# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL AGENDA

Mayor Dave Potter, Council Members Jeff Baron, Karen Ferlito, Bobby Richards, and Carrie Theis
Contact: 831.620.2000 www.ci.carmel.ca.us

All meetings are held in the City Council Chambers
East Side of Monte Verde Street
Between Ocean and 7th Avenues

**REGULAR MEETING**
**Tuesday, November 1, 2022**

**OPEN SESSION is at 4:30 PM (in person at City Hall and via teleconference), CLOSED SESSION is at 3:00 PM (via teleconference only)**

**Governor Newsom's Executive Order N-29-20 has allowed local legislative bodies to hold public meetings via teleconference and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to observe and to address the local legislative body.**

**To that end, OPEN SESSION will be held via teleconference and in-person in the City Council Chambers at City Hall located on Monte Verde Street between Ocean and Seventh Avenue. To participate via teleconference click the following link to attend via Zoom (or copy and paste link in your browser): https://ci-carmel-ca-us.zoom.us/j/85863804198 Meeting ID: 858 6380 4198 Passcode: 707855 Dial In: 253-215-8782**

**To participate in this meeting in-person in the City Council Chambers, the public must show proof of vaccination (including virus booster) and wear a face covering at all times. Seating will be limited and available on a first come first served basis.**

**CLOSED SESSION - 3:00 PM (via teleconference only, Zoom link above)**

**CALL TO ORDER AND ROLL CALL**

**PUBLIC APPEARANCE - Limited to Items on Closed Session**

**CLOSED SESSION**

**A.** CONFERENCE WITH LEGAL COUNSEL PURSUANT TO GOVERNMENT
CODE SECTION 54956.9 (d)(1) --EXISTING LITIGATION
Name of case: GTE Mobilnet of California Limited Partnership, a California limited partnership d/b/a Verizon Wireless v. City of Carmel-by-the-Sea, et.al.
United States District Court (Northern District) Case No. 5:22-CV-00347-NC

**OPEN SESSION**

**4:30 PM**

## CALL TO ORDER AND ROLL CALL

## PLEDGE OF ALLEGIANCE

## PUBLIC APPEARANCES

**Members of the public are entitled to speak on matters of municipal concern not on the agenda during Public Appearances. Each person's comments shall be limited to 3 minutes, or as otherwise established by the Chair. Matters not appearing on the agenda will not receive action at this meeting and may be referred to staff. Persons are not required to provide their names, and it is helpful for speakers to state their names so they may be identified in the minutes of the meeting.**

## ANNOUNCEMENTS

**A.** City Administrator Announcements

**B.** City Attorney Announcements

**C.** Council Member Announcements

## CONSENT AGENDA

**Items on the consent agenda are routine in nature and do not require discussion or independent action. Members of the Council, Board or Commission or the public may ask that any items be considered individually for purposes of Council, Board or Commission discussion and/ or for public comment. Unless that is done, one motion may be used to adopt all recommended actions.**

**1.** October 3, 2022, Special Meeting Minutes, and October 4, 2022, Regular Meeting Minutes

**2.** September 2022 Check Register Summary

**3.** September 2022 Monthly Reports

**4.** Resolution 2022-093, Proclaiming the Continuing Need To Meet By Teleconference Pursuant To Government Code Section 54953 (e)

**5.** Resolution 2022-094 Authorizing the City Administrator to execute a Professional Services Agreement with EMC Planning Group Inc., for a not-to-exceed fee of $175,000, to conduct the Coastal Engineering and Adaptation Planning Project

**6.** Resolution 2022-095, Authorizing Free Use Days of the Sunset Center Theater and Lobby for the Carmel Public Library Foundation and Carmel Unified School District

**7.** Adoption of Ordinance No. 2022-003 (Second Reading) - Amending Municipal Code Section 2.52.630 pertaining to eligibility for new hires to use accrued vacation leave in the first year of employment

## ORDERS OF BUSINESS

**Orders of Business are agenda items that require City Council, Board or Commission discussion, debate, direction to staff, and/or action.**

**8.** 2022 Car Week After Action Report

**9.** Resolution 2022-096, adopting the 2022 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

10. Provide feedback on the Design Traditions 1.5 Strategy Paper

11. Resolution 2022-097 Authorizing the Mayor to Execute a Sixth Amendment to the City Administrator At-Will Employment Agreement Effective October 1, 2022

## PUBLIC HEARINGS

12. Consider Resolution No. 2022-098 amending CDP 18-231 to extend the current Beach Fire Management Pilot Program by six months, with an end date of May 15, 2023

13. Resolution 2022-099, Agreement between the County of Monterey and the City of Carmel-by-the-Sea for joint participation in the Permanent Local Housing Allocation (PLHA) funding program for fiscal years 2019-2023

14. First Reading - Ordinance 2022-004 amending Carmel Municipal Code (CMC) Title 15 (Buildings and Construction) by adopting the 2022 editions of the California Building (CBC), Residential (CRC), Energy (CEnC), Fire (CFC), Mechanical (CMC), Plumbing (CPC), Electrical (CEC), Green Building Standards (CGBSC), Historic Building (HBC), and Existing Building Codes (EBC) with local amendments.

15. First Reading - Ordinance 2022-005 Amending Section 2.74.010(B) of the Carmel-by-the-Sea Municipal Code Related to Board Member Qualifications for the Historic Resources Board

16. Introduction and Adoption of Urgency Ordinance 2022-006 - Urgency Ordinance of the City Council of the City of Carmel-by-the-Sea Adopting Rules of Conduct for Attending Meetings of Legislative Bodies at City Facilities

## FUTURE AGENDA ITEMS

## ADJOURNMENT

17. Correspondence Received After Agenda Posting

This agenda was posted at City Hall, Monte Verde Street between Ocean Avenue and 7th Avenue, outside the Park Branch Library, NE corner of Mission Street and 6th Avenue, the Carmel-by-the-Sea Post Office, 5th Avenue between Dolores Street and San Carlos Street, and the City's webpage http://www.ci.carmel.ca.us in accordance with applicable legal requirements.

**SUPPLEMENTAL MATERIAL RECEIVED AFTER THE POSTING OF THE AGENDA**

Any supplemental writings or documents distributed to a majority of the City Council regarding any item on this agenda, received after the posting of the agenda will be available for public review at City Hall located on Monte Verde Street between Ocean and Seventh Avenues during regular business hours.

**SPECIAL NOTICES TO PUBLIC**

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the City Clerk's Office at 831-620-2000 at least 48 hours prior to the meeting to ensure that reasonable arrangements can be made to provide accessibility to the meeting (28CFR 35.102-35.104 ADA Title II).

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**CONSENT AGENDA**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Nova Romero, City Clerk |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | October 3, 2022, Special Meeting Minutes, and October 4, 2022, Regular Meeting Minutes |

## RECOMMENDATION:

Approve Draft Minutes.

## BACKGROUND/SUMMARY:

The City Council routinely approves minutes of its meetings.

## FISCAL IMPACT:

None.

## PRIOR CITY COUNCIL ACTION:

None.

## ATTACHMENTS:

Attachment 1) October 3, 2022, Special Meeting Minutes
Attachment 2) October 4, 2022, Regular Meeting Minutes

# CITY COUNCIL SPECIAL MEETING
# Monday, October 3, 2022
# 4:00 PM

## OPEN SESSION

## CALL TO ORDER AND ROLL CALL

Mayor Potter called the special meeting to order at 4:11 p.m.

Roll Call: Council Members Baron, Ferlito, Theis, Mayor Pro Tem Richards and Mayor Potter were present.

## CONSENT AGENDA

Council Member Baron pulled Item 1 from Consent and stated he will be voting no because he would like to see all of the boards and commissions return to in-person meetings.

**Item 1 -** Resolution 2022-087 of the City Council of the City Of Carmel-by-the-Sea Proclaiming the Continuing Need To Meet By Teleconference Pursuant To Government Code Section 54953 (e)

**Motion by Mayor Pro Tem Richards to adopt Resolution 2022-087, seconded by Mayor Potter, and approved 4-1-0-0 with the following roll call vote:**
AYES: Council Members Ferlito, Theis, Richards, and Mayor Potter
NOES: Council Member Baron
ABSENT: None
ABSTAIN: None

## CLOSED SESSION

Mayor Potter read the closed session title.

**Item 2 -** CONFERENCE WITH LEGAL COUNSEL PURSUANT TO GOVERNMENT CODE SECTION 54956.9 (d)(1) --EXISTING LITIGATION
Name of case: GTE Mobilnet of California Limited Partnership, a California limited partnership d/b/a Verizon Wireless v. City of Carmel-by-the-Sea, et.al.
United States District Court (Northern District) Case No. 5:22-CV-00347-NC

Public Comment: None

Council moved to closed session.

## ADJOURNMENT

Council adjourned from Closed Session at 4:54 p.m.

APPROVED:

Dave Potter, Mayor

Nova Romero, MMC, City Clerk

# CITY COUNCIL MINUTES
## Regular Meeting
## Tuesday, October 4, 2022

**CALL TO ORDER AND ROLL CALL**

Mayor Potter called the closed session meeting to order at 3:00 PM.
Roll Call: Council Members Baron, Ferlito, Theis, Mayor Pro Tem Richards and Mayor Potter were present.

**CLOSED SESSION - 3:00 PM**

City Attorney Pierik read the closed session titles.

A. PUBLIC EMPLOYEE PERFORMANCE EVALUATION PERSUANT TO GOVERNMENT CODE SECTION 54957
   Title: City Administrator

B. CONFERENCE WITH LABOR NEGOTIATORS – Government Code Section 54957.6
   Agency designated representatives: Mayor Pro Tem Richards and City Attorney
   Unrepresented employee: City Administrator

Council adjourned to closed session at 3:04 p.m.

**TOUR OF INSPECTION - 3:30 PM**
Council returned from closed session, and conducted the tour of inspection of the following locations:

A. Mills Act – Monte Verde Street 2 northeast of 9th Avenue, Block 94, Lot 18 (Strom and Miller)
B. Mills Act – Southeast Corner of San Antonio Avenue and 4th Avenue Block HH, Lot 28 (Ludwick)
C. Mills Act – Vizcaino Avenue 12 southwest of Mountain View Avenue, Block 102, Lot 12 & 13 (Prentiss)

**OPEN SESSION – 4:30 PM**

**CALL TO ORDER AND ROLL CALL**
Mayor Potter called the regular City Council meeting to order at 4:30 p.m.
Roll Call: Council Members Baron, Ferlito, Theis, Mayor Pro Tem Richards and Mayor Potter were present.

**PLEDGE OF ALLEGIANCE**
Assistant City Administrator Maxine Gullo led the pledge of allegiance.

**EXTRAORDINARY BUSINESS**

**A. Proclamation - Childhood Cancer Awareness Week**

Council Member Baron read the proclamation.

**B. Receive a presentation on street addresses to be discussed, and provide staff with direction**

Administrative Analyst Emily Garay gave a presentation on the topic and answered questions from Council.

Public Comment:
Betty Maurutto, Betty Kullas, and Jana Schilling spoke in favor of street addresses. Nancy Twomey addressed the Council.

Council discussion resumed. Council gave direction to staff to continue to do research on the topic and confirm if implementing a street address system will require mail delivery service, and if so staff inform the Council and ask for further direction. Staff will return to Council with their findings and a preliminary plan for community engagement and feedback on the topic of street address implementation.

**C. Receive a presentation on Parking Management Program**

Parking Management Program Consultant Brian Uhler gave a presentation on the topic and answered questions from Council.

Public Comment:
Judy Tollner and Parker Logan spoke against paid parking. Nancy Twomey addressed the Council.

Council discussion resumed. Council directed Mr. Uhler to move forward with his recommendations on the next steps to begin a parking management program beginning in January after the new Council is seated.

**PUBLIC APPEARANCE**

None

**ANNOUNCEMENTS**

**A. CITY ADMINISTRATOR** - Assistant City Administrator Gullo thanked Council for the opportunity to sit at the helm of the meeting while City Administrator Rerig was attending a conference. She thanked the community for their input on the design guidelines workshop last night. She announced that Public Works will be planting new trees during the month of October. She announced upcoming City events: October 27 - Third Thursday in the park, 4-7 p.m.,

October 29 - Annual pumpkin roll 2-4 p.m. and Hocus Pocus movie in Devendorf Park in the evening, October 31 – the Annual Halloween parade at 4 p.m. and trick or treating in the park to follow.

**B. CITY ATTORNEY** - No reports from closed session.

**C. CITY COUNCIL**

Council Member Baron – No reports

Council Member Ferlito – No reports

Council Member Theis - Announced that October 8th there will be a Meet the Makers, art and wine tasting event.

Mayor Pro-Tem Richards – Announced that October 6th is the Taste of Carmel event put on by the Chamber of Commerce.

Mayor Potter – Reported that he attend the design traditions workshop last night there was great discussion and lots of interest and passion from the community. He voiced concern about homes that have their garages right on the front edge of the property with no area to back out, and is dangerous for cars to back out onto the street, especially on Carpenter Street.

**CONSENT AGENDA**

Mayor Potter pulled Item 7 from the Consent agenda.

**Item 1 - August 1, 2022 Special Meeting Minutes, and September 13, 2022 Regular Meeting Minutes**

**Item 2 - August 2022 Monthly Reports**

**Item 3 - August 2022 Check Register Summary**

**Item 4 - Resolution 2022-088, awarding a Professional Services Agreement to Schaaf & Wheeler to amend the City's Storm Drain Master Plan**

**Item 5 - Resolution 2022-089, waiving a bid irregularity and awarding a three-year on-call Landscape Maintenance Services contract to Town & Country Gardening & Landscaping, with a not-to-exceed fee for Fiscal Year 2022/23 of $140,000**

**Item 6 - Resolution 2022-090, authorizing the City Administrator to execute an agreement with Public Risk Innovation, Solutions, and Management (PRISM) risk management for the term of October 15, 2022, to June 30, 2023 in an amount not to exceed the $50,000 approved in the FY 22-23 budget**

**Motion by Mayor Pro Tem Richards to approve consent agenda items 1-6, seconded by Council Member Theis, and approved 5-0-0-0 with the following roll call vote:**

AYES: Council Members Baron, Ferlito, Theis, Richards, and Mayor Potter
NOES: None
ABSENT: None
ABSTAIN: None

**ITEMS PULLED FROM CONSENT**

**Item 7 - Resolution 2022-091 approving a supplemental budget appropriation to the Fiscal Year 2022-2023 Adopted budget for Discretionary Grants in the amount of $1,000 for the Carmel High School Mock Trial Team**

Mayor Potter requested that Council to increase the donation amount from $1,000 to $5,000. He added that former Carmel Mayor Sue McCloud has generously offered to match the City's donation up to $5,000. Council discussion resumed.

Public Comment: None

**Motion by Mayor Potter, to adopt Resolution 2022-091 with an amendment to increase the donation amount to $5,000, seconded by Mayor Pro Tem Richards, and approved 5-0-0-0 with the following roll call vote:**
AYES: Council Members Baron, Ferlito, Theis, Richards, and Mayor Potter
NOES: None
ABSENT: None
ABSTAIN: None

**ORDERS OF BUSINESS**

**Item 8 - Resolution 2022-092 authorizing the City Administrator to execute a purchase agreement for the purchase of a One (1) Pierce Manufacturing, Inc. Enforcer 1500 GPM Pumper (HGAC Consortium Purchase – Contract FS12-19, Product Code FS19VC07) for a not to exceed in the amount of $880,000**

Public Safety Director Ward gave a presentation on the item.

Public Comment: None

Council discussion followed.

**Motion by Baron to approve the purchase of a diesel fire engine and adopt Resolution 2022-092, seconded by Council Member Theis, and approved 5-0-0-0 with the following roll call vote:**
AYES: Council Members Baron, Ferlito, Theis, Richards, and Mayor Potter
NOES: None
ABSENT: None
ABSTAIN: None

**Item 9 - Receive a presentation on the 2022 editions of the California Building (CBC), Residential (CRC), Energy (CEnC), Fire (CFC), Mechanical (CMC), Plumbing (CPC), Electrical (CEC), Green Building Standards (CGBSC), Historic Building (HBC), and Existing Building Codes (EBC) with local amendments to be discussed, and provide staff with direction**

Building Official Jermel Laurie gave a presentation and answered questions from Council.

Public Comment:
Judy Tollner and Edan Asturi addressed the Council.

Council discussion followed. Council consensus to move forward with the October 12th community meeting and have the first reading of the building code Ordinance added to the November 1, 2022 meeting.

Council took a recess at 6:35 p.m., and reconvened at 6:45 p.m.

**Item 10 - Discussion regarding potential amendments to the City's Mills Act Contract policy**

Principal Planner Marnie Waffle gave a presentation and answered questions from Council.

Public Comment: None

Council Member Ferlito said she would like consider a cap on the tax break, and limit the number of Mills Act contracts at any given time since the yearly inspections require lots of staff resources. Council Member Theis said she would like to consider the length of the contract and that 20 years may be too long for the tax break, and Mayor Pro Tem Richards and Council Member Baron agreed. Council Member Baron expressed concerns about commercial properties that make millions and get the benefit of reduced taxes for 20 years.

Council consensus to continue the discussion on amending the City’s Mills Act Contract policy in the future.

**Item 11 - Discussion on amending the qualifications for the Historic Resources Board Members**

City Clerk Romero gave a presentation on the item and answered questions from Council.

Public Comment:
Edan Asturi addressed the Council.

Council discussion followed. Council consensus to return with a first reading Ordinance to amend City Code Chapter 2.74.010(B), to expand the residency requirements for Historic Resources Board members to allow up to two (2) members to reside within Monterey County, outside of Carmel-by-the-Sea, so long as they meet the other qualifications regarding relevant experience or knowledge.

**Item 12 - Discussion on rescinding Urgency Ordinance 2022-002 - Adopting Rules of Conduct for attending meetings of Legislative Bodies at City Facilities**

City Clerk Romero gave a presentation on the item and answered questions from Council.

Public comment: None.

Council discussion followed. Council discussed coming back with a new Urgency Ordinance to amend the rules of conduct for attending meetings of legislative bodies removing the requirement to show a vaccine card to enter City facilities, and require masks be worn if the CDC Community Level at the time of the agenda posting is medium or high, and to have the level posted on the agenda.

**Motion by Council Member Baron, directing staff to return with an Urgency Ordinance to repeal and replace Urgency Ordinance 2022-002, removing the requirement to show a vaccine card to enter City facilities, masks are required if the CDC Community Level at the time of the agenda posting is medium or high, per the guidance of the California Department of Public Health, seconded by Mayor Potter, and approved 5-0-0-0 with the following roll call vote:**
AYES: Council Members Baron, Ferlito, Theis, Richards, and Mayor Potter
NOES: None
ABSENT: None
ABSTAIN: None

**PUBLIC HEARINGS**

**Item 13 - Introduction of Ordinance No. 2022-003 (First Reading) - Amending Municipal Code Section 2.52.630 pertaining to eligibility for new hires to use accrued vacation leave in the first year of employment**

Assistant City Administrator Gullo gave a presentation on the item.

Public Comment: None

Council discussion followed.

**Motion by Council Member Baron to read by title only, waive full reading, introducing Ordinance 2022-003 and passing to second reading on November 1st, seconded by Council Member Theis, and approved 5-0-0-0 with the following roll call vote:**
AYES: Council Members Baron, Ferlito, Theis, Richards, and Mayor Potter
NOES: None
ABSENT: None
ABSTAIN: None

**Item 14 - MA 22-204 (Prentiss): Consideration of a recommendation from the Historic Resources Board to the City Council that the City enter into a Mills Act Historical Property Contract MA 22-204 (Prentiss) with Amanda S. Prentiss and Matthew J.**

**Mermer for the historic "Marion Daniels Shand House" located at Vizcaino Avenue 12 southwest of Mountain View Avenue (APN 010-055-021)**

Associate Planner Katherine Wallace gave a presentation and answered questions from Council.

Public Comment: Dr. Matthew Mermer, applicant, addressed the Council.

Council discussion followed.

**Motion by Council Member Baron to approve the Mills Act Contract MA 22-204 (Prentiss), seconded by Council Member Theis, and approved 5-0-0-0 with the following roll call vote:**
AYES: Council Member Baron, Ferlito, Theis, Richards, Mayor Potter
NOES: None
ABSENT: None
ABSTAIN: None

**Item 15 - MA 22-214 (Ludwick): Consideration of a recommendation from the Historic Resources Board to the City Council that the City enter into a Mills Act Historical Property Contract MA 22-214 (Ludwick) with Christopher & Adrienne Ludwick Trust for the historic "Frederick Ten Winkel House" located at the southeast corner of San Antonio Avenue and 4th Avenue (APN 010-253-018)**

Associate Planner Katherine Wallace gave a presentation and answered questions from Council.

Public Comment: Mr. Ludwick, applicant, addressed the Council.

Council discussion followed.

**Motion by Mayor Potter to approve the Mills Act Contract MA 22-214 (Ludwick), seconded by Mayor Pro Tem Richards, and approved 5-0-0-0 with the following roll call vote:**
AYES: Council Member Baron, Ferlito, Theis, Richards, Mayor Potter
NOES: None
ABSENT: None
ABSTAIN: None

**Item 16 - MA 22-254 (Strom & Miller): Consideration of a recommendation from the Historic Resources Board to the City Council that the City enter into a Mills Act Historical Property Contract MA 22-254 (Strom & Miller) with Nancy Strom and Gavin Miller for the historic "Enoch A. Lewis House" located at Monte Verde Street 2 northeast of 9th Avenue (APN 010-193-010)**

Public Comment: Nancy Strom, applicant, addressed the Council.

Council discussion followed.

**Motion by Council Member Theis to approve Mills Act Contract MA 22-254 (Strom & Miller), seconded by Mayor Potter, and approved 5-0-0-0 with the following roll call vote:**
AYES: Council Member Baron, Ferlito, Theis, Richards, Mayor Potter
NOES: None
ABSENT: None
ABSTAIN: None

**FUTURE AGENDA ITEMS**

Mayor Potter – Requested future discussion on garage encroachments.

**ADJOURNMENT**

Council adjourned at 8:00 p.m.

APPROVED:

| | |
|---|---|
| _____ | _____ |
| Dave Potter | Nova Romero, MMC |
| Mayor | City Clerk |

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**CONSENT AGENDA**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Thomas Levandowski, Finance Manager |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | September 2022 Check Register Summary |

## RECOMMENDATION:

Approve the check register for September 2022.

## BACKGROUND/SUMMARY:

The check register is produced from the City's financial system. The report groups the checks by the respective department or function. The check register includes the check number, the name of the vendor, a description of the purchase, the check issue date and the amount of the check.

Per the California Supreme Court's decision in the case of Los Angeles County Board of Supervisors v. Superior Court (Dec. 29, 2016) (2016 WL 7473802), the check register excludes the specific invoice payments for legal services incurred for pending and active investigations, pending and active litigation, as well as recently concluded matters. The Supreme Court has ruled that these specific invoices are protected under attorney-client privilege and need not be disclosed under the Public Records Act.

On the last page of the report, staff have included the contract balance for the respective vendors that were paid in September.

## FISCAL IMPACT:

The check register summary for September 2022 totals $3,478,295.45.

## PRIOR CITY COUNCIL ACTION:

Council ratified the August 2022 check register at its October 4th regular meeting.

## ATTACHMENTS:

Attachment 1) September 2022 Check Register Summary

## September 2022 Check Register

Attachment 1

| Check | Vendor/Employee | Transaction Description | Date | Amount |
|---|---|---|---|---|
| Department: 110 City Council | | | | |
| 49784 | Carmel Heritage Society | Council Grant FY 22-23 | 09/09/2022 | 3,000.00 |
| 49794 | Food Bank For Monterey County | Council Discretionary Grant FY 22-23 | 09/09/2022 | 3,000.00 |
| 49807 | Peninsula Messenger LLC | Mail service sorting and delivery | 09/09/2022 | 4,512.00 |
| 49817 | US Bank | SimpleTexting subscription | 09/09/2022 | 278.40 |
| 49826 | Carmel Youth Center Inc | Council Grant FY 2022-23 | 09/13/2022 | 3,000.00 |
| 49894 | Dave Potter | Cal Cities conference travel expenses | 09/24/2022 | 4,553.66 |
| | | **Total** | | **18,344.06** |
| Department: 111 City Administration | | | | |
| 49761 | Alhambra | Water service City Hall | 09/08/2022 | 135.85 |
| 49766 | Comcast | City Hall business cable service | 09/08/2022 | 73.32 |
| 49767 | Corbin Willits System | MOM Financial system monthly fee | 09/08/2022 | 720.79 |
| 49769 | J 4 Systems | Billable services for Systems Engineer | 09/08/2022 | 640.00 |
| 49770 | Minuteman Press | 5000 Laser A/P checks | 09/08/2022 | 1,272.60 |
| 49771 | Pitney Bowes Bank Inc Purchase Power | Postage-meter refills | 09/08/2022 | 3,434.00 |
| 49772 | Robert Half | Temporary payroll assistance services | 09/08/2022 | 2,736.00 |
| 49773 | Toshiba Financial Service | Toshiba Copier lease Estudio 5506 | 09/08/2022 | 373.06 |
| 49774 | US Bank | Printing of 22-23 Budget books | 09/08/2022 | 5,367.92 |
| 49779 | Amazon Web Services Inc | Data and cloud storage fees | 09/09/2022 | 836.15 |
| 49780 | AT&T | Telephone service citywide | 09/09/2022 | 3,158.93 |
| 49785 | Carmel Pine Cone | Legal noticing | 09/09/2022 | 1,231.50 |
| 49793 | Digital Deployment | Website support agreement:Maint, training, secur | 09/09/2022 | 700.00 |
| 49796 | Image Sales | Employee ID Badges | 09/09/2022 | 58.62 |
| 49797 | Iron Mountain | Records storage service | 09/09/2022 | 616.07 |
| 49798 | J 4 Systems | Billable services for Systems Engineer | 09/09/2022 | 160.00 |
| 49801 | Monterey County Film Commission | Marketing and media outreach | 09/09/2022 | 2,500.00 |
| 49803 | Next Request | FOIA Workflow Platform-Standard subscription | 09/09/2022 | 8,388.00 |
| 49804 | Office Depot, Inc. | Business office supplies-Admin/Finance | 09/09/2022 | 246.83 |
| 49809 | Pitney Bowes Global Fin S | Postage meter lease | 09/09/2022 | 836.55 |
| 49810 | Robert Half | Temporary payroll assistance services | 09/09/2022 | 9,120.00 |
| 49811 | Ryan Ranch Printers | Envelopes, stationary, business card and busines | 09/09/2022 | 522.27 |
| 49812 | Sprint | Cell service fees, usage and purchases | 09/09/2022 | 29.99 |
| 49815 | T-Mobile | Monthly cell service, usage and purchases | 09/09/2022 | 1,464.04 |
| 49817 | US Bank | Employee appreciation lunches | 09/09/2022 | 1,799.70 |
| 49818 | Verizon Wireless | C Rerig IPAD | 09/09/2022 | 1,588.39 |
| 49819 | Wageworks,Inc | Healthcare monthly Admin and Compliance Fee | 09/09/2022 | 170.00 |
| 49827 | Hinderliter, De Llamas & Associates | Sales/transactions tax auditing services Jul-Sep 2 | 09/13/2022 | 600.00 |
| 49829 | United Way Of Monterey County | 211 Monterey County Information & Referral Serv | 09/13/2022 | 3,000.00 |
| 49867 | Alhambra | Water service City Hall | 09/24/2022 | 158.34 |
| 49870 | Benefit Coordinators Corporation (BCC) | Cobra Admin expenses | 09/24/2022 | 300.00 |
| 49871 | Carmel Pine Cone | Legal noticing | 09/24/2022 | 105.00 |
| 49873 | Hayashi/Wayland | Leadership Carmel 2022-23 class fee:E Garay | 09/24/2022 | 1,700.00 |
| 49874 | Law Enforcement Psychological Serv, Inc | Post employment psychological evaluations | 09/24/2022 | 900.00 |
| 49879 | Office Depot, Inc. | Business office supplies-Admin/Finance | 09/24/2022 | 128.66 |
| 49881 | Pitney Bowes Bank Inc Purchase Power | Postage-meter refills | 09/24/2022 | 3,636.25 |
| 49882 | Robert Half | Temporary payroll assistance services | 09/24/2022 | 12,768.00 |
| 49883 | Rydin Decal | 500 Business license delivery vehicle stickers | 09/24/2022 | 795.00 |
| 49885 | Toshiba Financial Service | Toshiba Copier lease Estudio 5506 | 09/24/2022 | 403.46 |
| 49888 | Zoom Imaging Solutions, Imc. | Business office copier usage fees | 09/24/2022 | 501.84 |
| 49896 | Office Depot, Inc. | Business office supplies-Admin/Finance | 09/24/2022 | 65.51 |
| 49897 | Ryan Ranch Printers | Business cards:  T Ford | 09/24/2022 | 86.31 |
| 49898 | Comcast Business | NonNGEN internet and recurring charges | 09/28/2022 | 644.82 |
| | | **Total** | | **73,973.77** |

Department: 112 City Attorney

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|---|---|---|---|---|
| 49823 | Burke,Williams & Sorensen, LLP | City Attorney services - Labor negotiations May 2 | 09/13/2022 | 27,351.23 |
| 49825 | Burke,Williams & Sorensen, LLP | City Attorney services - July 2022 | 09/13/2022 | 45,014.50 |
| | | **Total** | | **72,365.73** |

Department: 115 Community Planning & Building

| | | | | |
|---|---|---|---|---|
| 49719 | Baystar Express | Copy paper Business Office (Non-jamming) - Pla | 09/07/2022 | 91.77 |
| 49721 | Carmel Towing & Garage | FY 22-23: Building Dept. - Gas & Oil | 09/07/2022 | 57.00 |
| 49724 | Engineered Fire Systems | FY 22-23: Fire Inspection Plan Reviews - JULY 2 | 09/07/2022 | 1,437.50 |
| 49725 | IWORQ | PCLUP - Parcel Upload - Monthly | 09/07/2022 | 500.00 |
| 49729 | Past Consultants LLC | Historic Context Statement Update Project | 09/07/2022 | 3,900.00 |
| 49732 | US Bank | APA EDUCATION: Evan Kort, 08-05-2022 | 09/07/2022 | 1,624.06 |
| 49855 | Carmel Towing & Garage | FY 22-23: Building Dept. - Gas & Oil | 09/24/2022 | 114.51 |
| 49856 | CSG Consultants, Inc. | FY 22-23: Building Dept. - Plan Review Svcs. | 09/24/2022 | 459.00 |
| 49858 | Engineered Fire Systems | FY 22-23: Fire Inspection Plan Reviews | 09/24/2022 | 937.50 |
| 49860 | Kelly-Moore Paint Company Inc | Paint - Planning Office | 09/24/2022 | 395.23 |
| 49864 | Office Depot, Inc. | FY 22-23: Office Supplies | 09/24/2022 | 97.39 |
| | | **Total** | | **9,613.96** |

Department: 116 Police

| | | | | |
|---|---|---|---|---|
| 49762 | American Messaging | PD: PGCopy Followers Cell Services | 09/08/2022 | 2.70 |
| 49763 | AT&T/FirstNet | PD Wireless services | 09/08/2022 | 89.49 |
| 49774 | US Bank | PD Badges | 09/08/2022 | 3,620.87 |
| 49776 | Alan Ward | Reimburse 2 classes Cal Coast Univ | 09/09/2022 | 1,350.00 |
| 49777 | Alhambra | Water service-PD | 09/09/2022 | 300.05 |
| 49778 | Allied Universal | Beach patrol services | 09/09/2022 | 4,326.07 |
| 49783 | Caltronics/J.J.R Enterprises. Inc | Police Dept copier usage fees | 09/09/2022 | 150.47 |
| 49786 | Carmel Towing & Garage | Police Dept-Fuel expense | 09/09/2022 | 5,090.49 |
| 49788 | Comcast | Police Dept cable services | 09/09/2022 | 253.19 |
| 49789 | Community Hospital of the Monterey Peninsu | Testing services for Police Dept | 09/09/2022 | 405.00 |
| 49790 | County of Monterey, Dept of Emerg Commur | Dispatch Service-Quarterly | 09/09/2022 | 13,279.00 |
| 49792 | Department of Justice/Accounting Office | PD:Fingerprinting services | 09/09/2022 | 87.00 |
| 49799 | Lemos Service Inc | Police Dept auto repairs | 09/09/2022 | 119.65 |
| 49800 | Mission Linen Service | Fire Dept laundry service | 09/09/2022 | 305.85 |
| 49802 | Monterey County Health Department | Annual Rediness Retainer fee CBS-PD FY 22-23 | 09/09/2022 | 2,000.00 |
| 49804 | Office Depot, Inc. | Police Dept office supplies | 09/09/2022 | 933.60 |
| 49813 | Summit Uniforms | PD Uniform purchases | 09/09/2022 | 882.66 |
| 49814 | T2 Systems Canada Inc. | PD:Digital iris services | 09/09/2022 | 75.00 |
| 49816 | United Public Safety, Inc | Ticketing Platform for PD:Hardware, software, tec | 09/09/2022 | 256.38 |
| 49828 | Mission Linen Service | Fire Dept laundry service | 09/13/2022 | 272.81 |
| 49868 | Allied Universal | Beach patrol services | 09/24/2022 | 564.27 |
| 49869 | Angel Armor | Safety equipment | 09/24/2022 | 3,539.44 |
| 49872 | De Lage Landen Financial | Police Dept copier lease | 09/24/2022 | 161.70 |
| 49875 | Lemos Service Inc | Police Dept auto repairs | 09/24/2022 | 115.88 |
| 49877 | Mission Linen Service | Fire Dept laundry service | 09/24/2022 | 303.44 |
| 49878 | Napa Auto Parts | Police Dept-Auto parts | 09/24/2022 | 105.20 |
| 49884 | Same Day Shred | PD-Document shredding services | 09/24/2022 | 45.00 |
| 49886 | Transparent Glass Coatings, Inc | PD vehicle window coating | 09/24/2022 | 2,859.00 |
| 49887 | Transunion Risk & Alterna | PD: Monthly fee for information services | 09/24/2022 | 1.60 |
| 49889 | Alhambra | Water service-PD | 09/24/2022 | 245.56 |
| 49890 | AT&T/FirstNet | PD Wireless services | 09/24/2022 | 89.49 |
| 49892 | Comcast | Police Dept cable services | 09/24/2022 | 55.59 |
| 49895 | Department of Justice/Accounting Office | PD:Fingerprinting services | 09/24/2022 | 194.00 |
| | | **Total** | | **42,080.45** |

Department: 117 Fire

| | | | | |
|---|---|---|---|---|
| 49765 | City Of Monterey | FY 2022-23 Monthly fee:Interim Fire Admin/Emer | 09/08/2022 | 236,620.21 |
| 49777 | Alhambra | Water service Fire Dept | 09/09/2022 | 199.55 |
| 49786 | Carmel Towing & Garage | Fire Dept gas expense (E15) | 09/09/2022 | 831.46 |
| 49787 | City Of Monterey | FY 22-23 Fire Dept vehicle repairs | 09/09/2022 | 4,894.29 |
| | | **Total** | | **242,545.51** |

Department: 118 Ambulance

| | | | | |
|---|---|---|---|---|
| 49765 | City Of Monterey | FY 2022-23 Ambulance Administration fee | 09/08/2022 | 8,581.53 |
| 49781 | Bound Tree Medical LLC | Medical supplies | 09/09/2022 | 1,454.62 |
| 49786 | Carmel Towing & Garage | Amb Dept gas expense (7166) | 09/09/2022 | 1,740.53 |
| 49808 | Peninsula Welding & Medical Supply, inc. | Ambulance Dept-Oxygen/hazardous materials tra | 09/09/2022 | 179.83 |
| 49818 | Verizon Wireless | Machine to machine activity | 09/09/2022 | 14.04 |
| 49820 | Wittman Enterprises, LLC | Ambulance billing service | 09/09/2022 | 4,610.21 |
| 49821 | Dr. James Stubblefield | Medical director services Aug-Feb'23 (Re-issue C | 09/12/2022 | 6,500.00 |
| 49872 | De Lage Landen Financial | Ambulance Copier lease | 09/24/2022 | 71.01 |
| 49876 | Medics For Life, Inc . | EMT training and education services | 09/24/2022 | 1,600.00 |
| 49891 | Bound Tree Medical LLC | Medical supplies | 09/24/2022 | 2,023.18 |
| | | **Total** | | **26,774.95** |

Department: 119 Public Works

| | | | | |
|---|---|---|---|---|
| 49717 | Cypress Painting & Decorating, Inc. | Replace PO 2022000478-PW Exterior painting | 09/02/2022 | 18,045.00 |
| 49734 | Granite Fire Protection, Inc | Sunset Center cooling linework 08/21/22 #08212 | 09/08/2022 | 2,600.00 |
| 49735 | Ailing House Pest Control | City Wide Pest Control | 09/08/2022 | 379.00 |
| 49736 | Airtec Inc | HVAC work for City Facilities | 09/08/2022 | 1,295.56 |
| 49737 | American Lock & Key | Locksmith ervice for City Facilities | 09/08/2022 | 215.89 |
| 49738 | Cate Electrical Co., Inc. | Electrical work at City Facilities | 09/08/2022 | 910.77 |
| 49739 | Cintas Corporation | PW Uniform Service 21/22 FY | 09/08/2022 | 482.63 |
| 49740 | Coast Counties Glass, Inc. | HML glass repalcement-6/6/22 #05452 | 09/08/2022 | 3,419.00 |
| 49741 | De Lage Landen Financial | PW Copier monthly lease- | 09/08/2022 | 205.40 |
| 49742 | Drought Resistant Nursery | Plants for City - 8/2/22 #259434 | 09/08/2022 | 158.28 |
| 49744 | Edges Electrical Group | Electrical supplies for City Facilities | 09/08/2022 | 227.20 |
| 49745 | Granite Rock Company | PW Streets-Supplies | 09/08/2022 | 57.74 |
| 49746 | John Ley's Tree Service | Tree work as directed by City Forester | 09/08/2022 | 490.00 |
| 49747 | Metropolitan Transportation Commission | Street Saver annual subscription 7/15/22 #4926-A | 09/08/2022 | 2,000.00 |
| 49748 | Mirage Window Cleaning | Window cleaning service for City Facilites | 09/08/2022 | 890.00 |
| 49750 | Monterey Sanitary Supply | PW/FM janitorial supplies cleansers/COVID | 09/08/2022 | 417.82 |
| 49751 | Office Depot, Inc. | PW/FM/Forestry - Office Supplies FY 2023 | 09/08/2022 | 539.12 |
| 49752 | Poe's Plumbing & Backflow | Plumbing repairs City facilities | 09/08/2022 | 990.29 |
| 49753 | Pureserve Building Service | Janitorial services | 09/08/2022 | 21,141.35 |
| 49754 | Scarborough Lumber & Building | Forestry supplies. 8/10/22 #443995-4 | 09/08/2022 | 320.43 |
| 49755 | Sherwin-Williams Co. | PW Paint and paint supplies 8/4/22 2267-4 | 09/08/2022 | 197.69 |
| 49756 | Tope's Tree Service Inc. | Tree services citywide as directed by City Foreste | 09/08/2022 | 6,821.00 |
| 49757 | Tree Stuff Lockbox No 639707 | Forestry safety equipment and supplies | 09/08/2022 | 145.29 |
| 49758 | Uline Inc. | PW Streets - Safety Supplies | 09/08/2022 | 477.65 |
| 49759 | US Bank | Supplies for FM Div. CW-8/8/22 #6191 | 09/08/2022 | 2,014.88 |
| 49760 | Valley Saw & Garden Equipment | Supplies for Forestry | 09/08/2022 | 4,652.66 |
| 49818 | Verizon Wireless | PW 2 IPAD's | 09/09/2022 | 1,626.16 |
| 49841 | American Supply Company | PW/FM Janitorial supplies | 09/24/2022 | 412.97 |
| 49842 | Caltronics/J.J.R Enterprises. Inc | Copier Contract PUBLIC WORKS - FY22/23 | 09/24/2022 | 243.72 |
| 49843 | Cintas Corporation | PW Uniform Service 21/22 FY | 09/24/2022 | 146.81 |
| 49844 | Dominic Marquez | Work Boot reinbursement per MOU 22/23 FY - 25 | 09/24/2022 | 250.00 |
| 49846 | Golden State Portables | Porta-Potties FT & Events | 09/24/2022 | 5,720.38 |
| 49847 | Iverson Tree Service | Tree work as directed by City Forester | 09/24/2022 | 4,500.00 |
| 49848 | Monterey Bay Pest Control, Inc | Gopher hole pest control - 6/17/22 #18446 | 09/24/2022 | 450.00 |
| 49849 | Monterey County Weekly Classifieds | RFP-Landscape Maint Service Public Notice- For | 09/24/2022 | 341.25 |
| 49850 | Poe's Plumbing & Backflow | Plumbing repairs City facilities | 09/24/2022 | 461.42 |
| 49851 | Scarborough Lumber & Building | Flagging tape - for Forestry 9/2/22 444285-4 | 09/24/2022 | 24.77 |
| 49852 | Sentry Alarm Systems | Alarm monitoring for City buildings | 09/24/2022 | 360.00 |
| 49853 | Tope's Tree Service Inc. | Tree services Citywide as directed by City Forest | 09/24/2022 | 3,400.00 |

| | | | | |
|---|---|---|---|---|
| | | **Total** | | **87,032.13** |

Department: 120 Library

Attachment 1

| | | | | |
|---|---|---|---|---|
| 49806 | Pacific Grove Self Storage | Storage Unit - Document storage | 09/09/2022 | 307.00 |
| | | **Total** | | **307.00** |

Department: 121 Community Activities

| | | | | |
|---|---|---|---|---|
| 49733 | US Bank | Lunches for Homecrafters' Marketplace jury on Ju | 09/08/2022 | 58.83 |
| 49795 | Good Roots Events, Inc. | Farmers Market management FY 22-23 | 09/09/2022 | 6,700.00 |
| 49899 | US Bank | Sandcastle contest & Pumpkin Roll supplies | 09/28/2022 | 490.90 |
| | | **Total** | | **7,249.73** |

Department: 122 Economic Revitalization

| | | | | |
|---|---|---|---|---|
| 49824 | Carmel Chamber of Commerce | Visitor Center operations 50% Allocation FY 21-2 | 09/13/2022 | 7,500.00 |
| 49900 | Monterey County Convention & Visitors Bure | Jurisdiction Investment Apr-Jun 2022 FY 21-22 Q | 09/28/2022 | 40,001.75 |
| | | **Total** | | **47,501.75** |

Department: 130 Non-Departmental

| | | | | |
|---|---|---|---|---|
| 49782 | Cal-Am Water Company | Water service citywide | 09/09/2022 | 12,232.48 |
| 49805 | Pacific Gas & Electric | | 09/09/2022 | 282.56 |
| 49880 | Pacific Gas & Electric | Citywide gas & electric services | 09/24/2022 | 15,073.44 |
| | | **Total** | | **27,588.48** |

Fund: 301 Capital Projects

Department: 311 Capital Projects

| | | | | |
|---|---|---|---|---|
| 49738 | Cate Electrical Co., Inc. | Electrical upgrades to allow for stage rigging 8/5/ | 09/08/2022 | 999.35 |
| 49743 | Dudek | MTNP Improvements | 09/08/2022 | 1,920.00 |
| 49818 | Verizon Wireless | 4 IPADS PBD | 09/09/2022 | 1,219.62 |
| | | **Total** | | **4,138.97** |

Fund: 401 Debt Service

Department: 411 Debt Service

| | | | | |
|---|---|---|---|---|
| 49830 | US BANK St. Paul | Carmel Pub Imp Auth 2020 Debt service interest | 09/13/2022 | 77,899.79 |
| | | Total for Department: 411 Debt Service | | 77,899.79 |
| | | Total for Fund:401 Debt Service | | 77,899.79 |
| | | **Grand Total** | | **3,478,295.45** |

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**CONSENT AGENDA**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Nova Romero, City Clerk |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | September 2022 Monthly Reports |

## RECOMMENDATION:

Review and receive monthly reports.

## BACKGROUND/SUMMARY:

This is a monthly series of reports:
1) City Administrator Contract Log
2) Community Planning and Building Department Reports
3) Police, Fire, and Ambulance Reports
4) Public Records Act Requests
5) Public Works Department Reports

## FISCAL IMPACT:

N/A

## PRIOR CITY COUNCIL ACTION:

Monthly review and approval.

## ATTACHMENTS:

Attachment 1) City Administrator Contract Log
Attachment 2) Community Planning and Building Department Reports
Attachment 3) Police, Fire, and Ambulance Reports
Attachment 4) Public Records Act Requests
Attachment 5) Public Works Department Reports

# City Administrator Contract Log
## FY 2022-23

Attachment 1

| Date entered Into | Contractor | Contract Amount | Purpose |
|---|---|---|---|
| 9/1/2022 | NICOLE NEDEFF BIOLOGICAL CONSULTING | $24,000.00 | On call biological consulting services |

# CITY OF CARMEL-BY-THE-SEA
# Monthly Report

## Community Planning and Building Department

| | |
|---|---|
| TO: | Honorable Mayor and City Council Members |
| SUBMITTED BY: | Leah Young, Administrative Coordinator |
| SUBMITTED ON: | November 1, 2022 |
| APPROVED BY: | Brandon Swanson, Director of Community Planning and Building |

SEPTEMBER 2022 – DEPARTMENT ACTIVITY REPORT

I. PLANNING PERMIT APPLICATIONS:

In September 2022, 37 planning permit applications were received.

II. BUILDING PERMIT APPLICATIONS:

In September 2022, 58 building permit applications were received.

III. CODE COMPLIANCE CASES:

In September 2022, 23 new code compliance cases were created.

IV. TRANSIENT RENTAL COMPLIANCE CASES:

In September 2022, 5 new code compliance cases were created.

V. ENCROACHMENT PERMIT APPLICATIONS:

In September 2022, 32 encroachment permit applications were received.

VI. YEAR-TO-DATE TRENDS

Table 1 includes the following September 2022 totals: planning and building permit applications, code compliance and transient rental compliance cases, and encroachments. September 2022 totals are provided alongside September 2021 totals for comparison.

Compared to the same time period in the year 2021, Table 1 denotes the following percentage changes in the year 2022:

- Planning Permit Applications – **increase of 11.07%**
- Building Permit Applications – **decrease of 2.48%**
- Code Compliance Cases **– increase of 125%**
- Transient Rental Compliance Cases – **increase of 933.33%**
- Encroachment Permit Applications – **decrease of 6.64%**

Table 1. Permit Application Totals

| | PLANNING | BUILDING | CODE COMPLIANCE | TRANSIENT RENTAL COMPLIANCE | ENCROACHMENTS |
|---|---|---|---|---|---|
| 2021 Totals | 271 | 404 | 84 | 3 | 226 |
| 2022 Totals | 301 | 394 | 189 | 31 | 211 |
| % Difference | +11.07% | -2.48% | +125% | +933.33% | -6.64% |

# Planning Permit Report

09/01/2022 - 09/30/2022

| Permit # | Permit Type | Project Description | Address/Location | Date Received | Date Approved | Status |
|---|---|---|---|---|---|---|
| 22319 | Design Review | Revised approved BP 22-171 plans -<br>1) replace proposed window with new door<br>2) remove 493 sf of existing gravel driveway<br>3) add 17 sf of side stoop landing - stone<br>4) extend existing front landing step, adding 5 sf | Lobos St. 3 SE of 3rd Ave. | 9/30/2022 | | In Review |
| 22318 | Historic Evaluation | Initial historic determination | Lobos Street 2 NE of 4th Avenue | 9/27/2022 | | In Review |
| 22317 | Design Study | CHANGES ORIGINALLY PROPOSED AS A REVISION TO BP 22-205, but Design Study must be completed first.<br><br>To add a new landscape stair and move the front door. To re-use windows from the main house on the garage. To remove the shed on the garage to make room for the new stair, to reduce the impermeable area. | Camino Real and 4th Avenue | | 9/27/2022 | |
| 22316 | Temporary Use Permit | Birthday Dinner for 15 Guests | NW Corner of 6th & Mission Street | 9/30/2022 | | Approved |
| 22315 | Design Study | 1. To remodel an existing one story single family dwelling, modify existing detached carport, and add a second upper level. 2. Project includes the exterior and interior modifications as shown per the plans, and converting the existing carport into a garage. 3. The project will consist of changes to the rear decks, and front porch entrance. 4. No excavation or tree removal. | Dolores Street 4 SW of 10th Avenue | 9/29/2022 | | In Review |
| 22314 | Design Study | Proposed Window Changes to the Master Bathroom on the East and West Elevations. | San Antonio 2 NE of 9th Ave. | 9/29/2022 | | In Review |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22313 | Design Study | Window changes on lower level, south elevation. Replace the existing two windows with two windows of more uniform size and style to match the rest of the residence. | Guadalupe 5 SW of Ocean Ave | 9/29/2022 | | In Review |
| 22312 | Design Study | Retroactive authorization for the installation of seven new Velux skylights. | Torres 4 NE of 3rd | 9/29/2022 | | In Review |
| 22311 | Notice of Exempt Work | Remove existing permeable flat stone at the front yard setback and replace it with in-kind stone in the same area. Contact: Alejandro Carderas (831) 998-0171 | SW of Carmelo and 4th | 9/27/2022 | 9/28/2022 | Approved |
| 22310 | Historic Evaluation | HISTORIC EVALUATION: Relocation of the community building. | Dolores 1 SE of 7th | 9/27/2022 | | In Review |
| 22309 | Preliminary Site Assessment | Request for Preliminary Site Assessment; also, see HE 22-169. | SW Corner of Casanova and 11th | 9/23/2022 | | Pending Assignment |
| 22308 | Design Study | Follow up to DS 20-264 & BP 21-061 (Linfesty). PLANNING COMMISSION REFERRAL : Fiberglass Exterior w/Paint Grade Wood Interior Windows to replace existing fenestration. See attached order, elevations, floor plans, window schedule, and manufacturer information related to fiberglass exterior performance. Order is on-site for Planning Commission Review. | 4 Oak Knoll Way | 9/23/2022 | | In Review |
| 22307 | Design Study | Modify interior finishes to include new interior doors, flooring, cabinets, associated plumbing and electrical. Replace existing exterior windows, skylights and siding to match existing. This work to be completed at Owners Suite and Kitchen only. The rest of the house is to remain as-is. | Scenic Road 3 SE of 12th Ave | 9/23/2022 | | In Review |
| 22306 | Design Study | Exterior repair/restoration. Remove/replace P/L fence section. Relocate pedestrian gate. Replace driveway. No change in site coverage; no proposed new elevation. | 7th & Camino Real | 9/22/2022 | | In Review |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22305 | Appeal | ACTION/DECISION BEING APPEALED: Removal of established, healthy, drought-resistant trees and loss of homeowner privacy protection from public walkway and pedestrian traffic.<br><br>APPELLANT: Kathleen Correia and Stephen Evans, PO Box 933, Lafayette, CA 94549; 925-997-8330; oscaroscar@mac.com | Right-of-way fronting 4 North San Antonio, APN 010-241-001 | 9/22/2022 | | In Review |
| 22304 | Planning Permit Revision | FOLLOW UP TO DS 21-250 - (1) Change in materials type approved on planning application #DS 21-250. (2) Change in roofing material to CertainTeed Roofing MAX DF Weathered Look. (3) Change in siding type to Hardie Shingle Fiber Cement board. Shingles to be painted per item 4. (4) Change color of the exterior body of the house to Sherwin Williams, Alabaster. | 9 Crespi SE of Mountain View | 9/22/2022 | | In Review |
| 22303 | Design Review | Revision to Building Permit No. 220151: For the Northwest Building of Pine Inn Hotel, the As-Necessary In-Kind Replacement of Any Existing Dry Rotted or Damaged Wood Roof Sheathing Planks at Soffits, Sculpted Roof Rafter Tails and Sculpted Roof Outrigger Tails During the Re-Roofing Process per Architectural and Structural Plans; Patch and Match Existing Stucco Texture and Color as Required; Remove Existing Non-Historic Aluminum Covers in Space Above Existing Roof Outriggers and Install White Aluminum Bird Repellant Spikes on Top of Roof Outrigger Beams. | Pine Inn Hotel : Between Lincoln St. and Monte Verde St. and Between 6th Ave. and Ocean Ave. | 9/21/2022 | | In Review |
| 22302 | Design Study | Follow up to a SWO posted for hot tub installation, slab and electrical. | SE Corner of Palou and Casanova | 9/16/2022 | | In Review |
| 22301 | Design Review | use the exisiting tile to fill in | NE Junipero St and Fifth Ave | | | In Review |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22300 | Design Study | This project consists of the Demolition of an existing non-historic two-story single family residential structure, shed and detached garage. construction of new two-story single family residence approximately 2,600 SF, with new single-car detached garage, new detached 350 SF guest house, in-ground spa with related terraces and site work. | Dolores St 3 NW of 13th | 9/14/2022 | | In Review |
| 22299 | Sign | Interior design office sign permit | 6th Ave. 2 NW of Dolores St., STE 11 | 9/14/2022 | | In Review |
| 22298 | Design Review | One-story addition bedroom, bath, office, laundry. | Santa Rita 5 NW Fourth | | | In Review |
| 22297 | Sign | Installation of new awning sign for "Carmel's Hidden Gem". | Mission 3 NW of 5th | 9/12/2022 | | Approved |
| 22296 | Sign | Sign permit | Lincoln 2 SW of Ocean Ave - Unit A | 9/12/2022 | | In Review |
| 22295 | Design Review | Authorizes replacing seven (7) existing metal framed windows on the 2nd floor (3 along alleyway, 4 fronting San Carlos St) in the same footprint with Sierra Pacific brand aluminum clad windows with 5/8" contemporary wood simulated divided lite. | San Carlos 2/3 SE of 5th | 9/9/2022 | 9/22/2022 | Approved |
| 22294 | Historic Evaluation | Historic ineligibility | SW Corner of Mission & 12th | 9/1/2022 | | In Review |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22293 | Design Study | This approval of Design Study (DS 22-293, Caplin) authorizes amendments to existing Design Study Approvals (DS 19-364, DS 20-113, DS 22-144) for alterations to an existing single-family residence located on Camino Real 5 SW 13th in the Single Family Residential (R-1) District with an active building permit (BP 19-535). The modifications approved under this Design Study include:<br><br>1. Material changes to the previously approved outdoor fire pit. The revised pit shall be Solado Golde Ledgestone to match the pavers on site. No changes to the size, or location are authorized under this approval.<br><br>The project shall be consistent with the plans prepared by Jon Erlandson dated approved by Community Planning & Building Department on September 23, 2022, unless modified by the conditions of approval contained herein. | Camino Real 4 SW of 13th | 9/2/2022 | 9/23/2022 | Approved |
| 22292 | Preliminary Site Assessment | 164.00 s.f. dining room / kitchen addition. Bathroom remodel to the guest house. | NW Corner of Forest & Mountain View | 9/2/2022 | | In Review |
| 22291 | Design Review | Tenant improvement for a new Retail store in an existing leased space, including storefront changes facing the courtyard. Remodel of suites #217 and #219, to be known as #217 | Ocean Ave and Mission St | | | In Review |
| 22290 | Sign | | 3 NW Corner of San Carlos & 8th | 9/1/2022 | 9/22/2022 | Approved |
| | | | | | | |

Total Records: 30

10/6/2022

# Building Permit Report

09/01/2022 - 09/30/2022

| Permit # | Date Submitted | Date Approved | Project Description | Valuation | Permit Type | Property Location |
|---|---|---|---|---|---|---|
| 220394 | 10/3/2022 | | Install wheel chair lift for owner under Reasonable Accomodation. | 30,000 | Building | 4th 2 NE of Monte Verde |
| 220393 | 9/29/2022 | 10/3/2022 | Exterior painting of residence, carport and fence in-kind. Contact: Detailed Finish Painting (831) 975-1104 | 0 | Exempt Work | Monte Verde 3 NW of 3rd |
| 220392 | 9/29/2022 | | Lighting changes in 382 sf of 1480sf tenant space in (e) commercial building. | 10,000 | Electrical | NW Corner of Ocean & Lincoln |
| 220391 | 9/29/2022 | | Roof mounted solar pv 5 kW system using 13 LG380 Panels. | 24,627 | Electrical | Lopez 5 Nw Of 4th |
| 220390 | 9/27/2022 | 9/27/2022 | Reroute 3/4" galvanized gas line from the meter to under house tie onto existing 3/4" line. Eliminate and cap off line for old abandoned floor furnace. Contact: A & R Plumbing (831) 394-7221 | 2,000 | Plumbing | SW Corner of Perry Newberry & 5th |
| 220389 | 9/27/2022 | | Repaint (e) house, garage & deck using Kelly More "Yin Mist" paint color. Contact: Matt McNickle (831) 594-8232 | 0 | Exempt Work | San Antonio 3 SE of 11th |
| 220388 | 9/26/2022 | | Demolition of rear attached structure, demolition of garage, construction of new garage, new bay window, new kitchen, two new bedrooms and bath at second floor. | 300,000 | Building | Escolle 2 SE of Perry Newberry |
| 220387 | 9/26/2022 | | Addition of a drain filed to prevent water infiltration into the basement. Contact: MAS Construction (831) 214-2965 | 10,000 | Building | San Antonio 3 SE of 8th |
| 220386 | 9/26/2022 | 9/26/2022 | Replacement of impervious carmel stone pathway with new impervious idaho stone pathway. Contact: Kathleen Michaels (831) 622-9826 | 0 | Exempt Work | Mission 7 NW of Santa Lucia |

| | | | | | | |
|---|---|---|---|---|---|---|
| 220385 | 9/26/2022 | 9/26/2022 | Paint entire exterior of home. Home is currently a blueish/gray color. New exterior paint color to be dark grey and white trim. Contact: Icon Building & Development (831) 920-6007 | 0 | Exempt Work | NW Corner of Casanova & Fraser |
| 220384 | 9/26/2022 | 9/26/2022 | Remove (e) wood shake roof, replace with new Presidential TL roofing system in color Shadow Gray. Contact: Salinas Valley Roofing (831) 757-9400 | 18,950 | Roofing | Santa Rita 5 SW of 2nd |
| 220383 | 9/26/2022 | 9/26/2022 | Renovation of lower interior area, apply new hardwood floors, can lights & sheet rock. Contact: Saroyan Master Builder (831) 393-1800 | 3,500 | Electrical | Guadalupe 4 NE of 5th |
| 220382 | 9/26/2022 | 9/27/2022 | Install PV system - 16 Solaria PowerXT-400R panels/16 Enphase IQ8Plus microinverters. | 27,450 | Electrical | Monte Verde 2 NE Santa Lucia |
| 220381 | 9/22/2022 | 9/22/2022 | Replace the (e) water heater with a new Bradford-White 75 gallon water heater. Contact: Rooter King (831) 394-5315 | 1,700 | Plumbing | SW Corner of Lincoln & 7th |
| 220380 | 9/21/2022 | 9/26/2022 | Replace and repair rotted fence along north boundary to garage (6' high), along southern boundary replace 6' redwood fence to within 15' of property corner, continue with 4' redwood fence to property boundary. Repair east setback (front) fence as possible, when not possible replace with fence no more than 4' high. Contact: Bay View Building Services (831) 394-3645 | 0 | Exempt Work | Monte Verde 2 NW of 6th |
| 220379 | 9/21/2022 | | Significant remodel of interior and exterior of structure with no landscaping/site changes. | 500,000 | Building | NW Corner of Monte Verde & Santa Lucia |
| 220378 | 9/21/2022 | | Bathroom remodel | 30,000 | Building | Monterey 3 SW of 1st |
| 220377 | 9/21/2022 | 9/22/2022 | Installation of a new shower. Contact: Chris Miller (831) 601-3776 | 4,000 | Plumbing | Forest 3 SW of 7th |
| 220376 | 9/21/2022 | | Level dirt mound are in rear of property. Protect oak tree in corner of yard. Replace rear fence, to be no taller than 6'. | 0 | Exempt Work | Lobos 5 SE of 2nd |

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|---|---|---|---|---|---|---|
| 220375 | 9/20/2022 | 9/20/2022 | Paint interior of residence, replace five interior doors, replace bathroom vanity cabinets in two bathrooms with no changes to plumbing, repair hand railing at front porch. Contact: Sheree Hanson (408) 823-2396 | 0 | Exempt Work | Lobos 5 SE of 2nd |
| 220374 | 9/20/2022 | 9/20/2022 | Removal of flooring and installation of new floor. Contact: The Floor Store (916) 430-9012 | 0 | Exempt Work | Lobos 5 SE of 2nd |
| 220373 | 9/20/2022 | | Installation of new 7.6KW PV (19) module rooftop mounted system. Contact: Sunrun Installation Services (408) 506-3693 | 14,440 | Electrical | SW Corner of Carpenter & 3rd |
| 220372 | 9/20/2022 | 9/23/2022 | Master bathroom work, replace tub with shower, tile shower area and bathroom floor, add shelving. Contact: Christopher Andrade (831) 601-3653 | 7,000 | Building | San Carlos 2 SE of 10th |
| 220371 | 9/20/2022 | 9/21/2022 | Residential demolition of deck, sunporch, garage, and portions of main residence. Contact: Hermina Dallas (831) 293-4052 | 2,800 | Demolition | NW Corner of San Carlos & 12th |
| 220370 | | | Revision to Permit No. 220151: For the Northwest Building of Pine Inn Hotel, the As-Necessary In-Kind Replacement of Any Existing Dry Rotted or Damaged Wood Roof Sheathing Planks at Soffits, Sculpted Roof Rafter Tails and Sculpted Roof Outrigger Tails per Architectural and Structural Plans; Patch and Match Existing Stucco Texture and Color as Required. | 500 | BP Revision | Pine Inn Hotel: Between Lincoln St. and Monte Verde St. and Between 6th Ave. and Ocean Ave. |
| 220369 | 9/19/2022 | | Demo existing non-permeable brick patio surface and replace with permeable stone surface. Contact: Stocker & Allaire (831) 375-1890 | 0 | Exempt Work | NE Corner of Lincoln & 10th |
| 220368 | 9/19/2022 | 9/19/2022 | Change 100 amp service to 200 amp service. Contact: Craft Electric Co, Inc. (831) 915-3488 | 3,500 | Electrical | 5th 2 NE of Perry Newberry |

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|---|---|---|---|---|---|---|
| 220367 | 9/19/2022 | 9/19/2022 | Replacement of 4 windows with 4 all new windows to match all others used in previous renovation. Utilizing same window manufacturer, style, and material (wood). Contact: Javier Ortiz (831) 905-8042 | 0 | Exempt Work | Lincoln 2 NW of 12th |
| 220366 | 9/19/2022 | 9/19/2022 | Placement of a POD on private property from 9/23/22 - 10/23/22 | 0 | Exempt Work | SE Corner of Santa Fe & 5th |
| 220365 | 9/16/2022 | 9/16/2022 | Addition of 120V receptacle in attic for outdoor cameras. Contact: Cate Electrical Company (831) 624-5361 | 2,535 | Electrical | 6th 2 SW of Carpenter |
| 220364 | 9/15/2022 | 9/16/2022 | Return white windows to the original brown color. Restoration of full wall to be authorized when original paint color samples are received. Contact: Will Bullock (831) 277-8952 | 0 | Exempt Work | NW Corner of San Carlos & 6th |
| 220363 | 9/15/2022 | 9/15/2022 | Replace (e) bathroom vanity and counter top. Contact: JL DiBenedetto (831) 277-0052 | 0 | Exempt Work | San Antonio 5 SE of 2nd |
| 220362 | 9/16/2022 | | Voluntary repair of two horizontal cracks in existing stemwall foundation, no remodeling, no change in footprint. | 16,674 | Building | Dolores 2 SE of 9th |
| 220361 | 9/15/2022 | | Interior remodel. Replace all Electrical and Lighting. Install Fire Sprinklers. Demo 92 SF of Mezzanine. Reconfigure Stairs to Upper Floor. | 325,000 | Building | Fraser Way 2 NE of Camino Real |
| 220360 | 9/15/2022 | 10/4/2022 | Install PV solar and battery backup, upgrade main panel to 200 amp. | 40,000 | Electrical | Lincoln 3 NW of 3rd |
| 220359 | 9/13/2022 | | Installation of new hot tub, decking, and garden walls. Contact: Garden Solutions Landscaping (831) 224-4006 | 4,300 | Building | 2905 Franciscan Way |
| 220358 | 9/13/2022 | | Install a 5KW roof mounted solar system. Contact: William Drew (831) 402-7583 | 25,642 | Electrical | 26185 Dolores |
| 220357 | 9/13/2022 | 9/14/2022 | Remove (e) wood shakes and replace with new 3/4" premium heavy cedar shakes (Teal Johns Group t0 year, color: wood). Contact: Premo Roofing Company (831) 443-3605 | 45,000 | Roofing | Carmelo 5 SW of 4th |

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| 220356 | 9/13/2022 | 9/13/2022 | Remove and replace kitchen countertop and backsplash. Contact: Russ Campbell (831) 625-3497 | 0 | Exempt Work | NE Corner of San Antonio & 7th |
| 220355 | 9/12/2022 | | Conversion of second-floor office spaces to three apartments. No work to first floor commercial spaces. | 95,000 | Building | San Carlos 2 NW of 8th |
| 220354 | 9/12/2022 | | Modify A.W. Shucks restrooms to comply with ADA requirements. Add new accessible unisex restroom to tenant restrooms. | 40,000 | Building | Ocean 2 SW of San Carlos |
| 220353 | 9/12/2022 | 9/20/2022 | Tear off existing wood shake roof down to original skip sheathing and haul away for proper disposal. Install one layer of Polyglass Polystick XFR self-adhered high temp membrane at all roof penetrations. Install one layer of fire rated 72lb mineral surface cap sheet membrane over roof deck. Provide and install class A fire-rated CeDur Multi Width Synthetic shakes interlaced with 22" felt. All synthetic shakes will be installed in a straight-course pattern at 10" exposure to the weather. The color of the shakes will be Walden. Contact: Scudder Roofing (831) 384-1500 | 137,610 | Roofing | Torres 9 SW of 10th |
| 220352 | 9/12/2022 | 9/12/2022 | Correct wiring in the laundry room. Contact: Pars Power (510) 681-3452 | 1,050 | Electrical | 25962 Mission |
| 220351 | 9/12/2022 | 9/21/2022 | Install a roof mounted 5.10kW solar PV system of 12 panels. No main service panel upgrade to be performed, no storage batteries. Contact: SolarTecture (831) 233-3004 | 10,000 | Electrical | Dolores 5 SE of 13th |
| 220350 | 9/9/2022 | 9/20/2022 | Painting of office and installation of new carpet. Contact: Diego Reyes (831) 206-3947 | 0 | Exempt Work | NW Corner of San Carlos & 8th #2 |
| 220349 | 9/8/2022 | 9/9/2022 | Remodel of closet space. Contact: Defersol Building (831) 601-6768. | 1,500 | Building | San Carlos 2 NE of 12th |
| 220348 | 9/8/2022 | | Single story addition of 153.25sf and interior remodel. Contact: Denee Berliner (415) 235-6142 | 145,000 | Building | Guadalupe 2 NE of 3rd |

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|---|---|---|---|---|---|---|
| 220347 | 9/8/2022 | 9/8/2022 | Removal of 2 lf of drywall and insulation around perimeter of cottage and removal of laminate flooring. Contact: Monterey Peninsula Restoration LLC (831) 275-1901 | 7,500 | Building | Carmelo 2 NW of 10th |
| 220346 | 9/7/2022 | 9/8/2022 | Remove bondo, repair, paint, and replace windows in existing locations. Contact: Handy Dan Construction (831) 643-9911 | 0 | Exempt Work | Dolores 2 SE of 1st |
| 220345 | 9/7/2022 | 9/29/2022 | Remove/Replace (2) 5 Ton Split Systems With Like-For-Like Split Systems. Contact: Mesa Energy Systems (559) 277-7900 | 89,000 | Mechanical | San Carlos 2 SE of Ocean |
| 220344 | 9/7/2022 | 9/7/2022 | Repair & replace gas pipes in laundry room. Contact: Chris Wilson Plumbing & Heating (831) 393-9321 | 904 | Plumbing | 25962 Mission Street |
| 220343 | 9/7/2022 | 9/7/2022 | Remove & replace water heater. Install 50 gallon BRG250T6N394. Contact: A&R Plumbing (831) 394-7221 | 2,800 | Plumbing | 2nd 2 SE of San Carlos |
| 220342 | 9/7/2022 | | Demolition and construction to redemise three tenant spaces into two tenant spaces, to include replacement in-kind of existing mechanical equipment, relocation electrical and plumbing service. No change in use or zoning. no structural in scope. | 161,076 | Building | SW Corner of Ocean & Junipero |
| 220341 | 9/7/2022 | 9/7/2022 | Tear off (e) wood shake roof system. Install new self-adhered waterproof membrane at all roof penetrations. Install one layer of eco-chief solarhide synthetic underlayment. Install 4400 sf of new class "A" fire rated DaVinci single-width synthetic slate in the color "Brownstone". Contact: Scudder Roofing (831) 384-1500 | 161,926 | Roofing | NE Corner of Mission & Santa Lucia |
| 220340 | 9/7/2022 | 10/3/2022 | KITCHEN/BATHROOM TILES REPLACEMENT, CHANGE BATHTUB TO SHOWER, REPLACE DRAIN PIPES FROM KITCHEN TO MAIN SEWER. Contact: Amir Salehi (408) 219-2276 | 3,500 | Plumbing | Monte Verde 2 NW of 8th |

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|---|---|---|---|---|---|---|
| 220339 | 9/2/2022 | 9/19/2022 | New roof mount PV 8 mods, 3.48 kW, new 200A subpanel, new 200A Gateway. | 35,721 | Electrical | SW Corner of Casanova & 10th |
| 220338 | 9/1/2022 | | Replacement of old weathered windows that is falling apart with a new "like for like" window. | 0 | Exempt Work | Ocean 3 SE of Monte Verde |
| 220337 | 9/1/2022 | 9/19/2022 | ESS: 1 new tesla powerwall 5 kW. Contact: Scudder Solar (916) 765-2113 | 14,100 | Electrical | Casanova 4 NE 13th |
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Total Records: 58

10/6/2022

# Code Compliance Report

09/01/2022 - 09/30/2022

| Case # | Case Type: | Status | Location | Problem Description | Date Received | Date Closed |
|---|---|---|---|---|---|---|
| 22189 | Planning Violation | Open | Torres 4 NE 6th | Stone Pavers w/o design review | 9/30/2022 | |
| 22188 | Planning Violation | Open | Palou 2 SW 2nd | Tall Fence Correction Required | 9/13/2022 | |
| 22187 | Public Nuisance | Closed | Santa Fe 2 NE 6th | Unkempt Worksite/SWM | 9/25/2022 | 9/29/2022 |
| 22186 | Property Maintenance | Closed | Santa Rita 3 NE of 3rd | Construction debris in front yard | 9/25/2022 | 9/29/2022 |
| 22185 | Right of way Violation | Open | NW Corner Santa Fe and 3rd | multiple lease signs in ROW | 9/24/2022 | |
| 22184 | Short-term Rental | Closed | Santa Fe 2 SE of 5th | STR | 9/25/2022 | 9/26/2022 |
| 22183 | Short-term Rental | 1st NOV sent | SE Corner of 2nd and N San Antonio | STR | 9/25/2022 | |
| 22182 | Building Violation | Open | San Carlos 2 SE of 10th | Unpermitted alterations requiring building permit (Bathroom Remodel) | 9/19/2022 | |
| 22181 | Right of way Violation | Closed | Guadalupe 2 NW 4th | Material/Dumpster in ROW | 9/13/2022 | 9/20/2022 |
| 22180 | Business License Violation | Open | Ocean SE of Monte Verde | No business sign | 9/9/2022 | |
| 22179 | Right of way Violation | Closed | Lincoln S of Ocean | Control of Public ROW | 9/9/2022 | 9/9/2022 |
| 22178 | | | | | | |
| 22177 | Short-term Rental | 1st NOV sent | Santa Fe 2 SE of 4th | STR | 9/10/2022 | |
| 22176 | Short-term Rental | 1st NOV sent | SE Corner Lobos and 3rd | STR | 9/10/2022 | |
| 22175 | Short-term Rental | 1st NOV sent | Junipero 3 SE of 2nd | STR | 9/10/2022 | |
| 22174 | | | | | | |
| 22173 | Right of way Violation | Open | NE Corner Santa Fe and 4th | Gravel in ROW | 9/9/2022 | |

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|---|---|---|---|---|---|---|
| 22172 | Business License Violation | 1st NOV sent | Mission 2 NE 5th | exceeding hours of operations | 9/9/2022 | |
| 22171 | Building Violation | Open | Torres 4 NE of 3rd | Exceeded scope of work by cutting in @ 9 new skylights | 8/25/2022 | |
| 22170 | Planning Violation | Open | Oak Koll 4 NE of Forest | Exceeded Scope of BP 21-061 Requiring Planning Approval | 8/25/2022 | |
| 22169 | Skin Care Complaint | Open | Ocean NE of Dolores | Soliciting in sidewalk | 9/7/2022 | |
| 22168 | Right of way Violation | Open | San Carlos 3 NE of 6th | Dump truck parked on sidewalk | 9/7/2022 | |
| 22162 | Right of way Violation | Open | Carmelo 4 NW Ocean | Speed bumps w/o encroachment permit | 9/1/2022 | |
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Total Records: 23

10/6/2022

# Transient Rental Report

01/01/2022 - 09/30/2022

| Case # | Street | Status | Date Received | Last Status Date | Date Closed |
|---|---|---|---|---|---|
| 22184 | Santa Fe | Closed | 9/25/2022 | 9/25/2022 | 9/26/2022 |
| 22183 | San Antonio | 1st NOV sent | 9/25/2022 | 9/25/2022 | |
| 22177 | Santa Fe | 1st NOV sent | 9/10/2022 | 9/11/2022 | |
| 22176 | Lobos | 1st NOV sent | 9/10/2022 | 9/10/2022 | |
| 22175 | Junipero | 1st NOV sent | 9/10/2022 | 9/10/2022 | |
| 22167 | Mountain View | 1st NOV sent | 8/30/2022 | 8/30/2022 | |
| 22164 | San Carlos | 2nd NOV sent | 8/25/2022 | 9/29/2022 | |
| 22163 | Monte Verde | Closed | 8/17/2022 | 9/6/2022 | 9/6/2022 |
| 22151 | Forest | Closed | 7/21/2022 | 8/30/2022 | 8/30/2022 |
| 22146 | Carmelo | Closed | 7/20/2022 | 9/14/2022 | 9/14/2022 |
| 22138 | Casanova | Closed | 7/5/2022 | 7/5/2022 | 9/2/2022 |
| 22134 | Junipero | Closed | 6/28/2022 | 8/3/2022 | 8/3/2022 |
| 22133 | Junipero | Closed | 6/27/2022 | 7/1/2022 | 8/3/2022 |
| 22132 | Valley Way | Closed | 6/24/2022 | 7/5/2022 | 7/5/2022 |
| 22103 | Dolores | Closed | 5/24/2022 | 5/26/2022 | 5/26/2022 |
| 22098 | Santa Rita | Closed | 5/25/2022 | 7/20/2022 | 7/20/2022 |
| 22097 | Carmelo | Closed | 5/22/2022 | 6/21/2022 | 6/21/2022 |
| 22096 | Mission | Closed | 5/22/2022 | 7/5/2022 | 7/5/2022 |
| 22091 | Junipero | Closed | 5/15/2022 | 6/21/2022 | 6/21/2022 |
| 22090 | Dolores | Closed | 5/15/2022 | 7/6/2022 | 7/6/2022 |
| 22070 | Junipero | Closed | 4/12/2022 | 6/24/2022 | 6/24/2022 |
| 22068 | N Carmelo | Closed | 4/6/2022 | 5/3/2022 | 5/3/2022 |
| 22067 | N San Antonio | Closed | 4/5/2022 | 5/10/2022 | 5/10/2022 |
| 22063 | Carmelo | Closed | 3/22/2022 | 5/15/2022 | 5/15/2022 |
| 22062 | Casanova | Closed | 3/17/2022 | 3/17/2022 | 4/20/2022 |
| 22042 | San Carlos | Closed | 2/22/2022 | 4/5/2022 | 4/5/2022 |

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|---|---|---|---|---|---|
| 22039 | Ocean | Closed | 2/15/2022 | 4/4/2022 | 4/4/2022 |
| 22033 | Dolores | Closed | 2/10/2022 | 2/10/2022 | 2/10/2022 |
| 22024 | Dolores | Closed | 2/3/2022 | 2/10/2022 | 2/11/2022 |
| 22013 | Junipero | Closed | 2/1/2022 | 4/11/2022 | 4/11/2022 |
| 22007 | Lopez | Closed | 1/11/2022 | 3/15/2022 | 3/15/2022 |
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**Total Records: 31**

**10/5/2022**

# Encroachment Permit Report

09/01/2022 - 09/30/2022

| Permit # | Permit Type | Date Submitted | Project Description | Property Location | Date Issued | Status |
|---|---|---|---|---|---|---|
| 220213 | Temp Ench | 9/28/2022 | 11'x16' asphalt patch for Cal Am Job #0621. Contact: Coastal Paving & Excavating (831) 262-1425 | SW Corner of Torres & 3rd | 9/29/2022 | Issued |
| 220212 | Temp Ench | 9/27/2022 | Setup traffic control to access (e) AT&T structures for fiber placement - no excavation required. AT&T Job# A02FRZY. Contact: AT&T (408) 807-3662 | Monte Verde from Ocean to 7th | 9/27/2022 | Issued |
| 220211 | Temp Ench | 9/26/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | San Carlos 2 NW of 8th | 10/3/2022 | Issued |
| 220210 | Temp Ench | 9/26/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | 1st 2 NE of Carpenter | 9/26/2022 | Issued |
| 220209 | Temp Ench | 9/26/2022 | PG&E to trench & backfill all (5'x5' bellhole and 41' trench in franchise to property line), and installation of new gas service. PM# 35366891. Contact: PG&E (408) 478-1894 | NE Corner of San Antonio & 13th | 9/26/2022 | Issued |
| 220208 | Temp Ench | 9/20/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | Carpenter 3 SW of 3rd | 9/20/2022 | Issued |
| 220207 | Temp Ench | 9/20/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | SW Corner of Perry Newberry & 5th | 9/20/2022 | Issued |
| 220206 | Temp Ench | 9/20/2022 | Lid and frame replacement for in-street cover. PM# 45453643. Contact: PG&E (831) 713-6019 | 4th 3 SE of Mission | 9/20/2022 | Issued |
| 220205 | Temp Ench | 9/19/2022 | Sewer lateral replacement from house to street. Contact: A Ramirez Plumbing (831) 809-4707 | Dolores 4 SE of 9th | 10/3/2022 | Issued |
| 220204 | Temp Ench | 9/19/2022 | Replace sewer lateral from front of the building to City main, approx 25'. Contact: Edgar's Plumbing (831) 601-5557 | San Carlos 3 NW of 6th | 9/21/2022 | Issued |

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|---|---|---|---|---|---|---|
| 220203 | Driveway | 9/16/2022 | Replace (e) asphalt driveway with (n) gray decomposed granite driveway. Install steel edging along open side of driveway to contain d.g. Proposed to be the same size and width. Contact: Samuel Pitnick Architects, Inc. (831) 241-1895 | San Antonio 3 SE of 11th | | In Review |
| 220202 | Temp Ench | 9/16/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | 4th 3 NE of Monte Verde | 9/19/2022 | Closed |
| 220201 | Temp Ench | 9/15/2022 | 3'x3' asphalt patch for CalAm. Contact: Coastal Paving & Excavating (831) 262-1425 | NE Corner of Lobos & 4th | 9/29/2022 | Issued |
| 220200 | Temp Ench | 9/15/2022 | Proposing to access one (e) vault and install two 2" HDPE conduits by open trench, approx 10lf within private property to convey FO service. Contact: Quanta Teletcom (470) 626-3989 | SE Corner of Dolores & 5th | 9/20/2022 | Issued |
| 220199 | Temp Ench | 9/15/2022 | Temporary placement of debris bin during remodel. Contact: Todd Fujinaga (925) 785-3779 | Guadalupe 2 NW of 4th | 9/20/2022 | In Review |
| 220198 | Driveway | 9/15/2022 | Replacement of 35'x12' asphalt driveway with new asphalt driveway. Contact: Rick Tucci (408) 646-2131 | NW Corner of San Carlos & 13th | | In Review |
| 220197 | Temp Ench | 9/13/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | Camino Real 3 SW of 4th | 9/14/2022 | Issued |
| 220196 | Temp Ench | 9/12/2022 | Installation of temporary speed bumps in road for use during construction hours. Contact: Level 5 Construction (831) 682-5381 | Carmelo 4 NW of Ocean | | In Review |
| 220195 | Temp Ench | 9/12/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | 3rd 2 NW of Junipero | 9/13/2022 | Issued |
| 220194 | Temp Ench | 9/9/2022 | PG&E to replace rotten pole at Location 1. PM# 35365157. Contact: PG&E (831) 713-6019 | SE Corner of Casanova & 2nd | 9/13/2022 | Issued |
| 220193 | Temp Ench | 9/9/2022 | Replace full sewer lateral with trenchless system. Open 4'x4' bellhole to access line. Contact: Edgars Plumbing (831) 601-55557 | Camino Real 2 SE of 11th | 9/13/2022 | Issued |
| 220192 | Temp Ench | 9/9/2022 | PG&E to install anchor and replace crossarm (overhead electrical maintenance). Contact: PG&E (408) 478-1894 | SE Corner of 2nd & N. Casanova | | In Review |

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| 220191 | Temp Ench | 9/9/2022 | Replacement of 4" cast iron pipe with 4" abs pipe. Contact: Hawk Plumbing (831) 277-8408 | NW Corner of Torres & 3rd | 9/14/2022 | Issued |
| 220190 | Temp Ench | 9/8/2022 | Replace sewer lateral from house to City main using trenchless system. Excavate 5x5x bell hole, backfill per city does after inspection. Replace asphalt with hot mix. CONDITION: FLAGGERS ARE REQUIRED ALONG SAN ANTONIO. PUBLIC WORKS REQUIRED TO BE ON SITE ONCE TRAFFIC CONTROL HAS BEEN SET UP. Contact: ACME Plumbing (831) 422-2311 | 5 Sand & Sea | 9/13/2022 | Issued |
| 220189 | Temp Ench | 9/8/2022 | Loading of roofing material onto roof. CONDITION: SIDEWALK CLOSED AHEAD/CROSS HERE SIGNS ARE REQUIRED AT THE CORNERS OF SAN CARLOS AT 5TH & 6TH. Contact: Premo Roofing (831) 443-3605 | San Carlos 3 NE of 6th | 9/13/2022 | Issued |
| 220188 | Temp Ench | 9/8/2022 | Storage of flooring materials in tour bus parking area. Contact: Justin Wagner (916) 407-4988 | Carmel Plaza | | Denied |
| 220187 | POD | 9/8/2022 | Placement of a 8x8x12 POD in driveway from 9/12/22 - 9/22/22 for the purpose of moving. Contact: Johnny Black (831) 622-8313 | 5th 2 NW of San Carlos | 9/8/2022 | Issued |
| 220186 | Temp Ench | 9/7/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | Monterey 3 SW of 2nd | 9/7/2022 | Issued |
| 220185 | Temp Ench | 9/7/2022 | Replace 30' of 4" sewer line at the street. New ABS pipe from clean out to CAWD main to get rid of low sagging pipe. New wye, clean out, and backwater valve. Contcat: Chris Wilson Plumbing (831) 393-9321 | Carmelo 2 NW of 10th | 9/7/2022 | Issued |
| 220184 | Temp Ench | 9/2/2022 | Replacde approx 60ft of sewer lateral with 30ft of trenched 4" ABS Pipe and 30ft of 4" Trenchless SDR Pipe from two openings. One 2x3 opening on property at a depth of 2ft and a 4x5ft Opening in the street at a depth of 2ft. Install 2 way clean out and sewer back water valve and sewer popper. | 4802 monterey st. | 9/7/2022 | Issued |
| 220183 | Temp Ench | 9/1/2022 | Replace full sewer lateral with trenchless system. Open 4'x4' square at street to expose City main sewer line. Contact: Edgars Plumbing (831) 601-5557 | Camino Real 2 SE of 11th | | In Review |

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| 220182 | Temp Ench | 9/1/2022 | Replace sewer lateral using pipe bursting. Contact: Rooter King (831) 394-5315 | Lincoln 4 NE of 7th | 9/7/2022 | Issued |
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Total Records: 32

10/6/2022

# CITY OF CARMEL-BY-THE-SEA
# Monthly Report
## September 2022

**Meeting Date: 11-1-2022**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Alan Ward, Public Safety Director |
| **SUBMITTED DATE:** | October 17, 2022 |
| **APPROVED BY:** | Chip Rerig, City Administrator |

**AMBULANCE REPORT**

Summary of Carmel Fire Ambulance August Calls for Service

**AMBULANCE PERFORMANCE MEASURE**

**The performance goal for Code-3 (life threatening emergency-lights & siren) ambulance calls in the City of Carmel-by-the-Sea with a response time of 5 minutes or less from dispatch to arrival is 95%. For the month of September 2022 the ambulance did not meet the performance measure. The response time was 93.54% with (3) code-3 calls over 5 minutes.**

33 Calls for service in CBTS Average response time: 3:10 min.

31 Code 3 calls for service –Two calls were over 5:00 min. with a 3:02 min average response.

09/26/22; 1:40 am; (5:06 min); Carmelo/ 4th (Early morning response)

09/27/22; 1:51 am; (5:47 min); Camino Real/ 13th (Early morning response)

**MONTEREY FIRE REPORT**

**Summary of Monterey Fire August Calls for Service**

**FIRE PERFORMANCE MEASURE**

**The performance goal for Code-3 (life threatening emergency-lights & siren) fire calls with a response time of 5 minutes or less from dispatch to arrival is 95%. For the month of September 2022 the fire department met the performance measure. The response time was 95% with (3) code-3 calls over 5 minutes.**

72 total calls for service in CBTS Average response time: 3:13 min.

61 total Code-3 calls – There were 3 responses over 5:00 min.

**BEACH FIRES**

There were 5 illegal beach fires recorded during the month of September 2022.

# RESPONSE SUMMARY REPORT BY INCIDENT TYPE
## 27060 CARMEL-BY-THE-SEA
## Alarm Date From: 9/1/2022 To: 9/30/2022

| Incident | Alarm Date | Incident Number | Response Time | Combined Address | Cross Street | Priority |
|---|---|---|---|---|---|---|
| **100 Series (Fires)** | | | | | | |
| Special outside fire, other | 9/7/2022 8:22 PM | 220907-MNT06211 | 0:02:19 | DOLORES ST | 5TH AVE | 3 |
| | | ***1*** | ***0:02:19*** | | | |
| **300-321 Series (EMS)** | | | | | | |
| Medical assist, assist EMS crew | 9/1/2022 8:58 PM | 220901-MNT06048 | 0:02:30 | MONTE VERDE ST | OCEAN AVE | 3 |
| Medical assist, assist EMS crew | 9/8/2022 8:14 AM | 220908-MNT06226 | 0:03:40 | OCEAN AVE | MONTE VERDE ST | 3 |
| Medical assist, assist EMS crew | 9/8/2022 2:41 PM | 220908-MNT06237 | 0:05:06 | SCENIC RD | 11TH AVE | 3 |
| Medical assist, assist EMS crew | 9/18/2022 2:59 AM | 220918-MNT06506 | 0:04:30 | S MOUNTAIN VIEW AVE | 8TH AVE | 3 |
| Medical assist, assist EMS crew | 9/19/2022 9:38 AM | 220919-MNT06548 | 0:03:13 | TORRES ST | 2ND AVE | 3 |
| Medical assist, assist EMS crew | 9/19/2022 1:06 PM | 220919-MNT06554 | 0:03:03 | OCEAN AVE | SAN ANTONIO AVE | 3 |
| Medical assist, assist EMS crew | 9/19/2022 2:09 PM | 220919-MNT06556 | 0:02:45 | CARMELO ST | OCEAN AVE | 3 |
| Medical assist, assist EMS crew | 9/19/2022 4:14 PM | 220919-MNT06564 | 0:01:40 | MISSION ST | 7TH AVE | 3 |
| Medical assist, assist EMS crew | 9/20/2022 1:34 PM | 220920-MNT06588 | 0:02:11 | SAN CARLOS ST | OCEAN AVE | 3 |
| Medical assist, assist EMS crew | 9/24/2022 6:10 PM | 220924-MNT06689 | 0:08:25 | DOLORES ST | OCEAN AVE | 2 |
| Medical assist, assist EMS crew | 9/25/2022 10:01 AM | 220925-MNT06708 | 0:02:27 | DOLORES ST | 5TH AVE | 3 |
| Medical assist, assist EMS crew | 9/26/2022 12:28 AM | 220926-MNT06717 | 0:04:05 | CARMELO ST | 4TH AVE | 3 |
| Medical assist, assist EMS crew | 9/27/2022 12:39 AM | 220927-MNT06743 | 0:05:00 | CAMINO REAL ST | 13TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/3/2022 5:11 PM | 220903-MNT06092 | 0:02:47 | 8TH AVE | DOLORES ST | 3 |
| EMS call, excluding vehicle accident with injury | 9/5/2022 2:40 PM | 220905-MNT06155 | 0:02:04 | MISSION ST | 7TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/6/2022 2:20 PM | 220906-MNT06183 | 0:01:31 | SAN CARLOS ST | 7TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/8/2022 1:21 PM | 220908-MNT06233 | 0:03:10 | 8TH AVE | TORRES ST | 3 |
| EMS call, excluding vehicle accident with injury | 9/10/2022 6:07 PM | 220910-MNT06300 | 0:01:29 | OCEAN AVE | DOLORES ST | 3 |
| EMS call, excluding vehicle accident with injury | 9/10/2022 8:41 PM | 220910-MNT06305 | 0:02:44 | S MOUNTAIN VIEW AVE | SANTA RITA ST | 3 |
| EMS call, excluding vehicle accident with injury | 9/12/2022 12:28 AM | 220912-MNT06332 | 0:03:11 | OCEAN AVE | MISSION ST | 3 |
| EMS call, excluding vehicle accident with injury | 9/14/2022 4:40 PM | 220914-MNT06397 | 0:02:21 | 8TH AVE | SAN CARLOS ST | 3 |
| EMS call, excluding vehicle accident with injury | 9/15/2022 10:49 AM | 220915-MNT06420 | 0:03:08 | DOLORES ST | 13TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/16/2022 9:51 AM | 220916-MNT06451 | 0:02:52 | SAN CARLOS ST | 7TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/17/2022 7:32 AM | 220917-MNT06485 | 0:03:17 | JUNIPERO AVE | 4TH AVE | 2 |
| EMS call, excluding vehicle accident with injury | 9/17/2022 12:00 PM | 220917-MNT06491 | 0:02:36 | SANTA RITA ST | 5TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/17/2022 2:24 PM | 220917-MNT06494 | 0:02:51 | MONTE VERDE ST | 9TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/17/2022 9:46 PM | 220917-MNT06502 | 0:02:30 | DOLORES ST | OCEAN AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/18/2022 10:17 PM | 220918-MNT06538 | 0:03:39 | LINCOLN ST | 7TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/21/2022 7:35 AM | 220921-MNT06604 | 0:03:37 | TORRES ST | 2ND AVE | 3 |

| Incident | Alarm Date | Incident Number | Response Time | Combined Address | Cross Street | Priority |
|---|---|---|---|---|---|---|
| EMS call, excluding vehicle accident with injury | 9/21/2022 2:11 PM | 220921-MNT06615 | 0:04:15 | DOLORES ST | 5TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/21/2022 2:45 PM | 220921-MNT06617 | 0:01:27 | JUNIPERO AVE | 4TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/21/2022 9:50 PM | 220921-MNT06624 | 0:05:45 | CASANOVA ST | SANTA LUCIA AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/22/2022 1:53 AM | 220922-MNT06627 | 0:02:24 | DOLORES ST | 12TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/23/2022 1:42 PM | 220923-MNT06659 | 0:02:51 | LINCOLN ST | 7TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/23/2022 8:54 PM | 220923-MNT06666 | 0:03:49 | 13TH AVE | CASANOVA ST | 3 |
| EMS call, excluding vehicle accident with injury | 9/24/2022 9:54 AM | 220924-MNT06676 | 0:03:37 | SAN ANTONIO AVE | 10TH AVE | 3 |
| EMS call, excluding vehicle accident with injury | 9/29/2022 7:54 PM | 220929-MNT06812 | 0:03:15 | 13TH AVE | CASANOVA ST | 3 |
| Search for person on land | 9/22/2022 12:40 AM | 220922-MNT06626 | 0:00:00 | 11TH AVE | SAN CARLOS ST | 2 |
| | | ***38*** | ***0:03:09*** | | | |

## 400 Series (Hazardous Material)

| | | | | | | |
|---|---|---|---|---|---|---|
| Overheated motor | 9/13/2022 7:01 PM | 220913-MNT06375 | 0:03:03 | SAN CARLOS ST | 9TH AVE | 3 |
| Power line down | 9/8/2022 3:37 PM | 220908-MNT06242 | 0:02:38 | SAN CARLOS ST | 1ST AVE | 3 |
| | | ***2*** | ***0:02:51*** | | | |

## 500 & 600 Series (Service Calls)

| | | | | | | |
|---|---|---|---|---|---|---|
| Lock-out | 9/2/2022 12:53 PM | 220902-MNT06062 | 0:04:07 | CARMELO ST | 4NW OF 12TH | 2 |
| Water problem, other | 9/17/2022 6:21 PM | 220917-MNT06499 | 0:02:49 | CASANOVA ST | 8TH AVE | 3 |
| Water or steam leak | 9/13/2022 1:45 PM | 220913-MNT06366 | 0:04:25 | 7TH AVE | 7TH PL | 2 |
| Smoke or odor removal | 9/13/2022 1:18 PM | 220913-MNT06363 | 0:01:18 | DOLORES ST | OCEAN AVE | 2 |
| Public service assistance, other | 9/19/2022 7:22 PM | 220919-MNT06572 | 0:04:32 | SAN CARLOS ST | 4TH AVE | 3 |
| Police matter | 9/2/2022 10:49 AM | 220902-MNT06056 | 0:03:26 | MISSION ST | OCEAN AVE | 3 |
| Police matter | 9/14/2022 9:24 PM | 220914-MNT06403 | 0:02:46 | SANTA FE ST | 6TH AVE | 3 |
| Public service | 9/1/2022 1:34 PM | 220901-MNT06037 | 0:01:02 | 8TH AVE | LINCOLN ST | 3 |
| Public service | 9/2/2022 12:18 PM | 220902-MNT06059 | 0:04:30 | CASANOVA ST | 2NW OF 12TH AVE | 3 |
| Public service | 9/13/2022 4:08 PM | 220913-MNT06369 | 0:02:20 | JUNIPERO AVE | 4TH AVE | 3 |
| Assist invalid | 9/4/2022 10:31 AM | 220904-MNT06114 | 0:06:23 | DOLORES ST | 1ST AVE | 2 |
| Assist invalid | 9/14/2022 10:16 AM | 220914-MNT06384 | 0:00:00 | SAN CARLOS ST | 8TH AVE | 2 |
| Assist invalid | 9/15/2022 3:53 PM | 220915-MNT06431 | 0:06:23 | DOLORES ST | 13TH AVE | 2 |
| Assist invalid | 9/21/2022 1:57 PM | 220921-MNT06612 | 0:04:14 | JUNIPERO AVE | VISTA AVE | 2 |
| Assist invalid | 9/27/2022 5:51 PM | 220927-MNT06761 | 0:04:04 | CASANOVA ST | 8TH AVE | 2 |
| Dispatched & canceled en route | 9/4/2022 1:12 PM | 220904-MNT06121 | 0:03:00 | 2 PINE RIDGE RD | | 3 |
| Dispatched & canceled en route | 9/29/2022 12:03 PM | 220929-MNT06798 | 0:02:24 | 4TH AVE | JUNIPERO AVE | 3 |
| No incident found on arrival at dispatch address | 9/3/2022 5:30 PM | 220903-MNT06094 | 0:04:49 | SCENIC RD | 11TH AVE | 3 |
| No incident found on arrival at dispatch address | 9/4/2022 5:35 PM | 220904-MNT06132 | 0:02:50 | 4TH AVE | TORRES ST | 3 |
| No incident found on arrival at dispatch address | 9/9/2022 3:53 PM | 220909-MNT06268 | 0:00:50 | JUNIPERO AVE | 6TH AVE | 3 |
| No incident found on arrival at dispatch address | 9/9/2022 7:04 PM | 220909-MNT06269 | 0:02:59 | OCEAN AVE | DEL MAR AVE | 3 |
| No incident found on arrival at dispatch address | 9/10/2022 9:16 PM | 220910-MNT06307 | 0:02:59 | OCEAN AVE | CARPENTER ST | 3 |
| No incident found on arrival at dispatch address | 9/13/2022 2:39 PM | 220913-MNT06367 | 0:01:21 | 5TH AVE | JUNIPERO AVE | 3 |
| No incident found on arrival at dispatch address | 9/14/2022 6:28 PM | 220914-MNT06399 | 0:03:05 | JUNIPERO AVE | VISTA AVE | 3 |
| No incident found on arrival at dispatch address | 9/18/2022 12:15 PM | 220918-MNT06521 | 0:02:19 | CARPENTER ST | 5TH AVE | 3 |
| Smoke scare, odor of smoke | 9/9/2022 3:31 AM | 220909-MNT06253 | 0:05:42 | MISSION ST | VISTA AVE | 3 |
| | | ***26*** | ***0:03:15*** | | | |

| Incident | Alarm Date | Incident Number | Response Time | Combined Address | Cross Street | Priority |
|---|---|---|---|---|---|---|
| **700 Series (False Alarms)** | | | | | | |
| False alarm or false call, other | 9/19/2022 8:20 PM | 220919-MNT06574 | 0:03:46 | 7TH AVE | SAN ANTONIO AVE | 3 |
| Smoke detector activation due to malfunction | 9/5/2022 5:14 PM | 220905-MNT06163 | 0:03:44 | CAMINO REAL ST | 12TH AVE | 3 |
| Smoke detector activation due to malfunction | 9/16/2022 11:57 PM | 220916-MNT06481 | 0:04:58 | TORRES ST | 4TH AVE | 3 |
| CO detector activation due to malfunction | 9/27/2022 1:49 PM | 220927-MNT06758 | 0:03:27 | JUNIPERO AVE | 8TH AVE | 3 |
| | | ***4*** | ***0:03:59*** | | | |
| **800 Series (Severe Weather)** | | | | | | |
| Flood assessment | 9/22/2022 3:06 PM | 220922-MNT06638 | 0:03:36 | OCEAN AVE | LINCOLN ST | 3 |
| | | ***1*** | ***0:03:36*** | | | |

**Over 5 Minute Response Times Cause of Delay: Code 3 Responses**

220908-MNT06237 E15 responded from St 15, delay due to distance

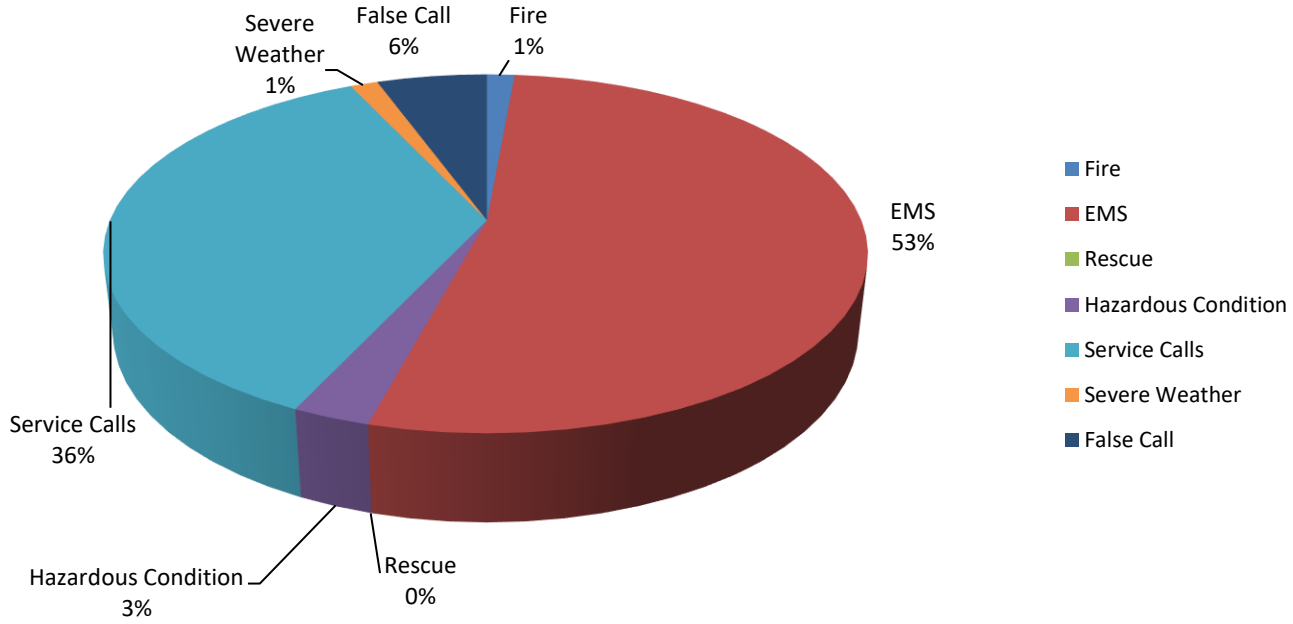
220921-MNT06624 E15 responded from St.15 area, normal response time

220909-MNT06253 Delay due to time of day

| | |
|---|---|
| **Code 2 Calls** | **11** |
| **Code 3 Calls** | **61** |
| **Total # of Incidents** | **72** |
| **% Under 5 Minute Response Time** | **95%** |

CARMEL-BY-THE-SEA
SEPTEMBER 2022
Response Summary Report by Incident Type

| Type of Call | Number | Average Response Time |
|---|---|---|
| Fire | 1 | 2:19 |
| EMS | 38 | 3:09 |
| Rescue | 0 | 0:00 |
| Hazardous Condition | 2 | 2:51 |
| Service Calls | 26 | 3:15 |
| Severe Weather | 1 | 3:36 |
| False Call | 4 | 3:59 |
| Total Responses | 72 | 3:13 |




| | |
|---|---|
| Total Code 3 Calls: | 61 |
| Response Times for Code 3 Calls ≤ 5 minutes: | 95% |

# RESPONSE SUMMARY REPORT BY DISTRICT

## 27015 CARMEL-BY-THE-SEA FIRE AMBULANCE

**Alarm Dates: 09/01/2022 to 09/30/2022**

## MEDICAL RESPONSES CARMEL CITY

| INCIDENT | PRIORITY | DATE | ALARM | ARRIVAL | RESPONSE | CALL CLEARED | STREET |
|---|---|---|---|---|---|---|---|
| 220901-CFA01224 | Emergent | 9/1/2022 | 8:59:34 PM | 9:01:38 PM | 0:02:04 | 9:07:54 PM | MONTE VERDE ST / C |
| 220902-CFA01227 | Emergent | 9/2/2022 | 10:50:34 AM | 10:52:56 AM | 0:02:22 | 11:10:11 AM | MISSION ST / OCEAN |
| 220903-CFA01232 | Emergent | 9/3/2022 | 5:11:00 PM | 5:15:00 PM | 0:04:00 | 6:25:00 PM | 8TH AND DOLORES |
| 220904-CFA01237 | Emergent | 9/4/2022 | 1:13:16 PM | 1:16:22 PM | 0:03:06 | 1:52:58 PM | 2 PINE RIDGE RD |
| 220906-CFA01246 | Emergent | 9/6/2022 | 2:20:20 PM | 2:21:40 PM | 0:01:20 | 3:20:00 PM | SAN CARLOS 2NW OF |
| 220908-CFA01258 | Emergent | 9/8/2022 | 8:14:51 AM | 8:17:33 AM | 0:02:42 | 8:39:31 AM | OCEAN AVE / MONTE |
| 220908-CFA01262 | Emergent | 9/8/2022 | 2:42:14 PM | 2:46:11 PM | 0:03:57 | 3:50:00 PM | SCENIC RD / 11TH AV |
| 220909-CFA01266 | Emergent | 9/9/2022 | 3:54:53 PM | 3:55:43 PM | 0:00:50 | 3:57:52 PM | JUNIPERO AVE / 6TH |
| 220909-CFA01267 | Emergent | 9/9/2022 | 7:05:24 PM | 7:07:37 PM | 0:02:13 | 7:11:22 PM | OCEAN AVE / DEL MA |
| 220910-CFA01274 | Emergent | 9/10/2022 | 8:41:50 PM | 8:44:31 PM | 0:02:41 | 9:45:00 PM | S MOUNTAIN VIEW A |
| 220912-CFA01277 | Emergent | 9/12/2022 | 12:29:28 AM | 12:32:39 AM | 0:03:11 | 12:55:06 AM | OCEAN AVE / MISSIO |
| 220914-CFA01284 | Non-Emerg | 9/14/2022 | 10:16:44 AM | 10:19:12 AM | 0:02:28 | 10:22:18 AM | SAN CARLOS ST / 8T |
| 220914-CFA01286 | Emergent | 9/14/2022 | 4:41:39 PM | 4:43:15 PM | 0:01:36 | 5:30:00 PM | 8TH AVE / SAN CARL |
| 220914-CFA01288 | Emergent | 9/14/2022 | 9:25:43 PM | 9:29:37 PM | 0:03:54 | 9:32:24 PM | SANTA FE ST / 6TH A |
| 220915-CFA01291 | Emergent | 9/15/2022 | 10:50:18 AM | 10:53:16 AM | 0:02:58 | 11:50:00 AM | DOLORES ST / 13TH |
| 220917-CFA01306 | Emergent | 9/17/2022 | 7:33:08 AM | 7:36:08 AM | 0:03:00 | 8:30:00 AM | JUNIPERO AVE / 4TH |
| 220917-CFA01310 | Emergent | 9/17/2022 | 9:47:09 PM | 9:51:22 PM | 0:04:13 | 10:05:19 PM | DOLORES ST / OCEAI |
| 220918-CFA01311 | Emergent | 9/18/2022 | 2:59:54 AM | 3:04:00 AM | 0:04:06 | 3:38:00 AM | S MOUNTAIN VIEW A |
| 220918-CFA01314 | Emergent | 9/18/2022 | 12:17:09 PM | 12:19:59 PM | 0:02:50 | 12:20:31 PM | CARPENTER ST / 5TH |
| 220918-CFA01316 | Emergent | 9/18/2022 | 10:19:30 PM | 10:20:44 PM | 0:01:14 | 10:36:52 PM | LINCOLN ST / 7TH AV |
| 220919-CFA01319 | Emergent | 9/19/2022 | 1:07:22 PM | 1:09:44 PM | 0:02:22 | 1:50:00 PM | OCEAN AVE / SAN AN |
| 220920-CFA01326 | Emergent | 9/20/2022 | 1:34:50 PM | 1:36:22 PM | 0:01:32 | 2:01:54 PM | SAN CARLOS ST / OC |
| 220921-CFA01329 | Emergent | 9/21/2022 | 7:35:52 AM | 7:39:08 AM | 0:03:16 | 8:45:00 AM | TORRES ST / 2ND AV |
| 220921-CFA01333 | Emergent | 9/21/2022 | 2:12:30 PM | 2:16:18 PM | 0:03:48 | 2:25:00 PM | DOLORES ST / 5TH A |
| 220921-CFA01334 | Emergent | 9/21/2022 | 2:45:55 PM | 2:48:48 PM | 0:02:53 | 3:59:10 PM | JUNIPERO AVE / 4TH |
| 220921-CFA01335 | Emergent | 9/21/2022 | 9:51:15 PM | 9:55:44 PM | 0:04:29 | 10:50:00 PM | CASANOVA ST / SAN |
| 220922-CFA01336 | Emergent | 9/22/2022 | 1:55:19 AM | 1:59:44 AM | 0:04:25 | 3:00:00 AM | DOLORES ST / 12TH |
| 220924-CFA01347 | Non-Emerg | 9/24/2022 | 6:10:56 PM | 6:18:58 PM | 0:08:02 | 7:22:38 PM | DOLORES ST / OCEAI |
| 220925-CFA01351 | Emergent | 9/25/2022 | 10:01:55 AM | 10:04:13 AM | 0:02:18 | 11:15:00 AM | DOLORES ST / 5TH A |
| 220926-CFA01352 | Emergent | 9/26/2022 | 12:29:05 AM | 12:34:11 AM | 0:05:06 | 1:40:00 AM | CARMELO ST / 4TH A |
| 220927-CFA01355 | Emergent | 9/27/2022 | 12:40:23 AM | 12:46:10 AM | 0:05:47 | 1:51:37 AM | CAMINO REAL ST / 1 |
| 220929-CFA01369 | Emergent | 9/29/2022 | 12:04:30 PM | 12:06:25 PM | 0:01:55 | 12:27:57 PM | 4TH AVE / JUNIPERO |
| 220929-CFA01371 | Emergent | 9/29/2022 | 7:58:26 PM | 8:02:03 PM | 0:03:37 | 8:48:06 PM | 13TH AVE / CASANOV |

**NUMBER OF EMS INCIDEN 33 AVERAGE RESPONSE 0:03:10**

## FIRE RESPONSES CARMEL CITY

| INCIDENT | PRIORITY | DATE | ALARM | ARRIVAL | RESPONSE | CALL CLEARED | STREET |
|---|---|---|---|---|---|---|---|
| 220904-CFA01236 | Emergent I | 9/4/2022 | 10:31:43 AM | 10:36:03 AM | 0:04:20 | 10:44:17 AM | DOLORES ST / 1ST A |
| 220913-CFA01281 | Non-Emerg | 9/13/2022 | 4:09:17 PM | 4:12:19 PM | 0:03:02 | 4:14:30 PM | JUNIPERO AVE / 4TH |
| 220913-CFA01282 | Emergent | 9/13/2022 | 7:02:30 PM | 7:05:04 PM | 0:02:34 | 7:22:29 PM | |
| 220914-CFA01287 | Emergent | 9/14/2022 | 6:29:50 PM | 6:33:38 PM | 0:03:48 | 6:42:44 PM | JUNIPERO AVE / VIST |
| 220919-CFA01325 | Emergent | 9/19/2022 | 8:21:00 PM | 8:24:29 PM | 0:03:29 | 8:38:28 PM | 7TH AVE / SAN ANTC |
| 220927-CFA01357 | Emergent | 9/27/2022 | 1:50:34 PM | 1:53:53 PM | 0:03:19 | 1:55:14 PM | JUNIPERO AVE / 8TH |
| 220927-CFA01359 | Non-Emerg | 9/27/2022 | 5:52:25 PM | 5:56:58 PM | 0:04:33 | 6:00:00 PM | CASANOVA ST / 8TH |
| 220930-CFA01373 | Emergent | 9/30/2022 | 12:24:00 PM | 12:27:47 PM | 0:03:47 | 12:43:13 PM | CASANOVA ST / 10TH |

**NUMBER OF FIRE INCIDENTS 8 AVERAGE RESPONSE 0:03:37**

***TOTAL CARMEL CITY INCIDEN 41 TAL AVERAGE RESPONSE TIME 0:03:37***

## RESPONSES BY DISTRICT

| INCIDENT | PRIORITY | DATE | ALARM | ARRIVAL | RESPONSE | CALL CLEARED | STREET |
|---|---|---|---|---|---|---|---|

**CARMEL HIGHLANDS**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220905-CFA01240 | Emergent | 9/5/2022 | 5:41:07 AM | 5:54:52 AM | 0:13:45 | 6:50:00 AM | 130 CYPRESS WAY |
| 220905-CFA01241 | Emergent | 9/5/2022 | 9:47:12 AM | 9:52:56 AM | 0:05:44 | 11:32:19 AM | 2605 RIBERA RD |
| 220907-CFA01250 | Emergent | 9/7/2022 | 4:46:41 AM | 5:03:20 AM | 0:16:39 | 6:08:13 AM | 31453 HWY 1 |
| 220905-CFA01251 | Emergent | 9/7/2022 | 6:46:28 AM | 6:52:17 AM | 0:05:49 | 6:54:00 AM | 48 HIGHWAY 1 |
| 220907-CFA01252 | Emergent | 9/7/2022 | 11:02:43 AM | 11:10:29 AM | 0:07:46 | 12:35:48 PM | 1 POINT LOBOS STAT |
| 220925-CFA01350 | Emergent | 9/25/2022 | 7:31:50 AM | 7:43:57 AM | 0:12:07 | 9:00:00 AM | 75 CORONA RD |
| **Subtotal** | | **6** | **Average Response Time** | | **0:10:18** | | **Carmel Highlands** |

**CARMEL VALLEY**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220911-CFA01276 | Emergent | 9/11/2022 | 5:04:07 PM | 5:14:11 PM | 0:10:04 | 6:40:00 PM | 7440 CARMEL VALLE |
| 220913-CFA01280 | Emergent | 9/13/2022 | 10:01:06 AM | 10:15:34 AM | 0:14:28 | 11:23:58 AM | 5490 QUAIL MEADOV |
| 220918-CFA01313 | Non-Emerg | 9/18/2022 | 9:02:11 AM | 9:18:28 AM | 0:16:17 | 9:55:00 AM | 1 OLD RANCH RD |
| **Subtotal** | | **3** | **Average Response Time** | | **0:16:17** | | **CARMEL VALLEY** |

**CYPRESS FIRE**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220901-CFA01221 | Emergent | 9/1/2022 | 8:21:04 AM | 8:29:57 AM | 0:08:53 | 9:11:40 AM | 26245 CARMEL RANC |
| 220902-CFA01225 | Emergent | 9/2/2022 | 3:31:23 AM | 3:37:52 AM | 0:06:29 | 4:07:01 AM | 3415 RIO RD |
| 220902-CFA01226 | Emergent | 9/2/2022 | 8:34:46 AM | 8:42:18 AM | 0:07:32 | 9:21:12 AM | 275 CROSSROADS BL |
| 220903-CFA01230 | Emergent | 9/3/2022 | 12:58:23 PM | 1:04:54 PM | 0:06:31 | 2:25:00 PM | 26245 CARMEL RANC |
| 220903-CFA01233 | Emergent | 9/3/2022 | 10:43:39 PM | 10:50:08 PM | 0:06:29 | 11:59:00 PM | 3665 RIO RD |
| 220904-CFA01234 | Emergent | 9/4/2022 | 1:24:42 AM | 1:32:00 AM | 0:07:18 | 2:35:00 AM | 25455 CANADA VALL |
| 220904-CFA01238 | Emergent | 9/4/2022 | 1:55:53 PM | 1:59:37 PM | 0:03:44 | 3:15:00 PM | 3850 RIO RD |
| 220905-CFA01242 | Emergent | 9/5/2022 | 12:37:55 PM | 12:42:45 PM | 0:04:50 | 1:47:36 PM | 26245 CARMEL RANC |
| 220905-CFA01244 | Emergent | 9/5/2022 | 5:01:39 PM | 5:03:48 PM | 0:02:09 | 6:11:23 PM | 4125 MARGUERITA W |
| 220906-CFA01247 | Emergent | 9/6/2022 | 4:52:54 PM | 4:58:00 PM | 0:05:06 | 5:22:32 PM | 25255 PINE HILLS DR |
| 220907-CFA01253 | Emergent | 9/7/2022 | 4:54:00 PM | 4:57:58 PM | 0:03:58 | 5:11:07 PM | 6 CROSSROADS MALI |
| 220907-CFA01254 | Emergent | 9/7/2022 | 10:55:18 PM | 11:00:39 PM | 0:05:21 | 11:10:06 PM | 3650 RIO RD |
| 220908-CFA01257 | Emergent | 9/8/2022 | 6:22:46 AM | 6:27:22 AM | 0:04:36 | 7:20:07 AM | 185 HACIENDA CARM |
| 220909-CFA01263 | Emergent | 9/9/2022 | 6:34:57 AM | 6:41:07 AM | 0:06:10 | 7:25:24 AM | 2658 15TH AVE |
| 220909-CFA01268 | Emergent | 9/9/2022 | 7:38:57 PM | 7:43:43 PM | 0:04:46 | 8:09:06 PM | 26245 CARMEL RANC |
| 220910-CFA01271 | Emergent | 9/10/2022 | 11:02:17 AM | 11:07:17 AM | 0:05:00 | 11:20:00 AM | CARMELO ST / SCENI |
| 220910-CFA01272 | Emergent I | 9/10/2022 | 4:13:41 PM | 4:20:00 PM | 0:06:19 | 5:15:00 PM | 2814 14TH AVE |
| 220912-CFA01279 | Emergent | 9/12/2022 | 12:21:44 PM | 12:25:39 PM | 0:03:55 | 1:14:27 PM | 97 HIGH MEADOW LN |
| 220914-CFA01283 | Emergent | 9/14/2022 | 7:48:16 AM | 7:53:02 AM | 0:04:46 | 8:17:03 AM | 25086 HWY 1 |
| 220914-CFA01285 | Emergent | 9/14/2022 | 2:48:07 PM | 2:55:46 PM | 0:07:39 | 3:36:24 PM | 6 CROSSROADS MALI |
| 220916-CFA01297 | Emergent | 9/16/2022 | 9:23:02 AM | 9:33:28 AM | 0:10:26 | 10:40:00 AM | 16 DEL MESA CARME |
| 220918-CFA01312 | Emergent | 9/18/2022 | 7:39:16 AM | 7:44:11 AM | 0:04:55 | 8:35:00 AM | 26262 CARMELO ST |
| 220918-CFA01315 | Emergent | 9/18/2022 | 9:02:01 PM | 9:09:35 PM | 0:07:34 | 10:10:00 PM | 26277 ISABELLA AVE |
| 220919-CFA01317 | Emergent | 9/19/2022 | 2:03:07 AM | 2:10:24 AM | 0:07:17 | 2:24:08 AM | 3574 OLIVER RD |
| 220920-CFA01328 | Emergent | 9/20/2022 | 7:20:38 PM | 7:26:34 PM | 0:05:56 | 7:43:14 PM | 25621 CARMEL KNOL |
| 220921-CFA01331 | Emergent | 9/21/2022 | 12:37:39 PM | 12:41:11 PM | 0:03:32 | 12:58:00 PM | HWY 1 / SAN LUIS A\ |
| 220922-CFA01337 | Emergent | 9/22/2022 | 8:28:16 AM | 8:32:36 AM | 0:04:20 | 8:48:04 AM | 25593 HATTON RD |
| 220922-CFA01338 | Emergent | 9/22/2022 | 9:19:57 AM | 9:28:37 AM | 0:08:40 | 10:10:00 AM | 275 CROSSROADS BL |
| 220923-CFA01340 | Emergent | 9/23/2022 | 7:28:01 PM | 7:34:27 PM | 0:06:26 | 8:41:38 PM | 26135 CARMEL RANC |
| 220924-CFA01345 | Emergent | 9/24/2022 | 7:38:37 AM | 7:46:22 AM | 0:07:45 | 9:10:57 AM | 26020 ROTUNDA DR |
| 220924-CFA01346 | Emergent | 9/24/2022 | 9:25:54 AM | 9:30:25 AM | 0:04:31 | 10:43:09 AM | 25725 BALDWIN PL |
| 220924-CFA01348 | Emergent | 9/24/2022 | 7:28:36 PM | 7:32:13 PM | 0:03:37 | 7:46:49 PM | 26135 CARMEL RANC |
| 220924-CFA01349 | Emergent | 9/24/2022 | 10:01:58 PM | 10:06:54 PM | 0:04:56 | 10:07:49 PM | HWY 1 / CARPENTER |
| 220926-CFA01353 | Emergent | 9/26/2022 | 9:51:19 AM | 9:58:39 AM | 0:07:20 | 10:56:58 AM | 25390 CARMEL KNOL |
| 220927-CFA01356 | Emergent | 9/27/2022 | 8:36:22 AM | 8:41:40 AM | 0:05:18 | 9:45:00 AM | 26245 CARMEL RANC |
| 220928-CFA01366 | Emergent | 9/28/2022 | 2:14:58 PM | 2:20:24 PM | 0:05:26 | 2:42:40 PM | 24501 VIA MAR MON |
| 220929-CFA01370 | Emergent | 9/29/2022 | 7:19:43 PM | 7:23:51 PM | 0:04:08 | 7:58:02 PM | 24558 PORTOLA RD |
| 220930-CFA01372 | Emergent | 9/30/2022 | 7:05:57 AM | 7:10:48 AM | 0:04:51 | 7:55:00 AM | 25725 BALDWIN PL |
| 220930-CFA01375 | Emergent | 9/30/2022 | 6:56:09 PM | 7:02:26 PM | 0:06:17 | 8:05:12 PM | 3850 RIO RD |
| **Subtotal** | | **39** | **Average Response Time** | | **0:05:46** | | **CYPRESS FIRE** |

**PEBBLE BEACH**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220903-CFA01229 | Emergent | 9/3/2022 | 10:26:20 AM | 10:36:00 AM | 0:09:40 | 11:50:00 AM | 3171 FOREST LAKE R |
| 220903-CFA01231 | Emergent | 9/3/2022 | 3:46:20 PM | 3:54:00 PM | 0:07:40 | 3:57:03 PM | 1500 CYPRESS DR |
| 220910-CFA01273 | Emergent | 9/10/2022 | 5:46:31 PM | 5:59:59 PM | 0:13:28 | 6:50:00 PM | 640 SPRUCE AVE |
| 220916-CFA01303 | Emergent | 9/16/2022 | 9:08:33 PM | 9:20:57 PM | 0:12:24 | 10:30:00 PM | 1191 LOOKOUT RD |
| 220917-CFA01307 | Emergent | 9/17/2022 | 10:19:37 AM | 10:32:24 AM | 0:12:47 | 11:30:00 AM | 2700 SEVENTEEN MI |
| 220920-CFA01327 | Emergent | 9/20/2022 | 5:25:40 PM | 5:32:40 PM | 0:07:00 | 6:33:13 PM | 1518 PALMERO WAY |
| 220923-CFA01339 | Emergent | 9/23/2022 | 9:13:52 AM | 9:25:37 AM | 0:11:45 | 10:26:52 AM | 3150 SEVENTEEN MI |
| 220923-CFA01341 | Emergent | 9/23/2022 | 8:48:51 PM | 9:08:22 PM | 0:19:31 | 9:14:57 PM | 3302 SEVENTEEN MI |
| **Subtotal** | | **8** | **Average Response Time** | | **0:11:47** | | **PEBBLE BEACH** |

**PACIFIC GROVE**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220908-CFA01255 | Non-Emerg | 9/8/2022 | 5:03:33 AM | 5:22:42 AM | 0:19:09 | 6:03:05 AM | 651 SINEX AVE |
| 220908-CFA01260 | Emergent | 9/8/2022 | 9:46:29 AM | 9:54:40 AM | 0:08:11 | 10:32:05 AM | 551 GIBSON AVE |
| 220915-CFA01295 | Emergent | 9/15/2022 | 6:12:00 PM | 6:24:56 PM | 0:12:56 | 7:20:00 PM | 1113 PRESIDIO BLVD |
| 220916-CFA01302 | Emergent | 9/16/2022 | 6:47:48 PM | 6:57:54 PM | 0:10:06 | 7:45:00 PM | FOREST AVE / ADOBE |
| 220929-CFA01367 | Emergent | 9/29/2022 | 6:37:22 AM | 6:50:12 AM | 0:12:50 | 7:45:00 AM | 551 GIBSON AVE |
| **Subtotal** | | **5** | **Average Response Time** | | **0:11:01** | | **PACIFIC GROVE** |

**MARINA**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220908-CFA01261 | Emergent | 9/8/2022 | 12:44:22 PM | 1:00:14 PM | 0:15:52 | 2:08:01 PM | RESERVATION RD / I |
| 220919-CFA01323 | Emergent | 9/19/2022 | 5:33:47 PM | 5:44:55 PM | 0:11:08 | 6:20:11 PM | 930 2ND AVE |
| **Subtotal** | | **2** | **Average Response Time** | | **0:11:08** | | **MARINA** |

**MID COAST**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220905-CFA01243 | Emergent | 9/5/2022 | 2:05:41 PM | 2:34:10 PM | 0:28:29 | 4:49:34 PM | 36260 HWY 1 |
| **Subtotal** | | **1** | **Average Response Time** | | **0:28:29** | | **MID COAST** |

**MONTEREY**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220915-CFA01290 | Emergent | 9/15/2022 | 8:35:09 AM | 8:44:49 AM | 0:09:40 | 10:00:00 AM | 1526 MTY SNS HWY |
| 220915-CFA01292 | Emergent | 9/15/2022 | 1:59:24 PM | 2:07:59 PM | 0:08:35 | 2:45:00 PM | 65 SOLEDAD DR |
| 220916-CFA01299 | Emergent | 9/16/2022 | 12:11:00 PM | 12:13:43 PM | 0:02:43 | 12:16:00 PM | 300 FREMONT ST |
| 220927-CFA01361 | Emergent | 9/27/2022 | 7:26:07 PM | 7:29:39 PM | 0:03:32 | 7:43:43 PM | 625 PACIFIC ST |
| 220928-CFA01362 | Emergent | 9/28/2022 | 6:13:45 AM | 6:25:42 AM | 0:11:57 | 6:50:25 AM | 200 GLENWOOD CIR |
| 220930-CFA01374 | Emergent | 9/30/2022 | 4:04:29 PM | 4:16:39 PM | 0:12:10 | 5:25:00 PM | 1501 SKYLINE DR |
| **Subtotal** | | **6** | **Average Response Time** | | **0:08:06** | | **MONTEREY** |

**SEASIDE/SAND CITY**

| INCIDENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 220909-CFA01265 | Emergent | 9/9/2022 | 11:27:02 AM | 11:36:47 AM | 0:09:45 | 12:35:27 PM | 2055 MILITARY AVE |
| 220924-CFA01342 | Emergent | 9/23/2022 | 11:07:00 PM | 11:16:00 PM | 0:09:00 | 1:15:00 AM | 5100 COE AVE |
| **Subtotal** | | **2** | **Average Response Time** | | **0:09:23** | | **SEASIDE/SAND CITY** |

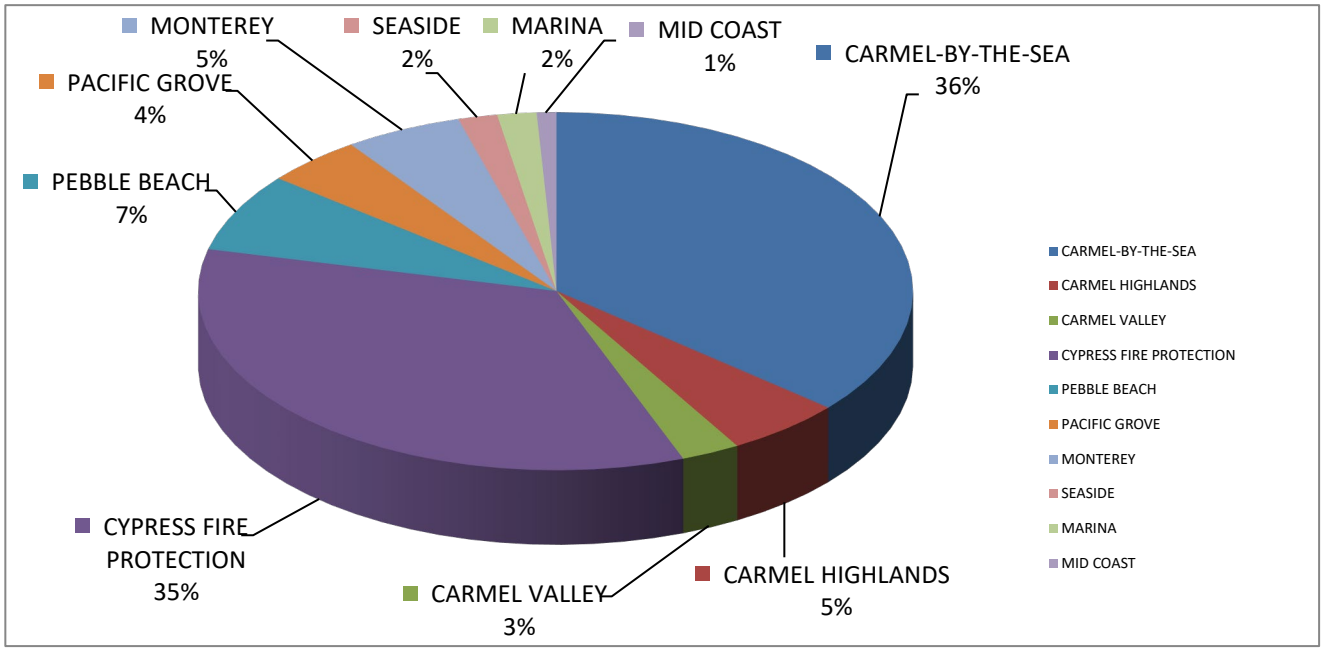
| | | | |
|---|---|---|---|
| ***TOTAL All CALLS*** | **113** | ***TOTAL AVERAGE RESPONSE TIME*** | **0:06:30** |

# CITY OF CARMEL - FIRE AMBULANCE DEPARTMENT
# SEPTEMBER 2022

## Response Summary Report by District Type

| District Response | Number | Average Response Time |
|---|---|---|
| CARMEL-BY-THE-SEA | 41 | 0:03:37 |
| CARMEL HIGHLANDS | 6 | 0:10:18 |
| CARMEL VALLEY | 3 | 0:16:17 |
| CYPRESS FIRE PROTECTION | 39 | 0:05:46 |
| PEBBLE BEACH | 8 | 0:11:47 |
| PACIFIC GROVE | 5 | 0:11:01 |
| MONTEREY | 6 | 0:08:06 |
| SEASIDE | 2 | 0:09:23 |
| MARINA | 2 | 0:11:08 |
| MID COAST | 1 | 0:28:29 |
| Total Responses | 113 | 0:06:30 |

%of code 3 medical responses in Carmel < 5min 93.94%



| request number | Date Requested | 10-day response date | records requested | requestor | date completed | notes |
|---|---|---|---|---|---|---|
| 2022-048 | 9/1/2022 | 9/12/2022 | Copy of Carmel's current On-Call Landscape Maintenance Contract | Kathleen Mitchell | 9/2/2022 | no current contract exists |
| 2022-049 | 9/6/2022 | 9/16/2022 | title records for the home on San Carlos 2 NE of 12th in Carmel by the Sea, CA 93923 | Thana Makdsdi | 9/6/2022 | No responsive documents. Directed them to the Monterey County Clerk Recorder |
| 2022-050 | 9/7/2022 | 9/19/2022 | Amount of money paid to Telecom Law Firm and BB&K regarding Wireless Ordinance | Mary Schley | 9/8/2022 | sent records |
| 2022-051 | 9/8/2022 | 9/19/2022 | all information—including communication between staff and council—-pertaining to the allocation of $272,676 that was collected for parklet rental, and supposedly used for beautification of downtown. Where did the money get spent (if any at all) and where is the balance of these funds? | Parker Logan | 9/30/2022 | sent fund balance, fund total, fund expenditures on 9/8. No communications confirmed 9/30/22 |
| 2022-052 | 9/8/2022 | 9/19/2022 | log of the city's art collection, all inventory including installations and stored pieces. I want to know where installed pieces can be viewed and details of where the remaining unhung pieces are stored, including but not limited to how they are stored, the temperature at which they are stored, the manner in which they are stored (wrapped, boxed, stacked, etc. ) and an audit to ensure no pieces are unaccounted for. | Parker Logan | 9/12/2022 | sent records |
| 2022-053 | 9/8/2022 | 9/19/2022 | All communications between Lyle Coe (or Coe & Company) and the City of Carmel (all departments) from March 1, 2022 to today (Sept 8, 2022), to include all letters, emails, texts, meeting notes, phone logs, or other communications to or from Coe or the City. | Anonnymous | 9/30/2022 | extended deadline to 10/3/22. Recods sent on 9/30/22 |
| 2022-054 | 9/15/2022 | 9/26/2022 | all communication, dating back to January 1, 2019 to present day, regarding the climate action plan, climate change, and global warming. Specifically the request is all communication between Jeff Baron and staff— Also all communication between Jeff baron and the council, including the mayor. All communication should include private and city owned cellular texts, private and city operated emails, and any other written or voice recorded communication on the subject of climate change/climate action plan. | Parker Logan | | extended deadline to 10/24/2022 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2022-055 | 9/13/2022 | 9/23/2022 | Business License for YAFA Resturant in Carmel. License might be under the name of "Urdon Corporation, a California Corporation" (mail records) | Mark Zorne | 9/16/2022 | record sent |
| 2022-056 | 9/14/2022 | 9/26/2022 | the current rate sheets for both solid waste and recycling for commercial and multi-family with the effective date. I have attached a copy of the 2021 franchise rate sheet as an example of what I am requesting. If the 2021 rates are still effective, please let me know. My hope is that you will forward me a copy of the 2022 rates. I found the 2021 rates on the City of Carmel by the Sea, CA website. | Doreen Vickery | 9/23/2022 | records sent |
| 2022-057 | 9/23/2022 | 10/3/2022 | All plans, permits, applications, designs, depictions, diagrams, agendas, minutes, resolutions, approvals, disapprovals, agreements, bids, contracts, invoices, payment vouchers, receipts, photographs, correspondence, requests, notices, and work orders associated with the Right of Way fronting 4 North San Antonio, Carmel, California APN 010-241-001 including the maintenance and removal of Cypress, loquat, and other trees on that right of way for the period of time January 1, 2018 through September 23, 2022. | Mark O'Connor | 10/6/2022 | sent plans, permits, applications, designs, depictions, receipts, notices, approvals, on 10/6/22. |
| 2022-058 | 9/27/2022 | 10/7/2022 | the total amount of money spent for Council Member Baron's: salary, benefits, city cell phone, and any Council related travel expenses, from December 2018 (when he took office) to present | Parker Logan | | extended deadline to 10/24/2022 |
| 2022-059 | 9/27/2022 | 10/7/2022 | How much the City paid in storage fees each year, with monthly breakdowns for each storage facility for anything stored outside of a city owned property in 2021 and 2022 | Parker Logan | 10/7/2022 | records sent |
| 2022-060 | 9/27/2022 | 10/7/2022 | Business License application for Barmel Supper Club | Mary Schley | 10/4/2022 | records sent |
| 2022-061 | 9/20/2022 | 9/30/2022 | All permanent encroachment permits issued for properties located in the RC zone in the City | Cody Phillips | 10/14/2022 | records sent |

POLICE RECORDS REQUEST LOG - SEPTEMBER 2022

Attachment 4

| Request No. | Request Date & Received By | 10-Day Due Date | Date Completed by PSO | Requestor | Info Requested | Status | Date & PSO Mailed |
|---|---|---|---|---|---|---|---|
| 2022-00001 | 9/1/22 da | 9/11/2022 | 9/2/22 da | Lexis Nexis | CA2200366 | completed | mailed by DA |
| 2022-00002 | 9/1/22 da | 9/11/2022 | 9/2/22 da | Lexis Nexis | CA2200365 | completed | mailed by DA |
| 2022-00003 | 9/1/22 da | 9/11/2022 | 9/2/22 da | Lexis Nexis | Accident | no record | mailed back by DA |
| 2022-00004 | 9/9/22 DA | 9/19/2022 | 9/10/22 DA | Metropolitan Reporting | CA2200413 | completed | mailed by DA |
| 2022-00005 | 9/9/22 DA | 9/19/2022 | 9/10 DA | Lexis Nexis | CG2200362 | completed | mailed chp 180 only by DA |
| 2022-00006 | 9/9/22 DA | 9/19/2022 | 9/10/22 DA | Lexis Nexis | Accident | completed | card exchange/no rpt |
| 2022-00007 | 9/9/22 DA | 9/19/2022 | 9/10/22 DA | Lexis Nexis | CA2200366 | completed | mailed by DA |
| 2022-00008 | 9/11/22 Da | 9/21/2022 | 9/11/22 DA | Sarah Mccallister | CG2200353/CG2200350 | completed | PU 09/22/2022 |
| 2022-00009 | 9/12/22 DA | 9/22/2022 | 9/15/22 DA | Marie Rodriguez | CG2200423 | completed | awaiting pick up |
| 2022-00010 | 9/20/22MS | 9/30/2022 | 9/24 DA | Kelly Regan | CG2000579 | completed | interview #3 & face pages mailed |
| 2022-00011 | 9/20/22 MS | 9/30/2022 | 9/23 DNA | Saclia Khan | CG2200424 | completed | awaiting pickup |
| 2022-00012 | 9/23/22 DA | 10/3/2022 | 9/23/22 DA | Metropolitan Reporting | CA2200297 | completed | mailed by DA |
| 2022-00013 | 9/23/22 DA | 10/3/2022 | 9/23 DA | Lexis Nexis | CC2200401 | completed | mailed by DA |
| 2022-00014 | 09/23/22 JD | 10/3/2022 | 9/25 DA | Akshada Kulkarni | CG2200406 | completed | mailed by DA |
| 2022-00015 | 09/23/2022 JD | 10/3/2022 | 9/25 DA | Christopher Groves | CJ2200068 | denied | denial letter mailed (under investigation) |
| 2022-00016 | 9/25/22 DA | 10/5/2022 | 10/1/2022 | Malcolm O'Donovan | CG2200343 | completed | emailed by DA |

# CITY OF CARMEL-BY-THE-SEA
# Monthly Report

## Public Works Department Report
## September 2022

**Meeting Date: 11-1-2022**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Robert M. Harary, P.E., Director of Public Works |
| **SUBMITTED ON:** | October 3, 2022 |
| **APPROVED BY:** | Chip Rerig, City Administrator |

**Forest and Beach Commission Meeting of September 8, 2022**

- Meeting canceled due to a lack of quorum.

**City Council Meeting of September 13, 2022**

- Adopted Resolution 2022-075, awarding a Professional Services Agreement to 4Leaf, Inc. for $197,780 for Project Management services to implement the Police Building Renovation Project – Expanded Scope, construction of the 2020/21 Paving Project, and two other new capital improvement projects.
- Adopted Resolution 2022-076, awarding a Professional Services Agreement to the Carmel Area Wastewater District to provide Vactor services for three years for a not-to-exceed fee of $71,647.
- Adopted Resolution 2022-085, appointing Tamara Michie and Kelly Brezoczky to the Forest and Beach Commission for four-year terms ending May 30, 2026.

**Climate Committee Meeting of September 15, 2022**

- Reviewed a proposal from a consulting team combining EMC Planning Group, Integral Consulting, and Haro Kasunich & Associates to perform Phases I and II of the Coastal Engineering Study and Beach Sand Survey Projects, as outlined under the adopted Climate Adaptation Plan. Phase I is funded at this time at $175,000, and Phase II is anticipated by a $100,000 non-competitive Coastal Commission Local Coastal Program Grant. The Committee recommended forwarding a Contract to Council for approval, with stipulations, at the November meeting.

**Public Works Administration**

- Welcomed new Forest and Beach Commissioners Tamara Michie and Kelly Brezoczky, and provided an overview of the Public Works Department, Forestry Division, and Commission meeting expectations.
- Maintenance Worker candidates were interviewed, a selection was made, offer accepted, and a background check is in progress.
- The Facility Maintenance Specialist position was posted as an internal promotional opportunity, and interview is scheduled in early October.
- Completed the draft Request for Proposals for the Scout House Renovation, Activities Programming, and Facility Management Operations and Maintenance Agreement, and routed for comments.
- Prepared the Climate Committee staff report and gave the presentation at the September 15th meeting.
- Issued letter to Councilmembers regarding incidents involving PG&E removing several City trees without prior notification to the City Forester. While PG&E has the responsibility for pruning and removal for public safety, the long-standing practice was to coordinate ahead of time so that the City has the opportunity to provide input into the timing, place, and manner of the work. The matter will be presented to the Forest & Beach Commission in October.
- Met with the California Coastal Commission enforcement regarding PG&E's removal of trees in the City without prior notification to the City. Evaluating City's authority through the Local Coastal Permit to require PG&E to mitigate tree removals, such as by replanting trees or providing in-lieu fees.

- Ranked Statements of Qualifications received for on-call geotechnical engineering and materials testing services, and prepared a $24,999 Professional Services Agreement with Haro Kasunich & Associates.
- Met with Site LogiQ representatives to consider resuming the implementation of certain energy efficiency projects, based on their energy audit conducted prior to the Pandemic.
- Met with the Carmel Area Wastewater District to coordinate their upcoming Scenic Road Sewer Pipe Bursting and Pescadero Road Sewer Replacement Projects.
- Held negotiations with Otis Elevator who continue to invoice the City for dumbwaiter maintenance services in the Park Branch Library (PBL), even though the dumbwaiter has been out of service for 10 years. All reasonable attempts to resolve the matter were dismissed by Otis, and the matter may be referred to the City Attorney's office.

**Carmel Cares**

- The Downtown Detail continued to make significant downtown beautification improvements by planting in additional street bump outs, placing potted plants, improving tree wells, removing debris, landscaping around parking lots, and removing graffiti.
- Coordinated with the Green Cadre, a youth workforce training program sponsored by Monterey County. The workgroup is scheduled to support Carmel Cares around the City starting in late October. Projects will include installation of a post and rail fencing along Forest Hill Park, invasive removals in the North Dunes Habitat Restoration Area, planting at the Forest Theater, and others.
- Continued to improve the Scenic Pathway and Forest Theater site, and maintain Vista Lobos Park, Sunset Center grounds, and numerous landscaped medians.

**Environmental Programs**

- Environmental Technician, Jessica Juico, attended the California Climate and Energy Forum in San Diego to learn about the latest trends in climate action planning, electrification, decarbonization, and environmental justice.
- Reviewed the draft technical report that summarizes the findings of 4 years of watershed sampling for the Area of Special Biological Significance.
- Reviewed biological and archaeological reports prepared by consultant, Dudek, regarding the three stream stability projects to be constructed in 2023 in the Mission Trail Nature Preserve (MTNP).
- Coordinated with PG&E to launch the design of new EV charging stations to be installed in the Vista Lobos parking lot. One charging station is planned to be high capacity to energize our new electric street sweeper which is scheduled to be delivered in early 2023. Site meeting with PG&E in October.
- Coordinated with the Monterey Regional Waste Management District and their contractor who will begin to provide spot-inspections of waste and recycling containers in Carmel and other jurisdictions, to ensure compliance with SB1383. These inspections are also referred to as "lid flipping."
- Began to prepare the very long and complicated Annual Stormwater Report as required by the State Water Quality Control Board.

**Facility Maintenance**

- Began the ADA Upgrades Project, Year 5, by lowering a 911 Emergency phone box to ADA-compliant height in Forest Hill Park, and ordering an ADA drinking fountain with refill station for the PBL
- Repaired the irrigation backflow device in the Harrison Memorial Library garden.
- Fixed the Forest Theater alarm transmitter which was sending dozens of error messages daily.
- Scrubbed and repainted both Forest Hill Park restrooms after graffiti was sprayed nearly every weekend in September.
- Replaced electrical receptacles and switches in the Community Planning and Building office following their second painting project.
- Lubricated squeaky wheels of the old green chairs at the Council dais.
- Supported the Flu Clinic at Vista Lobos.
- Provided new remotes and fixed exhaust fans for the Fire Station.
- Ordered and stocked first aid supply cabinets for multiple departments. Also ordered new cabinets to house automated external defibrillators.

- Received quotes to permanently close the dumbwaiter at the Park Branch Library.
- Negotiated with Sentry Alarm to soften their demand to pre-pay a year in advance, instead of monthly billings as in previous contracts, to compromise with quarterly billings.

**Project Management (PM) for Capital Improvement Program**

- The contract was executed and the Notice to Proceed was issued to 4Leaf to provide PM services for the following four capital projects. Highlights of the kickoff meeting included:
  - Police Building Renovation Project Additional Scope – Initial emphasis will be to urgently complete a Professional Services Agreement with Kasavan Architects, to evaluate the impacts of the proposed additional renovations, including an EOC, witness report room, upgraded lockers, EV charging station, etc., on potential building code requirements, including fire suppression, ADA-compliance, electrical re-wiring, and/or seismic upgrades, all of which would impact cost and time.
  - 2020/21 Paving Project – While the plans and technical specifications have been completed for some time, the construction contract documents and special provisions require significant editing and updating prior to bidding. The Project is scheduled for construction in the Springtime.
  - Infrastructure Resiliency Pilot Project – This project will review possible battery storage and microgrid options for the Police, Public Works, Vista Lobos, and Youth Center facilities.
  - Electrical Panel Upgrades at four buildings – Statements of Qualifications submitted by four electrical engineering firms are being reviewed and ranked to plan and design this project.
- Specifications and contract documents were completed by Ausonio for the City Hall Retaining Wall Repair Project and submitted for review. Project is scheduled to be submitted for a building permit and to be advertise for bids by late October.
- A review of carpeting specifications for the HML Carpet Replacement Project revealed that the existing carpeting throughout the HML likely contains asbestos-containing glue beneath. Remediation could significantly increase the cost of this project.
- Reviewed seven Statements of Qualifications, and short-listed and interviewed three architectural firms to provide on-call, as-need architectural services for various facility renovation projects, and to prepare the Facilities Condition Assessment of Four Buildings Project. 10 Over Studios was selected for on-call architectural services and a Professional Services Agreement was prepared. Bureau Veritas was selected for Facilities Condition Assessments, and they are preparing a project-specific proposal.
- For the City-Wide Drainage System Repair Project, a Professional Services Agreement was prepared with Schaaf and Wheeler to update the Storm Drain Master Plan for 20-year storm event analysis to reflect Climate Change, among other reasons. Agreement scheduled for Council award in October.
- Reviewed proposals received from two short-listed architectural firms to prepare the Libraries Master Plan, and scheduled interviews in early October.

**Street Maintenance**

- As recommended at the July 28th meeting of the Traffic Safety Committee, installed a crosswalk across Seventh Avenue, just west of Junipero Street, to align with the eastern Carmel Plaza sidewalk and ramps. While this crosswalk is located before the Stop sign for eastbound travelers, the crosswalk and yield to pedestrian signs makes this situation safer, although not ideal.
- Made several hot mix street repair patches after removing root-damaged pavement areas.
- Installed asphalt berms along several residential streets.
- Prepared for mid-September rains, and cleaned up minor storm damage afterwards. Over an inch and a half of rain was recorded.
- Replaced and compacted decomposed granite which got washed out along the Fourth Avenue pedestrian walkway.
- Finished installing drainage improvements on Acacia Way.
- Began the annual Storm Drain Inspection Program to prepare for the winter season.
- Repaired a storm drain manhole cover ring damaged by a contractor.
- Continued making sidewalk repairs. Since the backlog of repairs is increasing, scheduled a full-time crew to make sidewalk repairs in the downtown area indefinitely.
- Removed the five firepits from the beach in mid-September.

**Forestry Parks and Beach Report (Forester's Report)**

- **As part of the Cal Fire grant, 108 new trees will be planted. The initial round of tree planting is planned to begin in October.**
- One addendum was issued during bidding of the on-call landscape maintenance contract. Only one bid proposal, submitted by Town & Country Gardening & Landscaping, was received at the September 20th Bid Opening. The bid contained one irregularity that will be waived by Council when the $140,000 contract is awarded in October.
- Compiled the Forest and Beach Commission's final recommendations and all supporting documentation regarding the Scenic Pathway benches, for submittal to the Planning Commission and Community Planning and Building Department.
- Preparation of the on-call tree care services contracts and bid documents are being finalized.
- Refurbished a table in front of City Hall that originated from the Sequoia National Forest.

## Tree Planting Procedure

There are many steps in the tree planting process. The following is a general outline of the process:

1. Vacant spaces are found, marked, and mapped
2. Posts are placed in the ground to indicated the future home of a new tree
3. A request for the underground utilities to be marked is made.
4. Up to three days later, the utilities are marked
5. The sites are re-visited to check if the utilities will prohibit a new tree
6. Trees types are assigned
7. Trees are planted
8. Trees are put on a watering rotation

This process requires each space to be visited at least three times prior to planting.

## . Private and Development Activities

**2022 Permitted Removals and Required Planting**

| | Removals | Plant Upper | Plant Lower | No room for New Tree | Meets Density Recommendation | Total Number of Trees Required |
|---|---|---|---|---|---|---|
| January | 2 | 1 | 1 | 0 | 0 | 2 |
| February | 14 | 4 | 5 | 0 | 3 | 9 |
| March | 13 | 4 | 4 | 0 | 4 | 8 |
| April | 7 | 2 | 5 | 3 | 2 | 7 |
| May | 19 | 8 | 4 | 3 | 4 | 12 |
| June | 11 | 3 | 1 | 0 | 6 | 4 |
| July | 8 | 1 | 1 | 4 | 1 | 2 |
| August | 41 | 16 | 10 | 5 | 3 | 26 |
| **September** | **9** | **5** | **2** | **0** | **0** | **7** |
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| **2022 Totals** | **124** | **44** | **33** | **15** | **23** | **77** |

**Historic Permitted Removals and Required Planting**

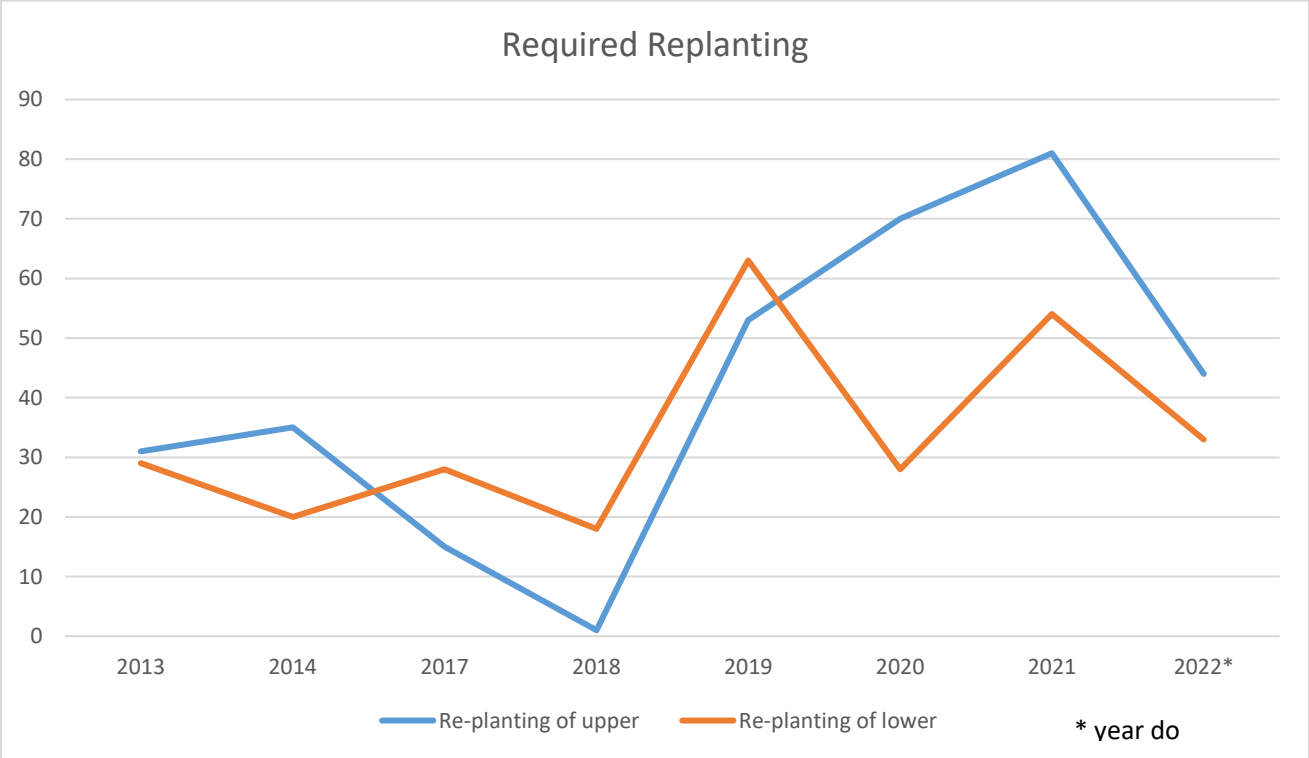
**Public Works Department Report – September 2022**

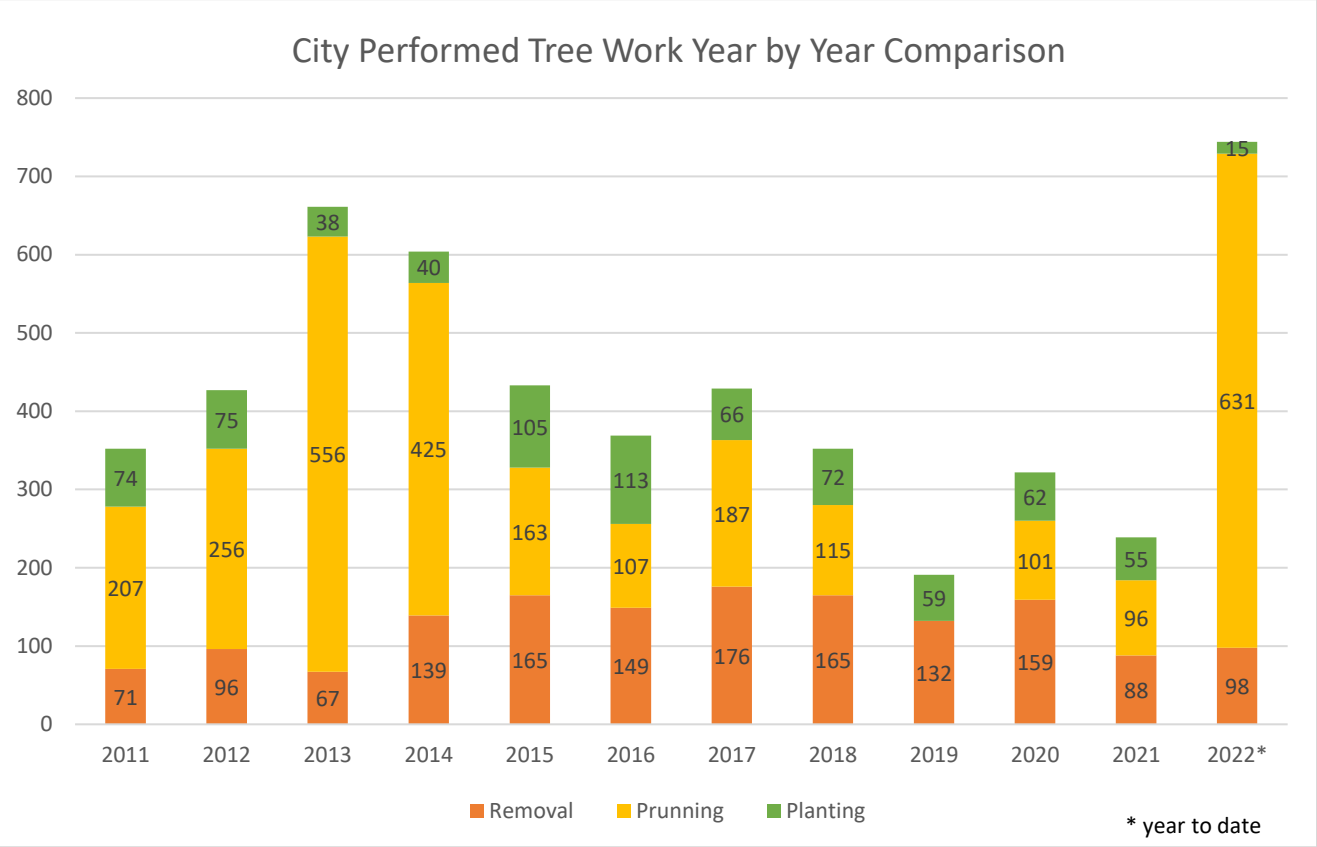
| | Removal Permits | Removal of Upper | Removal of Lower | Replanting Required | Replanting of Upper | Replanting of Lower | Replanting % |
|---|---|---|---|---|---|---|---|
| 2012 | 96 | | | 20 | | | 20.83% |
| 2013 | 123 | 60 | 63 | 59 | 31 | 29 | 47.97% |
| 2014 | 145 | 64 | 81 | 49 | 35 | 20 | 33.79% |
| 2016 | 90 | | | 37 | | | 41.11% |
| 2017 | 119 | 50 | 69 | 43 | 15 | 28 | 36.13% |
| 2018 | 77 | 37 | 60 | 20 | 1 | 18 | 20.62% |
| 2019 | 170 | 107 | 63 | 116 | 53 | 63 | 68.24% |
| 2020 | 98 | 57 | 41 | 93 | 67 | 26 | 94.90% |

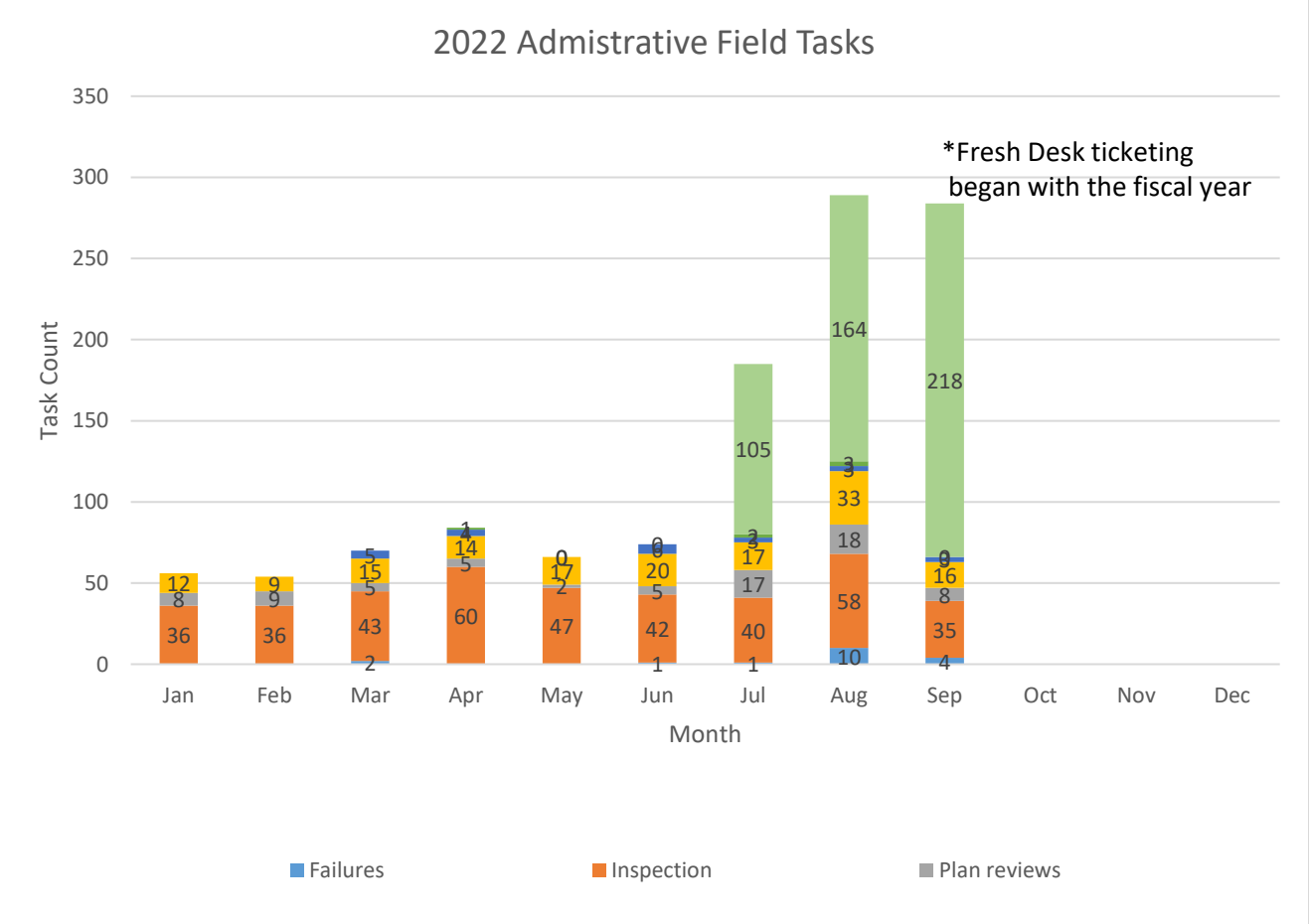
| | Permitted removals | Removal of upper | Removal of lower | Replanting Required | Replanting of upper | Replanting of lower | Replanting % | Applications processed |
|---|---|---|---|---|---|---|---|---|
| 2021 | 204 | 81 | 123 | 135 | 81 | 54 | 66.18% | 213 |
| **2022*** | **124** | **76** | **48** | **77** | **44** | **33** | **62.10** | **144** |

*year to date

## City Forestry, Parks, and Beach Activities




City Performed Tree Work Year by Year Comparison
800
700
600
500
400
300
200
100
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022*
71 207 74
96 256 75
67 556 38
139 425 40
165 163 105
149 107 113
176 187 66
165 115 72
132 59
159 101 62
88 96 55
98 631 15
Removal
Prunning
Planting
* year to date


2022 Admistrative Field Tasks
*Fresh Desk ticketing began with the fiscal year
Task Count
350
300
250
200
150
100
50
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Month
36 8 12
36 9 9
43 5 15 5
2 5
60 5 14 4 1
47 2 17 0
42 5 20 6 0
1 1
40 17 3 105
1 3
10 58 18 33 3 164
4 35 8 16 9 218
Failures
Inspection
Plan reviews

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**CONSENT AGENDA**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Brian Pierik, City Attorney |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Resolution 2022-093, Proclaiming the Continuing Need To Meet By Teleconference Pursuant To Government Code Section 54953 (e) |

## RECOMMENDATION:

Adopt Resolution 2022-093 of the City Council of the City of Carmel-by-the-Sea, proclaiming the continuing need to meet by teleconference pursuant to Government Code Section 54953 (e).

## BACKGROUND/SUMMARY:

All meetings of the City of Carmel-by-the-Sea legislative bodies are open and public as required by the Ralph M. Brown Act (Cal. Gov. Code 54950 – 54963).

Before COVID-19, Section 54953(b) of the Brown Act allowed for teleconferencing if the public agency complied with the following requirements:

1. At least a quorum of the members of the legislative body must participate from locations within the boundaries within the jurisdiction of the local agency.

2. An agenda shall be posted at all teleconference locations.

3. Each teleconference location shall be identified in the notice and agenda of the meeting.

4. Each teleconference location shall be accessible to the public.

AB 361 amended Government Code Section 54953 and authorizes a City to allow for modified teleconferencing rules, subject to the existence of certain requirements which are listed below in this Staff Report.

Government Code section 54953(e)(1) lists the circumstances under which a local agency may use such modified teleconferencing procedures, as follows:

(1) A local agency may use teleconferencing without complying with the requirements of paragraph (3) of subdivision (b) if the legislative body complies with the requirements of paragraph (2) of this subdivision in any of the following circumstances:

(A) The legislative body holds a meeting during a proclaimed state of emergency, and state or local officials have imposed or recommended measures to promote social distancing.

(B) The legislative body holds a meeting during a proclaimed state of emergency for the purpose of determining, by majority vote, whether as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.

(C) The legislative body holds a meeting during a proclaimed state of emergency and has determined, by majority vote, pursuant to subparagraph (B) that, as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.

March 4, 2020, Governor Newsom declared a State of Emergency as a result of the COVID-19 pandemic.

The State of Emergency remains in effect and COVID-19 continues to threaten the health and lives of the public and the Delta variant is highly transmissible in indoor settings. In addition, breakthrough cases are becoming more common.

On September 22, 2021, the County of Monterey Health Department issued a Recommendation Regarding Social Distancing Including Remote Meetings of Legislative Bodies which provides:

"The Monterey County Health Department continues to recommend that physical and social distancing strategies be practiced in Monterey County, which includes remote meetings of legislative bodies of local agencies, to the extent possible.

Monterey County continues to experience transmission of COVID-19 locally. Physical and social distancing is still an effective measure to reduce the spread of COVID-19, especially when combined with use of face coverings, frequent hand washing, staying home when ill, testing, and vaccination with U.S. Food and Drug Administration approved or authorized COVID-19 vaccines.

Remote meetings of legislative bodies allow for the virtual participation of agency staff, presenters, and community members in safer environments, with less risk of exposure to SARS-CoV-2, the virus that causes COVID-19.

The Monterey County Health Officer will continue to monitor local metrics and the necessity of this recommendation."

Thus, meetings of the City Council and its legislative bodies may be held pursuant to the terms of Government Code Section 54953(e)(1)(A) so long as a proclaimed state of emergency continues and state or local officials continue to impose or recommend measures to promote social distancing.

If, for some reason, state or local officials discontinue imposing or recommending measures to promote social distancing, the proposed Resolution would also authorize teleconferencing under the rules of 54953(e) so long as a proclaimed state of emergency continues.

On October 4, 2021, the City Council adopted the initial Resolution No. 2021-057 authorized by AB 361 to allow for meetings of the City Council to be held telephonically.

Government Code Section 54953 (e) (3) provides that every 30 days after teleconferencing for the first time, and every 30 days thereafter, to continue teleconferencing the City Council must state that it has reconsidered the circumstances of the state of emergency and that either of the following circumstances exist: (1) The state of emergency continues to directly impact the ability of the members to meet safely in person or (2) State or local officials continue to impose or recommend measures to promote social distancing. Currently, both of these

circumstances continue to exist and, for that reason, the recommended action is for the City Council to adopt the attached Resolution of the City Council of the City of Carmel-by-the-Sea Proclaiming the Continuing Need To Meet By Teleconference Pursuant To Government Code Section 54953 (e), Attachment 2 to this Staff Report.

This Resolution will authorize the City Council, and other legislative bodies of the City, to hold teleconference meetings within the requirements of AB 361, but does not prohibit the City from holding in person meetings in the future.

If the Resolution is adopted, then the City and its legislative bodies which hold teleconference meetings must follow the procedures set forth by AB 361, which include the following:

1. Notice of the meeting must still be given in compliance with the Brown Act, and the notice must include the means by which the public may access the meeting and provide public comment.

2. The public must be provided access to the meeting via a call-in option or internet-based service option and allowed to "address the legislative body directly." The agency does not have to provide an in-person option for the public to attend the meeting.

3. The meeting must be conducted "in a manner that protects the statutory and constitutional rights of the parties and the public appearing before the legislative body."

4. If there is a disruption to the meeting broadcast or in the ability to take call-in or internet-based public comment, no further action can be taken on agenda items until the issue is resolved.

5. The body cannot require comments to be submitted before the start of the meeting. The public must be allowed to make "real time" public comment.

6. Reasonable time for public comment must be provided. If the agency provides a timed public comment period, the public comment period must be left open until the time expires.

7. All votes must be taken by roll call.

8. The legislative body must approve a resolution making findings every 30 days to continue to conduct teleconference meetings under AB 361. The body must find it has reconsidered the circumstances of the state of emergency and either 1) the emergency continues to impact the ability to meet safely in person, or 2) State or local officials continue to impose or recommend social distancing.

If the state of emergency ends or if the City Council decides to rescind the Resolution, then meetings of the City Council and other legislative bodies of the City must comply with the pre-COVID teleconferencing rules of 54953(b) described earlier in this Staff Report.

Without this Resolution, as noted, if a Council Member or a member of a City Board or Commission does not attend a meeting in person, then the agenda would need to be posted at the location of that person and the public would have access to that location. This Resolution (so long as Government Code Section 54953 allows) would provide flexibility to the Council, Board Members and Commissioners when meetings are held in person to attend remotely if they do not attend in person without the necessity of posting an agenda at their location and there would be no limit on the number (quorum must be physically present without this Resolution) of Council Members, Board Members and Commissioners who attend remotely. There are some public agencies in California which have adopted a Resolution authorized by AB 361 and use a "hybrid" method for attendance at meetings in which some members attend in person and other members attend remotely and the staff and public also can attend in person or remotely.

## FISCAL IMPACT:

No direct fiscal impact for this action.

## PRIOR CITY COUNCIL ACTION:

Adoption of Initial Resolution No.2021-057 on October 4, 2021 and continuing Resolutions at subsequent meetings of the City Council.

## ATTACHMENTS:

Attachment 1) Resolution 2022-093

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**RESOLUTION NO. 2022-093**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARMEL- BY-THE-SEA PROCLAIMING THE CONTINUING NEED TO MEET BY TELECONFERENCE PURSUANT TO GOVERNMENT CODE SECTION 54953 (e)**

WHEREAS, all meetings of the City of Carmel-by-the-Sea legislative bodies are open and public as required by the Ralph M. Brown Act (Cal. Gov. Code 54950 – 54963); and

WHEREAS, the Brown Act, Government Code section 54953(e), makes provisions for remote teleconferencing participation in meetings by members of a legislative body, without compliance with the requirements of Government Code section 54953(b)(3), subject to the existence of certain conditions; and

WHEREAS, on March 4, 2020, Governor Newsom declared a State of Emergency as a result of the COVID-19 pandemic; and

WHEREAS, such State of Emergency remains in effect; and

WHEREAS, COVID-19 continues to threaten the health and lives of City of Carmel-by-the-Sea residents; and

WHEREAS, the Delta variant is highly transmissible in indoor settings; and

WHEREAS, breakthrough cases are becoming more common; and

WHEREAS, on October 4, 2021, the City Council adopted Resolution No. 2021-57 Proclaiming The Continuing Need To Meet By Teleconference Pursuant To Government Code Section 54953 (e).

**NOW, THEREFORE, BE IT HEREBY RESOLVED by the City Council of the City of Carmel-by-the-Sea that:**

Section 1. Imminent Risk to Health and Safety. Due to COVID-19, holding City Council and other legislative body meetings in person will present imminent risk to the health and safety to attendees.

Section 2. Findings. The City Council has reconsidered the circumstances of the state of emergency and finds that: (1) The state of emergency continues to directly impact the ability of the members to meet safely in person and (2) The County of Monterey continues to recommend measures to promote social distancing.

Section 2. Compliance With Government Code Section 54953. The City Council and other legislative bodies will continue to meet by teleconference in accordance with Government Code section 54953(e).

Section 3. Effective Date of Resolution. This Resolution shall take effect immediatelyupon its adoption and shall be effective until the earlier of (i) 30 days from the date of adoption of this Resolution, or (ii) such time the City Council adopts a subsequent resolution rescinding this Resolution.

Section 4. Future Resolutions. The City Council expressly reserves the right to adopt Resolutions more than 30 days after this date of adoption of this Resolution to authorize the City Council and other legislative bodies to continue to meet by teleconference in accordance with Government Code section 54953(e) provided that a State of Emergency exists as of the date of adoption of such Resolutions.

**PASSED AND ADOPTED by the City Council of the City of Carmel-by-the-Sea this 1st day of November, 2022, by the following vote:**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED:

Dave Potter
Mayor

ATTEST:

Nova Romero, MMC
City Clerk

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**CONSENT AGENDA**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Agnes Martelet, Manager, Environmental Compliance |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Resolution 2022-094 Authorizing the City Administrator to execute a Professional Services Agreement with EMC Planning Group Inc., for a not-to-exceed fee of $175,000, to conduct the Coastal Engineering and Adaptation Planning Project |

## RECOMMENDATION:

Adopt Resolution 2022-094 authorizing the City Administrator to execute a Professional Services Agreement with EMC Planning Group Inc., for a not-to-exceed fee of $175,000, to conduct the Coastal Engineering and Adaptation Planning Project.

## BACKGROUND/SUMMARY:

**Project Origins**

As shown in the Fiscal Year (FY) 2022/23 and 2021/22 Adopted Budgets, there are two funded Capital Improvement Program (CIP) projects involved with this Agenda report as follows:

*"Sea Level Rise/Coastal Engineering Report: This report has been identified by the Climate Committee as a critical document for sea level rise resilience planning. This report will ensure the City has the information and tools necessary to make decisions related to the long-term durability and maintenance needs of our coastal resources and infrastructure. For efficiency, this project would be combined with the Beach Sand Survey and Wall Inspections project, a FY 2021/22 carry-over project. A consultant would be needed with an estimated fee of $150,000. Staff is researching whether grant opportunities can be leveraged to fund this project. A request for Statements of Qualifications has been posted to hire a consultant to execute this, and many other projects. The Environmental Compliance Manager will manage this project."*

*"Beach Sand Survey and Wall Inspections: This project involves collecting and reviewing existing data and aerial imagery to determine rates of beach sand loss. Next, the project establishes a series of beach profile transects to facilitate long-term beach sand monitoring. In addition, this project funds the initial, non-destructive inspection by a coastal engineer of the shoreline armoring structures during low sand levels to determine priorities and phasing for anticipated repairs."*

At their August 2, 2022 meeting, the City Council adopted the City of Carmel-by-the-Sea's Climate Adaptation Plan and Climate Action Plan under Resolution 2022-064. Council commented that

implementation of these Plans is imperative and requested the Climate Committee to continue to oversee the implementation of certain projects, including the Coastal Engineering Study and the Beach Sand Survey.

The adopted Climate Adaptation Plan includes Action 3.1.9, which states, *"Sea Level Rise Coastal Vulnerability Study. Hire coastal engineer with experience in planning for climate change to: (1) Conduct research and prepare a Sea-Level Rise Vulnerability Study to further assess the risks to the city's coastal assets, including the beach, sea walls, revetments, bluffs, stairs and access, public bathrooms, parking areas, drainage infrastructure, and utilities. (2) Determine adaptation measures and Local Coastal Program policy options, including but not limited to: a) Mostly natural, unarmored North Dunes area; b) mostly armored bluffs along Scenic Roach south of 8th Avenue; c) Unarmored dunes along private property between 8th Avenue and Del Mar Parking Lot; d) Armored private properties on the bluffs at the north end of the City (Pescadero Canyon area). (3) Evaluate the use of thresholds for phasing adaptation projects based on changing coastal conditions. Consider applying an adaptive pathways approach which establishes trigger thresholds for different adaptive measures based on the severity of the impact from flooding and erosion associated with sea-level rise."*

**Consultant Selection Process**

In April 2022, requests for Statements of Qualifications (SOQs) were advertised, from San Jose to Sacramento to San Luis Obispo, seeking qualifications from consultants covering 14 professional service areas, including Coastal Engineering/Geotechnical Engineering and Environmental Services, both with anticipated services related to Climate Adaptation and Action Plan implementation projects.

In May 2022, one SOQ was received for Coastal Engineering/Geotechnical Engineering services and independently evaluated by a Selection Committee consisting of the City Administrator and Public Works Director. The SOQ was submitted by Haro Kasunich & Associates (HKA) who have extensive local knowledge of Carmel Beach and the surrounding shoreline and are extremely well qualified to participate in this Project.

Initial communications with HKA revealed that while they are very interested in the Project and most capable of performing the required engineering and infrastructure cost estimating services, environmental and climate adaptation experts will also be required to provide the full scope of the Project as outlined in the Climate Adaptation Plan.

Next, nine SOQs received for Environmental Services were independently evaluated by a Selection Committee consisting of the Public Works Director and Environmental Programs Manager. EMC Planning Group was determined to be best qualified to provide climate adaptation project management and technical reviews for this Project. EMC included a key subconsultant, Integral Consulting, on their team to provide hazard modeling, shoreline change analysis, and technical policy review.

City staff held a series of meetings with representatives of all three firms to review the scope of the City's projects and requested that these firms consolidate into one team so that the City could enter into one Professional Services Agreement (Agreement).

As a result, EMC has been recommended as the lead firm to contract with the City for this project and for consistency over the long term for possible subsequent projects. HKA and Integral will perform a majority of the technical work for the project, while EMC will provide policy guidance and project management. This team has worked together in the past on similar projects, including: the 2019 West Cliff Drive Adaptation and Management Plan for the City of Santa Cruz, and the 2019 City of Marina's Existing Conditions and

Sea Level Rise Reports.

**Project Scope of Work**

To develop the project's scope of work, the Consultant team performed a cursory review of the 2001 Coastal Development Permit for Scenic Road Armoring Repairs, 2003 Shoreline Management Plan (Shonman and D'Ambrosio), the 2016 Carmel Shoreline Assessment Update, 2016 Assessments of Shoreline Improvements at Carmel Beach (Easton Geology), and the City's 2022 Climate Adaptation and Climate Action Plans.

The work is proposed to be completed in two phases. Phase I of the project is funded in the current CIP and included in the Agreement in Attachment 2, while Phase 2 is not yet funded. Staff has identified a non-competitive California Coastal Commission grant of $100,000 for which this project is eligible. Staff would work with the consultant team to develop and submit the grant application. Council would approve the receipt of grant funds, and authorize an Amendment to this Agreement, before any work would begin on Phase 2. Key tasks and associated deliverables for both phases are outlined below:

**PHASE 1 – COASTAL ENGINEERING AND HAZARD ASSESSMENT (Funded)**

- Task 1 – Coastal Engineering Condition Evaluation
  - Deliverables: Technical memo of results with maps and GIS shapefiles, one Climate Committee presentation.

- Task 2 -Shoreline and Beach Change Analysis – Seasonal and Long Term
  - Technical memo of results with maps and relevant GIS shapefiles, one Climate Committee presentation.

- Task 3 – Shoreline and Beach Erosion Exposure Modeling
  - Technical memo of methods and maps showing results of the projected existing and future coastal hazard extents, one Climate Committee presentation.

- Task 4 – Coastal Hazard and Sea Level Rise Vulnerability, High Priority Adaptation, Identification, and Action Plan
  - Executive summary of results, up to five sector profile summaries (land use, transportation, utilities, etc.), tables summarizing feasibility, recommendations for policy and project approaches, and identify high priority adaptations, one Climate Committee presentation.

**PHASE 2 – HAZARDS POLICY REVIEW AND REVISIONS, OUTREACH, AND ADAPTATION PATHWAY DEVELOPMENT (Subject to Grant funding)**

- Task 1 – Policy Review and Revised Hazard Policies
  - Memo summarizing the City's existing coastal hazard policies, technical work and adaptation feasibility completed in Phase I, policy recommendations for climate adaptation, triggers and thresholds recommendations for policy implementation, and recommendations for Local Coastal Program (LCP) updates, and one Climate Committee presentation.

- Task 2 - Public Outreach and Engagement
  - Technical content and PowerPoint slides for input into presentations by City Staff.

- Task 3 - Adaptation Pathway Development

- Technical memo on monitoring needs and adaptation pathway graphics for each section, one Climate Committee presentation.

At their September 15, 2022 meeting, the Climate Committee reviewed the consultant's proposed project scope of work and recommended its approval by the City Council. During the meeting, the Climate Committee members discussed the importance of public engagement. In order to conserve budget, staff is proposing to take the lead on public engagement, including presenting results of specific tasks to the Forest and Beach Commission, Planning Commission, and City Council, as appropriate.

**Schedule**

Phase 1 is anticipated to take up to 16 months to complete upon approval of the Professional Services Agreement and issuance of the Notice to Proceed. Phase 2 is also anticipated to take up to 16 months to complete, but is anticipated to be performed somewhat concurrently with Phase 1, subject to approval and timing of the LCP Grant.

## FISCAL IMPACT:

Consultant fees for the project are $175,000 for services to be performed in Phase 1 and $100,000 for Phase 2. Funding for Phase 1 in the amount of $175,000 is available in the FY 2022/23 CIP Budget from a combination of $150,000 for the Coastal Engineering Study plus $25,000 for the Beach Sand Survey Project which was carried-over from FY 2021/22. Thus, the total budget amount authorized for this Agreement is $175,000 and will be charged to the CIP account no. 301-311-00-43008.

Funding for Phase 2 is anticipated to come from a non-competitive California Coastal Commission LCP Grant in the amount of $100,000. Work will not be authorized to begin on Phase 2 until the grant is accepted by the City Council.

## PRIOR CITY COUNCIL ACTION:

In June 2022, City Council approved the Fiscal Year 2022-23 CIP budget, which included a Sea Level Rise/Coastal Engineering Report and a Beach Sand Survey and Wall Inspections. At their August 2, 2022 meeting, City Council adopted the City's Climate Adaptation Plan and Climate Action Plan under Resolution 2022-064. The Coastal Engineering Report is identified as a high-priority project in the Climate Adaptation Plan.

## ATTACHMENTS:

Attachment 1) Resolution 2022-094

Attachment 2) Professional Services Agreement with EMC Planning Group for the Coastal Engineering and Adaptation Planning Project

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**RESOLUTION NO. 2022-094**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA AUTHORIZING THE CITY ADMINISTRATOR TO EXECUTE A PROFESSIONAL SERVICES AGREEMENT WITH EMC PLANNING GROUP INC., FOR A NOT-TO-EXCEED FEE OF $175,000, TO CONDUCT THE COASTAL ENGINEERING AND ADAPTATION PLANNING PROJECT**

WHEREAS, in June 2022, the City Council approved the Fiscal Year 2022-2023 Capital Improvement Plan budget, including a Sea Level Rise/Coastal Engineering Report project and a Beach Sand Survey and Wall Inspection project, with a combined budget of $175,000; and,

WHEREAS, in August 2022, the City Council adopted the City's Climate Adaptation Plan, which identifies the development of a Sea Level Rise Coastal Vulnerability Study as a high-priority project; and,

WHEREAS, through a rigorous evaluation process, staff identified EMC Planning Group, with Haro Kasunich and Associates and Integral Consulting as subconsultants, as the most qualified team to conduct this Coastal Engineering and Adaptation Planning project; and,

WHEREAS, the consultant team developed a phased scope of work to complete the Coastal Engineering and Adaptation Planning project, with Phase 1 including a Coastal Engineering and Hazard Assessment, and Phase 2 including Hazards Policy Reviews, Outreach and Adaptation Pathway Development; and,

WHEREAS, in September 2022, the Climate Committee reviewed the proposed scope of work and schedule and recommended its approval by the City Council; and,

WHEREAS, Phase I of the project is funded in the current Capital Improvement Plan, while Phase 2 is eligible to be funded by a non-competitive California Coastal Commission grant.

**NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA DOES HEREBY:**

Authorize the City Administrator to execute a Professional Services Agreement with EMC Planning Group Inc., for a not-to-exceed fee of $175,000, to conduct the Coastal Engineering and Adaptation Planning Project.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA this 1st day of November, 2022, by the following vote:**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED:

Dave Potter
Mayor

ATTEST:

Nova Romero, MMC
City Clerk

**PROFESSIONAL SERVICES AGREEMENT**
**for the**
**Coastal Engineering and Adaptation Planning Project**
**Agreement #**

**THIS AGREEMENT** is executed this ____ day of November, 2022, by and between the City of Carmel-By-The-Sea, a municipal corporation, (hereinafter "City"), and EMC Planning Group Inc., (hereinafter "Consultant"), collectively referred to herein as the "parties".

**WHEREAS**, the City wishes to engage Consultant to perform the services required by this Agreement; and

**WHEREAS**, Consultant is willing to render such professional services, as hereinafter defined, on the following terms and conditions; and

**WHEREAS**, Consultant represents that it is trained, experienced and competent and holds all necessary licenses and certifications to perform the services required by this Agreement.

**NOW, THEREFORE,** in consideration of the terms and conditions herein contained, the parties hereby covenant and agree as follows:

**1. SERVICES**

A. **Scope of Services**. Consultant agrees to provide to the City, as the scope of services ("Scope of Services") under this Agreement, the following: coastal engineering and hazard assessment for sea level rise and climate adaptation planning. The Scope of Services for this Agreement is the first phase of a multi-phase adaptation planning project. The Scope of Services is attached hereto as Exhibit "A." The Scope of Services under this Agreement should include, but is not limited to, a project description, project phases, task descriptions, identification of key personnel, identification of subconsultants, their key personnel and general description of services that will be performed, as further set forth in this Agreement and attachments hereto. Consultant agrees to all of the following:

i. Consultant will furnish all of the labor, technical, administrative, professional and other personnel, all supplies and materials, equipment, printing, vehicles, transportation, office space and facilities, and all tests, testing and analyses, calculations, and all other means whatsoever, except as otherwise expressly specified in this Agreement, necessary to perform the services required of Consultant under this Agreement.

ii. Consultant's designated representative(s) who are authorized to act on its behalf and to make all decisions in connection with the performance of services under this Agreement are listed in Exhibit "B," Key Personnel and Subconsultants, which is made a part of this Agreement.

iii. Consultant must make every reasonable effort to maintain the stability and continuity of Consultant's key personnel and subcontractors, if any, listed in Exhibit B to perform the services required under this Agreement. Consultant must notify City and obtain City's

written approval with respect of any changes in key personnel prior to the performance of any services by replacement personnel.

iv. Consultant must obtain City's prior written approval before utilizing any subconsultants to perform any services under this Agreement. This written approval must include the identity of the subconsultant and the terms of compensation.

v. Consultant represents that it has the qualifications, experience and facilities necessary to properly perform the services required under this Agreement in a thorough, competent and professional manner. Consultant will at all times faithfully, competently and to the best of its ability, experience and talent, perform all services described in this Agreement. In meeting its obligations under this Agreement, Consultant must employ, at a minimum, generally accepted standards and practices utilized by persons engaged in providing services similar to those required of Consultant under this Agreement.

vi. City may inspect and accept or reject any of Consultant's work under this Agreement, either during performance or when completed. Acceptance of any of Consultant's work by City will not constitute a waiver of any of the provisions of this Agreement.

vii. The Consultant must maintain any work site in the City in a safe condition, free of hazards to persons and property resulting from its operations.

B. **Change Orders**.

i. Agreements and Change Orders exceeding $24,999 require City Council approval to be valid.

ii. The City may order changes to the Scope of Services, consisting of additions, deletions, or other revisions, and the compensation to be paid Consultant will be adjusted accordingly. All such changes must be authorized in writing, and executed by Consultant and City. The cost or credit to City resulting from changes in the services will be determined by the written agreement between the parties. However, any increase in compensation beyond the compensation limit amount approved by the City Council must be authorized in advance by the City Council and any service provided by Consultant in the absence of such approval are at Consultant's sole risk.

iii. Consultant will not be compensated for any services rendered in connection with its performance of this Agreement that are in addition to or outside of those set forth in the Scope of Services or otherwise required by this Agreement, unless such additional services are authorized in advance and in writing by City.

iv. If Consultant believes that additional services are needed to complete the Scope of Services, Consultant will provide the City Representative with written notification describing the proposed additional services, the reasons for such services, and a detailed proposal regarding cost.

C. **Familiarity with Services and Site.**

i. By executing this Agreement, Consultant represents that Consultant:

a. has thoroughly investigated and considered the Scope of Services to be performed;
b. has carefully considered how the services should be performed;
c. understands the facilities, difficulties, and restrictions attending performance of the services under this Agreement; and
d. possesses all licenses required under local, state or federal law to perform the services contemplated by this Agreement, and will maintain all required licenses during the performance of this Agreement.

ii. If services involve work upon any site, Consultant has or will investigate the site and is or will be fully acquainted with the conditions there existing, before commencing its services. Should Consultant discover any latent or unknown conditions that may materially affect the performance of services, Consultant will immediately inform District of such fact and will not proceed except at Consultant's own risk until written instructions are received from City.

**2. COMPENSATION**

A. **Total Fee**. Subject to any limitations set forth in this Agreement, the City agrees to pay and Consultant agrees to accept as full and fair consideration for the performance of this Agreement, hourly fees as set forth in Consultant's Compensation & Fee Schedule (Exhibit "C"), in a total amount not-to-exceed One Hundred Seventy-Five Thousand Dollars ($175,000.00). Such compensation is the "Maximum Authorized Expenditure" under this Agreement. The Fee Schedule includes, but is not limited to, fees for each phase and task, not-to-exceed total fee, hourly rates, reimbursable rates and subconsultant mark-up rates. The use of subconsultants will not be considered a reimbursable expense, and such costs must be applied towards the approved budgeted amount. Payment of any compensation to Consultant is contingent upon performance of the terms and conditions of this Agreement to the satisfaction of the City. If the City determines that the Services set forth in the written invoice have not performed in accordance with the terms of this Agreement, the City is not responsible for payment until the Services have been satisfactorily performed.

B. **Invoicing**. Consultant must submit to the City monthly written invoices to the City's Project Representative, identified in Section 5 below. Invoices must be prepared in a form satisfactory to the City, describing the services rendered and associated costs for the period covered by the invoice. The City will provide invoicing format upon request. Consultant may not bill the City for duplicate services performed by more than one person. Consultant's invoices must include, but are not limited to, the following information:

i. Project Title, the City's Purchase Order number and City's Project Code(s) for each project;

ii. Invoice number and date;

iii. A brief description of services performed for each project phase and/or task;

iv. The budgeted amount for each phase, task and item, including the total amount, with the same for approved Change Orders, if any;

v. Amount invoiced to date divided by the agreed total compensation, expressed as a percentage, with the same for approved Change Orders, if any;

vi. The amount earned and invoiced to date for each phase, task and/or item, including the total amount, with the same for approved Change Orders, if any;

vii. The amount previously invoiced for each phase, task and/or item, including the total amount, with the same for approved Change Orders, if any;

viii. The amount due for the period covered by this invoice for each phase, task, and/or item, including the total amount, with the same for approved Change Orders, if any;

ix. For time and materials authorizations, the number of hours spent, by whom and their hourly rate for each phase, task and/or item, including the total amount;

x. The costs incurred, including reimbursables, for each phase, task, and/or item for the agreed total compensation and approved Change Orders, if any, along with a brief description of those costs;

xi. The total amount due for the period covered by this invoice, including subconsultants and vendors of services or goods;

xii. Copies of subconsultant, vendor, and reimbursable invoices including hourly breakdowns when requested by City.

xiii. Copies of subconsultant and vendor lien releases.

Any such invoices must be in full accord with any and all applicable provisions of this Agreement. Consultant must submit invoices to the City on or before the sixteenth ($16^{th}$) day of each month for services performed in the preceding month.

The City will review each invoice submitted by Consultant to determine whether the work performed and expenses incurred are in compliance with this Agreement. In the event that no charges or expenses are disputed, the invoice will be approved and paid.

Except as to any charges for work performed or expenses incurred by Consultant that are disputed by City, the City will pay on each such invoice within thirty (30) days of receipt; provided, however, that if Consultant submits an invoice which is incorrect, incomplete, or not in accord with the provisions of this Agreement, or if any charges or expenses are disputed by City, the invoice will be returned by City to Consultant for correction and resubmission, and the City will not be obligated to process any payment to Consultant until thirty (30) days after a correct and complying invoice has been submitted by Consultant. Payment to Consultant for services performed under this Agreement may not be deemed to waive any defects in the services performed by Consultant, even if such defects were known to City at the time of

payment. City reserves the right to withhold future payment to Consultant if any aspect of the Consultant's work is found to be non-conforming to the terms of this Agreement.

The City is not obligated to pay Consultant a greater percentage of the Maximum Authorized Expenditure than the actual percentage of services completed as of the invoice date.

Consultant agrees to remit and is responsible for all withholding taxes, income taxes, unemployment insurance deductions, and any other deductions required by applicable federal, state or local laws and regulations for Consultant, its employees, subconsultants and vendors of services or goods.

C. **Adjustment of Maximum Authorized Expenditure**. The City may increase or decrease the Maximum Authorized Expenditure by issuing a Change Order to the Agreement in accordance with Section 1.B "Change Orders" above. Should Consultant consider that any request or instruction from the City's Project Representative constitutes a change in the scope of services, Consultant will advise the City's Project Representative, in writing, within fourteen (14) calendar days of such request or instruction. Without said written advice within the time period specified, the City is not obligated to make any payment of additional compensation to Consultant.

D. **Hourly Rates**. Payment for all authorized services, including payment for authorized on-call, as-needed services, will be made by the City to Consultant in accordance with the various hourly rates as set forth in the Consultant's Compensation & Fee Schedule (Exhibit "C").

E. **Subconsultants and Vendors**. Invoices for subconsultants and vendors of services or goods will be paid by the City to Consultant in accordance with the various rates as set forth in the Consultant's Compensation & Fee Schedule (Exhibit "C"). All reimbursable expenses will be considered as included within the Maximum Authorized Expenditure. Consultant is solely responsible for payment to subconsultants and vendors of services or goods, and the City is not responsible or liable for any payments to subconsultants and vendors, either directly or indirectly.

F. **Audit and Examination of Accounts**:

i. Consultant must keep and will cause any assignee or subconsultant under this Agreement to keep accurate books of records and accounts, in accordance with sound accounting principles, which pertain to services to be performed under this Agreement.

ii. Any audit conducted of books of records and accounts must be kept in accordance with generally accepted professional standards and guidelines for auditing.

iii. Consultant must disclose and make available any and all information, reports, books of records or accounts pertaining to this Agreement to the City and any city of the County of Monterey, or other federal, state, regional or governmental agency which provides funding for these Services.

iv. Consultant must include the requirements of Section 2F, "Audit and Examination of Accounts", in all contracts with assignees or subconsultants under this Agreement.

v. All records provided for in this Section are to be maintained and made available throughout the performance of this Agreement and for a period of not less than four (4) years after full completion of the Services. All records, which pertain to actual disputes, litigation, appeals or claims, must be maintained and made available for a period of not less than four (4) years after final resolution of such disputes, litigation, appeals or claims.

**3. AGREEMENT TERM**

A. **Term**. The work under this Agreement will commence by November 2, 2022 and must be completed by June 30, 2024 unless sooner terminated or the City grants an extension of time in writing pursuant to the terms of this Agreement, except for provisions in this Agreement that will survive the termination or completion of this Agreement. Consultant will perform Change Order services as set out in Section 1.B, "Amendment of Services (Change Orders)", in a timely manner or in accordance with the agreed upon Change Order Project Schedule.

B. **Timely Work**. Consultant will perform all Services in a timely fashion, as set forth more specifically in Section 3.A, "Term", and Section 3.C, "Project Schedule", of this Agreement. Failure to perform is deemed a material breach of this Agreement, and the City may terminate this Agreement with no further liability hereunder, or may authorize, in writing, an extension of time to the Agreement.

C. **Project Schedule**. Services must be completed by Consultant in accordance with the Project Schedule set forth in Exhibit "D". The parties may, from time to time, by Change Order, alter the Project Schedule. Consultant will provide the Services pursuant to the Project Schedule or any applicable Project Schedule Change Order. If at any time Consultant discovers that the Project Schedule cannot be met, Consultant must promptly notify the City in writing and provide a revised Project Schedule for review and consideration by City.

D. **Notice to Proceed**. Upon execution of this Agreement by both parties and the receipt of all documentation required by this Agreement to be provided by Consultant to the City, including proof of insurance and tax identification numbers, the City will issue a written Notice to Proceed to the Consultant. The City may, in its sole discretion, issue subsequent notices from time to time regarding further portions or phases of the work. Upon receipt of such notices, Consultant will diligently proceed with the Services authorized and complete those Services within the agreed time specified in said notice. Consultant will not proceed with any of the Services unless they have received a Notice to Proceed from the City.

**4. CONSULTANT'S EMPLOYEES AND SUBCONSULTANTS**

A. **Listed Employees and Subconsultants.** Consultant will perform the Services using the individuals listed in the Key Employees and Subconsultants List attached hereto in Exhibit "B".

B. **Substitution of Employees or Subconsultants:**

i. Consultant may not substitute any key employee or subconsultant listed in Exhibit "B" without the prior written approval of the City, and such approval will not be unreasonably withheld. The City will not approve removal or substitution of employees or subconsultants for the reason that Consultant or its affiliates has called on such individuals to perform services for another client of the Consultant.

ii. If, at any time, the City reasonably objects to the performance, experience, qualifications or suitability of any of Consultant's employees or subconsultants, then Consultant may, upon written request from the City, replace such employee or subconsultant. Consultant must, subject to scheduling and staffing considerations, make reasonable efforts to replace the individual with an individual of similar competency and experience.

iii. Whether or not the City consents to, or requests a substitution of any employee or subconsultant of Consultant, the City will not be liable to pay additional compensation to Consultant for any replacement or substitution.

C. **Sub-agreements with Subconsultants.** Consultant will incorporate the terms and conditions of this Agreement into all sub-agreements with subconsultants in respect of the Services necessary to preserve all rights of the City under this Agreement. Consultant is fully responsible to the City of all acts and omissions of subconsultants and of persons employed by any subconsultant.

D. **Not an Agent of the City.** Nothing in this Agreement will be interpreted to render the City the agent, employer, or partner of Consultant, or the employer of anyone working for or subcontracted by Consultant, and Consultant must not do anything that would result in anyone working for or subcontracted by Consultant being considered an employee of the City. Consultant is not, and must not claim to be, an agent of the City.

E. **Independent Contractor**:

i. Consultant is an independent contractor. This Agreement does not create the relationship of employer and employee, a partnership, or a joint venture. The City may not control or direct the details, means, methods or processes by which Consultant performs the Services. Consultant is responsible for performance of the Services and may not delegate or assign any Services to any other person except as provided for in this Agreement. Consultant is solely liable for the work quality and conditions of any partners, employees and subconsultants.

ii. No offer or obligation of permanent employment with the City or particular City department or agency is intended in any manner, and Consultant may not become entitled by virtue of this Agreement to receive from the City any form of employee benefits including but not limited to sick leave, vacation, retirement benefits, workers' compensation coverage, insurance or disability benefits. Consultant will be solely liable for and obligated to pay directly all applicable taxes, including federal and state income taxes and social security, arising out of Consultant's performance of Services under this Agreement. Consultant will defend, indemnify and hold the City harmless from any and all liability, which the City may incur because of Consultant's failure to pay such taxes.

**5. REPRESENTATIVES AND COMMUNICATIONS**

A. **City's Project Representative.** The City appoints the individual named below as the City's Project Representative for the purposes of this Agreement ("City's Project Representative"). The City may unilaterally change its project representative upon notice to Consultant.

Name: Agnes Martelet
Title: Environmental Compliance Manager
Address: PO Box CC, Carmel-by-the-Sea, CA 93921
Telephone: (831) 620-2078
Email: amartelet@ci.carmel.ca.us

B. **Consultant's Project Manager.** Consultant appoints the person named below as its Project Manager for the purposes of this Agreement ("Consultant's Project Manager").

Name: Polaris Kinison Brown
Title: Principal Planner
Company: EMC Planning Group Inc.
Address: 601 Abrego Street, Monterey, CA 93940
Telephone: (831) 649-1799
Email: kinisonbrown@emcplanning.com

C. **Meet and Confer**. Consultant agrees to meet and confer with the City's Project Representative, its agents or employees with regard to Services as may be required by the City to insure timely and adequate performance of this Agreement.

D. **Communications and Notices**. All communications between the City and Consultant regarding this Agreement, including performance of Services, will be between the City's Project Representative and Consultant's Project Manager. Any notice, report, or other document that either party may be required or may wish to give to the other must be in writing and will be validly given to and received by the addressee, if delivered personally, on the date of such personal delivery, if delivered by email, on the date of transmission, or if by mail, seven (7) calendar days after posting.

6. **INDEMNIFICATION**

Consultant hereby agrees to the following indemnification clause:

To the fullest extent permitted by law (including, without limitation, California Civil Code Sections 2782 and 2782.6), Consultant will defend (with legal counsel reasonably acceptable to the City), indemnify and hold harmless the City and its officers, designated agents, departments, officials, representatives and employees (collectively "Indemnitees") from and against claims, loss, cost,

damage, injury expense and liability (including incidental and consequential damages, Court costs, reasonable attorneys' fees as may be determined by the Court, litigation expenses and fees of expert consultants or expert witnesses incurred in connection therewith and costs of investigation) to the extent they arise out of, pertain to, or relate to, the negligence, recklessness, or willful misconduct of Consultant, any subconsultant or subcontractor, anyone directly or indirectly employed by them, or anyone that they control (collectively "Liabilities"). Such obligations to defend, hold harmless and indemnify any Indemnitee will not apply to the extent that such Liabilities are caused in part by the active negligence or willful misconduct of such Indemnitee.

Notwithstanding the provisions of the above paragraph, Consultant agrees to indemnify and hold harmless the City from and against all claims, demands, defense costs, liability, expense, or damages arising out of or in connection with damage to or loss of any property belonging to Consultant or Consultant's employees, subconsultants, representatives, patrons, guests or invitees.

In no event will the obligation of the Consultant exceed the limitations on the duty to defend and indemnify as set forth in Civil Code Sections 2782, 2782.6, and 2782.8.

7. **INSURANCE**

Consultant must submit and maintain in full force all insurance as described herein. Without altering or limiting Consultant's duty to indemnify, Consultant must maintain in effect throughout the term of this Agreement a policy or policies of insurance with the following minimum limits of liability:

A. Commercial General Liability Insurance including but not limited to premises, personal injuries, bodily injuries, property damage, products, and completed operations, with a combined single limit of not less than $1,000,000 per occurrence and $2,000,000 in the aggregate.

B. Professional Liability Insurance with limits of not less than $1,000,000 per occurrence or claim and $2,000,000 in the aggregate. Consultant will have a policy for professional liability coverage that provides coverage on an occurrence basis or obtain extended reporting (tail) coverage (with the same liability limits) for at least three years following the City's acceptance of the work.

C. Automobile Liability Insurance covering all automobiles, including owned, leased, non-owned, and hired automobiles, used in providing Services under this Agreement, with a combined single limit of not less than $1,000,000 per occurrence.

D. Workers' Compensation Insurance. If Consultant employs others in the performance of this Agreement, Consultant must maintain Workers' Compensation insurance in accordance with California Labor Code section 3700 and with a minimum of $1,000,000 per occurrence.

E. Other Insurance Requirements:

i. All insurance required under this Agreement must be written by an insurance company either:

a. admitted to do business in California with a current A.M. Best rating of no less than A:VI; or

b. an insurance company with a current A.M. Best rating of no less than A:VII. Exception may be made for the State Compensation Insurance Fund when not specifically rated.

ii. Each insurance policy required by this Agreement may not be canceled, except with prior written notice to the City.

iii. All liability and auto policies must:

a. Provide an endorsement naming the City of Carmel-by-the-Sea, its officers, officials, employees, and volunteers as additional insureds. General liability coverage can be provided in the form of an endorsement to the Consultant's insurance (at least as broad as ISO Form CG 20 10 11 85 or both CG 20 10 and CG 23 37 forms if later revisions used).

b. Provide that such Consultant's insurance is primary as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City of Carmel-by-the-Sea is excess to the Consultant's insurance and will not contribute with it.

c. Contain a "Separation of Insureds" provision substantially equivalent to that used in the ISO form CG 00 01 10 01 or their equivalent.

d. Provide for a waiver of any subrogation rights against the City via an ISO CG 24 01 10 93 or its equivalent.

iv. Prior to the start of work under this Agreement, Consultant will file certificates of insurance and endorsements evidencing the coverage required by this Agreement with the City. Consultant will file a new or amended certificate of insurance promptly after any change is made in any insurance policy which would alter the information on the certificate then on file.

v. Neither the insurance requirements hereunder, nor acceptance or approval of Consultant's insurance, nor whether any claims are covered under any insurance, may in any way modify or change Consultant's obligations under the indemnification clause in this Agreement, which will continue in full force and effect. All coverage available to the Consultant as named insured will also be available and applicable to the additional insured. Notwithstanding these insurance requirements, Consultant is financially liable for its indemnity obligations under this Agreement.

vi. All policies must be written on a first dollar coverage basis or contain a deductible provision. Any deductibles or self-insured retentions ("SIR") must be declared to and approved by the City. At the option of the City, either: the insured will reduce or eliminate such deductibles or SIR as respects the City, its officers, officials, employees and volunteers; or Consultant will provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration, and defense expenses. In no event will any SIR or insurance policy contain language, whether added by endorsement or contained in the policy conditions, that prohibits satisfaction

of any self-insured provision or requirement by anyone other than the named insured, or by any means including other insurance, or which is intended to defeat the intent or protection of an additional insured.

vii. City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

viii. Consultant must require and verify that all subconsultants and subcontractors maintain insurance meeting all the requirements in this Agreement.

ix. If Consultant, for any reason, fails to have in place at all times during the term of this Agreement all of the required insurance coverage, the City may, but is not obligated to, obtain such coverage at Consultant's expense and deduct the cost from the sums due Consultant. Alternatively, City may terminate the Agreement.

x. The existence of the required insurance coverage under this Agreement will not be deemed to satisfy or limit Consultant's indemnity obligations under this Agreement. Consultant acknowledges that the insurance coverage and policy limits set forth in this Agreement constitute the minimum coverage and policy limits required. Should any coverage carried by the Consultant or any subcontractor of any tier have limits of liability that exceed the limits or have broader coverage than required in this Agreement, those higher limits and that broader coverage are deemed to apply for the benefit of any person or organization included as an additional insured and those limits and broader coverage will become the required minimum limits and insurance coverage in all sections of this Agreement. Any insurance proceeds available to City in excess of the limits and coverages required by this Agreement, and which is applicable to a given loss, must be made available to City to compensate it for such losses.

xi. Consultant must give City prompt notice of claims made of lawsuits initiated that arise out of or result from Consultant's performance under this Agreement, and that involve or may involve coverage under any of the required liability insurance policies.

xii. The Consultant hereby waives any right of subrogation that any of its insurers may have or that they may accrue out of the payment of any claim related to the Consultant's performance of this Agreement, regardless of whether any endorsements required by this section are obtained.

**8. PERFORMANCE STANDARDS**

A. Consultant warrants that Consultant and Consultant's agents, employees, and subconsultants performing Services under this Agreement are specially trained, experienced, and competent and have the degree of specialized expertise contemplated within California Government Code Section 37103, and further, are appropriately licensed to perform the work and deliver the Services required under this Agreement.

B. Consultant, its agents, employees, and subconsultants must perform all Services in a safe and skillful manner consistent with the usual and customary standards of care, diligence and skill ordinarily exercised by professional consultants in similar fields in accordance with sound

professional practices. All work product of Consultant must comply with all applicable laws, rules, regulations, ordinances and codes. Consultant also warrants that it is familiar with all laws that may affect its performance of this Agreement and will advise City of any changes in any laws that may affect Consultant's performance of this Agreement. All Services performed under this Agreement that are required by law to be performed or supervised by licensed personnel must be performed in accordance with such licensing requirements.

C. Consultant must furnish, at its own expense, all materials, equipment and personnel necessary to carry out the terms of this Agreement. Consultant may not use the City premises, property (including equipment, instruments, or supplies) or personnel for any purpose other than in the performance of its obligations under this Agreement.

D. Consultant agrees to perform all work under this Agreement to the satisfaction of City and as specified herein. The City's Project Representative or his or her designee will evaluate the work. If the quality of work is not satisfactory, City in its discretion may meet with Consultant to review the quality of work and resolve the matters of concern, and may require Consultant to repeat the work at no additional fee until it is satisfactory.

**9. CITY INFORMATION AND RESOURCES**

A. **Available Information.** The City will make available to Consultant all relevant information, plans, maps, reports, specifications, standards and pertinent data which is in the hands of the City and is required by Consultant to perform the Services. Consultant may rely upon the accuracy and completeness of such information and data furnished by the City, except where it is stated otherwise or unreasonable.

B. **City Resources.** The City acknowledges that Consultant's ability to provide the Services in accordance with this Agreement may be dependent on the City providing available information and resources in a prompt and timely manner as reasonably required by Consultant. To the extent that the City fails to provide City resources, Consultant will not be liable for any resulting delay in the Services or failure to meet the Project Schedule, but in no event will such delay or failure to provide City resources constitute a breach of this Agreement by the City, nor will Consultant be entitled to extra compensation for same. Consultant's sole remedy shall be an extension of time to complete the Scope of Services.

C. **Obligations of Consultant.** No reviews, approvals, or inspections carried out or supplied by the City will derogate from the duties and obligations of Consultant, and all responsibility related to performance of the Services will be and remain with Consultant.

**10. OWNERSHIP AND USE OF MATERIALS**

A. **Ownership of the Materials.** All data, studies, reports, calculations, field notes, sketches, designs, drawings, plans, specifications, cost estimates, manuals, correspondence, agendas, minutes, notes, audio-visual materials, photographs, models, software data, computer software (if purchased on the City's behalf) and other documents or products produced by Consultant under this Agreement (collectively, "the Materials") are and will remain the property of the City even though Consultant or another party may have physical possession of them or a portion

thereof. Consultant hereby waives, in favor of the City, any moral rights Consultant, its employees, subconsultants, vendors, successors or assignees may have in the Materials.

B. **No Patent or Copyright Infringement.** Consultant guarantees that in its creation of the Materials produced under this Agreement, no federal or state patent or copyright laws were violated. Consultant agrees that all copyrights, which arise from creation of the work or Services pursuant to this Agreement, will be vested in the City and waives and relinquishes all claims to copyright or intellectual property rights in favor of the City. Consultant covenants that it will defend, indemnify and hold City harmless from any claim or legal action brought against the City for alleged infringement of any patent or copyright related to City's use of Materials produced by Consultant and its employees, agents and subconsultants under this Agreement.

C. **Delivery and Use of the Materials.** All Materials will be transferred and delivered by Consultant to the City without further compensation following the expiration or sooner termination of this Agreement, provided that the City may, at any time prior to the expiration or earlier termination of this Agreement, give written notice to Consultant requesting delivery by Consultant to the City of all or any part of the Materials in which event Consultant must forthwith comply with such request. The Materials created electronically must be submitted in a format and medium acceptable to the City. The Materials may be used by the City in any manner for the intended purpose or as part of its operations associated with the Materials.

D. **Survival of Ownership and Use Provisions.** The provisions contained in Section 10, Ownership and Use of Materials, survives the expiration or earlier termination of this Agreement, and that this Section is severable for such purpose.

E. **Additional Copies**. If the City requires additional copies of reports, or any other material that Consultant is required to furnish as part of the Services under this Agreement, Consultant must provide such additional copies, and the City will compensate Consultant for the actual costs related to the production of such copies by Consultant.

## 11. CONFIDENTIALITY

A. **No Disclosure.** Consultant must keep confidential and may not disclose, publish or release any information, data, or confidential information of the City to any person other than representatives of the City duly designated for that purpose in writing by the City. Consultant may not use for Consultant's own purposes, or for any purpose other than those of the City, any information, data, or confidential information Consultant may acquire as a result of the performance of the Services under this Agreement. Consultant must promptly transmit to the City any and all requests for disclosure of any such confidential information or records. The obligations under this Section will survive the expiration or earlier termination of this Agreement.

B. **California Public Records Act.** Consultant acknowledges that the City is subject to the California Public Records Act (Government Code Section 6250 et seq.), known as the "PRA", and agrees to any disclosure of information by the City as required by law. Consultant further acknowledges that it may have access to personal information as defined under the PRA, and Consultant will

not use any such personal information for any purposes other than for the performance of Services under this Agreement without the advance written approval of the City.

All Scopes of Services and related documents received will be public records, with the exception of those elements, identified by the Consultant as business trade secrets and are plainly marked "Trade Secret", "Confidential" or "Proprietary". If disclosure is required under the PRA or otherwise by law, the City will not be liable or responsible for the disclosure of any such records and the Consultant will indemnify, defend, and hold the City harmless for any such disclosure.

**12. CONFLICT OF INTEREST**

Consultant covenants that neither Consultant, nor any officer, principal or employee of its firm, has or will acquire any interest, directly or indirectly, that would conflict in any manner with the interests of City relating to this Agreement or that would in any way hinder Consultant's performance of services under this Agreement. Consultant's attention is directed to the conflict of interest rules applicable to governmental decision-making contained in the Political Reform Act (California Government Code Section 87100 and following) and its implementing regulations (California Code of Regulations, Title 2, Section 18700 et seq.), and California Government Code section 1090.

Consultant is required to file a Form 700 in compliance with the City's Conflict of Interest Code unless a written determination by the City Administrator is made modifying or eliminating said requirement, or unless otherwise exempted by law.

In addition, Consultant, Consultant's employees, and subconsultants agree as follows:

A. That they will conduct their duties related to this Agreement with impartiality, and must, if they exercise discretionary authority over others in the course of those duties, disqualify themselves from dealing with anyone with whom a relationship between them could bring the impartiality of Consultant or its employees into question;

B. May not influence, seek to influence, or otherwise take part in a decision of the City knowing that the decision may further their private interests;

C. May not accept any commission, discount, allowance, payment, gift, or other benefit connected, directly or indirectly, with the performance of Services related to this Agreement, that causes, or would appear to cause, a conflict of interest;

D. May have no financial interest in the business of a third party that causes, or would appear to cause, a conflict of interest in connection with the performance of the Services related to this Agreement, and if such financial interest is acquired during the term of this Agreement, Consultant must promptly declare it to the City;

E. May not, during the term of this Agreement, perform a service for, or provide advice to, any person, firm, or corporation, which gives rise to a conflict of interest between the obligations of Consultant under this Agreement and the obligations of Consultant to such other person, firm or corporation.

**13. DISPUTE RESOLUTION**

A. **Dispute Resolution Procedures.** The parties will make reasonable efforts to promptly resolve any dispute, claim, or controversy arising out of or related to this Agreement ("Dispute") using the Dispute Resolution Procedures set forth in this Section.

B. **Negotiations.** First, the City's Project Representative and Consultant's Project Manager will make reasonable efforts to resolve any Dispute by amicable negotiations and will provide frank, candid, and timely disclosure of all relevant facts, information, and documents to facilitate negotiations. Should these negotiations be unsuccessful in resolving the Dispute, the matter will be promptly referred to the City Administrator or designee, and the Consultant's Principal, who will meet and confer, in good faith, to resolve the Dispute to mutual satisfaction of the parties.

C. **Mediation.** If all or any portion of a Dispute cannot be resolved by good faith negotiations as set forth above within thirty (30) days of the date that the matter was referred to the City Administrator pursuant to subsection B above, either party may, by notice to the other party, submit the Dispute for formal mediation to a mediator selected mutually by the parties from the Monterey Superior Court's Court-Directed Mediator Panel list. The duration of any such mediation may not exceed 2 hours unless otherwise agreed to by the parties. The cost of the mediation (including fees of mediators) will be borne equally by the parties, and each party will bear its own costs of participating in mediation. The mediation will take place within or in close proximity to the City of Carmel-by-the-Sea.

In any mediation conducted pursuant to this section, the provisions of California Evidence Code section 1152 willl be applicable to limit the admissibility of evidence disclosed by the parties in the course of the mediation. In the event the parties are unsuccessful in resolving the dispute through the mediation process, then the parties agree that the dispute will be submitted to Binding Arbitration to a single Arbitrator in accordance with the existing Rules of Practice and Procedure of the Judicial Arbitration and Mediation Services, Inc. (JAMS) within thirty (30) days of the close of mediation as declared by the mediator.

D. **Arbitration.** The submission to Mediation and Arbitration in accordance with the requirements of this section of any and all agreements, differences, or controversies that may arise hereunder is made a condition precedent to the institution of any action or appeal at law or in equity with respect to the controversy involved. The award by the arbitrator will have the same force and effect and may be filed and entered, as a judgment of the Superior Court of the State of California and is subject to appellate review upon the same terms and conditions as the law permits for judgments of Superior Courts. A "Prevailing Party" will be determined in the Arbitration, and the prevailing party will be entitled to reasonable attorney's fees and costs incurred, and accrued interest on any unpaid balance that may be due. Costs will include the cost of any expert employed in the preparation or presentation of any evidence. All costs incurred and reasonable attorney fees will be considered costs recoverable in that proceeding, and be included in any award.

**14. TERMINATION OF AGREEMENT**

A. **Termination for Cause or Default.** The City reserves the right to immediately terminate this Agreement, in whole or in part, if Consultant or any subconsultant defaults or fails to deliver the Services in accordance with the terms and conditions of this Agreement. Such termination must be in writing, setting forth the effective date of termination, and will not result in any penalty or other charges to the City, and may be issued without any prior notice. Without limitation, Consultant is in default of its obligations contained in this Agreement if Consultant, or any subconsultant:

i. Fails to perform the required Services within the term and/or in the manner provided under this Agreement;

ii. Fails to supply sufficient, properly skilled workers or proper workmanship, products, material, tools and equipment to perform the Services;

iii. Fails to observe or comply with all laws, ordinances, including all requirements of governmental or quasi-governmental authorities, including federal, state, and local government enactments, bylaws, and other regulations now or, following the date of this Agreement, in force that pertain to;

iv. Fails to observe or comply with the City's reasonable instructions;

v. Breaches the Conflict of Interest provisions of this Agreement; or

vi. Otherwise violates any provision of this Agreement.

B. **Termination for Convenience.** The City may, at its option and sole discretion, terminate this Agreement, in whole or in part, with or without cause, at any time during the Agreement Term for the convenience of the City, upon ten (10) days written notice to the Consultant.

C. **Steps after Termination:**

i. Upon termination of this Agreement by the City for any reason, the City will pay Consultant for satisfactorily performed Services and disbursements incurred by Consultant to the date of termination pursuant to this Agreement, less any amounts necessary to compensate the City for damages or costs incurred by the City arising from Consultant's default. Termination will be without prejudice to any other rights or remedies the City may have.

ii. Upon receipt of written notice of termination of this Agreement by the City for any reason, Consultant must:

a. Promptly cease all Services, including Services provided by any subconsultant, unless otherwise directed by the City; and

b. Deliver to the City all the Materials provided to Consultant or prepared by or for Consultant or the City in connection with this Agreement. Such Materials are to

be delivered to the City in completed form; however, notwithstanding the provisions of Section 10, Ownership and Use of Materials, herein, the City may condition payment for services rendered to the date of termination upon Consultant's delivery to the City of such Materials.

iii. If this Agreement is terminated by the City for any reason, the City is hereby expressly permitted to assume the projects and Services, and to complete them by any means including, but not limited to, an agreement with another party.

**15. LEGAL ACTION / VENUE**

A. Should either party to this Agreement bring legal action against the other, the validity, interpretation and performance of this Agreement will be controlled by and construed under the laws of the State of California, excluding California's choice of law rules.

B. Venue for any such action relating to this Agreement will be in Monterey County.

C. If any legal action or proceeding, including action for declaratory relief, is brought for the enforcement of this Agreement or because of an alleged dispute, breach, default or misrepresentation in connection with this Agreement, the prevailing party may recover reasonable attorneys' fees as may be determined by the Arbitrator, experts' fees, and other costs, in addition to any other relief to which the party may be entitled.

**16. MISCELLANEOUS PROVISIONS**

A. **Non-discrimination**. During the performance of this Agreement, Consultant, and its subconsultants, may not unlawfully discriminate against any person because of race, religious creed, color, sex, national origin, ancestry, physical disability, mental disability, medical condition, marital status, age, or sexual orientation, either in Consultant's employment practices or in the furnishing of services to recipients. Consultant further acknowledges that harassment in the workplace is not permitted in any form, and will take all necessary actions to prevent such conduct.

B. **Acceptance of Services Not a Release**. Acceptance by the City of the Services to be performed under this Agreement does not operate as a release of Consultant from professional responsibility for the Services performed.

C. **Force Majeure**. Either party is absolved from its obligation under this Agreement when and to the extent that performance is delayed or prevented, and in the City's case, when and to the extent that its need for vehicles, materials, or Services to be supplied hereunder are reduced or eliminated by any course, except financial, for reasons beyond its control. Such reasons include, but are not limited to: earthquake, flood, epidemic, fire, explosion, war, civil disorder, act of God or of the public enemy, act of federal, state or local government, or delay in transportation to the extent that they are not caused by the party's willful or negligent acts or omissions, and to the extent that they are beyond the party's reasonable control.

D. **Headings**. The headings do not govern, limit, modify, or in any manner affect the scope, meaning or intent of the provisions of this Agreement. The headings are for convenience only.

E. **Entire Agreement**. This Agreement, including the Exhibits attached hereto, constitutes the entire agreement between the parties hereto with respect to the terms, conditions, and Services and supersedes any and all prior proposals, understandings, communications, representations and agreements, whether oral or written, relating to the subject matter thereof pursuant to Section 1B, "Change Order of Services". Any Change Order to this Agreement will be effective only if it is in writing signed by both parties hereto and will prevail over any other provision of this Agreement in the event of inconsistency between them.

F. **Conflict between Agreement and Exhibits**. In the event of a conflict between a provision in this Agreement and a provision in an Exhibit attached to this Agreement, the provisions in this Agreement will take precedence.

G. **Counterparts**. This Agreement may be executed in one or more counterparts, each of which will be deemed an original, and may be signed in counterparts, but all of which together will constitute one and the same Agreement.

H. **Multiple Copies of Agreement**. Multiple copies of this Agreement may be executed, but the parties agree that the Agreement on file in the office of the City's City Clerk is the version of the Agreement that governs should any difference exist among counterparts of this Agreement.

I. **Authority**. Any individual executing this Agreement on behalf of the City or Consultant represents and warrants hereby that he or she has the requisite authority to enter into this Agreement on behalf of such party and bind the party to the terms and conditions of this Agreement.

J. **Severability**. If any of the provisions contained in this Agreement are held illegal, invalid or unenforceable, the enforceability of the remaining provisions will not be impaired thereby. Limitations of liability and indemnities will survive termination of the Agreement for any cause. If a part of the Agreement is valid, all valid parts that are severable from the invalid part remain in effect. If a part of this Agreement is invalid in one or more of its applications, the part remains in effect in all valid applications that are severable from the invalid applications.

K. **Non-exclusive Agreement**. This Agreement is non-exclusive and both the City and Consultant expressly reserve the right to enter into agreements with other Consultants for the same or similar services, or may have its own employees perform the same or similar services.

L. **Assignment of Interest**. The duties under this Agreement are not assignable, delegable, or transferable without the prior written consent of the City. Any such purported assignment, delegation, or transfer constitutes a material breach of this Agreement upon which the City may terminate this Agreement and be entitled to damages.

M. **City Business License**. Prior to receiving a Notice to Proceed from the City, Consultant will obtain and maintain a valid City of Carmel-by-the-Sea Business License for the duration of the Agreement. Costs associated with the license are the responsibility of Consultant.

N. **Laws**. Consultant agrees that in the performance of this Agreement it will comply with all applicable federal, state and local laws and regulations. This Agreement will be governed by and

construed in accordance with the laws of the State of California and the City of Carmel-by-the-Sea.

IN WITNESS WHEREOF, the parties enter into this Agreement hereto on the day and year first above written in Carmel-by-the-Sea, California.

| CITY OF CARMEL-BY-THE-SEA | CONSULTANT |
|---|---|
| _____ | _____ |
| Signature | Consultant Signature |
| _____ | _____ |
| Printed Name Date | Printed Name Date |
| City Administrator _____ | _____ |
| Title | Title |
| | _____ |
| | Consultant Legal Company Name |

**APPROVED AS TO FORM:**

By: _____ Date: _____
Brian Pierik, Esq., City Attorney

**ATTEST:**

By: _____ Date: _____
Nova Romero, MMC, City Clerk

Exhibit "A" Scope of Services
Exhibit "B" Key Personnel & Subconsultants
Exhibit "C" Compensation & Fee Schedule
Exhibit "D" Project Schedule

# EXHIBIT A

# Scope of Services

This Scope of Services is to complete the first phase of a multi-phase Coastal Adaptation Planning Project. This first phase of the project focuses on coastal engineering and hazard assessment. Future Phases will include hazards policy review and revisions, outreach, and adaptation pathway development for LCP policy update. The Scope of Work is broken into several work tasks with deliverables identified.

## COASTAL ENGINEERING AND HAZARD ASSESSMENT

This Phase of work is outlined in the Climate Committee Implementation Appendix, with analysis to be completed for four sections of the city shoreline:

1. Armored private properties on the bluffs at the north end (Pescadero Canyon area);
2. Mostly natural, unarmored North Dunes area;
3. Unarmored dunes along private property between 8th Ave and Del Mar Parking Lot; and
4. Mostly armored bluffs along Scenic Roach south of 8th Avenue.

### Task 0 – Project Management

Grant writing support for Non-Competitive Grant funding for Phase 2 of the project. This task includes billing hours after the City issues a purchase order to complete, project administration, execution of subconsultant contracts, and internal team coordination. EMC Planning Group, as Prime, will take the lead on project management and administration.

***Deliverable:*** *Kickoff meeting and quarterly progress calls with summary notes.*

### Task 1 – Coastal Engineering Condition Evaluation

Previous evaluations of coastal protection structures have focused on maintenance and repair. HKA will inventory the length, footprint, and elevations using North American Vertical Datum 1988 (NAVD88). Documentation of the position of each structure relative to Mean High Tide Line (MHTL) and High Tide Line (HTL) for use by planners when identifying agencies with jurisdiction. Using engineering judgment determine the effectiveness of restacking rip rap revetment structures and lateral/vertical extensions of both revetments and vertical seawalls. Estimate of the existing life of structure until it ceases to adequately provide protection for the bluff and roadway. Integral will support HKA by providing mapping and GIS support while HKA will provide the written condition assessment and tabular inventory.

***Deliverables:*** *Technical memo of results with maps and GIS shapefiles, one Climate Committee presentation (remote – HKA/Integral).*

### Task 2 -Shoreline and Beach Change Analysis – Seasonal and Long Term

Using historic imagery and topographic data sets, conduct a shoreline, bluff top and beach width change analysis to assess long term changes in beach and shoreline position. To the extent possible utilize historic data from other sources (aka Wilard Bascom), City, Coastal

development permits, etc. to assess seasonal changes and sand volume changes along Carmel Beach. This task will be led by Integral with technical review by HKA.
***Deliverables:*** *Technical memo of results with maps and relevant GIS shapefiles, one Climate Committee presentation (remote – HKA/Integral).*

## Task 3 – Shoreline and Beach Erosion Exposure Modeling

Results of Task 1 and Task 2 will feed into Task 3. Integral will conduct Coastal Hazard Exposure modeling using state of the science models including dune erosion modeling for North Dunes, and applying available cliff erosion models. HKA will provide input on the effect of erosion by existing armoring and what happens when the structures fail or are removed. Integral lead with input on results and armoring assumptions by HKA.
***Deliverables:*** *Technical memo of methods and maps showing results of the projected existing and future coastal hazard extents, one Climate Committee presentation (remote - Integral).*

## Task 4 – Coastal Hazard and Sea Level Rise Vulnerability, High Priority Adaptation Identification, and Action Plan

Using results of Task 3, Integral will conduct a vulnerability assessment in GIS looking at the spatial intersection between publicly available infrastructure and asset data and the various coastal hazards. Results of this analysis will be summarized by hazard type, sea level rise in up to 5 transects including foreshore and backshore beach, coastal bluff, and roadway and whether the impact is anticipated in the near-term or long-term HKA will provide technical review and perspectives of relative risk.

Integral will summarize the wide range of possible adaptation strategies (projects and policy, green vs gray) and briefly describe the secondary consequences of each and using our professional judgement and experiences to identify adaptation strategies that should be left on the table and presented to the community for further analysis and discussion in Phase 2. We will also identify high priority adaptations that have a very good chance of needing to be implemented over the next 10 years. Some of the feasibility criteria for adaptation will include secondary consequences, regulatory viability, as well as initial construction and ongoing maintenance costs. Essentially this will identify which adaptation tools remain on the table for community discussion, which ones are ruled out, and which are of higher priority that should be expedited to the City planning and permit phase. Integral will lead this task with input on costs from HKA and EMC write up for policy approaches.
***Deliverables:*** *Executive summary of results, up to five sector profile summaries (land use, transportation, utilities, etc.), tables summarizing feasibility, recommendations for policy and project approaches, and identify high priority adaptations, one Climate Committee presentation (remote - Integral).*

# EXHIBIT B

# KEY PERSONNEL AND SUBCONSULTANTS

## CONSULTANT ROLES

**EMC** – Prime, policy and outreach lead, adaptation pathway technical review.
**Key Personnel:** Polaris Kinison Brown, Principal Planner

## SUBCONSULTANT ROLES

**Integral** –Mapping, hazard modeling, shoreline change analysis, GIS, vulnerability assessment, adaptation pathway, econ, policy tech review.
**Key Personnel:** David Revell, Principal
Matt Jamieson, Project Scientist

**HKA -** Lead coastal engineering, technical review on exposure modeling and shoreline change, engineering cost estimates, and input on feasibility of alternatives.
**Key Personnel:** Moses Cuprill, Principal Engineer

# EXHIBIT C

# COMPENSATION & FEE SCHEDULE

## Coastal Engineering and Adaptation Planning

| | LABOR (HOURS) | | | | | | | | | | | | | | | | | EXPENSES | | BUDGET | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EMC Planning Group | | | | | | | Integral | | | | | | | HKA | | | | | | | | | |
| Task | Senior Principal | Polaris Kinison Brown, Principal Planner | Associate Planner | Graphics/Mapping | Admin/ Production | EMC Planning Group Hours | EMC Planning Group Costs | David Revell, Principal | Matt Jamieson, Project Scientist | Cheryl Hapke/Chris Flanary | Sam M/Tim N | Sam B | Integral Hours | Integral Costs | Moses Cuprill, Principal Engineer | Staff Engineer | HKA Hours | HKA Costs | Expense | Cost | Labor ($) | Expenses ($) | Subtotal ($) | 5% Markup* | Total ($) |
| | $250 | $200 | $150 | $95 | $115 | | | $260 | $185 | $216 | $190 | $150 | | | $250 | $115 | | | | | | | | | |
| Phase I - Coastal Engineering and Hazard Assessment | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Management | 8 | 30 | | | | 38 | $8,000 | 3 | 8 | | | | 11 | $2,260 | 8 | | 8 | $2,000 | Postage/Misc (EMC) | $70 | $12,260 | $70 | $12,330 | | $12,330 |
| 1. Coastal Engineering Condition Evaluation | | | | | | 0 | $0 | 5 | 24 | | | | 29 | $5,740 | 40 | 120 | 160 | $23,800 | Mileage (Integral, HKA) | $114 | $29,540 | $114 | $29,654 | | $29,654 |
| 2. Shoreline and Beach Change Analysis | | | | | | 0 | $0 | 12 | 90 | | | | 102 | $19,770 | 4 | 8 | 12 | $1,920 | | | $21,690 | $0 | $21,690 | | $21,690 |
| 3. Shoreline and Beach Erosion Exposure Modeling | | | | | | 0 | $0 | 20 | 100 | 20 | 90 | | 230 | $45,120 | 8 | 16 | 24 | $3,840 | | | $48,960 | $0 | $48,960 | | $48,960 |
| 4. Coastal Hazard and SLR Vulnerability/Priority Adaptation/Action Plan | | 8 | | | | 8 | $1,600 | 40 | 110 | 50 | | 40 | 240 | $47,550 | 8 | 16 | 24 | $3,840 | Production (Integral) | $1,500 | $52,990 | $1,500 | $54,490 | | $54,490 |
| **Total Phase I (Hours)** | 8 | 38 | 0 | 0 | 0 | 46 | | 80 | 332 | 70 | 90 | 40 | 612 | | 68 | 160 | 228 | | | | | | | | |
| **Total Phase I Not-to-Exceed (Cost)** | $2,000 | $7,600 | $0 | $0 | $0 | | $9,600 | $20,800 | $61,420 | $15,120 | $17,100 | $6,000 | | $120,440 | $17,000 | $18,400 | | $35,400 | | $1,684 | $165,440 | $1,684 | $167,124 | $7,876 | **$175,000** |

# EXHIBIT D

# PROJECT SCHEDULE

| TIMELINE | | 2022 | | 2023 | | | | | | | | | | | | 2024 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| **PHASE 1** | **COASTAL ENGINEERING AND HAZARD ASSESSMENT** | | | | | | | | | | | | | | | | | | | | |
| Task 1 | Coastal Engineering Condition Evaluation | | | | | | | | | | | | | | | | | | | | |
| a | One Climate Committee Presentation | | | | | | | | | | | | | | | | | | | | |
| Task 2 | Shoreline and Beach Change Analysis – Seasonal and Long Term | | | | | | | | | | | | | | | | | | | | |
| a | One Climate Committee Presentation | | | | | | | | | | | | | | | | | | | | |
| Task 3 | Coastal Hazard Exposure Modeling | | | | | | | | | | | | | | | | | | | | |
| a | One Climate Committee Presentation | | | | | | | | | | | | | | | | | | | | |
| Task4 | Coastal Hazard and Sea Level Rise Vulnerability, High Priority Adaptation, and Action Plan | | | | | | | | | | | | | | | | | | | | |
| a | One Climate Committee Presentation | | | | | | | | | | | | | | | | | | | | |

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**CONSENT AGENDA**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Nova Romero, City Clerk |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Resolution 2022-095, Authorizing Free Use Days of the Sunset Center Theater and Lobby for the Carmel Public Library Foundation and Carmel Unified School District |

## RECOMMENDATION:

Adopt Resolution 2022-095 authorizing Free Use Days of the Sunset Center Theater and Lobby for the Carmel Public Library Foundation and Carmel Unified School District.

## BACKGROUND/SUMMARY:

The 2017 Agreement between the City and Sunset Cultural Center, Inc. (SCC) provides that the City shall have the right to use the theater and lobby for up to twelve (12) full days each fiscal year without charge, as long as the spaces have not already been committed to rental customers by SCC.

The Carmel Public Library Foundation (CPLF), a non-profit organization, is requesting one of the City's free use days of the theater and lobby. CPLF plans to hold its eleventh annual fundraising benefit, on Tuesday, April 18, 2022. Proceeds from the evening will benefit CPLF, whose mission is "to fund the Carmel Public Library, to keep the doors open and to maintain the library's preeminence as a steward and cherished cultural institution on the Central Coast of California."

Carmel Unified School District (CUSD) is requesting the use of three (3) of the City's free use days of the theater and lobby for their annual district-wide choral, string, and band festivals for Spring 2023. These performances include elementary, middle and high school musicians together and showcase the developmental progression of CUSD's music programming. The parents, musicians and administration greatly appreciate holding these performances in the Sunset Center. Use of the Sunset Center for the 2023 annual music program will "provide an inspiring performance environment for our community's young musicians."

Granting the Carmel Public Library Foundation and the Carmel Unified School District free use days will result in a significant savings in facility use fees.

The Carmel Public Library Foundation and Carmel Unified School District have tentatively booked the theater and lobby for the requested dates and will confirm with Sunset Center should Council authorize the

free use days.

## FISCAL IMPACT:

None for this action.

## PRIOR CITY COUNCIL ACTION:

Council has approved the Sunset Center Free Use days for the Carmel Public Library Foundation and the Carmel Unified School District for eight years - 2020 being an anomaly during which time the benefit was held virtually due to the COVID-19 pandemic.

## ATTACHMENTS:

Attachment 1) Resolution 2022-095 Sunset Center CPLF and CUSD Request
Attachment 2) CPLF Request Letter
Attachment 3) CUSD Request Letter

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**RESOLUTION NO. 2022-095**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA AUTHORIZING FREE USE DAYS OF THE SUNSET CENTER THEATER AND LOBBY FOR THE CARMEL PUBLIC LIBRARY FOUNDATION AND CARMEL UNIFIED SCHOOL DISTRICT**

WHEREAS, the City's Amended and Restated Lease Agreement with Sunset Center Cultural Center (SCC), adopted by the City Council on June 6, 2017, stipulates that the City shall have the right to use the Sunset Center theater, lobby and dressing rooms for up to twelve (12) full days (designated in the Lease Agreement as "Free Theater Days") each fiscal year without charge; and

WHEREAS, the Carmel Public Library Foundation is requesting use of the Sunset Cultural Center through the City's Free Theater Days for their 11th annual fundraising benefit; and

WHERAS, Carmel Unified School District is requesting use of the Sunset Cultural Center through the City's Free Theater Days for three (3) days to conduct their annual district-wide choral, string, and band festivals for Spring 2023; and

WHEREAS, granting the Carmel Public Library Foundation and Carmel Unified School District each Sunset Center Free Theater Days will result in significant savings in facility use fees for these organizations.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA DOES HEREBY: Authorize the Carmel Public Library Foundation to utilize one (1) of the City's Sunset Center Free Theater Days in 2023, and authorize the Carmel Unified School District to utilize three (3) of the City's Sunset Center Free Theater Days in 2023.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL-BYTHE-SEA this 1st day of November, 2022, by the following vote:**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED: ATTEST:

Dave Potter, Mayor

Nova Romero, MMC, City Clerk

October 17, 2022

Chip Rerig City Administrator &
City Council
Carmel-by-the-Sea City Hall
P.O. Box CC
Carmel, CA 93921

Dear Mr. Rerig:

The Carmel Public Library Foundation respectfully requests consideration of our request to be granted one of the City of Carmel's "free use days" at the Sunset Center Theater. We plan to hold our 11th annual fundraising benefit this spring: ***Tuesday, April 18, 2023***.

Set in the beautiful Sunset Center Theater, our annual fundraising benefits highlight national renowned authors, historians and scholars. Proceeds from the evening will benefit the Carmel Public Library Foundation whose mission is to fund the Carmel Public Library, to keep the doors open and to maintain the library's preeminence as a steward and cherished cultural institution on the Central Coast of California. Tickets to the program are typically $65 and include book sale and signing and a wine reception.

Thank you for your consideration of our request. We hope to make this a successful and profitable event furthering our mission to fund the library. Please let me know if you require any additional information or documentation.

Sincerely,

*Alexandra Fallon*

Alexandra Fallon
Executive Director

Cc:

Nova Romero, City Clerk
Ashlee Wright, Library Director
Lettie Bennet, CPLF President
Tara Twomey, Library Trustee President
Mary Carrieri, Sunset Center

**BOARD OF EDUCATION**
Tess Arthur
Sara Hinds
Seaberry Nachbar
Karl Pallastrini
Anne-Marie Rosen

**SUPERINTENDENT**
Ted Knight,Ed.D.

**DISTRICT OFFICE:**
P.O. Box 222700
Carmel CA 93922

4380 Carmel Valley Road
Carmel, CA 93923

**TEL:** (831) 624-1546
**FAX:** (831) 624-1726
www.carmelunified.org

Attachment 3

August 10, 2022

Chip Rerig
Carmel-by-the-Sea City Administrator
PO Box CC
Carmel-by-the-Sea, CA 93921

Dear Mr. Rerig,

Carmel Unified School District is planning the annual district-wide choral, string, and band festivals for Spring 2023. These performances include our elementary, middle and high school musicians together and showcase the developmental progression of our music programming.

In the past the City has provided the District with access to "Free Theater Days". The parents, musicians and administration have greatly appreciated holding these performances in the Sunset Center. Not only does it accommodate the number of attendees, but it truly provides an inspiring performance environment for our community's young musicians. We would like to formally request these three days of usage again this year.

Please feel free to contact me should you have any questions or need additional information.

Sincerely,

E. Ted Knight, Ed.D.
Superintendent

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**CONSENT AGENDA**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Maxine Gullo, Ass't. City Administrator |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Adoption of Ordinance No. 2022-003 (Second Reading) - Amending Municipal Code Section 2.52.630 pertaining to eligibility for new hires to use accrued vacation leave in the first year of employment |

## RECOMMENDATION:

Waive the reading in full and adopt, on second reading, Ordinance 2022-003 Amending Municipal Code Section 2.52.630 pertaining to eligibility for new hires to use accrued vacation leave in the first year of employment.

## BACKGROUND/SUMMARY:

The City Council for the City of Carmel-by-the-Sea (City) recently approved Memoranda of Understanding (MOUs) with general and management employees represented by the Laborers' International Union of North America, United Public Employees of California (LiUNA/UPEC) for the period from July 1, 2022 through June 30, 2024 at the September 13, 2022 council meeting. During the negotiation process, the City agreed to recommend that the Council amend Section 2.52.630 to permit employees in their first year of City employment to use accrued vacation. The City recently hired 31.0 new employees who would otherwise not be entitled to use accrued vacation time during the upcoming holiday closure approved by Council. Accordingly, the City believes it is appropriate to remove the requirement of completing one year of continuous service as a condition for using accrued vacation for all City employees under Section 2.52.630.

## FISCAL IMPACT:

Vacation leave usage is budgeted as standard operating costs in the operating budget.

## PRIOR CITY COUNCIL ACTION:

N/A

## ATTACHMENTS:

Attachment 1) Ordinance 2022-003

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**ORDINANCE NO. 2022-003**

**AN ORDINANCE AMENDING SECTION 2.52.630 REGARDING ELIGIBILITY FOR NEW HIRES TO USE ACCRUED VACATION LEAVE IN THE FIRST YEAR OF EMPLOYMENT**

WHEREAS, the City Council for the City of Carmel-by-the-Sea (City) recently approved Memoranda of Understanding (MOUs) with general and management employees represented by the Laborers' International Union of North America, United Public Employees of California (LiUNA/UPEC) for the period from July 1, 2022 through June 30, 2024; and

WHEREAS, in the MOUs between the City and LiUNA/UPEC the City agreed to recommend that the Council amend Section 2.52.630 to permit employees in their first year of City employment to use accrued vacation; and

WHEREAS, the City believes it is appropriate to remove the requirement of completing one year of continuous service as a condition for using accrued vacation for all City employees under Section 2.52.630.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA DOES ORDAIN AS FOLLOWS:**

**SECTION 1.**

1. The City Council of the City of Carmel-by-the-Sea does hereby find that the above referenced recitals are true and correct and material to the adoption of this Ordinance.

2. The actions authorized by this Ordinance are consistent with the City's General Plan, and the terms of the City's MOUs with the groups represented by LiUNA/UPEC.

**SECTION 2.**

Section 2.52.630 is hereby amended to read:

An employee is eligible to use accrued vacation time starting from the first day of employment.

**SECTION 3**. Effective Date. This Ordinance shall take effect 30 days after its adoption by the City Council of the City of Carmel-by-the-Sea.

INTRODUCED at a Regular City Council Meeting on October 4, 2022.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA this 1st day of November, 2022, by the following vote:**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED:

Dave Potter
Mayor

ATTEST:

Nova Romero, MMC
City Clerk

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**ORDERS OF BUSINESS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Alan Ward, Police Chief |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | 2022 Car Week After Action Report |

## RECOMMENDATION:

Receive the 2022 Car Week After Action Report and provide staff with feedback and direction.

## BACKGROUND/SUMMARY:

Since its inception, "Car Week" has evolved from being just a handful of events during the span of a week, to tens of public and private events held over the span of a week and a half on the peninsula. As a result, the peninsula has seen an increase in visitors and residents have been vocal about the resulting traffic, parking, and speedy or reckless driving issues.

This year "Car Week" took place from Friday August 12 through Sunday, August 21.This After Action Report seeks to discuss traffic and safety impacts to Carmel-by-the-Sea during Car Week, as well as a breakdown of any issues with events held in the Village, namely Acura in the Park and Prancing Ponies, and to propose mitigation tactics to counter these effects for subsequent years.

During 2020 there were no Car Week events. In 2021 the State began allowing large-scale events again, but Concours on the Avenue was the only event held in the City. This year, 2022, was the first return to "normal" year on the Peninsula for Car Week since the pandemic.

### 2022 EVENTS HELD IN CARMEL-BY-THE-SEA

There were two permitted events held in Carmel-by-the-Sea this year: Acura in the Park and Prancing Ponies.

Acura in the Park

The Acura in the Park event, held on Tuesday, August 16, 2022 in Devendorf Park from 9:00 a.m. to 4:00 p.m, was previously a part of the larger Concours on the Avenue (COTA) event. COTA did not move

forward this year due to the untimely passing of event organizer Doug Freedman. As previously stated this event was held in Devendorf Park. Ocean Avenue from Junipero Street to Mission Street, as well as Mission Street between Ocean and Sixth Avenues, were temporarily closed for event set-up which began at 12:00 a.m. Mission Street between Ocean and Sixth Avenues remained closed during the event. Because of an increase in event participants near the end of the event the event organizer requested an additional hour and this was granted by staff. Breakdown began promptly at 5:00 p.m. and there were no issues, safety or otherwise, overall with this event.

Prancing Ponies All Woman Car Show

The Prancing Ponies event was held Thursday, August 18, 2022 from 11:00 a.m. to 3:30 p.m. This is the 4th year this event was held in the City. Previously the event was held on Sixth Avenue between San Carlos and Lincoln Streets and Dolores Street from Ocean Avenue to the driveway of the Post Office. Because of the absence of the Tour d'Elegance - another large Ocean Avenue event, staff worked with the event organizer to move the event to Ocean Avenue for additional event visibility during Car Week. Ocean Avenue was closed from Junipero to San Carlos Street. Mission Street was also closed between Red Eagle Lane and Sixth Avenue. Event set-up began at 4:00 a.m. and event breakdown began at 3:30 p.m. and was completed by 6:00 p.m. This year, overall, the event ran smoothly having made the switch to Ocean Avenue.

There were several issues that arose during these two events and were promptly addressed/resolved:

- Event music was too loud, which was addressed during the event.
- Some of the participating vehicles were late arriving at the venue because they were caught in Pebble Beach Tour d'Elegance traffic as the Tour was returning from Big Sur.
- Additional volunteers/security were needed for help with staging vehicles and traffic control guiding vehicles out of the event venue at the end of the event.
- One of the event sponsors was handing out cannabis samples and the sponsor is currently under investigation for this activity by the DA's office. This activity was not authorized by the City and the event organizer was unaware of the City regulations regarding cannabis as this is not a part of the special event permit review process.

2022 Car Week Concerns

Again, as in past years, Carmel-by-the-Sea was inundated with specialty vehicles known as "exotics". Exotics are a group of exclusive and expensive high performance vehicles owned or rented by enthusiasts and members of car clubs. "Exotic" cars have a large following and can draw substantial crowds and car enthusiast videographers who produce videos and other content for display on the internet and social media sites. Subgroups of exotics enthusiasts also enjoy demonstrating the engine power and high performance capabilities of exotic cars and similar cars designed for street racing. These enthusiasts or groups have in the past taken over streets and intersections in towns and cities to conduct illegal street races or to engage in reckless driving behavior in events called "Sideshows". Groups and enthusiasts sometimes use messaging platforms like Twitter, Snapchat, You Tube, and/or Facebook to post videos of reckless driving and illegal car show activities. They also utilize social media to post the intended location of street racing sites with the intent to draw crowds to be spectators to dangerous acts, including speeding and burnouts through intersections. These groups have come to Carmel-by-the-Sea in the past and continue to conduct illegal "Sideshow" events all over the country.

Due to previous illegal “sideshows” in Carmel-by-the-Sea during Car Week, the City and Police Department coordinated plans to close Ocean Avenue in the evenings to deter the take over of intersections on Ocean Avenue. Carmel-by-the-Sea has become known as a location where some of the most expensive and rare exotic cars are on display and drive the streets during car week. These vehicles have come into the Village in previous years, but not to the extent that occurred this year. The high end exotics were parked on display throughout Car Week and were here in our City the entire week. People visited the City during the day to see the cars parked throughout the City. In the evenings, between 6:00 p.m. - 10:00 p.m. Thursday - Saturday, there was a dramatic increase in people who came to video or witness the cars cruising Carmel streets with the largest crowds and cars occurring on Friday and Saturday nights.

Unlike previous years, the high end exotic cars were parked in and around the downtown area prominently presented and displayed. Because the “normal” large scale car events were not taking place, it appears the exotic cars were able to take over in prominence which brought in more people to see them displayed and driven around the City. By Friday and Saturday, there were large groups of people in town all day to view the cars, and the crowds increased into the evenings as other local events concluded. In response to past activity, the Police Department was able to control and dissipate the crowds using planned staffing of additional personnel, planned closures of Ocean Avenue, engineered controls of traffic to alleviate cruising activities, and by utilizing mutual aid from neighboring agencies, including the traffic units from STOPP (Strategic Traffic Observation and Prevention Program) made up of units from Carmel, Monterey, Marina, and Salinas Police Departments.

During Car Week, the Police Department took a “No Tolerance” approach to dangerous driving by posting warning signs at the entrance to our Village. During the week, officers conducted 123 traffic stops for various violations including; Speeding, Exhibition of Speed, Reckless Driving, Registration Violations and Modified Exhaust. Of those traffic stops, 59 traffic citations were written for various violations. The Police Department also made two DUI arrests, and arrested another seven for other crimes including assault on a peace officer and malicious mischief for throwing rocks and hitting a police vehicle.

**PLANNING FOR 2023**

At the conclusion of Car Week, the Police Department made an evaluation of efforts and will be looking to re-evaluate traffic calming and engineered controls, staffing and planning of events, seek direction on how Car Week may be adjusted next year and in years to come, and evaluate best practices and implement changes to our planning and event management based on the expectations of Council, residents, and the business communities.

Some ideas for direction could include:

- Planning and developing a traffic/event action plan with established times for comprehensive closure of Ocean Avenue to seriously deter the cruising behavior that draws the exotics or similarly-minded car enthusiasts who come to Carmel to view and film the cars.
- Working with event organizers to ensure security and non-police staffing for their events so that the Police Department can reserve resources for the evenings or other times to ensure Village security and to ensure a timely emergency response.
- Working with regional and state law enforcement assets to monitor car events and social media for

information on illegal car activities.
- Continuation of the “No Tolerance” approach to dangerous or illegal street activity.
- Consider increasing fines for certain violations of the Municipal Code during Car Week.
- Continuing to work with Peninsula L.E. partners in developing mutual aid responses for partner cities, including more planned resource sharing in the City.
- As part of a more comprehensive plan, creating and implementing additional signage and messaging through press, media, and social media to directly educate the public and potential visitors on Carmel-by-the-Sea event activities and plans for road closures and police enforcement of traffic and parking rules.

## CONCLUSION

The two Car Week events this year were well-attended and, as noted, issues were minor and promptly addressed. Staff will be working with event organizers on these for future events.

Except for the small group disturbance on Thursday, there were no significant problems that occurred as a result of large-scale “SideShow” events or street takeovers. There was, however, a great number of people on Friday and Saturday nights who flooded downtown streets to view Exotic cars driving down and parking along Ocean Avenue. As a whole, these visitors were well behaved and did not create an out-of-control environment. All of the cruising activities and crowds dissipated within a short time of implementing the traffic controls which sent cars onto side streets and away from Ocean Avenue.

Continued planning and coordinating with City departments will continue to improve the safety and success of future Car Week events.

## FISCAL IMPACT:

N/A

## PRIOR CITY COUNCIL ACTION:

## ATTACHMENTS:

Attachment 1) Survey Results

# Attachment 1

| Timestamp | I am: | How did you feel about Car Week in Carmel-by-the-Sea overall this year? | Why do you feel that way? | Did you attend the Acura in the Park Event on Tuesday, August 16? | How did you feel about the Acura in the Park event on Tuesday, August 16? | Did you attend the Prancing Ponies All Woman Car Show on Thursday, August 18 on Ocean Avenue? | How did you feel about the Prancing Ponies All Woman Car Show on Thursday, August 18 on Ocean Avenue? | How do you feel about the events in Carmel-by-the-Sea in general this year? | Why do you feel that way? | Do you want to see the larger events like Concours on the Avenue and/or Tour d'Elegance return to Carmel-by-the-Sea if it is possible? | Why do you feel that way? | How did you feel about the effectiveness of traffic calming measures in place for safety in the City during Car Week - i.e. shutting streets down in the evenings, alternate routes around Ocean Avenue, etc.? | Why do you feel that way? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/9/2022 16:35:40 | A worker in 93921 | Loved it. | | No | It was okay. | Yes | Loved it. | Loved them. | | Yes. | | They helped with traffic and safety somewhat. | |
| 9/9/2022 16:47:06 | A worker in 93921 | I did not like it at all. | Fancy cars are dumb. Just think of all the good the money spent on those car could do in the world. I do not like that the park was turned into a Acura dealership. | No | I did not like it at all. | No | I did not like it at all. | I did not like them at all | It is wasteful and glorifies an antiquated mode of transpiration. | Why does it have to be cars? Why not a Pride event. Or a dog show. Or an art festival? | Again, it is gross to see rich people showing off their money. | We need pedestrian calm measures. People just wonder into the street. It is dangerous. | |
| 9/9/2022 16:59:03 | A worker in 93921 | It was okay. | Cool to watch and not as bad as folks had described it as, but also incidents of unnecessarily loud noise and reckless behavior (ex: cars revving/barreling down Ocean Ave) with no city authorities in sight. | No | | No | | I really liked them, but t | My work in public services requires facilitating cooperation between the public and community services, and Car Week helped as much as hindered that. | I am neutral. | I wouldn't mind larger events if they were managed properly by city personnel. | They helped with traffic and safety. | I was able to get in and out of the city for work without too much fuss. |
| 9/11/2022 17:22:04 | A resident of 93921 | Loved it. | great event that brings tourism to the area | No | I'm indifferent | No | neutral | They were okay. | I didn't pay much attention- and wasn't real clear on the events in the evenings on Ocean Ave | or maybe new and different events | I like the idea of doing something in the evenings in the village where people could do after dinner strolls | don't know | I really can't answer- not sure if they helped |
| 9/12/2022 8:55:46 | A worker in 93921 | Loved it. | This was my first car week experience and while I do not have an interest in cars, I loved seeing others' passion! I was impressed by the number of cars on display throughout town and the fact that people had travelled from around the country to attend the event. My favorite moment was driving out Ocean towards 1 and seeing a group of young men/teens with lawn chairs posted up in a driveway, excitedly waiting for the next cool car to drive by. | No | | Yes | I have never experienc | I didn't care very much | No interest in organized car week events | Have never seen these events but would be interested to experience them | From what I've heard, these are part of Carmel's historical tradition that seem worthy of continuing | I'm not sure. I leave work at 5pm and did not experience car week at night | |
| 9/12/2022 11:02:32 | A worker in 93921 | It was okay. | Felt too crowded and the guests were not well behaved. | Yes | It was okay. | Yes | Loved it. | They were okay. | Didn't appreciate the behavior of the Village guests after dark. | Apathetic. | Not sure it will attract any better behaved guests. | They helped with traffic and safety. | The traffic calming measures made it less appealing for the 'side shows.' |
| 9/12/2022 11:45:12 | A resident of 93921 | It was okay. | Felt less significantly lively than usual. The loss of Concours on the Avenue was clearly felt. The prancing ponies show didn't bring the same energy or scale. | No | I walked by the event a | Yes | It was okay. | They were okay. | The events in town felt like second tier after thought events. | Yes. | Car Week is a big event for the area and Carmel felt left out this year. We were just a place for people to sleep vs being a part of the event. | They helped with traffic and safety. | The evenings were not disrupted by the cars speeding through town as they have been in the past. |
| 9/12/2022 11:46:41 | A resident of 93921 | I did not like it at all. | Unchecked speeding and reckless driving all over the village, not just on Ocean. | No | N/A since I did not atter | No | N/A since I did not atter | Assume you mean Car | We didn't attend | No | Event likely to attract more traffic, speeding, reckless driving | They helped with traffic and safety somewhat. | Very limited due to perceived impact on businesses. Suggest more closures around Ocean completely shutting down causing and create more of a walking street faire to attract people to businesses. |
| 9/12/2022 12:25:10 | A resident of 93921 | Loved it. | Great cars, fun visitors. | Yes | Loved it. | Yes | Loved it. | Loved them. | Great to showcase Carmel with interesting events. | Yes. | Celebrate life! | They helped with traffic and safety somewhat. | |
| 9/12/2022 12:27:02 | A resident of 93921 | I did not like it at all. | very little for locals to see this year / too much cars racing down the neighborhood streets | No | did not visit it | No | not worth going to | | see previous answer | Yes. | it makes it something worthwhile to see in the village | Carpenter Street was a disaster with loud cars racing up and down it | the noise in the residential area and safety issues with the cars speeding |
| 9/12/2022 12:28:04 | A resident of 93921 | It was okay. | Revving cars during day and evening. Concern about pedestrians in crosswalks. Great for business. | No | | No | | They were okay. | Missed the Concours on the Avenue. | Yes. | Quality event that seems to be an anchor event for the smaller events. | They helped with traffic and safety somewhat. | Good that Ocean closed in evening. Maybe have some barriers up in the evening/night on neighborhood streets that open to residents only? For example (and granted, self-serving), from Monte Verde/Seventh south to Ninth? |
| 9/12/2022 12:28:10 | A worker in 93921 | It was okay. | miss Concours on the Avenue. Only car event was Prancing Ponies which I believe to be substandard. | No | knew it was there. didn | Yes | I did not like it at all. | not like the old days of | Those two events were professional and represented Carmel-by-the-Sea the way we would want our village to show. | Yes. | Carmel-by-the-Sea = quality, high end events | They helped with traffic and safety. | |
| 9/12/2022 12:28:10 | A resident of 93921 | I did not like it at all. | The Thursday event was marketing a lot of cars for rent. Tacky. And it should have been held on Wednesday so the farmers market on Thursday could have been held. | No | | Yes | I did not like it at all. | | | Yes. | The Concours event has always been tasteful, classy and benefits an amazing local charity, The Carmel Foundation. | | |
| 9/12/2022 12:28:40 | A resident of 93921 | I did not like it at all. | No events | Yes | It was okay. | No | Scam charity | What events? | See above | Yes. | I miss COTA and the Tour | | |
| 9/12/2022 12:28:59 | A resident of 93921 | It was okay. | Do not enjoy the throngs of people all over town. | No | Did not attend | Yes | Again very crowded | They were okay. | Too crowded | No | You have to ask….too crowded | They helped with traffic and safety. | |
| 9/12/2022 12:30:33 | A resident of 93921 | It was okay. | missed concours on the avenue | No | did not attend | Yes | Loved it. | They were okay. | Prancing Ponies car show was great, filled the void (somewhat) of the concours on the ave, but still missed that event | Yes. | tradition, and it also helps the businesses in carmel, makes car week in carmel more festive, etc. | They helped with traffic and safety. | i actually think it would be fun if they shut the streets down on Saturday night and allowed the fancy cars to come through and "show off" . Crowds would love to see that and it would bring people in to watch vs. making it a safety issue |
| 9/12/2022 12:31:17 | A resident of 93921 | It was okay. | No event on Ocean Ave. this year | No | Did not attend | No | Did not attend | They were okay. | Did not attend any | Yes. | | They helped with traffic and safety. | |

# Attachment 1

| Timestamp | I am: | How did you feel about Car Week in Carmel-by-the-Sea overall this year? | Why do you feel that way? | Did you attend the Acura in the Park Event on Tuesday, August 16? | How did you feel about the Acura in the Park event on Tuesday, August 16? | Did you attend the Prancing Ponies All Woman Car Show on Thursday, August 18 on Ocean Avenue? | How did you feel about the Prancing Ponies All Woman Car Show on Thursday, August 18 on Ocean Avenue? | How do you feel about the events in Carmel-by-the-Sea in general this year? | Why do you feel that way? | Do you want to see the larger events like Concours on the Avenue and/or Tour d'Elegance return to Carmel-by-the-Sea if it is possible? | Why do you feel that way? | How did you feel about the effectiveness of traffic calming measures in place for safety in the City during Car Week - i.e. shutting streets down in the evenings, alternate routes around Ocean Avenue, etc.? | Why do you feel that way? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/12/2022 12:31:55 | A resident of 93921, A v | It was okay. | I missed Concours on the Ave. and the Thursday Tour stop. | No | | Yes | It was okay. | They were okay. | Concours on the Ave is a very well executed event and we missed it. The Thursday tour stop is also very special and we missed it! | Yes. | They are wonderful events! | They helped with traffic and safety somewhat. | I appreciate how they closed Ocean at Junipero in the evening and redirected traffic. During the daytime, during car week, there was some dangerous activity. As soon as I would step out of the crosswalk, cars were gunning it to get to the next stop sign. Especially with my 6 year old with me, this felt very unsafe. |
| 9/12/2022 12:32:27 | A resident of 93921 | It was okay. | Wish the cars on the avenue would return. Unhappy to hear of those who came to town to cause problems. Grateful to our amazing police department doing their best. | Yes | It was okay. | Yes | Loved it. | Loved them. | Love the variety of community activities for such a tiny village. | Yes. | It's such a great opportunity for people to see amazing cars without the high cost of Pebble Beach events. | They helped with traffic and safety somewhat. | People still speeding, revving engines, etc. |
| 9/12/2022 12:33:12 | A resident of 93921 | Loved it. | Great to see fancy cars around the downtown neighborhood | No | What event in the Park´ | No | What event on Ocean A | Loved them. | Glad to see all the activity in the area | Yes. | A little personal inconvenience is worth it | They helped with traffic and safety somewhat. | worked fine |
| 9/12/2022 12:33:46 | A resident of 93921 | Loved it. | The influx of car enthusiasts brings millions of dollars to local business and Charity's | Yes | I would like to see the c | Yes | Loved it. | Brings local community | Brings local community together | Yes. | These free events allow younger families to<br>Learn and see cars they'd never have the opportunity too without spending hundreds at Pebble | They did not help with traffic and safety at all. | Created more traffic in surrounds residential areas. Isn't a needed expense |
| 9/12/2022 12:36:49 | A resident of 93921 | It was okay. | It had a different feel. Less wholesome and more racing type vehicles that were not part of an official event. Racing up and down our streets for hours, with little regard for safety of pedestrians. Seemed like the people following the Fuel Run were not our usual visitors. Clogging the sidewalks, drinking and eating on sidewalks, etc. | Yes | It was okay. | Yes | Better than just OK. Di | They were okay. | Miss the Thursday event with the unusual older historical vehicles. | Possibly, if they are a bit smaller and less noise. | The COTA of the last few years had gotten stale. Too many Porsches. And, too much partying and public drinking when parklets were on the street in 2021. | They helped with traffic and safety somewhat. | They stopped some of the racing down Ocean Avenue. But there was not enough control of the Fuel Run traffic. |
| 9/12/2022 12:36:52 | A resident of 93921 | I did not like it at all. | Too busy, too unmanaged, too loud at night (we live near Junipero st) | No | Why? What's the point | Yes | It was okay. | They were okay. | Just not very interesting | Not until the TRAFFIC and the DISRESPECTFUL VISITORS are better managed. | You guess --- miserable experience. Dirty diapers in our front yard. Rude people running stop signs while I'm walking the dogs. It's just the caliber of person that these events are now drawing. It's all about money, money, money | They helped with traffic and safety somewhat. | Try living a block off of Junipero downtown |
| 9/12/2022 12:37:20 | A resident of 93921 | It was okay. | I miss Concours on the Avenue and the Tour d'Elegance on Ocean Avenue, and hope to see them back someday. | No | Devendorf Park should | No | It was okay. | Loved them. | | Yes. | I like that the downtown gets used in this creative, festive way. | They helped with traffic and safety. | |
| 9/12/2022 12:37:43 | A resident of 93921 | I did not like it at all. | Noise, violations requiring extra police time, exhaust fumes, goes against efforts to mitigate climate change. Only good for restaurants and hotels. Ostentatious puerile displays of wealth. | Yes | Went as a volunteer in | No | Not interested. | Unnecessary | I enjoy the beauty, clean air, quietness of the City. Nothing else is necessary. | No | It's 2022–way past due to shut down global warming contributors induced by endless hours of wasted gas burned on showing off 20th century relics. | They helped with traffic and safety. | Communication from CBTS PD. |
| 9/12/2022 12:38:24 | A resident of 93921 | Loved it. | The event is only one week per year. The village is alive as people celebrate cars. | No | It was okay. | Yes | Loved it. | Loved them. | I want to see more outdoor events. More outside dining and seating. | Yes. | I want to see more outdoor events. More outside dining and seating. | They helped with traffic and safety somewhat. | Did not like the traffic calming. Felt like a police state. Not friendly. Not inviting. |
| 9/12/2022 12:40:24 | A resident of 93921 | I did not like it at all. | No events. No Concour On The Avenue, no Thursday tour, no Aston Martin. | Yes | It was okay. | No | I did not like it at all. | I did not like them at all | The Prancing Ponies should be called the Prancing Phonies. Fake charity. They were supposed to be denied because it's a scam. According the IRS in 2017 they took in $486,811.00 and they only paid out $1,721 in grants. | Yes. | Love Car Week, Best week in the year. | They helped with traffic and safety. | YouTube influences and out of town people ruining the party for the rest of us. |
| 9/12/2022 12:41:55 | An innkeeper in 93921 | It was okay. | No Tuesday COTA nor aThursday stop over. | No | | Yes | Loved it. | Loved them. | | Yes. | Helps to increase overnight visitors on Monday & Tuesday. | They helped with traffic and safety. | |
| 9/12/2022 12:42:45 | A resident of 93921 | Loved it. | It was less crowded | No | What event in the Park´ | No | Not interested | They were okay. | | Yes. | It's fun - but do just one big event. | They helped with traffic and safety. | It seems comprehensive |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/12/2022 12:43:15 | A resident of 93921 | It was okay. | Really missed the drive-thru on Ocean Ave and the car display on Ocean Ave. Really upset by the bad behavior of some of the visitors which required police activity. The police did a great job. | No | It was okay. | No | It was okay. | They were okay. | Really missed the Carmel Mission event. | Yes. | Really a nice addition. | They helped with traffic and safety. | The traffic flow seemed just fine. |
| 9/12/2022 12:44:09 | A resident of 93921 | I did not like it at all. | after living here for 30 years the bloom is off the rose...as far as car week...i want a quieter carmel | No | What event in the Park´ | No | What event on Ocean A | I did not like them at all | i moved here for peace and the sound of the ocean... affordable restaurants...easy parking...no litter... respectful visitors | No | i have lived in large urban cities...i want a peaceful village as it was decades ago... | i mostly stayed home...when i drove i hated the irresponsible motorists and pedestrians | i am old.... i can afford to live here...pay my taxes...buy expensive gas and nice groceries....i want more bang for my buck in thinking this is ACTUALLY MY village and it can bring me serene joy i deserve |
| 9/12/2022 12:45:49 | A resident of 93921 | Loved it. | very nice event, good people, good for community | No | not personally intereste | No | Didn't bother me but I p | Loved them. | good events, good for community | Yes. | Nice to make them accessible, great attraction in town | They helped with traffic and safety. | |
| 9/12/2022 12:46:01 | A resident of 93921 | It was okay. | Missed the cars on Ocean | No | | Yes | It was okay. | Loved them. | Culturally interesting | Yes. | | They helped with traffic and safety. | |
| 9/12/2022 12:47:06 | A resident of 93921 | It was okay. | We missed the cars on the avenue and the tour d'elegance in town | No | What event in the Park´ | Yes | Loved it. | They were okay. | | Yes. | They are well run & fun | They helped with traffic and safety. | |
| 9/12/2022 12:47:58 | A resident of 93921 | Loved it. | I love seeing the old classic cars in such perfect condition and also the not so perfect but still old cars that their owners like to bring out of storage. | Yes | It was okay. | Yes | Loved it. | They were okay. | My first year as a resident and Concourse on the Avenue is cancelled - big disappointment. I can understand why and sympathize. | Yes. | It is much easier to walk into town and see cars on Ocean Avenue etc and also to walk to Hwy 1 and see the cars going to Big Sur than it is to go into Pebble Beach. | They helped with traffic and safety. | Because they seemed to help. |
| 9/12/2022 12:48:14 | A Car Week attendee fr | Loved it. | Loved the energy. Even though it added additional traffic, the many cars on the road and parked around the village, created a sense of inclusion through proximity. You didn't need to purchase a ticket to drive alongside or see/photograph many of the unique cars, just being out/about in the village was fun. | No | What event in the Park´ | No | What event on Ocean A | Did not attend | | Yes. | Great energy and fun to be amongst! | They helped with traffic and safety. | |
| 9/12/2022 12:48:17 | A worker in 93921 | Loved it. | Smaller events, east to navigate around the City. Events didn't overwhelm the City. Still lots of nice cars parked everywhere. | Yes | Loved it. | Yes | Loved it. | Loved them. | Again, they were small and didn't overwhelm the City. Both events were put together nicely, the Prancing Ponies on Ocean Avenue was the perfect size, they could of had more cars if they wanted. | Yes. | The events are different, one is an all day event (similar to the Prancing Ponies) and the other is just a drive through, but the cars are beautiful!!! Both bring different elements to the City. | | The streets should be reopened, the parts that were shut down seemed dead and closed up. I think the business owners in these areas suffered. Maybe look at different styles of traffic patterns - switching the left and right lane on each intersection or mid-block - maybe? |
| 9/12/2022 12:50:13 | | Loved it. | Great for the economy of Monterey County | No | | No | | Loved them. | Great for the economy of Monterey County. | Yes. | Great for the economy of Monterey county | | |
| 9/12/2022 12:52:56 | A resident of 93921 | I did not like it at all. | There was no Concours event | No | What event in the Park´ | No | What event on Ocean A | Lacks a sense of comm | The general feeling is that Carmel is shoddy, overrun by tourists, and no one cares anymore | Yes. | These are epic events! Especially Tour d'Elegance | It may have deterred racing. | There are a lot of Larry Lambos in town that week. We can hear them. |
| 9/12/2022 12:55:34 | A resident of 93921 | It was okay. | Cool to see all the cars but crowded and people were drag racing down ocean. | No | | Yes | Loved it. | They were okay. | | Yes. | Would like to see Carmel event return but need to enforce things like speeding. | They helped with traffic and safety somewhat. | There was drag racing down ocean |
| 9/12/2022 12:55:39 | A worker in 93921 | Loved it. | An exceptional event for the Monterey Peninsula. | No | | No | | | | Yes. | A free opportunity for locals to participate in Car Week. | They helped with traffic and safety somewhat. | Best that PD could do |
| 9/12/2022 12:57:06 | A worker in 93921 | It was okay. | I miss the bigger events from previous years. | No | I did not attend. | No | I did not attend. | They were okay. | The energy in the city is exciting but the lack of the big events made me not as excited about the events as I was in previous years. | Yes. | | No opinion. Did not affect me. | No opinion. Did not affect me. |
| 9/12/2022 12:57:29 | A resident of 93921 | I did not like it at all. | Rudeness of tourists and excessive noise | No | | No | | | | If it benefits the town, I don't mind | | They did not help with traffic and safety at all. | I've never seen the level of openly and arrogantly flouting traffic rules and speed limits as this year. |
| 9/12/2022 12:58:03 | A resident of 93921 | It was okay. | Aggressive drivers made me unsafe in walking downtown. I wasn't certain if they would observe stop signs -- some didn't. And the constant noise from loud mufflers, day and night. | No | Did not attend. | No | Walked through it, so h | They were okay. | Some businesses make lots of money and tax revenues accrue to us. That is OK | Yes. | Classier crowd and more revenue. It may be good for the city, but I just stay home and avoid the mobs | They helped with traffic and safety. | Anything is better than leaving it unchanged and wide open for mischief. |
| 9/12/2022 12:58:50 | A resident of 93921, A r | I did not like it at all. | Bad for my business. | No | What event in the Park´ | No | What event on Ocean A | I like the events that are for the residence , like | | No | | | |
| 9/12/2022 12:59:13 | A resident of 93921 | It was okay. | Really miss the Carmel Ocean Avenue car event. I think it provided a nice opportunity for residents and non residents a no cost oevent to get into the spirit of car week. | Yes | It was okay. | Yes | Loved it. | They were okay. | Same as previous answer. | Yes. | Same overall answer | They helped with traffic and safety somewhat. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/12/2022 13:04:43 | A resident of 93921 | It was okay. | Loved the Prancing Ponies two-block show; missed having the bigger Concourse on Ocean; Loved the hard work of CPD trying to keep the racing cars and shenanigans and everyone safe; Hated hearing about the threatening gang of bad actors disrupting people's safety and comfort! | No | | Yes | Loved it. | They were okay. | See answer to Q2 on earlier page | Yes. | Enjoy the cars, energy and fun atmosphere ... but also so very much appreciate how CPD works hard to control troublemakers disrupting things both on wheels and on foot. If it becomes to daunting to control them and keep people happy & safe, I would rather not have the event(s). | They helped with traffic and safety somewhat. | It definitely helps on Ocean but, unfortunately, there are troublemakers and other drivers who simply go to other streets and speed up well over safe speeds. We live on Dolores and a safe walk to town during Car Week is definitely much tougher. |
| 9/12/2022 13:05:07 | A resident of 93921 | Loved it. | Wonderful celebration of kinetic art | No | | Yes | Loved it. | Loved them. | Brings life to the town | Yes. | Unique opportunity for residents and visitors to witness truly world class events | They helped with traffic and safety somewhat. | |
| 9/12/2022 13:07:06 | A resident of 93921 | I did not like it at all. | Horribly loud, terribly crowded and misbehaving visitors | Yes | I did not like it at all. | No | What event on Ocean A | I did not like them at all. | | No | Horrible | They did not help with traffic and safety at all. | |
| 9/12/2022 13:08:23 | A worker in 93921 | It was okay. | I missed the concourse event on Ocean | No | | No | | | | Yes. | | They helped with traffic and safety. | |
| 9/12/2022 13:08:40 | A worker in 93921 | It was okay. | The impacts to traffic were not too bad. The event brought in alot of visitors and revenue, which is positive. The Prancing Ponies event was great! | No | | Yes | Loved it. | They were okay. | | Yes. | Revenue and visitors to Carmel are a positive way to bring people to experience the area. It would be great to have other events that focus on the environment and sustainability, such as electric cars/alternative energy | They helped with traffic and safety somewhat. | |
| 9/12/2022 13:11:50 | A resident of 93921 | It was okay. | cars on ocean av cancelled this year hope back next year really missed | No | What event in the Park´ | No | was not aware of it | I did not like them at all | cars in park too short no cars on ocean avenue this year too many rowdy outsiders on fri and sat night | absolutely return these two events | they were missed and they bring the local community together | They helped with traffic and safety somewhat. | too many outside visitors wanting to drive fast good that we had extra police in town |
| 9/12/2022 13:13:25 | A resident of 93921 | It was okay. | We really missed Concours on the Avenue | Yes | It was okay. | Yes | Loved it. | They were okay. | | Yes. | The free events are really important for locals who don't have the means to attend Pebble Beach or Auction events.<br><br>Not having races at Laguna Seca on Sunday was a strange choice that probably had nothing to do with the city but does make the week less desirable. | They helped with traffic and safety. | |
| 9/12/2022 13:16:55 | A resident of 93921 | It was okay. | I don't care about cars. | No | I don't care | No | I don't care | They were okay. | This is not an area of interest for me | No | I don't care about cars or the people who do | I stayed home to avoid all the traffic | |
| 9/12/2022 13:19:26 | A resident of 93921, A r | I did not like it at all. | My local clients don't want to come to town and car week doesn't generally bring me too much tourist clients. Perhaps sales are better for jewelry stores? It is really the worst week for me and many of us (business owners) have said that next year may be one where we are closed for the week. It's not worth the time coming in. | No | | No | | I did not like them at all | It's so rough on my business. | No | Same as above | They helped with traffic and safety. | Blocking the streets was great for preventing the usual revving and speeding that happens. |
| 9/12/2022 13:20:02 | A resident of 93921 | It was okay. | Good attendance and great for local businesses after Covid losses, but too many people. Attendance should be limited (tickets?) so village can handle crowds safely. Disruptions by out of towners who came to make noise and be a nuisance was not at all welcome. Concern for residents who need services or help when all resources were directed to events. | No | | No | | | Good attendance and great for local businesses after Covid losses, but too many people. Attendance should be limited (tickets?) so village can handle crowds safely. Disruptions by out of towners who came to make noise and be a nuisance was not at all welcome. Concern for residents who need services or help when all resources were directed to events. | No | Good attendance and great for local businesses after Covid losses, but too many people. Attendance should be limited (tickets?) so village can handle crowds safely. Disruptions by out of towners who came to make noise and be a nuisance was not at all welcome. Concern for residents who need services or help when all resources were directed to events. | They helped with traffic and safety somewhat. | Good attendance and great for local businesses after Covid losses, but too many people. Attendance should be limited (tickets?) so village can handle crowds safely. Disruptions by out of towners who came to make noise and be a nuisance was not at all welcome. Concern for residents who need services or help when all resources were directed to events. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/12/2022 13:20:43 | A resident of 93921 | It was okay. | Not enough enforcement & too much bad behavior | No | What event in the Park´ | No | Not sure why we do this | They were okay. | As residents, it all seems a bit out of control. Loud, speeding cars, crowds of unruly people, rules of the beach not followed. | Yes, with good enforcement. | We need more safety in place for residents. | Need mor | We stayed away from downtown so not sure what was/wasn't effective. Based on what we heard about certain behavior, we think we need more proactive enforcement |
| 9/12/2022 13:26:44 | A resident of 93921 | Loved it. | Car week brings lots of visitors and their families. The events provide fun things to do and the local businesses benefit. Yes, it's crowded and there's lots of traffic, but for one summer week, the area is all about automobiles. It's wonderful! I would really like to see the COTA come back and would be willing to volunteer to help with that effort. | No | I had to work... | Yes | Loved it. | Loved them. | It's a week about CARS. Love them or plan your trip out of town next year. I think it's the best week of the year and want to see Carmel reinstate COTA and the lunch hour of the Tour. | Yes. | That's what it's all about. If you don't like it, leave town for the week. | They helped with traffic and safety. | I think the traffic management was handled thoughtfully and that it made a real difference. |
| 9/12/2022 13:30:01 | A resident of 93921 | Loved it. | It brings interesting people, autos and much needed revenue to our town and to area charities. | No | | No | | Loved them. | The events showcase our community and bring people together. | Yes. | It was sorely missed this year and I believe the more events the better for reasons stated prior. | They helped with traffic and safety. | Pretty easy to get around all week. |
| 9/12/2022 13:31:11 | A resident of 93921 | It was okay. | I find part of the fun of Car Week is getting to stroll to downtown and see the cars/chat with the owners and enthusiasts, which wasn't an option this year as we didn't have the Concours on the Avenue. | No | I didn't attend. | No | n/a | Missed Concours. | It's an event that fits my level of participation in Car Week. | Yes. | Car Week isn't going away. It will continue to be in the surrounding areas, and we will continue to hear the noise from the cars coming through town or on Hwy 1 into the evening even if Carmel doesn't participate. It's nice to enjoy some of the activities of Car Week without having to pay a large amount for tickets or drive to another town/search for parking, etc. Concours on the Avenue was a great way to see a lot of the cars, feel like the town was bustling with enthusiasts as opposed to feeling as if our town had been overtaken by those attending Car Week. | They helped with traffic and safety. | The 5-way stop at the bottom of Ocean is often a nightmare crossing without an event happening. I thought the redirection of traffic helped tremendously in that area. |
| 9/12/2022 13:33:47 | A worker in 93921 | I did not like it at all. | Too noisy, too much traffic, crime, and chaos. | No | What event in the Park´ | No | What event on Ocean A | They were okay. | | No | Streets around this area are not constructed for large events like this. This is a quaint area with a classical, whimsical ambience and the events should be fitting of this. | They helped with traffic and safety somewhat. | |
| 9/12/2022 13:38:58 | A worker in 93921 | Loved it. | It's my first time being here in Carmel during the week. I loved seeing all the cars. | Yes | It was okay. | No | I wasn't here. | Loved them. | | not sure, as I have not experienced them. | | do not have an opinion. | |
| 9/12/2022 13:44:43 | A resident of 93921 | I did not like it at all. | It's all too much. Hear racing engines at night feels unsafe for the community | No | Too many events | No | Didn't go | Not interested | Car week is now ten days or more. It's too much and has wrecked the thing . 85000 visitors and we have no water?? | Those events are more traditional and the one supports carmel foundation | See above. Your is directly related to the main event | Not sure . Avoided town at night. It's t sounded dangerous snd friends told me it felt that way | Why do people think it's ok to come to our town and race ???!!! |
| 9/12/2022 13:53:39 | A resident of 93921 | I did not like it at all. | Noise, visitors looking to park in the driveways, facing wrong way, cars go throuth the stops without stopping (Monte Verde & Ocean-needs a cop present at all times). | No | I did not like it at all. | | I did not like it at all. | They were okay. | | No | Not enough cops to keep things under control | They helped with traffic and safety somewhat. | Alternative routes around Ocean Ave would clog up narrow streets |
| 9/12/2022 13:59:35 | A resident of 93921 | I did not like it at all. | We live close to one of the main entrances/exits into town. The loud revving of car engines went on well after we had gone to bed most nights of car week. We were woken from sleep four and five times a night. We are also frequent pedestrians and it became quite dangerous at times with speeding cars and little regard for stop signs. For the first time ever I was frequently thinking "where are the cops". | No | | No | | Did not attend | | | | I wish that there had been more comprehensive safety throughout the city, not just centered on downtown. I live about six blocks from town and I felt that my neighborhood was turned into a race track. The noise and the speeding cars made walking into town very unpleasant | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/12/2022 13:59:43 | A resident of 93921 | I did not like it at all. | Hard to move around our own city. Loud racing engines at all hours of the night. Streets littered by people who do not respect our city. | No | | No | | I did not like them at all. | | No | People park haphazardly all over the neighborhoods, where parking is already at a premium. A friend had her driveway blocked and the police refused to have the rental car towed. Squealing tires, revving engines, and cars racing between stop signs. I watched several cares blow through stop signs like they weren't even there. It becomes very dangerous for pedestrians in the neighborhoods. | Only helped moderately in the downtown. | |
| 9/12/2022 14:01:28 | A resident of 93921 | It was okay. | We live far enough from the center that the inconvenience doesn't reach us | No | Not in town that day | No | It was okay. | They were okay. | Don't go near the center at that time | This year seemed to have less crush | Celebrating such inequality kind of doesn't mesh with our values | They helped with traffic and safety. | We didn't seem to notice any problems |
| 9/12/2022 14:02:08 | A resident of 93921 | Loved it. | I liked seeing the visitors in town, I liked seeing the cars | No | | Yes | Loved it. | Loved them. | | Yes. | It is a really fun experience | They helped with traffic and safety. | |
| 9/12/2022 14:09:47 | A resident of 93921 | Loved it. | Vibrancy…lots of people and fun | No | | No | | They were okay. | | Yes. | Good for the town | They helped with traffic and safety. | |
| 9/12/2022 14:18:28 | A resident of 93921, A v | I did not like it at all. | Too crowded, too noisy. Not really what the village is about imho | No | It was okay. | No | It was okay. | Love farmers' market | as above | No | as above | it was scary here. first time in 20 + years I've felt that way. | Scary! |
| 9/12/2022 14:19:17 | A worker in 93921 | It was okay. | It was very crowded | No | What event in the Park? | No | What event on Ocean A | Not a huge fan of car week | | Yes. | I like the more traditional | They helped with traffic and safety. | I heard it was crazy! |
| 9/12/2022 14:19:43 | A resident of 93921 | It was okay. | I was disappointed that Concourse on the Avenue did not take place. | No | | Yes | Loved it. | They were okay. | | Yes. | | They helped with traffic and safety. | Police were organized and ready for inappropriate activity. |
| 9/12/2022 14:20:32 | A resident of 93921 | I did not like it at all. | Every year it just seems like we have more "bad actors" in town. These are not classic car enthusiasts, but just people - typically young men - with loud cars that they like to drive fast, seemingly enjoying the annoyance they create. It has become a loud and unsafe weekend and I'd be delighted if it just went away. | Yes | It was okay. | Yes | It was okay. | They were okay. | The sponsored events are fine, but having them CBTS just encourages the bad actors to also attend. | No | I think I've said it - the overall tone of car week is inconsistent with the tone of CBTS. It is a "look at me" crowd, showing off their stuff. Boys with toys. CBTS is delightfully not about showmanship. End this please. | They helped, but only by keeping an intolerable situation from becoming worse. | As long as CBTS supports any events at car week, it will continue to be identified as the place to come and annoy the locals. Shutting down streets is just a game of whackamole, sending the nuckleheads into the residential streets. How about a big sign at Ocean and Hwy 1 saying that there are no car week events in CBTS, and to please enjoy those in Carmel Valley and Monterey and elsewhere! |
| 9/12/2022 14:23:57 | A resident of 93921 | I did not like it at all. | City already has 40% 2cd/3rd and investment homes -- all unoccupied. Character is lost as a wealth enclave, some would say wealth ghetto | No | I did not like it at all. | No | I did not like it at all. | They were okay. | Some diversity to events | No | City less a "real town" and more an Event Center for wealthy and wealthy wannabes | They helped with traffic and safety somewhat. | Drag racing on Ocean Ave, racing/speeding throughout the peninsula |
| 9/12/2022 14:26:19 | A resident of 93921 | I did not like it at all. | In this age of climate change, it is irresponsible to be celebrating the internal combustion engine. | No | | No | I did not like it at all. | I did not like them at all | See above. | No | See above. | They helped with traffic and safety somewhat. | |
| 9/12/2022 14:29:28 | A resident of 93921 | It was okay. | Missed COTA and Pebble Tour cars coming through. Felt like every other city had things going on except us. | No | It was okay. | No | I did not like it at all. | There weren't any | There was nothing | Yes. | They are classy and at no charge and show off our village in a good way. It's art in the street. | They helped with traffic and safety. | |
| 9/12/2022 14:31:31 | A resident of 93921 | Loved it. | Liked all the cars | No | Too much advertising | No | Didn't attend | Loved them. | | Like the Concors on the Avenueq | | They were good but probably need more. | Didn't like the crowd that gathered in the evening |

# Attachment 1

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/12/2022 14:34:50 | A resident of 93921 | I did not like it at all. | I hate what the crowds do to our town, and the drivers go racing through the neighborhoods at a really unsafe speed. | No | I did not like it at all. | No | I did not like it at all. | I did not like them at all | I understood the appeal of the Concours on the Avenue, since it offered people a chance to look at the cars without paying a steep price for a ticket, and of course I was pleased that the Carmel Foundation benefited from the event. But that event is gone, and we don't need other Car Week events in town. It doesn't seem consistent with the culture of Carmel, and I do hate it that we're celebrating the internal combustion engine at a time like this, when climate change is such a looming crisis. | I'd be grudgingly okay with the Concours on the Avenue, but that's it. | | They didn't work well enough...it was better than 2019, but still a problem. | |
| 9/12/2022 14:35:05 | A resident of 93921 | It was okay. | Need to do something about cars racing on San Carlos. Not safe and very loud. Happens up to almost midnight. Trash from sunset center to pur frontyards to 11th Avenue. Drunk high school kids at the bus stop on San Carlos and 11th from 1:00 p.m. until midnight. RV's parked in front of our houses with generators going, dogs barking and loud music. | No | | No | | Working so did not attend any events. | | Yes. | Great boost for our village shops and is a wonderful time for locals. | Did not seem to stop racing and loud cars in residential area on San Carlos. Blocking Ocean was s good move. | It seems like what was done wS for the commercial district and not much for residents on San Carlos and other high traffic streets like Junipero. |
| 9/12/2022 14:50:22 | A resident of 93921 | It was okay. | Minimal exposure but likes that Prancing Ponies was on Ocean Avenue | No | | Yes | Loved it. | They were okay. | | Yes. | More excitement and brings in outside participants and tourists | They helped with traffic and safety. | |
| 9/12/2022 14:59:39 | A resident of 93921, A r | It was okay. | No COTA, no Pebble Beach Tours d'Elegance on Ocean | Yes | | Yes | I did not like it at all. | Kind of pathetic versus | See above. | Yes. | We need it for the City's economy and I like beautiful cars. | They helped with traffic and safety. | Think how bad it would have gotten without them. |
| 9/12/2022 15:17:47 | A resident of 93921 | It was okay. | | Yes | Loved it. | Yes | Loved it. | Loved them. | | Yes. | | | |
| 9/12/2022 15:43:51 | A resident of 93921 | Loved it. | Love seeing all the cars and excitement in the town | No | | Yes | Loved it. | Loved them. | | Yes. | I think its good for the town | They helped with traffic and safety. | |
| 9/12/2022 15:50:29 | A resident of 93921, A r | It was okay. | I would like to see Concourse on the Avenue return (I understand why it did not happen this year) and the road rally on Thursday stop in town again. These are the type of events that Carmel should embrace and work to keep. They bring a lot of people into town—which is good for everyone. Yes, parking is difficult but so what, it' s a couple of days. Unfortunately, the “events” that did take place—evening drive arounds—we' re not the type we want in town. | No | | No | Didn’t attend but glad th | They were okay. | | Yes. | Great events that reflect the Carmel. | They helped with traffic and safety somewhat. | |
| 9/12/2022 15:51:19 | A resident of 93921 | It was okay. | Sad that the concours on Ocean Ave did not take place | Yes | It was okay. | Yes | It was okay. | They were okay. | Again missed the concours on the avenue | Yes. | The events are fun and interesting | They helped with traffic and safety. | The Carmel PD did a great job |
| 9/12/2022 15:54:05 | A resident of 93921 | I did not like it at all. | (1) Loud, intoxicated people on the sidewalk, (2) people disrespectful to and threatening police officers, (3) reckless, speeding unsafe driving, (4) loud cars and motorcycles with mufflers ALL night long and (5) no place for families and the elderly. Why did we install cameras around town that don't monitor and ticket excessively loud vehicles? Don't we care about our reputation? Every year this gets worse!!! Why do we tolerate this behavior? Where is the benefit here? I know many residents who leave town for car week. | No | I did not like it at all. | No | I did not like it at all. | All of them are fine EXC | This is not way to live! | The Tour d'Elegance was fine. It was free and open to everyone. It least we got some benefit for all the trouble. | Why don't we celebrate something environmentally responsible, like an electronic vehicle show. How about an event that features new EVs and people that have converted their gas cars to EVs? There are many wonderful and charming EV conversions. The people doing the conversions are wonderful and charming too. And they can educate the kids! Something that is positive and not fueled by petrol and alcohol. | They helped with traffic and safety somewhat. | |
| 9/12/2022 16:13:38 | A resident of 93921 | It was okay. | It didn’t really make a difference to my activities. | No | What event in the Park? | Yes | Loved it. | They were okay. | We missed the Ocean Avenue event. | Yes. | Ocean Avenue is a great venue | They helped with traffic and safety. | Controlling the speed up and down ocean Ave is essential |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/12/2022 16:24:50 | A resident of 93921 | I did not like it at all. | Too many visitors overwhelm the village and the municipal resources. Attracting an undesirable element as seen on Friday night this year and akin to the problems of several years ago. | No | | No | | too many! | The City is catering to the visitor element and not the residential community. The downtown public assets looks shabby, unkempt, in need of maintenance and repair/replacement. But the focus is on events to attract out-of-towners. | No | Same answers as above | If we didn't have the events, we wouldn't need the traffic efforts. | Same as previously listed. |
| 9/12/2022 16:31:00 | | | | | | | | | | | | | |
| 9/12/2022 16:31:50 | A resident of 93921 | It was okay. | Carmel should host the Tuesday and Thursday events like before. The amount of people and traffic is the same whether the main events are outside of Carmel or in Carmel, so why not host some of the events that Carmel is known for. | No | What event in the Park´ | No | Just not the amazing C | Not impressed. | By comparison to previous car show years in Carmel, this was not worth attending or inviting friends to come. | Yes. | Spectacular cars and it's free for everyone to enjoy on Carmel's amazing stage (it's streetscape of historic buildings), and Carmel is famous for these events. I don't like the traffic issues or sideshows, but we seemed to have those issues without hosting. | They did not help with traffic and safety at all. | Still too many people and too many cars. As a resident, I usually leave town to avoid the traffic and crowds. |
| 9/12/2022 16:41:57 | A resident of 93921 | Loved it. | Car week is a globally recognized series of events that bring patrons and participants to the Peninsula from all over the world. this global exposure is priceless and should be celebrated by everyone interested in seeing carmel thrive. | Yes | Loved it. | Yes | Loved it. | Loved them. | Carmel should encourage events and community celebrations to enhance and reinforce our active culture. | Yes. | | They helped with traffic and safety somewhat. | I don't think closing ocean avenue is the right decision. Instead just place sufficient temporary speed humps to modulate flow. |
| 9/12/2022 16:48:39 | A resident of 93921 | It was okay. | Fewer cars as previous years. Loud recorded music not useful. | Yes | I did not like it at all. | Yes | It was okay. | Loved them. | I love local events | Yes. | It enhances the town | They helped with traffic and safety somewhat. | Speeding on 4th as usual to/from Pebble Beach |
| 9/12/2022 17:50:06 | A resident of 93921 | It was okay. | Missed the Concours on the Avenue | No | What event in the Park´ | No | missed it unfortunately | Missed the usual Thursday car meet at Devend | | Yes. | Love the cars and it brings in high end tourists and makes money for the town and charities | They helped with traffic and safety. | Didn't notice any disruptions except for loud engine noises at night |
| 9/12/2022 17:56:30 | | I did not like it at all. | The attendees do not respect Carmel, our town, the plants and it provides an opportunity for mayhem by those bent on causing trouble. It causes traffic disruption, closure of schools, prevents people who work in and around Carmel to cancel their jobs. | No | I drove by it to see how | No | Did not go. | They were okay. | The cultural events befit Carmel. | No | The Concours on the Avenue just go too big. The 10 days of events become headaches for residents, other than those who like cars. The Tour with a stop in Carmel would be welcome. | | Because I avoid downtown during Car Week, I cannot speak to this issue. It was very crowded when I did drive through. |
| 9/12/2022 17:59:35 | A resident of 93921 | Loved it. | Loved the excitement and seeing all the exotic, beautiful, and sporty cars on the roads or parked in town. | No | It was okay. | Yes | Loved it. | They were okay. | Miss the Concours on the Avenue on Tuesday's and vintage cars lined up on Ocean on Thursday's. | Yes. | They were the highlights of Car Week for my husband and me in past years. As residents, we loved being able to walk freely to the events, mingle with people, and spend time taking photos. | They helped with traffic and safety somewhat. | As a pedestrian, I felt it was more dangerous to divert traffic to side streets which were narrow and caused congestion, resulted in impatient and erratic drivers, made parked cars were more likely to be sideswiped, and created more risks for pedestrians crossing streets. |
| 9/12/2022 18:04:32 | A resident of 93921 | It was okay. | | No | | No | I did not like it at all. | Missed cars in Carmel | Fun gathering with locals | Yes. | Local involvement | They helped with traffic and safety. | Kept traffic moving |
| 9/12/2022 18:05:14 | A resident of 93921 | I did not like it at all. | It used to be called « le concours d'élégance ». Now it is more like noise, drag racing and total disrespect for our precious little town. I live on Carpenter and we take our very lives in our hands trying to back out of our driveways. The noise and danger of the speeding on my street is absolutely unacceptable and very dangerous. | No | | No | | | | Yes. | Because that is what the Concours is about | | |
| 9/12/2022 18:37:31 | A restauranteur in 9392 | It was okay. | Not enough foot traffic | Yes | It was okay. | No | What event on Ocean A | They were okay. | Big events are all gone | Yes. | More people in town | They helped with traffic and safety. | Need to enforce |
| 9/12/2022 18:59:01 | A resident of 93921 | I did not like it at all. | Crowds at night too large, lawlessness, etc. | No | What event in the Park´ | Yes | I did not like it at all. | I did not like them at all | these events are attracting an outside element that is reckless, dangerous | No | too disruptive | They did not help with traffic and safety at all. | there were incidents of crime, out of control behavior |
| 9/12/2022 19:32:40 | A resident of 93921 | It was okay. | Missed the daytime events that usually occur. | No | | Yes | It was okay. | They were okay. | Missed the drive through parade and the other daytime event<br>Hope they are back next year | Yes. | More enjoyable than the nighttime antics | They helped with traffic and safety. | Pedestrian management has gotten challenging, we even saw a flasher this year. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/12/2022 20:36:54 | A resident of 93921 | It was okay. | Too much of a sideshow feel on Ocean Ave Friday and Saturday nights. It was a younger crowd that appeared to be interested in loitering and side show type events. Didn't feel like the typical car week audience. | Yes | It was okay. | Yes | Loved it. | They were okay. | we missed attending concourse on the ave. Acura event was fairly low key and uneventful | Yes. | these are traditional car week events that bring true car enthusiasts to the city and people who will also patronize the restaurants and retailers | They helped with traffic and safety somewhat. | overall too many people downtown on Friday and Saturday and a questionable crowd |
| 9/12/2022 20:37:56 | A worker in 93921 | Loved it. | It was exciting to see the joy and enthusiasm of the car lovers. Patience was important to handle the large number of visitors | Yes | Loved it. | Yes | Loved it. | Loved them. | Again, the enthusiasm and joy of all participants was worth the challenges of the crowds | Yes. | So many people asked "When is the Concours on the Avenue?" It was truly missed by many people | They helped with traffic and safety. | |
| 9/12/2022 20:59:42 | A resident of 93921 | Loved it. | Need to bring back COTA | Yes | Loved it. | Yes | Had mixed feelings abo | Loved them. | Enjoyed people from all over the world coming together for an innovative event in a beautiful location. | Yes. | Making the beautiful cars available to all to appreciate is essential to Car Week. And the draw for local businesses is huge. Missed that this year quite a lot. | They helped with traffic and safety. | There are some who are detrimental to this elegant history. |
| 9/12/2022 23:02:04 | A resident of 93921 | It was okay. | I hate cars and car noise. So I stay away from downtown, and it then does not bother me too much, except for the occasional roar of an unmuffled roar | No | What event in the Park´ | No | What event on Ocean A | I did not like them at all | Hate cars and attendant hoopla | No | | They helped with traffic and safety somewhat. | |
| 9/12/2022 23:45:11 | A resident of 93921 | It was okay. | We really missed COTA and even much more missed Tour D'Elegance stopping in town on Thursday.<br>Prancing ponies was ok (better than nothing ). The exotic cars around town were amazing (jewelry on wheels) . | No | Like going Tovar dealer | Yes | It was okay. | They were okay. | Already answered this | Yes. | Getting up close for free to the 1950 and prior year cars is what is the real Village experience for Car Week. Love love love that the best! | They helped with traffic and safety somewhat. | Still too much speeding in San Carlos Ave. |
| 9/13/2022 0:10:44 | A resident of 93921 | It was okay. | For me, car week is all about the Thursday tour on Ocean Ave we previously have enjoyed. I had volunteered from 2016 to 2019 for this event, until the pandemic shut it down. It is such a great opportunity for residents and visitors to see the classics up close and interact with the owners ….. all for free. Please work on bringing that back as an event!! | Yes | I did not like it at all. | Yes | It was okay. | I did not like them at all | Nothing can replace the COTA event on Tuesday and the Thursday Tour d' Elegance on Ocean. I realize the issues with the Tuesday event and am sympathetic. Please work to bring them back. The Acura and Prancing Ponies were unimpressive substitutes. | Yes. | They are stellar events and contribute to the Carmel Foundation. The Tour d'Elegance is an opportunity to volunteer and provides residents and visitors an opportunity to see these amazing cars that will be judged up close for free. The COTY event highlights more of the exotic cars which are exciting, as well. These two events are what makes car week special for me! | They helped with traffic and safety somewhat. | Ocean Ave was way too crowded with hyper cars and people. |
| 9/13/2022 6:22:10 | A resident of 93921 | I did not like it at all. | Too many loud cars, totally out of control. City streets should not be blocked with car shows and the resulting no parking for traffic control. Too big for our small business district. | Yes | I did not like it at all. | Yes | I did not like it at all. | I did not like them at all | The cars shown were not worthy of the resulting disruption. | No | These events are too large and disruptive. It is questionable as to the revenue brought in compared to the overall cost to the city to monitor and maintain them. | They did not help with traffic and safety at all. | Obstacles seem to annoy the speeders, sometimes resulting in more reckless driving. There should be more police presence and violations given. |
| 9/13/2022 7:22:18 | A resident of 93921 | Loved it. | I think it's nice to have a classy event with beautiful cars and owners who love sharing them. I liked the prancing pony show a bit more than the previous event. The events bring life as well as money for our local businesses. | No | | Yes | Loved it. | Loved them. | Same answer as above. | Yes. | Same answer | They helped with traffic and safety. | From what I observed in the evenings it seemed a bit calmer than previous years although I know we had some issues with bad behavior. |
| 9/13/2022 7:31:03 | A resident of 93921 | It was okay. | Completely missed having concour on the Avenue. We have car event guru's here who could've stepped in and picked up the event for the previous operator and then have given it back to her should she choose. An event conservator per say. | Yes | Loved it. | Yes | Loved it. | They were okay. | Needed concours on the ave | Yes. | That event elevates our area and allows us to show off to a world crowd. | They helped with traffic and safety somewhat. | |
| 9/13/2022 9:26:06 | A resident of 93921 | I did not like it at all. | Bad elements in town. | No | I DIDN'T ATTEND | No | I DIDN'T ATTEND | I think that there's an ur | I think that there's an unruly element that comes to town and we need to deal with that. | No | Too much unruliness | They helped with traffic and safety. | |
| 9/13/2022 9:37:57 | A resident of 93921 | It was okay. | No Cars in the Avenue | No | What event in the Park´ | No | What event on Ocean A | They were okay. | | Yes. | More events, more fun | They helped with traffic and safety. | |

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| 9/13/2022 10:15:22 | A resident of 93921 | I did not like it at all. | The noise is deafening. We live close to 17 mile drive and we may as well live next to Laguna Seca. I never heard police sirens chasing down those racers. How about imposing an RPM limit? What about violations of noise limits. I was in a cross walk and had an antique car honk at me to get out of the way as he sped past! The lack of Concours on the Ave spoiled car week for Carmel-By-The-Sea Residents! | No | What event in the Park´ | Yes | It was okay. | I only saw one | | Yes. | They are the only events that make car week tolerable for residents. | I didn't witness any positive effects | |
| 9/13/2022 10:20:15 | A worker in 93921 | Loved it. | It brings energy and excitement to the village. And lots of eye candy (the cars, of course)! | No | What event in the Park´ | Yes | Loved it. | Loved them. | The vibe is so positive. | Yes. | More energy, excitement, and good vibes for the village. Plus it's an economic boost to our local economy. | They helped with traffic and safety. | People who break the rules will always find a way. Carmel PD did an excellent job managing those who got out of hand. |
| 9/13/2022 10:31:03 | A resident of 93921 | Loved it. | Because the Auto Racing Industry made me what I am today. I love Cars! | No | Didn't attend this event. | Yes | Loved it. | Loved them. | Events generate revenue for Carmel plus I love people. | Yes. | We all need to get out of the house, have fun and meet new people! | They helped with traffic and safety. | Because it helped isolate the flow of event traffic. |
| 9/13/2022 11:48:40 | A resident of 93921 | It was okay. | I missed the Concourse de Avenue and would love to see it return. Also, there was a different crowd on the Avenue this year. Many younger adults who seemed to be more interested in loitering and side shows than automobiles. It felt like a more "combustible" crowd which made it less pleasant for me. | Yes | It was okay. | Yes | Loved it. | They were okay. | See prior response | Yes. | Very enjoyable and good for Carmel merchants | They helped with traffic and safety somewhat. | |
| 9/13/2022 12:13:41 | A worker in 93921, A Ca | It was okay. | TRAFFIC NOISE | Yes | It was okay. | Yes | It was okay. | Loved them. | CARMEL IS #1 MOST BEAUTIFUL CITY | Yes. | REVENUE | They helped with traffic and safety. | |
| 9/13/2022 12:43:51 | A resident of 93921 | It was okay. | It didn't interfere with my life. | No | What event in the Park´ | Yes | It was okay. | They were okay. | I miss the usual big events. | Yes. | They are a bigger draw and more exciting. | They helped with traffic and safety somewhat. | I could get around better |
| 9/13/2022 13:26:03 | A resident of 93921 | It was okay. | I used to like it, many, many years ago. Like Carmel by the Sea, it now attracts way too many visitors. Those visitors cost tax dollars (police, administration, maintenance, clean-up, etc). I don't benefit in any way and am mostly inconvenienced. Businesses make money, homeowners who can rent their homes for outrageous sums due to demand, make money. Residents like me foot the bills for no benefit other than the eye candy of the cars. For the 20 years we have lived here, we've seen our city go from a nice quiet little beach community to a profit driven, over advertised, over visited, over priced, Business, whose goal is to make money for business. The quality of life to residents like me has gone down tremendously while the budget to maintain this business centric model has become obscene. | No | What event in the Park´ | No | I did not like it at all. | | Too crowded, no parking, I avoid town other than very early in the day. | No | If it gets larger than it was this year I'll leave town like many other residents do. | They helped with traffic and safety somewhat. | Traffic control of events has very much improved over the years. How much did this traffic and safety cost exactly? |
| 9/13/2022 14:10:39 | A worker in 93921 | It was okay. | Loved the cars, hate the traffic but once a year, the pro's outweigh the con's. | Yes | Loved it. | Yes | Loved it. | Loved them. | Would like more car events | Yes. | Love the cars | Needs improvement like shut down Ocean St completely and sell or allocate parking spots for show cars only.s | Love old cars |
| 9/13/2022 14:42:01 | A resident of 93921 | I did not like it at all. | Missed having the car show on Ocean Avenue this year and felt that Carmel was not as active in Car Week as it has been in the past. So we left town for a few days. | No | We were not in town on | No | Have seen Prancing Po | Would like to see Carm | Prefer having Carmel be a major player during Car Week with top notch events. | Yes. | We have always enjoyed those events. | We were out of town. | See above. |
| 9/13/2022 15:04:05 | A resident of 93921 | Loved it. | I enjoyed the Prancing Ponies show, and seeing all the fancy sporty cars parked around town during the 10 days of car week. | No | Missed it but would hav | Yes | Loved it. | Missed having the cars | We have enjoyed both events in the past and missed them this year. It is a great opportunity to see the cars close up without having to leave town and face traffic! | Yes. | I think they are great events that draw a lot of people to town - enjoyed by both locals and tourists, and great for our local businesses. | They helped with traffic and safety somewhat. | I walked downtown a few nights and the later it got there was a feeling things could get out of control pretty easily (I worked in law enforcement before I retired) |
| 9/13/2022 15:20:18 | A Car Week attendee fr | Loved it. | It wasn't too overly crowded this time. We didn't have to wait long for dinner anywhere either. The police did really well on the traffic flow. | No | Missed it this year | Yes | Loved it. | Loved them. | Always a good time | Yes. | I love more events in the area | They helped with traffic and safety. | |
| 9/13/2022 15:35:20 | A Car Week attendee fr | I did not like it at all. | There continues to be a reduction of car week events each year. It is disappointing given the events I've attended numerous times in years' past. | No | What event in the Park´ | No | Did not attend as I was | I did not like them at all | Lack of shows that were staples in previous years | Yes. | Concours on the Avenue and the tour stop were the two events I would attend every year in Carmel. | They did not help with traffic and safety at all. | It did not calm traffic by shutting streets down and it is an insulting measure taken for one week a year by a community that loves to reap the rewards of car week but doesn't want to partake in it. |
| 9/13/2022 15:35:48 | A resident of 93921 | It was okay. | traffic and stunt car racing in Carmel was unacceptble | Yes | I did not like it at all. | Yes | not a good role model f | nothing special | nothing of interest for me | one or the other but not both | traffic and safety concerns | They helped with traffic and safety somewhat. | helped with traffic but safety issues were still a big concern |
| 9/13/2022 15:55:29 | A Car Week attendee fr | It was okay. | Really not the same without Concours on the Avenue… hopefully the event will return. | No | | No | | | | Yes. | They are signature events that bring out the absolute best cars for the viewing public to enjoy without an admission ticket. | They helped with traffic and safety somewhat. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/13/2022 16:38:45 | A Car Week attendee fr | I did not like it at all. | Miss the tour d'elegance stopping in downtown Carmel. This used to be a highlight of all of car week<br><br>The revving/cruising in the evening needs to be stopped somehow | No | | No | | I did not like them at all. | | Yes. | | They helped with traffic and safety somewhat. | |
| 9/13/2022 16:42:37 | A Car Week attendee fr | Loved it. | Car Week is awesome. And really my only reason for visiting Carmel. | No | | No | | | | Yes. | | Seemed unnecessary. | Some of the traffic measures seemed over-the-top. There were a lot of people out wanting to see the cars on weekend. But I didn't see any dangerous driving so shutting the streets down felt like an overcorrection. |
| 9/13/2022 17:11:56 | A Car Week attendee fr | Loved it. | | No | What event in the Park´ | No | | Loved them. | | Yes. | | They helped with traffic and safety. | |
| 9/13/2022 17:20:08 | A Car Week attendee fr | I did not like it at all. | Please bring back cars on Ocean Ave. fashion show was boring and not fun. | Yes | It was okay. | Yes | I did not like it at all. | I did not like them at all. | | Yes. | Be great! | They helped with traffic and safety. | Too strict. Roads were closed and quite difficult to get around. |
| 9/13/2022 18:09:56 | A Car Week attendee fr | Loved it. | Friends, Food, cars, amazing | No | What event in the Park´ | No | It was okay. | They were okay. | I miss Concours on the Ave held on Tuesday to kick off carweek | Yes. | Tradition | They helped with traffic and safety somewhat. | |
| 9/13/2022 18:18:49 | A Car Week attendee fr | I did not like it at all. | The events I normally go to were canceled this year. It was really just a place to see people and cars going by. I ended up not spending any money in Carmel which is unusual. | No | What event in the Park´ | No | I had another event at t | They were okay. | | Yes. | These are the reasons I come to Carmel during Car Week. | They did not help with traffic and safety at all. | This just pushed traffic to the side streets that are narrower so they ended up being blocked and caused more traffic. |
| 9/13/2022 18:39:54 | A worker in 93921, A Ca | It was okay. | Just not the same without Concours on the Ave | No | What event in the Park´ | No | Poor substitute for COA | They were okay. | No COA | Yes. | I own the Junipero Professional Building (4th & Junipero) and I am a car guy. It was very convenient for me to park at the building and walk to Ocean | They helped with traffic and safety somewhat. | I heard that CPD was treated poorly by some adolescents from out of the area.<br><br>The City should have a promoter for future year's events that has a strong connection with owners of noteworthy cars. The Prancing Ponies show is basically a "social gathering" and not of vintage or COA heritage quality. I believe the City should establish an economic cost value for security, etc and (if transferable) start an RFP immediately for a 5 or 10 yr period. The City should also ask Jeannie Freedman for the roster of all cars previously submitted, asking them their price point threshold for entering. Darius Sadeghi 625.5815 |
| 9/13/2022 19:09:51 | A Car Week attendee fr | Loved it. | As a Monterey County resident car week is my favorite week of the year. | No | Wasnt there | No | Wasn't there | They were okay. | Missed concours on the avenue | Yes. | Concours on the avenue is a highlight of the week for me. | They helped with traffic and safety. | |
| 9/13/2022 19:14:59 | A resident of 93921 | It was okay. | Very overcrowded in town so I avoided it for many days | No | What event in the Park? | | What event on Ocean A | They were okay. | I understand that they are historical or necessary or whatever to bring in needed funds so I do not mind avoiding certain areas during certain times. | Not really, unless the majority of my fellow residents want it. Then I could go along with it and not complain. | Ambivalence about cars but I understand that our financial coffers need to be considered. | I'm sorry, but living in North West Carmel and not leaving my house did not allow me to witness the traffic calming measures. | |
| 9/13/2022 19:52:27 | A retail shop owner in 9 | Loved it. | Brings money to our area | No | Wish I could have seen | Yes | Loved it. | They were okay. | I missed the concours on the Ave, but I understand the main organizer passed recently. | Yes. | It's crucial to keeping Carmel part of Car Week | They helped with traffic and safety somewhat. | |
| 9/13/2022 19:54:56 | A Car Week attendee fr | Loved it. | Grey events good Venus just hard to find parking. | No | | No | Could not find parking | Loved them. | They had parking. | Yes. | | They helped with traffic and safety. | |
| 9/13/2022 20:00:00 | A Car Week attendee fr | Loved it. | First time out there during car week. It great meeting so many people and seeing great cars. | No | What event in the Park´ | No | What event on Ocean A | Didn't attend any of the formal events | | | | They did not help with traffic and safety at all. | Made it very hard to get around anywhere in the evening and it took away from the atmosphere of what I think car week should be. |
| 9/13/2022 20:14:25 | A Car Week attendee fr | It was okay. | A lot of the events in downtown Carmel are no longer there. Concourse on the avenue, the pebble beach tour end up on ocean avenue. Roads closed at dark ect.. it just feels like Carmel doesn't want the car people in there city. Just my opinion, I have been coming for car for the last 15 years. Didn't come in 2020 and 2021, that's why this year was such a let down. | Yes | It was okay. | No | What event on Ocean A | They were okay. | Just not a lot of car stuff like they had in years past. | Yes. | That's what made coming to downtown Carmel | They did not help with traffic and safety at all. | It just frustrated most people either visiting or staying in the golden triangle. Police closed ocean avenue but drove the bad behavior to the outer streets. You don't need to close ocean avenue, it just needs to be policed. |
| 9/13/2022 20:17:42 | A resident of 93921, A v | Loved it. | I'm in the automotive industry and I love cars. Take Exotics back to Canary Row. Broadway is not exotic at all. More like the Pits on Broadway with exotic cars. Not appropriate! | No | What event in the Park´ | Yes | Loved it. | Loved them. | It's the right venue for the event. | Yes. | It's been the focus and venue for these events | They helped with traffic and safety somewhat. | Need more volunteers |
| 9/13/2022 20:29:31 | A Car Week attendee fr | Loved it. | It was my first time attending and so had no expectations | No | | No | | Loved them. | | Yes. | | They helped with traffic and safety. | |
| 9/13/2022 20:38:44 | A Car Week attendee fr | Loved it. | It was great to eat at the restaurants, visit the shops, and watch the city decide to shut down the cars going into the weekend. | Yes | It was okay. | No | What event on Ocean A | Loved them. | | Yes. | It was like the city didn't want the cars or people later on the week | They helped with traffic and safety somewhat. | Trying to find a handicapped parking spot at any time after Thursday in the city was impossible. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/13/2022 20:56:28 | A Car Week attendee fr | Loved it. | | No | What event in the Park´ | No | What event on Ocean A | Loved them. | | Yes. | Monterey car week is the standout event of the year with a great chance to view rare automobiles with fellow enthusiasts and bring business to the area | They helped with traffic and safety somewhat. | |
| 9/13/2022 20:58:55 | A Car Week attendee fr | It was okay. | Carmel seemed overrun in the evenings by young attendees looking to film the next video. While it's fun to watch the various exotic cars, I' m not sure how you control the crowds. We had dinner reservations on Saturday night this year and it was difficult to navigate in order to find parking. We likely won't schedule dinner in downtown Carmel next year on Saturday as a result. | No | | No | | They were okay. | | Yes. | Carmel is a very neat city & setting; however, crowd management would help tremendously. Perhaps a limited number of tickets available on a first come first serve basis. | They helped with traffic and safety somewhat. | I don't know if shutting down traffic lanes in the evening helped or just made it worse. Police presence to keep everything under control was nice. |
| 9/13/2022 21:32:55 | A resident of 93921 | It was okay. | We got rid of all the events. Unfortunately, that left it a circus for all the visitors to essentially shut down the streets. Had we had formal events, we not only would have brought in revenue but could have limited who was there. | Yes | It was okay. | No | | They were okay. | | Yes. | We have a beautiful town. People are already coming for Car Week. People look forward to these events and they're well organized and support our community. | They helped with traffic and safety. | They helped with safety as less cars could get around and it likely limited all the "donuts" done in the past. However, it didn't help at all with traffic. Again, if we had sanctioned events , perhaps where ocean was closed, that would eliminate the crazy driving. |
| 9/13/2022 22:05:02 | A resident of 93921 | It was okay. | Concours on the ave. and the P.B | Yes | It was okay. | Yes | It was okay. | They were okay. | | Yes. | Those two events that that have been held here in Carmel-by-sea are of the highest quality and are recognized throughout the world "for must see". | They helped with traffic and safety. | I believe social media practice's makes it very difficult to keep normal traffic flow . Safety in the village is paramount !! We cannot have our streets gridlocked because of the possible need for emergency vehicles. |
| 9/13/2022 22:15:29 | A Car Week attendee fr | It was okay. | Missing concourse on the avenue | No | What event in the Park´ | No | | There were events? | | Yes. | Best events of car week | They did not help with traffic and safety at all. | |
| 9/13/2022 22:20:55 | A Car Week attendee fr | I did not like it at all. | Carmel by the sea ruined the car week vibe, along with the ridiculous cops on electric motorcycles who were harassing multiple car owners. It was disgusting. I won't be back. If you' re trying to kill car week you're doing a fantastic job. | No | | No | | I did not like them at all | The events were pathetic. | No | You've already ruined the experience, now you want to bring events back? | The police were lawful and rude | Never coming back |
| 9/13/2022 22:47:34 | A Car Week attendee fr | Loved it. | Great atmosphere and important support of the area businesses | No | What event in the Park´ | No | What event on Ocean A | Loved them. | Love to see cars and meet great people | Yes. | Very important events for community | They helped with traffic and safety. | Sounds like a good compromise |
| 9/13/2022 22:58:27 | A resident of 93921 | Loved it. | Only thing I didn't like was missing concours on the avenue, and that prancing ponies event. | No | | No | I did not like it at all. | | | Yes. | | They helped with traffic and safety. | |
| 9/14/2022 1:37:31 | A Car Week attendee fr | Loved it. | This has been a tradition and it's great | No | | No | | Loved them. | | Yes. | | They helped with traffic and safety. | |
| 9/14/2022 1:37:52 | A resident of 93921 | Loved it. | It's an amazing week | Yes | Loved it. | Yes | Loved it. | Loved them. | | Yes. | | They helped with traffic and safety. | |
| 9/14/2022 7:00:27 | A Car Week attendee fr | Loved it. | Great venue, people and cars. It's awesome! | No | What event in the Park´ | No | Na | Loved them. | | No | | They helped with traffic and safety. | They were unnecessary. |
| 9/14/2022 7:05:47 | A Car Week attendee fr | It was okay. | Did not like the sideshow characters causing scenes | No | | No | | Loved them. | | Yes. | Those are literally the biggest draw for me and many more fans | They helped with traffic and safety. | |
| 9/14/2022 7:14:33 | A worker in 93921 | It was okay. | Expensive cars blocking roadways and causing traffic for no other reason than to show off. | Yes | It was okay. | Yes | It was okay. | They were okay. | Creates lots of traffic and large wait times for restaurants | No | Carmel is a small town and cannot handle the increase in foot/vehicle traffic | They helped with traffic and safety somewhat. | Still too many impatient drivers speeding around |
| 9/14/2022 9:00:09 | A resident of 93921 | Loved it. | It's a week of excitement for our beautiful, quiet little village. And when it's over we go back to being a quiet little village. | Yes | It was okay. | Yes | Loved it. | Loved them. | | Yes. | | They did not help with traffic and safety at all. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/14/2022 9:54:17 | A resident of 93921 | Loved it. | It was quiet and lovely. COTA was sort of fun when it was unique, but there are currently so many similar events in the area that it just seems unnecessary and intrusive. We know there is money to be made and taxes to be collected, but is it really worth the extra security and increased administrative costs? Concours D'Elegance is the crown jewel and Carmel government, Foundation and businesses benefit plenty without the chaos of another car event that closes our streets. | No | What event in the Park´ | No | What event on Ocean A | I didn't love them becau | Do we really want to use Devendorf Park for car sales? ugh | Yes to the Tour, no to COTA | The Tour is a grand tradition which allows us to see the extraordinary automobiles that have qualified for the Sunday event, and is in an elevated class above all other car events in the area. The lunch stop is a perfect use of Devendorf Park and Ocean Avenue. The audience is very civilized. We are much more aligned with Concours d'Elegance and should embrace the opportunity to support them. However, it looked like they were very happy to have lunch in Pebble Beach instead this year, probably because they are not competing with another event that shuts down the streets. | They helped with traffic and safety somewhat. | Because there were no big car events like COTA and Tour, the comparison between 2022 and years past is not valid. |
| 9/14/2022 10:08:40 | A resident of 93921 | Loved it. | Love the excitement and the money it brings into the community | No | | No | | Loved them. | | No | | They helped with traffic and safety somewhat. | Need more traffic control though |
| 9/14/2022 10:17:42 | | | | | | | | | | | | | |
| 9/14/2022 11:28:03 | A resident of 93921, A v | It was okay. | Missed having the free concours on the avenue event | No | What event in the Park´ | Yes | It was okay. | They were okay. | I liked the fashion show which included local retailers | Yes. | Free to attend | They helped with traffic and safety. | It seemed to deter problematic side shows on Ocean Ave. |
| 9/14/2022 11:50:44 | A resident of 93921 | I did not like it at all. | Bad behavior by visitors and too many noisy vehicles racing. | No | I did not like it at all. | No | What event on Ocean A | I did not like them at all | Too disruptive | No | Too disruptive, compromises public safety responses, too much noise and reckless driving threatens pedestrians walking Carmel's streets. | They did not help with traffic and safety at all. | Witnessed problems |
| 9/14/2022 12:43:58 | A Car Week attendee fr | Loved it. | Need more cars! Rare exotics. | No | | No | | Loved them. | Rare cars | Yes. | Chance to see cars up close | Closing down ocean avenue made for worse crowds and traffic flow | Disruptive to people trying to find parking and caused more pedestrian obstructions |
| 9/14/2022 13:09:36 | An innkeeper in 93921 | Loved it. | Slow start to the week, but picked up starting on Thursday | No | | No | | | | Yes. | Would draw more to the area, particularly if they occur earlier in the week | They helped with traffic and safety. | |
| 9/14/2022 14:43:25 | A Car Week attendee fr | It was okay. | Tuesday cars on ocean was eliminated. It must come back next year. | No | | Yes | Loved it. | They were okay. | | Yes. | | They did not help with traffic and safety at all. | All they did was give out unwarranted tickets! |
| 9/14/2022 15:02:47 | A resident of 93921 | It was okay. | enjoyed the car day of past years. | No | | No | | | | Yes. | for one day it is fun and not disruptive, easy to attend and free | They helped with traffic and safety. | |
| 9/14/2022 15:42:57 | A resident of 93921 | Loved it. | Part of the reason we purchased a house in Carmel by the sea is to have east access to car week. | No | | Yes | It was okay. | They were okay. | Only attended Prancing Ponies this year, other than just walking down to ocean ave in the evenings to see what was out. | Yes. | Fantastic event in the past, missed it this year. | They helped with traffic and safety somewhat. | As much as I like car week, I don't necessarily love guys dragging up and down ocean ave. This at least made the drivers slow down a little. |
| 9/14/2022 16:12:31 | A Car Week attendee fr | It was okay. | | Yes | It was okay. | No | | They were okay. | | Yes. | | They did not help with traffic and safety at all. | |
| 9/14/2022 19:44:57 | A Car Week attendee fr | I did not like it at all. | The lack of quality events there - Prancing Ponies def doesn't qualify - was a big disappointment. As a result we barely spent any time in Carmel this year, and will probably come to car week later next year if the Ocean ave concours doesn't return. This was our 20th year attending car week. | No | Can see new Hondas a | Yes | Poorly attended | They were okay. | A shadow of former years | Yes. | That's a big part of what car week is! Classic and unique vehicles normally never seen | They helped with traffic and safety. | 2019 was a gong show, that level of attendee is not needed nor wanted. |
| 9/14/2022 20:47:05 | A Car Week attendee fr | Loved it. | Plenty of cars and diversity for people , plenty of new food spots to try and support local businesses | No | What event in the Park´ | No | What event on Ocean A | Loved them. | | Yes. | More room for people to explore , plus costal has cooler weather near water , | They helped with traffic and safety somewhat. | More focused on random small tickets for cars over the line |
| 9/14/2022 20:51:30 | A Car Week attendee fr | Loved it. | It's our fourth year going and we still enjoyed it although we left on the 18th to go to Capitola. Next year we're going to stay Sunday to Sunday. | No | What event in the Park´ | Yes | Loved it. | Loved them. | Why would anybody not love it | Yes. | Really miss the concourse on the Avenue this year. | No problems for us | We stayed in a hotel a block away and so we didn't notice any traffic problems. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/14/2022 22:50:38 | A Car Week attendee fr | Loved it. | If I could express my gratitude straight to the city/residents of Carmel I would. Some of the things that they put up with during the week are something else. This year, in my opinion, was much better in comparison to a few years ago, say 2019 when people blatantly disrespected the people & police of Carmel by being super annoying with their cars. When I was there, most of the action was usually taking place on Ocean Avenue. I didn't hear too many loud noises, see reckless driving, & even though I'm not a resident I thought it was much more bearable especially in the evening hours. Regardless of the yearly revenue that Monterey Car Week brings in, I am especially grateful that it continues to be one of the greater areas of the peninsula during and apart from Monterey car week. The police work done during the week was great and seemed to keep people in line in order to create positive experiences for themselves and others around them. Thanks again to all who help make it possible. | No | What event in the Park´ | No | What event on Ocean A | Loved them. | I didn't attend the tour D'elegance this year but in prior years I enjoyed it. I think one positive thing that would benefit both parties would be some time to stay on the sidewalks when all the cars park. Speaking from a photographers perspective, I think everyone would enjoy getting a few full photos of cars before people swarm around them. Wonderful event otherwise. Super disappointed I missed this year! | Yes. | I think in terms of Carmel city it brings in a lot of revenue during these times especially to restaurants. In regards to attendees, these events are so special to us and when they're free, it helps college students like me, and families as well, see vehicles I only dream of being able to see when I don't have the means to pay for the higher priced events. Super thankful that Carmel puts these on and I hope to continue to see the tour and concours on the avenue continue in the future. | They helped with traffic and safety somewhat. | I said before in another response how back in 2019 I believe, I don't think there was as much enforcement on obeying traffic laws in comparison to last year and this years week. With a combination of donuts, excessive revving and burnouts I agree with a stricter level of enforcement. I'm not sure to what effect or reason keeping streets closed during later hours does, but it did seem to mitigate risk of endangerment to pedestrians and vehicles alike. I think there are some instances where there should be leniency in the case of a couple loud noises, it did seem that they were particularly strict this year on such matter but that helped the local residents sleep as well. It is car week, and I think that engines revving and accelerations are imminent. I do believe while that is a part of the experience, it should be done in a safe and respectful manner. |
| 9/14/2022 22:56:15 | A resident of 93921 | Loved it. | This area is known to celebrate beautiful cars like art and artistic display; love the festiveness, anticipation leading up to the final day. | Yes | Loved it. | Yes | Loved it. | Loved them. | The event is unique w/it's international influence as well as its All American influence—being an American sport to collect or race cars; Laguna Seca is also a treasure to complement the event. | Yes. | If you build it they will come! People love coming to see so many gorgeous cars in one place. | They helped with traffic and safety. | Always a good thing to make it known the City takes safety seriously; visitors need to be respectful, responsible, and aware the City can't/won't tolerate anything less |
| 9/15/2022 0:06:27 | A resident of 93921 | Loved it. | Amazing cars | Yes | Loved it. | Yes | It was okay. | They were okay. | Not enough events | Yes. | They are staples of car week | They helped with traffic and safety. | |
| 9/15/2022 0:39:56 | A Car Week attendee fr | Loved it. | It's an amazing area that is perfect to enjoy cars and just overall have a good time. I love the scenery and the events that go on each year. | Yes | Loved it. | No | I have to check it out ne | Loved them. | The events are always a hit with me there. | Yes. | They're awesome events I always look forward to watching them. | They helped with traffic and safety somewhat. | |
| 9/15/2022 9:13:31 | A Car Week attendee fr | It was okay. | Too much police presence. People were pulled over more than driving and it burned out the cruising. No loud exhaust or revving robbed people of the opportunity to hear supercars. Same thing in Monterey. | No | Did not attend | Yes | Loved it. | They were okay. | Once again too much police presence shutting down car owners from having fun | Yes. | I like concours | They helped with traffic and safety. | Did not have any issues with travels |
| 9/15/2022 11:21:24 | A resident of 93921 | I did not like it at all. | Mayhem, way too many people with supercars running amok and showing off. | No | | No | | I did not like them at all | I'm over it | No | I'm over it all. | They helped with traffic and safety somewhat. | The whole thing has gotten too big. |
| 9/15/2022 11:37:02 | A resident of 93921 | Loved it. | Brings in business and publicity for Carmel and the surrounding area. A good tradition to keep going through the coming years. Police did a good job of keeping everything under control as well. | No | N/A | Yes | Loved it. | Loved them. | Great atmosphere of bringing people together. | Yes. | Keeps the tradition and is more reminiscent of the original Car Week feel of where it started with the Concours. | They helped with traffic and safety. | Keeps the wrong crowd out of the area and establishes that recklessness won't be tolerated. |
| 9/15/2022 15:44:52 | A Car Week attendee fr | Loved it. | I loved that they changed the schedule of the Reunion so that Saturday was the final day, clearing the conflict with Pebble Beach that has been in place since I began attending in 1984. As a working journalist, it meant I no longer had to give up the last day at Laguna Seca to cover the Pebble Beach event for the magazine that sent me there. | No | What event in the Park´ | No | What event on Ocean A | They were okay. | My assignments were specifically at Laguna Seca and Pebble, but friends and fellow journalists were quite disappointed in the way some other events (Concours on the Avenue in particular) were downplayed or simply cancelled this year. | Yes. | Time permitting, I would love to see the Concours on the Avenue. My wife was able to walk around Carmel for several hours while I was at Pebble (the media pass for the Concours did not include her), and she always loves browsing the galleries and shops, and she found a lovely French restaurant, La Bicyclette, where we had a delicious meal. | They helped with traffic and safety somewhat. | Our 2021 visit to Carmel was made almost impassible, if not impossible, by the gridlock. As much as I love the automobile-related events, it was somewhat easier to negotiate the streets of Carmel on Sunday. |
| 9/15/2022 17:42:53 | A Car Week attendee fr | Loved it. | Its a good event to people Who love cars and for local commerce | Yes | Loved it. | Yes | Loved it. | Loved them. | It was very awesome | Yes. | These are great events | They helped with traffic and safety. | Its useful |
| 9/15/2022 19:47:25 | A Car Week attendee fr | Loved it. | Car Week gives me a reason to go visit my friends and enjoy the views! | Yes | It was okay. | No | | Loved them. | | Yes. | | I wasn't a fan of the police shutting down Ocean Ave!! | |

# Attachment 1

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/15/2022 21:33:45 | A resident of 93921 | It was okay. | We need the big Car Week events back in Carmel-by-the-Sea, it was too dull this year without them. Any why were there no events scheduled at Sunset Center in August? That is just plain stupid to have a venue like Sunset Center just sit idle during such a popular month. | No | What event in the Park´ | No | Why was it gender focu | They were okay. | We need the big events back in Carmel-by-the-Sea, it was too dull this year without them. Any why were there no events scheduled at Sunset Center in August? That is just plain stupid to have a venue like Sunset Center just sit idle during such a popular month. | Yes. | We need these types of events to return so Carmel-by-the-Sea can regain its following and have events enjoyed by both locals and visitors. | They did not help with traffic and safety at all. | It was very inconvenient. |
| 9/15/2022 21:33:57 | A Car Week attendee fr | It was okay. | Peoples behaving badly, a seedy element that I haven't witnessed before | No | | Yes | It was okay. | I did not like them at all | Not like the old days. Too much trailer trash | Yes. | I liked the old tour | They helped with traffic and safety somewhat. | Not enough enforcement. More tickets and impound..cars shouldn't be allowed to cruise |
| 9/15/2022 22:03:30 | A resident of 93921 | It was okay. | Not as good as last year. Need to bring back Ocean Avenue events. | Yes | It was okay. | Yes | Loved it. | They were okay. | Not as exciting as in past years. | Yes. | Carmel, has evolved to become an event location. | They helped with traffic and safety somewhat. | The radius of 50 miles surrounding Carmel, rowdies disrupted a very nice event on Carmel in general. |
| 9/15/2022 22:06:51 | A Car Week attendee fr | Loved it. | The traffic was well controlled and not too crowded. | No | | | This event is just medic | They were okay. | Bring back the local events. See above! | Yes. | It brings more business to town. | They helped with traffic and safety somewhat. | |
| 9/15/2022 22:37:41 | A resident of 93921 | It was okay. | Not enough events | No | What event in the Park´ | Yes | It was okay. | They were okay. | | Yes. | It makes Carmel special | They helped with traffic and safety somewhat. | |
| 9/16/2022 0:14:14 | A resident of 93921 | Loved it. | The city needs upscale and community events to remain vibrate and relevant. Tourism and new ideas and events help a community communicate and interact with each other. We are a welcoming and volunteering people and these events help our nonprofits and businesses. We have an excellent police department with very quick response for any type of call. | No | | No | | Loved them. | Great four our community. | Yes. | Concours dElegance is one of the premier international events. Any city in the US would be happy to host this event. I volunteered for 15 years and they are the best at preparation and operation. They care about their employees, residents and the surrounding community. Please ask them to return. A huge loss to Carmel when they left. | They helped with traffic and safety. | Results |
| 9/16/2022 5:05:40 | A retail shop owner in 9 | It was okay. | The lack of the two events (Tuesday & Thursday), made Carmel appear to not be an important stop during car week. Many of our regular clients attended other events in the apeninsula and skipped Carmel on their visit, resulting in a big decline in sales primarily on these two days. | Yes | I did not like it at all. | Yes | It was okay. | We needed more event | See explanations above | Yes. | Carmel should always be an important visiting stop during car week with events that befit our town. Concours on the Ave was sorely missed. | They helped with traffic and safety somewhat. | |
| 9/16/2022 5:20:01 | A resident of 93921 | I did not like it at all. | I live on Monte Verde St. I had difficulty getting in and out of my house and my garage because of crowds on the sidewalk and in the street. The revving of engines and then the loud roars of people responding to the revving was annoying as hell. By Wednesday I couldn't stand it anymore and left town for the duration. | No | | No | | I did not like them at all. | | No | These events completely hijack life for residents. It's noisy and obnoxious. | I can't say. I try not to leave my house during this event. | |
| 9/16/2022 6:16:22 | A resident of 93921 | I did not like it at all. | Crowds, traffic, noise. No respect for the people who live here! | No | I did not like it at all. | No | I did not like it at all. | I did not like them at all | See previous | No | Same as before | They did not help with traffic and safety at all. | See prior |
| 9/16/2022 6:17:25 | A resident of 93921 | I did not like it at all. | Too many car clubs that ignore the road laws, especially down hwy 1. We do not have enough law enforcement to handle the large crowds, now bringing in some bad elements. We are a small community and are starting to feel we come second to the event. The amount of money it brings in is for only a few, I do not see how it helps the community as a whole. | No | | No | | They were okay. | The car show use to be a long weekend, now it's inconveniencing us for over a week | No | | They helped with traffic and safety somewhat. | |
| 9/16/2022 7:11:04 | A Car Week attendee fr | Loved it. | Not overwhelming | No | It was okay. | No | It was okay. | They were okay. | Small scale. Not really special | Yes. | Spectacular events showcasing Carmel | They helped with traffic and safety. | Not as many problems with hooligans |
| 9/16/2022 7:13:01 | A resident of 93921 | Loved it. | I love having the car events in town | Yes | Loved it. | Yes | It was okay. | They were okay. | I missed having the Concours on the Avenue and having the Pebble Beach Tour stop in town. | Yes. | I like the cars and I think it is good for the City | They helped with traffic and safety. | |
| 9/16/2022 7:35:14 | A resident of 93921 | It was okay. | Wish you guys would bring back the Concours on the Avenue and the Pebble Beach Tour. It's so nice to live in town and be able to avoid all the traffic and just walk to see the cars. | Yes | It was okay. | No | | They were okay. | | Yes. | Those are the best of the best cars wise and as previously stated so nice to live in town and be able to walk to them and again all the traffic. | They helped with traffic and safety somewhat. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/16/2022 8:09:29 | A resident of 93921 | Loved it. | The cars are magnificent works of art and history. Car week makes it possible to see so many in one place. The owners are happy to share information about their cars. | Yes | I enjoyed the event in th | Yes | Loved it. | Loved them. | I enjoy attending the events with friends. It' s something we look forward to from year to year. We watch the cars, people and shop downtown. | Yes. | Concourse on the Avenue was a great event that allowed you to look at cars and also stop and listen to owners discussing their cars. The tour of d'elegance gives us the ability to see some of the magnificent cars that are entered into the concours d' elegance if you are not able to purchase tickets for the Sunday event. | They helped with traffic and safety. | I did not have any problems driving around town or walking to the prancing ponies event. |
| 9/16/2022 8:15:54 | A Car Week attendee fr | It was okay. | The only negative was the racing of loud cars on Highway 1 and neighboring streets. It seems as if the car owners want to be noticed and making the sound of a road race is their method of securing attention. It is VERY annoying to us locals. | No | Did not attend | Yes | Loved it. | Loved them. | The beautiful cars and friendly people | Yes. | For Carmel, it is the only way to partake in the festivities without paying $500+. The event was a stroke of genius and gets everyone is Carmel involved. | They helped with traffic and safety. | In 2019 I witnessed the hooligans during their dangerous driving and head-to-head confrontations with police. Not something I ever want in Carmel. |
| 9/16/2022 8:24:17 | A resident of 93921 | I did not like it at all. | It disrupts every aspect of living in Carmel by the Sea. My neighborhood is always full of cars making it hard to have a normal week. Car owners are the most part rude. | No | I did not like it at all. | No | I did not like it at all. | I did not like them at all | Who needs to see people showing off their cars? | No | Disruptive and unnecessary. | They did not help with traffic and safety at all. | Guests ( not for car show) couldn't park near us. |
| 9/16/2022 8:28:52 | A resident of 93921 | I did not like it at all. | | No | I did not like it at all. | No | I did not like it at all. | I did not like them at all. | | No | | They helped with traffic and safety somewhat. | |
| 9/16/2022 8:44:49 | A resident of 93921 | Loved it. | I love muscle cars and car week is the undisputed leader in bring together car lovers of all types | No | What event in the Park´ | No | Loved it. | Loved them. | | Yes. | | They helped with traffic and safety. | |
| 9/16/2022 8:55:47 | A resident of 93921 | I did not like it at all. | I enjoyed it when it was VINTAGE cars, now it seems to be mostly race cars, and the type of people that like loud and fast. | No | What event in the Park´ | No | What event on Ocean A | I did not like them at all | Again, used to be about VINTAGE cars (10s-40s)d now about race cars | No | Carmel is too small a town for that | They helped with traffic and safety somewhat. | |
| 9/16/2022 9:14:30 | A resident of 93921 | Loved it. | Naturally missed the display of cars on Ocean, lot of work, hope it comes back, it was such a fun, joyous street fair atmosphere, however this year survived without incident and exotic, beautiful cars were abundantly roaming our Village with gleeful spectators,… I Loved It! | Yes | The Host were very nic | No | Wasn't there | Loved them. | Great opportunity to mingle, view and enjoy the atmosphere of cordial locals and tourists. | Yes. | It is great for the Village but I'll tell you our restaurants could use some lessons in service, hosting, manners and the taste of their food, I can count on one hand places I would recommend as places to dine in Carmel. Proprietors seem to take for granted that our Village will always have tourists and therefore do not need to put their best foot forward all the time in Service, Taste of Food and Price. | They helped with traffic and safety. | Never had a problem getting around. |
| 9/16/2022 9:21:52 | A Car Week attendee fr | It was okay. | No Concours on the Avenue and no Tour de Elegance. Sorry, but Prancing Ponies does not generate the same excitement. I would also imagine that not having the two events hurt retail revenue, but that is just a guess. | Yes | It was okay. | Yes | It was okay. | They were okay. | They lack the excitement of the Concours on the Avenue and the Tour. | Yes. | That is a major part of the draw of Car Week. | They helped with traffic and safety. | |
| 9/16/2022 9:53:18 | A resident of 93921 | Loved it. | | No | | No | | | | Yes. | | They helped with traffic and safety somewhat. | |
| 9/16/2022 10:05:16 | A resident of 93921 | It was okay. | Missed the closing of Ocean Avenue fir one day ... big loss ! | Yes | | Yes | Loved it. | They were okay. | Not very exciting | Yes. | Again ... closing Ocean Ave again would be ... WONDERFUL! | They helped with traffic and safety. | |
| 9/16/2022 11:49:36 | A resident of 93921 | It was okay. | Too many cars from other nearby areas come to race down our residential areas, not enough enforcement. | No | It was okay. | No | | They were okay. | | No | Those events are too big for our small town. They cause too many traffic and noise problems. | They helped with traffic and safety somewhat. | |
| 9/16/2022 12:18:24 | A worker in 93921, A Ca | Loved it. | Streets not overly crowded | No | I did not like it at all. | No | What event on Ocean A | They were okay. | | Yes. | COTA is a highlight of Car Week and it only one day | They did not help with traffic and safety at all. | Need active traffic control at Ocean and Junipero. Crossing pedestrians hold up lines of traffic! |
| 9/16/2022 13:00:01 | A Car Week attendee fr | I did not like it at all. | Event canceled due to death | No | Not substantial enough | No | Did not attend, too narr | Did not attend any ever | Major event canceled due to death of the "promoter" | Yes. | Larger events are more inclusive and serve broader interests | They helped with traffic and safety. | Alcohol consumption causes bad behavior |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/16/2022 13:06:04 | A resident of 93921 | I did not like it at all. | Cars racing at break-neck speed through our town, running stop signs, racing engines all through the night. Impossible to get anywhere because of traffic and discourteous people blocking the roads. I couldn't even walk my dog without fear of getting run over. It should be held at Laguna Seca on a race track. | No | | No | | I did not like them at all | Same answer as before | No | All events should be held at a venue that can take care of racing cars. NOT on our local streets. | They helped with traffic and safety somewhat. | I was walking my dog mid day during the week, and at the intersection at Monte Verde and 4th approximately 10-15 Ferrari's ran the stop sign. No one was around to ticket them. Why should this be the norm? Why are these inconsiderate and unlawful people allowed to disregard rules and laws? Also, when people say "it's good for business" all I can think about are the people that live here 365 days a year and pay taxes? What about our "good for business" money that we use here 365 days? Our money is more plentiful than those that come for a day or two. The residents needs should be of more concern than those "out of towners". Again, have these events at a venue that can support them not in a small town on residential streets. |
| 9/16/2022 13:20:46 | A resident of 93921 | I did not like it at all. | Hectic, and impossible to get any where | No | | No | It's crazy to think that th | I did not like them at all | Laws were broken with total disregard. Speeding, running stop signs, etc. It is a miracle that no one was/is killed. | No | Our village cannot safely manage these events. There are venues that can. Those coming to them still need a place to stay and restaurants to eat at. | They helped with traffic and safety somewhat. | Our residential streets should not be holding events that encourage visitors and out-of-towners to blatantly break the law. I live across from City Hall and could not drive out of my driveway because of the careless people blocking the street. I could not get a delivery the entire week. I couldn't keep any appointments. What if an emergency happened? |
| 9/16/2022 14:06:04 | A Car Week attendee fr | I did not like it at all. | The Green Porsche is the trouble maker. https://www.youtube.com/watch?v=Fys5s8SVVcg | No | I did not like it at all. | Yes | It was okay. | They were okay. | We are missing two key events. | Yes. | Its part of Car Week's history | They helped with traffic and safety somewhat. | |
| 9/16/2022 14:14:23 | A resident of 93921 | Loved it. | I generally love how quiet the town is. But this is one of the few weeks where it is a destination spot! I do love seeing all of the cars. And if we don't feel like dealing with the crowds it's an opportunity to get away. | No | What event in the Park? | Yes | It was okay. | They were okay. | Missed the Acura event totally. The prancing ponies was fine, an interesting concept. No issues with it. | Yes. | The Tour de Elegance was one of the highlights of the week!! I do miss that and wish it would return. So amazing to see those cars going, and to be able to take a closer look at them parked on Ocean was a treat. | | They certainly helped. There is an aspect of the public on Friday and Saturday nights that gets slightly intimidating, but seems to be perfectly safe. |
| 9/16/2022 15:27:58 | A Car Week attendee fr | It was okay. | | | | | | | | Yes. | | | |
| 9/16/2022 15:30:26 | A resident of 93921 | It was okay. | Miss the concours on Ocean. | No | It was okay. | Yes | It was okay. | Loved them. | | Yes. | | They helped with traffic and safety. | |
| 9/16/2022 15:46:15 | A Car Week attendee fr | It was okay. | While I love and fully support the idea and drive behind the prancing ponies event, and truly hope they can continue to host their event in downtown, their selection of cars leaves a little to be desired. I wholeheartedly support the return of both the concourse on the avenue and the tour de elegance. They are all great events and the only events I make plans to attend. | No | While I think it is cool to | Yes | I love what this event re | I was only really aware | *see above (basically, would just love more events) | Yes. | I have lived just outside of city limits (93923) for 30+ years and have attended Peale beach concours only once (when gifted a free ticket). But I attended almost every tour, and concours on the avenue since their inception. Having those events walking distance from my home and free has really make me look forward to car week. Despite all the traffic and congestion and people on the peninsula, that feels like a little gift for the locals. | I'm not sure how well they actually worked but I support the idea of shutting down idiots who want to speed and do doughnuts. | *see above |
| 9/16/2022 15:46:46 | A resident of 93921 | I did not like it at all. | Inconsiderate attendees were speeding and revving their engines loudly at night. | No | What event in the Park? | Yes | It was okay. | They were okay. | I would like to see more elegant Concours events as it seems to attract a more mindful attendee than car week in general with its frat-like atmosphere. Also, I would like to see more emphasis on electric cars given climate change. | Yes. | It would be nice to have that energy on town as well as other kinds of elegant events throughout the year. | They did not help with traffic and safety at all. | so much speeding and car revving |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/16/2022 16:57:22 | A resident of 93921 | I did not like it at all. | Cars driving irresponsibly, noise, bad element coming to town with violent behavior. Was just happy it was over. Been there, done that in regards to seeing cars. When you think about all the pollution caused by all the trucks bringing the Concours cars here it doesn't seem very environmentally positive. | Yes | Ho hum. | Yes | It's nice to give people a | Let the Concours take t | Bad behavior by the crowd that is drawn into town. It is just going to get worse and worse as crime in surrounding communities continues to go up. We are a magnet for people to come and show off their bad behavior. | No | Same as above. | No affect in my neighborhood. | People were blowing through stop signs without slowing down, driving noisy cars way too fast, and just being plain rude as drivers. |
| 9/16/2022 17:11:07 | A resident of 93921 | It was okay. | Instead of blocking the Ocean ave. by our police department, they should've kept the street open but have a visible presence to curtail and discourage any mischievous behavior. By blocking the street, our business community did suffer and they did lost business. | No | | No | | They were okay. | The City and the community should be much more pro-active during the car week. We do get lost of visitors and they come to see car activities and if such activities are downplayed, they may not come back. This is the time where everyone makes money for not only for our community abroad but also for charitable organizations that they depend on such revenue. | Yes. | This has been the heartbeat of the Car week for the locals. This is where people can mingle and see most of the cars that may be too expensive to see in private venues. Please bring it back for the sake of the community and the car lovers. | They did not help with traffic and safety at all. | Please see my earlier comment. Do not close the street but have officer present with their patrol cars.<br>People do behave when the police is physically present. |
| 9/16/2022 17:24:24 | A Car Week attendee fr | I did not like it at all. | Concourse on the Avenue is a truly wonderful event I hope is able to return | No | What event in the Park´ | No | | | | Yes. | Both are unique events that do not involve the “idiots” who have caused traffic issues in the past. Gives an opportunity to the common person to participate in car week, in a great venue, without cost. Always enjoy taking in the shops and dining while there for those events. | | |
| 9/16/2022 17:25:04 | A resident of 93921 | It was okay. | Have the regular car week activities return | Yes | It was okay. | Yes | Loved it. | They were okay. | Return all car week activities in the village | Yes. | It is a great time, lots of fun, good for the village and shops and restaurants | They helped with traffic and safety. | Closing streets and more police presence is a good thing, helps keep all safe. |
| 9/16/2022 17:28:46 | A resident of 93921 | It was okay. | | No | It was okay. | No | It was okay. | They were okay. | | Yes. | | They helped with traffic and safety somewhat. | |
| 9/16/2022 17:29:34 | A resident of 93921 | It was okay. | I missed the car show on Ocean, and the classic cars on parade… I do not like how people have turned our local residential streets into drag racing, loud modified cars, speeding roads. | No | | No | | Missed to cars on Ocean | | Yes. | Concourse on the Ave, brought a lot of beautiful autos, and people, it’s controlled, and organized, not just a free for all drag racing… | They did not help with traffic and safety at all. | |
| 9/16/2022 17:43:29 | A Car Week attendee fr | It was okay. | The big event on Tuesday was missed by many of our friends. We live in Tehama | No | What event in the Park´ | Yes | It was okay. | What events? | Not clear which were open to everyone. | Yes. | It was great for out of town guests. We walked Ocean and then had lunch. It was large enough that it was worth the effort to go. | They helped with traffic and safety somewhat. | Did not notice huge differences |
| 9/16/2022 17:56:13 | A resident of 93921 | I did not like it at all. | My favorite events no longer happen. It’s not the same without the Tuesday Concourse on the Avenues (my favorite event of the entire week), and Thursday’s parade of PB Concourse cars. It’s ridiculous that these two events no longer take place. Looks like Carmel is no longer participating in the week’s events and that Pacific Grove has stepped up to fill in for Carmel. However, I applaud Carmel for cracking down on the morons doing doughnuts and burn-outs at the intersections on Ocean. | No | What event in the Park´ | Yes | I did not like it at all. | I did not like them at all | The Acura event is a joke, and Prancing Ponies is a bit of a mystery, seemingly run by 2 or 3 women, and with a strange collection of cars. Not very enticing, crappy music, just not much fun. | Yes. | They are the best events with the best cars and the best crowds of people. They make car week. | They helped with traffic and safety somewhat. | They didn’t solve the entire problem of the morons doing burn-outs on Ocean, but the effort helped. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/16/2022 18:27:04 | A resident of 93921 | I did not like it at all. | Without Concours on the Avenue it was very dull. | Yes | I did not like it at all. | Yes | Not very good. Small n | I did not like them at all. | | Yes. | It brings a vibrancy to our town. Makes our town an important destination in the biggest week of the year on the Monterey Peninsula. | They helped with traffic and safety somewhat. | |
| 9/16/2022 18:29:39 | A resident of 93921 | It was okay. | We missed the Tuesday car show. Was always a fun, exciting event. Well organized, civilized and a credit to our village. Missed the Concourse cars stopping in town on Thursday. What did we have this year? A small Prancing Piny show and lots of people here to go to events in other towns. | Yes | It was okay. | Yes | It was okay. | They were okay. | Our events were small, no energy, no pizzazz. All we got were unruly crowds at night, which kept many of us from coming into town for the evenings. | Yes. | Those were class. classic events that brought people into our village during the days. Vibrant crowds. All we get now is the drunk trouble makers at night. | They helped with traffic and safety. | |
| 9/16/2022 19:21:12 | A resident of 93921 | I did not like it at all. | The associated noise and cars racing in and around town. Not clear to me that they were part of a sanctioned car week event, but that all comes with it so I have a negative opinion. Even the sanctioned events with all the idling and exhaust would be better held outside of Carmel, or minimally only involve parked cars. | No | | Yes | I did not like it at all. | | | No | See response above. It will be markedly worse than this year without the larger events. How about an e-car event and drop the gassy noisy cars. | | |
| 9/16/2022 20:21:36 | A resident of 93921 | I did not like it at all. | Lack of events | No | | No | | I did not like them at all. | | Yes. | It brings the city to life | They helped with traffic and safety somewhat. | |
| 9/16/2022 21:35:53 | A resident of 93921 | Loved it. | | No | | | | Loved them. | | Yes. | | They helped with traffic and safety. | |
| 9/16/2022 21:59:50 | A resident of 93921 | Loved it. | Great influx of cars, tourists and a much needed injection of fun to the city | No | | Yes | Loved it. | Loved them. | Cars and Carmel go together perfectly. Brought life to the city | Yes. | It's great fun and brings in a great crowd you won't find on other weeks. Exposes the world to how great Carmel is. | They helped with traffic and safety somewhat. | It helped. |
| 9/17/2022 2:01:37 | A Car Week attendee fr | It was okay. | I miss the Tour d' Elegance stopping in Carmel. | No | | Yes | Loved it. | Loved them. | I love cars. It doesn't matter if I see them on the street or at a show. I get excited. I've been attending car week since 1996. 2020 it was cancelled. | Yes. | Those are my favorite events. | They helped with traffic and safety. | Safety is importsnt. |
| 9/17/2022 4:11:14 | A resident of 93921 | Loved it. | Better control over lawlessness and debauchery versus previous years! | No | Did not attend...but I lo | No | In the interest of fairnes | Loved them. | The events are irrelevant. I just love anything Carmel! | Yes. | It's the money, baby. We need the tax revenue. | They helped with traffic and safety. | Seriously...this is THE most important thing for the City to focus on. Someone is going to get killed by one of these out-of-control hot-rodders if our Police and City Planners don't remain vigilant. Please keep being proactive on this subject. Thank you! |
| 9/17/2022 8:15:49 | A worker in 93921, A C | It was okay. | the best part was ALWAYS the big car event..... not the ponies | Yes | It was okay. | Yes | I did not like it at all. | They were okay. | just didn't have that Carmel feeling and atmosphere that makes Carmel fun and great.....booring events this year. | Yes. | you had to ask!!!!!! they are fun and exciting and add to Carmel as being part of the peninsula..... never mind the dollars and people these events bring into our town. Don't fret about the parking issue..... there's not a lot of parking every day anyway....it's normal | They helped with traffic and safety. | in a town our size, it's also normal to do that for an event.....SAFETY is ALWAYS first!!!! Traffic is what it is....nothing new....local and shops should be informed more so their employees can plan property.....GREAT IDEA the shuttle....use it more..... |
| 9/17/2022 8:37:09 | A resident of 93921 | I did not like it at all. | It's always been a problem for me as a local. Too many people and too much noise pollution. | No | What event in the Park´ | No | What event on Ocean A | I did not like them at all. | I have never been a fan of Car Week. | No | I don't think I need to explain. | It seems to me that an event centered around cars in our present environmental crisis (climate change) is irresponsible and given what happened with the police this year asking for problems. | Climate change and a huge problem for locals who live here full time. |
| 9/17/2022 8:54:19 | A resident of 93921 | It was okay. | I missed the Concours on the Avenue and the Tour d'Elegance stopping on Ocean Ave. | No | | Yes | Loved it. | They were okay. | Not enough variety of classic cars. | Yes. | Great cars, great crowds and good for the town's image and businesses. | They helped with traffic and safety. | Blocking Ocean Ave at critical times appears to be effective. |

# Attachment 1

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/17/2022 11:21:24 | A resident of 93921 | It was okay. | My year revolves around Car Week, since 1987, almost. I moved from Saratoga to Carmel (0 Torres SW 9th) in 2020, but I never missed Car Week. (I bought the 2nd Murphy House on Dolores between 9th and 10th in 1983.) The loss of Concours on the Avenue - sad that no one could keep it alive. That is the single best event of the week. And for the Pebble Beach cars to not stop for lunch on Thursday has been a disappointment for a few years now. By the same token, for the Pacific Grove Auto Rally to no longer stop in Carmel on Fridays is sad. I drove in that event each year since it started in 1994. Ocean Avenue used to be lined with cheering, happy people.- it was sublime. The Acura thing this year was a joke, nothing more than a new car showroom outdoors. Prancing Ponies brought some pretty great cars out, though some of the models had more of a Hollywood vibe. But it was a fun event. And the CPD seems to have gotten the better of the morons driving 600 hp Lambos and Dodges on Friday and Saturday nights. Bravo! | Yes | I did not like it at all. | Yes | It was okay. | | A sadly minimal participation compared to PG and Monterey. I really hope CBTS will get in the game. | Yes. | I've seen and felt the great energy these things bring. Carmel is a privileged place, and I know that residents treasure the quiet calmness here. But for a few days during a single week to bring some authentic excitement and energy - that makes the quiet that follows even more treasured. Kind of how we love the holidays, and then how we enjoy the peace after New Years. | They helped with traffic and safety. | I watched the street scene from 8:30 to 9:30 Friday and Saturday nights. Seemed much better than 2021. And that's a lot of testosterone to manage! |
| 9/17/2022 14:55:00 | A Car Week attendee fr | It was okay. | I greatly miss the Tuesday Concours on the Avenue | No | Miss the Concours on t | No | What event on Ocean A | I | I leave Wednesday to avoid the congestion. | Yes. | COTA was my favorite event; relatively low key and on Tuesday before the craziness | They helped with traffic and safety. | From what I understand, they are necessary given the later week congestion and craziness |
| 9/17/2022 16:07:12 | A resident of 93921 | I did not like it at all. | Traffic congestion, rude visitors, excessive noise at all hours, no benefit to the residents. | No | I did not attend due to c | No | I did not attend due to c | I did not like them at all | Traffic congestion, rude visitors, excessive noise, no benefit to the residents. | No | Even more traffic congestion, more rude visitors, more excessive noise. | They helped with traffic and safety somewhat. | Coming back home on Ocean avenue from family event were directed through a maize of unsafe routes through 6th street packed with vehicles and pedestrians. City needs more signage when traffic entering Ocean Avenue or Rio Road so that residents can use alternate routes to their homes. |
| 9/17/2022 16:58:09 | A resident of 93921 | It was okay. | I missed having the Concours d'Elegance drive through the city. | No | No comment. | Yes | It was okay. | They were okay. | I missed the loudspeaker commentary. It would help with crowd control if there was an occasional welcome and please be mindful of this or that. In addition to commenting on special cars, the commentator could encourage patronage and give historical anecdotes about past Carmel Car Shows. | Yes. | I like the American love affair with the car and that romance may well end as we move into a new era of transportation. | They helped with traffic and safety somewhat. | As far as I know, no one was injured or killed by a moving vehicle during Car Week, but I could be misinformed. |
| 9/17/2022 17:02:39 | A resident of 93921 | I did not like it at all. | The people it drew in behaved horribly. Friday night's crowds on Ocean Ave along egging on the sooped up, loud cars was sad to see. A truck belching smoke out as it went by and everyone cheering was atrocious. I was embarrassed to say I lived in Carmel. And the vandalism to the new police vehicle on Thursday was something that should never happen. | No | Did not attend | No | Did not attend | Loved them. | Because they are "Carmel". Keeping on the small home town tradition. | Yes. | Concours on the avenue was a great event. | They helped with traffic and safety somewhat. | I believe it helped discourage drag racing thru town, by slowing cars down, but it did not discourage the type of people we don't want here. They were going so slow on Ocean Ave which gave them more time to rile up the crowds. I sincerely believe Ocean Avenue should be closed down completely. We are already planning to go out of town next year should things remain the same. So sorry to say that, but it just keeps getting worse. What we witnessed is not Carmel. |
| 9/18/2022 6:08:28 | A Car Week attendee fr | It was okay. | Miss Concours on the Avenue but liked Prancing Ponies | Yes | It was okay. | Yes | Loved it. | They were okay. | | Yes. | More interesting as more to see | They helped with traffic and safety. | |
| 9/18/2022 8:34:58 | A worker in 93921 | Loved it. | I enjoy car culture and I get more hours at work that week and it helps me out financially quite a bit. Without events as large as Car Week I could not afford to live in Monterey County | No | I was working. I see th | No | Loved it. | Loved them. | Because they bring good economic activity to our community and the revenues and taxes generated create jobs and taxes and those tax dollars go to pay for services that all residents, workers and visitors benefit from. | Yes. | The Concours on the Avenue was my absolute favorite event. It was easy to attend and so interesting with all of the beautiful cars on display | They helped with traffic and safety. | I support ALL of the Car Week activities but I do not support lawbreakers. I would like to see a zero tolerance policy from CPD towards speeders and other bad actors. If they are not stopped forcefully, they will ruin this wonderful event and we will lose it forever. |
| 9/18/2022 10:33:32 | A resident of 93921 | It was okay. | Missed Concourse line up on ocean and the display of cars | Yes | It was okay. | Yes | It was okay. | They were okay. | Missed old events | Yes. | Makes car week a stupendous event | They helped with traffic and safety. | Safety to residents is important |
| 9/18/2022 11:44:35 | A Car Week attendee fr | It was okay. | No Concours on the Avenue. And no Tour D'Elegance lunch stop. We live in Carmel (93923) | No | | No | Totally under whelmed. | They were okay. | | Yes. | They are the best events Carmel has to offer. | They helped with traffic and safety. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/18/2022 12:14:52 | A Car Week attendee fr | It was okay. | Not enough interesting events in the village | No | | Yes | It was okay. | They were okay. | There wasn't much of interest going on...and nothing compares to the Concours on the Avenue event! | Yes. | The Concours on the Avenue always showcases an amazing selection of vehicles and it's fun to speak with the owners. Listening to the personal stories (interviews by 2 experts with car owners by the library) is a highlight of the day. This is our favorite event. The tour on Wednesday is also fun to attend, due to the variety of vehicles all in one place. | They helped with traffic and safety. | No racing from block to block stop signs, revving of engines, i.e., noise, etc. |
| 9/18/2022 12:16:58 | A Car Week attendee from outside of the 93921 | | I just submitted my form but wanted to add a note that you should include the 93923 zip code along with 93921. | | | | | | | | | | |
| 9/18/2022 14:15:44 | A resident of 93921 | Loved it. | I missed Concours on the Avenue, but enjoyed everything else. | Yes | It was okay. | Yes | Loved it. | Loved them. | Love the car events at no cost | Yes. | They are interesting and exciting | Living right downtown, I walk to everything and was not inconvenienced by traffic except on the Highway. | See above |
| 9/18/2022 14:33:21 | A Car Week attendee fr | It was okay. | I wish there had been more events like there have been in the past but prancing ponies did a great event | No | | Yes | Loved it. | Wished there could've been more events | | Yes. | Because they were exciting and fun | They helped with traffic and safety. | |
| 9/18/2022 15:37:55 | A Car Week attendee fr | Loved it. | It was an opportunity to see some remarkable cars. There was an air of excitement that was fun. | No | | Yes | Loved it. | Loved them. | Carmel is a charming community. We have been renting a vacation rental for a month or two every year for 25 years. The people are friendly and the restaurants are great. We are golfers and appreciate the beauty of the courses. All the events we have attended in the past have been enjoyable. | Yes. | This was our first car show, so we have never experienced those events and would like to. | They helped with traffic and safety. | We never experienced any issues or inconvenience |
| 9/18/2022 17:30:01 | A resident of 93921 | Loved it. | Great cars, no major issues, money to the city/business | Yes | Loved it. | Yes | Loved it. | Loved them. | They bring something to Carmel | Yes. | An event to do something for the day | They helped with traffic and safety. | Slowed down traffic and prevented reckless drivers |
| 9/18/2022 18:36:41 | A resident of 93921 | I did not like it at all. | Even though the event says it brings in millions to charity, I never see what charities. It must cost a mint and a half to put up the massive tents, etc. Three weeks to set up/two weeks to take down. Semi trucks everywhere. Speeding here and in PB day and night. Noise … OMG, it's such a juxtaposition from what we are used to here. Even if cars are gunning it on Ocean, you can hear for miles. I wish everyone could be shuttled in. That might not help Carmel b/c if they shuttle in to PB events, maybe more would come to Carmel. ??? Not sure. I had one couple in a convertible tell me to get out of the road and drove right at me while I was walking. I was on the side of the road - like we all walk and have forever. It just seems like too much, too excessive and too disruptive to those of us who live here, pay taxes here, shop here and support here. Even if it's just a week. We've come to call it Hell Week vs Car Week. | No | NA | No | NA | I did not like them at all. | It's just nothing we are that interested in - cars/crowds. | No | See all the previous Why answers. | They helped with traffic and safety somewhat. | |
| 9/19/2022 14:28:44 | A Car Week attendee fr | I did not like it at all. | Prancing Ponies has never interested me, nor Acura. Concours on the Avenue has always been a huge draw as was the Pebble Beach Tour d'Elegance. Hopefully the City of Carmel will make an effort to bring them back. | Yes | I did not like it at all. | No | I did not like it at all. | I did not like them at all. | | Yes. | They were exciting events. | They helped with traffic and safety. | It's nice to be able to walk down Ocean Avenue and not wonder if you are going to be hit by crazy car drivers. |
| 9/19/2022 15:48:12 | A resident of 93921 | It was okay. | I miss Concourse on the Avenue. Miss the PB drive through Carmel/lunch for drivers. | No | What event in the Park? | Yes | Loved it. | Missed previous years | Love the cars, love that I can walk to the event, dont have to leave town. Love the atmosphere it creates downtown. | Yes. | See above | They helped with traffic and safety somewhat. | Very concerned about police officers safety. Still had issues in the evenings, despite no large events during the day. Any measures to make it easier for the officers to manage the later evening trouble makers would be welcome. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/19/2022 15:49:00 | A resident of 93921 | I did not like it at all. | The cars were out of control, it was dangerous to cross the street downtown, way too much traffic out of town. If you lived in town it didn't allow you to do your usual errands. | No | | Yes | It was okay. | I did not like them at all | Nothing seemed worth viewing. It felt like there was no effort put into the events for the community. | Yes. | It actually gives the local community something to participate in and makes you hate the overall week less. | They did not help with traffic and safety at all. | |
| 9/19/2022 16:33:47 | A Car Week attendee fr | I did not like it at all. | Missed Concours on the Avenue. One of few free events for locals. Plus businesses count on this income. | No | Attended in 2021. Borin | No | Uninterested | I did not like them at all | Boring | ABSOLUTELY!!! | Fun, entertaining, educational, engaging | Carmel did their best. In future bring in additional help | Too many rude people coming from out of area |
| 9/19/2022 17:39:19 | A Car Week attendee fr | Loved it. | It's fun and brings a lot of benefit to our economy | No | Didn't attend | No | Didn't attend | Loved them. | Fun | Yes. | Economic benefits | They helped with traffic and safety. | No issues |
| 9/19/2022 17:42:30 | A Car Week attendee fr | Loved it. | As a local peninsula resident, it was great to see businesses thriving. It's also fun to see all the cars. | No | | No | | Wish there were more. | Seems like someone canceled this year | Yes. | I think it shows off our town, and brings revenue to our businesses and workers. This money helps pay for things for residents in the long run. | They helped with traffic and safety somewhat. | Cars were deterred from Ocean Avenue, which was great after a certain hour. I like having the ability to see them, drive up and down during the day though. |
| 9/19/2022 17:48:50 | | I did not like it at all. | Too many people, frightening to drive locally, people driving 65 in 25mph zones | No | | Yes | I did not like it at all. | I did not like them at all. | | No | Too many people, no parking, dangerous for police and firefighters to get to help those in need | They helped with traffic and safety somewhat. | there's still too many people |
| 9/19/2022 19:16:43 | A restauranteur in 9392 | I did not like it at all. | Missed Concours on the Avenue and the Prancing Ponies was just horrible, a complete embarrassment, not the upscale type of event we are use to. Also, this event being held on Thursday messed up the Concours cars coming through Carmel like they usually do. All in all, it felt like a bad year for Carmel relative to Car Week so I hope it improves next year. Martin and I are happy to donate time to help now that Doug is gone. | Yes | I did not like it at all. | Yes | I did not like it at all. | I did not like them at all | A big let down compared to prior years | Yes. | They are part of our culture and are so much fun! They tie Carmel to Car Week and are upscale events showcasing amazing cars. Half the cars at Prancing ponies were not woman owned and many were rental cars. | Overkill! Let's enjoy one week a year if fun cars zipping around and showing off. Too much policing, feels like a retirement community has taken over. | |
| 9/19/2022 19:25:31 | A Car Week attendee fr | It was okay. | Really missed concourse on the avenue! | No | | No | | They were okay. | | Yes. | | They helped with traffic and safety somewhat. | |
| 9/19/2022 20:55:09 | A Car Week attendee fr | It was okay. | Love the events but not the show off drivers | No | What event in the Park? | No | What event on Ocean A | They were okay. | | Yes. | They were a family friendly fun event. | They helped with traffic and safety somewhat. | I heard a lot of racing though carmel, pebble and pg. didn't feel safe going on walks or taking kids out. |
| 9/20/2022 8:00:35 | A resident of 93921, A v | Loved it. | Less crowds | No | Neutral | No | It was okay. | They were okay. | | Neutral | They mostly inconvenience residents and those attendees are not spending at local businesses | Slight improvement. | STILL lots of racing on resident streets for hours and police never showed up! Everyone thought someone else would call authorities. It was insane! |
| 9/20/2022 9:30:23 | A resident of 93921 | It was okay. | Missed COTA. Best part. | Yes | I did not like it at all. | Yes | I did not like it at all. | I did not like them at all | Unengaging | Yes. | Best excitement. FREE. Fun. Educational. | They helped with traffic and safety somewhat. | Police/City did their best. Guests always find a way around safety measures. |
| 9/20/2022 9:33:53 | A worker in 93921 | I did not like it at all. | Slow. Business declined. | Yes | I did not like it at all. | Yes | I did not like it at all. | I did not like them at all | Dull | Yes. | It's the best event in Carmel for all | They helped with traffic and safety somewhat. | |
| 9/20/2022 11:00:47 | A resident of 93921 | I did not like it at all. | Too much traffic, too many really terrible drivers, too many people in general. Too much violation of driving laws. | No | I did not like it at all. | No | I did not like it at all. | I did not like them at all | see comments above | No | | They did not help with traffic and safety at all. | Idiot drivers racing up and down Ocean Ave. Grand standing. |
| 9/20/2022 11:45:01 | An innkeeper in 93921 | It was okay. | Missed Concourse on the Ave which made a lot of our guests come in later than we usually do which lead to lost revenue. Parking was better though! | No | | Yes | Loved it. | They were okay. | | Yes. | It's fun for everyone! | They helped with traffic and safety. | |
| 9/20/2022 11:45:18 | A restauranteur in 9392 | It was okay. | Not enough events in Carmel | No | It was okay. | Yes | Loved it. | I wish there were more | More events brings more people. More people means more money spent in Carmel | Yes. | I know locals do not like car week but it brings a lot of business and money for everyone that works in Carmel | They helped with traffic and safety. | |
| 9/20/2022 11:51:34 | A resident of 93921 | It was okay. | The Concour on the Avenue and Tour d'Concour set the stage for world class events that during car week that were managed extremely well. This year was chaos. We went from Rolex and Tiffany events in previous years to Walmart and Target events this year. | Yes | Loved it. | Yes | I did not like it at all. | I did not like them at all. | | Yes. | World class events that were professionally executed | They helped with traffic and safety somewhat. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/20/2022 11:51:40 | An innkeeper in 93921 | Loved it. | Its a very lively event and there is a great vibe all week long | Yes | It was okay. | Yes | Loved it. | Loved them. | it was great and brought in lots of people which is good marketing and revenue for Carmel | Yes. | Definitely wish to bring it back as some of my guests stay at our hotel so they can walk to these events or sit outside to see the tour and they were very disappointed that it did it happen this year. Then streets were bare on some of these days due to nothing happening in Carmel. | They helped with traffic and safety. | it was ok but it does deter some guests to avoid coming in |
| 9/20/2022 13:55:43 | A restauranteur in 9392 | It was okay. | Business is not what it used to be 5 years ago during that week. | Yes | It was okay. | No | | They were okay. | | Yes. | | They helped with traffic and safety somewhat. | |
| 9/20/2022 14:55:30 | A resident of 93921 | It was okay. | Understand the reasons, but it wasn't the same without Concours on the Avenue and the Pebble Cars on the Avenue. Prancing Ponies should be relegated to the side streets they started on, not front and center at Devendorf Park. Other than that, I look forward to Car Week every year. | No | What event in the Park? | No | I did not like it at all. | They were okay. | Missed Concours and Pebble Cars | Yes. | That's the heart and soul of the Carmel-by-the-Sea Car Week experience . | They helped with traffic and safety. | |
| 9/20/2022 16:48:11 | | | It did bring a lot of visitors into our store.Those putting on and judging the different events, attendees of the events. There was joy and happiness in the air.Even those visitors who were in the area and didn't know the event was going on we're excited when we talk to them | Yes | It was okay. | Yes | Loved it. | Loved them. | Well, I'm a car fan! I was very surprised though of all the cars and people up and down Ocean Avenue and the side streets Thursday Friday and Saturday night I think that's an unplanned event and it was wow | Yes. | ☺ | Didn't notice | |
| 9/20/2022 17:09:47 | A resident of 93921 | I did not like it at all. | Tuesday and Thursday were canceled! That's terrible. Those were the days I looked most forward to in Carmel, the days most special for our city. Seeing the cars all week in town is nice, but concours on the Avenue and the tour stop are the best | Yes | It was okay. | Yes | does not have the inten | I like seeing the car is v | Concours on the Avenue and the tour de elegance are very special events that put Carmel on the map. We should not take these for granted. | Yes. | These are world-class events that contribute to the special aspects of our city! | may have actually been too much. Don't take out all the fun! | I do appreciate the work of the police officers. They were very vigilant and brave. City manager and mayor very smart and caring for our city. |

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**ORDERS OF BUSINESS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Alan Ward, Police Chief |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Resolution 2022-096, adopting the 2022 Monterey County Multi-Jurisdictional Hazard Mitigation Plan |

## RECOMMENDATION:

Adopt Resolution 2022-096, adopting the 2022 Monterey County Multi-Jurisdictional Hazard Mitigation Plan, Volumes 1 and 2.

## BACKGROUND/SUMMARY:

The Federal Emergency Management Agency (FEMA) and the California Governors' Office of Emergency Services (Cal OES) have completed a preliminary review of the 2022 Monterey County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). FEMA and Cal OES have given tentative approval of the plan, pending local adoption. The approval of the plan ensures the city of Carmel-by-the-Sea's eligibility and pre-qualification for potential federal pre-and post-disaster funding. The plan includes hazard identification, risk and vulnerability assessments, and mitigation strategies to reduce vulnerability and risk from hazards and reduce the severity of the effects of hazards on people, property, and the environment.

## DISCUSSION

Monterey County and Carmel-by-the-Sea are potentially vulnerable to a wide range of natural and man-made hazards. These hazards can threaten the life and safety of residents and visitors and have the potential to damage or destroy both public and private property and disrupt the local economy and overall quality of life. While the threats from hazard events may never be fully eliminated, there is much that can be done to lessen their potential impact. The purpose of hazard mitigation is to implement and sustain actions that reduce vulnerability and risk from hazards or reduce the severity of the effects of hazards on people, property, and the environment.

The Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) requires state and local government agencies to prepare comprehensive Hazard Mitigation Plans in order to be eligible to receive pre-and post-disaster mitigation funding from the Federal Emergency Management Agency (FEMA). The DMA also requires the Hazard Mitigation Plan to be monitored, evaluated, and updated within a five-year cycle to remain eligible for disaster related benefits under the DMA.

The 2022 Monterey County Multi-Jurisdictional Local Hazard Mitigation Plan (MJHMP) is a comprehensive update to the 2016 Monterey County Multi-Jurisdictional Hazard Mitigation Plan and represents the third iteration of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan, which was initially adopted in 2007. The planning area for the MJHMP encompasses the entire geographic area of Monterey County and includes the following participating jurisdictions: Monterey County, the cities of Carmel-by-the-Sea, Del Rey Oaks, Gonzales, Greenfield, King, Marina, Monterey, Pacific Grove, Salinas, Sand City, Seaside, and Soledad, as well as the Monterey County Water Resources Agency, the Carmel Area Wastewater District, Monterey One Water, the Monterey Regional Waste Management District, and the Moss Landing Harbor District.

The 2022 update to the MJHMP (**attachment 2, "Volume 1"**) was developed by the MJHMP Steering Committee, made up of participants from the County and participating jurisdictions. The Steering Committee served as an advisory body on hazard and mitigation action priorities both for the County as a whole and each jurisdiction individually, with Monterey County Office of Emergency Services as the planning lead. The Monterey County MJHMP:

- Provides an explanation of prevalent hazards within the County and describes how hazards may affect the County and participating jurisdictions differently based upon various relationships to natural hazards.
- Includes a discussion of hazard location, size of a typical event, historical occurrences, and the probability of future occurrences for each identified hazard.
- Identifies risks to vulnerable assets, both people and property.
- Provides a mitigation strategy that responds to the identified vulnerabilities within each community and provides prescriptions or actions to achieve the greatest risk reduction based upon available resources.
- Pools resources from throughout the County and creates a uniform local hazard mitigation plan that can be consistently implemented.
- Ensures eligibility for Federal Emergency Management Agency (FEMA) and Cal OES grants.

The Carmel-by-the-Sea Annex (**attachment 3, "Volume 2"**, pages 51-75) provides specific details on the City's planning process, a City specific risk and vulnerability assessment, and a mitigation strategy that responds to the identified vulnerabilities within to achieve the greatest risk reduction based upon available resources.

The plan underwent review by the County and participating jurisdictions, the general public (review period occurred from December 2021 to March 2022) and received approval pending adoption from FEMA on June 14, 2022.

## OTHER AGENCY INVOLVEMENT

The Multi-Jurisdictional Hazard Mitigation revision process brought together representatives of involved stakeholder agencies and organizations who could have a role in mitigation planning and implementation of mitigation strategies as identified in the plan. Monterey County, the cities of Carmel-by-the-Sea, Del Rey Oaks, Gonzales, Greenfield, King, Marina, Monterey, Pacific Grove, Salinas, Sand City, Seaside, and Soledad, as well as the Monterey County Water Resources Agency, the Carmel Area Wastewater District, Monterey One Water, the Monterey Regional Waste Management District, and the Moss Landing Harbor District participated in the planning and completion of the plan.

Staff recommends that Council adopt Resolution 2022-096, adopting the 2022 Multi-Jurisdictional Hazard

Mitigation plan, Volume 1 and Volume 2.

## FISCAL IMPACT:

There is no fiscal impact for the approval of the MJHMP. However, implementation of the MJHMP will require funding and staff resources. Future funding requests will come before this Board for consideration as part of the budget process or on a case by case basis.

## PRIOR CITY COUNCIL ACTION:

There are no prior City Council actions in regard to this agenda item.

## ATTACHMENTS:

Attachment 1) Resolution 2022-096
Attachment 2) MJHMP Volume 1
Attachment 3) MJHMP Volume 2-Carmel-by-the-Sea annex

**RESOLUTION NO. 2022-096**

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARMEL –BY-THE-SEA ADOPTING THE 2022 MONTEREY COUNTYMULTI- JURISDICTIONAL HAZARD MITIGATION PLAN**

WHEREAS, the City of Carmel-by-the-Sea is vulnerable to natural hazards that may result in loss of life and property, economic hardship, and threats to the public health and safety; and

WHEREAS, the City anticipates climate change will exacerbate the severity, frequency, and impacts of natural hazards; and

WHEREAS, pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, the federal Disaster Mitigation Act of 2000 requires all cities, counties, and special districts to have adopted a Hazard Mitigation Plan to receive pre-and post-disaster mitigation funding from the Federal Emergency Management Agency (FEMA); and

WHEREAS, a coalition of Monterey County local governments and special districts embarked on a planning process to prepare for and lessen the impacts of specified hazards by updating the Monterey County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), which is the blueprint for reducing the Operational Area's vulnerability to disasters and hazards; and

WHEREAS, the update to the MJHMP has been prepared in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; Disaster Mitigation Act of 2000, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, the MJHMP identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Carmel-by-the-Sea from the impacts of future hazards and disasters; and

WHEREAS, the MJHMP planning partnership and the City of Carmel-by-the-Sea have completed a coordinated planning process that engaged the public, assessed the risk and vulnerability to the impacts of natural hazards, developed a mitigation strategy consistent with a set of uniform goals and objectives, and created a plan for implementing, evaluating, and revising the strategy; and

WHEREAS, each jurisdiction has been responsible for the review and approval of their individual sections of the Plan and the Plan presents the accumulated information in a unified framework to ensure a comprehensive and coordinated hazard mitigation plan that covers the entire Monterey County Operational Area planning area that is aligned with the goals, objectives and priorities of the State's multi-hazard mitigation plan; and

WHEREAS, the proposed project is categorically exempt from the provisions of the CEQA Guidelines pursuant to the Provisions of Title 14 of the California Administrative Code, Section 15061(b)(3) (common sense exemption), and Section 15262 (Feasibility and Planning Studies); and

WHEREAS, the result of the countywide organizational effort is a two volume Hazard Mitigation Plan, which will result in a Federal Emergency Management Agency (FEMA) and

California Office of Emergency Services (Cal OES) approved multi-jurisdictional, multi-hazard mitigation plan; and

WHEREAS, the MJHMP has been reviewed by the California Governor's Office of Emergency Services (Cal OES) and FEMA, Region IX, and have approved it contingent upon its official adoption by the participating governing bodies; and

WHEREAS, adoption of the Plan will allow the jurisdictional partners to collectively and individually become eligible to apply for hazard mitigation project funding and demonstrates its commitment to hazard mitigation and achieving the goals outlined in the Monterey County Multi-Jurisdictional Hazard Mitigation Plan.

NOW THEREFORE BE IT RESOLVED that the City Council of the City of Carmel-by-the-Sea, hereby adopts the 2022 Monterey County Multi-Jurisdictional Hazard Mitigation Plan, consisting of Volume 1 in its entirety and the City of Carmel-by-the-Sea's Annex in Volume 2.

BE IT FURTHER RESOLVED that the City of Carmel-by-the-Sea City Council resolves to integrate the Monterey County Multi-Jurisdictional Hazard Mitigation Plan by reference into the Public Safety Element of the General Plan in accordance with the requirements of Government Code sections 65302, 65302.6, and 8685.9.

BE IT FURTHER RESOLVED that the City of Carmel-by-the-Sea City Council directs staff to:

1. Use the Plan to guide pre-and post-disaster hazard mitigation.
2. Pursue implementation of the identified mitigation actions subject to the limitations of available of funding and staff.
3. Coordinate the strategies in the plan with other planning programs and mechanisms under its jurisdictional authority.
4. Continue support of ongoing countywide mitigation efforts.
5. Continue to participate in the regional planning partnership as described by the MJHMP.

BE IT FURTHER RESOLVED that City of Carmel-by-the-Sea City Council will submit this adopted resolution to the California Office of Emergency Services and FEMA Region IX officials to enable the Plan's final approval in accordance with the requirements of the Disaster Mitigation Act of 2000 and to establish conformance with the requirements of AB 2140.

**PASSED AND ADOPTED at a regular meeting of the City Council of the City of Carmel-by-the-Sea duly held on the 1st day of November 2022.**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED: ATTEST:

_____ _____

Dave Potter, Mayor Nova Romero, MMC, City Clerk

Attachment 2

# COUNTY OF MONTEREY

## MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

VOLUME 1

March 2022

Carmel-by-the-Sea
Del Rey Oaks
Gonzales
Greenfield
King City
Marina
Monterey
Pacific Grove
Salinas
Sand City
Seaside
Soledad
Carmel Area Wastewater District
Monterey County Water Resources Agency
Monterey One Water
Monterey Regional Waste Management District
Moss Landing Harbor District

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## MONTEREY COUNTY OFFICE OF EMERGENCY SERVICES

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IT IS THE POLICY OF THE COUNTY OF MONTEREY THAT NO PERSON SHALL BE DENIED THE BENEFITS OF OR BE SUBJECTED TO DISCRIMINATION IN ANY CITY PROGRAM, SERVICE, OR ACTIVITY ON THE GROUNDS OF RACE, RELIGION, COLOR, NATIONAL ORIGIN, ENGLISH PROFICIENCY, SEX, AGE, DISABILITY, SEXUAL ORIENTATION, GENDER IDENTITY, OR SOURCE OF INCOME. THE COUNTY OF MONTEREY ALSO REQUIRES ITS CONTRACTORS AND GRANTEES TO COMPLY WITH THIS POLICY.

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# ACKNOWLEDGMENTS

The Monterey County Multi-Jurisdictional Hazard Mitigation Plan update was made possible through the dedicated efforts of each participating jurisdiction, stakeholders, members of the public, and the Monterey County Office of Emergency Services. The development of this plan would not have been possible without the dedication and commitment of the Hazard Mitigation Plan Steering Committee.

Participating jurisdictions include:

Monterey County
City of Carmel-by-the-Sea
City of Del Rey Oaks
City of Gonzales
City of Greenfield
City of King
City of Marina
City of Monterey
City of Pacific Grove
City of Salinas
City of Sand City
City of Seaside
City of Soledad
Monterey County Water Resources Agency
Carmel Area Wastewater District
Monterey One Water
Monterey Regional Waste Management District
Moss Landing Harbor District

Special thanks to the following partners who helped make this project possible:

Federal Emergency Management Agency (FEMA)
California Governor's Office of Emergency Services (Cal OES)
Monterey County Information Technology Department

The citizens of Monterey County are commended for their participation in the outreach strategy. This outreach success will set the course for the successful implementation of this plan during the next performance period.

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# JURISDICTIONAL ANNEXES

While this Volume, **Volume 1,** address the entire geographic area of Monterey County and all participating jurisdictions holistically, **Volume 2** of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan contains the Jurisdictional Annexes for each participating jurisdiction.

**A** Unincorporated County of Monterey (and Monterey County Water Resources Agency)
**B** City of Carmel-by-the-Sea
**C** City of Del Rey Oaks
**D** City of Gonzales
**E** City of Greenfield
**F** City of King
**G** City of Marina
**H** City of Monterey
**I** City of Pacific Grove
**J** City of Salinas
**K** City of Sand City
**L** City of Seaside
**M** City of Soledad
**N** Carmel Area Wastewater District
**O** Monterey One Water
**P** Monterey Regional Waste Management District
**Q** Moss Landing Harbor District

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| *AB* | Assembly Bill |
| *AMBAG* | Association of Monterey Bay Area Governments |
| *APG* | Adaptation Planning Guide |
| *APN* | Assessor Parcel Numbers |
| *BFE* | Base Flood Elevation |
| *BRIC* | Building Resilient Infrastructure and Communities |
| *CAL FIRE* | California Department of Forestry and Fire Protection |
| *Cal OES* | California Governor's Office of Emergency Services |
| *Cal-Am Water* | California-American Water Company |
| *CalARP* | California Accidental Release Prevention Program |
| *Caltrans* | California Department of Transportation |
| *CAWD* | Carmel Area Wastewater District |
| *CCR* | California Code of Regulations |
| *CDAA* | California Disaster Assistance Act |
| *CDBG* | Community Development Block Grant |
| *CDC* | Centers for Disease Control and Prevention |
| *CDFW* | California Department of Fish and Wildlife |
| *CDPH* | California Department of Public Health |
| *CEQA* | California Environmental Quality Act |
| *CERV* | Community Emergency Response Volunteers |
| *CFR* | Code of Federal Regulations |
| *CGS* | California Geological Survey |
| *CHP* | California Highway Patrol |
| *CIP* | Capital Improvement Plan |
| *CoSMoS* | USGS Coastal Storm Modeling System |
| *County* | Monterey County |
| *COVID-19* | Coronavirus Disease 2019 |
| *CRS* | Community Rating System |
| *CSUMB* | California State University, Monterey Bay |
| *DFIRM* | Digital Flood Insurance Rate Map |
| *DHS* | Department of Homeland Security |
| *DMA* | Disaster Mitigation Act of 2000 |
| *DSOD* | California Division of Safety of Dams |
| *DTSC* | Department of Toxic Substances Control |
| *DWR* | California Department of Water Resources |
| *EEW* | Earthquake Early Warning |
| *EOP* | Emergency Operations Plan |
| *EPA* | US Environmental Protection Agency |

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| *ESA* | Endangered Species Act |
| *FEMA* | Federal Emergency Management Agency |
| *FERC* | Federal Energy Regulatory Commission |
| *FHSZ* | Fire Hazard Severity Zones |
| *FIRM* | Flood Insurance Rate Map |
| *FIS* | Flood Insurance Study |
| *FMA* | Flood Mitigation Assistance Program |
| *FMAG* | Fire Management Assistance Grant |
| *FMMP* | Farmland Mapping and Monitoring Program |
| *FPD* | Fire Protection District |
| *FRA* | Federal Responsibility Area |
| *FRAP* | Fire and Resource Assessment Program |
| *GIS* | Geographic Information System |
| *HHPD* | High Hazard Potential Dams |
| *HMA* | Hazard Mitigation Assistance |
| *HMGP* | Hazard Mitigation Grant Program |
| *IBC* | International Building Code |
| *JPA* | Joint Powers Authority |
| *LHMP* | Local Hazard Mitigation Plan |
| *LRA* | Local Responsibility Area |
| *M1W* | Monterey One Water |
| *MBARI* | Monterey Bay Aquarium Research Institute |
| *MBNMS* | Monterey Bay National Marine Sanctuary |
| *MCI* | Multiple Casualty Incident |
| *MCOE* | Monterey County Office of Education |
| *MCWRA* | Monterey County Water Resources Agency |
| *MHHW* | Mean Higher High Water |
| *MJHMP* | Multi-Jurisdictional Hazard Mitigation Plan |
| *MM* | Modified Mercalli Scale |
| *MPRPD* | Monterey Peninsula Regional Park District |
| *MPWMD* | Monterey Peninsula Water Management District |
| *MRWMD* | Monterey Regional Waste Management District |
| *MST* | Monterey-Salinas Transit |
| *NCRIC* | Northern California Regional Intelligence Center |
| *NEHRP* | National Earthquake Hazards Reduction Program |
| *NEPA* | National Environmental Policy Act |
| *NFIP* | National Flood Insurance Program |
| *NIMS* | National Incident Management System |

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| *NOAA* | National Oceanic and Atmospheric Administration |
| *NPS* | National Park Service |
| *NRCS* | Natural Resources Conservation Service |
| *NTWC* | National Tsunami Warning Center |
| *NWS* | National Weather Service |
| *OES* | Monterey County Office of Emergency Services |
| *OPC* | Ocean Protection Council |
| *OPR* | Governor's Office of Planning and Research |
| *PBCSD* | Pebble Beach Community Services District |
| *PG&E* | Pacific Gas and Electric |
| *PGA* | Peak Ground Acceleration |
| *PHMSA* | Pipeline and Hazardous Materials Safety Administration |
| *PSPS* | Public Safety Power Shut-off |
| *RCDMC* | Resources Conservation District of Monterey County |
| *RCP* | Representative Concentration Pathways |
| *RL* | Repetitive Loss |
| *RWQCB* | Regional Water Quality Control Boards |
| *SARS* | Severe Acute Respiratory Syndrome |
| *SB* | Senate Bill |
| *SBA* | Small Business Administration |
| *SFHA* | Special Flood Hazard Area |
| *SGMA* | Sustainable Groundwater Management Act |
| *SHMP* | State Hazard Mitigation Plan |
| *SRA* | State Responsibility Area |
| *Stafford Act* | Robert T. Stafford Disaster Relief and Emergency Assistance Act |
| *Steering Committee* | Multi-Jurisdictional Hazard Mitigation Steering Committee |
| *UBC* | Uniform Building Code |
| *URM* | Unreinforced Masonry |
| *USACE* | US Army Corps of Engineers |
| *USDA* | US Department of Agriculture |
| *USFS* | US Forest Service |
| *USGS* | US Geological Survey |
| *WHO* | World Health Organization |
| *WMD* | Weapons of Mass Destruction |
| *WUI* | Wildland Urban Interface |

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# EXECUTIVE SUMMARY

## HAZARD MITIGATION OVERVIEW

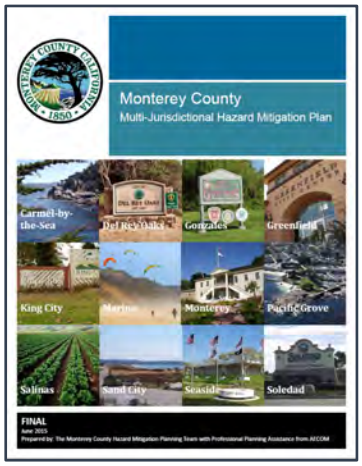
Monterey County is vulnerable to a wide range of natural and manmade hazards. These hazards can threaten the life and safety of residents and visitors and have the potential to damage or destroy both public and private property and disrupt the local economy and overall quality of life. While the threats from hazard events may never be fully eliminated, there is much we can do to lessen their potential impact on our communities. By minimizing the damaging impacts of hazards upon our built environment, we can prevent such events from resulting in disasters. The concept and practice of reducing risks to people and property from known hazards is called hazard mitigation.

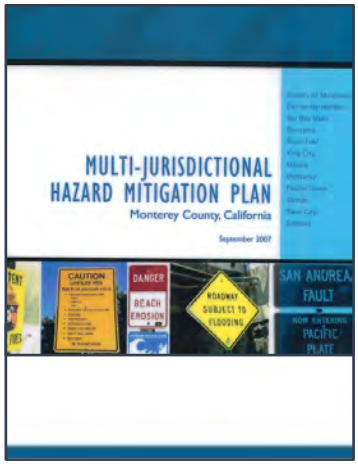
Hazard mitigation is the use of long-term and short-term policies, programs, projects, and other activities to alleviate the death, injury, and property damage that can result from a disaster. Monterey County and a partnership of local governments within the County have developed a hazard mitigation plan to reduce risks from natural disasters in the Monterey County Operational Area—defined as the unincorporated county and incorporated jurisdictions within the geographical boundaries of the County. The plan complies with federal and state hazard mitigation planning requirements to establish eligibility for funding under Federal Emergency Management Agency (FEMA) grant programs.

## UPDATING THE MONTEREY COUNTY PLAN

This plan is a comprehensive update of the 2016 Monterey County Multi-Jurisdictional Hazard Mitigation Plan, which covered the unincorporated county, 12 municipalities and 2 special purpose districts. FEMA approved the 2016 plan on March 7, 2016, and it expired on March 7, 2021, the current update meets federal requirements for updating hazard mitigation plans on a five-year cycle. It represents the third iteration of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan, which was initially adopted in 2007.

This Plan was prepared in coordination with FEMA and the California Office of Emergency Services (Cal OES) to ensure that it meets all applicable federal and state requirements. This includes conformance with FEMA's latest Local Mitigation Planning Handbook (released March 2013) and Local Mitigation Plan Review Guide (released October 2011).



## GUIDING PRINCIPLE

The following guiding principle was created and agreed upon by the participants to represent the overall intended outcome of the Plan:

**Reduce the risk to life and property in Monterey County in an efficient and effective manner by decreasing the long-term vulnerability from hazards through coordinated planning, partnerships, capacity building, and implementation of effective risk reduction measures.**

## SCOPE AND AUTHORITY

The Monterey County Multi-Jurisdictional Hazard Mitigation Plan geographically covers the entire area of Monterey County and has multiple participating jurisdictions. This includes Monterey County, 12 incorporated municipalities, and 5 special districts, hereinafter referred to as "participating jurisdictions."

- Unincorporated Monterey County
- Monterey County Water Resources Agency (MCWRA) (Included with unincorporated Monterey County)
- City of Carmel-by-the-Sea
- City of Del Rey Oaks
- City of Gonzales
- City of Greenfield
- City of King
- City of Marina
- City of Monterey
- City of Pacific Grove
- City of Salinas
- City of Sand City
- City of Seaside
- City of Soledad
- Carmel Area Wastewater District (CAWD)
- Monterey Regional Waste Management District (MRWMD)
- Monterey One Water (M1W)
- Moss Landing Harbor District

Representatives from each participating jurisdiction formed a core planning team, referred to as the Steering Committee, in order to drive the development of the plan update. The Steering Committee was at the core of the MJHMP planning process and was integral to ensuring its success, its implementation, and its future maintenance. The Plan addresses those hazards determined to be of primary or secondary concern to each jurisdiction, as documented in the risk assessment portion of this Plan. Other hazards that pose a low risk or are otherwise

omitted from this Plan will continue to be evaluated during future plan updates, but they may not be fully addressed until they are determined to be of primary or secondary concern to Monterey County. Individual entities are still able to, and are encouraged to, continue to address, and plan for those other hazards as may be appropriate within their jurisdictions.

This Plan must be adopted by all participating jurisdictions in accordance with the authority and police powers granted to local governments under Article 11 of the California Constitution. This Plan was developed in accordance with current federal rules and regulations governing local hazard mitigation plans. The Plan shall be monitored and updated on a routine basis to maintain compliance with the following legislation: Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (Public Law 106-390) and by FEMA's Interim Final Rule published in the Federal Register on February 26, 2002, at 44 CFR Part 201.

## PLAN STRUCTURE

This plan has been set up in two volumes so that elements that are jurisdiction-specific can easily be distinguished from those that apply to the whole County.

**Volume 1** includes the federally required elements of a hazard mitigation plan for all participating jurisdictions. This includes the description of the planning process, public involvement strategy, hazard risk assessments, countywide mitigation actions, and a plan maintenance strategy. Since this is a multi-jurisdictional plan, **Volume 1** addresses the entirety of Monterey County, which includes all participating jurisdictions and the entire geographic boundary of the County.

**Volume 2** contains the Jurisdictional Annexes, which detail the hazard mitigation planning elements specific to each participating jurisdiction in the Monterey County MJHMP Update and includes all federally required jurisdiction-specific elements for each participating jurisdiction. Each annex is not intended to be a standalone document, but annexes to, supplements, and incorporates by reference the information contained in **Volume 1** of the Plan. As such, all information in **Volume 1**, including the planning process and other procedural requirements and planning elements apply to and were met by each participating jurisdiction. The Annexes provide additional information specific to each participating jurisdiction, with a focus on providing additional details on the risk assessment and mitigation strategy.

All participating jurisdictions will adopt Volume 1 in its entirety and their own jurisdiction-specific annex in Volume 2.

## RISK ASSESSMENT

Risk assessment is the process of measuring the potential loss of life resulting from natural hazards, as well as personal injury, economic injury, and property damage, in order to

determine the vulnerability of people, buildings, infrastructure, and the environment to natural hazards. For this update, risk assessment models were enhanced with new data and technologies that have become available since 2016. The Steering Committee used the risk assessment to rank risk and to gauge the potential impacts of each hazard of concern in the Operational Area. The risk assessment included the following:

- Hazard identification and profiling
- Assessment of the impacts on physical, social, environmental, and economic assets
- Identification of particular areas of vulnerability
- Estimates of the cost of potential damage.

Based on the risk assessment, hazards were ranked for the risk they pose to the overall Operational Area.

| Ranking | Hazard | Degree of Risk |
|---|---|---|
| **1** | Drought & Water Shortage | High |
| **2** | Earthquake | Substantial |
| **3** | Pandemic | Substantial |
| **4** | Wildfire | Substantial |
| **5** | Epidemic | Substantial |
| **6** | Cyber-Attack | Substantial |
| **7** | Utility Interruption/ PSPS | Substantial |
| **8** | Localized Stormwater Flooding | Substantial |
| **9** | Severe Winter Storms | Substantial |
| **10** | Water Contamination | Moderate |
| **11** | Windstorms | Moderate |
| **12** | Hazardous Materials Incident | Moderate |
| **13** | Agricultural Emergencies | Moderate |
| **14** | Riverine Flooding | Moderate |
| **15** | Sea Level Rise | Moderate |
| **16** | Slope Failure | Moderate |
| **17** | Flash Flood | Moderate |
| **18** | Extreme Heat | Moderate |
| **19** | Coastal Flooding | Moderate |
| **20** | Coastal Erosion | Moderate |
| **21** | Targeted Violence | Possible |
| **22** | Invasive Species | Possible |
| **23** | Terrorism | Possible |
| **24** | Dam Failure | Possible |
| **25** | Extreme Cold & Freeze | Possible |
| **26** | Mass Migration | Possible |
| **27** | Tsunami | Possible |
| **28** | Levee Failure | Possible |

## MITIGATION GOALS

The Steering Committee reviewed and updated the goals from the 2016 Monterey County Multi-Jurisdictional Hazard Mitigation Plan and confirmed a set of goals. The Steering Committee and planning partners established the following goals for the plan update:

| | |
|---|---|
| **Goal #1** | Minimize risk and vulnerability of Monterey County to hazards and protect lives and prevent losses to property, public health, economy, and the environment. |
| **Goal #2** | Increase the resilience of infrastructure and critical facilities and reduce long-term vulnerabilities of existing and future critical facilities, property, infrastructure, and high hazard potential dams due to natural hazards. |
| **Goal #3** | Build and support capacity to enable local government and the public to prepare for, respond to, and recover from the impact of natural hazards. |
| **Goal #4** | Encourage the development and implementation of long-term, cost-effective, and environmentally sound mitigation projects. |
| **Goal #5** | Promote and implement hazard mitigation policies and projects that are consistent with state, regional, and local climate action, and adaptation goals. |
| **Goal #6** | Inform the public on the risk from hazards of concern and increase awareness, preparation, mitigation, response, and recovery activities to promote public safety. |
| **Goal #7** | Enhance codes and their enforcement where feasible, so that new construction can withstand the impacts of known hazards and to lessen the impact of development on the environment's ability to absorb the impact of natural hazards. |
| **Goal #8** | Consider the impacts of known hazards in all planning mechanisms that address current and future land uses within the County. |
| **Goal #9** | Establish a partnership among all levels of government and the business community to improve and implement methods to protect property. |
| **Goal #10** | Encourage hazard mitigation measures that promote and enhance natural processes and minimize adverse impacts on the ecosystem. |

## HAZARD PROBLEM STATEMENTS

As part of the planning process, the Steering Committee and planning partners identified key vulnerabilities and hazards of concerns applicable to the entire County. Hazard Problem Statements helped the Steering Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. The update process resulted in the identification of unique hazard problem statements by individual planning partners, as presented in **Volume 2** of this plan.

In addition, the Steering Committee and planning partners identified countywide problem statements. The Countywide Hazard Problem Statements were based on the risk assessments,

the risk prioritization process, the vulnerability analysis, and local knowledge, as well as the jurisdiction specific problem statements and community and stakeholder input.

Countywide Hazard Problem Statements are identified below:

### *Drought & Water Shortage*

In Monterey County, water supply is extremely limited during non-drought years. As such, droughts are a serious threat in the County and could have devastating impacts on the agricultural industry, a major economic driver and job provider. Additionally, prolonged periods of drought can reduce water available for residential users and increase water prices. Governing authorities have been established to limit water use and protect water supply. Procurement of water credits/rights may limit new development necessary to meet increasing housing demands. Periods of drought also lead to increased pumping of groundwater wells, which can exacerbate sea water intrusion into the aquifer, increase land subsidence risks, and effect water quality. Contamination of drinking water, though unlikely, could be catastrophic. Drought conditions are likely to increase in future climate change scenarios.

### *Earthquake*

Monterey County has several fault systems, including three major active faults: The San Andreas Fault, the Palo Colorado-San Gregorio Fault, and the Monterey Bay-Tularcitos Fault. Due to the location of population centers and building history in the County, any large earthquake will likely have significant impacts on people, property, and critical infrastructure including water systems, telecommunications infrastructure, roads, bridges, healthcare systems, and utilities. Damages and debris could isolate large populations from these critical lifelines. Older unreinforced-masonry structures in the County are particularly vulnerable to earthquake risk. An earthquake can also produce cascading impacts due to urban conflagration, wildfires, seiches, landslides, tsunamis, dam failure, and levee failure.

### *Pandemic/ Epidemic*

The whole population of Monterey County is vulnerable to disease. The impacts of the COVID-19 Pandemic on the County have demonstrated the catastrophic risks that can be associated with large-scale disease outbreaks. Critical healthcare systems can become overwhelmed, limiting access to life-saving medical services. Continuity of government due to impacted workforces can result in limitations to essential government services. Disease outbreaks can place a disproportionate burden on the County's most vulnerable populations. Additionally, due to the large number of transient populations, such as tourists and migrant farmworkers, eradication of any new disease outbreak can be difficult without significant impacts to industry and the local economy.

### *Wildfire*

California, and subsequently Monterey County, is in cycle of extreme heat, drought, and fire, all amplified by climate change. Wildfires are a natural part of the California environment; however, fire behavior has increased in frequency, size, and impact from longer wildfire

"seasons." Deferred vegetation management and population sprawl in the wildland urban interface and intermix, have increased probability and impact of wildfires. Sudden oak death and invasive species have created unhealthy forests. Large wildfires, such as the 2020 Wildfires in Monterey County, can cause housing inventories to become significantly limited thus increasing the demand on the housing market; additionally, many property owners have been unable to obtain or retain fire insurance at an affordable price or at all. Pre-existing water supply challenges in the County can lead to limited water available for fire suppression.

### *Cyber-Attack*

Nearly every aspect of life in Monterey County is dependent on systems and resources connected and managed through computer systems. Cyber-attacks can have catastrophic impacts on the ability of government, public and private entities to access banking, electricity, water, telecommunications, transportation, and other information systems necessary for survival. Due to the tightly coupled nature of technological system and critical lifelines, any failure of service continuity could cost lives.

### *Utility Interruption/ PSPS*

Heat-related equipment failures and electrical infrastructure igniting wildfires has resulted in unintentional and intentional rolling blackouts and power shutoffs throughout the County. Public Safety/ Utility Initiated Power Shut Offs to prevent wildfire ignition can have notably significant impacts due to the length of disruption time, limited efficacy of the strategy, and the effect on first responder capabilities. Extreme and prolonged heatwaves across the state increase the demand for use of the aging electrical grid, significantly depleting electricity reserves resulting in blackouts. Heatwaves are expected to increase in intensity and magnitude due to climate change, which will likely exacerbate this problem. Traditional energy sources increase climate change risk and are failing more consistently, but energy alternative technology cannot meet current nighttime demand.

Additionally, Monterey County has limited microgrids and reliance on the macro-grid makes the County vulnerable to rolling and prolonged power outages. Over the last decade Monterey County residents have begun adjusting to the increasing unreliability of macro utilities. Loss of power for more than a few hours can result in large economic losses, specifically related to food and agriculture. More vulnerable populations in isolated areas or who rely on medical devices are at increased risk during prolonged power outages.

### *Localized Stormwater Flooding*

Localized flooding has the potential to significantly impact people, property, and critical infrastructure in the County. Undersized and aging drainage infrastructure, deferred maintenance, increased run-off due to drought conditions, the built environment, and trends in precipitation and weather can all increase the risk of localized stormwater flooding. Climate change is likely to exacerbate the intensity and magnitude of precipitation events, increasing the risk associated with localized stormwater flooding causing drainage infrastructure to be undersized in increasingly more common events.

Additionally, unhoused residents living in stormwater drainage areas can lead to increasing flood risk due to accumulated debris and trash, which can complicate both flood response and mitigation activities.

### *Severe Winter Storms*

Severe winter storms have been increasing in intensity, magnitude, and severity in Monterey County and are associated with a variety of hazards in this Plan. Severe winter storms and heavy rain can have significant impacts including flash flooding, localized stormwater flooding, mudslides, and landslides. Secondary hazards can cause immobility and loss of utilities. Roads may become impassable due to flooding, downed trees, or landslides. Power lines may be downed due to high winds, and services such as water or telecommunications infrastructure may not be able to operate without power.

Stormwater runoff from heavy rains can also impair water quality by washing pollutants into water bodies. Severe winter storms can also cause large storm surge and wave action along the coastline, flooding low lying areas and causing dramatic erosion. Coastal bluff and cliff failure due to erosion can create hazardous conditions due to roadway collapse, undermined home foundations and damage to utilities. Additionally, future sea level rise scenarios are likely to exacerbate coastal and inland flood risks during winter storms.

### *Road Infrastructure*

The occurrence of any hazard profiled in this Plan in combination with aging and limited road infrastructure can result in limited egress of evacuees and minimal ingress of first responders. Roadways can be compromised in severe weather incidents, further limiting road capacity. Road infrastructure is not developing at a rate commensurate with the rate that population and housing is expanding. Further, the topography of the County limits where new roads can be built.

## MITIGATION ACTION PLAN

The Steering Committee and planning partners selected a range of appropriate mitigation actions to work towards achieving the goals set forth in this plan update, in addition to reducing risks identified in the problem statements. Mitigation actions presented in this update are activities designed to reduce or eliminate losses resulting from hazards. The update process resulted in the identification of mitigation actions for implementation by individual planning partners, as presented in **Volume 2** of this plan.

The Steering Committee reviewed the catalogs of hazard mitigation alternatives and selected area-wide actions to be included in a hazard mitigation action plan. The selection of area-wide actions was based on the risk assessment of identified hazards of concern and the defined hazard mitigation goals and objectives. The countywide hazard mitigation action plan was designed to benefit the whole partnership. The countywide Hazard Mitigation Action Plan includes the following mitigation actions:

| Hazard | Mitigation Action |
|---|---|
| **Drought** | Provide public information on water conservation and assess the potential for community-wide water conservation programs. |
| **Earthquake** | Provide information on earthquake risk and preparedness to the public. Continue to adopt and implement current earthquake building standards and upgrade, remove, or replace unreinforced masonry buildings, as feasible. |
| **Pandemic/ Epidemic** | Provide unified information to the public regarding personal protective measures and mitigating strategies in accordance with CDC guidelines. Implement public health measures in government facilities. |
| **Wildfire** | Continue to collaborate across the operational area with all jurisdictions with fire protection and suppression responsibility on wildfire mitigation efforts. |
| **Cyber-Attack** | Seek to increase redundancy in IT infrastructure, implement protective cyber-security measures, and train staff on common cyber-attack methods. |
| **Utility Interruption** | Encourage the development of and use of microgrids and the hardening of utility of infrastructure, where possible. Provide backup generators for critical infrastructure and facilities. |
| **Localized Stormwater Flooding** | Maintain good standing in the National Flood Insurance Program and encourage coordination on drainage system maintenance. |
| **Severe Winter Storms** | Maintain StormReady and TsunamiReady certification, as applicable. |
| **Climate Change** | Support, encourage, and implement, when feasible, countywide climate action, adaptation, and resiliency initiatives. |
| **All Hazards** | Incorporate and make consistent other planning documents with appropriate goals, policies, and objectives to address hazards identified within the Multi-Jurisdictional Hazard Mitigation Plan. |

## IMPLEMENTATION

The Steering Committee developed a plan implementation and maintenance strategy that includes annual progress reporting, a strategy for continued public involvement, a commitment to plan integration with other relevant plans and programs, and a commitment to actively maintain the plan over the performance period. Full implementation of the recommendations of this plan will require time and resources. The measure of the plan's success will be its ability to adapt to changing conditions. The planning partners will assume responsibility for adopting the recommendations of this plan and committing resources toward implementation. The framework established by this plan commits all planning partners to pursue actions when the benefits of a project exceed its costs. The planning partnership developed this plan with extensive public input and support to help ensure the plan's success.

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# PART A: PLANNING AND COMMUNITY PROFILE

THIS PART PROVIDES AN OVERVIEW OF THE MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, THE PLANNING PROCESS, AND COMMUNITY OF MONTEREY COUNTY. IT CONSISTS OF THE FOLLOWING SECTIONS:

1. INTRODUCTION
2. PLANNING PROFILE
3. COMMUNITY PROFILE

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# 1. INTRODUCTION

Disasters can cause loss of life, damage buildings and infrastructure, and have devastating consequences for a community's economic, social, and environmental well-being. Nationwide, federal, state, and local governments spend billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. This only partially reflects the true cost of disasters because additional expenses are incurred by insurance companies, nongovernmental organizations, non-profits, and individuals, which are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be reduced or even eliminated.

Hazard mitigation reduces disaster losses and damages. The term "hazard mitigation" is defined as sustained action or strategy taken to reduce or eliminate the long-term risk to human life and property from hazards. After disasters, repairs and reconstruction often are completed in such a way as to simply restore damaged property to pre-disaster conditions. These efforts may return property and infrastructure to "the norm," but the replication of pre-disaster conditions may result in a repetitive cycle of damage and reconstruction. Hazard mitigation planning can break this repetitive cycle by reducing vulnerability to hazards through smart construction and proper planning of future development and critical infrastructure.

Mitigation activities can be developed, planned, and implemented before or after a disaster occurs. Hazard mitigation activities involve long- and short-term actions and include planning efforts, policy changes, programs, studies, improvement projects, and other steps to reduce the impacts of hazards. Implementing fuel reduction around buildings within high wildfire risk areas, outreach programs that increase risk awareness, projects to protect critical facilities, and

the removal of structures from flood hazard areas are all examples of mitigation actions. Local mitigation actions and concepts can also be incorporated into land use plans and building codes. Proactive mitigation policies and actions help reduce risk and create safer, more disaster resilient communities. Mitigation is an investment in the future safety and sustainability of Monterey County.

Monterey County and participating jurisdictions have prepared this update to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), which was originally approved by the California Governor's Office of Emergency Services (Cal OES) and the Federal Emergency Management Agency (FEMA) in 2007 and updated in 2016. The plan in its current form reflects a comprehensive update in 2021. The purpose of this plan is to guide hazard mitigation planning in Monterey County in order to better protect the people and property from the effects of hazard events.

This plan demonstrates the commitment of each participating jurisdiction to reducing risks from hazards through mitigation and serves as a tool to direct resources to achieve optimum results with available administrative, technical, and financial resources. The plan will help guide and coordinate mitigation activities throughout Monterey County. This plan was also developed to ensure Monterey County and participating jurisdictions' continued eligibility for certain federal disaster assistance, specifically the FEMA Hazard Mitigation Assistance (HMA) grants, including the Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), and Flood Mitigation Assistance Program (FMA).

## 1.1 HAZARD MITIGATION PLANNING

Mitigation is most effective when it is based on a comprehensive, long-term plan that is developed before a disaster occurs. The purpose of mitigation planning is to identify policies and actions that can be implemented over the long term to reduce risk and future losses from hazards. The hazard mitigation plan provides an assessment of hazards, vulnerabilities, and risks prevalent in Monterey County and how those hazards may affect participating jurisdictions differently based upon proximities to hazards.

Mitigation actions are identified based on that risk assessment and the participation of a wide range of stakeholders and the public in the planning process. The mitigation strategy presented in this plan responds to the identified vulnerabilities within each community and provides actions to achieve the greatest risk reduction based upon available resources.

### 1.1.1 REGULATORY FRAMEWORK

For many years, federal disaster funding focused on relief and recovery after disasters occurred, with limited funding for hazard mitigation planning. The purpose of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 100-707), as amended by the Disaster

Mitigation Act of 2000 (Public Law 106-390), is to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters.

The Disaster Mitigation Act (DMA 2000) shifted the federal emphasis toward planning for disasters before they occur and requires proactive pre-disaster planning as a condition of receiving certain federal financial assistance under the Stafford Act. Regulations developed to fulfill the Disaster Mitigation Act's requirements are included in Title 44 of the Code of Federal Regulations (44 CFR). The Disaster Mitigation Act encourages state and local authorities to work together on pre-disaster planning and to assist local governments in accurately assessing mitigation needs, resulting in faster allocation of funding and more cost-effective risk reduction projects under FEMA's Hazard Mitigation Assistance program.

The Disaster Mitigation Act requires the plan be updated every five years to remain in compliance with federal mitigation grant conditions. Grant compliance is contingent on meeting the plan update requirements that are contained in 44 CFR. Jurisdictions that allow a plan to expire are not able to pursue funding under the Stafford Act for which a current hazard mitigation plan is a prerequisite.

Federal regulations require a plan for monitoring, evaluating, and updating hazard mitigation plans. The plan update process provides an opportunity to reevaluate recommendations, monitor the impacts of actions that have been accomplished, and determine if there is a need to change the focus of mitigation strategies over time.

### 1.1.2 BENEFITS OF MITIGATION PLANNING

All citizens and businesses of Monterey County are the ultimate beneficiaries of hazard mitigation planning. This Plan seeks to reduce risk for those who live in, work in, and visit the County and provides a viable planning framework for all foreseeable hazards that may impact the County. Benefits of mitigation planning include:

- Identifying actions for risk reduction that are agreed upon by stakeholders and the public.
- Focusing resources on the greatest risks and vulnerabilities.
- Building partnerships by involving citizens, organizations, and businesses.
- Increasing education and awareness of threats and hazards, as well as their risks.
- Communicating priorities to State and Federal officials.
- Aligning risk reduction with other community objectives.

## 1.2 PURPOSE OF PLANNING AND THE PLAN UPDATE

The Monterey County Multi-Jurisdictional Hazard Mitigation Plan identifies resources, information, and strategies for reducing risk from hazards. Monterey County and the local jurisdictions that participated as planning partners initiated this planning effort for several key reasons. Monterey County has significant exposure to numerous hazards that have led to

injuries and loss of life, in addition to millions of dollars in past damages. The planning partners want to be proactive in preparing for the probable impacts of hazards. Finally, limited local resources make it difficult to implement proactive risk-reduction measures. Federal and state financial assistance is paramount to successful hazard mitigation in the County. Elements and strategies in the MJHMP were selected because they best meet the needs of the planning partners and their citizens. The resources and background information in the plan are applicable countywide, and the Plan's goals and recommendations can lay the groundwork for the development and implementation of local mitigation activities and partnerships.

As a DMA 2000 requirement, the plan must be updated every five years to remain in compliance with federal mitigation grant conditions. Monterey County first prepared a hazard mitigation plan in compliance with the Disaster Mitigation Act in 2007. The 2016 update to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan was prepared by Monterey County Office of Emergency Services (OES) and AECOM. This plan is the update to the previous iterations of the plan and was updated with funding support from a FEMA Hazard Mitigation Grant Program Planning Grant (DR-4382-PL0025).

### 1.2.1 OBJECTIVES OF THE PLAN UPDATE

The 2021 update to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan will help guide and coordinate mitigation activities and was developed to meet the following objectives:

- Meet or exceed the requirements of the Disaster Mitigation Act the and the 2015 California legislation requiring the incorporation of climate adaptation strategies into hazard mitigation planning (SB 379).
- Meet the needs of each planning partner as well as state and federal requirements.
- Enable all planning partners to continue using federal grant funding to reduce risk through mitigation.
- Create a risk and vulnerability assessment that focuses on local hazards of concern.
- Identify a comprehensive and integrated mitigation strategy for long term risk reduction.
- Meet the planning requirements of FEMA's Community Rating System (CRS) program, allowing planning partners that participate in the CRS program to maintain or enhance their classifications.
- Coordinate existing plans and programs so that high-priority projects to mitigate possible disaster impacts are funded and implemented.
- Create a single planning document that integrates all planning partners into a framework that supports partnerships within the County.

### 1.2.2 PARTICIPATING JURISDICTIONS

The County prepared this update in partnership with local municipalities and special districts. One of the benefits multi-jurisdictional planning is the ability to pool resources and eliminate redundant activities within a planning area that has uniform risk exposure and vulnerabilities.

Any local government or non-profit agency with the ability to regulate building or infrastructure development or maintenance may participate in the planning process. However, to obtain FEMA approval, each of the local jurisdictions must meet all FEMA planning requirements outlined in 44 CFR Section 201.6.

The Monterey County Multi-Jurisdictional Hazard Mitigation Plan geographically covers the entire area of Monterey County and has multiple participating jurisdictions. A planning partnership was formed to develop and steer the content in this plan. This partnership consists of participating jurisdictions and Monterey County stakeholders. Partners worked together to create the goals, objectives, mitigation strategies, and implementation methods to reduce risk.

The following municipal jurisdictions have elected to become annexes of this plan update:

- Unincorporated Monterey County (and Monterey County Water Resources Agency)
- City of Carmel-by-the-Sea
- City of Del Rey Oaks
- City of Gonzales
- City of Greenfield
- City of King
- City of Marina
- City of Monterey
- City of Pacific Grove
- City of Salinas
- City of Sand City
- City of Seaside
- City of Soledad

Additionally, the following special districts have elected to become annexes of this plan update:

- Monterey County Water Resources Agency (MCWRA) (in unincorporated annex)
- Carmel Area Wastewater District (CAWD)
- Monterey Regional Waste Management District (MRWMD)
- Monterey One Water (M1W)
- Moss Landing Harbor District

All jurisdictions listed above participated in and were annexes to the 2016 Monterey County MJHMP, with the exception of the Monterey Regional Waste Management District (MRWMD) and the Moss Landing Harbor District, which are new to the 2022 Plan.

## 1.3 CONTENTS OF THE PLAN

This plan has been set up in two volumes so that elements that are jurisdiction-specific can easily be distinguished from those that apply to the whole County.

### *Volume 1: Countywide Hazard Mitigation Plan*

**Volume 1** includes the federally required elements of a hazard mitigation plan for all participating jurisdictions. This includes the description of the planning process, public involvement strategy, hazard risk assessments, countywide mitigation actions, and a plan maintenance strategy. Since this is a multi-jurisdictional plan, **Volume 1** addresses the entirety of Monterey County, which includes all participating jurisdictions and the entire geographic boundary of the County. **Volume 1** includes the following appendices:

- Appendix 1: Plan Adoption Resolutions from Planning Partners
- Appendix 2: Plan Progress Report Template

### *Volume 2: Jurisdictional Annexes*

**Volume 2** contains the Jurisdictional Annexes, which detail the hazard mitigation planning elements specific to each participating jurisdiction in the Monterey County MJHMP Update and includes all federally required jurisdiction-specific elements for each participating jurisdiction. Each annex is not intended to be a standalone document, but annexes to, supplements, and incorporates by reference the information contained in **Volume 1** of the Plan. As such, all information in **Volume 1**, including the planning process and other procedural requirements and planning elements apply to and were met by each participating jurisdiction. The Annexes provide additional information specific to each participating jurisdiction, with a focus on providing additional details on the risk assessment and mitigation strategy. Jurisdictional Annexes in **Volume 2** are organized in the following order:

**A** Unincorporated County of Monterey (and Monterey County Water Resources Agency)
**B** City of Carmel-by-the-Sea
**C** City of Del Rey Oaks
**D** City of Gonzales
**E** City of Greenfield
**F** City of King
**G** City of Marina
**H** City of Monterey
**I** City of Pacific Grove
**J** City of Salinas
**K** City of Sand City
**L** City of Seaside
**M** City of Soledad
**N** Carmel Area Wastewater District
**O** Monterey One Water
**P** Monterey Regional Waste Management District
**Q** Moss Landing Harbor District

All participating jurisdictions will adopt **Volume 1** in its entirety and their own jurisdiction-specific annex in **Volume 2**. It should also be noted that the Monterey County Water Resources Agency as a dependent special district is covered under the Unincorporated Monterey County Annex. The Agency participated extensively in both the Steering Committee and the unincorporated County Hazard Mitigation Planning Team. The Plan will also be adopted by the Monterey County Water Resources Agency Board, in addition to its adoption by the Monterey County Board of Supervisors.

### 1.3.1 WHAT'S NEW?

In 2016, the County met all approval requirements from the DMA and officially adopted an update to the 2007 MJHMP. The 2016 Monterey County MJHMP contained descriptions of their planning processes, risk assessments of identified hazards, and mitigation strategies for reducing the risk and vulnerability from these hazards. Since the approval of the 2016 MJHMP by Cal OES and FEMA, progress has been made by the County and the participating jurisdictions on implementation of the mitigation strategies. As part of the update process, a thorough review and update of the 2016 MJHMP was conducted to ensure that this update reflects current community conditions and priorities in order to realign the updated mitigation strategy for the next five-year planning period.

Also, to be noted, **Section 8**, *Plan Maintenance* of the 2016 MJHMP and **Section 22**, *Plan Implementation and Maintenance*, of this MJHMP update identify key questions to be considered as criteria for assessing the effectiveness and appropriateness of the Plan during future plan updates. Questions include:

- Do the goals address current and expected conditions?
- Has the nature or magnitude of risks changed?
- Are the current resources appropriate for implementing the Plan?
- Are there implementation problems, such as technical, political, legal, or coordination issues with other agencies?
- Have the outcomes occurred as expected?
- Did the jurisdictions, agencies, and other partners participate in the plan implementation process as proposed?

#### *Plan Reorganization*

For this Plan update, a new plan organization was used. The hazard section was reorganized, combining Hazard Analysis and Vulnerability Analysis sections from the previous plan by hazard. This allowed for a simpler document flow, which allows the reader to gain a full picture of the risk of any given hazard profiled in this plan in one individual section.

#### *Changes in Development*

Hazard mitigation plan updates must be revised to reflect changes in development within the planning area during the previous performance period (44 CFR Section 201.6(d)(3)). The plan must describe changes in development in hazard-prone areas that increased or decreased

vulnerability for each jurisdiction since the last plan was approved. The intent of this requirement is to ensure that the mitigation strategy continues to address the risk and vulnerability of existing and potential development and takes into consideration possible future conditions that could impact vulnerability.

Monterey County experienced a 5.8% increase in population between 2010 and 2020. Participating jurisdictions have adopted general plans that govern land use decisions and policymaking, as well as building codes and specialty ordinances based on state and federal mandates. This plan update assumes that some new development triggered by the increase in population occurred in hazard areas. Because all such new development would have been regulated pursuant to local programs and codes, it is assumed that vulnerability did not increase even if exposure did. Specific land use and development trends for each participating jurisdiction are included in their respective Annex in **Volume 2**. Risk assessments included update information on development in order to assess current exposure accurately.

### *New Hazards and Risk Assessment Methodology*

The risk assessments for each identified hazard were updated. This included reworking the hazard profile, adding new hazard event occurrences, redoing the entire vulnerability analysis to add additional items, and updating the vulnerability assessment based on more recent hazard data as well as using the most current parcel and assessor data for the existing built environment to develop loss estimates.

The County strengthened this plan by using new research methods and information systems. Geographic Information Systems (GIS) mapping and updated critical infrastructure inventories provided the County the tools to develop more comprehensive data sets than those in the 2016 MJHMP. The FEMA National Risk Index was also used to enhance the risk assessment. The National Risk Index incorporates physical and social vulnerability data to identify communities more at-risk to the adverse impacts of natural hazards. The National Risk Index is a high quality, comprehensive data set that identifies a community's risk to natural hazards.

The 2016 MJHMP addressed the following hazards: agricultural emergencies coastal erosion, dam failure, earthquake, flood (including coastal storm), a hazardous materials event, landslide, tsunami, wildfire, and windstorm. As part of the plan update process new hazards of concern were identified and included in this update. Some hazards were reorganized or expanded to include additional sub-hazards. New hazards and changes include:

- Levee Failure added to Dam Failure
- Land Subsidence added to Earthquake Section
- Flooding was expanded to also include Localized Stormwater Flooding and Flash Floods
- Landslide was renamed to Slope Failure to encompass a broader range of slope-based hazards
- Severe Weather added as a new section which included Windstorm in addition to Severe Winter Storms, Extreme Cold & Freeze, and Extreme Heat

- Public Health Hazards added and includes Pandemic and Epidemic
- Human Caused Hazards added and includes Cyber-Attack, Targeted Violence, Terrorism, and Mass Migration
- Utility Interruption added, including PSPS and Space Weather
- The 2016 MJHMP described the anticipated effects of climate change on all hazards, as applicable, and for this update Climate Change risk analysis was expanded and combined into its own Section
- Sea Level Rise was moved under the new Climate Change Section

### *Mitigation Actions*

The 2016 mitigation actions were reviewed and have been changed, updated, and revised to reflect new priorities in this MJHMP. During this MJHMP update process, each of the 2016 mitigation actions were examined for relevancy and the potential for future implementation and then evaluated for potential follow-up. Some mitigation actions developed during the 2016 MJHMP effort are an inherent part of the MJHMP update process or were not detailed enough for implementation at a local jurisdiction level, and thus were not included in this update. The County has made significant changes to other 2016 Mitigation Actions because of the updated risk assessment and implementation strategy, to include more detail, or to update based on current mitigation practices.

During this MJHMP update process, the Steering Committee also decided to add countywide mitigation actions. These countywide actions were based on the highest rated hazards of concern the identified problem statements across the operational area. They were included in order to provide a high-level countywide mitigation strategy.

### *Mitigation Success Stories*

The 2016 Monterey County MJHMP guiding principle, goals, objectives, and mitigation actions have been implemented through various ongoing projects, plans, and programs. The planning partners have made improvements toward reducing natural hazard risks to life and property, with significant risk reduction efforts for floodplain management, flood damage prevention, and fire hazard reduction. Throughout the hazard sections of the Plan, mitigation success stories were added in order to reflect on risk reduction successes that have occurred over the previous planning period. Mitigation success stories discussed in the Plan include:

- Section 5: Mitigating the Impact of the COVID-19 Pandemic to Farmworkers
- Section 7: San Clemente Dam Removal
- Section 10: Severe Repetitive Loss Property Elevation
- Section 10: Salinas River Stream Maintenance Program
- Section 14: City of Salinas Free Tree Program
- Section 15: Rain Rocks Shed/ Pitkin's Curve Bridge
- Section 18: Monterey Fire Defensible Space Inspection Program
- Section 19: City of Gonzales Growing Green

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# 2. PLANNING PROFILE

This section describes each stage of the planning process used to develop the Monterey County Multi-Jurisdictional Hazard Mitigation Plan. The planning process provides a framework for document development and follows the FEMA recommended steps as enumerated in federal regulation and outlined below.

FEMA recommends 4 major planning steps:

- Step 1: Organize Resources
- Step 2: Assess Risk
- Step 3: Develop a Mitigation Strategy
- Step 4: Adopt and Implement the Plan

This MJHMP is a community-driven, living document. The planning process itself is as important as the resulting plan because it encourages communities to integrate mitigation with day-to-day decision making. This section describes each stage of the planning process.

*Multi-Jurisdictional Planning Process*

Multi-jurisdiction hazard mitigation planning offers many benefits, such as increased coordination and efficiency in planning and implementation efforts. At the same time, each jurisdiction has specific hazards and specific mitigation actions that must be addressed individually. The MJHMP balances the benefits of a comprehensive, coordinated approach to hazard mitigation with the specific realities of individual participating jurisdictions.

***Volume 2*** of this MJHMP documents each jurisdiction's hazard mitigation planning process and resources. Each participating jurisdiction individually followed the same planning process as the countywide plan for their respective annex. ***Volume 2*** provides each participating jurisdiction's stand-alone annex.

## 2.1 PLANNING TIMELINE

The planning process began in April of 2019. The original intention was to start public outreach and the content update in January of 2020. Milestones and tasks affiliated with the FEMA planning steps set the original anticipated closeout date for March 2022. Planning efforts were suspended for approximately 12 months due to several moderate to catastrophic disasters in Monterey County in 2020 and 2021. These large events included the COVID-19 Pandemic, the 2020 River Fire, the 2020 Carmel Fire, the 2020 Dolan Fire, subsequent recovery efforts, and the 2021 Atmospheric River/Post-Fire Flood Flows.

After being suspended, the planning and update process resumed in March 2021, with an anticipated closeout date of July 2023. *Table 2-1* outlines the key milestones in the process.

**Table 2-1**
**MJHMP Planning Timeline**

| Planning Stage | Start Date | End Date |
|---|---|---|
| Public Outreach | May 2019 | February 2021 |
| Planning Process | May 2019 | March 2020 |
| Planning and Update Process Suspended | March 2020 | March 2021 |
| Planning Process (Continued) | March 2021 | January 2022 |
| Update Process | March 2021 | January 2022 |
| Plan Review | February 2022 | June 2022 |
| Plan Adoption and Approval | July 2022 | July 2023 |

### 2.1.1 THE STEERING COMMITTEE

In line with the first step of the recommended planning process, organizing resources, a Steering Committee was developed. Monterey County OES opened this planning effort to all eligible local governments and special districts within the County. Each jurisdiction wishing to join the planning partnership was asked to provide a designated a point of contact for the jurisdiction who would serve as the jurisdiction's Steering Committee representative, as well as confirm the jurisdiction's commitment to the process and understanding of expectations.

The Steering Committee was comprised of representatives from all participating jurisdictions who worked together to develop the MJHMP. Each jurisdiction's Steering Committee representative was also the lead for their respective Jurisdictional Hazard Mitigation Plan Stakeholder Team.

The Steering Committee was at the core of the MJHMP planning process and was integral to ensuring its success, its implementation, and its future maintenance. Members of the Steering Committee, listed in *Table 2-2*, represented jurisdictional leads from each planning partner.

**Table 2-2**
**2022 MJHMP Steering Committee Members**

| Name | Agency/Jurisdiction | Title |
|---|---|---|
| Barbara Buikema | Carmel Area Wastewater District | General Manager |
| Paul Tomasi | City of Carmel-by-the-Sea | Police Chief |
| Chris Bourquin | City of Del Rey Oaks | Police Commander |
| Jeff Hoyne | City of Del Rey Oaks | Police Chief |
| Jason Muscio | City of Gonzales | Fire Chief |
| Jim Langborg | City of Greenfield | Fire Chief |
| Doreen Liberto | City of King | Community Development Director |
| Steve Adams | City of King | City Manager |
| Doug McCoun | City of Marina | Fire Chief |
| Gaudenz Panholzer | City of Monterey | Fire Chief |
| Alyson Hunter | City of Pacific Grove | Senior Planner |
| Skylar Thompson | City of Salinas | Fire Chief |
| Brian Ferrante | City of Sand City | Police Chief |
| Dave Nava | City of Seaside | Division Chief |
| Mary Gutierrez | City of Seaside | Fire Chief |
| George Nunez | City of Soledad | Fire Chief |
| John Dugan | Monterey County Housing and Community Development | Deputy Director of Land Use and Community Development |
| Kelsey Scanlon | Monterey County Office of Emergency Services | Emergency Services Planner |
| Jennifer Bodensteiner | Monterey County Water Resources Agency | Associate Hydrologist |
| Sarah Stevens | Monterey One Water | Compliance Analyst |
| David Ramirez | Monterey Regional Waste Management District | Senior Engineer |
| Tommy Razzeca | Moss Landing Harbor District | General Manager/ Harbormaster |

The Steering Committee met throughout the development of the MJHMP update to discuss the MJHMP, its progress, and key planning elements. *Table 2-3* provides an overview of those meetings, including dates and topics discussed.

Agendas for all Steering Committee Meetings are included in **Appendix 3**.

**Table 2-3**
**Steering Committee Meeting Schedule**

| Meeting | Date | Topics Discussed |
|---|---|---|
| Kick-Off Meeting | May 22, 2019 | • Overview of Hazard Mitigation<br>• Solicit Planning Partners<br>• Plan Expectations and Timeline |
| Planning Meeting #1 | January 22, 2020 | • Hazard Mitigation Overview<br>• Overview of Planning Process<br>• Roles, Responsibilities, and Tasks<br>• Public Outreach Strategy<br>• Information Requirements |
| Planning Meeting #2 | February 19, 2020 | • Planning Process Schedule<br>• Public Outreach Strategy<br>• Community Profile Review<br>• Information Requirements |
| Planning Meeting #3 | March 2020 | • Cancelled Due to COVID-19 |
| Planning Meeting #4 | April 2020 | • Cancelled Due to COVID-19 |
| Planning Meeting #5 | May 2020 | • Cancelled Due to COVID-19 |
| Planning Meeting #6 | July 15, 2020 | • Progress Update<br>• COVID-19 Restrictions<br>• Timeline Changes |
| Planning Meeting #7 | August 2021 | • Cancelled Due to COVID-19 |
| Planning Meeting #8 | April 15, 2021 | • Planning Process Timeline Update<br>• Plan Reorganization and Hazard List<br>• Upcoming Public Meetings and Survey<br>• Jurisdiction Information Requirements |
| Planning Meeting #9 | May 21, 2021 | • Jurisdiction-Specific Planning Meetings<br>• Information on Jurisdiction Annexes<br>• Threat Hazard Risk Assessment |
| Planning Meeting #10 | September 21, 2021 | • Countywide Mitigation Strategy<br>• Threat Hazard Risk Assessment Results<br>• Countywide Mitigation Actions<br>• Plan Maintenance Strategy<br>• Jurisdiction Annexes Overview |

*Review and Incorporation of Existing Documents*

The Steering Committee and the Monterey County OES Team reviewed and incorporated existing plans, studies, reports, and technical information in the formation of this MJHMP. Those documents are referenced throughout the hazard sections and are examined more closely in **Section 20**, *Capability Assessment*.

### 2.1.2 STAKEHOLDER ENGAGEMENT

Per 44 CFR Section 201.6(b)(2), the planning process included an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved.

In order to gather input from stakeholders on the risks and hazards facing Monterey County, the Threat Hazard Identification and Risk Assessment (THIRA) Survey, described in more detail in **Section 4***, Risk Assessment Methods*, was sent out to neighboring communities, local and regional agencies, agencies that regulate development, businesses, academia, and other private and non-profit interests. Results from the survey were included with the rest of the Steering Committee and Jurisdiction results in the Countywide THIRA.

The agencies from whom stakeholders were invited to participate includes:

- American Red Cross
- American Water Works
- Association of Monterey Bay Area Governments (AMBAG)
- Big Sur Fire Brigade
- Cachagua Fire
- California American Water Company
- California Department of Fish and Wildlife
- California Department of Forestry and Fire Protection (CAL FIRE)
- California Department of Transportation (Caltrans)
- California Governor's Office of Emergency Services (Cal OES)
- California Highway Patrol (CHP)
- California State Parks
- California State University, Monterey Bay (CSUMB)
- Carmel Valley Recreation and Park District
- Castroville Community Services District
- Center for Ocean Solutions
- Central Coast Community Energy
- Central Coast Wetlands Group
- Community Emergency Response Volunteers (CERV) of the Monterey Peninsula
- Cypress Fire Protection District

- Elkhorn Slough National Reserve
- Gonzales Rural Fire Protection District
- Hartnell Community College
- Marina Coast Water District
- Mid Coast Fire Brigade
- Monterey Bay Aquarium Research Institute (MBARI)
- Monterey Bay Sanctuary Foundation
- Monterey County Office of Education
- Monterey County Regional Fire Protection District
- Monterey Peninsula Regional Park District (MPRPD)
- Monterey Peninsula Unified School District
- Monterey Regional Fire
- Monterey-Salinas Transit (MST)
- National Weather Service (NWS)
- Natural Resources Conservation Service (NRCS)
- Naval Postgraduate School
- North County Fire Protection District
- North County Recreation and Park District
- Pacific Gas & Electric (PG&E)
- Pajaro/Sunny Mesa Community Services District
- Pebble Beach Community Services District
- Resources Conservation District of Monterey County (RCDMC)
- Salinas Valley State Prison.
- San Ardo California Water District
- San Benito County
- San Lucas County Water District
- San Luis Obispo County
- Santa Cruz Country
- Santa Lucia Community Services District
- Soledad-Mission Recreation District
- SPCA for Monterey County
- Spreckels Community Services District
- The Nature Conservancy
- United Way Monterey County
- US Army Garrison- Presidio of Monterey
- US Army Garrison-Fort Hunter Liggett
- US Environmental Protection Agency (EPA)
- US Forest Service - Los Padres National Forest

### 2.1.3 JURISDICTION SPECIFIC PLANNING EFFORTS

Each jurisdiction conducted internal planning efforts with their individual jurisdiction planning teams to update their specific Annexes. These efforts were led by the Local Jurisdiction Lead who served as that jurisdiction's Steering Committee representatives. Each Jurisdictions respective Steering Committee representative established their own Jurisdiction Hazard Mitigation Plan Stakeholder Team. Jurisdiction-specific Stakeholder Teams included, as applicable, those deemed relevant for local hazard mitigation and disaster risk reduction efforts and often included representatives from the following departments: City Management, Economic Development, Fire Department, Floodplain Administration, IT, Parks & Recreation, Community Development, Police Department, and Public Works. Details on the members of each Jurisdiction Hazard Mitigation Plan Stakeholder Team is included in **Volume 2**.

Each participating jurisdiction held at least one Jurisdiction Hazard Mitigation Planning Meeting. At these meetings, the respective Hazard Mitigation Plan Stakeholder Team discussed hazard vulnerabilities, reviewed previous problem statements and mitigation strategies, and discussed their action plan. Each jurisdiction went through a risk ranking process using the Threat Hazard Risk Assessment (THIRA) Survey. This process is described in more detail in Section 4.4, *Hazard Prioritization and Risk Ranking*. Jurisdiction specific planning meetings are listed in *Table 2-4.*

**Table 2-4**
**Jurisdiction-Specific Planning Meetings**

| Jurisdiction | Meeting Date | Location |
|---|---|---|
| City of Pacific Grove | May 5, 2021 | Virtual |
| City of Carmel-by-the-Sea | June 15, 2021 | Virtual |
| City of King | June 22, 2021 | Virtual |
| City of Seaside | June 28, 2021 | Virtual |
| City of Salinas | July 13, 2021 | City of Salinas City Hall |
| City of Monterey | July 19, 2021 | Virtual |
| Monterey One Water (MW1) | July 28, 2021 | Regional Treatment Plant |
| Carmel Area Wastewater District (CAWD) | August 2, 2021 | CAWD Offices |
| City of Soledad | August 18, 2021 | City of Soledad City Hall |
| City of Sand City | August 24, 2021 | City of Sand City City Hall |
| Unincorporated Monterey County | August 30, 2021 | Virtual |
| City of Marina | August 31, 2021 | Virtual |
| City of Gonzales | September 15, 2021 | City of Gonzales Police Station |
| City of Del Rey Oaks | September 21, 2021 | City of Del Rey Oaks City Hall |
| City of Greenfield | September 23, 2021 | Virtual |
| Monterey Regional Waste Management District (MRWMD) | September 23, 2021 | MRWMD Offices |
| Moss Landing Harbor District | September 27, 2021 | Moss Landing Harbor |
| City of Salinas | October 5, 2021 | City of Salinas City Hall |

## 2.2 PUBLIC ENGAGEMENT

Broad public participation in the planning process helps ensure that diverse points of view are considered and addressed. The public must have opportunities to comment on disaster mitigation plans during the drafting stages and prior to plan approval (44 CFR, Section 201.6(b)(1)). The public involvement strategy used for this plan update introduced the concept of mitigation to the public and provided the Steering Committee with feedback to use in developing the plan.

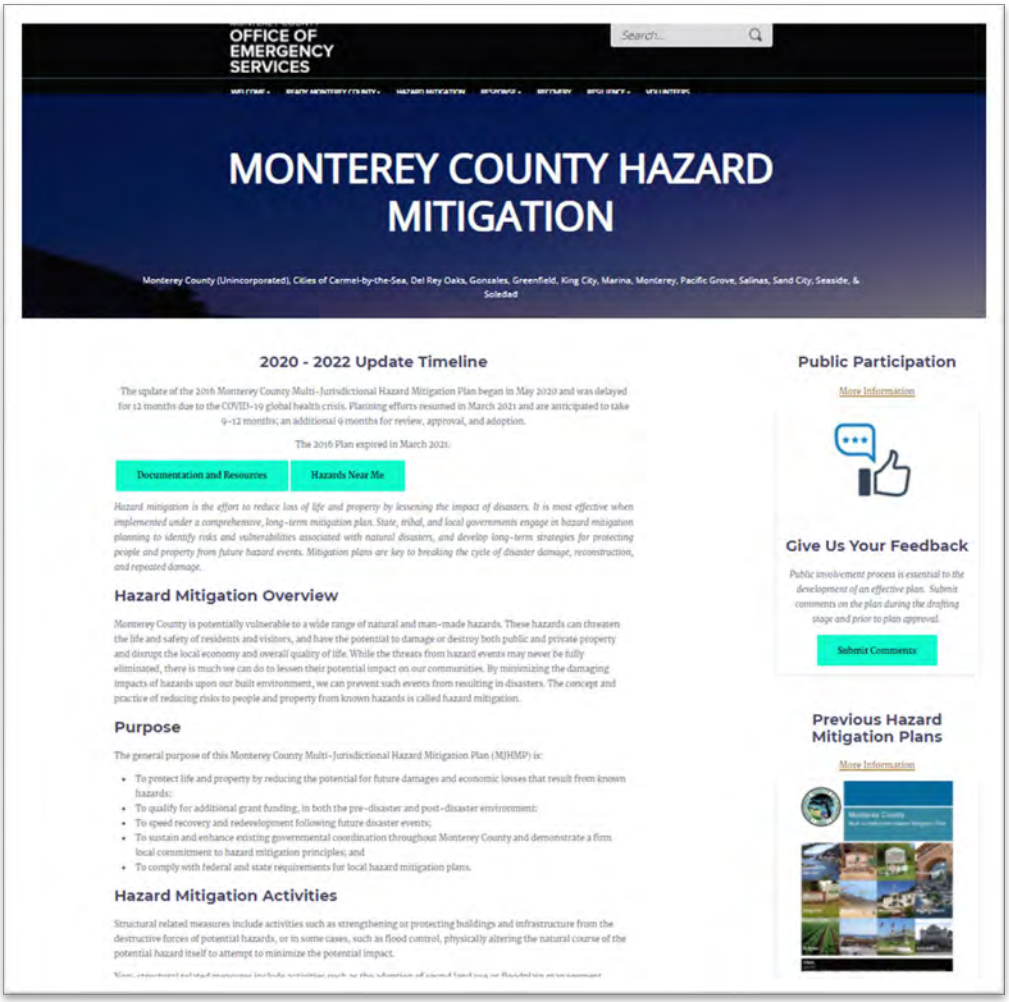
Public outreach was a critical element of the plan update process, as Monterey County includes a broad range of communities with diverse citizenry, concerns, and needs. A plan that reflects the community's values and priorities is likely to have greater legitimacy and "buy-in" and greater success in implementing mitigation actions and projects to reduce risk. The public outreach strategy maximized involvement throughout the planning process.

Public stakeholders were given many opportunities to provide comment during all phases of the update process. The strategy for involving the public in this plan was a multi-pronged approach utilizing a dedicated website, a Community Survey, 7 Public Forums, and Public Presentations. Presentations were provided in Spanish upon request. The website and Survey were translated in Spanish to accommodate Spanish speaking community members.

### 2.2.1 WEBSITE

At the beginning of the plan development process, a website was created to keep the public posted on plan development milestones and to solicit relevant input. The site's address was publicized at all public meetings. Each planning partner established a link to this site on its own agency website. Information on the plan development process, the Steering Committee, the Survey, and drafts of the plan was made available to the public on the site throughout the

process. Monterey County OES intends to keep the website active after the plan's completion to keep the public informed about successful mitigation projects and future plan updates.




## 2.2.2 SURVEY

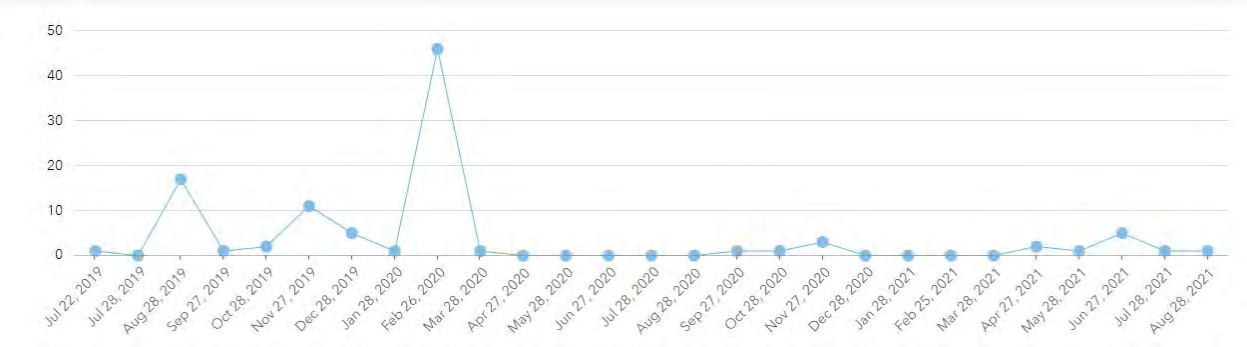
A hazard mitigation survey was developed, in both English and Spanish, by the planning team with guidance from the Steering Committee. The survey provided an opportunity for residents to share opinions regarding hazard mitigation and participate in the plan update process. The survey consisted of 30 questions and was made available on the hazard mitigation plan website and advertised throughout the course of the planning process. The survey was used to:

- Gauge the public's perception of risk and identify what citizens are concerned about.
- Identify the best ways to communicate with the public.
- Determine the level of public support for different mitigation strategies.
- Understand the public's willingness to invest in hazard mitigation.

The survey was open for public participation from July 22, 2019, to August 28, 2021, and 100 completed surveys were submitted.

Data suggests a direct correlation between public outreach efforts and survey participation as seen in *Figure 2-1.*

**Figure 2-1**
**Survey Responses to Date**



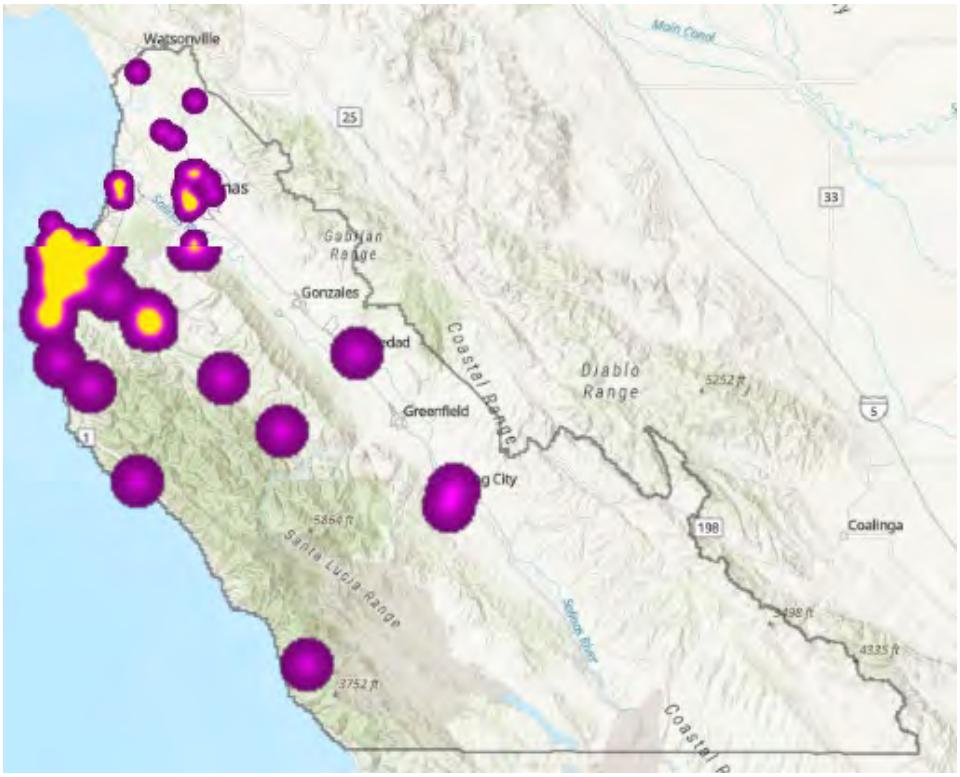

Survey respondents represented a broad range of geographical areas. *Table 2-5* summarizes the geographic diversity of respondents and *Figure 2-2* shows a heat map of respondents.

**Table 2-5**
**Public Survey Respondents by Location**

| Jurisdiction | # of Respondents |
|---|---|
| City of Carmel by The Sea | 1 |
| City of Del Rey Oaks | 2 |
| City of Gonzales | 0 |
| City of Greenfield | 0 |
| City of King City | 1 |
| City of Marina | 5 |
| City of Monterey | 27 |
| City of Pacific Grove | 5 |
| City of Salinas | 12 |
| City of Sand City | 0 |
| City of Seaside | 0 |
| City of Soledad | 1 |
| **Incorporated Jurisdiction Respondents Subtotal** | **54** |
| Unincorporated Area- Big Sur | 8 |
| Unincorporated Area-Carmel | 5 |
| Unincorporated Area- Carmel Valley | 9 |
| Unincorporated Area - Salinas/River Rd | 2 |
| Unincorporated Area - North County | 4 |
| Unincorporated Area - Other | 1 |
| **Unincorporated Area Respondents Subtotal** | **29** |
| Other* | 17 |
| **Total Respondents** | **100** |

*Respondents identified locations outside of County or did not identify their locations.

**Figure 2-2**
**Heat Map of Public Survey Respondents Locations**




Results of the survey were used to support the creation of the Countywide Hazard Mitigation Problem Statements and the Countywide Hazard Mitigation Action Matrix.

Approximately 74% of survey participants indicated they had experienced or been impacted by a natural hazard or disaster. The most common hazards respondents had experienced or been impacted by were flooding (25 respondents), earthquakes (24 respondents), wildfires (23 respondents), and windstorms (19 respondents). Survey participants were most concerned about agricultural emergencies, earthquakes, and climate change.

Participants also ranked which community assets were most vulnerable to natural hazards. Community assets were ranked by vulnerability in the following order:

1. Infrastructure: Damage or loss of roads, bridges, utilities, schools, etc.
2. People: Loss of life and/or injuries
3. Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.
4. Governmental: Ability to maintain order and continue providing public services, etc.
5. Economic: Business interruptions or closures, job losses, agricultural losses, etc.
6. Cultural/Historic: Damage or loss of libraries, museums, historic properties, etc.

In terms of mitigation activities, 81% of respondents felt natural systems protection was very important to pursue, 77% felt educations and awareness programs were very important to

pursue, 73% felt local plans and regulations were very important to pursue, and 71% felt structure and infrastructure projects were very important to pursue.

The highest priority mitigation actions included: Strengthen infrastructure such as roads, bridges, water/wastewater and electric power supply facilities (83 respondents); Develop climate adaptation plans, policies or projects to minimize potential negative impacts from climate change (68 respondents); Enhance or restore the capacity of natural features (dunes, floodplains, wetlands) to absorb impacts of natural hazards (61 respondents); Strengthen critical public facilities such as police, fire, schools and hospitals (60 respondents); and Provide better public information about hazard risks and available mitigation measures (59 respondents).

The lowest priority mitigation actions included: Protect cultural and/or historic resources such as monuments, museums, historic landmarks, etc. (18 respondents); Assist vulnerable property owners with securing funding for mitigation projects (35 respondents); and acquire vulnerable properties from willing sellers, remove or relocate existing structures and maintain as open space (23 respondents).

Full survey results are available upon request.

### 2.2.3 COMMUNITY FORUMS

Monterey County OES held 7 Community Forums, geographically dispersed by Supervisorial District, in order to capture a wide range of community input on the update to the MJHMP. *Table 2-6* lists the community forums that occurred.

**Table 2-6**
**Hazard Mitigation Community Forums on the 2022 MJHMP**

| District | Date | Location |
|---|---|---|
| District 1 | January 8, 2020 | Ag Commissioner's Office |
| District 2 | January 6, 2020 | Castroville Library |
| District 3 | January 15, 2020 | San Antonio Valley Community Center |
| District 3 | January 17, 2020 | Arroyo Seco Fire District Station #32 |
| District 4 | January 9, 2020 | Marina Library |
| District 5 | January 16, 2020 | Big Sur Lodge Conference Room |
| District 5 | January 22, 2020 | Discovery Center at Palo Corona Regional Park |

In order to assess the community's perception of hazard risk, during the community forums, an interactive activity was conducted. The activity was offered in both English and Spanish. Community members voted with stickers to answers questions on the importance of various community assets and their level of concern on different hazards. First, in order to understand the importance of various community assets, community forum participants indicated how

important various community assets were to them. Community assets was defined as features, characteristics, or resources that either make a community unique or allow it to function.

*Table 2-7* summarizes the results from all community forums on the answer to the question: How important are each of the following community assets to you? The results indicate that over 90% of community members that responded considered Electric Power and Gas Facilities, Emergency Operations Centers, Hospital and Medical Facilities, Major Roads and Bridges, and Water and Wastewater Utilities to be very important.

**Table 2-7**
**Community Forums Interactive Activity Results: Community Assets**

| Community Asset | Percent of Respondents | | | | |
|---|---|---|---|---|---|
| | Very Important | Somewhat Important | Neutral | Not Very Important | Not Important |
| Airports | 13.3% | 66.7% | 13.3% | 0.0% | 6.7% |
| Colleges/Universities | 50.0% | 28.6% | 7.1% | 14.3% | 0.0% |
| Day Care Facilities | 30.0% | 40.0% | 30.0% | 0.0% | 0.0% |
| Elder Care Facilities | 64.3% | 14.3% | 21.4% | 0.0% | 0.0% |
| Electric Power and Gas Facilities | 95.7% | 0.0% | 4.3% | 0.0% | 0.0% |
| Emergency Operations Centers | 93.3% | 6.7% | 0.0% | 0.0% | 0.0% |
| Emergency Shelters | 87.5% | 12.5% | 0.0% | 0.0% | 0.0% |
| Farms and Agricultural Facilities | 38.5% | 46.2% | 7.7% | 7.7% | 0.0% |
| Fire Stations and EMS Facilities | 80.0% | 20.0% | 0.0% | 0.0% | 0.0% |
| Government Buildings | 25.0% | 37.5% | 37.5% | 0.0% | 0.0% |
| Historic Buildings | 41.7% | 25.0% | 25.0% | 8.3% | 0.0% |
| Hospital and Medical Facilities | 92.3% | 7.7% | 0.0% | 0.0% | 0.0% |
| Major Roads and Bridges | 92.6% | 7.4% | 0.0% | 0.0% | 0.0% |
| Major Employers | 28.6% | 42.9% | 28.6% | 0.0% | 0.0% |
| Military Facilities | 14.3% | 57.1% | 14.3% | 14.3% | 0.0% |
| Natural Resources | 85.7% | 14.3% | 0.0% | 0.0% | 0.0% |
| Parks and Recreational Areas | 78.6% | 21.4% | 0.0% | 0.0% | 0.0% |
| Police Stations | 84.6% | 15.4% | 0.0% | 0.0% | 0.0% |
| Port and Marine Facilities | 62.5% | 25.0% | 0.0% | 12.5% | 0.0% |
| Schools (K-12) | 68.8% | 25.0% | 6.3% | 0.0% | 0.0% |
| Small Businesses | 54.5% | 45.5% | 0.0% | 0.0% | 0.0% |
| Water and Wastewater Utilities | 92.3% | 7.7% | 0.0% | 0.0% | 0.0% |

Next, in order to understand the community's perception of hazard risk, community forum participants indicated how concerned they were about various hazards.

*Table 2-8* summarizes the results from all community meetings on the answer to the question: How concerned are you about the possibility of your community being impacted by each of these hazards?

**Table 2-8**
**Community Forums Interactive Activity Results: Hazard Concern**

| Hazard | Percent of Respondents | | |
|---|---|---|---|
| | Very Concerned | Somewhat Concerned | Not Concerned |
| Agricultural Emergency | 73.9% | 26.1% | 0.0% |
| Coastal Erosion | 70.0% | 30.0% | 0.0% |
| Dam Failure | 55.6% | 27.8% | 16.7% |
| Earthquake | 78.6% | 21.4% | 0.0% |
| Flood | 80.0% | 20.0% | 0.0% |
| Hazardous Materials Incident | 62.5% | 25.0% | 12.5% |
| Landslide / Debris Flow | 69.4% | 22.2% | 8.3% |
| Sea Level Rise | 64.7% | 29.4% | 5.9% |
| Tsunami | 61.1% | 22.2% | 16.7% |
| Wildland Fire | 73.1% | 23.1% | 3.8% |
| Windstorm | 37.5% | 58.3% | 4.2% |

### 2.2.4 PUBLIC PRESENTATIONS

In order to inform the public about the plan, public presentations were held. Presentations helped educate the public about existing hazards and mitigation strategies and allowed the public to provide feedback on the MJHMP. Public presentations are listed in *Table 2-9*.

**Table 2-9**
**Public Presentations of the 2022 MJHMP Update**

| Public Presentation | Date |
|---|---|
| Monterey County Board of Supervisors | Tuesday, April 2, 2019 |
| Monterey County Disaster Council | Wednesday, April 24, 2019 |
| Monterey County Disaster Council Meeting | Wednesday, October 30, 2019 |
| City of Gonzales City Council Meeting Presentation | Monday, November 18, 2019 |
| City of Pacific Grove City Council Meeting Presentation | Wednesday, February 19, 2020 |
| City of Sand City City Council Meeting Presentation | Tuesday, March 3, 2020 |
| City of King City Council Meeting Presentation | Tuesday, August 25, 2020 |
| City of Greenfield City Council Meeting Presentation | Tuesday, September 22, 2020 |
| City of Monterey City Council Meeting Presentation | Tuesday, October 6, 2020 |
| Monterey County Disaster Council Meeting | Wednesday, October 28, 2020 |
| Carmel-by-the-Sea Climate Change Committee Meeting | Thursday, November 19, 2020 |
| City of Marina City Council Meeting Presentation | Tuesday, May 18 2021 |
| City of Carmel-by-the-Sea City Council Presentation | Tuesday, June 1, 2021 |
| City of Seaside City Council Meeting Presentation | Thursday, June 3, 2021 |
| Monterey Regional Waste Management District Board | Friday, June 18, 2021 |
| City of Soledad City Council Meeting Presentation | Wednesday, July 21, 2021 |
| City of Salinas City Council Meeting Presentation | Tuesday, August 10, 2021 |
| City of Del Rey Oaks City Council Meeting Presentation | Tuesday, September 28, 2021 |
| Moss Landing Harbor District Board Presentation | Wednesday, September 29, 2021 |

## 2.3 ASSESS THE RISK

In accordance with FEMA requirements, the Steering Committee identified and prioritized the hazards affecting both the County as a whole and each participating jurisdiction individually. It also assessed the vulnerability to those hazards. Results from this risk assessment aided in the subsequent identification of appropriate mitigation actions. While the process is described below, the substance of this risk assessment is detailed in **Section 4**, *Risk Assessment Methods*.

### *Identify and Profile Hazards*

Based on a review of past hazard events, existing plans, reports, and other technical studies, data, and information, the Steering Committee determined what regional hazards could affect the County. The Steering Committee completed a screening and prioritization processes to determine priority hazards to be assessed. A risk assessment finalized the prioritization process by ranking hazards according to the impact and threat to the whole County in **Volume 1** and each participating jurisdiction in **Volume 2**.

### *Assess Vulnerabilities*

Assessing vulnerabilities exposes the unique characteristics of individual hazards and begins the process of narrowing down which areas within the County are vulnerable to specific hazard events. The vulnerability assessment involved a subjective assessment, in addition to a GIS overlaying method for examining vulnerabilities in-depth. The identified hazards varied depending on the geographic make-up of, priorities of, and services provided by the participating jurisdictions. Using these methods, planning partners estimated vulnerable populations, infrastructure, and potential losses from hazards.

## 2.4 DEVELOP A MITIGATION STRATEGY

This plan provides an explicit strategy and blueprint for reducing potential losses identified in the risk assessment based on existing authorities, policies, programs and resources, and participating jurisdictions' abilities to expand on and improve these existing tools. MJHMP development included identifying goals, assessing existing capabilities, reviewing the 2016 MJHMP goals, and identifying new mitigation actions. The MJHMP was prepared in accordance with requirements from DMA 2000 and the California Governor's Office of Planning and Research (OPR) and FEMA's HMP guidance. The process is described below; the substance of the mitigation strategy is detailed in **Section 21,** *Mitigation Strategy***,** for the whole County and within **Volume 2** for each participating jurisdiction.

### *Identify Goals*

The Steering Committee reviewed the 2016 MJHMP goals and determined their current validity, consistent with FEMA requirements. The goals were updated to meet the current hazard environments and to be consistent with the changing policies and goals of participating jurisdictions. The goals are presented in **Section 21,** *Mitigation Strategy***.**

*Develop Capabilities Assessment*

A capabilities assessment is a comprehensive review of participating jurisdictions' capabilities and tools to implement the mitigation actions in the MJHMP. The Steering Committee and individual jurisdiction Planning Teams identified technical, financial, and administrative capabilities to implement mitigation actions, as detailed in **Section 20,** *Capability Assessment,* and in **Volume 2** for each participating jurisdiction.

*Identify Hazard Problem Statements*

The Steering Committee and individual jurisdiction Planning Teams developed mitigation actions, as both planning activities and projects, to address problems that could originate from hazards identified in the risk assessment, in line with identified capability of each jurisdiction. Mitigation actions were created first by developing problem statements for prioritized hazards. Hazard Problem Statements are located at the conclusion of each hazard section, in **Section 21**, *Mitigation Strategy,* and in **Volume 2** for each individual jurisdiction.

*Identify Mitigation Actions*

As part of the MJHMP planning process, the Steering Committee and individual jurisdiction Planning Teams reviewed and analyzed the status of the mitigation actions identified in the 2016 MJHMP. The status of mitigation actions included in the 2016 MJHMP that were either completed or deleted during the plan update process is included in **Volume 2** in the respective annexes of each jurisdiction who were included in the prior plan. Once the 2016 actions were reviewed, the Steering Committee and individual jurisdiction Planning Teams then worked to identify and develop new mitigation actions with implementation elements. Additional detail on these mitigation actions is provided in **Section 21,** *Mitigation Strategy,* and in **Volume 2** for each individual jurisdiction.

## 2.5 ADOPT AND IMPLEMENT THE PLAN

Once the risk assessment and mitigation strategy were completed, information, data, and associated narratives were compiled into the MJHMP. **Section 1.3.1,** *What's New?,* provides detailed information on new and updated elements of the MJHMP.

*Plan Review and Revision*

Once the Draft MJHMP Update was completed, a public and government review period was established for official review and revision. Public comments were accepted, reviewed, and incorporated into this update. Applicable comments from the public have been received and addressed prior to submitting to FEMA and Cal OES. Steering Committee Members, Operational Area stakeholders, and partners were provided a 60-day review period prior to the public review and comment period. This was announced at the Monterey County Operational Area Disaster Council meeting on October 27, 2021.

A 30-day public comment period, from February 10 to March 10, 2022, gave the public an opportunity to comment on the draft plan update prior to its submittal to Cal OES. The principal

avenue for public comment on the draft plan was the website established for this plan update. Comments received on the draft plan are available upon request. All comments were reviewed by the Steering Committee and incorporated into the draft plan as appropriate.

### *Plan Approval and Submittal*

On behalf of all participating jurisdictions, Monterey County Office of Emergency Services submitted the Plan for Cal OES and FEMA Review on March 11, 2022. The 2022 Monterey County MJHMP received Approval Pending Adoption from FEMA on June 14, 2022.

### *Plan Adoption*

Upon receiving the notice of Approval Pending Adoption, all participating jurisdictions seeking plan approval are required to adopt the plan. The plan approval date remains the same regardless of the independent participating jurisdictions adoption dates.

**Table 2-10**
**Jurisdiction Plan Adoption Dates**

| Annex Letter | Agency/Jurisdiction | Adoption Date |
|---|---|---|
| **A** | Unincorporated County of Monterey | |
| **A** | Monterey County Water Resources Agency | |
| **B** | City of Carmel-by-the-Sea | |
| **C** | City of Del Rey Oaks | |
| **D** | City of Gonzales | |
| **E** | City of Greenfield | |
| **F** | City of King | |
| **G** | City of Marina | |
| **H** | City of Monterey | |
| **I** | City of Pacific Grove | |
| **J** | City of Salinas | |
| **K** | City of Sand City | |
| **L** | City of Seaside | |
| **M** | City of Soledad | |
| **N** | Carmel Area Wastewater District | |
| **O** | Monterey One Water | |
| **P** | Monterey Regional Waste Management District | |
| **Q** | Moss Landing Harbor District | |

Upon receiving the record of adoption from the State, FEMA will issue an official approval letter stating which jurisdictions have adopted and are approved and eligible for FEMA Hazard Mitigation Assistance programs. The approval letter and date are generated with the first jurisdiction adopting the plan. The Monterey County MJHMP was approved on DATE and expires on DATE.

### *Implement, Evaluate, and Revise the Plan*

The true worth of any mitigation plan is its implementation and success under FEMA's grant programs. This MJHMP has been assembled to reduce the risk of natural hazards, and also to meet the requirements of the DMA 2000 and maintain eligibility under FEMA's Hazard Mitigation Assistance (HMA) grant programs. FEMA administers three programs that provide funding for local agencies with approved mitigation plans:

- Hazard Mitigation Grant Program (HMGP), which assists in implementing long-term hazard mitigation planning and projects following a Presidential major disaster declaration.
- Building Resilient Infrastructure and Communities (BRIC), which provides funds for hazard mitigation planning and projects on an annual basis.
- Flood Mitigation Assistance (FMA), which provides funds for planning and projects to reduce or eliminate risk of flood damage to buildings that are insured under the National Flood Insurance Program (NFIP) on an annual basis.

### *Plan Maintenance*

The County will update and monitor this plan in accordance with all FEMA requirements in order maintain eligibility for FEMA HMA. Evaluation and revision procedures for this plan are detailed in **Section 22,** *Plan Implementation and Maintenance*. **Section 22** includes the measures Monterey County and planning partners will take to ensure the MJHMP's continuous long-term implementation, including MJHMP monitoring, reporting, evaluation, maintenance, and updating.

# 3. COMMUNITY PROFILE

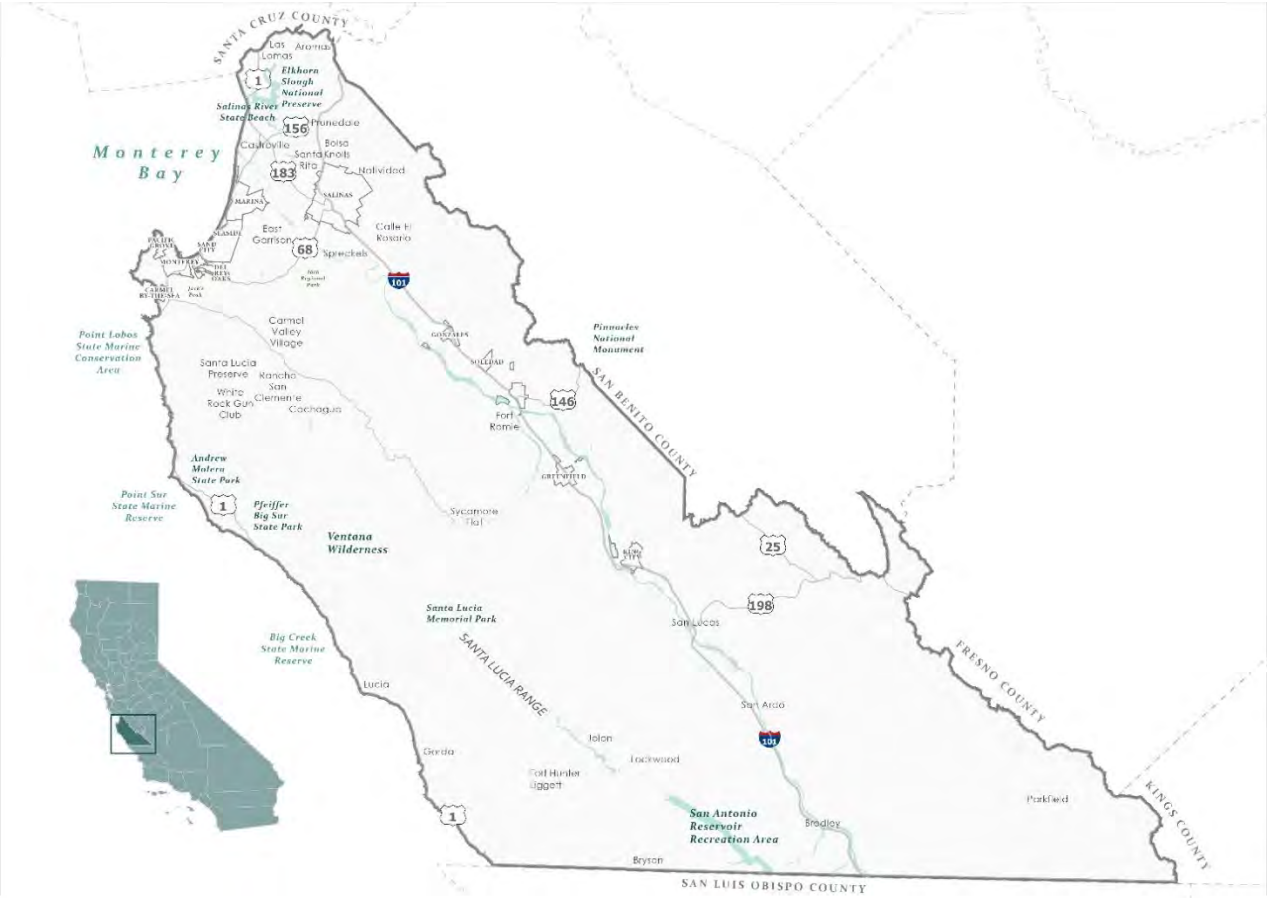
Monterey County is situated on California's central coast, south of San Francisco and north of Los Angeles. Monterey County is known to the world for its majestic coastlines including Big Sur, the Monterey Peninsula, and the Monterey Bay, as well as the agriculturally rich Salinas Valley, known as the “Salad Bowl of the World.” It is also home to Pinnacles National Park near the City of Soledad, the Monterey Bay Aquarium, and the site of a Monarch butterfly preserve in the City of Pacific Grove.

## 3.1 LOCATION, GEOGRAPHY, AND CLIMATE

Monterey County is located on the Pacific Ocean on the north-central coast of California. The County is bordered by Santa Cruz County to the North, San Benito, Fresno, and King Counties to the East, San Luis Obispo County to the South, and the Pacific Ocean to the West. The County is 110 miles south of San Francisco and 320 miles north of Los Angeles.

Monterey County, one of the largest in California, covers 3,771 square miles, of which 13% is water, and contains nearly 100 miles of coastline. Elevation within the County ranges from sea level to 5,862 feet at Junipero Serra Peak, which is located 12 miles inland in the Santa Lucia Range. Prominent land features in the County include two major northwest-southeast trending mountain ranges—the Santa Lucia Range along the coast, and the Gabilan Range along the eastern border of the County, both of which are part of the Pacific Coast Range. Between the Santa Lucia and Gabilan mountain ranges lies the Salinas Valley; and at the center of the Valley flows the Salinas River, the largest river on California’s Central Coast.

**Figure 3-1**
**Map of Monterey County**




The Santa Lucia Range stretches approximately 100 miles from just south of Carmel to a point north of the San Luis Obispo County line. The steepest slope in the contiguous United States occurs within the Coast Range at Cone Peak, ranging from sea level to 5,155 feet in a distance of just three miles. The Big Sur coastline is known for its steep slopes, jagged peaks, and narrow coastal canyons. Offshore the steep ridges of the Santa Lucia Mountains fall sharply beneath the Pacific Ocean. 50 miles offshore, the Pacific Ocean reaches a depth of 12,000 feet. Two deep submarine canyons, the Sur Submarine Canyon, and the Partington Submarine Canyon, cut into the continental shelf near the Big Sur coast, and eventually merge to become one of the deepest submarine canyons on earth.

On the eastern side of the Santa Lucia Range, the mountain slopes descend abruptly down to the Salinas Valley, which rises in altitude from sea level at the Monterey Bay to approximately 400 feet near Bradley. The Valley is 130 miles long and is famous for its productive soils.

The Gabilan Mountains, like the Santa Lucia Mountains, are composed of granite and metamorphic rocks and are similarly characterized by steep slopes and complex drainage patterns. The Gabilan Mountains, located further inland however, are drier than the Santa Lucia

Mountains. At the northern end of the Monterey County lies the Pajaro River. Much of north County land is cultivated with agricultural crops. The coastal area of North County contains wide sandy beaches and the primary commercial fishing harbor for the entire County.

Monterey County includes 12 incorporated cities and 16 unincorporated areas; of which Salinas, the County seat, is the largest municipality. The cities can be generally grouped into two classifications (valley and coastal):

**Valley Cities**: Gonzales, Greenfield, King City, Salinas (Monterey County seat), and Soledad.

**Coastal Cities**: Carmel, Del Rey Oaks, Marina, Monterey, Pacific Grove, Sand City, and Seaside.

California Highway 101 bisects the County providing easy access to all Salinas Valley cities and the Monterey Peninsula, while Highway 1 offers scenic views of the California coast.

The climate in Monterey County is considered Mediterranean, with dry summers, rainy winters, and moderate temperatures year-round, with an average rainfall of about 19 inches per year. Precipitation in the region falls mainly between November and April. Large variations exist in rainfall amounts between coastal and inland areas, as well as from year to year and from sea level to altitude along the coast.

## 3.2 HISTORY

Before the European colonization, the Monterey area had been inhabited for over 8,000 years. Indigenous peoples lived in the valleys and near the seaside and the area was inhabited by three major native groups: the Costanoan (Ohlone), Esselen, and Salinan groups. The Salinan Indigenous Americans lived in southern region of the County and had about 3,500-4,000 members. The Esselen Indigenous Americans had several hundred members and resided on the northwest coast of the County. The Costanoan (Ohlone) group was the largest in the area with around 7,000 people, occupying Monterey Peninsula and northern region of the County.

Spanish explorers first sailed past the Monterey coast in the mid-1500s but did not land in the Monterey Bay until the early 1600s. In 1542, Juan Rodriguez Cabrillo discovered the bay he named "*la Bahia de los Pinos*," the Bay of Pines, but not venture ashore. By the late 1500s, New Spain's concerns were focused on the Pacific, in particular, the threat of English piracy against Spain's Manila galleons. With a view toward finding a port to protect and supply the galleons, Sebastian Vizcaino laid claim to the bay in 1602, when he named it, the *Bahia de Monte Rey*, or Monterey Bay, in honor of Gaspar de Zuniga y Acevedo, Conde de Monterrey, the Viceroy of New Spain. The word itself is composed of the "*monte*" and "*rey*," which literally means "king of the mountain" in Spanish. Spanish settlement in the region though did not occur for another 167 years. It would not be until 1769, when New Spain, fearing the advancement of the Russians, planned an expedition into California to establish a military foothold and a mission. On June 3, 1770, Captain Gaspar de Portola, and Franciscan Father Junipero Serra founded the Presidio of Monterey and the Mission de San Carolos Borromeo de Monterey at Monterey Bay.

In 1774, the small, rudimentary presidio was named the capital of the Californias, both Alta and Baja, upper and lower. And, in 1778 it was named the capital of Spanish Alta California.

Spanish settlers began developing catholic missions, or religious outposts, within the County and used the Salinas Valley for range lands. Franciscan missionaries also began constructing missions in the late 1700s, establishing missions in Monterey (1770, then moved to Carmel in 1771), in the San Antonio River Valley (1771) along the eastern side of the Santa Lucia Mountains, and in Soledad (1791). This began a period of forced conversions of Indigenous Americans to Catholicism and the disintegration of traditional Indigenous life. Natives were decimated by introduced European diseases, particularly whooping cough, and measles, and by violence in the missions and declining birth rates. In 1826, after Mexico's secession from Spain, the governor of Alta California emancipated the remaining natives from the missions. A small number of their descendants still live in the region.

Monterey was an important port and military position, for Spain, becoming the political and cultural Capital of Alta California in 1775. Spain established a formal pueblo government in the region that went into effect in 1794. By 1800, most settlers in the area lived in the Presidio or at the mission in Carmel, while a few had moved out to ranches south of Salinas. Slowly, settlers began moving into the Salinas Valley and developing ranches centered around cattle. The region remained a military outpost for most of Spanish rule. Spanish occupation of the Monterey County region significantly expanded grasslands, especially in the Salinas Valley, to support an economy based primarily on cattle grazing. The Spanish also introduced a number of important crops to the region, including wine grapes, olives, apples, and pear trees.

In 1822, following the Mexican War of Independence, California became a province of Mexico. Monterey remained the capital of Alta California during the 20-year period of Mexican rule. Under Mexican rule, with the secularization of the missions, the Californios, the descendants of the original Spanish colonists, secured vast land grants and expanded the cattle and hide trade. The boundaries of the original ranchos serve to a large extent as today's property boundaries within the region, particularly on larger tracts of agricultural and ranching lands. Mexico lifted the strict trading regulations the Spanish had enforced, and Monterey became California's main port of entry. British, American, and South American trading vessels flocked to the coastal port. The official Custom House at Monterey opened to foreign ships, transforming the old Spanish provincial capital into an international port.

Tensions between the US and Mexico rapidly deteriorated in the 1840s as American expansionists eagerly eyed land to the west, including the lush northern Mexican province of California. Indeed, in 1842, a US naval fleet, incorrectly believing war had broken out, seized Monterey. Monterey was returned the next day, but the episode only added to the uneasiness between Mexico and the US. In the mid-1800s, during the Mexican American war, the Presidio of Monterey was taken over by the US military. In July 1846, Commodore John Drake Sloat's troops officially raised the American flag over the Custom House, setting the stage for California to become part of the US. Sloat established the first American fort in California to protect the

harbor. Following the Mexican American War, the Treaty of Guadalupe Hidalgo, signed in February 1848, formally ceded Alta California, which included Monterey County, to the United States. US Navy Captain Walter Colton was appointed Monterey's first American Alcalde or Chief Magistrate of the Monterey district in 1846. He impaneled the first jury in California, co-founded the first newspaper in California, was one of the founders of the first public library in California, and raised funds to build Colton Hall, the first and largest public building in California, as a town hall and school. In 1849, the new building became the site of the convention to establish a constitution for American California.

Settlement of Monterey County following its entry into the US, was at first concentrated around the establishments of earlier settlers. As ranchos were subdivided and settlers applied for preemption to public lands, clustered farms appeared in the canyon mouths that opened on to the Salinas Valley. The discovery of gold in the Sierra Nevada foothills in 1849 brought droves of homesteaders to the County, and as the best parcels in Monterey and the Salinas Valley became occupied, homesteading spread to the rugged Big Sur coast. Many of the first American settlers were cattlemen like the Spanish before them, and sheep were raised in large numbers, both in the Salinas Valley and in the hills of the Big Sur coast. Grazing eventually gave way to irrigated agriculture. The gold rush sparked the development of the Southern Pacific railroad and, as the railroad system grew in late 1800s, so did the Salinas Valley population.

David Jacks, a controversial figure in Monterey history, involved himself in the settlement of Mexican land claims in Monterey. In 1853 the Pueblo of Monterey contracted Delos Ashley to help legalize its title to some 30,000 acres of land. Ashley billed the city $1,000 for his services and when they could not pay, he suggested the city auction some of its land. Ashley and Jacks were the only two bidders and purchased the entire tract for $1002.50, which included what is now the cities of Monterey, Pacific Grove, Seaside, and Del Rey Oaks along with the Del Monte Forest, and Fort Ord. The sale was controversial, and the city filed suit against Jack claiming the sale was illegitimate. The case eventually reached the US Supreme Court in 1903, which ruled in favor of Jack. Jack embarked on what appears to have been an almost obsessive taste for land acquisition. Piece by piece he added to his holdings through mortgage and tax sales and other shrewd practices. As a result, of Jack's shrewd business practices, animosity toward him ran high. At his height Jack was said to own around 100,000 acres of Monterey County land.

The gold rush created a cattle boom, which ended with major flooding in 1862, shifting the use of land from ranching to dry farming of grains. By 1870, commercial agriculture was well underway in the Salinas Valley. A major drought in 1863 and 1864 essentially wiped out the cattle industry, and grain production became the County's principal agricultural activity. Sugar beet cultivation and dairying began to replace grain farming by 1897. In 1874, the first railroad was established, the Monterey and Salinas Valley Railroad, shipping grain, fish, and other goods. Soon, the narrow gauge was overtaken by the Southern Pacific Railroad. The extension of the Southern Pacific Railroad from Pajaro to Salinas, along with improved irrigation systems, refrigerated freight cars, and other innovations in technology, encouraged increasingly

intensive row crop cultivation and set the stage for the Salinas Valley to become one of the most productive agricultural regions in the world.

The wealth of sea life around the Monterey Peninsula, from migrating whales to abalone and squid, also attracted settlers to the region. By 1853, Chinese settlers had established a vibrant fishing village, making the Monterey villages unique in early Chinese immigration to California. The Chinese would continue their livelihood, despite fire and hardships. They were joined on the Bay by Portuguese whalers from the Azores who found a lucrative and dangerous livelihood in shore whaling.

The sugar beet industry in Monterey County was the first type of intensive farming to bring changes that would profoundly affect land use, labor, and settlement. In 1897, Claus Spreckels began a sugar beet industry in Monterey County. The success of the industry was dependent on contracted growers and a large body of low-wage laborers. These needs had a tremendous effect on tenancy and colonization of agricultural lands in the County, and greatly influenced the ethnic makeup of the Salinas Valley. The operations in Monterey County did not experience gradual growth but were put in place in the form of a fully planned town and plant, with company owned farms scattered from Salinas to King City. Spreckels did most of the pioneer work in irrigation technology in the County, paving the way for more efficient use of the seasonally scarce water supply that had hindered intensive farming efforts up to this time. Beets, however, were eventually replaced by row crops which had a higher value per acre.

David Jacks sold a large tract of land between Carmel and Pacific Grove to the Pacific Improvement Company, a company controlled by the so-called "Big Four" California railroad barons. Railroad pioneer Charles Crocker sought to create a destination for the railroad, the Hotel Del Monte with gardens, polo fields, a racetrack, and a seventeen-mile leisure road to the Del Monte's Pebble Beach. The hotel opened in 1880 and was immediately dubbed the "The World's Most Elegant Seaside Resort." Hotel Del Monte was the catalyst for Monterey's modern-day tourism industry and at its peak encompassed 20,000-acres spread across the Monterey Peninsula. The Hotel Del Monte was requisitioned by the Navy at the beginning of World War II and in 1947, the resort was sold to the federal government.

Following the Spanish-American War, the need for more bases on the West Coast prompted the Army to establish the Monterey Military Reservation on the same site as the, the old fort on Presidio Hill (the American Presidio in contrast to the Royal Presidio located east of Old Town). In 1904, it was renamed the Presidio of Monterey in honor of the original Spanish and Mexican presidio. From 1902 onward the mission of the Presidio changed from 19th century coastal defense to instruction and training, which it continues today as the home of the Defense Language Institute. The 1900s were a time of military growth for Monterey County with Fort Ord's creation in Seaside during World War I and Camp Roberts development in South County during World War II. However, in recent history, base closures have resulted in reductions of military presence in the County, and the reuse of major portions of the former Fort Ord.

A phenomenal expansion in lettuce production took place starting in 1920, and by 1930 lettuce accounted for almost half the gross returns to the County from farm products. The resulting increase in total farm income was reflected in a substantial growth in population. The need for seasonal field labor was firmly established with the shift to intensive single crop production. By 1930, a permanent shift in agricultural production to corporate owners and large operators who packed and shipped as well as grew the crop had taken place in the County. During the late 1930s and 40s the Salinas Valley witnessed a significant boom in agricultural production due to the development of farming infrastructure in the region. This led to a higher demand for labor that was satisfied due to the influx of farmworkers from Mexico during World War II, through the "Bracero" program. During and after the Dust Bowl, the Salinas Valley received thousands of displaced workers from the South and Midwest. Displaced workers led to a vast increase in agricultural productivity. The commercial farming sector of the Dust Bowl era forms the backdrop for several John Steinbeck novels.

In the early 1900s, the Monterey Bay began to attract the interest of commercial fish processors. In 1900, the first sardine cannery opened, adjacent to the Monterey Wharf and in 1902, the first fish packing and canning operation on Cannery Row. In 1903, Frank Booth took over the sardine cannery and would hire a Norwegian fisheries expert, Knut Hovden, to mechanize the canning process. Hovden would go on to revolutionize the canning industry and successfully operated the largest and longest operating cannery. By the 1940s, nineteen fully operating canneries harvested over 250,000 tons per season on "Cannery Row," making Monterey the "Sardine Capital of the World." In the late 1940s the sardine harvests diminished year by year signaling the end of the industry. The Monterey Bay Aquarium opened in 1984 at the old Hovden cannery site. Designated in 1992 as the Monterey Bay National Marine Sanctuary, an enormous federally protected marine area of California's central coast was created, centered on Monterey Bay.

## 3.3 POPULATION AND DEMOGRAPHICS

According to the 2020 Census, Monterey County has a population of 439,035 people. About 80% of the countywide population resides in the 12 incorporated municipalities, which consist of only 2% of the County's total land area.

Salinas represents the largest city in Monterey County with over 163,542 residents. The cities of Marina, Soledad, Monterey, and Seaside form the second largest group in population ranging from 22,359 to 33,366 residents each. The smallest cities include Sand City, Del Rey Oaks Carmel-by-the-Sea and Gonzales with populations ranging from 325 to 8,647. The population for the unincorporated areas of the County is 104,482. The largest communities in the unincorporated County are Prunedale (18,885 residents), Castroville (7,515 residents), Carmel Valley Village (4,524 residents), and the Del Monte Forest (4204 residents). Since the 2010 Census the population of Monterey County has increased 6%. The largest population growth occurred in Greenfield (16%), Marina (13%), Salinas (9%), and Monterey (9%).

*Table 3-1* lists the total land area, population, percentage change in population since 2010, and population density (in persons/per square mile) for each jurisdiction.

**Table 3-1**
**Total Land Area and Population in Monterey County**

| Jurisdiction | Land Area (Square Miles) | Population (2020) | Population Density | Population (2010) | Percent Change |
|---|---|---|---|---|---|
| **Incorporated Cities** | **67.06** | **334,553** | **4,988.9** | **314,844** | **6%** |
| Carmel-by-the-Sea | 1.08 | 3,220 | 2,981.5 | 3,722 | -13% |
| Del Rey Oaks | 0.48 | 1,592 | 3,316.7 | 1,624 | -2% |
| Gonzales | 1.92 | 8,647 | 4,503.6 | 8,187 | 6% |
| Greenfield | 2.14 | 18,937 | 8,849.1 | 16,330 | 16% |
| King City | 3.84 | 13,332 | 3,471.9 | 12,874 | 4% |
| Marina | 8.88 | 22,359 | 2,517.9 | 19,718 | 13% |
| Monterey | 8.47 | 30,218 | 3,567.7 | 27,810 | 9% |
| Pacific Grove | 2.86 | 15,090 | 5,276.2 | 15,041 | 0% |
| Salinas | 23.18 | 163,542 | 7,055.3 | 150,441 | 9% |
| Sand City | 0.56 | 325 | 580.4 | 334 | -3% |
| Seaside | 9.24 | 32,366 | 3,502.8 | 33,025 | -2% |
| Soledad | 4.41 | 24,925 | 5,651.9 | 25,738 | -3% |
| **Unincorporated Areas** | **3,213** | **104,482** | **32.5** | **100,213** | **4%** |
| Aromas | 4.75 | 2,708 | 570.1 | 1,358 | 99% |
| Boronda | 0.55 | 1,760 | 3,200 | 1,710 | 3% |
| Bradley | 0.09 | 69 | 766.7 | 93 | -26% |
| Carmel Valley Village | 19.20 | 4,524 | 235.6 | 4,407 | 3% |
| Castroville | 1.06 | 7,515 | 7,089.6 | 6,481 | 16% |
| Chualar | 0.63 | 1,185 | 1,881.0 | 1,190 | 0% |
| Del Monte Forest | 10.65 | 4,204 | 394.7 | 4,514 | -7% |
| Elkhorn | 4.83 | 1,588 | 328.8 | 1,565 | 1% |
| Las Lomas | 1.04 | 3,046 | 2,928.8 | 3,024 | 1% |
| Lockwood | 10.91 | 368 | 33.7 | 379 | -3% |
| Moss Landing | 0.60 | 237 | 395.0 | 204 | 16% |
| Pajaro | 0.93 | 2,882 | 3,098.9 | 3,070 | -6% |
| Pine Canyon | 3.34 | 1,871 | 560.2 | 1,822 | 3% |
| Prunedale | 46.20 | 18,885 | 408.8 | 17,560 | 8% |
| San Ardo | 0.45 | 392 | 871.1 | 517 | -24% |
| San Lucas | 0.39 | 324 | 830.8 | 269 | 20% |
| Spreckels | 0.12 | 692 | 5,766.7 | 673 | 3% |
| Other Unincorporated | 3,107 | 52,232 | 16.8 | 51,377 | 2% |
| **Total** | **3,280** | **439,035** | **133.9** | **415,057** | **6%** |

Source: US Census Bureau, 2020 Census & 2010 Census

Monterey County's population growth has been fairly constant for the past 30 years, increasing steadily since the 1980s. Population projections for Monterey County ranging from 2030 to 2060, according to the California Department of Finance, are: 464,124 (2030); 477,265 (2040); 481,305 (2050); and 476,734 (2060).[1]

### 3.3.1 DEMOGRAPHICS

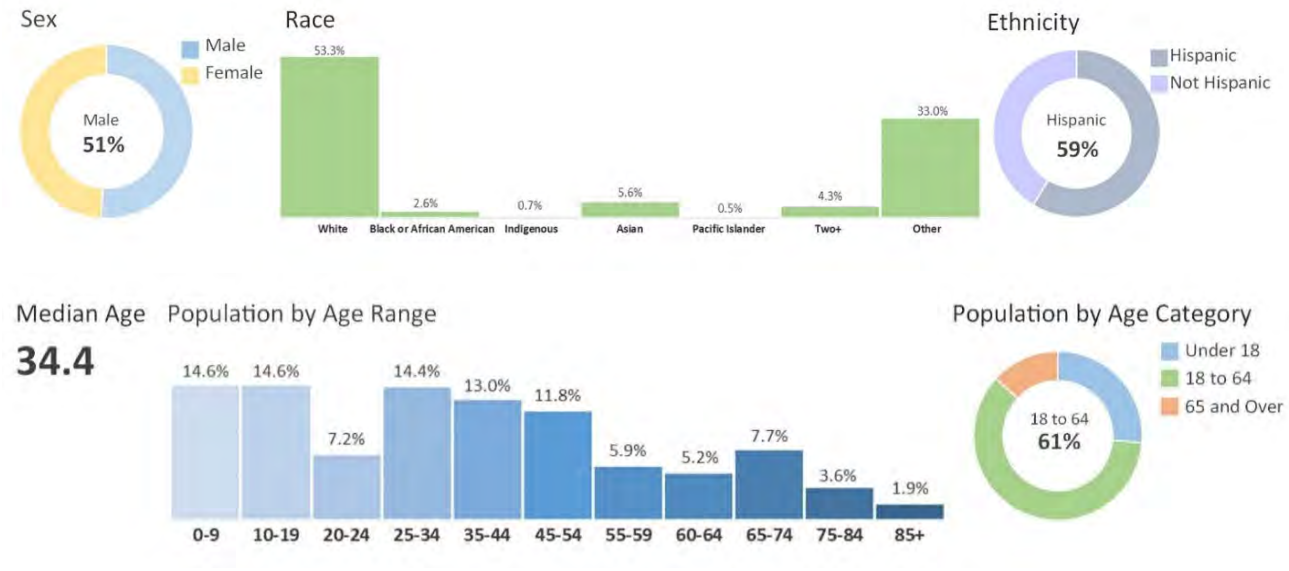
*Note: Since full 2020 Census Data was not available at the time of this plan, the remainder of the section summarizes the most up-to-date information for Monterey County according to the 2015-2019 American Community Survey (ACS) performed by the US Census Bureau, except where noted.*

The median age of Monterey County residents is 34.4 years. Monterey County's population is relatively young with 50.8% of residents under the age of 34. The next largest age group consists of adults between the ages of 35-59 comprising 30.7% of the population. Older adults ages 60+ make up about 13% of the population.

The gender makeup of the county is 51% male and 49% female. The racial makeup is approximately 53.3% White, 5.6% Asian, 2.6% Black or African American, 0.7% American Indian or Alaskan Native, and 0.5% Native Hawaiian and other Pacific Islander, and 4.3% from two or more races. Hispanic or Latino of any race makes up 58.7% of the county population.

*Figure 3-2* summarizes the demographics of the population of Monterey County.

**Figure 3-2**
**Monterey County Demographics**




[1] California Department of Finance, Population Projections

There are approximately 127,155 households in Monterey County with an average household size of 3.3 persons. Married couples make up 52.5% of households and cohabiting couple comprise 7.8% of households. 15.3% of households have a male householder and 24.4% have a female householder, with no spouse/partner present.

78% of Monterey County residents are US citizens, which is lower than the national average of 93% and the state average of 87%. In 2017, the percentage of US citizens in Monterey County was 77.4%, meaning that the rate of citizenship has been increasing. Immigrants comprise about 30% of the total population, and at 21%, Monterey County has the highest percentage of non-citizens of any county in California. The County's immigrant population, including undocumented immigrants, is a critical component of the local labor force, especially for the agriculture, and hospitality industries.

### 3.3.2 INCOME

Per capita income in Monterey County continues to be at the low end of the spectrum in comparison to the statewide average and nearby counties. In 2019, the County had a per capita personal income of $30,073 and a median household income of $71,015 annually. 81.9% of households received earnings exclusive of social security and retirement income, with an average income amount of $91,308. 30% of households received Social Security with the average income amount of $19,147 and 17.6% of households received retirement income with the average income of $37,254. These income sources are not mutually exclusive; that is, some households received income from more than one source.

### 3.3.3 EDUCATION

The education system in Monterey County primarily consists of a public school system headed by the Monterey County Office of Education (MCOE). MCOE was established more than 150 years ago by California's Constitution and supports 24 school districts, two community colleges, and a state university. Data from the California Department of Education[2] indicates that in Monterey County, 2019-20 enrollment in K-12 Public Schools was 77,387. After experiencing continuous declines in enrollment growth, the County's K-12 enrollment began growing steadily in 2009 and has grown by 6.7% since then. However, in 2020 enrollment declined by 0.7% from the previous year. Between 2019 and 2020, Monterey County's high school graduation rate increased from 83.5% to 84.5%. In 2017-18, the college going rate was 67.7% compared to the State's rate of 65.2%.

#### *Higher Education and Research Institutions*

Approximately 71.5% of people 25 years and over in Monterey County have graduated from high school and 24.7% had a bachelor's degree or higher.

[2] California Department of Education, DataQuest

Monterey County is home to a range of institutions of higher learning, both public and private, large, and small, general, and highly focused institutions, particularly related to marine research. The higher education and research institutions located in the County contribute to the local economy, directly employing more than 15,000 faculty, staff, and researchers. Institutions in the County include:

- Brandman University
- Cabrillo College
- California Department of Fish & Wildlife (CDFW) Marine Region
- California State University, Monterey Bay
- Central Coast College
- Defense Language Institute, Foreign Language Center
- Defense Manpower Data Center
- Elkhorn Slough National Estuarine Research Reserve
- Fleet Numerical Meteorology and Oceanography Center, US Navy
- Golden Gate University
- Hartnell College
- Hopkins Marine Station of Stanford University
- Middlebury Institute of International Studies at Monterey
- Monterey Bay Aquarium
- Monterey Bay Aquarium Research Institute (MBARI)
- Monterey College of Law
- Monterey Bay National Marine Sanctuary
- Monterey Peninsula College
- Moss Landing Marine Lab, California State University (7 campuses)
- Pacific Fisheries Environmental Laboratory (NOAA)
- Panetta Institute for Public Policy
- National Weather Service (NOAA)
- Naval Postgraduate School
- Naval Research Laboratory
- US Geological Survey (USGS), Pacific Science Center
- University of California, Santa Cruz (UCSC)

## 3.4 HOUSING

Of the approximately 141,820 housing units in Monterey County, an estimated 90% are occupied, and 10% are vacant. Of the total housing units, 69% are in single-unit structures, 27% are in multi-unit structures, and 5% are mobile homes. 23.5% of housing units were built since 1990, and 28% were built prior to 1960. Of all occupied housing units, about 50% were moved into since 2010. Of the 127,155 occupied housing units, 51%, 64,900 units are owner-occupied

and 49%, 62,255 units are renter occupied. This percentage of owner-occupation is lower than the national average of 64%, but similar to the state average of 54.8%. *Table 3-2* shows the ownership percentage in Monterey County compared its parent and neighboring geographies.

**Table 3-2**
**Home Ownership in Monterey County Compared to Other Jurisdictions**

| Jurisdiction | Owner-Occupied | Renter-Occupied |
|---|---|---|
| Monterey County, California | 51% | 49% |
| United States | 64% | 36% |
| California | 54.8% | 45.2% |
| Fresno County, California | 53.3% | 46.7% |
| Kings County, California | 52.3% | 47.7% |
| San Benito County, California | 63.7% | 36.3% |
| San Luis Obispo County, California | 61.6% | 38.4% |
| Santa Cruz County, California | 60.1% | 39.9% |

*Source*: 2015-2019 American Community Survey 5-Year Date Profile

The median housing value of owner-occupied units is $516,600 and 67% of owner-occupied units had a mortgage. The median monthly housing costs for mortgaged owners was $2,265 and $593 for non-mortgaged owners, 31% of owners with mortgages and 12% of owners without mortgages spent 35% or more of household income on housing costs. The median gross rent in the County was $1,495 and 44.5% of renters spent 35% or more of household income on rent. About 88.2% of County residents were living in the same residence one year earlier. 5.8% of people had moved during the past year from another residence in the County, 3.3% from another county in California, 1.9% from another state, and 0.8% from abroad.

### *Geographic Mobility*

Monterey County is connected to the north and south by US Highway 101 and State Route 1 and is connected to the Central Valley by State Routes 156 and 198. State Route 68 connects Salinas with the Monterey Peninsula and State Route 145 provides access to the Pinnacles National Recreation Area. The Monterey Peninsula Airport provides regular flights to San Francisco, Los Angeles, Phoenix, Denver, and Las Vegas. Four carriers currently provide service from Monterey and provide 40 flights in and out daily. AMTRAK serves Monterey County daily north and south with a station in Salinas. The County is also served by Greyhound Bus Lines.

## 3.5 LOCAL ECONOMY

Monterey County's economy is primarily based upon tourism in the coastal regions and agriculture in the Salinas Valley. In 2019, The total GDP in Monterey County was approximately $24.5 billion. Of the sectors in Monterey County, Agriculture, Forestry, Fishing and Hunting contributed the largest portion of GDP, almost $5 billion. The next-largest contributions came

from Real Estate and Rental and Leasing, about $3 billion, Public Administration, about $2.1 billion, and Health Care and Social Assistance, about $2 billion.

### *Agriculture*

Monterey County is one of the nation's top agricultural producers. Agriculture is the County's largest sector in terms of economic output and employment. As such, it represents a vital link to both the County's cultural past and competitive future. Agriculture touches nearly every facet of life in Monterey County. From lettuce in the Salinas Valley, artichokes in Castroville, berries in north Monterey County, or vineyards in the Carmel Valley, agriculture shapes County life. Monterey County is known as "The Salad Bowl of the World" and crops grown in the County supply large percentages of total national pounds produced each year: 61% of leaf lettuce, 57% of celery, 56% of head lettuce, 48% of broccoli, 38% of spinach, 30% of cauliflower, 28% of strawberries, and 3.6% of wine grapes. Monterey County farmers are among the most productive and efficient in the world, growing more than 150 crops.[3]

In 2019, Monterey County agriculture accounted for a production value of over $4.4 billion, which was 3.6% over the previous year. Agriculture contributes a total of $11.7 billion in economic output. The $11.7 billion in economic output consists of $7.4 billion in direct economic output and $4.3 billion in additional economic output in the form of multiplier effects, over $31 million per day. Local agriculture accounts for more than 63,921 jobs in Monterey County with 57,503 being direct employees and 6,417 additional jobs made possible through expenditures by agricultural companies and their employees. One in five jobs in Monterey County directly attributable to the agricultural industry.[4]

### *Tourism & Hospitality*

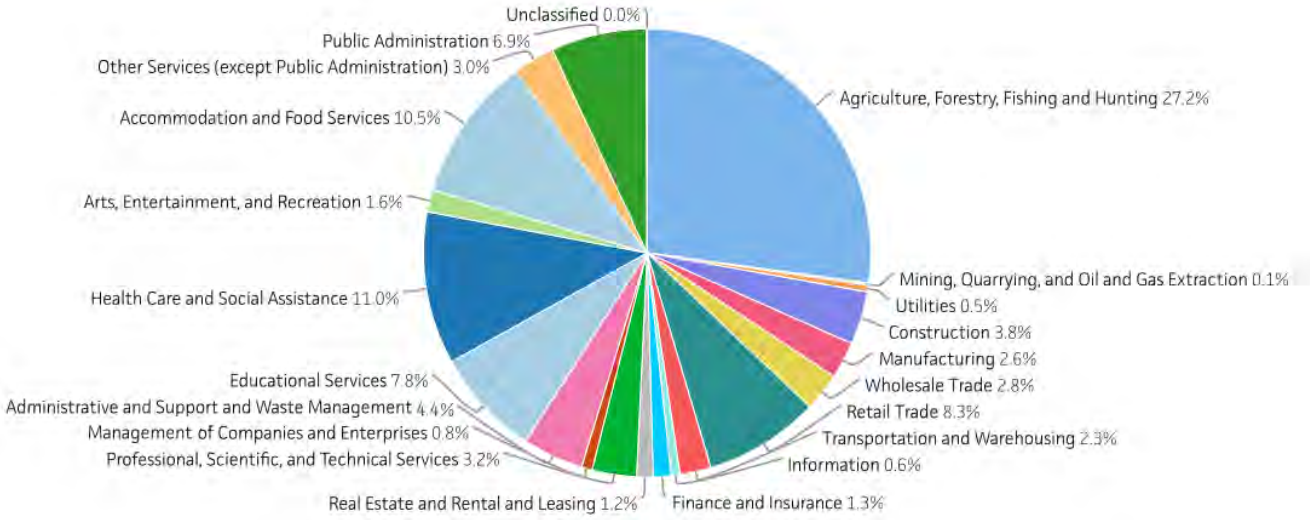
Monterey County has long been a tourist destination attracting nearly 4.6 million visitors annually. The County has a worldwide reputation with widely recognized destinations such as Big Sur, Pebble Beach, Carmel-by-the-Sea, and Monterey – and attractions such as Monterey Bay Aquarium, National Steinbeck Center, 17-Mile Drive, Cannery Row, Fisherman's Wharf, Pinnacles National Park, and the Monterey Wine Country. Tourism spending accounts for approximately $3 billion annually, supporting 27,000 jobs and generating $153 million in local tax revenue.[5] Visitors enjoy a wide variety of recreational activities including golf, beaches, scuba diving, sailing, kayaking, whale watching, fishing, camping, horseback riding, skydiving, hiking, biking, art galleries, exhibits, music, and theatre. Nearly 300 special events take place in Monterey County annually, including AT&T Pebble Beach Pro-Am Golf Tournament, Monterey Jazz Festival, races at WeatherTech Raceway Laguna Seca, Concours d'Elegance, Big Sur Marathon and other food, wine, cultural and family festivals.

[3] Facts, Figures & FAQs, Monterey County Farm Bureau
[4] Economic Contributions of Monterey County Agriculture, Agricultural Commissioner's Office (June 2020)
[5] 2020-2021 Annual Report, Monterey County Convention & Visitors Bureau

## 3.6 EMPLOYMENT

Monterey County's civilian labor force includes approximately 197,404 persons, or about 45% of the County's total population. 76.4% of the civilian workforce is private wage and salary workers; 15.2% are government workers; and 8.1% are self-employed in their own businesses. Monterey County's annual unemployment rate in 2020 was 10.8%. The most common industries in Monterey County, by number of employees, are Agriculture, Forestry, Fishing, Mining & Hunting (55,033 workers), Health Care & Social Assistance (22,297 workers), and Accommodation & Food Services (21,287 workers). Compared to other counties, Monterey County, has an unusually high number of Agriculture, Forestry, Fishing & Hunting industry (20x higher than expected). Sectors with the highest average wages per worker are Utilities ($123,326), Mining, Quarrying, and Oil and Gas Extraction ($103,601), and Finance and Insurance ($87,368).[6] *Figure 3-3* shows the breakdown of the labor force by industry.

**Figure 3-3**
**Monterey County Labor Force Breakdown, By Industry**




*Source*: Monterey County Workforce Development Board

Compared to the national average, Monterey County has an unusually high number of residents working in Farming, Fishing, & Forestry Occupations (32 times higher than expected), Building & Grounds Cleaning & Maintenance Occupations, and Food Preparation & Serving Related Occupations.

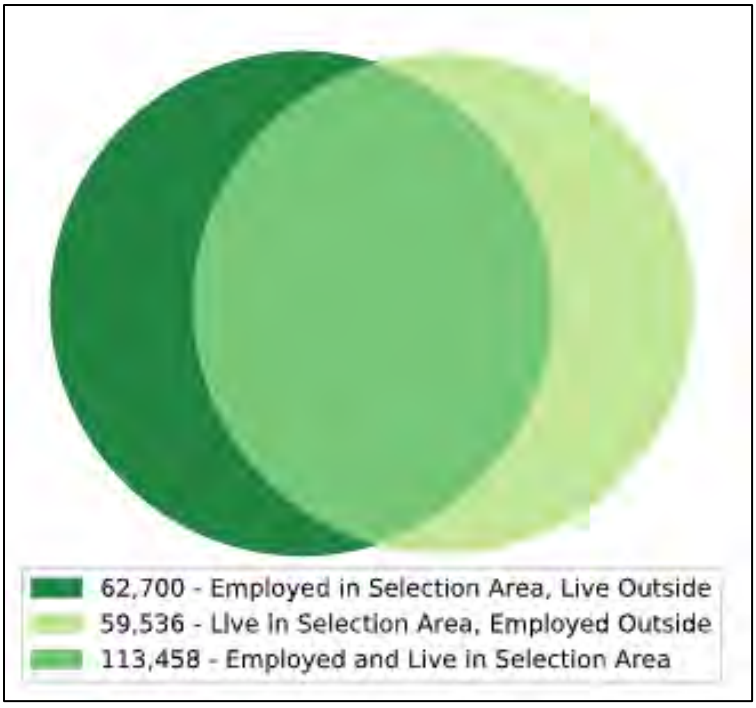
According to the State of California Employment Development Department's Labor Market Division, Monterey County's local economic strength lies in occupations that generally pay lower wages, explaining why the per capita income levels are relatively low compared to nearby counties. In Monterey County, 18% of the labor force consists of occupations in Farming,

[6] Economic Overview: Monterey County, Monterey County Workforce Development Board (November 30, 2020)

Fishing, and Forestry. In the first quarter of 2020, the mean hourly wage was $15.46 per hour. The second highest occupational category is Office and Administrative Support, accounting for 10% of the workforce with a mean wage of $22.36 per hour. Food Preparation and Serving-Related occupations represent the third largest share of Monterey County's employment, with 10% and a mean wage of $15.37 per hour. The top three occupations in Monterey County represent 38% of all employment.

Monterey County continues its efforts to attract more highly skilled jobs to the local economy by encouraging its residents to seek higher educational opportunities that will in turn create a more highly skilled labor force. Occupations in with the highest average wages per worker are Healthcare Practitioners and Technical Occupations ($121,200), Management Occupations ($119,400), and Legal Occupations ($116,500). Inflow/Outflow job data from 2018 indicates the majority of employees (113,458) live and work in Monterey County. *Figure 3-4* summarizes inflow/outflow job data for Monterey County.

**Figure 3-4**
**Inflow/Outflow Job Counts in 2018 for Monterey County**




*Source*: United States Census Bureau, Job-to-Job Flows (J2J)

Recent forecasts suggest that agriculture will continue to provide the greatest number of new jobs, but post-secondary education and specialized business services, both key components of the expanding technology sector of the County, will show the highest percentage growth over the next several years. *Table 3-3* summarizes projected change in number of jobs in 2026 based on occupation from a 2016 baseline.

**Table 3-3**
**Projected Change in Occupation in Monterey County**

| Occupation | 2016 Employment | 2026 Employment | Percent Change |
|---|---|---|---|
| Management Occupations | 14,280 | 15,920 | +11.5% |
| Business & Financial Operations Occupations | 5,520 | 6,020 | +9.1% |
| Computer & Mathematical Occupations | 2,080 | 2,310 | +11.1% |
| Architecture & Engineering Occupations | 1,150 | 1,270 | +10.4% |
| Life, Physical & Social Science Occupations | 1,620 | 1,760 | +8.6% |
| Community & Social Service Occupations | 2,230 | 2,590 | +16.1% |
| Legal Occupations | 890 | 970 | +9% |
| Education, Training & Library Occupations | 13,240 | 15,130 | +14.3% |
| Arts, Design, Entertainment, Sports, & Media Occupations | 2,350 | 2,570 | +9.4% |
| Healthcare Practitioners & Technical Occupations | 6,990 | 8,310 | +18.9% |
| Healthcare Support Occupations | 3,050 | 3,630 | +19% |
| Protective Service Occupations | 4,450 | 270 | -4% |
| Food Preparation & Serving Related Occupations | 17,200 | 19,340 | +12.4% |
| Building/Grounds Cleaning & Maintenance Occupations | 7,970 | 8,970 | +12.5% |
| Personal Care & Service Occupations | 8,260 | 10,520 | +27.4% |
| Sales & Related Occupations | 16,080 | 16,840 | +4.7% |
| Office & Administrative Support Occupations | 20,990 | 21,710 | +3.4% |
| Farming, Fishing & Forestry Occupations | 45,580 | 55,590 | +22% |
| Construction & Extraction Occupations | 6,340 | 7,420 | +17% |
| Installation, Maintenance & Repair Occupations | 6,870 | 7,490 | +9% |
| Production Occupations | 5,200 | 5,590 | +7.5% |
| Transportation & Material Moving Occupations | 11,120 | 12,560 | +12.9% |
| **Total** | 203,460 | 226,780 | |

*Source: California Employment Development Department*

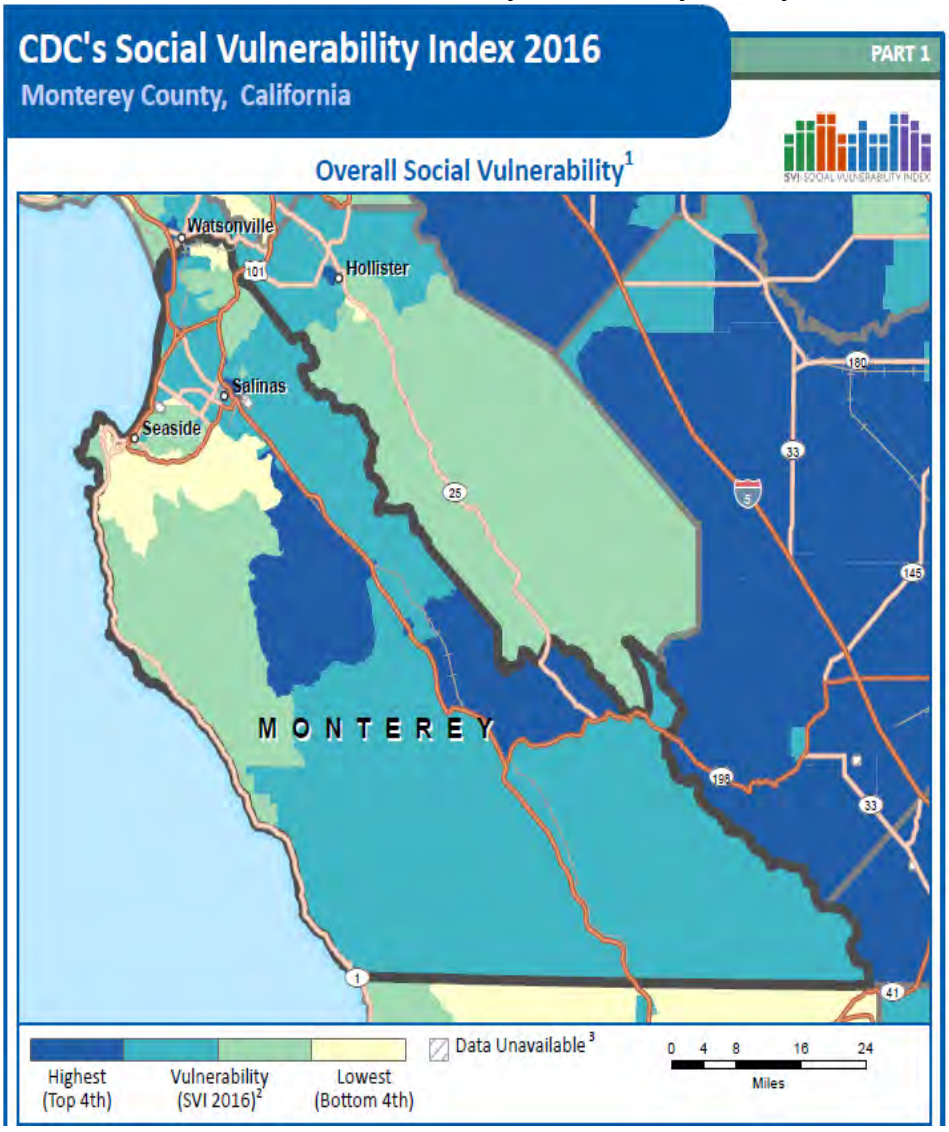
## 3.7 SOCIAL VULNERABILITY

Social vulnerability refers to the resilience of communities when confronted by external stresses, including natural or human-caused disasters. Characteristics of a population can serve as an important gauge of everything from evacuation compliance to successful long-term recovery, therefore reducing social vulnerability can decrease both human suffering and economic loss. Geographic patterns of potential population vulnerability to disaster can be used to inform mitigation, preparedness, response, and recovery. Considering social vulnerability is an important step in establishing a Whole Community approach to emergency management and hazard mitigation.

Hazard exposure alone does not fully explain disaster resilience; characteristics including age, ethnicity, race, income, household structure, language, employment, home & car ownership,

health, population density, insurance, and citizenship, can also impact how well a person manages hazard risks. For the purposes of this plan, the CDC's Social Vulnerability Index (2016), was used to assess the vulnerability of the community. The Index uses US Census data to determine the social vulnerability of census tracts. The Index ranks each tract on 15 social factors, including poverty, lack of vehicle access, and crowded housing. Each tract receives an overall ranking. *Figure 3-5* shows overall Social Vulnerability by census tract in the County.

**Figure 3-5**
**Overall Social Vulnerability in Monterey County**



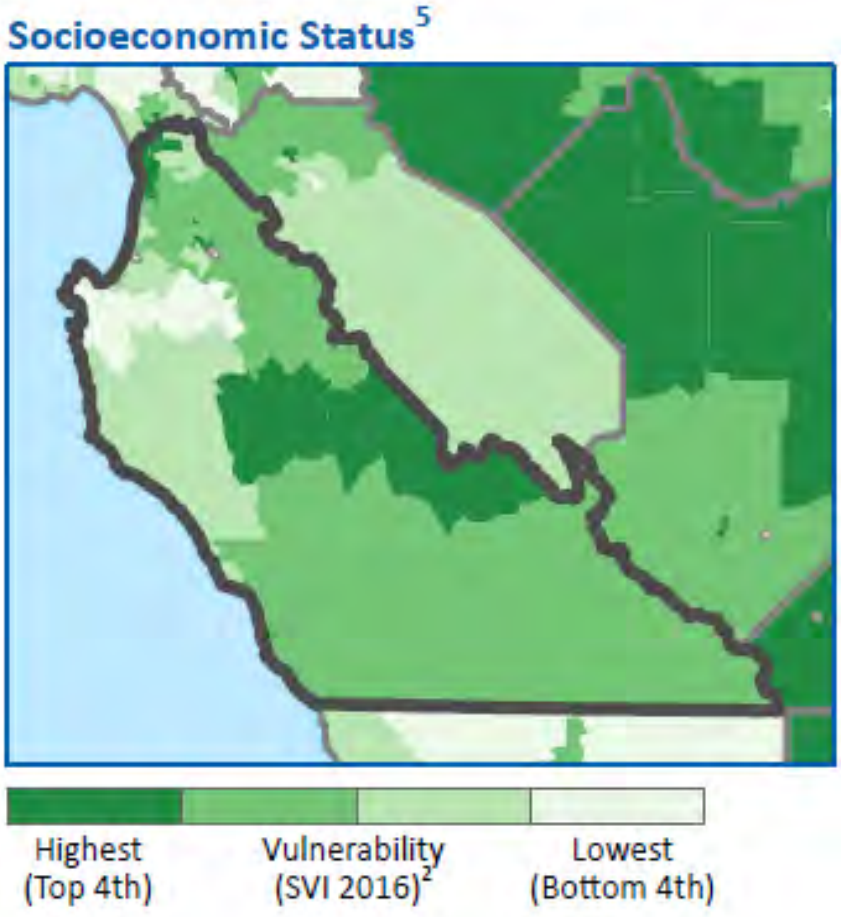

The index also groups tracts into four related themes and ranks them by theme. The four themes used by the CDC Social Vulnerability Index include:

- Socioeconomic Status
- Household Composition and Disability
- Minority Status and Language
- Housing Type and Transportation

### 3.7.1 SOCIOECONOMIC STATUS

The Socioeconomic Status Theme consists of income, poverty, employment, and education variables. Economically disadvantaged populations are disproportionately affected by disasters and are less likely to have the income or assets needed to prepare for a possible disaster, respond to, or to recover after a disaster. Although the monetary value of their property may be less than that of other households, it likely represents a larger proportion of total household assets. For these households, lost property is proportionately more expensive to replace, especially without homeowner's or renter's insurance. *Figure 3-6* shows overall ranking by census tract on the Social Vulnerability Index Socioeconomic Status Theme in Monterey County.

**Figure 3-6**
**CDC Social Vulnerability Index: Socioeconomic Status in Monterey County**



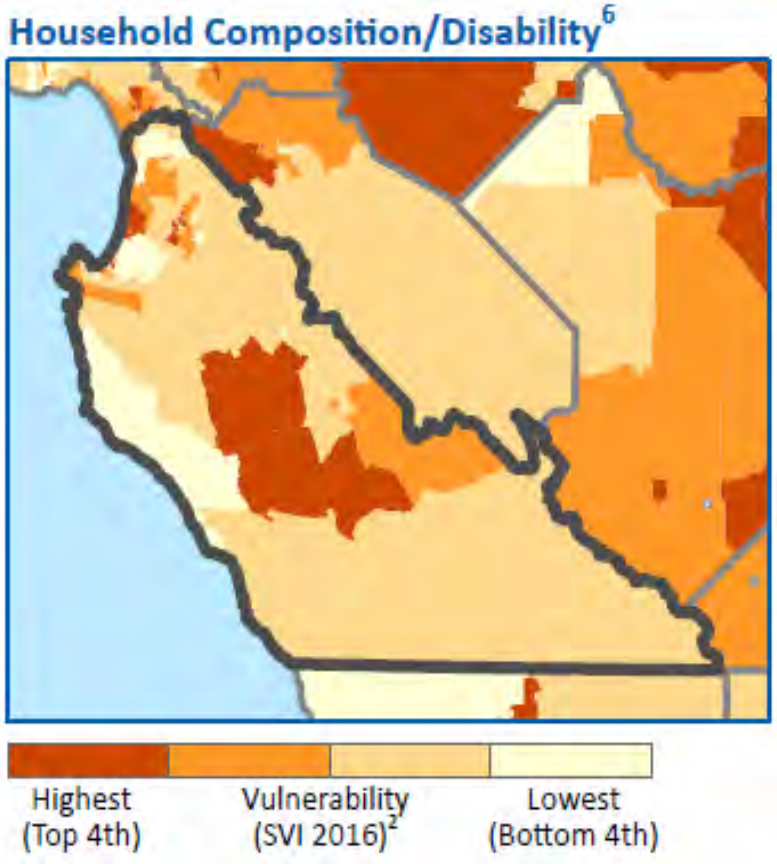

Approximately 13.1% of people in the County are in poverty; about the same rate as California (13.4%) and the in US (13.1%). 9.6% of families are below the poverty line. 19.4% of children under 18 are below the poverty level, compared with 8% of people 65 years old and over. The largest demographic living in poverty is Females, with no spouse and a child under 18 (35%). The most common racial or ethnic group living below the poverty line in the County is Hispanic, followed by White and Other.

Approximately, 2% of residents received cash public assistance benefits, averaging $4,533 annually. Monterey County has the highest yearly enrollment when compared to its neighboring counties (1,915 participants in 2018-2019) in CalWORKS, which provides financial assistance to families. About 7% of residents received Supplemental Nutrition Assistance Program (SNAP) benefits. Monterey County has 18,961 housesholds participating, in CalFresh, which supplements the food budget of low-income households to meet their nutritional needs.

### 3.7.2 HOUSEHOLD COMPOSITION AND DISABILITY

The Household Composition and Disability Theme is composed of age, single parenting, and disability variables. Household composition is defined here to include dependent children less than 18 years of age, persons aged 65 years and older, and single-parent households. Also included are people with disabilities. People in any of these categories are likelier to require financial support, transportation, medical care, or assistance during disasters. Children and elders are the most vulnerable groups in disasters. Children, especially younger children, cannot protect themselves during a disaster because they lack the needed resources and knowledge to effectively cope with the situation. *Figure 3-7* shows overall ranking by census tract on the CDC Social Vulnerability Index Household Composition and Disability Theme in Monterey County.

**Figure 3-7**
**CDC Social Vulnerability Index: Household Composition and Disability in Monterey County**



An estimated 8.8% of residents in Monterey County has a disability. 30.6% of residents 65 years of age and older had a disability. *Table 3-4* summarizes the percentage of the population in Monterey County who have a disability by age group and type of disability.

**Table 3-4**
**Percent of Noninstitutionalized Monterey County Residents with a Disability by Age Group**

| Type of Disability | Under 18 | 18 to 64 Years | 65+ Years | Total |
|---|---|---|---|---|
| With a hearing difficulty | 0.5% | 1.4% | 13.1% | 2.7% |
| With a vision difficulty | 0.6% | 1.4% | 4.8% | 1.6% |
| With a cognitive difficulty | 3.0% | 2.8% | 8.2% | 3.6% |
| With an ambulatory difficulty | 0.6% | 2.9% | 18.7% | 4.7% |
| With a self-care difficulty | 1.0% | 1.3% | 8.2% | 2.2% |
| With an independent living difficulty | n/a | 2.5% | 13.2% | 4.5% |
| Total Persons with Disabilities | 3.1% | 6.6% | 30.6% | 8.8% |

Additionally, many residents suffer from a chronic health condition. *Table 3-5* summarize age-adjusted prevalence rates from chronic conditions in Monterey County.

**Table 3-5**
**Prevalence of Chronic Health Conditions of Adults Aged 18 and Over[7]**

| Health Condition | Age-Adjusted Prevalence Rate |
|---|---|
| Arthritis | 21.6% |
| High Blood Pressure | 28.8% |
| Cancer[1] | 5.7% |
| Asthma | 9.2% |
| Coronary Heart Disease | 6% |
| Chronic Obstructive Pulmonary Disease | 6% |
| Diabetes | 10.8% |
| High Cholesterol[2] | 29.6% |
| Chronic Kidney Disease | 3.1% |

[1]Excludes skin cancer
[2]Among adults who have been screened in the past 5 years
*Source*: Centers for Disease Control, PLACES: Local Data for Better Health, County Data, 2020

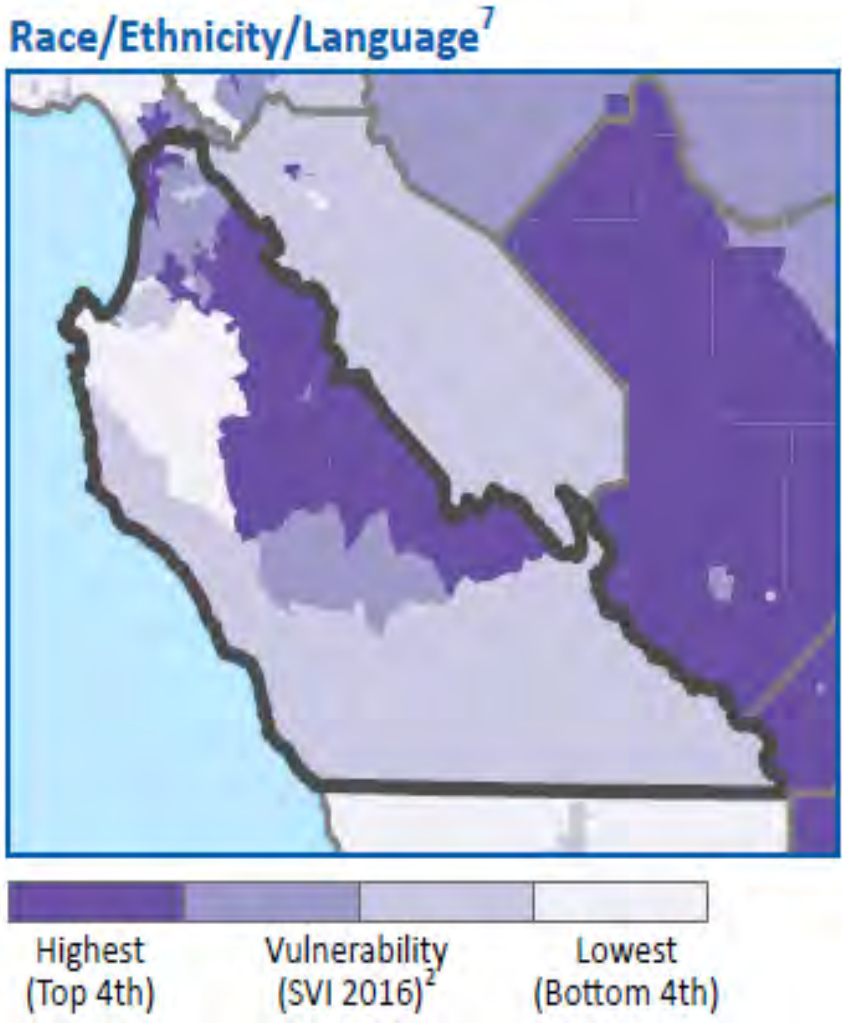
### 3.7.3 MINORITY STATUS AND LANGUAGE

The Minority Status and Language Theme is composed of race, ethnicity, and English language proficiency variables. The social and economic marginalization of certain racial and ethnic groups has rendered these populations more vulnerable at all stages of disaster. African Americans; Native Americans; and populations of Asian, Pacific Islander, or Hispanic origin are correlated with higher vulnerability rates. In recent decades, the numbers of persons immigrating to the United States from Latin America and Asia have substantially increased. Many immigrants are not fluent in English, and literacy rates for some groups are lower. To the

[7] Centers for Disease Control, PLACES: Local Data for Better Health, County Data, 2020

degree that immigrants have limited English proficiency, disaster communication is made increasingly difficult. *Figure 3-8* shows overall ranking by census tract on the CDC Social Vulnerability Index Minority Status and Language Theme in Monterey County.

**Figure 3-8**
**CDC Social Vulnerability Index: Minority Status and Language Theme in Monterey County**




As of 2015, data from the Department of Justice indicates that 109,286 people, 28.2% of residents in Monterey County have limited English proficiency. 91% of the population with limited English proficiency speak Spanish. The next most common language spoken was Tagalog, account for 2.1% of the limited English proficiency population.

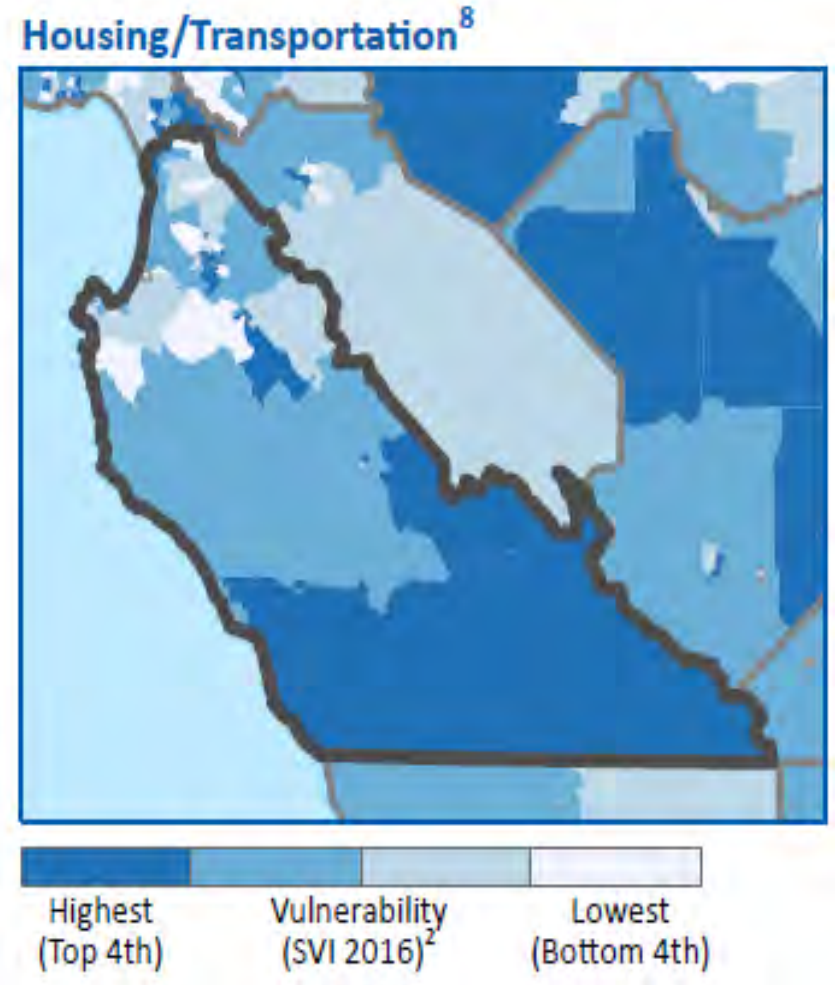
### 3.7.4 HOUSING AND TRANSPORTATION

The Housing and Transportation Theme is composed of housing structure, crowding, and vehicle access variables. Housing quality is an important factor in evaluating disaster vulnerability. It is closely tied to personal wealth; that is, poor people often live in more poorly constructed houses or mobile homes that are especially vulnerable to strong storms or

earthquakes. Populations residing in group quarters such as college dormitories, farm workers' dormitories, psychiatric institutions, and prisons also present special concerns during evacuation. Residents of nursing homes and long-term care facilities are especially vulnerable because of their need for specific and limited resources.

On average, farmworker incomes are less than half of the area median household income. Some housing requirements can pose a particular challenge to farmworkers. For example, farmworkers may have difficulty establishing good credit or demonstrating long-term residency, both of which are often standard requirements in the private rental-housing market. Substandard and structurally deficient conditions are common in farmworker housing; conditions that are often worsened by crowding or lack of affordability. The lack of an adequate, affordable housing supply forces farmworkers to live in overcrowded and unsafe housing or to seek housing in garages or other substandard structures that sometimes do not provide basic shelter or sanitation. *Figure 3-9* shows overall ranking by census tract on the CDC Social Vulnerability Index Housing and Transportation Theme in Monterey County.

**Figure 3-9**
**CDC Social Vulnerability Index: Housing and Transportation Theme in Monterey County**



Homeless populations are also vulnerable during disasters. As of the last comprehensive count in 2019[8], there were 2,422 homeless people in Monterey County. As homeless populations can be difficult to count accurately this number is most likely underestimated. Most of the homeless population, 76% is unsheltered, spending their nights outdoors, primarily in the streets or parks (22%), in their vehicle (19%), or in a tent (18%). Men (65%) are disproportionately represented in the County's homeless population, as are Black/African American residents (25% of the homeless population, 3% of the County population). Over half of homeless survey respondents, 58%, have at least one disabling condition. 44% suffer from depression, 45% abuse drugs or alcohol, 27% have physical disabilities, 25% suffer from chronic health problems, and 23% have post-traumatic stress disorder.

## 3.8 LAND USE AND DEVELOPMENT TRENDS

Monterey County has a total area of 3,771 square miles, of which 13% is water. As seen in *Table 3-6*, Land cover data indicates that the largest land use in Monterey County is shrubland, followed by grasslands and forest land. The majority of developed land consists of low-intensity development.

**Table 3-6**
**Land Cover Monterey County: 2018 Statistics**

| Land Cover Type[1] | Percent |
|---|---|
| Crops[2] | 5.3% |
| Forest[3] | 22.3% |
| Wetlands | 1.5% |
| High Intensity Developed | 0.6% |
| Low Intensity Developed | 5.6% |
| Grassland | 24.9% |
| Shrubland | 35.4% |
| Fallow | 2.7% |
| Barren | 1.7% |

*Source*: CalLands, UC Agriculture and Natural Resources (2018)
[1] Percentages recalculated based on acreage to exclude water
[2] All crop categories combined (Alfalfa & hay, corn, cotton, fruit trees, grain crops, grapes, other tree crops, rice, tomatoes, vegetables & fruits, walnuts, winter wheat)
[3] Includes deciduous, evergreen, and mixed forest

The County and its municipal planning partners all adopt General Plans, which serve as blueprints for establishing long-range development policies, as directed with California's General Planning Law. Decisions on land use will be governed by these plans. This hazard mitigation plan will work together with the General Plans to support wise land use in the future by providing vital information on the risk associated with natural hazards in the planning area. A

[8] Monterey County Homeless Census & Survey Comprehensive Report (2019)

General Plan provides a basis for private development proposals and public projects to remain consistent with existing city, regional and state policies. The General Plan is designed to help the County and participating jurisdictions address issues related to land use, circulation(traffic), housing, open space, conservation, noise, and safety. The Land Use portion of the plan helps guide the County and participating jurisdictions in determining the location of future development(s), to include possible future annexations for municipal jurisdictions. The Safety Element of the General Plan serves to decrease risk of impact from natural hazards.
Past development that most led to the highest increases in hazard vulnerability in the County happened many decades and even more than a century ago. The County and other participating jurisdictions are well aware of areas of increased hazard risk related to older development. More recently, development in the last few decades has occurred with less hazard risk because of existing overlay of Federal, State, and local regulations.

The Association of Monterey Bay Area Governments (AMBAG) estimates that to house the region's expected population growth by 2040, an increase of approximately 24,000 housing units is needed in Monterey County. A large amount of the growth is expected to occur in South County and in the Cities of Marina and Seaside.[9] Future development may become constrained due to limited water sources, poor water quality, and geologic (landslide), fire, flood, and seismic hazards. In addition to local challenges, infrastructure problems affect entire regions.
All planning partners reviewed their General Plans under the capability assessments undertaken for this hazard mitigation plan. Deficiencies revealed by these reviews are identified as mitigation actions to decrease risks to move beyond past trends. Moreover, while past development has occurred in hazard areas to some degree, increasing hazard risks, development standards and performance measures, often times incorporated into specific plans, policy plans, and master plans, are employed to reduce risk. These development standards are continually improving and will continue to strengthen into the future.

The Safe Growth Survey,[10] a technique recommended by organizations such as the American Planning Association (APA) and FEMA,[11] was used to evaluate the extent to which each local jurisdiction in Monterey County is positioned to grow safely relative to its natural hazards. The survey was used to gain an understanding of individual jurisdiction's land use and devolvement trends and how various comprehensive plans, capital improvement plans, and zoning and subdivision ordinances may allow growth in hazardous areas. The Safe Growth Survey was used as part of the 2013-2014 MJHMP Plan update, which allowed the survey results to be compared over time, in order to measure progress. The results indicate that municipal jurisdictions in the County are continuing to maintain the level of safe growth established in 2016. More information on the Safe Growth Survey is included in **Section 20.2**, *Safe Growth Survey.* Specific

[9] 2018 Regional Growth Forecast, Association of Monterey Bay Area Governments (June 2018)
[10] Safe Growth Audits, David R. Godschalk, FAICP (October 2009)
[11] Local Mitigation Planning Handbook, *Worksheet 4.2: Safe Growth Audit*, FEMA (March 2013)

land use and development trends, along with the Safe Growth Survey results for each participating municipal jurisdiction are included in their respective Annex in **Volume 2**.

### *Water Availability*

In the coastal regions of California, access to water is a barrier to new development. Access to water is a primary constraint to development on the Monterey Peninsula. Water is supplied to most of the Monterey Peninsula through wells in Carmel Valley, dams, and a well drawing from the Seaside Aquifer. However, since 2020 a portion of the Monterey Peninsula's potable water supply has come from indirect potable reuse via the Pure Water Monterey Groundwater Replenishment Project, an effort lead by Monterey One Water. The Monterey Peninsula Water Management District has established water allocations for jurisdictions within its district and communities have distributed most of the available allocations. As a result, new development must either provide another water source such as a well or enter a waitlist for future allocations.

### *Fort Ord Reuse*

Fort Ord was a major US Army base which closed in 1994. The former Fort Ord Military Base is located on the California coastline near the Monterey Peninsula consisting of 45 square miles and covering over 28,000 acres of land. The Fort Ord Reuse Authority (FORA), a large multi-governmental body composed of elected officials at the local, state, and federal levels, was created by the California State Legislature in 1994 with the legislatively mandated mission of overseeing replacement land use, removing physical barriers to reuse, financing and constructing major components of the required infrastructure and protecting identified environmental reserves.

The property was divided among the City of Seaside, City of Marina, and unincorporated Monterey County. This reuse has resulted in the expanding of the cities of Marina, Del Rey Oaks, and Seaside, and adding area to be developed by Monterey County. 69% of the total acreage has been dedicated to recreational/open space. About 1,000 acres were used to create the Fort Ord Dunes State Park and approximately 15,000 acres were dedicated by President Obama for the Fort Ord National Monument. The Fort Ord National Monument consists of nearly 23 square miles of undeveloped natural wildlands and is open to the public and managed by the US Department of the Interior, Bureau of Land Management.

Many other areas have been converted from military to civilian land uses under the direction of FORA. While many old military buildings and infrastructure remain abandoned, many others have been demolished. Notable developments include the cleanup of Army munitions from thousands of acres of land, the California State University Monterey Bay (CSUMB) campus, the UC-Santa Cruz Monterey Bay Education, Science and Technology Center (MBEST), the Veterans Transition Center, residential subdivisions, shopping centers, health clinics, new military facilities, and a nature preserve. FORA legislatively terminated on June 30, 2020. The responsibility for the area and undeveloped land now falls to the individual jurisdictions of Seaside, Marina, Del Rey Oaks, Marina Coast Water District, and the Monterey County.

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# PART B: HAZARD PROFILES AND RISK ASSESSMENT

THIS PART IDENTIFIES, PROFILES, AND ASSESSES THE HAZARDS THAT COULD AFFECT MONTEREY COUNTY. IT CONSISTS OF THE FOLLOWING SECTIONS:

4. RISK ASSESSMENT METHODS
5. AGRICULTURAL EMERGENCIES
6. COASTAL EROSION
7. DAM & LEVEE FAILURE
8. DROUGHT
9. EARTHQUAKE
10. FLOODING
11. HAZARDOUS MATERIALS INCIDENT
12. HUMAN CAUSED HAZARDS
13. PUBLIC HEALTH HAZARDS
14. SEVERE WEATHER
15. SLOPE FAILURE
16. TSUNAMI
17. UTILITY INTERRUPTION
18. WILDFIRE
19. CLIMATE CHANGE

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# 4. RISK ASSESSMENT METHODS

As defined by the Federal Emergency Management Agency (FEMA), risk is the potential for damage, loss, or other impacts created by the interaction of hazards with community assets. The risk assessment process measures the potential loss to a community, including loss of life, personal injury, property damage, and economic injury resulting from a hazard event. This information provides a framework for a community to develop and prioritize mitigation strategies and plans to help reduce both the risk and vulnerability from future hazard events.

The *FEMA Local Mitigation Planning Handbook* identifies four steps for conducting a risk assessment:

1. Identify & Describe Hazards
2. Identify Community Assets
3. Analyze Risks
4. Summarize Vulnerability

The risk assessment for this hazard mitigation plan update evaluates the risk of hazards prevalent in Monterey County and meets requirements of the Disaster Mitigation Act and 44 CFR, Section 201.6(c)(2).

## 4.1 HAZARD IDENTIFICATION

The first step in the planning process was to identify the threats and hazards of concern in Monterey County, based on a combination of experience, forecasting, subject matter expertise,

and other available resources. This supported the development of a list of threats and hazards that could affect the community. Hazards were categorized as follows:

- Natural hazards are naturally occurring physical phenomena caused either by rapid or slow onset events which can be geophysical (earthquakes, landslides, tsunamis, and volcanic activity), hydrological (avalanches and floods), climatological (extreme temperatures, drought, and wildfires), meteorological (cyclones and storms/wave surges), or biological (disease epidemics and insect/animal plagues).
- Technological hazards are generally accidental or result from events with unintended consequences (for example, an accidental hazardous materials release).
- Human Caused Hazards result from the intentional actions of an adversary, such as a threatened or actual terrorism, chemical attack, biological attack, or cyber incident.

The Steering Committee considered the full range of hazards that could affect the County and then listed hazards that present the greatest concern. The process incorporated a review of state and local hazard planning documents, as well as information on the frequency of, magnitude of, and costs associated with hazards that have struck or could strike the County. Anecdotal information regarding natural hazards and the perceived vulnerability of the County's assets to them was also used. *Table 4-1* summarizes the hazards of concern this plan will address.

**Table 4-1**
**Hazards of Concern**

| Hazard | Reason for Inclusion |
|---|---|
| **Agricultural Emergencies** | Agriculture is an economic driver in the County and is at risk to many hazards such as insects, weeds, wildfire, and severe weather. |
| **Coastal Erosion** | Parts of the County are located on the Ocean and are subject to erosion risk. Coastal erosion can create hazardous conditions, threatens dune habitat, and poses a threat to the agriculture and tourism industries. Sea level rise is likely to exacerbate erosion risk. |
| **Dam & Levee Failure** | Several large and aging dams are in the County, in addition to many miles of levees. Dam failure can be catastrophic to all life and property downstream. |
| **Drought** | Droughts are a serious threat and could have devastating impacts on agriculture. Previous droughts have caused major economic damage to the agricultural industry and prolonged periods of drought can reduce water availability and increase water prices. |
| **Earthquake** | Several active faults, including the San Andreas Fault, run through the County. Due to the location of population centers and building history, any earthquake will likely have significant impacts on people, property, and critical infrastructure. An earthquake could also trigger other natural hazard events such as dam failures and landslides, which could severely impact the County. |

**Table 4-1**
**Hazards of Concern**

| Hazard | Reason for Inclusion |
|---|---|
| **Flooding** | Flooding is a major hazard and is associated with many of the largest and most damaging historical hazard events. The history of flooding is associated with coastal storms, heavy rainfall, flash flooding, and run-off. Increased impervious surfaces, the channelization of streams, and increased development in floodplains has resulted in intensified flood flows and more property and lives at risk. |
| *Coastal Flooding* | Coastal flooding is generally associated with winter storms, high tides, and strong winds and is a significant hazard on the coastline. |
| *Riverine Flooding* | Riverine flooding, notably along the Salinas, Carmel, and Pajaro Rivers, has caused damage in the County. |
| *Flash Flooding* | Flash flooding occurs quickly with little to no warning and can cause serious damage in the County. |
| *Localized Stormwater Flooding* | Drainage systems in the County have a finite capacity and prolonged heavy rainfall has contributed to flooding in more urbanized areas. |
| **Hazardous Materials Incidents** | The County contains large industrial facilities, major transportation routes, agricultural operations, harbors, pipelines, and oil fields, all of which have the potential to cause a hazardous materials release. |
| **Human Caused-Hazards** | Although not required, human-caused hazards were included since preparation for them involves many of the same resources as a natural hazard. The likelihood of these hazard is greater than that of several of the natural hazards identified in this Plan. |
| *Cyber-Attack* | The spectrum of cyber-risks is limitless, with threats having a wide range of effects. Cyber-attacks can originate from any computer in the world and effect any system that is connected to the Internet. |
| *Targeted Violence* | Mass-casualty incidents (MCIs) and active shooters can cause loss of life serious injuries, and associated property damage. |
| *Terrorism* | Terrorism can cause loss of life, widespread illness and injury, the destruction of property, the displacement of large numbers of people, and devastating economic losses. |
| *Mass Migration* | Population migration of large scales can lead to resource pressures and can exacerbate existing instability. |
| **Public Health Hazards** | All of the County is susceptible to public health hazards. A large disease outbreak could have devastating effects on the population. Health hazards can also have large economic effects and complicate response efforts to other natural hazard events. |
| *Epidemic* | Due to increased air travel and growing population, the probability and threat of a communicable disease outbreak is growing. |
| *Pandemic* | While the probability of a major infectious disease pandemic is relatively low, it can have catastrophic social and economic consequences, as seen during the COVID-19 pandemic. |

**Table 4-1**
**Hazards of Concern**

| Hazard | Reason for Inclusion |
|---|---|
| **Severe Weather** | Severe weather has previously caused damage in Monterey County. Due to the size of the County and changes in elevation and climate, weather conditions and their impacts can vary greatly. Severe weather events are also associated with a variety of secondary hazards, which have the potential to greatly impact the County. |
| *Severe Winter Storms* | Severe winter storms have caused damage in the County and can lead to immobility and loss of utilities. Heavy rain can have significant impacts, including flash flooding and mudslides. |
| *Extreme Cold & Freeze* | Extreme cold and freeze events have impacted the County. Freeze can have a devastating effect on agriculture. Prolonged exposure to cold can cause frostbite or hypothermia and can be life-threatening. |
| *Windstorms* | Windstorms are a frequent problem in the County and have been associated with injuries and fatalities. Windstorms can topple trees and cause damage to utilities and critical facilities. |
| *Extreme Heat* | Extreme heat has caused fatalities in the County and is associated with a variety of health-related issues. |
| **Sea Level Rise** | Rising sea levels will increase the likelihood and intensity of floods., as well as lead to increased coastal and fluvial flooding, increased tidal inundation, coastal erosion, tsunami inundation, seawater intrusion, and worsened storm surge. (Profiled in Climate Change) |
| **Slope Failure** | The County is vulnerable to slope instability, especially after prolonged rainfalls and in areas recently burned by wildfires. Slope failure is a common occurrence and has caused damage to homes, public facilities, and roads. In Big Sur, landslides have caused millions of dollars in damage and have led to lengthy closures of Highway 1. |
| **Tsunami** | Several areas of the County are located in mapped tsunami inundation zones. Tsunamis are a threat to life and property. |
| **Utility Interruption** | Equipment failures and electrical infrastructure igniting wildfires has resulted in blackouts and power shutoffs throughout the County. Loss of power for more than a few hours can result in large economic losses and have large effects on vulnerable populations. |
| *Space Weather* | Space weather can cause damage to critical infrastructure, especially the electric grid. The effects can be far-reaching, as virtually all infrastructure and services depend on the electric power grid. |
| **Wildfire** | The geography, terrain, weather patterns and vegetation in the County provide ideal conditions for recurring wildfires and rapid spread. Past wildfires have caused damage to critical infrastructure, property, and the environment, and have led to injuries and loss of life. The County is likely to face a wildfire threat each and every year and can expect a large fire to occur every few years. |

In addition to the hazards listed above, climate change was assessed as both a hazard and as exacerbating other hazards profiled in this Plan. Sea level rise risk is profiled within the climate change section, in addition to the increased risk of the following hazards:

- *Agricultural Emergencies*- The Salinas Valley is one of the most vulnerable agricultural regions to climate change. The amounts, forms, and distribution of precipitation, as well as the increased frequency and intensity of climate extremes, will affect water availability as well as pests, crop yields, and the length of the growing season.
- *Dam & Levee Failure*- Dams and levees are designed partly based on assumptions about a river's flow behavior. Changes in weather patterns can have significant effects on the behavior of rivers and these changes could conceivably cause a dam or levee to lose some or all of its designed margin of safety.
- *Drought*- With a warmer climate, droughts could become more frequent, more severe, and longer lasting, thereby increasing their impact on the County.
- *Earthquake*- The impacts of global climate change on earthquake probability are unknown, but secondary impacts of earthquakes could be magnified by climate change.
- *Flooding*- Climate change is likely to exacerbate the intensity and magnitude of precipitation events, increasing the risk associated with flooding. High frequency flood events in particular will likely increase with a changing climate.
- *Human-Caused Hazards*- Climate change could lead to increases in violence and cause increases in climate induced migration.
- *Public Health Hazards*- Rising temperatures and more extreme drought events could lead to increases in heat-related illness, as well as vector-borne and infectious diseases.
- *Severe Weather*- Extreme heat waves are likely to increase in probability due to climate change. Atmospheric river events, the dominant driver of locally extreme rainfall events and associated flooding, are expected to increase under projected climate change.
- *Slope Failure*- Climate change will likely affect storm patterns, the occurrence and duration of droughts, and the probability of wildfire, which are all factors that would increase the probability of landslide occurrence.
- *Tsunami*- It is unclear if climate change would increase the frequency of tsunamis, but when a tsunami occurs the effects of climate change could lead to more destructive waves and inundation areas would likely reach further than current mapping indicates.
- *Wildfire*- Climate change has the potential to affect multiple elements of the wildfire system: fire behavior, ignitions, fire management, and vegetation fuels.

### *Excluded Hazards*

Other hazards were noted by the Steering Committee and the public to potentially consider in the MJHMP update. Some of these hazards have the potential to do damage or harm but were determined to not have a significant enough effect, so they are not profiled further; in some cases, they are currently addressed in other planning mechanisms or have had limited historic impacts. *Table 4-2* lists the hazards excluded from this Plan.

**Table 4-2**
**Excluded Hazards**

| Hazard Type | Explanation |
|---|---|
| Avalanche | Monterey County is not located in area prone to frequent or significant snowfall. |
| Blizzard | Monterey County is not located in area prone to frequent or significant snowfall. |
| Cyclone | No historic events have occurred in Monterey County. |
| Ice Storm | The County does not reach temperatures low enough with enough frequency for an ice storm to pose a major threat. |
| Limnic Eruption | No historic events have occurred in Monterey County. |
| Civil Unrest | This is a risk in Monterey County but is more appropriately dealt with in other planning mechanisms. |
| Expansive Soils | No historic events have occurred in Monterey County. |
| Glacier Movement/ Collapse | There are no glaciers in Monterey County. |
| Human-Wildlife Conflicts | This is a risk in Monterey County but is more appropriately dealt with in other planning mechanisms. |
| Hurricane | No significant historic events have occurred in the County. |
| Maritime Incidents | This is a risk in Monterey County but is more appropriately dealt with in other planning mechanisms. |
| Plane Crash | This is a risk in Monterey County but is more appropriately dealt with in other planning mechanisms. |
| Sinkholes | No significant historic events have occurred in the County. |
| Supply Chain Interruptions | This is a risk in Monterey County but is more appropriately dealt with in other planning mechanisms. |
| Volcano | Due to distance from volcanoes and the limited chance of an eruption, this hazard was not identified as a priority. |

### 4.1.1 DISASTER DECLARATION HISTORY

One important consideration in identifying and prioritizing hazards is past major hazard events, especially those that triggered federal, state, or local disaster declarations. Most available information on major past hazard events comes from past disaster declarations. If a local government determines effects of an emergency are beyond the capability of local resources to mitigate effectively, the local government may proclaim a local emergency. Pursuant to *California Government Code Section 8680.9*, a local emergency is a condition of extreme peril to persons or property proclaimed as such by the governing body of the local agency affected by a natural or manmade disaster. The purpose of a local emergency proclamation is to provide extraordinary police powers, immunity for emergency actions, authorize issuance of orders and regulations, activate pre-established emergency provisions, and is a prerequisite for requesting state or federal assistance.

Pursuant to *California Government Code Section 8625*, the Governor may proclaim a State of Emergency in an area affected by a disaster, when he is requested to do so by the governing body of the local agency affected, or he finds the local authority is inadequate to cope with the emergency. The California Disaster Assistance Act (CDAA) provides state financial assistance for recovery efforts to local governments after a state disaster has been declared.

If the severity and magnitude of an event surpasses the ability of the local and state government to respond and recover, the Governor can request federal assistance. Based on the Governor's request, the President may declare that a major disaster or emergency exists, thus activating an array of Federal programs to assist in the response and recovery effort. There are two types of disaster declarations provided for in the Stafford Act: Emergency Declarations and Major Disaster Declarations. Both declaration types authorize the President to provide supplemental federal disaster assistance. However, the event related to the disaster declaration and type and amount of assistance differ.

- **Emergency Declarations**: An Emergency Declaration can be declared for any occasion or instance when the President determines federal assistance is needed. Emergency Declarations supplement State and local efforts in providing emergency services, or to lessen or avert the threat of a catastrophe in any part of the US. The total amount of assistance provided for a single emergency may not exceed $5 million.
- **Major Declaration**: The President can declare a Major Disaster Declaration for any natural event, including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought, or, regardless of cause, fire, flood, or explosion, that the President believes has caused damage of such severity that it is beyond the combined capabilities of state and local governments to respond. A major disaster declaration provides a wide range of federal assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work.

Not all programs, however, are activated for every disaster. The determination of which programs are authorized is based the types of assistance specified and, on the needs, identified during Preliminary Damage Assessments. FEMA disaster assistance programs are as follows:

- **Individual Assistance**: Assistance to individuals and households
- **Public Assistance:** Assistance to state and local governments for emergency work and the repair or replacement of disaster damaged facilities
- **Hazard Mitigation Assistance**: Assistance to state and local governments for actions taken to prevent or reduce long term risk to life and property from natural hazards.

Additionally, the Disaster Mitigation Act of 2000 authorized the Fire Management Assistance Grant (FMAG) program, which provides for the mitigation, management, and control of fires that threaten such destruction as would constitute a major disaster. The purpose of FMAG is to provide supplemental federal assistance to states and local government to fight fires burning

on public (non-federal) or privately owned forest or grassland. A Local or State fire agency must request an FMAG through the Cal OES Fire and Rescue Branch or the California State Warning Center while the fire is burning uncontrolled. The federal government may also issue a disaster declaration through the US Department of Agriculture (USDA), and the Small Business Administration (SBA). The SBA can make federally subsidized loans to repair or replace homes, personal property or businesses that sustained damages not covered by insurance. The Secretary of Agriculture is authorized can declare a disaster to make emergency loans available to producers suffering losses in declared counties and in counties that are contiguous to a designated county.

As summarized in *Table 4-3*, since 1990, Monterey County has experienced a total of 55 emergencies, resulting in a local, state, or federal disaster declaration, 14 of which were major federally declared disasters. This information, coupled with local historical and anecdotal information, helped inform the hazard identification process.

**Table 4-3**
**Disaster Proclamations and Declarations (1990-2021)**

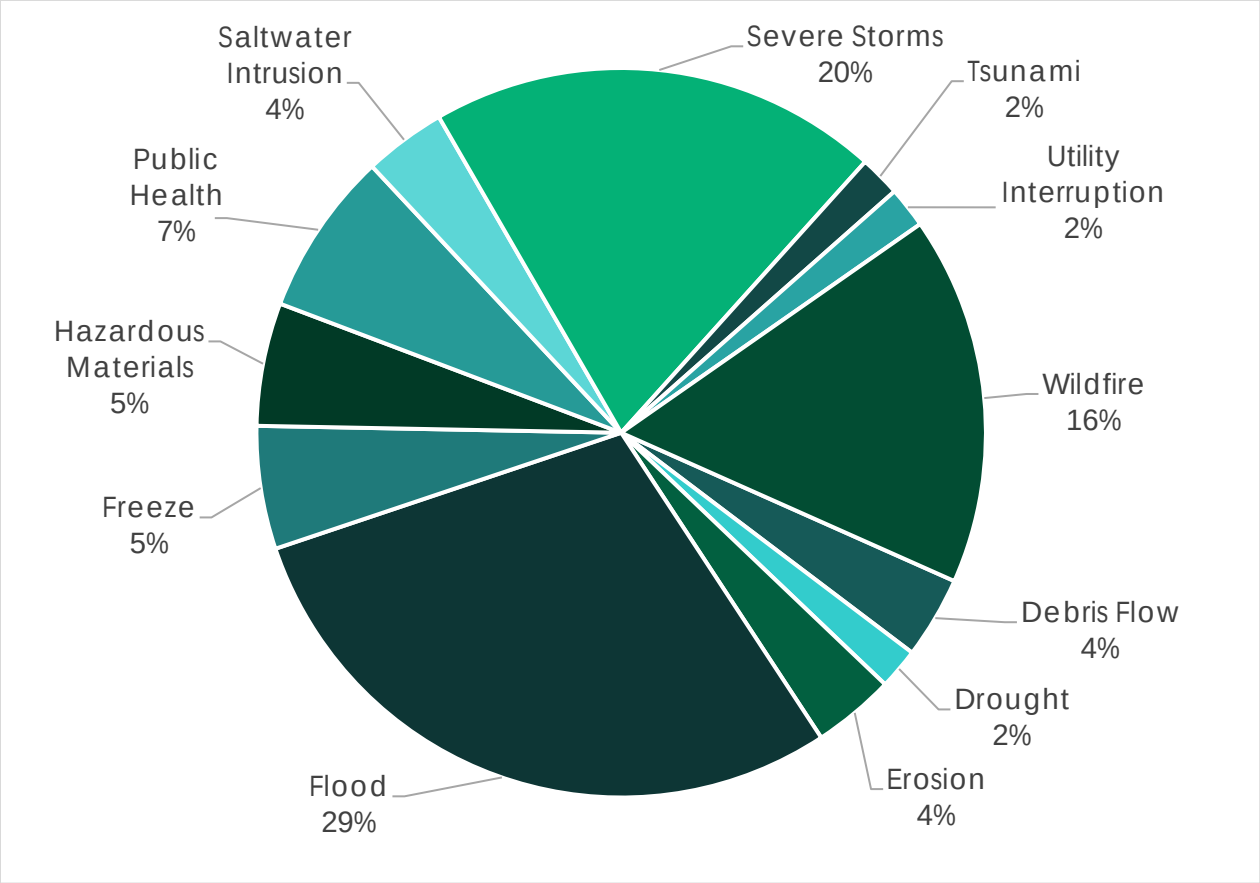
| Year | Declaration Type | Incident Type | Description | FEMA # | CDAA # | Local # |
|---|---|---|---|---|---|---|
| 2021 | State and Local Emergency | Drought | Drought | | 2021 | 21-189 |
| 2021 | State and Local Emergency | Severe Storms | Severe Winter Storms, Flooding, Mudslides, and Erosion | | 2021 | 21-033 |
| 2020 | Major Disaster | Wildfire | August 2020 Wildfires | DR-4558 | 2020-06 | |
| 2020 | Local Emergency | Wildfire | Dolan Fire | | | 20-283 |
| 2020 | Fire Management | Wildfire | Carmel Fire | FM-5333 | 2020-06 | |
| 2020 | Fire Management | Wildfire | River Fire | FM-5329 | 2020-06 | 20-277 |
| 2020 | Local Emergency | Flood | Salinas River Lagoon Flooding | | | 20-309 |
| 2020 | Major Disaster | Public Health | COVID-19 Pandemic | DR-4482 | 2020-01 | 20-060 |
| 2019 | Local Emergency | Flood | Carmel River & Lagoon Flooding | | | 19-016 |
| 2019 | State and Local Emergency | Flood | Atmospheric River, Chualar Flash Flood, and Carmel River Flooding | | 2020-05 | 19-943 |
| 2019 | Local Emergency | Utility Interruption | Public Safety Power Shutoff | | | 19-383 |
| 2019 | Major Disaster | Severe Storms | Late February 2019 Storms | DR-4434 | 2019-03 | |
| 2019 | State and Local Emergency | Severe Storms | Mid-February 2019 Atmospheric River | | 2019-02 | 19-077 |
| 2019 | Local Emergency | Flood | Salinas River Lagoon Flooding | | | 19-022 |
| 2017 | Major Disaster | Severe Storms | February 2017 Winter Storms | DR-4308 | 2017-03 | 17-045 |
| 2017 | Major Disaster | Severe Storms | January 2017 Winter Storms | DR-4301 | 2017-01 | 17-008 |
| 2017 | Local Emergency | Flood | Salinas River Lagoon Flooding | | | 16-005 |
| 2016 | Local Emergency | Erosion | Emergency Infrastructure Repair | | | 16-089 |
| 2016 | Local Emergency | Flood | Emergency Infrastructure Repair | | | 16-324 |
| 2016 | Fire Management | Wildfire | Soberanes Fire | FM-5137 | | 16-206 |

**Table 4-3**
**Disaster Proclamations and Declarations (1990-2021)**

| Year | Declaration Type | Incident Type | Description | FEMA # | CDAA # | Local # |
|---|---|---|---|---|---|---|
| 2016 | Local Emergency | Severe Storms | Severe Winter Storms | | | 16-084 |
| 2015 | Local Emergency | Saltwater Intrusion | Saltwater Intrusion and Inundation at Moro Cojo Slough | | | 15-122 |
| 2015 | Local Emergency | Wildfire | Tassajara Fire | | | 15-253 |
| 2014 | Local Emergency | Saltwater Intrusion | Saltwater Intrusion and Inundation at Moro Cojo Slough | | | 14-299 |
| 2014 | Local Emergency | Wildfire | Pfeiffer Fire | | | 14-003 |
| 2012 | Local Emergency | Flood | Salinas River Lagoon Flooding | | | 12-386 |
| 2012 | Local Emergency | Flood | Carmel River & Lagoon Flooding | | | 12-027 |
| 2011 | Major Disaster | Tsunami | March 2011 California Tsunami | DR-1968 | 2011-02 | |
| 2011 | Local Emergency | Debris Flow | Highway 1 Failure and Closure | | | 11-075 |
| 2010 | Local Emergency | Flood | Carmel River & Lagoon Flooding | | | 10-083 |
| 2010 | Local Emergency | Flood | Carmel River & Lagoon Flooding | | | 10-006 |
| 2009 | Local Emergency | Public Health | Influenza A (H1N1) Virus Infection | | | 09-319 |
| 2009 | State and Local Emergency | Wildfire | Gloria Fire | | 2009-06 | 09-376 |
| 2009 | Local Emergency | Hazmat | Dayton Fire Explosion and Hazardous Material Incident | | | 09-741 |
| 2009 | Local Emergency | Flood | Salinas River Lagoon Flooding | | | 09-172 |
| 2009 | Local Emergency | Debris Flow | Basin Complex Burn Scar Debris Flow | | | 09-147 |
| 2009 | Local Emergency | Flood | Carmel River & Lagoon Flooding | | | 09-148 |
| 2009 | Local Emergency | Public Health | Human Immunodeficiency Virus | | | 09-129 |
| 2008 | Fire Management | Wildfire | Indians and Basin Complex Fires | FM-2781 | 2008-02 | 08-244 |
| 2008 | Local Emergency | Hazmat | Emergency Asbestos Remediation | | | 08-234 |
| 2007 | Major Disaster | Freeze | Severe Freeze | DR-1689 | 2007-02 | |
| 2007 | Local Emergency | Flood | Carmel River & Lagoon Flooding | | | 07-309 |
| 2006 | Local Emergency | Hazmat | Emergency Asbestos Remediation | | | 06-267 |
| 2006 | Local Emergency | Flood | Severe Winter Storms | | | 06-006 |
| 2005 | Local Emergency | Erosion | Road Erosion on Scenic Road | | | 05-118 |
| 2005 | Local Emergency | Flood | Carmel River & Lagoon Flooding | | | 05-085 |
| 2004 | Local Emergency | Severe Storms | Severe Winter Storms | | | 04-058 |
| 2003 | Local Emergency | Public Health | Human Immunodeficiency Virus | | | 03-034 |
| 1999 | Major Disaster | Freeze | Severe Freeze | DR-1267 | 98-02 | |
| 1998 | Major Disaster | Severe Storms | El Nino '98 Winter Storms | DR-1203 | 98-01 | |
| 1997 | Major Disaster | Severe Storms | Severe Winter Storms, | DR-1155 | 97-01 | |
| 1995 | Major Disaster | Severe Storms | 1995 Late Winter Storms | DR-1046 | 95-03 | |
| 1995 | Major Disaster | Severe Storms | 1995 Winter Storms | DR-1044 | 95-01 | |
| 1993 | Major Disaster | Flood | 1993 Winter Storms | DR-979 | 93-01 | |
| 1991 | Major Disaster | Freeze | Severe Freeze | DR-894 | | |

As seen in *Figure 4-1*, the top three hazards resulting in a declaration of any kind are Flooding (29%), Severe Storms (20%), and Wildfires (16%).

**Figure 4-1**
**Historical Declared Hazard Events in Monterey County by Hazard Type (1990-2021)**




### 4.1.2 EOC ACTIVATIONS

The County maintains a list of Emergency Operations Center (EOC) activations. As seen from the list of EOC Activations, winter storms, wildfires, flooding, and utility outages were the most common hazards requiring activation of the EOC. EOC activations from 2006 to present include:

- 2022 Tsunami
- 2021 Willow Fire
- 2019 PSPS Event
- 2017 Pajaro Sewage Spill
- 2016 Soberanes Fire
- 2015 Tassajara Fire
- 2014 Drought
- 2009 Mudslide
- 2008 Basin Complex Fire
- 2021 Car Week
- 2020 Wildfires
- 2019 Chualar Flood
- 2016 Winter Storms
- 2016 Phone Outage
- 2014 Winter Storms
- 2014 Debris Flows
- 2009 H1N1 Influenza
- 2006 Soledad MCI
- 2021 Winter Storms
- 2020 COVID-19
- 2017 Winter Storms
- 2016 Chimney Fire
- 2015 Power Outage
- 2014 Natividad Water Issue
- 2013 Pfeffer Fire
- 2009 Dayton Hazmat Incident
- 2008 Winter Storms

## 4.2 HAZARD PROFILES

The hazards identified in *Table 4-1 Hazards of Concern*, were profiled individually in identified sections. These profiles set the stage for the risk assessment, where exposure and vulnerability are quantified for each of the identified hazards. Each hazard is profiled in the following format:

**Hazard Overview**: This section gives a description of the hazard and includes definitions and background, scientific, and regulatory information, as applicable.

**Hazard History**: This section contains information on previous occurrences of the hazard in the County. Historical hazard information is helpful in estimating the likelihood of future events and predicting potential impacts. When data was available, the extent of the impacts, such as fatalities, injuries, building and infrastructure damages, and loss of services, were included.

**Location**: This section includes information on the geographic location of areas affected by the hazard in Monterey County. Generally, maps were used to illustrate location for many of the hazards. National, state, and County databases were reviewed to locate available spatially based data relevant to this planning effort.

Maps were produced using Geographic Information System (GIS) to show the spatial extent and location of hazards when such datasets were available. These maps are included in the hazard chapters of this plan. When mapping was not available or deemed not the most appropriate way to identify the location, narrative description was used. Some hazards affect the entire County uniformly, in which case specific location or extent was not identified.

**Frequency**: This section describes the frequency and likelihood of future occurrences of the hazard. The frequency and likelihood of the hazard occurring in the future and can be described in a variety of ways. Where possible, frequency was calculated based on existing data. Hazard likelihood was compared using the following general descriptions:

- *Unlikely*: Less than 1% chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years.
- *Occasional*: Between 1 and 10% chance of occurrence in the next year or has a recurrence interval of 11 to 100 years.
- *Likely*: Between 10 and 100% chance of occurrence in next year or has a recurrence interval of 10 years or less.
- *Highly Likely*: Near 100% chance of occurrence in next year or happens every year.

**Severity**: Severity, or extent, is defined as the strength or magnitude of a hazard. Depending on the hazard, the severity was described in a combination of ways including:

- The value on an established scientific scale or measurement system
- Other measures of magnitude, such as water depth or wind speed
- The duration of hazard events

**Warning Time**: This section describes the warning time and speed of onset for the hazard.

**Secondary Hazards**: This section seeks to examine the vulnerabilities of hazard events beyond the individual hazard. Often another hazard occurs as a secondary hazard, such as an earthquake causing a landslide or tsunami or a wildfire. Other events are compounded by outside factors, such as wildfire evacuations occurring during Public Safety Power Shutoff (PSPS) events. This section was included to highlight compounding hazard risks by highlighting secondary hazards and local conditions that accelerate impacts.

## 4.3 RISK ASSESSMENT METHODOLOGY

The Risk Assessment measures the potential impact on life, property, critical infrastructure, the environment, and the economy resulting from the hazards profiled. The intent of the Risk Assessment is to identify the qualitative and quantitative vulnerabilities of the community to the greatest extent possible given available data. The Risk Assessment increases understanding of hazard impacts to the community and provides a foundation to develop and prioritize mitigation actions. In turn, mitigation actions reduce damage from natural disasters through increased preparedness and focus resources to areas of greatest vulnerability.

This section provides an overview of the methods used for the risk assessments for each hazard identified. Vulnerabilities to each hazard were assessed in a two-step process. First, population, critical facilities, county parcels, and structures were inventoried to develop a "lay of the land." Then, those inventories were utilized in calculating estimated exposure and damage from hazards at various levels of severity.

The Risk Assessment utilized geospatial data along with local knowledge of past events. Geospatial data was essential in determining population and assets exposed to hazards and was conducted if a natural hazard has a spatial footprint that could be analyzed against the locations of people and assets.

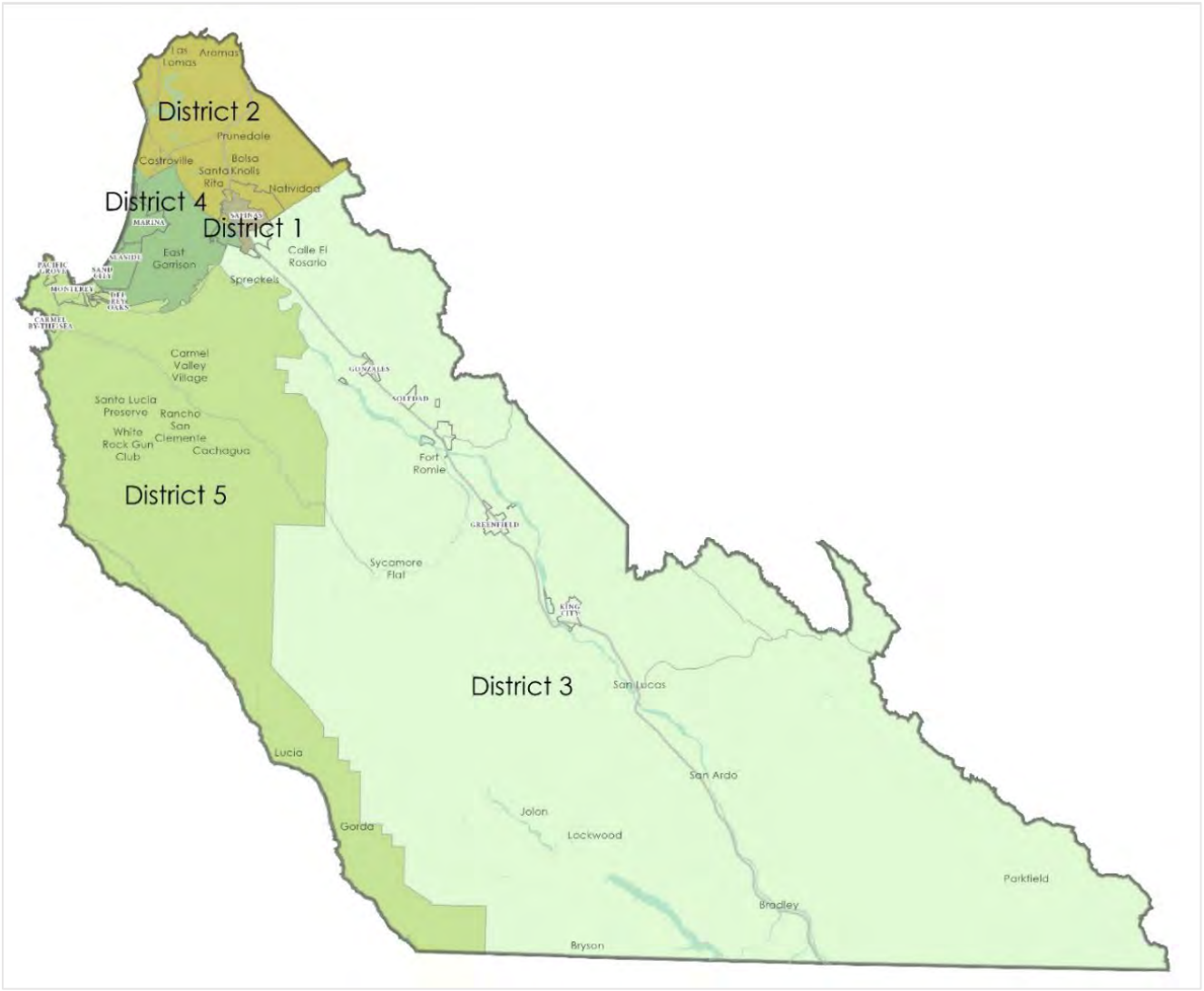
### 4.3.1 POPULATION AND ASSET INVENTORY

In order to describe the risk posed by each hazard, it was important to first understand the total population and assets at risk. The population and asset inventories provided a baseline to measure the significance of hazard events and vulnerability to those events.

#### *Supervisorial Districts and Political Subdivisions*

For the purposes of Countywide analysis, the 2010 Supervisorial Districts were used to conceptualize the geographic distribution of population and property. *Figure 4-2* shows the geographic location of each Supervisorial Districts in Monterey County.

**Figure 4-2**
**2010 Monterey County Supervisorial Districts**




Supervisorial Districts in Monterey County include the following geographic areas:

**District 1** is geographically the smallest supervisorial district in Monterey County and is entirely within the city limits of the city of Salinas.

**District 2** is the northernmost supervisorial district in Monterey County, the 2nd District includes the communities of Boronda, Castroville, Las Lomas, Moss Landing, Pajaro, Prunedale, Royal Oaks, the northern neighborhoods of the city of Salinas, and those portions of the community of Aromas that are located within Monterey County.

**District 3** covers the majority of the Salinas Valley and southern Monterey County, extending to its border with San Luis Obispo County. The district includes the unincorporated communities of Spreckels, Chualar, Jolon, the eastern portion of the city of Salinas, and the cities of Gonzales, Greenfield, Soledad, and King City. Additionally, it includes the military installations at Fort Hunter Liggett and Camp Roberts, as well as portions of the Los Padres National Forest.

**District 4** includes the southwest portion of the city of Salinas, the cities of Del Rey Oaks, Marina, Seaside, Sand City, and the former military installation at Fort Ord.

**District 5** is geographically the largest of the five districts and covers most of the Monterey Peninsula and southern coastline of the County down to the southern border with San Luis Obispo County. The 5th District includes the cities of Carmel-by-the-Sea, Monterey, and Pacific Grove, the unincorporated communities of Carmel Valley Village, Big Sur, Pebble Beach, San Benancio, Corral de Tierra, and Jamesburg. Additionally, it includes the military installations at the Presidio of Monterey, the Defense Language Institute, and the Naval Postgraduate School, as well as the Ventana Wilderness area of the Los Padres National Forest.

### *Population*

Each natural hazard affects County residents differently depending on the location of the hazard and the population density where the hazard event could occur. Risk assessments presented in this section summarize the population exposure for each natural hazard if available.

To produce the hazard-specific risk assessments, first the population near each hazard was determined. Population estimates were derived from 2010 Census information. Census blocks were used to determine the population exposed to the hazards.

### *Parcel Value Inventory*

Monterey County Assessor's data was used to develop both residential and non-residential values exposed to hazards. Residential and nonresidential parcels were identified using Assessor's Land Use Codes.

The Parcel Value Inventory includes total assessed value of the land and of any structures on the land. These elements are combined because, in the event of a disaster, the value of the infrastructure or improvements to the land is usually the focus and the land itself is not a total loss. Each hazard profile outlines predicted impacts to this Inventory based on each hazard's geographic extent.

The Monterey County Parcel and Population Inventory is summarized in *Table 4-4.*

**Table 4-4**
**Monterey County Parcel and Population Inventory**

| Jurisdiction | Population | Residential | | Non-Residential | |
|---|---|---|---|---|---|
| | | Count | Value ($) | Count | Value ($) |
| Carmel-by-the-Sea | 3,460 | 2,489 | $4,071,156,577 | 888 | $691,544,498 |
| Del Rey Oaks | 1,000 | 584 | $276,553,256 | 144 | $55,959,358 |
| Gonzales | 6,758 | 1,303 | $437,053,854 | 479 | $193,034,179 |
| Greenfield | 13,299 | 2,574 | $749,316,532 | 585 | $176,076,227 |
| King City | 10,970 | 1,874 | $552,522,904 | 898 | $284,138,790 |
| Marina | 18,939 | 3,603 | $2,163,216,447 | 1,388 | $582,115,264 |
| Monterey | 26,998 | 6,533 | $4,016,887,152 | 5,671 | $2,661,097,840 |
| Pacific Grove | 15,030 | 4,798 | $3,545,159,214 | 1,763 | $441,654,454 |
| Salinas | 133,018 | 23,032 | $9,261,979,929 | 9,025 | $3,159,440,145 |
| Sand City | 324 | 157 | $32,386,952 | 644 | $320,490,499 |
| Seaside | 28,456 | 5,461 | $2,345,735,210 | 2,159 | $481,073,182 |
| Soledad | 22,713 | 2769 | $1,049,529,544 | 703 | $147,123,893 |
| **Supervisorial District** | | | | | |
| District 1 | 74,822 | 9,872 | $3,434,995,377 | 4,619 | $1,674,390,014 |
| District 2 | 73,812 | 16,226 | $7,225,922,676 | 8,558 | $2,369,919,832 |
| District 3 | 76,581 | 12,949 | $4,353,858,958 | 10,695 | $5,609,556,661 |
| District 4 | 71,735 | 15,072 | $7,553,619,336 | 7,009 | $2,506,288,306 |
| District 5 | 81,657 | 29,599 | $32,363,271,436 | 14,367 | $6,397,430,508 |

### Critical Facilities and Infrastructure

Critical facilities and Infrastructure were of particular concern when conducting the Risk Assessment. A critical facility is a structure or other improvement that, because of its function, size, service area, or uniqueness, has the potential to cause disruption of vital socioeconomic activities if it is destroyed, damaged, or functionally impaired. Critical facility points include police stations, fire stations, hospitals, elder care facilities, day care facilities, buildings containing hazardous materials, schools, transportation infrastructure, utilities, and government buildings. Critical lifelines include communication, electric power, liquid fuel, natural gas, and transportation routes.

A critical infrastructure spatial database was developed to translate critical facilities information into georeferenced points and lines. The critical facilities inventory was developed from a variety of sources, including County, City, State, Federal, and industry datasets.

*Table 4-5* lists critical infrastructure data sources. All data sources have a level of accuracy acceptable for planning purposes. Due to the sensitivity of this information, a detailed list of facilities is not provided. The risk assessment for each hazard qualitatively discusses critical facilities with regard to that hazard.

**Table 4-5**
**Critical Infrastructure and Assets Data Sources**

| Critical Facilities and Assets | Source |
|---|---|
| Emergency Operation Centers, Fire Stations, Police Stations, Schools, Airports, Electric Power Facilities, Landfills, Military Facilities, Large Public Facilities | 2015 Monterey County Local Hazard Mitigation Plan, data reviewed and updated by County OES, PG&E |
| Hospitals and Medical Care Facilities | Monterey County GIS, PG&E |
| Dams | US Army Corps of Engineers National Inventory of Dams |
| Harbors | Monterey County GIS |
| Hazardous Material Facilities | Monterey County GIS: Underground Tanks, Cal ARP Facility |
| Transportation Infrastructure- Roads, Highways, Bridges, and Railroads | Monterey County GIS |
| Communications Facilities | Monterey County GIS, PG&E |
| Water and Wastewater Infrastructure | Monterey County GIS, M1W provided GIS layer of collection system including conveyance pipelines and pump stations |
| Rain Gauges | Monterey Water Resources Agency |
| Stormwater Infrastructure | Monterey County GIS |
| Oil Wells | California Department of Conservation, Geologic Energy Management Division's (CalGEM) Well Finder (WellSTAR) |

### 4.3.2 HAZARD EXPOSURE

The asset and population inventory information were then used to generate specific exposure and damage estimations based on the severity of specific hazard events. “Exposure” of assets and population refers to the total counts of parcels, people, facilities, and assets within the County in which a hazard event may occur.

A natural hazards overlay was developed to reflect the combination of many known natural hazard spatial footprints. The spatial overlay method enables summarization of building values, parcel counts, population exposure, and critical facility exposure within a hazard’s geographic extents.

In Monterey County, coastal erosion, dam failure, levee failure, hazardous materials incidents, earthquake liquefaction, flooding, slope failure, sea level rise, tsunami, and wildfire have identifiable geographic extents and corresponding spatial information about each hazard.

*Table 4-6* summarizes the data sources used for each of these hazards.

**Table 4-6**
**Hazard Exposure Data**

| Hazard | Data Source | Severity and Exposure |
|---|---|---|
| **Coastal Erosion** | USGS Coastal Storm Modeling System (CoSMoS), Central California Projections of Coastal Cliff Retreat and Shoreline Change due to 21st Century Sea Level Rise | To determine exposure, the Hold the Line Management Scenario was used for both coastal cliff retreat and shoreline change. For shoreline change, Continued Nourishment Management Scenario, in addition to modeling which forced Sea Level Rise in 2100 at 200 cm. Based on OPC High Risk Aversion Guidance, the following sea level rise levels were chosen: 25 cm Sea Level Rise (2030, near future risk; 75 cm Sea Level Rise (2060); and 200 cm Sea Level Rise (2100). |
| **Dam Failure** | • *Nacimiento*- Monterey County GIS<br>• *San Antonio*- Monterey County GIS<br>• *Forest Lake Dam*- Pebble Beach Community Services District<br>• *Los Padres Dam*- CA DOSD | Exposure risk was based on the following:<br>• *Nacimiento*- Spillway Failure, Dam Failure<br>• *San Antonio*- Spillway Failure, Dam Failure<br>• *Forest Lake Dam*- 4 Failure Scenarios<br>• *Los Padres Dam*- Inundation area |
| **Levee Failure** | Army Corp of Engineers National Levee Database | Leveed Areas was used to determine exposure risk. |
| **Hazardous Materials Incident** | *Mobile*- US Dept of Transportation, National Transportation Atlas Database<br>*Fixed*-Monterey County Hazardous Materials Plan (2019) | Based on guidelines in the US Department of Transportation's Emergency Response, the recommended buffer distance or "protective action distance" of one mile was used, around mobile and fixed facilities to determine exposure risk. |
| **Earthquake Liquefaction** | Monterey County GIS | High and moderate liquefaction potential areas used to determine exposure risk. |
| **Flooding** | FEMA FIRM (2018) | 100-year and 500-year floodplain used to determine exposure risk. |
| **Slope Failure** | Earthquake Induced Landslide Risk, Monterey County 2010 General Plan | High and moderate earthquake induced landslide potential areas used to determine exposure risk, in addition to data from the FEMA National Risk Index. |
| **Sea Level Rise** | National Oceanic and Atmospheric Administration (NOAA), Sea Level Rise Data | Based on OPC High Risk Aversion Guidance, the following sea level rise levels were chosen: 1 ft Sea Level Rise (2030); 3 ft Sea Level Rise (2060); and 7 ft Sea Level Rise (2100) to determine exposure. |

**Table 4-6**
**Hazard Exposure Data**

| Hazard | Data Source | Severity and Exposure |
|---|---|---|
| **Tsunami** | California Geological Survey, Tsunami Inundation Maps, Monterey County Tsunami Hazard Areas (2021) | Tsunami Inundation Zone used to determine exposure risk. |
| **Wildfire** | CALFIRE Fire Threat | Statewide GIS layer in raster format of fire threat, which combines expected fire frequency with potential fire behavior to create 4 threat classes. Very High, High, and Moderate Threat Zones were considered areas exposed to wildfire risk. |

*FEMA National Risk Index*

The FEMA National Risk Index was also used to enhance the risk assessment. The National Risk Index incorporates physical and social vulnerability data to identify communities more at-risk to the adverse impacts of natural hazards. The National Risk Index is a high quality, comprehensive data set that identifies a community's risk to natural hazards.

Community risk in the National Risk Index is a combination of several factors, including the expected annual dollar loss related to building value, crop, or population, due to a natural hazard; social vulnerability, which measures how social groups respond to the adverse impacts of natural hazards; and community resilience, which is the community's ability to recover from a natural disaster.

### 4.3.3 HAZARD VULNERABILITY

Included in the risk assessment was a consideration of hazard vulnerability. Vulnerability is the characteristics of community assets that make them susceptible to damage from a given hazard. The vulnerability of people, property, critical infrastructure, the environment, and the economy is discussed within each respective risk assessment section for each hazard.

Vulnerability was evaluated by interpreting the probability of occurrence of each event and assessing structures, facilities, and systems that are exposed to each hazard. Additionally, vulnerability was assessed qualitatively using local knowledge.

*Environmental Impacts*

Monterey County has many important environmental assets and natural resources. These resources are critical to community identity and quality of life and support the economy through agriculture, tourism and recreation, and a variety of other ecosystem services, such as clean air and water. Hazards profiled in this Plan can have impacts on the natural environment and are discussed qualitatively in this section.

The natural environment also provides protective functions that reduce hazard impacts and increase resiliency. For instance, wetlands and riparian areas help absorb flood waters, soils and landscaping contribute to stormwater management, and vegetation provides erosion control and reduces runoff. Conservation of environmental assets may present opportunities to meet mitigation and other community objectives, such as protecting sensitive habitat, developing parks and trails, or contributing to the economy.

*Economic Impacts*

After a disaster, economic resiliency drives recovery. Monterey County has a variety of specific economic drivers that are important to understand when planning to reduce the impacts of hazards and disasters to the local economy. Depending on the hazard, economic impacts in this section were described in terms of indirect losses, such as functional downtime and loss of employment wages, and in terms of the impact to primary economic sectors

### 4.3.4 LIMITATIONS

Loss estimates, exposure assessments, and hazard-specific vulnerability evaluations rely on the best available data and methodologies. Uncertainties are inherent in any loss estimation methodology and arise in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Uncertainties also result from the following:

- Approximations and simplifications necessary to conduct a study
- Incomplete or outdated inventory, demographic, or economic parameter data
- Missing data on value of structure or land
- Population assessed based on census blocks, which differs from physical residents in a hazard area
- The unique nature, geographic extent, and severity of each hazard
- Mitigation measures already employed
- The amount of advance notice residents has to prepare for a specific hazard event
- The uncertain spatial accuracy of a variety of the data used to assess hazard exposure
- Lack of a standardized model for assessing sea level rise impacts. Multiple models provide multiple results. Not all models were run in the development of the sea level rise analysis.

These factors can affect loss estimates by a factor of two or more. Therefore, potential exposure and loss estimates are approximate and should be used only to understand relative risk. Over the long term, Monterey County will collect additional data to assist in estimating potential losses associated with other hazards.

## 4.4 HAZARD PRIORITIZATION AND RISK RANKING

FEMA requires all hazard mitigation planning partners to have jurisdiction-specific mitigation actions based on local risk, vulnerability, and community priorities. This plan included a risk

ranking protocol for each planning partner, in which "risk" was calculated by adding the extent of hazard, the likelihood of future occurrence, the severity, and the impact on people, property and the economy.

The risk ranking was used to identify mitigation actions for hazards. The risk ranking at the planning partner scale was used to inform the action plan development process for each partner. Planning partners were directed to identify mitigation actions addressing hazards that, at a minimum, had a "high" risk ranking. Actions that address hazards with a substantial, moderate, possible, slight, negligible hazard ranking are considered optional by this planning process. The following Countywide risk ranking was prepared by the planning team. The results are used in establishing mitigation priorities.

Each participating jurisdiction also completed the hazard prioritization process specifically for the hazards applicable to their jurisdiction, and this important initial stage informed the rest of the planning process for each jurisdiction. Individual hazard prioritization matrices are available in **Volume 2** of this MJHMP.

### 4.4.1 THREAT HAZARD RISK ASSESSMENT SURVEY

The risk ranking process was conducted using the Threat Hazard Risk Assessment Survey. All stakeholders took the Threat Hazard Risk Assessment Survey. The purpose was both the gauge perceived risk and to rank and prioritize the hazards. The survey assisted in the creation of a risk matrix, in order to compare hazards and rank which pose the greatest risk. Based on the survey each identified hazard was given a rank based on geographic extent, likelihood of future occurrences, magnitude, and impacts

The score for each variable by hazard was calculated using a weighted average of all survey responses. Variables were then summed to create results for each Individual jurisdiction (summarized in **Volume 2**). For the Countywide THIRA overall jurisdiction risk ranking scores by hazard for likelihood, magnitude, and impact were used and weighted by population in the jurisdiction (as a percentage of the total County population).

Municipal jurisdictions scores comprised 75% of the total score per variable, participating special district scores compromised 15% of the total score (weighted by population served), and stakeholder scores (collected as described in *Stakeholder Engagement*) comprised 10% of the total score. Geographic extent which was weighted by land area (as a percentage of the total County land area). The risk index was helpful tool to compare multiple hazards, but it is not a complete risk assessment and is supplementary to the more detailed risk analysis provided in each hazard chapter.

#### *Variables*

Variables were based on the hazard profiles as described above and, on the FEMA, Local Mitigation Planning Handbook. The following variables, questions, and guidance shaped the ranking on the matrices:

**Geographic Extent:** What geographic area is affected by this hazard?

1. Negligible: No known or negligible geographic extent
2. Limited: Less than 10% of Planning Area
3. Significant: 10-50% of Planning Area
4. Extensive: 50-100% of Planning Area

**Likelihood of Future Occurrences:** What is the likelihood of a hazard event occurring in a given year?

1. Unlikely: Less than 1% chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years.
2. Occasional: Between 1 and 10% chance of occurrence in the next year or has a recurrence interval of 11 to 100 years.
3. Likely: Between 10 and 100% chance of occurrence in next year or has a recurrence interval of 10 years or less.
4. Highly Likely: Near 100% chance of occurrence in next year or happens every year.

**Magnitude/ Severity:** What is the expected magnitude and severity of the hazard event based on historic events or future probability?

1. Negligible: Less than 10% of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries treatable with first aid
2. Limited:10-25% of property severely damaged; shutdown of facilities for more than a week; and/or injuries treatable do not result in permanent disability
3. Critical: 25-50% of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
4. Catastrophic: More than 50% of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths

**Impact:** In terms of injuries, damage, or death, would you anticipate impacts to be negligible, limited, critical, or catastrophic when a significant hazard event occurs?

1. Negligible: no meaningful impact
2. Limited: minimal potential impact
3. Critical: moderate potential impact
4. Catastrophic: widespread potential impact

### 4.4.2 RANKING METHODOLOGY

To determine the rank, each variable was weighted on a scale from 1-4, or negligible/ unlikely to extensive/ highly likely/ catastrophic. The score for each variable by hazard was calculated using a weighted average of all survey responses. Scores on each variable were added together to determine a score between 1 and 16.

*Figure 4-3* demonstrates how individual variable scores were added together to create a total score, associated with a relative degree of risk.

**Figure 4-3**
**Risk Ranking Score Matrix by Variable**

| | | Geographic Extent | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | | |
| Likelihood | 1 | 4 | 6 | 8 | 10 | 1 | Magnitude/ Severity |
| | 2 | 6 | 8 | 10 | 12 | 2 | |
| | 3 | 8 | 10 | 12 | 14 | 3 | |
| | 4 | 10 | 12 | 14 | 16 | 4 | |
| | | 1 | 2 | 3 | 4 | | |
| | | Impact | | | | | |

Each score was associated with a qualitative degree of risk ranking from Negligible (a score between 1 and 4) to Very High (a score between 14.1 and 16). As described below in *Table 4-7*

**Table 4-7**
**Degree of Risk Scores**

| Degree of Risk | Values |
|---|---|
| Very High | 14.1-16 |
| High | 12.1-14 |
| Substantial | 10.1-12 |
| Moderate | 8.1-10 |
| Possible | 6.1-8 |
| Slight | 4.1-6 |
| Negligible | 1-4 |

### 4.4.3 RESULTS

As discussed above, each participating also ranked hazards for its own area. *Table 4-8* summarizes the number of times a ranking of very high, high, substantial, moderate, possible, and slight was assigned by a participating jurisdiction based on the numerical ratings that each jurisdiction assigned each hazard. The results indicate the following general patterns:

- The only hazards to receive any very high-risk rankings were drought and water shortage, earthquake, epidemic, pandemic, sea level rise, and severe winter storms.
- Drought and water shortage followed by wildfire were the most commonly ranked as high risk. 50% of participating jurisdictions ranked drought as high risk.
- Earthquake, followed by utility interruption, and localized stormwater flooding were the most commonly ranked as substantial risk hazards. 67% of participating jurisdictions ranked earthquake as a substantial risk.

- Flash flood was the most commonly ranked moderate risk hazard, followed by terrorism and then, cyber-attack, hazardous materials incident, and riverine flooding.
- Extreme cold and freeze, extreme heat, and mass migration were the most commonly ranked as a possible risk.
- Extreme cold and freeze, mass migration, and slope failure were the most commonly ranked as slight risks. Levee failure was the most commonly unranked hazard.

**Table 4-8**
**Number of Participating Jurisdiction Assigning a Given Ranking to a Hazard**

| Hazard | Number of Jurisdictions Assigning Ranking to Hazard | | | | | | |
|---|---|---|---|---|---|---|---|
| | Very High | High | Substantial | Moderate | Possible | Slight | Unranked/ Negligible |
| Agricultural Emergencies | 0 | 2 | 5 | 2 | 0 | 3 | 6 |
| Coastal Erosion | 0 | 3 | 4 | 4 | 0 | 1 | 6 |
| Coastal Flooding | 0 | 2 | 4 | 2 | 4 | 0 | 6 |
| Cyber-Attack | 0 | 5 | 4 | 7 | 2 | 0 | 0 |
| Dam Failure | 0 | 0 | 1 | 4 | 5 | 2 | 6 |
| Drought & Water Shortage | 1 | 9 | 5 | 0 | 1 | 1 | 1 |
| Earthquake | 1 | 3 | 12 | 2 | 0 | 0 | 0 |
| Epidemic | 1 | 4 | 6 | 5 | 1 | 1 | 0 |
| Extreme Cold & Freeze | 0 | 0 | 1 | 3 | 7 | 4 | 3 |
| Extreme Heat | 0 | 0 | 2 | 6 | 7 | 0 | 3 |
| Flash Flood | 0 | 0 | 3 | 9 | 3 | 1 | 2 |
| Hazardous Materials Incident | 0 | 1 | 4 | 7 | 5 | 1 | 0 |
| Invasive Species | 0 | 0 | 2 | 6 | 3 | 3 | 4 |
| Levee Failure | 0 | 0 | 2 | 1 | 3 | 4 | 8 |
| Localized Stormwater Flooding | 0 | 0 | 7 | 6 | 4 | 1 | 0 |
| Mass Migration | 0 | 0 | 1 | 0 | 7 | 4 | 6 |
| Pandemic | 1 | 5 | 7 | 1 | 3 | 1 | 0 |
| Riverine Flooding | 0 | 0 | 3 | 7 | 5 | 2 | 1 |
| Sea Level Rise | 1 | 4 | 4 | 1 | 1 | 1 | 6 |
| Severe Winter Storms | 1 | 2 | 4 | 6 | 3 | 1 | 1 |
| Slope Failure | 0 | 0 | 4 | 5 | 4 | 4 | 0 |
| Targeted Violence | 0 | 0 | 3 | 6 | 5 | 2 | 0 |
| Terrorism | 0 | 1 | 2 | 8 | 3 | 3 | 0 |
| Tsunami | 0 | 3 | 2 | 4 | 2 | 0 | 0 |
| Utility Interruption/ PSPS | 0 | 3 | 8 | 6 | 1 | 0 | 0 |
| Water Contamination | 0 | 2 | 5 | 6 | 3 | 1 | 0 |
| Wildfire | 0 | 7 | 2 | 3 | 2 | 2 | 0 |
| Windstorms | 0 | 2 | 6 | 4 | 4 | 1 | 0 |

Specific jurisdictional results are included in **Volume 2** of this Plan. Based on the jurisdictional results and the methodology described above, a countywide Threat Hazard Identification Risk Assessment matrix was created. *Table 4-9* summarizes the results of the countywide THIRA.

**Table 4-9**
**Countywide Threat Hazard Identification Risk Assessment (THIRA)**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 2.6 | 2.1 | 2.2 | 2.3 | 9.1 | Moderate |
| Coastal Erosion | 2.5 | 1.9 | 1.8 | 1.8 | 8.0 | Moderate |
| Coastal Flooding | 2.6 | 1.8 | 1.9 | 1.9 | 8.2 | Moderate |
| Cyber-Attack | 2.3 | 2.6 | 2.7 | 2.9 | 10.5 | Substantial |
| Dam Failure | 2.7 | 1.2 | 1.2 | 1.8 | 6.9 | Possible |
| Drought & Water Shortage | 3.1 | 3.0 | 3.0 | 3.1 | 12.3 | High |
| Earthquake | 2.9 | 2.9 | 3.1 | 3.1 | 11.9 | Substantial |
| Epidemic | 2.6 | 2.5 | 2.8 | 2.7 | 10.7 | Substantial |
| Extreme Cold & Freeze | 2.0 | 1.6 | 1.6 | 1.6 | 6.7 | Possible |
| Extreme Heat | 2.8 | 2.0 | 1.7 | 1.8 | 8.2 | Moderate |
| Flash Flood | 2.4 | 1.9 | 2.0 | 2.1 | 8.4 | Moderate |
| Hazardous Materials Incident | 1.8 | 2.4 | 2.5 | 2.5 | 9.2 | Moderate |
| Invasive Species | 2.5 | 1.7 | 1.7 | 1.7 | 7.7 | Possible |
| Levee Failure | 2.4 | 1.2 | 1.0 | 1.4 | 6.1 | Possible |
| Localized Stormwater Flooding | 2.8 | 2.6 | 2.4 | 2.4 | 10.2 | Substantial |
| Mass Migration | 2.0 | 1.4 | 1.4 | 1.4 | 6.3 | Possible |
| Pandemic | 2.9 | 2.5 | 2.9 | 2.9 | 11.2 | Substantial |
| Riverine Flooding | 2.3 | 2.1 | 2.1 | 2.1 | 8.6 | Moderate |
| Sea Level Rise | 2.6 | 1.9 | 2.1 | 2.0 | 8.6 | Moderate |
| Severe Winter Storms | 2.7 | 2.5 | 2.5 | 2.5 | 10.1 | Substantial |
| Slope Failure | 2.5 | 1.9 | 2.0 | 2.0 | 8.5 | Moderate |
| Targeted Violence | 1.8 | 1.9 | 2.1 | 2.2 | 7.9 | Possible |
| Terrorism | 1.8 | 1.6 | 2.1 | 2.1 | 7.5 | Possible |
| Tsunami | 2.1 | 1.2 | 1.4 | 1.4 | 6.1 | Possible |
| Utility Interruption/ PSPS | 2.4 | 2.7 | 2.5 | 2.6 | 10.2 | Substantial |
| Water Contamination | 2.6 | 2.0 | 2.5 | 2.5 | 9.6 | Moderate |
| Wildfire | 3.2 | 2.4 | 2.6 | 2.6 | 10.8 | Substantial |
| Windstorms | 2.3 | 2.4 | 2.3 | 2.3 | 9.3 | Moderate |

Based on the THIRA results, *Table 4-10* shows the hazard ranking for all hazard considered in the plan update.

**Table 4-10**
**Countywide Hazard Risk Ranking**

| Ranking | Hazard | Total | Degree of Risk |
|---|---|---|---|
| **1** | Drought & Water Shortage | 12.3 | High |
| **2** | Earthquake | 11.9 | Substantial |
| **3** | Pandemic | 11.2 | Substantial |
| **4** | Wildfire | 10.8 | Substantial |
| **5** | Epidemic | 10.7 | Substantial |
| **6** | Cyber-Attack | 10.5 | Substantial |
| **7** | Utility Interruption/ PSPS | 10.2 | Substantial |
| **8** | Localized Stormwater Flooding | 10.2 | Substantial |
| **9** | Severe Winter Storms | 10.1 | Substantial |
| **10** | Water Contamination | 9.6 | Moderate |
| **11** | Windstorms | 9.3 | Moderate |
| **12** | Hazardous Materials Incident | 9.2 | Moderate |
| **13** | Agricultural Emergencies | 9.1 | Moderate |
| **14** | Riverine Flooding | 8.6 | Moderate |
| **15** | Sea Level Rise | 8.6 | Moderate |
| **16** | Slope Failure | 8.5 | Moderate |
| **17** | Flash Flood | 8.4 | Moderate |
| **18** | Extreme Heat | 8.2 | Moderate |
| **19** | Coastal Flooding | 8.2 | Moderate |
| **20** | Coastal Erosion | 8.0 | Moderate |
| **21** | Targeted Violence | 7.9 | Possible |
| **22** | Invasive Species | 7.7 | Possible |
| **23** | Terrorism | 7.5 | Possible |
| **24** | Dam Failure | 6.9 | Possible |
| **25** | Extreme Cold & Freeze | 6.7 | Possible |
| **26** | Mass Migration | 6.3 | Possible |
| **27** | Tsunami | 6.1 | Possible |
| **28** | Levee Failure | 6.1 | Possible |

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# 5. AGRICULTURAL EMERGENCIES

## 5.1 OVERVIEW

Agriculture is the backbone of Monterey County's economy. Agriculture has always been an integral part of the County and has continually grown and changed along with the County. The soils and climate in the region make the County an ideal area to sustain a wide variety of agricultural endeavors. Agriculture in Monterey County is a mosaic of farmland intermingled with other uses in a rural setting. This land provides marketable products, open space, wildlife habitat, watershed benefits, and an aesthetic environment.

For purposes of this plan, an agricultural emergency is any type of unintentional event that threatens human health and the economic stability of the agricultural industry in Monterey County. This primarily includes any event or threat that has the ability to cause widespread losses of crops, livestock, and farm property. Agricultural losses occur on an annual basis and are usually associated with severe weather events, heavy rains, floods, heat, freeze, drought, fires, crop and livestock disease, insects, and noxious weeds.

### 5.1.1 NATURAL DISASTERS & SEVERE WEATHER

According to the US Department of Agriculture (USDA), every year natural disasters, such as droughts, earthquakes, extreme heat and cold, floods, fires, earthquakes, hail, landslides, and tornadoes, challenge agricultural production. Because agriculture relies on the weather, climate, and water availability to thrive, it is easily impacted by natural events and disasters. Agricultural impacts from natural events and disasters most commonly include contamination of water bodies, loss of harvest or livestock, increased susceptibility to disease, and destruction

of irrigation systems and other agricultural infrastructure. These impacts can have long lasting effects on agricultural production including crops, forest growth, and arable lands, which require time to mature. These types of events may also include accidental threats related to the release of hazardous materials and/or explosive hazards, which can not only cause agricultural losses but also directly affect human health.

More in-depth risk assessments for *Drought* (**Section 8**), *Flooding* (**Section 10**), *Hazardous (***Section 11**), *Severe Weather*(**Section 14**), and *Wildfire*(**Section 18**) are included in this plan. As they all pose a potential agricultural hazard they are discussed briefly in this section.

### 5.1.2 PESTS, WEEDS, AND DISEASES

Pest and diseases are a critical threat due to their potential to cause economic and human health disasters. The Monterey County Office of the Agricultural Commissioner has active programs in place to monitor, detect, quarantine, eradicate, and manage pest and disease threats to Monterey County's agricultural sector.

Insect pest hazards can have a major economic impact on farmers, farm workers, packers, and shippers of agricultural products. They can also cause significant increases in food prices for consumers due to shortages. The primary pests of concern include:

- Mediterranean Fruit Fly
- Glassy-Winged Sharpshooter
- Gypsy Moth
- Asian Citrus Psyllid
- Oriental Fruit Fly
- Melon Fruit Fly
- Japanese Beetle
- Mexican Fruit Fly
- Light Brown Apple Moth
- European Grapevine Moth

These pests have a wide host range and are difficult and costly to manage once established.

Noxious weeds, defined as any plant that is liable to be troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, are also of concern. Weeds of concern in Monterey County include:

- Fertile Capeweed
- French Broom
- Cape Ivy
- Arundo
- Pampas Grass
- Purple Pampas Grass
- Sticky Eupatorium
- Yellowstar-thistle
- Veldt Grass
- Taurian Thistle
- Puna Grass
- Skeletonweed
- Scotch Thistle

The rich soils and moderate climate of Monterey County make it an ideal place for invasive weed species to colonize. Invasive weeds are generally able to out-compete local native plant species for water and space because they are more prolific, have more vigorous growth, and

lack predators that would otherwise help to keep them in check. They degrade habitat for other wildlife, domestic animals, recreation, and other land use activities. The agricultural industry is particularly affected by weeds.

Noxious weeds have been introduced in Monterey County by a variety of means. An absence of natural controls, combined with the aggressive growth characteristics and unpalatability of many of these weeds, allows these weeds to dominate and replace more desirable native vegetation. Negative effects of weeds include the following:

- Loss of wildlife habitat and reduced wildlife numbers
- Loss of native plant species
- Reduced livestock grazing capacity
- Increased soil erosion and topsoil loss
- Diminished water quality and fish habitat
- Reduced cropland and farmland production
- Reduced land value and sale potential

The consequences of agricultural disasters to the County include ruined plant crops, dead livestock, ruined feed and agricultural equipment, monetary loss, job loss, and possible multi-year effects (i.e., trees might not produce if damaged, loss of markets, food shortages, increased prices, possible spread of disease to people, and loss or contamination of animal products). When these hazards cause a mass die-off of livestock, other issues occur that include the disposal of animals, depopulation of affected herds, decontamination, and resource problems. In addition, insect pests and diseases such as bark beetles, Sudden Oak Death, and Pitch Canker in trees can destroy large expanses of forest and woodland, increasing the fuel load and contributing to greater fire risk. Overall, any type of severe agricultural disaster can have significant economic impacts on both the agricultural community and the entire County.

## 5.2 HAZARD PROFILE

### 5.2.1 HISTORY

Monterey County has experienced numerous agricultural-related disasters of varying magnitudes. The County received Presidential Major Disaster Declarations for severe freezing and crop damages in 2007, 1999, and 1991, and for a severe drought emergency in 1977. Major agricultural losses have also occurred following many of the other presidentially declared major disasters for Monterey County. For instance, it is estimated that the 1995 flood disaster resulted in $240 million in losses to crop production in the Salinas Valley.

Over the past 10 years, the US Department of Agriculture has declared 27 agricultural disasters in Monterey County, which are listed in *Table 5-1*. USDA Disaster Declarations make emergency loan assistance available to eligible family farmers to cover physical and production losses.

**Table 5-1**
**USDA Agricultural Disaster Designations in Monterey County (2012-2021)**

| Designation Number | Disaster Type | Crop Disaster Year |
|---|---|---|
| S4916 | Drought | 2021 |
| S4467 | Drought | 2019 |
| S4656 | Excessive Rain | 2019 |
| S4657 | Excessive Rain and Hail | 2019 |
| S4350 | Freeze | 2018 |
| S4460 | Drought | 2018 |
| S4144 | Drought | 2017 |
| S4163 | Drought | 2017 |
| S3952 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2016 |
| S4003 | Rain and Wind | 2016 |
| S4164 | Severe Weather, Excessive Rainfall and High Winds | 2016 |
| S3784 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2015 |
| S3943 | Drought | 2015 |
| S3626 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2014 |
| S3637 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2014 |
| S3626 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2014 |
| S3637 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2014 |
| S3743 | Drought | 2014 |
| S3491 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3497 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3504 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3547 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3569 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3268 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2012 |
| S3320 | Hailstorm, Rain, and Cold Temperatures | 2012 |
| S3379 | Drought | 2012 |
| S3452 | Drought | 2012 |

Source: United States Department of Agriculture (USDA), Disaster Designation Information

The most common cause of these disasters over the past several years have been, in order of frequency: drought, high winds, excessive heat, wildland fire, insects, excessive rain, and freezing temperatures. There has been an estimated $15.3 million in crop damages for Monterey County since 1996. Approximately $7 million is associated with severe freezing temperatures in 2007, about $7 million was attributed to wildfire events, and nearly $2 million to flood events.

The impact of the COVID-19 pandemic on California agricultural businesses was severe, unprecedented, and will continue to affect the industry for the coming years. Impacts occurred across four main sectors: consumer demand (retail, export, and food service), agricultural supply chain (transportation, packing, storage), producers (crops, dairy, nursery, and meat), and input suppliers (workers, crop protection, materials).

The Monterey County Agricultural Commissioner's Office conducted a survey of agricultural producers, which indicated significant losses particularly among growers providing fresh produce to the foodservice sector. The closing of schools and the cancellation of most conferences and travel resulted in the cancellation of contracts for fresh produce. Approximately 20% of County growers responded to the survey and of those responding to the survey, 38% reported losses. A total of 2,093 acres were reported as a loss or not planted. [12] Additionally, Agriculture work sites, shared worker housing, congested housing, and shared worker transportation vehicles presented unique challenges for preventing the spread of COVID-19.

The wildfires of 2020 presented yet another set of emergencies for Monterey County agriculture. The wildfire smoke created a hazard for farmworkers. Prior to the wildfires, the Agricultural Commissioner's Office had started distributing N95 respirators to pesticide applicators. When the first wildfire struck, the N95 respirators were redirected to protect farmworkers from the wildfire smoke. The losses from the 2020 wildfires occurred primarily to wine grapes and strawberries and were estimated at $74,586,292.[1]

**Mitigation Success Story**
**Mitigating the Impact of the COVID-19 Pandemic to Farmworkers**

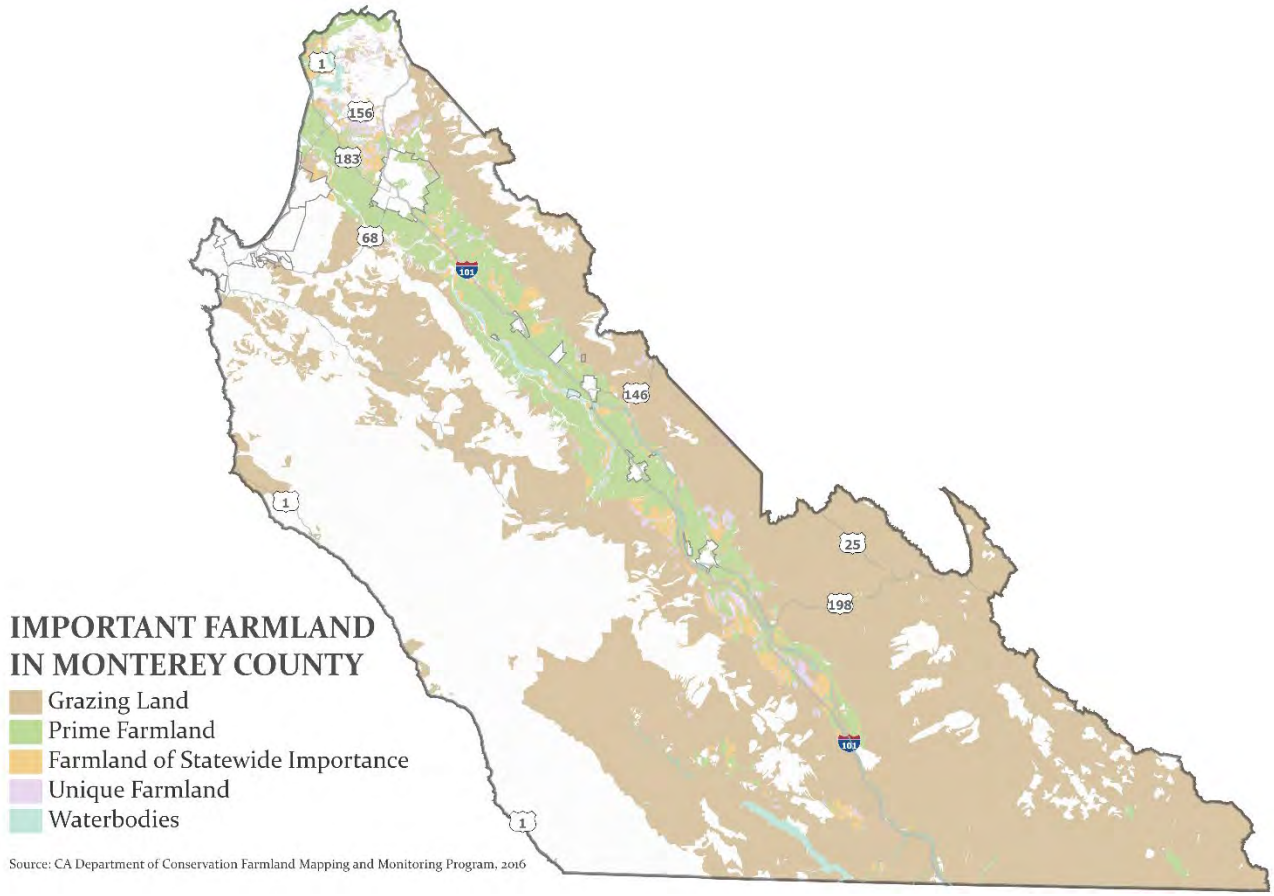
Staff from the Agricultural Commissioner's Office worked to distribute surgical masks face coverings, and other protective equipment directly to farmworkers and through community-based organizations, growers, and farm labor contractors. The Ag Commissioner's Office distributed thousands of COVID-19 informational cards to farmworkers. The Spanish language wallet-sized cards listed symptoms of COVID-19, along with information about where farmworkers could receive free medical attention, food, and childcare. They also partnered with several community groups to create a public service announcement in Spanish and Mixtec, speaking directly to farmworkers about the actions they could take to protect themselves, their families, and the community from COVID-19. Isolation housing was provided to those farmworkers either diagnosed or exposed to COVID-19 through a unique grower-led program which ultimately became the model for the state's program implemented much later in the pandemic, called Housing for Harvest.

[12] Monterey County Ag Community Shows Resilience, Henry S. Gonzales, Monterey County Agricultural Commissioner, April 24, 2021

### 5.2.1 LOCATION

Agricultural hazards occur throughout the County where lands are used for farming and grazing. The County has large swaths of agricultural lands. According to the California Department of Conservation's Farmland Mapping and Monitoring Program (FMPP), the County has about 165,000 acres of prime farmland, 44,500 acres of farmland of statewide importance, 26,500 acres of unique farmland, and over 1 million acres of grazing land. The map below shows the locations of valuable farmland in the County.

**Figure 5-1**
**Important Farmland in Monterey County**




While most agricultural land is located in the unincorporated County and cities may not be directly affected, they are indirectly affected economically when agricultural losses occur.

### 5.2.2 FREQUENCY

Agriculture in the County is at risk to many hazards: insects, weeds, wildfire, severe weather, as well as downturns in commodity prices. Each of these has a different likelihood, duration, and speed of onset. Some, such as freeze, can have a short onset and a short duration. Drought can have a long onset and long duration. Insects and weeds can have short or long onset, and short or long durations.

All agricultural losses can have a significant impact on affected communities. As long as severe weather events, insects, and weeds continue to be an ongoing concern, the potential for annual agricultural losses remains.

### 5.2.3 SEVERITY

The potential severity of agricultural emergencies in Monterey County can perhaps best be quantified by the exposure of production value. Crop values vary from year to year based on production, market, and weather conditions, but according to the Economic Contributions of Monterey County Agriculture Report the economic contribution of Monterey County agriculture is about $11.7 billion annually. This consists of $7.4 billion in combined, direct output from production and processing, plus $4.3 billion in multiplier effects. Nearly one out of every five jobs in the County are related to agriculture which supports 57,503 jobs directly and an additional 6,417 jobs indirectly. [13]

Crops grown in Monterey County supply large percentages of total national pounds produced each year: 61% of leaf lettuce, 57% of celery, 56% of head lettuce, 48% of broccoli, 38% of spinach, 30% of cauliflower, 28% of strawberries, and 3.6% of wine grapes. [14] Therefore, a significant agricultural hazard has the potential to severely affect the economy of the entire County and could have widespread effects on food availability in the rest of the Country.

### 5.2.4 WARNING TIME

Identifying the presence of insects and pests in agricultural lands is the most important step in warning for an agriculture disaster. Once identified, preventing the insects and pests from establishing a population is critical. Communication between farmers to warn each other of the presence of invasive pests and insects so that appropriate measures can be taken to prevent them from establishing a population and negatively impacting crops.

## 5.3 SECONDARY HAZARDS

The most significant secondary hazard associated with an agriculture disaster is wildfire. Severe infestation of pests and disease in agricultural lands can cause crops to die, creating increased fuel for wildfire. Agricultural lands are open areas with a mix of grasses, shrubs, trees, and crops that, if dried out or dead, could easily ignite and either start or contribute to a wildfire.

Additionally, Ample scientific evidence shows that crops, orchards, grasslands, and other agricultural areas can help protect people and property from wildfires. Agricultural belts around urban areas are especially helpful, where they reduce the fuel load, disrupt advancing fires, and facilitate firefighting efforts. For more information on wildfire risk in Monterey County, refer to **Section 18**, *Wildfire*.

[13] Monterey County Agricultural Commissioner, 2020, Economic Contributions of Monterey County Agriculture
[14] Monterey County Farm Bureau

## 5.4 RISK ASSESSMENT

### 5.4.1 POPULATION

Agricultural disasters pose a serious threat to the local economy and populations directly employed by the agriculture industry. An agricultural disaster has the potential to greatly impact the Monterey County economy, people employed in the agriculture industry, and their families. As noted previously, nearly one out of every five jobs in the County are related to agriculture which supports 57,503 jobs directly and an additional 6,417 jobs indirectly, [15] therefore agricultural emergencies can have a deep impact on the population of Monterey County if it leads to a reduction in jobs.

An agriculture disaster can also pose a threat to human health. Mosquitos carry harmful disease and can transmit diseases to the population. The Africanized honeybee also presents a threat to the population, not because of their sting but because of their aggressive response to a disturbance. The Africanized honeybee will swarm and attach for long periods in the event of a disturbance to their nests.

### 5.4.2 PROPERTY

All agricultural crops are threatened by and exposed to severe weather events, heavy rains, floods, heat, freeze, drought, fires, crop and livestock disease, insects, and noxious weeds.

*Table 5-2* summarizes gross production value of key crop types in Monterey County in 2020 and 2019 as a proxy for crop value threatened by hazards in the County.

**Table 5-2**
**Gross Production Value of Crops in Monterey County**

| Category | 2020 | 2019 |
|---|---|---|
| Vegetable Crops | $2,524,608,000 | $3,099,088,000 |
| Fruits & Nuts | $1,124,737,000 | $1,028,146,000 |
| Livestock & Poultry | $110,891,000 | $110,580,000 |
| Nursery Crops | $119,836,000 | $143,979,000 |
| Field Crops | $25,481,000 | $24,554,000 |
| Seed Crops & Apiary | $4,582,000 | $3,645,000 |
| **Total** | $3,910,135,000 | $4,409,992,000 |

Source: Monterey County Agricultural Commissioner

*Table 5-2* also demonstrates the impact of the COVID-19 pandemic and 2020 wildfires on crop production. Major increases and decreases in crop production for 2020 include:

[15] Monterey County Agricultural Commissioner, 2020, Economic Contributions of Monterey County Agriculture

- Vegetable Crops saw a decrease in value of $574,480,000 to $2,524,608,000.
- Fruit and Nut Crops saw an increase of $96,591,000 to $1,124,737,000. (The Fruits and Nuts category without including Wine Grapes values, saw an increase of $176,696,000 or nearly 21%, to $1,018,746,000 due in part to the increase in value of strawberries.)
- Wine Grapes saw a significant decrease of 43% or $80,105,000 to reach a total for red and white varietals of $105,991,000 partly due to effects of wildfires, the COVID-19 pandemic, a decrease in production and average price per ton.
- Nursery Crops suffered a decrease of 16.8% or $24,143,000 due to reduced acreage, production, and prices once again favoring an increase in imports and demand for cannabis greenhouse production

All agricultural land is threatened by and exposed to severe weather events, heavy rains, floods, heat, freeze, drought, fires, crop and livestock disease, insects, and noxious weeds.

*Table 5-3* summarizes the number of acres and value of important agricultural land by type.

**Table 5-3**
**Value of Agricultural Land in Monterey County**

| Supervisorial District | Prime Farmland | | Farmland of Statewide Importance | |
|---|---|---|---|---|
| | Acres | Value | Acres | Value |
| District 1 | 491 | $70,953,097 | 5 | $1,768,087 |
| District 2 | 19,181 | $804,422,513 | 8,741 | $635,499,149 |
| District 3 | 127,881 | $3,516,483,171 | 33,727 | $1,876,893,765 |
| District 4 | 13,635 | $381,699,801 | 1,382 | $189,266,984 |
| District 5 | 4,297 | $230,007,594 | 649 | $86,547,025 |
| **Total** | **165,485** | **$5,003,566,176** | **44,505** | **$2,789,975,010** |
| **Supervisorial District** | **Unique Farmland** | | **Grazing Land** | |
| | **Acres** | **Value** | **Acres** | **Value** |
| District 1 | 24 | $51,485,685 | 0 | $0 |
| District 2 | 8,163 | $714,501,131 | 21,829 | $463,542,869 |
| District 3 | 16,995 | $2,212,880,829 | 937,186 | $3,319,092,070 |
| District 4 | 244 | $170,856,593 | 8,417 | $169,830,424 |
| District 5 | 927 | $162,943,833 | 96,117 | $2,630,183,802 |
| **Total** | **26,353** | **$3,312,668,071** | **1,063,549** | **$6,582,649,165** |

Agricultural land value exposed to wildfire and flood risk was assessed for this plan. Agricultural land exposed wildfire risk was assessed using CAL FIRE Fire Hazard Severity Zones.

*Table 5-4* summarizes acres and values of Prime Farmland in Fire Hazard Severity Zones.

**Table 5-4**
**Prime Farmland Exposed to Wildfire Risk by Fire Hazard Severity Zone**

| Supervisorial District | Very High | | High | | Moderate | |
|---|---|---|---|---|---|---|
| | Acres | Value | Acres | Value | Acres | Value |
| District 1 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 2 | 14 | $12,577,575 | 191 | $43,685,766 | 481 | $66,884,478 |
| District 3 | 315 | $91,087,807 | 3455 | $337,096,616 | 15,763 | $903,926,268 |
| District 4 | 2 | $1,120,394 | 0 | $0 | 0 | $0 |
| District 5 | 43 | $47,386,924 | 250 | $35,805,582 | 741 | $33,058,223 |
| **Total** | 375 | $152,172,700 | 3,896 | $416,587,964 | 16,985 | $1,003,868,969 |

*Table 5-5* summarizes acres and values of Farmland of Statewide Importance in Fire Hazard Severity Zones.

**Table 5-5**
**Farmland of Statewide Importance Exposed to Wildfire Risk by Fire Hazard Severity Zone**

| Supervisorial District | Very High | | High | | Moderate | |
|---|---|---|---|---|---|---|
| | Acres | Value | Acres | Value | Acres | Value |
| District 1 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 2 | 16 | $2,781,112 | 459 | $70,633,137 | 304 | $79,151,933 |
| District 3 | 3 | $9,242,779 | 1,285 | $234,072,137 | 9,340 | $384,329,143 |
| District 4 | 0 | $1,210,897 | 0 | $0 | 0 | $0 |
| District 5 | 17 | $25,691,776 | 218 | $6,278,334 | 8 | $6,278,334 |
| **Total** | 37 | $38,926,564 | 1,963 | $310,983,608 | 9,652 | $469,759,410 |

*Table 5-6* summarizes acres and values of Unique Farmland in Fire Hazard Severity Zones.

**Table 5-6**
**Unique Farmland Exposed to Wildfire Risk by Fire Hazard Severity Zone**

| Supervisorial District | Very High | | High | | Moderate | |
|---|---|---|---|---|---|---|
| | Acres | Value | Acres | Value | Acres | Value |
| District 1 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 2 | 53 | $13,722,249 | 1,267 | $152,429,770 | 787 | $83,181,508 |
| District 3 | 203 | $89,991,097 | 3,571 | $432,711,859 | 6,003 | $617,457,668 |
| District 4 | 2 | $2,511,838 | 0 | $0 | 0 | $0 |
| District 5 | 100 | $26,134,030 | 174 | $58,265,936 | 444 | $27,945,919 |
| **Total** | 358 | $132,359,214 | 5,012 | $643,407,565 | 7,234 | $728,585,095 |

*Table 5-7* summarizes acres and values of Grazing Land in Fire Hazard Severity Zones.

**Table 5-7**
**Grazing Land Exposed to Wildfire Risk by Fire Hazard Severity Zone**

| Supervisorial District | Very High | | High | | Moderate | |
|---|---|---|---|---|---|---|
| | Acres | Value | Acres | Value | Acres | Value |
| District 1 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 2 | 9,760 | $51,763,441 | 7,053 | $146,479,709 | 2,488 | $69,632,969 |
| District 3 | 103,883 | $354,760,669 | 547,587 | $1,444,195,814 | 131,137 | $1,258,200,102 |
| District 4 | 182 | $5,416,285 | 0 | $0 | 0 | $0 |
| District 5 | 35,477 | $1,777,052,329 | 57,070 | $1,172,818,716 | 2,652 | $50,503,125 |
| **Total** | 149,301 | $2,188,992,724 | 611,710 | $2,763,494,239 | 136,277 | $1,378,336,196 |

Agricultural land exposed flood risk was assessed using the FEMA 100-year floodplain. *Table 5-8* summarizes acres and values of Prime Farmland in the 100-year floodplain.

**Table 5-8**
**Prime Farmland Exposed to Flood Hazard Risk**

| Supervisorial District | 100-Year Floodplain | |
|---|---|---|
| | Acres | Value |
| District 1 | 421 | $9,816,487 |
| District 2 | 7,102 | $408,922,260 |
| District 3 | 20,507 | $1,317,258,937 |
| District 4 | 7,121 | $269,820,865 |
| District 5 | 2,290 | $104,670,375 |
| **Total** | 37,441 | $2,110,488,924 |

*Table 5-9* summarizes acres and values of Farmland of Statewide Importance in the 100-year floodplain.

**Table 5-9**
**Farmland of Statewide Importance Exposed to Flood Hazard Risk**

| Supervisorial District | 100-Year Floodplain | |
|---|---|---|
| | Acres | Value |
| District 1 | 0 | $0 |
| District 2 | 320 | $158,964,554 |
| District 3 | 28,707 | $811,603,587 |
| District 4 | 2,457 | $141,858,306 |
| District 5 | 669 | $49,773,190 |
| **Total** | 32,152 | $1,162,199,637 |

*Table 5-10* summarizes acres and values of Unique Farmland in the 100-year floodplain.

**Table-10**
**Unique Farmland Exposed to Flood Hazard Risk**

| Supervisorial District | 100-Year Floodplain | |
|---|---|---|
| | Acres | Value |
| District 1 | 4 | $6,466,951 |
| District 2 | 1,514 | $294,890,372 |
| District 3 | 2,467 | $729,573,350 |
| District 4 | 181 | $106,480,197 |
| District 5 | 195 | $62,998,558 |
| **Total** | 4,362 | $1,200,409,428 |

*Table 5-11* summarizes acres and values of Grazing Land in the 100-year floodplain.

**Table 5-11**
**Grazing Land Exposed to Flood Hazard Risk**

| Supervisorial District | 100-Year Floodplain | |
|---|---|---|
| | Acres | Value |
| District 1 | 0 | $0 |
| District 2 | 1,126 | $161,714,843 |
| District 3 | 39,624 | $1,145,728,172 |
| District 4 | 229 | $40,332,494 |
| District 5 | 1,215 | $190,067,361 |
| **Total** | 42,193 | $1,537,842,870 |

### 5.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

Critical facilities, as defined in this plan, will not be affected by an agriculture disaster.

### 5.4.4 ENVIRONMENT

Agricultural lands in Monterey County provide a wide variety of ecosystem services that could be threatened by an agricultural hazard including:

- Wildlife Habitat: Providing food, water, shelter, and space to support resident and transient wildlife, especially through riparian areas and perennial vegetation.
- Soil Structure, Formation and Fertility: Sustaining healthy soils, the foundation of all life, by managing them in ways that not only support plant growth, but also reduce erosion, prevent landslides, suppress pathogens, sequester carbon, and purify water.
- Water Cycling: Maintaining or improving soil moisture and water storage, while minimizing runoff, through cover crops, tillage, residue management, and dozens of related practices.

- Pest Control: Controlling pests and weeds through many management practices that support their natural enemies, such as raptors, beneficial insects, and other wildlife.
- Pollination Services: Supporting agricultural production and healthy ecosystems by providing nesting habitat and floral resources for wild pollinators.
- Nutrient Cycling: Managing plant nutrients and soil in ways that help store, transform, and cycle important nutrients in the soil, such as carbon, nitrogen, and phosphorus.
- Biodiversity Conservation: Promoting ecosystem productivity, beauty, pest control, and other benefits by managing on-farm streams, trees, shrubs, wetlands, and cropped areas in ways that support diverse plants and animals.
- Atmospheric Gas & Climate Regulation: Reducing greenhouse gas levels through practices that make farm operations more energy efficient, and by building capacity to store carbon.
- Water Quality: Improving and protecting water quality through vegetative buffers, stream bank protection, prescribed grazing, grassed waterways, and other management practices.
- Wildfire Protection: Crops, orchards, grasslands, and other agricultural areas can help protect people and property from wildfires.

While calculating the true value of ecosystem services is quite difficult, there are some methods to try to capture this value. The 2020 Economic Contributions of Monterey County Agriculture Report estimated the value of ecosystem services provided by agricultural lands ranges from $4.7 billion to $10.9 billion, with rangelands delivering the highest value.

### 5.4.5 ECONOMIC IMPACT

As noted above, agriculture is an important pillar of the Monterey County economy with an economic contribution of about $11.7 billion annually. The agricultural industry also contributions significantly to local tax revenue. Including production and local processing, and after subtracting significant subsidies, estimate indicate agriculture's net tax contribution in the County in 2018 at $61.9 million to $122.7 million. This included excise, sales, and property taxes, as well as fees, licenses, and permits (but not income taxes).[16] Therefore, the potential economic impact associated with agricultural hazards is quite high.

Any of the hazards discussed in this chapter can deal a damaging blow to the agricultural industry. When combined, they can undermine not just an individual operation, but the entire industry. One way to reduce the economic risk to the agricultural industry is emphasize product diversification. To assess crop diversification in the County, the Monterey County Agricultural Commissioner used the Shannon-Weaver Index. Created in 1949 for military code breaking, the Shannon Weaver index is widely used by economists, ecologists, and others interested in quantifying diversity.

[16] Monterey County Agricultural Commissioner, 2020, Economic Contributions of Monterey County Agriculture

Over the past decade, Monterey County has consistently produced thirty-five major commodities. The relative contribution of individual commodities varied during the period analyzed from 0.25% of the county's total farm gate value (the minimum threshold in the analysis) to 35.4% of the county total. At first glance, Monterey County's resulting index of 0.61 seems near the middle of the 0.00 to 1.00 range. But the Shannon-Weaver formula includes a logarithmic function, which complicates interpretation. The 0.61 index is quite high compared to the twenty other California counties analyzed in the study. The index likely suggests exceptional protection from economic shocks. Validating the extent of this protection would require more detailed analysis, but these preliminary results indicate that Monterey County agricultural production is both diverse and well distributed across types.[5]

## 5.5 FUTURE TRENDS IN DEVELOPMENT

Possible future strategies to address influences on insect pests and diseases might include:

- Inventory and monitor invasive species that threaten crops
- Downscale climate change data to allow informed decisions on biodiversity planning by farmers and rural communities
- Strengthen the dissemination of knowledge, appropriate technologies, and tools to improve management practices related to agricultural biodiversity and ecosystem services

## 5.6 ISSUES

Key issues related to agricultural emergencies in Monterey County include:

- Large amounts of agricultural land in the Salinas Valley are below sea level and could become at risk due to future sea level rise.
- In Monterey County, water supply is extremely limited during non-drought years. As such, droughts are a serious threat in the County and could have devastating impacts on the agricultural industry, a major economic driver and job provider.
- The agricultural industry is a major driver of the local economy and any major impacts to it, could have a major effect on the community.
- Much of the agricultural water supply in Monterey County is susceptible to seawater intrusion.

# 6. COASTAL EROSION

## 6.1 OVERVIEW

Coastal erosion refers to the natural geological process resulting in loss of sand, sediment, vegetation, or soil on beaches, dunes, bluffs, or cliffs along the coast. It is a natural process, caused by waves, winds, tides, storms, and the movement of tectonic plates, but its effects can be exacerbated by human activity. Coastal erosion takes place both gradually over decades, caused by multiyear impacts and long-term climatic change such as sea level rise, lack of sediment supply, subsidence, or long-term human factors such as the construction of shore protection structures and dams, and rapidly, as with landslides or severe storms. Coastal erosion processes are complex and depend on a number of factors such as geologic formation, groundwater seepage, and exposure to wave energy. The Monterey County coastline is variable in terms of geologic composition and exposure to high tides, wave energy and related erosion. Sections of the coast exhibit a variety of backshore landforms including wide sand and cobble beaches backed by cliffs, sandy beaches backed by sand dunes, secluded and undeveloped pocket beaches, rocky intertidal areas, rocky bluffs, loosely consolidated bluffs, and large sea cliffs. Due to these various backshore types along the shoreline, erosion characteristics also vary significantly.

### *Chronic Versus Episodic Erosion*

Coastal erosion is measured as the rate of change in the position or horizontal displacement of a shoreline over a period of time. Coastal erosion is classified as either episodic or chronic. Episodic erosion consists of the shore and backshore adjustment that results from short duration, high intensity meteorological and oceanic storm events. This type of event response

results in shore adjustment and happens during a single storm or during a series of closely spaced storm events within a storm season. Chronic erosion is associated with slow, gradual shoreline adjustment associated with sea-level rise, land subsidence, changes in sediment supply which result from watershed modifications or dam building, and decadal adjustments in rainfall and runoff associated with climate change.

Human alteration of the shoreline can influence long and short-term erosion rates. One of the major causes of beach erosion is the construction of dams and other structures along creeks and rivers that trap sediment and prevent it from reaching the ocean. This deprives the shoreline of the material that would replenish beach sand supplies. Coastal structures such as groins, jetties, seawalls, and breakwaters can also cause increased erosion. Shoreline structures eliminate the natural wave run-up and sand deposition processes and can increase reflected wave action and currents at the waterline. The increased wave action can cause localized scour both in front of and behind structures and prevent the settlement of suspended sediment. This can result in a rapid loss of beach sand in down-current beaches. Seawalls are often used to protect sea cliffs from eroding wave action. These structures, however, can reflect wave energy to strip protective beach sand at an accelerated rate. This may ultimately result in increased sea cliff erosion rates, particularly at sections of coastline adjacent to the seawall.

### 6.1.1 SAND MINING IN MONTEREY COUNTY

On average, the coastline of southern Monterey Bay is the most erosive shore in California due to a long history of sand mining.[17] Southern Monterey Bay has a long history of sand mining operations and from 1906 to 1990, was the most intensively mined shoreline in the US.[18] As many as six sand mines, which includes the current CEMEX Lapis Plant, were active at various times over the past century in the City of Marina and City of Sand City. The CEMEX Lapis sand mine located in Marina, was the last coastal sand mine in the US, until its closure at the end of 2020. The plant produced an estimated 200,000 to 300,000 cubic yards of sand a year, enough to fill up to 30,000 dump trucks. The sand mine operated for years without permits from the state, claiming that its operations pre-date state laws such as the 1976 Coastal Act. The mine officially stopped operations on Dec. 31, 2020.

### 6.1.2 TYPES OF COASTAL EROSION

#### *Beach and Dune Erosion*

Beach and dune erosion occur through high wave run-up during high tides and increased wave energy that carry sand away from the shoreline. Beach and dune erosion may occur gradually over time as beaches naturally accrete and erode, resulting in mild changes in the shoreline and volume of sand present on the beach. Energetic coastal storms and particularly strong El Niño

[17] USGS, 2006, National Assessment of Shoreline Change, Part 3.
[18] Sand mining impacts on long-term dune erosion in southern Monterey Bay

events potentially result in the abrupt loss of large quantities of sediment and increased landward retreat of the shoreline.

*Cliffs and Bluff Erosion*

Bluff and cliff recession is the most visible aspect of coastal erosion because of the dramatic change it causes to the landscape. As a result, this aspect of coastal erosion usually receives the most attention. Coastal bluff erosion occurs in the form of irreversible landward retreat of coastal bluffs and cliffs. Historical bluff erosion has been episodic in nature with rates that vary throughout Monterey County due to the composition of coastline bluff rock formations and vulnerability to wave interaction with the cliffs.

Rising tides, currents, and waves directed at the base of the bluff cause the erosion of relatively non-resistant rock. As a bluff erodes, the top edge moves landward. This is a natural process that becomes a hazard as it threatens structures or other developed property, infrastructure, as well as recreational trails and public coastal access. The retreat of the bluffs threatens waterfront residences, businesses, and public facilities, eventually rendering them uninhabitable or unusable.

## 6.2 HAZARD PROFILE

### 6.2.1 HISTORY

Coastal erosion within Monterey County has primarily occurred during periods of intense wave action coinciding with high tides and coastal storms. El Niño events have produced large waves that have stripped volumes of sand from Monterey Bay, leaving the beaches, dunes, and cliffs exposed to high tides and wave attack.

As a result of the 1982–1983 El Niño events, approximately 20 to 40 feet of the marine terraces by Scenic Drive in Carmel fell into the sea. The 1997–1998 El Niño winter storm event, led to large amounts of dune erosion in the vicinity of Fort Ord (43-foot retreat) and the city of Marina (50-foot retreat). During both El Niño events, several extremely steep cliffs (100% slope) near Big Sur failed because of increased wave attack.

The 2017 Winter Storms resulted in a significant erosion in the Big Sur area, ultimately resulting in major infrastructure failures in Palo Colorado, Mud Creek, Paul's Slide, and Pfeiffer Canyon Bridge. Coastal erosion coupled with extreme wave action during the 2016-17 El Nino led to the exposure of M1W's land/ocean outfall junction structure. Earthquakes have also caused the Monterey cliffs to erode. The October 17, 1989, Loma Prieta Earthquake produced several isolated cliff failures throughout the County.

Some areas have seen particularly dramatic shoreline retreat. For example, At Fort Ord, a football field existed on the dune between Stillwell Hall and the ocean in 1944. After the field eroded into the ocean, rock rubble was placed in front of Stillwell Hall in 1978 and again in 1985 to stop erosion, but even after sand mining ceased, extreme recession continued to occur at

the flanks of the rubble. Up to 46 feet of recession occurred during the 1997–98 El Niño winter just to the north of Stillwell Hall. Close to 380 feet of retreat occurred over a 70-year period. The area still experiences erosion close to 6 feet per year.[19]

### *Historic Erosion Rates*

Historic average beach and dune erosion in Southern Monterey Bay (from Moss Landing to Pacific Grove) is approximately 2.6 feet a year and higher than any other region in the state. Historically, the highest dune erosion rates have occurred in the Fort Ord area (7 feet annually) and Marina (4.5 feet annually) because of wave refraction patterns that produce larger waves. Long-term historic erosion rates in this area have been variable.

Historic average erosion rates for Southern Monterey Bay are summarized in *Table 6-1.*

**Table 6-1**
**Estimated Historic Long-term Average Erosion Rates (ft/year) in Southern Monterey Bay**

| Location | Thornton et al. (2006) | | Hapke et al. (2006) | |
|---|---|---|---|---|
| | *1940-1984* | *1985-2005* | *1910-2002* | *1970-2002* |
| Moss Landing | | | +1.2 | -1.7 |
| Salinas River | | | +3.7 | 0 |
| Marina State Beach | -1.0 | -4.7 | -1.4 to -2.0 | -3.1 to -5.2 |
| Stilwell Hall (Fort Ord) | -5.2 to -6.2 | | -2.5 to -3.7 | -3.7 to -6.6 |
| Sand City | -3.9 to -6.4 | -2.7 | -1.4 | -3.7 to -6.2 |
| Monterey Beach Resort | -2.4 | -0.9 | -1.4 | -3.0 |
| Del Monte Beach | -2.0 | -0.4 | | |

Rocky cliffs and marine terraces located along Monterey Peninsula from Pacific Grove to Carmel have shown very little erosion over the past several years, with some locations which consist of granite showing virtually no change over a 50-year time span.[20] The granite cliffs around the entire Monterey Peninsula erode at rates of about 3.3 inches per year.[21] While long-term average erosion in this area is quite low, some years have seen a severe winter storm or series of storms result in 3 to 8 ft of erosion.[22]

Steep cliffs within Monterey County are located along the Big Sur coast, where the rugged Santa Lucia Mountains descend abruptly into the Pacific Ocean. Cliff retreat within this area average about 7 inches per year; however, failure rates can be much greater in weakened, fractured, or faulted areas.[23]

[19] USGS, 2006, National Assessment of Shoreline Change, Part 3.
[20] Living with the California Coast, 1985
[21] USGS, 2007, National Assessment of Shoreline Change, Part 4.
[22] Haro, Kasunich & Associates, 2016, Coastal Bluff Protection Analysis and Geotechnical Investigation for City of Pacific Grove Public Works Department.
[23] USGS, 2004, Map Showing Coastal Cliff Retreat Rates Along the Big Sur Coast.

### 6.2.2 LOCATION

Coastal erosion is an ongoing process that is difficult to measure but can be seen in various areas along the coastline. Dune and cliff erosion rates vary significantly throughout the County due to geological composition and the physical forces acting on the coastline; therefore, actual erosion and shoreline retreat distance will not be uniform throughout the county.

Coastal erosion is likely across the entire coastline of Monterey County at varying rates. Based on historic erosion rates, Southern Monterey Bay, from Moss Landing to Pacific Grove, is likely to experience the highest rates and largest impacts due to future erosion. While the granite cliffs of the Monterey Peninsula and Big Sur Coast are eroding at a slower rate, they are still vulnerable to erosion during large storm events.

### 6.2.3 FREQUENCY

Average rates of historic beach and cliff erosion and shoreline retreat and are expected to continue and accelerate, but future erosion rates are difficult to project due to variable coastal processes and uncertainty in sea level rise projections. Increased frequency of coastal storms and wave run-up due to sea level rise increases the irreversible bluff erosion and cliff collapse that may occur.

The entirety of the Monterey County coastline has shown a shift towards increased erosion in the more recent time period. In the Southern Monterey Bay region, the net average retreat rate more than doubles from the long-term (7.8 inches per year) to short-term net retreat of 24 inches per year. In addition, the percent of the coast experiencing erosion increased by 36%.[24]

Similar trends have been noticed in the Carmel and Big Sur regions, with net long-term average shoreline change rate being close to undetectable, with a maximum rate of 31 inches per year measured at the southern end of Carmel River State Beach. Short-term erosion occurred along 65% of the coast, with the maximum of 67 inches per year measured at Carmel River State Beach and Carmel City Beach. This indicates that this region is becoming became more erosional from the long-term to the short-term.[25]

Actual future rates of erosion are relative to future coastal processes and difficult to project with certainty. Projected rates of erosion are naturally varied and will likely accelerate by 2100; thus, most erosion will occur towards the end of the century. Over the next 50 years, sea level rise in Monterey Bay is predicted to increase coastal erosion 20-25% over historic erosion rates. In the 50-100-year timeframe, erosion rates are projected to increase 40-50% over historic rates.[26] In the Big Sur region, 5 feet of sea-level rise will expose 2.5 square miles of cliffs and 1.9

[24] USGS, 2007, National Assessment of Shoreline Change, Part 4.
[25] USGS, 2006, National Assessment of Shoreline Change, Part 3.
[26] Association of Monterey Bay Area Governments (AMBAG), 2008, Coastal Regional Sediment Management Plan for Southern Monterey Bay.

square miles of dunes to erosion, leading to average cliff retreats rates of 121 feet and average dune erosion rates of 590 feet.[27]

### 6.2.4 SEVERITY

Coastal erosion can range from gradual wearing a way of coastal land at inches per year to more significant, catastrophic events that can result in bluff failures involving several hundred cubic yards of material.

The most dramatic erosion often occurs during storms, particularly because the highest energy waves are generated under storm conditions. Although coastal erosion can occur with any annual winter storm, damage is more likely to occur during El Niño events. Ocean storms that have some amount of coastal impact can be expected every year. El Niño events occur about every 2 to 7 years and typically last 16 to 18 months.

Cliff erosion can result in permanent and significant alterations of coastal geology that can expose landward development and resources to additional coastal threats. Large sections of the county coastline, especially those with rocky headlands or sea cliffs, are not vulnerable to flooding, but are highly susceptible to erosion.

### 6.2.5 WARNING TIME

As discussed previously, coastal erosion can be classified as either episodic or chronic. Episodic erosion consists of the shore and backshore adjustment that results from short duration, high intensity meteorological and oceanic storm events. Meteorologists can often predict the likelihood of a severe weather event. This can give several days of warning time. However, meteorologists cannot predict the exact time of onset or severity of the storm. Some storms may come on more quickly and have only a few hours of warning time. Chronic erosion is associated with slow, gradual shoreline adjustment. Chronic erosion hazards occur slowly but can have significant property or health consequences. The identification of this hazard generally takes site-specific analysis to determine the erosion rates, site soil, geologic properties, and what mitigation is most relevant and prudent for the site. For this type of hazard, warning time is long.

## 6.3 SECONDARY HAZARDS

Coastal erosion can cause several types of secondary effects. Erosion can destabilize roads, the foundations of structures, and utility lines. It can also cause damage rivers or streams, potentially harming water quality, fisheries, and spawning habitat. Erosion can exacerbate landslide risk, as relentless erosion by ocean waves, creates extreme topography, making areas highly susceptible to landslides. Erosion also exacerbates flood risk, destroying important coastal dunes and cliffs, which provide key flood control benefits.

[27] Pacific Institute, California Climate Change Center, 2009, The impacts of sea-level rise on the California coast.

## 6.4 RISK ASSESSMENT

USGS Coastal Storm Modeling System (CoSMoS), Central California Projections of Coastal Cliff Retreat and Shoreline Change due to 21st Century Sea Level Rise data was used for this risk assessment. For cliff retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on Ocean Protection Council (OPC) High Risk Aversion Guidance. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion. Three sea level rise levels (25 cm, 75 cm, and 200 cm) were used to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

### 6.4.1 POPULATION

*Table 6-2* and *Table 6-3* indicates the population in the County exposed to coastal cliff and shoreline erosion risk, respectively.

**Table 6-2**
**Population Exposed to Coastal Cliff Erosion Risk in Monterey County**

| Supervisorial District | Sea Level Rise Scenario | | |
|---|---|---|---|
| | 25 CM | 75 CM | 200 CM |
| District 1 | 0 | 0 | 0 |
| District 2 | 0 | 0 | 0 |
| District 3 | 0 | 0 | 0 |
| District 4 | 0 | 0 | 0 |
| District 5 | 1,027 | 1,642 | 1,932 |
| **Total** | 1,027 | 1,642 | 1,932 |

**Table 6-3**
**Population Exposed to Shoreline Erosion Risk in Monterey County**

| Supervisorial District | Sea Level Rise Scenario | | |
|---|---|---|---|
| | 25 CM | 75 CM | 200 CM |
| District 1 | 0 | 0 | 0 |
| District 2 | 32 | 32 | 32 |
| District 3 | 0 | 0 | 0 |
| District 4 | 34 | 34 | 34 |
| District 5 | 423 | 147 | 147 |
| **Total** | 489 | 213 | 213 |

Bluff and cliff failure due to erosion can create hazardous conditions due to roadway collapse, undermined foundations, and damage to utilities. Isolated communities are vulnerable to the impacts, where roadway failure can limit access to basic services for months at a time.

### 6.4.2 PROPERTY

*Table 6-3* and *Table 6-4* indicates the residential property in the County exposed to coastal cliff and shoreline erosion risk, respectively.

**Table 6-4**
**Residential Property Exposed to Coastal Cliff Erosion Risk**

| Supervisorial District | Sea Level Rise Scenario | | | | | |
|---|---|---|---|---|---|---|
| | 25 CM | | 75 CM | | 200 CM | |
| | # | Value | # | Value | # | Value |
| District 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| District 2 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 3 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 4 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 5 | 206 | $1,183,367,352 | 226 | $1,244,106,508 | 253 | $1,323,971,611 |
| **Total** | 206 | $1,183,367,352 | 226 | $1,244,106,508 | 253 | $1,323,971,611 |

**Table 6-5**
**Residential Property Exposed to Shoreline Erosion Risk**

| Supervisorial District | Sea Level Rise Scenario | | | | | |
|---|---|---|---|---|---|---|
| | 25 CM | | 75 CM | | 200 CM | |
| | # | Value | # | Value | # | Value |
| District 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| District 2 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 3 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 4 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 5 | 4 | $3,099,857 | 4 | $3,099,857 | 4 | $3,099,857 |
| **Total** | 4 | $3,099,857 | 4 | $3,099,857 | 4 | $3,099,857 |

*Table 6-6* and *Table 6-7* indicates the non-residential property in the County exposed to coastal cliff and shoreline erosion risk, respectively.

**Table 6-6**
**Non-Residential Property Exposed to Coastal Cliff Erosion Risk**

| Supervisorial District | Sea Level Rise Scenario | | | | | |
|---|---|---|---|---|---|---|
| | 25 CM | | 75 CM | | 200 CM | |
| | # | Value | # | Value | # | Value |
| District 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| District 2 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 3 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 4 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 5 | 226 | $221,988,454 | 227 | $223,536,860 | 248 | $240,099,182 |
| **Total** | 226 | $221,988,454 | 227 | $223,536,860 | 248 | $240,099,182 |

**Table 6-7**
**Non-Residential Property Exposed to Shoreline Erosion Risk**

| Supervisorial District | Sea Level Rise Scenario | | | | | |
|---|---|---|---|---|---|---|
| | 25 CM | | 75 CM | | 200 CM | |
| | # | Value | # | Value | # | Value |
| District 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| District 2 | 3 | $0 | 2 | $0 | 1 | $0 |
| District 3 | 0 | $0 | 0 | $0 | 0 | $0 |
| District 4 | 0 | $122,851,855 | 32 | $122,851,855 | 27 | $116,279,109 |
| District 5 | 21 | $73,218,711 | 20 | $73,218,711 | 21 | $73,729,302 |
| **Total** | 24 | $196,070,566 | 54 | $196,070,566 | 49 | $190,008,411 |

Property vulnerable to coastal erosion, generally includes low-lying coastal structures and those built close to the edge of eroding bluffs. Coastal erosion impacts on coastal property are dependent on several factors including the elevation and composition of the shoreline (i.e., wide sandy beach versus a rocky intertidal beach fronting coastal bluffs).

### 6.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

Critical facilities that are vulnerable to coastal erosion may include transportation and wastewater treatment and water supply infrastructure. Regional and local-serving public and utility infrastructure vulnerable to coastal erosion include roads, bridges, railroad lines and crossings, wastewater treatment plants, culverts, water lines, communication line and towers, stormwater outlets, bike lanes, bike facilities, and fiber optic lines. The Seaside Pump Station, the Monterey Interceptor Pipeline between the Seaside Pump Station and Wharf II, and M1W's land/ocean outfall junction structure are all critical facilities identified at high to moderate risk from coastal erosion.

Coastal erosion will have long-lasting impacts on the Monterey Bay region's transportation infrastructure, threatening over 50 miles of highway, roads, and rail throughout the region including Highway 1.[28] *Table 6-8* summarizes transportation infrastructure exposed to both costal cliff and shoreline erosion risk in the County.

**Table 6-8**
**Transportation Infrastructure Exposed to Coastal Cliff and Shoreline Erosion Risk**

| Transportation Infrastructure | 1 ft Sea Level Rise (2030) | 3 ft Sea Level Rise (2060) | 7 ft Sea Level Rise (2100) |
|---|---|---|---|
| Highway/Freeway (Miles) | 0 | 0 | 0 |
| Major Road (Miles) | 71 | 88 | 89 |
| Local (Miles) | 1 | 3 | 8 |
| Railroad (Miles) | 0 | 0 | 0 |

[28] Pacific Institute, California Climate Change Center, 2009, The impacts of sea-level rise on the California coast.

### 6.4.4 ENVIRONMENT

Natural features such as dune fields and coastal cliffs exist over much of the County coastline that are subject to irreversible beach and bluff erosion. A transition between the land and the sea, the shoreline is a critical habitat for nutrient cycling and supports a diversity of invertebrate fauna, surf zone fishes, shorebirds, marine mammals, and plant species, including a Federally Threatened species, such as the Western Snowy Plover.

Sandy beaches and dunes also provide important services to human communities, such as flood protection, serving as barriers to landward shoreline retreat and providing a natural protective buffer against coastal flooding. Normal erosion of coastal dunes provides a significant sediment source for beaches. Sandy beaches also are a significant source of aesthetic, recreational, and economic value to human communities. For example, the Marina sand dunes are breathtaking examples of old dunes covered in coastal scrub and native dune vegetation. Loss of sandy beach and dune habitats would have large environmental effects on Monterey County.

### 6.4.5 ECONOMIC IMPACT

Tourism is a major economic driver in Monterey County, and future coastal erosion could threaten popular beaches and recreational facilities. Coastal erosion could affect vertical and lateral beach access points, which would prevent residents and visitors from accessing the beach and may increase the risk of injuries. Beach tourism is important to the County' economy and generates significant revenue as many visitors rent hotels or other accommodations, dine out or shop at area stores. Visitor-serving areas such as those on the Monterey Peninsula and in Big Sur include local businesses and hotels that benefit the local economy. These businesses depend on tourism, and cities and communities within the County benefit from sales tax revenues. Disruption of these areas due to impacts of coastal erosion could decrease economic activity and affect the local economy. Future coastal beach and bluff erosion in the County may also negatively impact coastal businesses and households and decrease coastal real estate opportunities.

Coastal bluff and cliff failure due to coastal erosion can create hazardous conditions due to roadway collapse, undermined home foundations, and damage to utilities. Natural resources with recreational and economic value may also be adversely affected. This risk is notable in the Big Sur area, where roadway failure can limit access to recreational areas for months at a time.

The County supports some of the largest dune habitats in the State, which are vulnerable to damages from erosion. As this vulnerability increases over time, damages may impact the economy of the area and impact viable coastal land uses. Dune erosion along the Monterey Bay is likely to exacerbate the risk of flooding in the lower Salinas Valley. This could increase the risk of flooding on agricultural land and threaten a major economic driver. Coastal storms can also lead to erosion impacts and severe flooding and inundation of economically important infrastructure such as harbors and buildings related to commercial and recreational fisheries.

## 6.5 FUTURE TRENDS IN DEVELOPMENT

Land use and development along the County's shoreline is governed by the California Coastal Act. Regulations under the Coastal Act are typically administered by the County and local cities through adopted Local Coastal Plans (LCP), overseen by the California Coastal Commission. The County and each incorporated city's certified Local Coastal Plans govern land use planning and development permitting. Monterey County has four LCP segments: North County, Del Monte Forest, Carmel Area, and Big Sur Coast, which guides development in unincorporated areas. There are also three areas of deferred certification in the County, at Fort Ord Dunes State Park, Mal Paso Beach, and Yankee Point. Each city along the Coast also as a certified Local Coastal Plan which governs land use and permitting with the coastal areas of the cities.

## 6.6 ISSUES

Key issues associated with coastal erosion in Monterey County include:

- The risk of costal erosion to critically important dune habitat.
- The economic risk of coastal erosion on the two largest economic drivers in the County: agriculture and tourism.
- The cumulative and compounding risk of coastal erosion along with severe winter storms, large storm surge, and wave action along the coastline is likely to lead to more dramatic erosion and exacerbate flooding in low lying areas.
- Coastal bluff and cliff failure due to erosion can create hazardous conditions due to roadway collapse, bridge failure, undermined home foundations, and damage to utilities. This can lead to immobility and loss of utilities.
- Future sea level rise scenarios are likely to exacerbate coastal erosion risks, but a high degree of uncertainty exists on the future risk.

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# 7. DAM AND LEVEE FAILURE

## 7.1 OVERVIEW

### 7.1.1 DAM FAILURE

A dam is an artificial barrier that stops or restricts the flow of water. Dams are built for a variety of uses including flood protection, power generation, agriculture, water supply, and recreation. A dam failure is usually the result of the age of the structure, inadequate spillway capacity, or structural damage caused by an earthquake or flood. Dam failures typically occur when spillway capacity is inadequate and excess flow overtops the dam, or when internal erosion (piping) through the dam or foundation occurs. Complete failure occurs if internal erosion or overtopping results in a complete structural breach, releasing a high-velocity wall of debris-filled water that rushes downstream, damaging anything in its path. Improper design, improper maintenance, negligent operation, and/or failure of upstream dams on the same waterway can also cause or contribute to dam failure.

Water released by a failed dam generates tremendous energy and can cause a flood that is catastrophic to life and property. A catastrophic dam failure could challenge local response capabilities and require evacuations to save lives. Impacts to life safety will depend on the warning time and the resources available to notify and evacuate the public. Major loss of life could result as well as potentially catastrophic effects to roads, bridges, and homes. Electric generating facilities and transmission lines could also be damaged and affect life support systems in communities outside the immediate hazard area. Associated water supply, water quality and health concerns could also be an issue. Factors that influence the potential severity

of a full or partial dam failure are the amount of water impounded; the density, type, and value of development and infrastructure located downstream; and the speed of failure.

### 7.1.2 LEVEE FAILURE

Levees are man-made structures, usually earthen embankments, designed and constructed to contain, control, or divert a flow of water in order to protect land from peak flood levels or to protect land that is below sea level. Levees reinforce the banks of streams and help prevent flooding by containing higher flow events to the channel. By confining the flow to a narrower steam channel, levees can also increase the speed of the water. Levees provide strong flood protection, but they are not failsafe. Levees are designed to protect against a specific flood level and could be overtopped during severe weather events or dam failure. Levees reduce, not eliminate, the risk to individuals and structures located behind them.

A levee breach occurs when part of a levee gives way, creating an opening through which floodwaters may pass. A breach may occur gradually or suddenly. The most dangerous breaches happen quickly during periods of high water. The resulting torrent can quickly swamp a large area behind the failed levee with little or no warning. When a levee system fails or is overtopped, severe flood damage can occur due to increased water surface elevation associated with levees and the resulting increase in water velocity.

Earthen levees can be damaged in several ways. For instance, strong river currents and waves can erode the surface. Trees growing on a levee can blow over, leaving a hole where the root wad and soil used to be. Burrowing animals, such as the California ground squirrel, the salt marsh harvest mouse, or the western burrowing owl can create holes that enable water to pass through a levee. If severe enough, any of these situations can lead to a zone of weakness that could cause a levee breach. In seismically active areas, earthquakes and ground shaking can cause a loss of soil strength, weakening a levee and possibly resulting in failure. Seismic activity can also cause levees to slide or slump, both of which can lead to failure. No levee provides protection from events for which it was not designed, and levees require maintenance to continue to provide the level of protection they were designed and built to offer.

### 7.1.3 REGULATORY OVERSIGHT

#### *National Dam Safety Act*

Potential for catastrophic flooding due to dam failures led to passage of the National Dam Safety Act (Public Law 92-367). The National Dam Safety Program requires a periodic engineering analysis of most dams in the country. The goal of this FEMA-monitored effort is to identify and mitigate the risk of dam failure in order to protect lives and property of the public.

The National Dam Safety Program is a partnership among the states, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety. Under FEMA's leadership, state assistance funds have allowed all participating states to improve their programs through increased inspections, emergency action planning, and

purchases of needed equipment. FEMA has also expanded existing and initiated new training programs. Grant assistance from FEMA provides support for improvement of dam safety programs that regulate most of the dams in the United States.

### *California Division of Safety of Dams*

California's Division of Safety of Dams (DSOD), a division of the Department of Water Resources (DWR), monitors dam safety at the state level. Dams regulated by the DSOD are more than 25 feet in height and hold back more than 15 acre-feet of water or are more than 6 feet in height and hold more than 50 acre-feet of water. DSOD assigns hazard ratings to large dams within the State. Dams are classified in four categories based on the potential hazard to life and property:

- **Extremely High Hazard** – Expected to cause considerable loss of human life or would result in an inundation area with a population of 1,000 or more.
- **High Hazard** – Expected to cause loss of at least one human life.
- **Significant Hazard** – No probable loss of human life but can cause economic loss, environmental damage, impacts to critical facilities, or other significant impacts.
- **Low Hazard** – No probable loss of human life and low economic and environmental losses. Losses are expected to be principally limited to the owner's property.

### *Federal Energy Regulatory Commission Dam Safety Program*

The Federal Energy Regulatory Commission (FERC) cooperates with many federal and state agencies to ensure and promote dam safety. More than 3,000 dams are part of regulated hydroelectric projects in the FERC program. Two-thirds of these are more than 50 years old. As dams age, concern about their safety and integrity grows, so oversight and regular inspection are important. FERC inspects hydroelectric projects on an unscheduled basis to investigate potential dam safety problems, complaints about constructing and operating a project, safety concerns related to natural disasters, and issues concerning compliance with the terms and conditions of a license.

Every five years, an independent engineer approved by the FERC must inspect and evaluate projects with dams higher than 32.8 feet (10 meters), or with a total storage capacity of more than 2,000 acre-feet. FERC monitors seismic research and applies it in performing structural analyses of hydroelectric projects. FERC also evaluates the effects of potential and actual large floods on the safety of dams. During and following floods, FERC visits dams and licensed projects, determines the extent of damage, if any, and directs any necessary studies or remedial measures the licensee must undertake.

FERC requires licensees to prepare emergency action plans and conducts training sessions on how to develop and test these plans. The plans outline an early warning system if there is an actual or potential sudden release of water from a dam due to failure. The plans include operational procedures that may be used, such as reducing reservoir levels and reducing downstream flows, as well as procedures for notifying affected residents and agencies responsible for emergency management.

### *US Army Corps of Engineers Dam Safety Program*

The US Army Corps of Engineers is responsible for safety inspections of some federal and nonfederal dams in the US that meet the size and storage limitations specified in the National Dam Safety Act. They have inventoried such dams and surveyed each state and federal agency's capabilities, practices, and regulations regarding design, construction, operation, and maintenance of the dams.

### US Army Corps of Engineers and FEMA Levee Oversight

The Army Corp and FEMA have differing roles and responsibilities related to levees. The Corps addresses operation and maintenance, risk communication, risk management, and risk reduction issues as part of its responsibilities under the Levee Safety Program. FEMA addresses mapping and floodplain management issues related to levees, and it accredits levees as meeting requirements set forth by the National Flood Insurance Program.

Depending on the levee system, the Corps and FEMA may be involved with a levee sponsor and community independently or jointly. The two agencies' long-term goals are similar: to reduce risk and lessen the devastating consequences of flooding. Army Corps and FEMA partnering activities related to levees include the following:

- Joint meetings with levee sponsors and other stakeholders
- Integration of levee information into the National Levee Database
- State Silver Jackets teams
- Sharing of levee information
- Targeted task forces to improve program alignment.

Coordination between the Corps and FEMA on levees is now standard within many of each agency's policies and practices. Over the past several years, both agencies coordinated policies where appropriate; jointly participated in meetings with stakeholders; and participated in many multiagency efforts, such as the National Committee on Levee Safety, the Federal Interagency Floodplain Management Task Force, and the Silver Jackets Program, which brings together state, federal, tribal, and local agencies to learn from each other and apply their knowledge to reduce risk from hazards.

### *National Committee on Levee Safety*

Congress created the National Committee on Levee Safety to develop recommendations for a national levee safety program. The Committee notes that when combined, aging levees, increased development in the floodplain, and increasing frequency of flooding due to climate change, point to an overall increase in the risk of flooding due to levee overtopping or failure. The Committee seeks to use an integrated approach to creating reliable levee systems and protecting people and property from floods. The Committee is made up of representatives from the Army Corps, FEMA, state, regional, and local agencies, and the private sector and has been working toward this goal since October 2008.

### 7.1.4 DAMS IN MONTEREY COUNTY

The following dams are located in or have inundation zones in Monterey County:

**Table 7-1**
**Dams in or Owned by Monterey County***

| Facility Name | Water Course | Owner | Dam Type | Downstream Hazard | Condition |
|---|---|---|---|---|---|
| San Antonio | San Antonio River | Monterey County Water Resources Agency | Earthen Embankment | Extremely High | Fair |
| Los Padres | Carmel River | California American Water | Earthen Embankment | Extremely High | Satisfactory |
| Pacific Grove | Pacific Ocean | California American Water | Earthen Embankment | Low | Satisfactory |
| Forest Lake | Off stream | Pebble Beach Community Services District | Earthen Embankment | Extremely High | Satisfactory |
| Black Rock Creek | Black Rock Creek | Private | Earth and Rock | Low | Satisfactory |
| Silacci | Unnamed | Private | Earthen Embankment | Significant | Fair |
| Nacimiento[1] | Nacimiento River | Monterey County Water Resources Agency | Earthen Embankment | Extremely High | Satisfactory |

*Excludes Federally owned Dams
[1]Located in San Luis Obispo County
Source: Division of Safety of Dams, Dams Within Jurisdiction of the State of California

For the purposes of this Plan, the Nacimiento, San Antonio, Forest Lake, and Los Padres dams will be discussed in more detail as they pose an Extremely High downstream hazard and are considered by FEMA as High Hazard Potential Dams (HHPD).

#### *Nacimiento Dam*

Nacimiento Dam and its reservoir, the Nacimiento Reservoir, are located in northern San Luis Obispo County, about 20 miles from the coast, in central California. This earth-filled dam was completed in 1957.When the reservoir is full (elevation 800 feet), it has a maximum storage capacity of 377,900 acre-feet, is 18 miles long, and has about 165 miles of shoreline. The maximum elevation during flood stage is 825 feet, with a maximum temporary capacity of 538,000 acre-feet and a temporary surface area of 7,149 acres. Nacimiento Dam is under the jurisdiction of the DWR DSOD and the FERC. The FERC has jurisdiction over the project due to the existence of the hydroelectric plant. Nacimiento Dam was constructed and is owned by the

Monterey County Water Resources Agency (MCWRA). It serves as a flood control, water conservation, and recreation facility.

For the purposes of this plan, the following relevant plans, and studies specific to the Nacimiento Dam were reviewed:

- Nacimiento Dam EAP; WRA Rev #3 12/17/2021
- Nacimiento Dam Spillway Condition Assessment Report; GEI 2018
- Nacimiento Dam construction documentation
- Nacimiento Dam periodic inspection reports
- Nacimiento Dam FERC Part 12D Potential Failure Mode Analysis Reports
- Nacimiento Dam FERC Part 12D Safety Inspection Reports
- Nacimiento Dam Seismic Stability Review Report; GEI 2005
- Nacimiento Dam Safety Surveillance and Monitoring Reports
- Probable Maximum Flood Hydrology Report for Nacimiento Reservoir and Supplements; GEI 2001, 2003, and 2004

### *San Antonio Dam*

San Antonio Dam and its reservoir, the San Antonio Reservoir, are located in southern Monterey County, about 16 miles northwest of Paso Robles, in central California. This earth-filled dam was completed in 1967. When the reservoir is full (elevation 780 feet), it has a maximum storage capacity of 335,000 acre-feet, is 16 miles long, and has about 100 miles of shoreline. The maximum elevation during flood stage is 802 feet, with a maximum temporary capacity of about 477,000 acre-feet and a temporary surface area of about 7,500 acres. San Antonio Dam is under the jurisdiction of the DSOD. Like Nacimiento Dam, San Antonio Dam was constructed and is owned by the MCWRA. It serves as a flood control, water conservation, and recreation facility.

For the purposes of this plan, the following relevant plans, and studies specific to the San Antonio Dam were reviewed:

- San Antonio Dam Spillway Condition Assessment Report; GEI 2018
- San Antonio Dam construction documentation
- San Antonio Dam periodic inspection reports
- San Antonio Dam Performance Evaluation Reports
- San Antonio Dam Seismic Analysis Report; Bechtel 1970
- Probable Maximum Flood Hydrology Report for San Antonio Reservoir; GEI 1999

### *Forest Lake Dam*

The Forest Lake Dam, and its reservoir, the Forest Lake Reservoir, is in the Pebble Beach area in the Del Monte Forest. In December 1998, the Pebble Beach Community Services District (PBCSD) purchased the Forest Lake Reservoir from California-American Water Company (Cal-Am). Following the purchase, the reservoir was rehabilitated, including new improvements to

meet the DSOD requirements. During winter months, when there is excess production at the Carmel Area Wastewater District's treatment plant, the reservoir is filled with recycled water. Stored recycled water is then used during summer months when the irrigation demands exceed the production, thereby further reducing the use of potable water. The rehabilitation of the reservoir started in 2005 and completed in 2006. In 2009, outlet structure of the reservoir was modified to increase the storage capacity from 105 million gallons to 115 million gallons.

#### *Los Padres Dam*

The Los Padres Dam, built in 1949 along the Carmel River, is located 25 miles upstream from the ocean. The dam is a rock and earth-filled dam which is as high as a thirteen-story building; its base is as thick as a football field and has an overall crest measurement of 680 feet. The dam is owned and operated by California-American Water Company (Cal-Am) and serves as a flood control and water conservation facility. The reservoir has a 3,200-acre feet of storage capacity. The Los Padres Reservoir is steadily filling with sediment, as the pervasively fractured granitic and metamorphic rock underlying the Carmel River watershed is easily eroded.

Sediment loads may greatly increase when fires reduce vegetation cover and are followed by large rainfall events, as occurred after the 1977 Marble Cone Fire that produced catastrophic debris flows. The Monterey Peninsula Water Management District (MPWMD) has undertaken several studies that fully evaluate the various options available for Los Padres Dam. The studies include consideration of dam removal and the development of new location for water storage "off-mainstem" of the Carmel River. This alternative was determined to best meet the long-term needs of water supply, instream flows, and fish passage within the watershed and represented the most effective means of maximizing beneficial use of the basin's available hydrology.

### 7.1.5 LEVEES IN MONTEREY COUNTY

Monterey County contains about 52 linear miles of levees. Most levees in the County are privately owned agricultural levees. *Table 7-2* summarizes levee miles by waterway.

**Table 7-2**
**Miles of Levee in Monterey County by Waterbody**

| Waterbody | Miles of Levee |
|---|---|
| Bennett Slough | 0.9 |
| Carmel River | 2.1 |
| Elkhorn Slough | 5.6 |
| Moro Cojo Slough | 4.3 |
| Pajaro River | 9.2 |
| Salinas River | 29.6 |
| **Total** | **51.7** |

Source: US Army Corp of Engineers, National Levee Database

*Pajaro River Levee*

The Pajaro River is located in Santa Cruz and Monterey County with the River being the approximate County line. The Pajaro River Levee System was built as a federal flood control project, authorized by Section 10 of the Flood Control Act of December 1944. The Army Corps of Engineers designed and constructed the levees and associated system components within the Pajaro River Basin in the late 1940s. The project was built to reduce flood risk to the City of Watsonville, the town of Pajaro and surrounding areas by reducing flooding over the channel banks. The project primarily consists of earthen levees, with a low flow channel. The low flow channel varies in elevation but is typically about 25 feet below the levee crest elevation.

The left (southern) bank of the Pajaro Levee system is located in Monterey County and extends from the Pacific Ocean to Murphy Road. The town of Pajaro is located behind the left bank levee. The levee maintenance agency for the left bank is the MCWRA. MCWRA has an emergency plan that identifies critical stages of the river and the related actions that the Office of Emergency Services takes such as declaring an emergency and mobilizing emergency responders. The MCWRA also has an ALERT system that monitors river levels whenever significant storms approach the area.

The right (northern) bank of the Pajaro River Levee system is owned/operated by the Santa Cruz County Flood Control and Water Conservation District – Zone 7. Santa Cruz County, Zone 7, and the City of Watsonville have an Emergency Action Plan. The County can monitor stream gages and when a critical water level is reached, alert the public through a reverse 911 system. The County also has an evacuation plan that covers a range of disasters and an ALERT Storm System.

*Carmel River Levees*

Levees have been constructed by private interests on the Carmel River from State Highway 1 upstream approximately 4,000 feet on the north bank, and from 3,000 feet upstream of the mouth to 10,000 feet upstream of the mouth on the south bank. These levees are not adequate to hold the 100-year flood.

## 7.2 HAZARD PROFILE

### 7.2.1 HISTORY

*Dam Failure*

There is no record of any damages, fatalities, or injuries associated with dam failure in the Monterey County. However, water has been released over the Nacimiento Dam spillway crest five times (1958, 1969, 1983, 2011, and 2017) over the last 63 years, and the San Antonio Dam spillway crest three times (1982, 1983, and 2006) over the past 55 years.

The state's most recent dam emergency occurred in February 2017 when the Oroville Dam in Butte County was on the verge of overflow. The dam's concrete spillway was damaged by erosion and a massive hole developed. The auxiliary spillway was used to prevent overtopping

of the dam, and it experienced erosion problems also. Evacuation orders were issued in advance of a potential large uncontrolled release of water from Lake Oroville, but such a release did not occur. After this incident, state officials ordered that the flood-control spillways of 93 dams be re-inspected for potential geologic, structural, or performance issues that could jeopardize their ability to safely pass a flood event.

*Levee Failure*

In March 1995, a 10–20-year storm event, caused a breach in the Pajaro levee approximately 3 miles upstream of the town of Pajaro. The drainage system in the flat town could not adequately discharge the stormwater runoff in the streets. This resulted in mass evacuations and damage to private property. All residences (600+) and businesses in Pajaro were damaged and 2,500 people were evacuated.

Several locations along the Pajaro Levee were damaged and had to be repaired after the 1989 Loma Prieta earthquake causing damage to roads and property. An atmospheric river event in January of 2017 caused a levee breach along the Carmel River near Paso Hondo in Carmel Valley Village, impacting 20 to 30 homes.

## 7.2.2 LOCATION

*Dam Failure*

A dam failure is possible at any dam in Monterey County. The most likely location of a damaging levee failure would be at dams classified as having extremely high downstream hazard, which as previously mentioned includes the Nacimiento, San Antonio, Forest Lake, and Los Padres Dams.

The Nacimiento, San Antonio, and Los Padres Dams are older and are the most likely locations of a dam failure.

**Mitigation Success Story**
**San Clemente Dam Removal**

The San Clemente Dam was a large concrete dam located about 18 miles from the Ocean on the Carmel River. Over time the reservoir became increasingly sedimented and no longer served as a water source. The dam posed a safety concern and could have failed in the event of a large earthquake or flood.

| | |
|---|---|
| 1921 | San Clemente Dam Built |
| 1991 | Dam declared seismically unsafe by the DOSD |
| 1999 | Carmel River listed as one of North America's most endangered rivers |
| 2007 | Studies confirm feasibility of dam removal option to bring dam into compliance with safety standards |
| 2009 | Dam removal and river re-route project chosen |
| 2011 | Preliminary designs completed and project approved by CPUC |
| 2013 | Construction begins |
| 2015 | San Clemente Dam Removed |

Due to safety and environmental concerns, the CA Coastal Conservancy, NOAA, and California American Water decided to re-route the river and remove the dam. As of 2019, the Carmel River is returning to its wild state and the fish population is rebounding. At the time, this was the largest dam removal project in California history.

All three dams and reservoirs are inspected annually by the DSOD to ensure that they are in good operating condition. Nacimiento receives an additional annual inspection from FERC. Both Nacimiento and San Antonio receive periodic inspections by Water Resource Agency staff. These dam safety programs reduce risk associated with the dams but do not eliminate the possibility of a dam failure. During the winter, temporary flood storage is provided in flood pools in Nacimiento and San Antonio reservoirs.

Along the Los Padres Dams, excess water can be released through transmission pipes, valves, and spillway systems. However, use of the dam spillways for flood control releases would most likely occur during severe winter storms, when the dams and reservoirs are receiving increased inflow. Damage from a dam failure is most likely to occur in mapped dam failure inundation zones. Shown in *Figure 7-1* is the dam failure inundation zones for a spillway or full dam failure at the Nacimiento Dam.

**Figure 7-1**
**Nacimiento Dam Failure Inundation Zone**

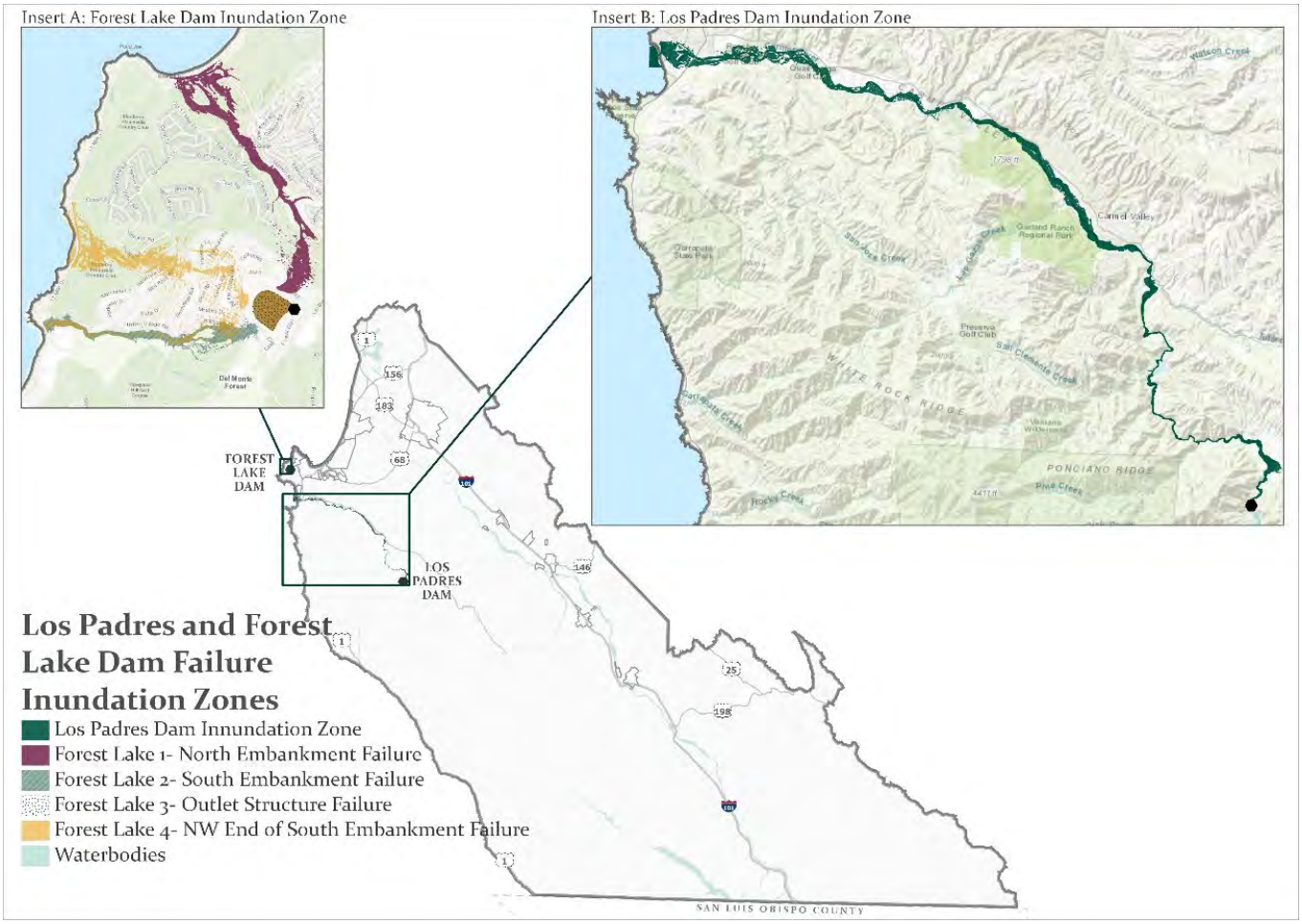
As of April 2019, the San Antonio Dam spillway has been identified to have significant foundation and structural deficiencies such that the spillway is in poor condition and unsafe for use under high flow conditions. Major rehabilitation or full replacement of the spillway will be needed to ensure the safe performance of the spillway under significant flows up to the maximum design outflow. The California Department of Water Resources, Division of Safety of Dams requires the San Antonio dam spillway be restored to full function by November 1, 2024.

Shown in *Figure 7-2* is the dam failure inundation zones for a spillway or full dam failure at the San Antonio Dam.

**Figure 7-2**
**San Antonio Dam Failure Inundation Zone**

The inundation zones for both the Los Padres Dam and the Forest Lake Dam are mapped in *Figure 7-3*.

**Figure 7-3**
**Los Padres and Forest Lake Dam Failure Inundation Zones**



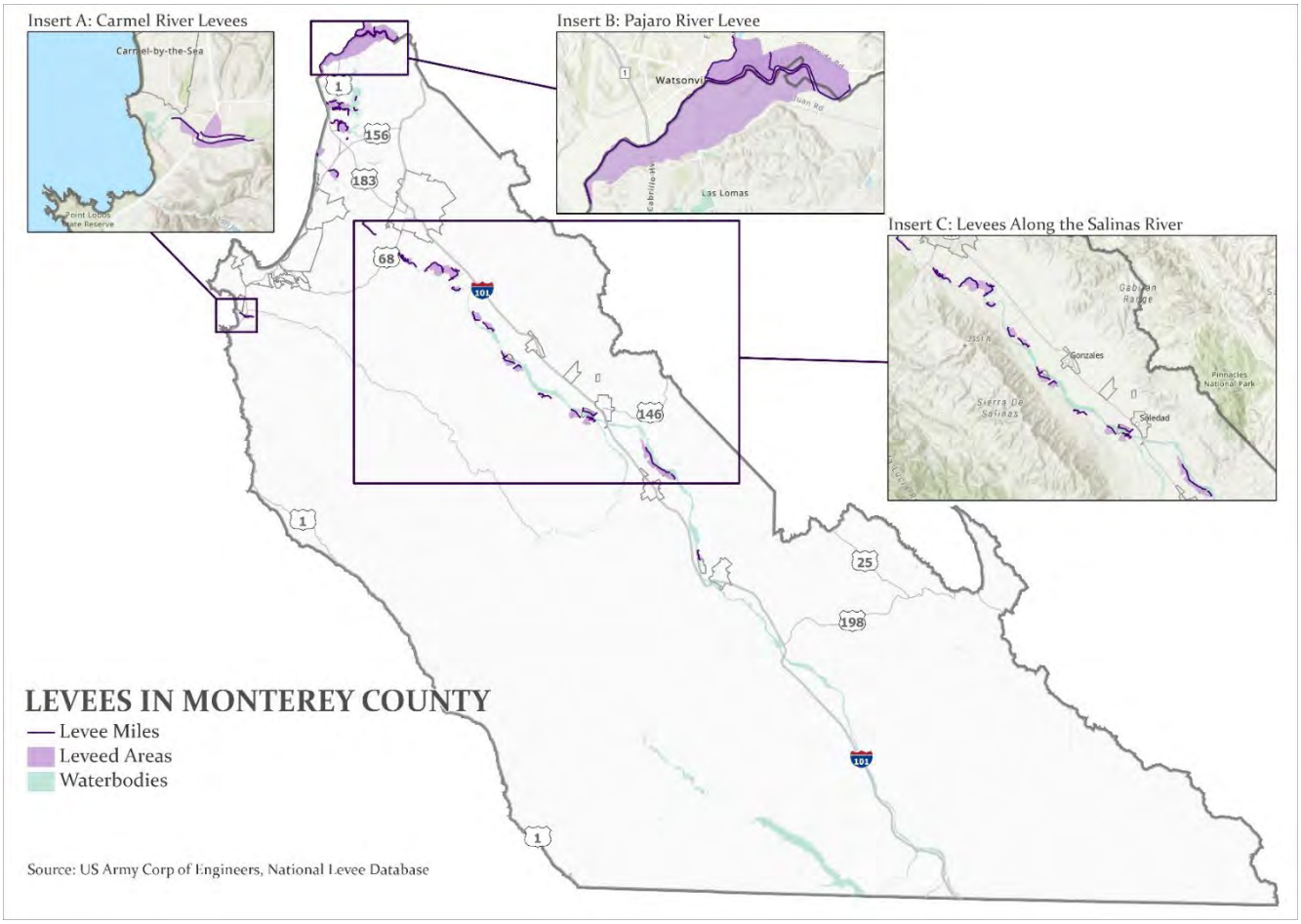

### *Levee Failure*

A levee failure is possible along any levee in Monterey County. The most likely location of a damaging levee failure would be at the Carmel River Levees, the Pajaro River Levee, or at one of the many levees along the Salinas River.

For the NFIP, FEMA only recognizes levee systems that meet minimum design, operation, and maintenance standards. Therefore, there is a possibility that unaccredited levees exist in Monterey County, which do not meet FEMA standards and that could be a location of a levee failure. Since information is not available on the locations of such levees, risk associated with unaccredited levees is beyond the scope of this plan.

Levee miles and leveed area in Monterey County is shown in *Figure 7-4*.

**Figure 7-4**
**Levees in Monterey County**




## 7.2.3 FREQUENCY

### *Dam Failure*

Dam failure events are infrequent and usually coincide with events that cause them, such as earthquakes, landslides, and excessive rainfall and snowmelt. Although the recent Oroville event raised public concern about dam failure, the probability of such failures remains low in today's regulatory environment.

All dams face a "residual risk" of failure, which represents the risk that conditions may exceed those for which the dam was designed. For example, dams may be designed to withstand a probable maximum precipitation, defined as the theoretically, greatest depth of precipitation for a given duration that is physically possible over a given storm area at a particular geographical location at a certain time of the year. The chance of occurrence of a precipitation event of a greater magnitude than that represents residual risk for such dams. This in turn represents a theoretical probability of future occurrence for a dam failure event, though the

probability of an event exceeding the assumed maximum is not generally calculated as part of dam design.

*Levee Failure*

Levee failure probabilities are considered to be higher than dam failure probabilities because levees are often exposed to more adverse conditions associated with high velocity flood flows, such as erosion and scour. Many levees are designed to overtop in high flow conditions; such overtopping is referred to as design failure.

### 7.2.4 SEVERITY

*Dam Failure*

Dam failure can be catastrophic to all life and property downstream. The US Army Corps of Engineers developed the classification system shown in *Table 7-3* for the hazard potential of dam failures.

**Table 7-3**
**US Army Corps of Engineers Dam Hazard Potential Classification**

| Hazard Category | Direct Loss of Life | Lifeline & Property Losses | Environmental Losses |
|---|---|---|---|
| **Low** | None expected | No disruption of services; Loss of isolated buildings, agricultural lands, and equipment | Minimal incremental damage |
| **Significant** | None expected | Disruption of essential facilities and access; major loss of public and private facilities | Major mitigation required |
| **High** | Probable. One or more expected | Disruption of essential facilities and access; Extensive loss of public and private facilities | Extensive or impossible to mitigate |

The Army Corps has classified the Forest Lake, Los Padres, San Antonio, and Nacimiento Dams as High Hazard [29] Dam inundation maps show that the greatest risk from dam failure is in Carmel Valley, where failure of the Los Padres would cause inundation of urbanized areas and alter the riparian corridor. Dam failure in Salinas Valley would also be significant, whether caused by the failure of San Antonio or Nacimiento Reservoir. Studies reveal that either failure would overflow the 100-year floodplain in Salinas Valley. However, the risk would predominately be to agricultural land.

*Levee Failure*

In the event of a levee failure, floodwaters may ultimately inundate the protected area landward of the levee. The extent of inundation is dependent on the flooding intensity. Failure of a levee during a 1% annual chance flood will inundate the 100-year floodplain previously

[29] US Army Corp of Engineers, National Inventory of Dams

protected by the levee. Residential and commercial buildings nearest the levee overtopping or breach location will suffer the most damage from the initial embankment failure flood wave. Landward buildings will be damaged by inundation.

One major risk for the Pajaro River levee is of a breach before water flows over the levee (overtopping). This breach is associated with seepage (water leaking through the levee) and resulting erosion of the levee slope. The other major risk is from overtopping (water flowing over the levee) which also results in levee erosion and the potential for a breach. If a breach occurs, water could flood the town of Pajaro and surrounding agricultural lands rapidly, leading to significant economic damage and potential loss of life. While these conditions are possible, they are not certain to take place during a flood event. The past evacuations and flood events have increased community awareness and reduced the likelihood for life loss through the implementation of the notification and evacuation plans.

### 7.2.5 WARNING TIME

#### *Dam Failure*

Warning time for dam failure varies depending on the cause of the failure, the size of the dam and volume of water retained, and the location of the dam. In events of extreme precipitation or massive snowmelt, evacuations can be planned with sufficient time. In the event of a structural failure due to earthquake, there may be no warning time. A dam's structural type also affects warning time. All dams of concern in Monterey County are earthen dams, which do not tend to fail completely or instantaneously. Once a breach is initiated, discharging water erodes the breach until either the reservoir water is depleted, or the breach resists further erosion. The time of breach formation ranges from a few minutes to a few hours.

The number of people to be alerted and evacuated in the event of impending dam failure can vary widely. A major factor to consider is the initial flow in the river when the failure occurs. The initial flow is normally very low on all the rivers between May and October. During the winter, the initial flow is much higher. This wide variation in initial flow has a significant impact on the areas that must be evacuated.

#### *Levee Failure*

Warning time for levee failures depends on the cause of the failure. A levee failure caused by structural failure can be sudden and occur with little to no warning. If heavy rains are impacting a levee system, communities located in the immediate danger zone can be evacuated before a failure occurs. If the levee failure is caused by overtopping, the community may or may not be able to recognize the impending failure and evacuate. If a levee failure occurs suddenly, evacuation may not be possible.

## 7.3 SECONDARY HAZARDS

Dam and levee failure can cause severe downstream flooding, depending on the magnitude of the failure. Other potential secondary hazards are landslides, bank erosion, and destruction of downstream habitat. Levee failures can also cause environmental incidents due to hazardous materials releases when floodwaters infiltrate facilities that store these types of materials.

Additionally, dam failure may worsen the severity of a drought by releasing water that might have been used as a potable water source. A failure of the Nacimiento or San Antonio dam could affect water availability for downstream agricultural users. If the dams were to fail or otherwise be unable to provide regular water releases, it would affect the ability of growers to exercise their right to those surface waters for supplementing recycled water and could cause a corresponding increase in groundwater usage.

## 7.4 RISK ASSESSMENT

For the purposes of this risk assessment, dam failure risk was assessed for the dams that are classified as High Hazard by the Army Corps of Engineers, which includes the Nacimiento, San Antonio, Forest Lake, and Los Padres Dams. Inundation zone data for the Nacimiento and San Antonio dams were provided by MCWRA. Inundation data for the Forest Lake Dam were provided by the Pebble Beach Community Services District. Inundation data for the Los Padres Dam were from the DWR DSOD California Dam Inundation Map data.

Data on levee location, leveed area, and population and property exposed to levee failure risk were from the US Army Corp of Engineers, National Levee Database. Leveed Area, which is defined as the estimated area of a floodplain from which flood water is excluded by the levee system, was used to determine the population and property exposed to levee failure.

### 7.4.1 POPULATION

*Dam Failure*

All residents in a dam failure inundation zone would be exposed to the risk of a dam failure. Population exposed to a failure of the Nacimiento Dam is summarized in *Table 7-4*.

**Table 7-4**
**Population Exposed to Dam Failure in Monterey County- Nacimiento Dam**

| Supervisorial District | Spillway Failure | Dam Failure |
|---|---|---|
| District 1 | 0 | 0 |
| District 2 | 4,391 | 6,876 |
| District 3 | 3,779 | 7,427 |
| District 4 | 1,493 | 11,372 |
| District 5 | 2,690 | 3,091 |
| **Total** | 12,353 | 28,766 |

Population exposed to a failure of the San Antonio Dam is summarized in *Table 7-5*.

**Table 7-5**
**Population Exposed to Dam Failure in Monterey County- San Antonio Dam**

| Supervisorial District | Spillway Failure | Dam Failure |
|---|---|---|
| District 1 | 0 | 0 |
| District 2 | 2,509 | 5,757 |
| District 3 | 1,024 | 7,742 |
| District 4 | 174 | 9,318 |
| District 5 | 66 | 3,090 |
| **Total** | 3,773 | 25,907 |

A failure of the Los Padres Dam would impact a population of 5,784, all located in Monterey County Supervisorial District 5, in the Carmel Valley area.

Population exposed to a failure of the Forest Lake Dam is summarized in *Table 7-6*. Impacts are not summarized by Supervisorial District, as all impacts would occur in Monterey County Supervisorial District 5 in the Pebble Beach community.

**Table 7-6**
**Population Exposed to Dam Failure in Monterey County- Forest Lake Dam**

| Scenario | Population |
|---|---|
| Scenario 1- North Embankment Failure | 302 |
| Scenario 2- South Embankment Failure | 403 |
| Scenario 3- Outlet Structure Failure | 23 |
| Scenario 4- NW End of South Embankment Failure | 834 |

The potential for loss of life is affected by the capacity and number of evacuation routes available to those living in potential inundation areas. Vulnerable populations are all populations downstream from dam failures that are incapable of escaping the area within the allowable time frame. This population includes the elderly and young who may be unable to get themselves out of the inundation area.

The vulnerable population also includes those who would not have adequate warning from a television or radio emergency warning system.

### *Levee Failure*

Those living in an area protected by a levee would be exposed to levee failure risk in the event of a levee failure event.

*Table 7-7* summarizes population exposed to levee failure risk by water body in Monterey County.

**Table 7-7**
**Population Exposed to Levee Failure in Monterey County by Waterbody**

| Waterbody | Miles of Levee | Population |
|---|---|---|
| Bennett Slough | 0.9 | 6 |
| Carmel River | 2.1 | 633 |
| Elkhorn Slough | 5.6 | 0 |
| Moro Cojo Slough | 4.3 | 0 |
| Pajaro River | 9.2 | 3,597 |
| Salinas River | 29.6 | 23 |
| **Total** | **51.7** | **4,259** |

Source: US Army Corp of Engineers, National Levee Database

A failure of the left (southern) bank of the Pajaro levee would threaten the population of the town of Pajaro, which includes a population of 2,700 to 3,600 people who are located within the floodplain with the higher number of populations at night. There is also potential for loss of life from levee breaching.

Similar to dam failure, vulnerable populations are all populations in a leveed area that are incapable of escaping the area within the allowable time frame. This population includes the elderly and young who may be unable to get themselves out of the inundation area. The vulnerable population also includes those who would not have adequate warning from a television or radio emergency warning system. Homeless encampments are sometimes located along levees and those populations would be immediately vulnerable if a levee were to fail.

### 7.4.2 PROPERTY

#### *Dam Failure*

All property in a dam failure inundation zone would be exposed to the risk of a dam failure. Residential property exposed to a failure of the Nacimiento Dam is summarized by failure type in *Table 7-8*. Non-residential property exposed to a failure of the Nacimiento Dam is summarized by failure type in *Table 7-9.*

**Table 7-8**
**Residential Property Exposed to Dam Failure in Monterey County- Nacimiento Dam**

| Supervisorial District | Spillway Failure | | Dam Failure | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 0 | $0 | 0 | $0 |
| District 2 | 102 | $64,518,030 | 547 | $215,959,574 |
| District 3 | 350 | $111,015,165 | 930 | $296,389,365 |
| District 4 | 18 | $7,953,691 | 2,449 | $1,085,984,861 |
| District 5 | 18 | $6,264,905 | 201 | $119,647,543 |
| **Total** | 488 | $189,751,791 | 4,127 | $1,717,981,343 |

**Table 7-9**
**Non-Residential Property Exposed to Dam Failure in Monterey County- Nacimiento Dam**

| Supervisorial District | Spillway Failure | | Dam Failure | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 0 | $0 | 0 | $0 |
| District 2 | 1,573 | $284,272,763 | 1,739 | $359,562,190 |
| District 3 | 601 | $1,046,736,191 | 1,237 | $1,913,669,147 |
| District 4 | 212 | $318,310,350 | 1,081 | $652,433,746 |
| District 5 | 81 | $75,470,973 | 149 | $97,208,521 |
| **Total** | 2,467 | $1,724,790,277 | 4,206 | $3,022,873,604 |

Residential and non-residential property exposed to a failure of the San Antonio Dam is summarized by failure type in *Table 7-10* and *Table 7-11*, respectively.

**Table 7-10**
**Residential Property Exposed to Dam Failure in Monterey County- San Antonio Dam**

| Supervisorial District | Spillway Failure | | Dam Failure | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 0 | $0 | 0 | $0 |
| District 2 | 25 | $14,955,579 | 356 | $160,541,542 |
| District 3 | 27 | $3,896,226 | 862 | $290,548,892 |
| District 4 | 6 | $1,878,279 | 1,829 | $817,783,466 |
| District 5 | 5 | $1,925,278 | 270 | $158,562,338 |
| **Total** | 63 | $22,655,362 | 3,317 | $1,427,436,238 |

**Table 7-11**
**Non-Residential Property Exposed to Dam Failure in Monterey County- San Antonio Dam**

| Supervisorial District | Spillway Failure | | Dam Failure | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 0 | $0 | 121 | $81,861,626 |
| District 2 | 1,365 | $163,566,067 | 1,709 | $344,429,789 |
| District 3 | 458 | $708,840,660 | 1,226 | $1,603,644,752 |
| District 4 | 84 | $156,648,583 | 883 | $570,421,330 |
| District 5 | 47 | $60,066,878 | 164 | $99,018,359 |
| **Total** | 1,954 | $1,089,122,188 | 4,103 | $2,699,375,856 |

A failure of the Los Padres Dam would impact 943 residential properties, valued at $779,795,548 and 419 non-residential properties, valued at $196,382,343. All impacted property would be in Monterey County Supervisorial District 5, in the Carmel Valley area.

Residential property exposed to a failure of the Forest Lake Dam by failure type is summarized in *Table 7-12.* Non-residential property exposed to a failure of the Forest Lake Dam by failure

type is summarized in *Table 7-13.* Impacts are not summarized by Supervisorial District, as all impacts would occur in Supervisorial District 5 in the Pebble Beach community.

**Table 7-12**
**Residential Property Exposed to Dam Failure in Monterey County- Forest Lake Dam**

| Scenario | Number | Value |
|---|---|---|
| Scenario 1- North Embankment Failure | 38 | $47,663,347 |
| Scenario 2- South Embankment Failure | 48 | $54,833,015 |
| Scenario 3- Outlet Structure Failure | 0 | $0 |
| Scenario 4- NW End of South Embankment Failure | 266 | $356,389,582 |

**Table 7-13**
**Non-Residential Property Exposed to Dam Failure in Monterey County- Forest Lake Dam**

| Scenario | Number | Value |
|---|---|---|
| Scenario 1- North Embankment Failure | 12 | $97,873,581 |
| Scenario 2- South Embankment Failure | 16 | $62,584,773 |
| Scenario 3- Outlet Structure Failure | 0 | $0 |
| Scenario 4- NW End of South Embankment Failure | 52 | $77,207,153 |

Vulnerable properties are those closest to the dam inundation area. These properties would experience the largest, most destructive surge of water. Low-lying areas are also vulnerable since they are near where the dam waters would collect. Properties in the dam inundation zone that are built to NFIP minimum construction standards may have some level of protection against dam inundation, depending on the velocity and elevation of the inundation waters. These properties also are more likely to have flood insurance.

### *Levee Failure*

Any property in an area protected by a levee would be exposed to levee failure risk in the event of a levee failure event. *Table 7-14* summarizes land area behind levees, as well as structures and property value exposed to levee failure risk by water body in Monterey County.

**Table 7-14**
**Property Exposed to Levee Failure in Monterey County by Waterbody**

| Waterbody | Miles of Levee | Leveed Area in Square Miles | Structures | Property Value |
|---|---|---|---|---|
| Bennett Slough | 0.9 | 0.35 | 1 | $544,000 |
| Carmel River | 2.1 | 0.17 | 111 | $258,000,000 |
| Elkhorn Slough | 5.6 | 0.62 | 0 | $0 |
| Moro Cojo Slough | 4.3 | 0.87 | 0 | $0 |
| Pajaro River | 9.2 | 5.97 | 811 | $481,000,000 |
| Salinas River | 29.6 | 8.51 | 8 | $55,501,000 |
| **Total** | **51.7** | **16.49** | **931** | **$795,045,000** |

Source: US Army Corp of Engineers, National Levee Database

The southern bank of the Pajaro levee reduces flood risk for agricultural areas and the town of Pajaro which sits within the floodplain. There is potential for high economic damages if a levee breach occurs and 800 structures at risk of flooding. While not all land protected by levee is agricultural, much of the 16.49 square miles of the land protected by levees in Monterey County is likely agricultural. Therefore, a levee failure could threaten important agricultural value.

### 7.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

*Dam Failure*

Transportation routes have the potential to be destroyed due to dam failure. This includes all roads, railroads, and bridges in the path of the dam inundation. Notably, Highway 101 would be at risk if the Nacimiento or San Antonio Dam were to fail. Carmel Valley Road would be at risk due to a failure of the Los Padres Dam.

Transportation routes vulnerable to dam inundation have the potential to be wiped out and could create isolation issues. Those that are most vulnerable are those that are already in poor condition and would not be able to withstand a large water surge.

Utilities such as overhead power lines, cable and phone lines could also be at risk if any dam were to fail. Loss of these utilities could create additional isolation issues for the inundation areas. *Table 7-15* summarizes critical infrastructure identified as vulnerable to dam failure risk.

**Table 7-15**
**Critical Infrastructure Exposed to Dam Failure Risk in Monterey County**

| Critical Infrastructure Type | Nacimiento | | San Antonio | | Forest Lake (Scenarios) | | | | Los Padres |
|---|---|---|---|---|---|---|---|---|---|
| | Dam Failure | Spillway Failure | Dam Failure | Spillway Failure | 1 | 2 | 3 | 4 | |
| **Facilities** | | | | | | | | | |
| Emergency Response | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fire Station | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Police Station | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Medical Facilities | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 |
| Military Facility | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Large Public Facility | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Educational Facilities | 12 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 |
| Power Plant | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Water & Wastewater | 32 | 14 | 28 | 2 | 0 | 0 | 0 | 0 | 21 |
| Stormwater Facilities | 9 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| Government Facilities | 14 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 1 |
| Communication Facilities | 80 | 24 | 64 | 9 | 2 | 2 | 2 | 2 | 6 |
| Rain Gauges | 9 | 3 | 7 | 3 | 0 | 0 | 0 | 0 | 1 |

**Table 7-15**
**Critical Infrastructure Exposed to Dam Failure Risk in Monterey County**

| Critical Infrastructure Type | Nacimiento | | San Antonio | | Forest Lake (Scenarios) | | | | Los Padres |
|---|---|---|---|---|---|---|---|---|---|
| | Dam Failure | Spillway Failure | Dam Failure | Spillway Failure | 1 | 2 | 3 | 4 | |
| **Hazardous Materials** | | | | | | | | | |
| Active or Idle Oil Well | 1,050 | 811 | 955 | 100 | 0 | 0 | 0 | 0 | 0 |
| Landfill | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Underground Tank | 6 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cal ARP Facility | 8 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Transportation** | | | | | | | | | |
| Airport | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bridge | 28 | 21 | 26 | 11 | 0 | 0 | 0 | 0 | 7 |
| Harbor | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Highway (Miles) | 96 | 42 | 63 | 8 | 0 | 0 | 0 | 0 | 0 |
| Major Road (Miles) | 109 | 38 | 111 | 15 | 0 | 0 | 0 | 0 | 0.7 |
| Local Road (Miles) | 159 | 57 | 133 | 10 | 3 | 2 | 0 | 4 | 25 |
| Railroad (Miles) | 45 | 11 | 46 | 2 | 0 | 0 | 0 | 0 | 0 |

*Levee Failure*

A failure of the left bank of the Pajaro levee could threaten critical infrastructure in the town of Pajaro, which includes a middle school, PG&E distribution lines, and industrial sites.

### 7.4.4 ENVIRONMENT

The environment would be exposed to a number of risks in the event of dam failure or levee failure event. The inundation could introduce many foreign elements into local waterways. This could result in destruction of downstream habitat and could have detrimental effects on many species of animals, especially endangered species such as steelhead.

### 7.4.5 ECONOMIC IMPACT

Dam and levee failure would likely impact Monterey County's agricultural economy. When a dam fails or a levee is breached, soil and crop damages in the flooded bottomland areas that impact agricultural management capacities and crop productivity. Breached levees appreciably impact freshwater resources, damage crops and livestock, destroy homes, schools, businesses, and wild species habitat, among other vital, sensitive areas. Levee failure often leads to oil and petroleum contamination of freshwater resources, particularly in dense residential, agricultural, and commercial areas protected by levee systems that depend upon such water resources for drinking, irrigation, and industrial uses.

## 7.5 FUTURE TRENDS IN DEVELOPMENT

Most of the areas vulnerable to the more severe impacts from dam and levee failure intersect the mapped flood hazard areas. Flood-related policies in the general plans of participating jurisdictions will help to reduce the risk associated with dam and levee failure for all future development. Flooding due to a dam or levee failure could exceed the special flood hazard areas regulated through local floodplain ordinances, and therefore the County and participating jurisdictions should still consider this hazard when permitting development in mapped dam inundation zones and downstream of high hazard and significant hazard dams. Low hazard dams could become significant or high hazard dams if development occurs below them.

## 7.6 ISSUES

The most significant issue associated with dam and levee failure involves the properties and populations in the inundation zones. Flooding as a result of a dam or levee failure would significantly impact these areas. There is often limited warning time for dam or levee failures. These events are frequently associated with other natural hazard events such as earthquakes, landslides, or severe weather, which limits their predictability and compounds the hazard. Important issues associated with dam and levee failure hazards include the following:

- Dam and levee infrastructure may require repair and improvement to withstand climate change impacts.
- Federally regulated dams have an adequate level of oversight and sophistication in the development of emergency action plans for public notification in the unlikely event of failure. However, the protocol for notification of downstream citizens of imminent failure needs to be tied to local emergency response planning.
- Mapping for federally regulated dams is already required and available; however, mapping for nonfederal-regulated dams that estimates inundation depths is needed to better assess the risk associated with dam failure from these facilities.
- Most dam failure mapping required at federal levels requires determination of the probable maximum flood. While the probable maximum flood represents a worst-case scenario, it is generally the event with the lowest probability of occurrence. For non-federal-regulated dams, mapping of dam failure scenarios that are less extreme than the probable maximum flood but have a higher probability of occurrence can be valuable to emergency managers and community officials downstream of these facilities. This type of mapping can illustrate areas potentially impacted by more frequent events to support emergency response and preparedness.
- The concept of residual risk associated with structural flood control projects should be considered in the design of capital projects and the application of land use regulations.
- Addressing security concerns and the need to inform the public of the risk associated with dam failure is a challenge for public officials.

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# 8. DROUGHT

## 8.1 OVERVIEW

Drought is a significant decrease in water supply relative to what is typical in a given location. It is a normal phase in the climate cycle of most regions, originating from a deficiency of precipitation over an extended period of time, usually a season or more. This leads to a water shortage for some activity, group, or environmental sector. High temperatures, high winds, and low humidity can worsen drought conditions, and can make areas more susceptible to wildfire. Human demands and actions can also hasten drought-related impacts.

Droughts are frequently classified as one of the four types: meteorological, agricultural, hydrological, or socioeconomic. Meteorological droughts are typically defined by the level of "dryness" when compared to an average, or normal amount of precipitation over a given period of time. Agricultural droughts relate common characteristics of drought to their specific agricultural-related impacts (when the amount of moisture in soil does not meet the needs of a particular crop). Hydrological drought is directly related to the effect of precipitation shortfalls on surface and groundwater supplies. Human factors, particularly changes in land use, can alter the hydrologic characteristics of a basin. Socioeconomic drought is the result of water shortages that affect people and limit the ability to supply water-dependent products in the marketplace.

Droughts cause public health and safety impacts, as well as economic and environmental impacts. Public health and safety impacts are primarily associated with catastrophic wildfire risks and drinking water shortage risks for small water systems in rural areas and private residential wells. Drought impacts are felt first by people most dependent on annual rainfall –

such as ranchers using dryland range or rural residents relying on wells in low-yield rock formations.

Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline. At times, drought may also cause community-wide impacts because of acute water shortages (regulatory use restrictions, drinking water supply, and seawater intrusion). The magnitude of such impact's correlates directly with local groundwater supplies, reservoir storage, and development densities. Drought conditions can also contribute to or exacerbate extreme heat concerns, particularly with regard to elderly populations.

### 8.1.1 DROUGHT IN CALIFORNIA

Most of California's precipitation comes from storms moving across the Pacific Ocean. The path followed by the storms is determined by the position of an atmospheric high-pressure belt that normally shifts southward during the winter, allowing low pressure systems to move into the State. On average, 75% of California's annual precipitation occurs between November and March, with 50% occurring between December and February. A persistent Pacific high-pressure zone over California in mid-winter signals a tendency for a dry water year.

A typical water year produces about 100 inches of rainfall over the North Coast, 50 inches of precipitation (combination of rain and snow) over the Northern Sierra, 18 inches in the Sacramento area, and 13 inches to 23 inches in the planning area. In extremely dry years, these annual totals can fall to as little as one half, or even one third of these amounts. The Sierra Nevada snowpack serves as the primary agent for replenishing water in the San Francisco Bay area, including Monterey County, and for much of the State of California. A reduction in spring snowpack runoff, whether due to drier winters or to increasing temperatures leading to more rain than snow, can increase risk of summer or fall water shortages throughout the region.

### 8.1.2 DROUGHT CONDITIONS

The US Drought Monitor (USDM) uses a five-category system to label the severity of droughts. Drought categories show experts' assessments of conditions related to dryness and drought including observations of how much water is available in streams, lakes, and soils compared to usual for the same time of year. Drought is classified into five categories:

| |
|---|
| D0 - Abnormally Dry |
| D1 - Moderate Drought |
| D2 - Severe Drought |
| D3 - Extreme Drought |
| D4 - Exceptional Drought |

Since no two states experience the same set of impacts during a drought. USDM has developed tables of impacts reported during past droughts in each state for each level of drought on the US Drought Monitor. Impacts by drought category for California are listed in *Table 8-1.*

**Table 8-1**
**Drought Impacts by USDM Drought Category in California**

| | |
|---|---|
| D0 | Soil is dry; irrigation delivery begins early; Dryland crop germination is stunted |
| | Active fire season begins |
| | Winter resort visitation is low; snowpack is minimal |
| D1 | Dryland pasture growth is stunted; producers give supplemental feed to cattle |
| | Landscaping and gardens need irrigation earlier; wildlife patterns begin to change |
| | Stock ponds and creeks are lower than usual |
| D2 | Grazing land is inadequate; Trees are stressed; plants increase reproductive mechanisms; wildlife diseases increase |
| | Producers increase water efficiency methods and drought-resistant crops |
| | Fire season is longer, with high burn intensity, dry fuels, and large fire spatial extent; more fire crews are on staff |
| | Wine country tourism increases; lake- and river-based tourism declines |
| | Water temperature increases, programs to divert water to protect fish begin<br>River flows decrease; reservoir levels are low, and banks are exposed |
| D3 | Livestock need expensive supplemental feed, cattle and horses are sold; little pasture remains; Orchard removal and well drilling company business increase |
| | Fruit trees bud early; producers begin irrigating in the winter |
| | Federal water is not adequate to meet irrigation contracts; extracting supplemental groundwater is expensive |
| | Fire season lasts year-round; fires occur in wet parts of state; burn bans implemented |
| | Low river levels impede fish migration and cause lower survival rates |
| | Wildlife encroaches on developed areas; little native food and water is available for bears, which hibernate less |
| | Water sanitation is a concern, reservoir levels drop significantly, surface water is nearly dry, flows are exceptionally low; water theft occurs |
| | Wells and aquifer levels decrease; homeowners drill new wells |
| | Water conservation rebate programs increase; water use restrictions are implemented; water transfers increase |
| | Water is inadequate for agriculture, wildlife, and urban needs; reservoirs are extremely low; hydropower is restricted |
| D4 | Fields are left fallow; orchards are removed; vegetable yields are low |
| | Fire season is very costly; number of fires and area burned are extensive |
| | Fish rescue begins; forest mortality is high; wetlands dry up; survival of native plants and animals is low; wildlife death is widespread; algae blooms appear |
| | Policy change, agriculture unemployment is high, food aid is needed |
| | Poor air quality affects health, greenhouse gas emissions increase as hydropower production decreases; West Nile Virus outbreaks rise |
| | Water shortages are widespread; surface water is depleted; federal irrigation water deliveries are extremely low; junior water rights are curtailed; water quality is poor |
| | Water prices are extremely high; wells are dry, more, and deeper wells are drilled |

### 8.1.3 LOCAL WATER SUPPLY AND WATER SHORTAGE

Monterey County is isolated from State and Federal water supplies and must rely solely on its local water resources, historically, groundwater and surface water from watersheds with negligible influence from snowpack. The Monterey County Water Resources Agency manages two large reservoirs: San Antonio and Nacimiento. The Monterey Peninsula depends on two water sources: the Carmel River, which drains a 255-square-mile watershed and runs 36 miles from its source in the Santa Lucia mountains to the sea; and the Seaside Basin, which is recharged by local rain, and which underlies the City of Seaside as well as parts of the former Fort Ord and Highway 68 corridor.

Groundwater is the major source of water for many water users in more rural areas of Monterey County with the exception of residents along the Big Sur coast, who depend entirely on surface water and shallow wells for their water supply, and of residents in an area near Greenfield in the Salinas Valley, who have a diversion from the Arroyo Seco River.

High demands on water resources during severe drought can limit water supply. During critically dry years, the California State Water Resources Control Board can mandate water conservation by water users and agencies to address statewide water shortages. *Table 8-2* lists State Drought Management Program stages mandated to water right holders.

**Table 8-2**
**State Drought Management Program**

| Drought Stage | State Mandated Customer Demand Reduction | Rate Impacts |
|---|---|---|
| Stage 0 or 1 | <10% | Normal rates |
| Stage 2 | 10 to 15% | Normal rates; Drought surcharge |
| Stage 3 | 15 to 20% | Normal rates; Drought surcharge |
| Stage 4 | >20% | Normal rates, Drought surcharge |

Several efforts are also underway to provide recycled water and reduce the risk seawater intrusion. The Pure Water Monterey Groundwater Replenishment Project (PWM/GWR) replenishes the Seaside Basin with an average of 3500 acre-feet/year of advanced purified recycled water which is injected to the Basin via a series of shallow and deep injection wells. The recycled water mixes with native groundwater and is stored for later potable water supply.

The Salinas Valley Reclamation Project (SVRP) provides recycled water to growers in the Salinas Valley. The distribution portion of the system, known as the Castroville Seawater Intrusion Project (CISP), delivers water through 45 miles of pipeline to 12,000 acres of farmland in the northern Salinas Valley nearly year-round. While SVRP does not produce potable water, it does help agricultural users in the CSIP area reduce their reliance on the 180- and 400-foot aquifers, which are the source of potable water supply for several communities including Castroville and the City of Salinas.

## 8.2 HAZARD PROFILE

### 8.2.1 HISTORY

The California Department of Water Resources has state hydrologic data back to the early 1900s. The hydrologic data show multi-year droughts from 1912 to 1913, 1918 to 1920, 1922 to 1924, and 1928 to 1934. Since then, a number of prolonged periods of drought occurred in California, all of which impacted Monterey County to some degree.

**1976 to 1977 Drought**: California had one of its most severe droughts due to lack of rainfall during the winters of 1976 and 1977. 1977 was the driest period on record in California, with the previous winter recorded as the fourth driest in California's hydrological history. The cumulative impact led to widespread water shortages and severe water conservation measures throughout the state. Only 37% of the average Sacramento Valley runoff was received, with just 6.6 million acre-feet recorded. Over $2.6 billion in crop damage was recorded in 31 counties. FEMA declared a drought emergency (Declaration 3023-EM) on January 20, 1977, for 58 California counties.

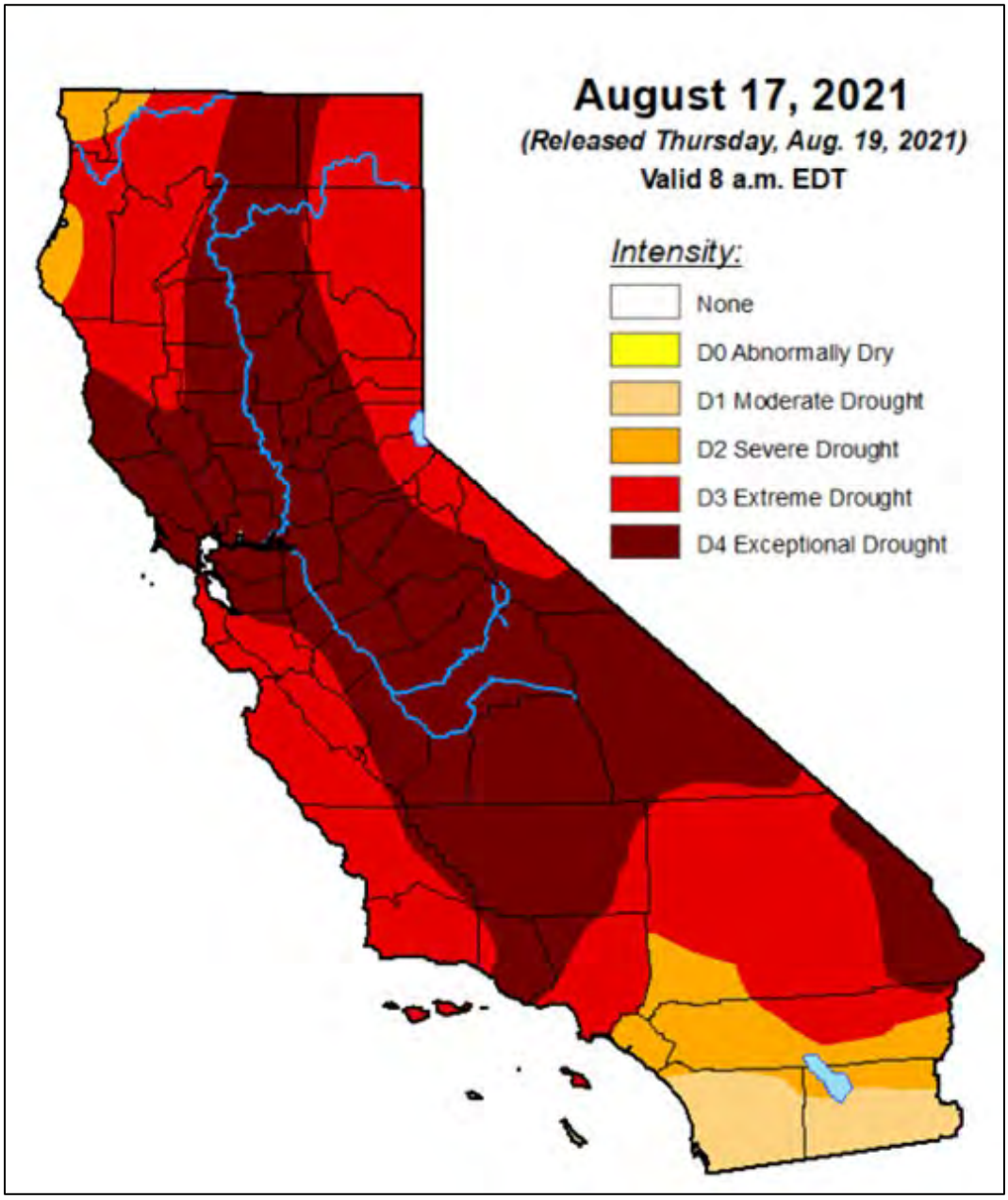
**1987 to 1992 Drought**: California received precipitation well below average levels for four consecutive years. While the Central Coast was most affected, the Sierra Nevadas in Northern California and the Central Valley counties were also affected. During this drought, only 56% of average runoff for the Sacramento Valley was received, totaling just 10 million acre-feet. In 1991, the State Water Project sharply decreased deliveries to water suppliers. By February 1991, all 58 counties in California were experiencing drought conditions. Urban areas as well as agricultural areas were impacted.

**2007 to 2009 Drought**: The governor issued an executive order that proclaimed a statewide drought emergency on June 4, 2008, after spring 2008 was the driest spring on record, with low snowmelt runoff. On February 27, 2009, the governor proclaimed a state of emergency for the entire state as severe drought conditions continued. The largest court-ordered water restriction in state history (at the time) was imposed.

**2012 to 2016 Drought**: The most recent major drought in California set several records for the state and was one of the most severe droughts on record. On January 17, 2014, Governor Jerry Brown declared a statewide drought emergency in response to California's driest year on record, with nearly 99% of the state considered abnormally dry or worse, and almost two-thirds of the state (including Monterey County) in extreme drought conditions. In the State of Emergency declaration, Governor Brown directed state officials to assist farmers and communities that are economically impacted by dry conditions. The Governor also directed state agencies to use less water and hire more firefighters and initiated a greatly expanded water conservation public awareness campaign. On April 2, 2017, Governor Brown lifted the drought emergency, but declared that California must continue water conservation efforts.

**2021 Drought:** On July 8, 2021, Governor Gavin Newsom declared a drought emergency in Monterey County along with 8 other Counties. This declaration was an expansion of the May 10, 2021, drought declaration**,** with 50 of California's 58 counties now included in the drought emergency declaration. Drought conditions in California as of August 17, 2021, are shown in *Figure 8-1*.

**Figure 8-1**
**US Drought Monitor, Drought Conditions as of August 17, 2021**




**Source**: The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map courtesy of NDMC.

The US Department of Agriculture (USDA) declares agriculture-related disasters for losses resulting from drought, flood, fire, freeze, tornadoes, pest infestation, and other natural disasters. Between 2012 and 2021, the period for which data was available, Monterey County was included in 21 USDA disaster declaration in relation to drought, listed in *Table 8-3*.

**Table 8-3**
**USDA Agricultural Disaster Designations in Monterey County (2012-2021)**

| Designation Number | Disaster Type | Crop Disaster Year |
|---|---|---|
| S4958 | Drought | 2021 |
| S4969 | Drought | 2021 |
| S4916 | Drought | 2021 |
| S4467 | Drought | 2019 |
| S4460 | Drought | 2018 |
| S4144 | Drought | 2017 |
| S4163 | Drought | 2017 |
| S3952 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2016 |
| S3784 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2015 |
| S3943 | Drought | 2015 |
| S3626 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2014 |
| S3637 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2014 |
| S3626 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2014 |
| S3637 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2014 |
| S3743 | Drought | 2014 |
| S3491 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3497 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3504 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3547 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3569 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2013 |
| S3268 | Drought, High Winds, Wildfire, Excessive Heat, and Insects | 2012 |
| S3379 | Drought | 2012 |
| S3452 | Drought | 2012 |

Source: United States Department of Agriculture (USDA), Disaster Designation Information, Last updated August 20, 2021

The National Drought Mitigation Center developed the Drought Impact Reporter in response to the need for a national drought impact database for the US. Information comes from a variety of sources: on-line, drought-related news stories and scientific publications, members of the public, members of the media, and staff of government agencies.

The Drought Impact Reporter found that Monterey County was affected by 111 impacts from droughts from January 2012 through November 2021 in the following categories (note that some impacts have been assigned to more than one category).[30]

### 8.2.2 LOCATION

Drought is a regional phenomenon with the potential to impact the entire population of Monterey County directly or indirectly, be it from water restrictions, higher water and food prices, reduced air or water quality, or restricted access to recreational areas. No portion of the County is immune from drought conditions. However, the most significant financial losses are likely to occur in areas that are primarily agricultural.

Lack of winter snowfall in the mountains can eventually lead to agricultural impacts due to decreased stream flows. Droughts of just a few weeks during critical periods of plant development can have disastrous effects on agriculture production. Reduced reservoir storage from decreased runoff in the mountains can lead to water shortages. Droughts that occur in populated areas may not have direct effects to the residents but may increase the threat of wildfire in the wildland urban interface areas.

### 8.2.3 FREQUENCY

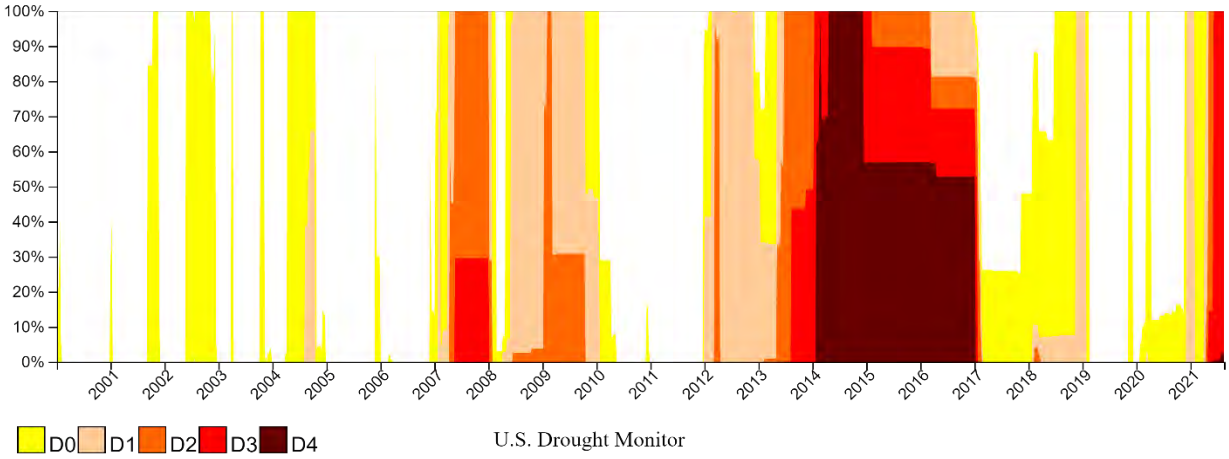
Droughts originate from a deficiency of precipitation resulting from an unusual weather pattern. If the weather pattern lasts a short time (a few weeks or a couple of months), the drought is considered short-term. If the weather pattern becomes entrenched and the

[30] Drought Impact Reporter, National Drought Mitigation Center

precipitation deficits last for several months or years, the drought is considered to be long-term. It is possible for a region to experience a long-term circulation pattern that produces drought, and to have short-term changes in this long-term pattern that result in short-term wet spells. Likewise, it is possible for a long-term wet circulation pattern to be interrupted by short-term weather spells that result in short-term drought.

According to historical data prepared by the National Drought Mitigation Center, Monterey County, has experienced some level of drought almost every year during the past 20 years. Time series data by percentage area in drought conditions in Monterey County from the US Drought Monitor[31] is shown in *Figure 8-2*. Therefore, droughts likely are likely to occur frequently in Monterey County at varied severities in the future.

**Figure 8-2**
**Monterey County Percentage Area Drought Conditions**




## 8.2.4 SEVERITY

Drought can have a widespread impact on the environment and the economy, although it typically does not result in loss of life or damage to property. The severity of a drought depends on the degree of moisture deficiency, the duration, and the size and location of the affected area. The longer the duration of the drought and the larger the area impacted, the more severe the potential impacts. Unlike most disasters, droughts normally occur slowly but last a long time. Drought can have severe impacts in Monterey County's water resources, which are already over-stretched by the demands of a growing agriculture economy and population.

The agricultural sector clearly demonstrates the site-specific nature of drought impacts. Agricultural drought impacts are normally felt earliest by those relying on unmanaged water supplies: entities carrying out dryland grazing and non-irrigated crop production, usually grain crops. Impacts to irrigated agriculture depend on the source and nature of the irrigation water supply, whether it be local groundwater, local surface water, or imported surface water, and

[31] Time Series Data, US Drought Monitor

any water rights or contractual provisions that may be associated with the source. The extent to which producers may mitigate water shortage impacts depends on multiple factors but is heavily influenced by economic considerations. Factors involved in making decisions about mitigating irrigation water shortages include availability and costs of pumping groundwater, price of alternative surface water sources, capital investments associated with maintaining permanent plantings, and status of international crop markets.

Drought generally does not affect groundwater sources as quickly as surface water supplies, but groundwater supplies generally take longer to recover. Reduced precipitation during a drought means that groundwater supplies are not replenished at a normal rate, and in many cases, groundwater is more heavily relied upon during periods of drought due to a reduction in surface water availability. This can lead to a reduction in groundwater levels, decreases in water quality, and problems such as reduced pumping capacity or wells going dry. Long term drought conditions in the County could lead to increased groundwater mining in the Deep Aquifers. Reduced replenishment of groundwater also affects streams. Much of the flow in streams comes from groundwater, especially during the summer when there is less precipitation and after snowmelt ends. Reduced groundwater levels mean that even less water will enter streams when steam flows are lowest.

### 8.2.5 WARNING TIME

Droughts are climatic patterns that occur over long periods of time. Only generalized warning can take place due to the numerous variables that scientists have not pieced together well enough to make accurate and precise predictions. Empirical studies conducted over the past century have shown that meteorological drought is never the result of a single cause. It is the result of many causes, often synergistic in nature; these include global weather patterns that produce persistent, upper-level high-pressure systems along the West Coast with warm, dry air resulting in less precipitation.

Scientists currently do not know how to predict drought more than a month in advance for most locations. Predicting drought depends on the ability to forecast precipitation and temperature. Anomalies of precipitation and temperature may last from several months to several decades. How long a drought will last depends on interactions between the atmosphere and the oceans, soil moisture and land surface processes, topography, internal dynamics, and the accumulated influence of weather systems on the global scale.

## 8.3 SECONDARY HAZARDS

Drought is often accompanied by extreme heat, exposing people to the risk of sunstroke, heat cramps and heat exhaustion. Pets and livestock are also vulnerable to heat-related injuries. Crops can be vulnerable as well. For more information on heat risk in Monterey County, refer to *Severe Weather* in **Section 14**.

### 8.3.1 SEAWATER INTRUSION

Droughts can cause and exacerbate seawater intrusion in Monterey Bay area. Drought conditions can lead to increases in groundwater pumping, including potential pumping from deep aquifers, and this loss of groundwater increases seawater intrusion. According to the 2015 Urban Water Management Plan for the Salinas District, the annual non-drought overdraft of the Salinas Valley Groundwater Basin is estimated to be approximately 45,300 AF per year. During droughts, the annual overdraft can escalate to between 150,000 to 300,000 AF per year. As a result of this consistent overdraft, groundwater levels in the Salinas Valley Groundwater Basin have dropped below sea level, allowing seawater to intrude from Monterey Bay into aquifers located 180 and 400 feet below ground surface. While basin overdraft conditions are expected to improve by the year 2030 due to water reclamation efforts, recent groundwater modeling from the Salinas Valley Integrated Ground and Surface Water Model (SVIGSM) predicted seawater intrusion to continue to worsen, though at a decreased rate.

### 8.3.2 WILDFIRE

A prolonged lack of precipitation dries out vegetation, which becomes increasingly susceptible to wildfire ignition as the duration of the drought extends. For more information on wildfire risk in Monterey County, refer to *Wildfire* in **Section 18**.

### 8.3.3 DEBRIS FLOWS

Post-fire vegetation recovery on burn scars is necessary for winter-storm slope stability. Drought conditions may slow the vegetation recovery rates on burn scars causing a higher debris flow likelihood for a longer period following a wildfire. For more information on debris flow risk in Monterey County, refer to *Slope Failure* in **Section 15**.

## 8.4 RISK ASSESSMENT

The National Drought Mitigation Center uses three categories to describe likely drought impacts:

- Population/Social Impacts: These impacts affect people's health and safety. Social impacts include public safety, health, conflicts between people when there is not enough water to go around, and changes in lifestyle.
- Economic Impacts: These impacts of drought cost people (or businesses) money, farmers' crops are destroyed; low water supply necessitates spending on irrigation or to drill new wells; businesses that sell boats and fishing equipment may not be able to sell their goods.
- Environmental Impacts: Plants and animals depend on water. When a drought occurs, their food supply can shrink, and their habitat can be damaged.

### 8.4.1 POPULATION AND SOCIAL IMPACTS

The entire population of Monterey County is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Drought also is often accompanied by extreme heat, exposing people to the risk of sunstroke, heat cramps and heat exhaustion. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease.

Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution. Disadvantaged communities in areas in the Central Coast region, such as the City of Salinas, were highly affected by water shortages during the 2011-2016 drought and another extend period of drought would likely disproportionality affect low-income communities. Drought changes also exacerbated affordability concerns for low-income households

### 8.4.2 ECONOMIC IMPACT

Drought causes the most significant economic impacts on industries that use water or depend on water for their business, most notably, agriculture and related sectors (forestry, fisheries, and waterborne activities), power plants and oil refineries. In addition to losses in yields in crop and livestock production, drought is associated with increased insect infestations, plant diseases, and wind erosion. Drought can lead to other losses because so many sectors are affected- losses that include reduced income for farmers and reduced business for retailers and others who provide goods and services to farmers. This leads to unemployment, increased credit risk for financial institutions, capital shortfalls, and loss of tax revenue. Prices for food, energy, and other products may also increase as supplies decrease. Although most businesses will still be operational, they may be affected aesthetically—especially the recreation and tourism industry. Moreover, droughts within another area could affect food supply/price of food for residents within the County.

Monterey County's agricultural sector is particularly vulnerable to drought conditions, with consequences that directly relate to the water available for irrigation purposes. Heat conditions associated with drought exacerbate agricultural irrigation demands when water levels are at their lowest. Reduction in precipitation coupled with heat stress can adversely impact crop production. In the Salinas Valley, agricultural water is made available from groundwater sources that are recharged by the Salinas River, which relies on water releases from the Nacimiento, and San Antonio reservoirs as controlled by MCWRA. Since 1990, growers in the Castroville Seawater Intrusion Project (CSIP) distribution system area have utilized tertiary-treated recycled water produced by M1W in partnership with MCWRA to irrigate their crops. In 2006, M1W and MCWRA added the Salinas River Diversion Facility (SRDF), which supplies recycled water to 12,000 acres of productive farmland. The SRDF relies upon water from the upstream Reservoirs to operate, providing Salinas River flows to supplement recycled water and further

reduce groundwater pumping in the 180- and 400-foot aquifers of the Salinas Valley Groundwater Basin. During years when the SRDF is non-operational due to drought, a corresponding increase in groundwater pumping in CSIP region has been observed.

### 8.4.3 ENVIRONMENTAL IMPACT

Environmental losses from drought are associated with damage to plants, animals, wildlife habitat, and air and water quality; forest and range fires; degradation of landscape quality; loss of biodiversity; and soil erosion. Some of the effects are short-term and conditions quickly return to normal following the end of the drought. Other environmental effects linger for some time or may even become permanent. Wildlife habitat, for example, may be degraded through the loss of wetlands, lakes, and vegetation. However, many species will eventually recover from this temporary aberration. The degradation of landscape quality, including increased soil erosion, may lead to a more permanent loss of biological productivity. Although environmental losses are difficult to quantify, growing public awareness and concern for environmental quality has forced public officials to focus greater attention and resources on these effects.

## 8.5 FUTURE TRENDS IN DEVELOPMENT

Land use planning is directed by general plans adopted under California's General Planning Law. Municipal planning partners are encouraged to establish general plans with policies to deal with issues of water supply and protection of water resources. These plans increase capability at the local municipal level to protect future development from impacts of drought. All planning partners reviewed their general plans under the capability assessments undertaken for this hazard mitigation plan. Deficiencies revealed by these reviews are identified as mitigation actions to increase capability to deal with future trends in development.

## 8.6 ISSUES

- The probability of increased drought frequencies and durations due to climate change.
- The promotion of active water conservation even during non-drought periods.
- Application of alternative techniques (groundwater recharge, continued/expanded water reclamation, local capture and reuse, desalination, and transfer) to stabilize and offset water supply shortfalls.
- Regular occurrence of drought or multiyear droughts that may limit the County's ability to successfully recover from or prepare for more occurrences.
- The impact of prolonged drought conditions on Monterey County's agricultural industry, a key economic driver in the County.
- Severe drought could have serious impacts on water quality.
- Increased groundwater pumping during drought years exacerbating seawater intrusion.
- A severe drought would result in drier fuels which could create increased wildfire risk. Lack of water due to drought could also impede firefighting capabilities.

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# 9. EARTHQUAKE

## 9.1 OVERVIEW

An earthquake is a sudden motion or trembling caused by an abrupt shift of rock along a fracture in the earth or a contact zone between tectonic plates. Most destructive quakes are caused by dislocations of the crust. The crust may first bend and then, when the stress exceeds the strength of the rocks, break, and snap to a new position. In the process of breaking, vibrations called “seismic waves” are generated. These waves travel outward from the source of the earthquake at varying speeds. Earthquakes usually occur without warning and, after just a few seconds, can cause massive structural damage, injury, and loss of life, as well as damage to infrastructure networks, such as water, power, gas, communication, and transportation. The effects of an earthquake can be felt far beyond the site of its occurrence. The degree of damage depends on many interrelated factors. Among these are: the magnitude, focal depth, distance from the causative fault, source mechanism, duration of shaking, high rock accelerations, type of surface deposits or bedrock, degree of consolidation of surface deposits, presence of high groundwater, topography, and the design, type, and quality of building construction.

### 9.1.1 EARTHQUAKE GEOLOGY

The Earth’s crust, which is the rigid outermost shell of the planet, is broken into seven or eight major tectonic plates and many minor plates. Where the plates meet, they move in one of three ways: convergent (two plates moving together), divergent (two plates moving apart), or transform (two plates moving parallel to one another). Earthquakes, volcanic activity, mountain building, and oceanic trench formation occur along plate boundaries.

Subduction is a geological process that takes place at convergent boundaries of tectonic plate, in which one plate moves under another. Regions where this process occurs are known as subduction zones, and they have the potential to generate highly damaging earthquakes. The transform (parallel) movement of tectonic plates against one another creates stresses that build as the rocks are gradually deformed. The rock deformation, or strain, is stored in the rocks as elastic strain energy. When the strength of the rock is exceeded, rupture occurs along a fault. The rocks on opposite sides of the fault slide past each other as they spring back into a more relaxed position. The strain energy is released partly as heat and partly as elastic waves called seismic waves. The passage of seismic waves produces the ground shaking in earthquakes.

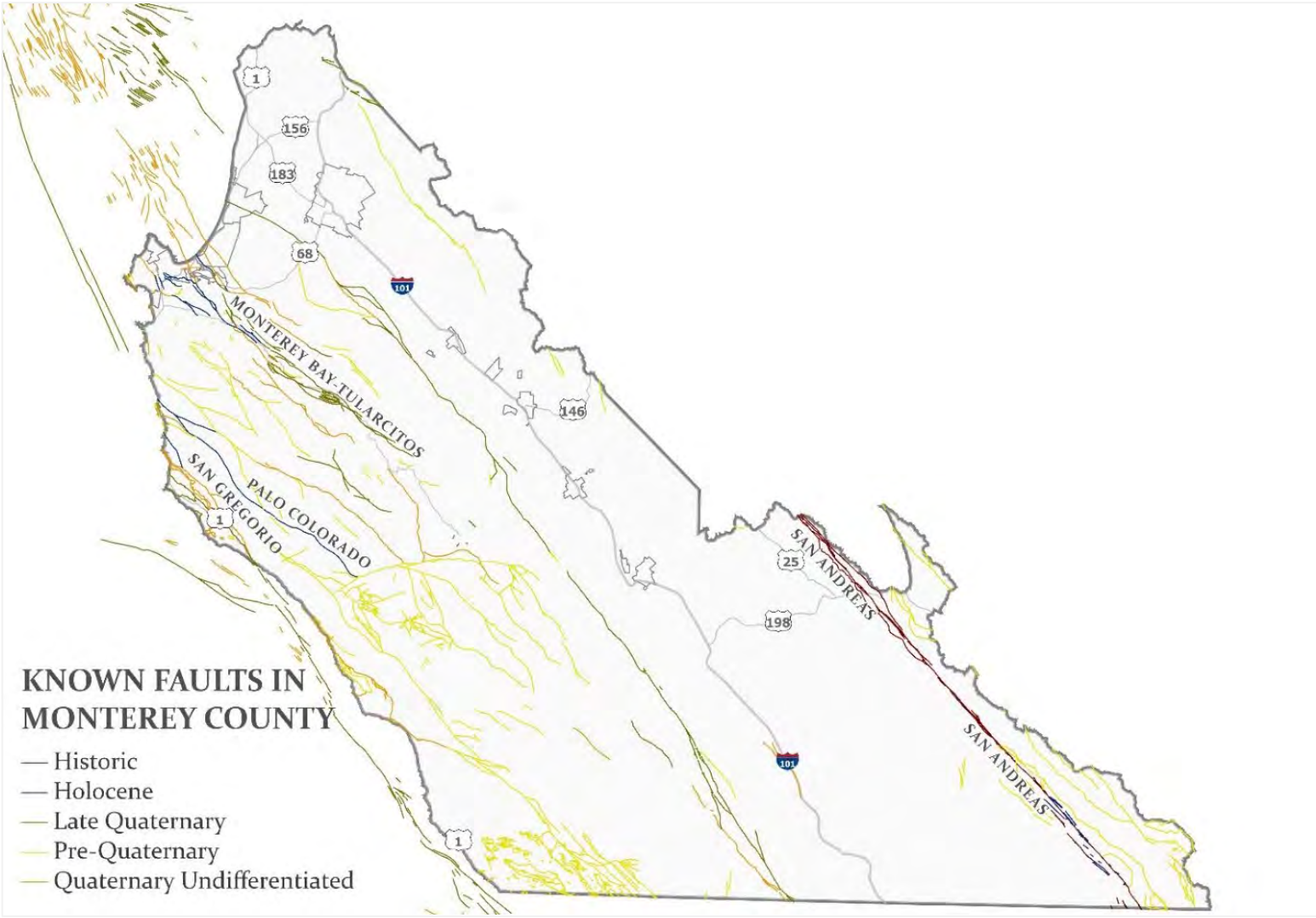
Monterey County lies within the California Coast Ranges, a region dominated by active tectonic movement of the North American Plate, east of the San Andreas Fault, and the Pacific Plate to the west. Regional tectonic forces generate an estimated relative motion between the North American and Pacific plates of approximately 2 inches per year. Over time, these forces have created the varied mountainous, valley, and fault-bound blocks seen in the County today.

Geologists have found that earthquakes tend to reoccur along faults, which are zones of weakness in the earth's crust. Even if a fault zone has recently experienced an earthquake, there is no guarantee that all stress has been relieved. Another earthquake could still occur. In fact, relieving stress along one part of a fault may increase it in another part. Therefore, faults are mapped to determine earthquake hazards. In California, a system has been developed by the California Geological Survey (CGS) and US Geological Survey (USGS) to assess the activity of faults. CGS categorizes faults based on the age of last displacement, as defined below:

- Historic faults have ruptured during historic time (approximately the last 200 years) and are associated with either a recorded earthquake with surface rupture, measurable surface displacement along a fault in the absence of notable earthquakes (e.g., aseismic creep), or displaced survey lines.
- Holocene age faults have ruptured within the past 11,000 years, as demonstrated by geomorphic or stratigraphic evidence of displacement of Holocene deposits or geomorphic features.
- Late Quaternary age faults have ruptured within approximately the last 700,000 years, as demonstrated by geologic and geomorphic evidence of displacement of Late Quaternary deposits or geomorphic features. This category may include younger faults that lack deposits by which to differentiate younger displacements.
- Quaternary age faults show evidence of surface rupture younger than approximately 1.6 million years ago.
- Pre-Quaternary age faults lack recognized evidence of Quaternary displacement or show evidence of no displacement during Quaternary time. Also included in this category are known faults for which detailed studies have not determined fault activity, and those faults identified only in preliminary mapping.

The classification of "active" is applied to historic and Holocene age faults; "potentially active" is applied to Quaternary and late Quaternary age faults; and "inactive" is applied to pre-Quaternary age faults. These classifications are not meant to imply that inactive faults will not rupture, only that they have not been shown to have ruptured for some time and the probability of fault rupture is low. Known faults in the County by age are shown in *Figure 9-1*.

**Figure 9-1**
**Known Faults in Monterey County by Age**




## 9.1.2 EARTHQUAKE CLASSIFICATIONS

Earthquakes are typically classified in one of two ways: By the amount of energy released, measured as magnitude; or by the impact on people and structures, measured as intensity.

*Magnitude*

The most common method for measuring earthquakes is magnitude, which measures the strength of earthquakes. An earthquake's magnitude is a measure of the energy released at the source of the earthquake and is related to the total area of the fault that ruptured, the amount of displacement across the fault, and the actual location of the energy release inside the earth. The Richter scale measures magnitude of earthquakes based on the amplitude of the largest energy wave released by the earthquake. Richter scale readings are suitable for smaller earthquakes; however, because it is a logarithmic scale, the scale does not clearly distinguish the magnitude of large earthquakes above a certain level.

Therefore, while the Richter scale is the most well-known measurement for earthquake magnitude, the majority of scientists currently use the Moment Magnitude (Mw) Scale to measure magnitude. As shown in *Table 9-1*, there are seven earthquake magnitude classes, ranging from great to micro. A magnitude class of great can cause tremendous damage to infrastructure, compared to a micro class, which results in minor damage to infrastructure.

**Table 9-1**
**Earthquake Magnitude Classes (Moment Magnitude Scale)**

| Magnitude Class | Magnitude Range | Description |
|---|---|---|
| Great | Magnitude > 8 | Tremendous Damage |
| Major | 7 ≤ Magnitude < 7.9 | Widespread Heavy Damage |
| Strong | 6 ≤ Magnitude < 6.9 | Severe Damage |
| Moderate | 5 ≤ Magnitude < 5.9 | Considerable Damage |
| Light | 4 ≤ Magnitude < 4.9 | Moderate Damage |
| Minor | 3 ≤ Magnitude < 3.9 | Rarely Causes Damage |
| Micro | Magnitude < 3 | Minor Damage |

*Intensity*

Although an earthquake has only one magnitude, it can have many intensities. The effects of an earthquake in a particular location are measured by intensity. Intensity at a given site is a function of earthquake magnitude, increasing as magnitude increases; distance from the causative fault, decreasing as distance increases; and underlying site geology, generally increasing in areas with weak, unconsolidated materials. Earthquake intensity decreases with increasing distance from the epicenter of the earthquake.

The Modified Mercalli Intensity value assigned to a specific site after an earthquake is a more meaningful measure of severity to the nonscientist than magnitude because intensity refers to the effects experienced at that place. The lower numbers on the intensity scale generally deal with the how the earthquake is felt by people, while the higher numbers are based on observed structural damage.

*Table 9-2* provides an overview of the Modified Mercalli Intensity scale.

**Table 9-2**
**Modified Mercalli Intensity Level Descriptions**

| Intensity | Shaking | Description/ Damage |
|---|---|---|
| I | Not Felt | Not felt except by a very few under especially favorable conditions. |
| II | Weak | Felt by only a few persons at rest, especially on upper floors of building. Delicately suspended objects may swing. |
| III | Weak | Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated. |
| IV | Light | Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably. |
| V | Moderate | Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop. Disturbances of trees, poles, and other tall objects sometimes noticed. |
| VI | Strong | Felt by all, many frightened. Many objects fall from shelves. Some heavy furniture moved; a few instances of fallen plaster, broken windows, and damaged chimneys. Damage slight. Some fall of tree limbs, isolated rockfalls and landslides, and isolated liquefaction. |
| VII | Very Strong | Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken. Tree damage, rockfalls, landslides, and liquefaction are more severe and widespread with increasing intensity. |
| VIII | Severe | Many find it difficult to stand. Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monument walls, and heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving in cars disturbed. |
| IX | Violent | Some forcibly thrown to the ground. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken. |
| X | Extreme | Some well-built structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Railway lines bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. |

### 9.1.3 GROUND MOTION

Earthquake hazard assessment is also based on expected ground motion. The ground experiences acceleration as it shakes during an earthquake. The peak ground acceleration (PGA) is the largest acceleration recorded by a monitoring station during an earthquake. PGA is a measure of how hard the earth shakes in a given geographic area and is expressed as a percentage of the acceleration due to gravity. Horizontal and vertical PGA varies with soil or rock type. Instruments called accelerographs record levels of ground motion due to earthquakes at stations throughout a region. These readings are recorded by state and federal agencies that monitor and predict seismic activity. Earthquake hazard assessment involves estimating the annual probability that certain ground motion accelerations will be exceeded, and then summing the annual probabilities over a time period of interest.

Maps of earthquake shaking hazards provide information for creating and updating seismic design requirements for building codes, insurance rate structures, earthquake loss studies, retrofit priorities and land use planning. After thorough review of the studies, professional organizations of engineers update the seismic-risk maps and seismic design requirements contained in building codes.

Building codes that include seismic provisions specify the horizontal force due to lateral acceleration that a building should be able to withstand during an earthquake. Buildings, bridges, highways, and utilities built to meet modern seismic design requirements are typically able to withstand earthquakes better, with less damage and disruption. PGA values are directly related to these lateral forces that could damage "short period structures" such as single-family dwellings. Longer-period response components determine the lateral forces that damage larger structures with longer natural periods such as apartment buildings, factories, high-rises, and bridges. *Table 9-3* lists damage potential and perceived shaking by PGA factors, compared to the Mercalli scale.

**Table 9-3**
**Modified Mercalli Scale and Peak Ground Acceleration**

| Modified Mercalli Scale | Perceived Shaking | Potential Structural Damage | | Estimated PGA (%g) |
|---|---|---|---|---|
| | | Resistant Buildings | Vulnerable Buildings | |
| I | Not Felt | None | None | < 0.17% |
| II-III | Weak | None | None | 0.17% - 1.4% |
| IV | Light | None | None | 1.4% - 3.9% |
| V | Moderate | Very Light | Light | 3.9% - 9.2% |
| VI | Strong | Light | Moderate | 9.2% - 18% |
| VII | Very Strong | Moderate | Moderate/Heavy | 18% - 34% |
| VIII | Severe | Moderate/Heavy | Heavy | 34% - 65% |
| IX | Violent | Heavy | Very Heavy | 65% - 124% |
| X - XII | Extreme | Very Heavy | Very Heavy | > 124% |

### 9.1.4 LIQUEFACTION

The impact of an earthquake on structures is a function of ground shaking, distance from the source of the quake, and liquefaction, an effect of an earthquake in which soils lose their shear strength and behave as liquid, damaging structures that derive their support from the soil. Liquefaction involves loose sandy soil with a high-water content that undermines the ground's ability to solidly support building structures during an earthquake. Liquefaction occurs when ground shaking causes the mechanical properties of some fine grained, saturated soils to liquefy and act as a fluid (liquefaction). It is the result of a sudden loss of soil strength due to a rapid increase in soil pore water pressures caused by ground shaking. In order for liquefaction to occur, three general geotechnical characteristics should be present:

- Ground water should be present within the potentially liquefiable zone
- The potentially liquefiable zone should be granular and meet a specific range in grain-size distribution
- The potentially liquefiable zone should be of low relative density. If those criteria are present and strong ground motion occurs, then those soils could liquefy, depending upon the intensity and duration of the strong ground motion.

Liquefaction that produces surface effects generally occurs in the upper 40 to 50 feet of the soil column, although the phenomenon can occur deeper than 100 feet. The duration of ground shaking is also an important factor in causing liquefaction to occur. The larger the earthquake magnitude, and the longer the duration of strong ground shaking, the greater the potential there is for liquefaction to occur.

A program called the National Earthquake Hazard Reduction Program (NEHRP) creates maps based on soil characteristics to help identify locations subject to liquefaction. *Table 9-4* summarizes NEHRP soil classifications. NEHRP Soils B and C typically can sustain ground shaking without much effect, dependent on the earthquake magnitude. The areas that are commonly most affected by ground shaking have NEHRP Soils D, E and F. In general, these areas are also most susceptible to liquefaction.

**Table 9-4**
**NEHRP Soil Classification System**

| NEHRP Soil Type | Description | Mean Shear Velocity to 30 m (m/s) |
|---|---|---|
| A | Hard Rock | 1,500 |
| B | Firm to Hard Rock | 760-1,500 |
| C | Dense Soil/ Soft Rock | 360-760 |
| D | Stiff Soil | 180-360 |
| E | Soft Clays | <180 |
| F | Special Study Soils- liquefiable soils, sensitive clays, organic soils, soft clays >36 m thick | |

## 9.2 HAZARD PROFILE

### 9.2.1 HISTORY

Earthquakes tend to reoccur where they have struck before. The central California coast has a history of damaging earthquakes, primarily associated with the San Andreas fault, which runs through the southeastern portion of the County for about 30 miles. There have also been a number of 5.0 to 6.5 earthquakes on other faults which have affected large portions of the region. The County has experienced 429 earthquakes since 1900 and 67 earthquakes since 2000 of 4.0 magnitude or higher. *Table 9-5* summarizes the year, epicenter, and magnitude of major earthquakes (6.0 magnitude or more) that have affected the County since 1850.

**Table 9-5**
**Monterey County Earthquakes, Magnitude 6.0+ (1838-Present)**

| Date | Magnitude | Location |
|---|---|---|
| 2004 | 6.0 | Parkfield |
| 2003 | 6.5 | San Simenon |
| 1989 | 6.9 | Loma Prieta |
| 1984 | 6.1 | Morgan Hill |
| 1983 | 6.5 | Coalinga |
| 1952 | 6.2 | Monterey Bay |
| 1966 | 6.6 | Parkfield |
| 1934 | 6.0 | Parkfield |
| 1926 | 6.3 | Monterey Bay |
| 1922 | 6.5 | Parkfield |
| 1906 | 7.8 | San Francisco |
| 1901 | 6.4 | Parkfield |
| 1857 | 7.9 | Parkfield |

The approximate 7.9 Fort Tejon earthquake of 1857 was one of the largest earthquakes ever recorded in the US and the largest in California history. It originated in Parkfield in Monterey County and caused a surface rupture scar of about 225 miles in length along the San Andreas Fault to the Cajon Pass northwest of San Bernardino. Yet, despite the immense scale of this quake, only two people were reported killed by the effects of the shock. The fact that only two lives were lost was primarily due to the fact that in 1857 California was sparsely populated, especially in the regions of strongest shaking. Were the Fort Tejon shock to happen today, the damage would easily run into the billions of dollars, and the loss of life would likely be substantial.

In 1906, the 7.8. magnitude San Francisco Earthquake caused severe damage. The Salinas River bottom lands were severely ruptured, fissured, and otherwise deformed. The Spreckels Sugar Mill, situated on the banks of the river, suffered more severely probably than any other steel

structure in the State. Other damage from the 1906 earthquake included destruction of the wharf at Moss Landing and destruction of the Hotel Del Monte in Monterey.

On October 17, 1989, the Loma Prieta earthquake occurred in neighboring Santa Cruz County. The earthquake lasted only 10 to 15 seconds but was a 6.9 magnitude. In Moss Landing, liquefaction destroyed a causeway, damaged the bridge linking the Moss Landing spit to the mainland and cracked the paved road on Paul's Island.[32] A section of Highway 1 through Monterey, a bridge carrying Highway 1 over the Salinas River, and the Salinas River rail bridge suffered damage. In the Old Town Salinas historical district, unreinforced masonry buildings were partially destroyed. The 2004 6.0 magnitude Parkfield earthquake caused only minor damage but was long-anticipated event on the San Andreas fault and is the world's best recorded earthquake to date.

### 9.2.2 LOCATION

Monterey County is located in a region of high seismicity with numerous local faults, as shown below. The primary seismic hazard for the County is potential ground shaking from these faults. Major faults in Monterey County are described below and mapped by slip rate in *Figure 9-2.*

#### *San Andreas Fault*

The San Andreas Fault runs through the southeastern portion of the County for approximately 30 miles and poses the single greatest seismic hazard to the County. To the north and south of the County, the fault appears to be currently locked with no detectable movement. Between these locked sections, within the County, the San Andreas Fault creeps (slips aseismically).

From San Juan Bautista to Parkfield, the creeping section produces numerous small to moderate (mostly magnitude 6.0 and smaller) earthquakes but no large ones. The stretch of the fault between Parkfield and Gold Hill defines a transition zone between the creeping and locked behavior of the fault. The slip rate of the San Andreas fault is Greater than 5.0 mm/year.

#### *Palo Colorado-San Gregorio Fault*

The Palo Colorado-San Gregorio Fault zone connects the Palo Colorado Fault near Point Sur, south of Monterey, with the San Gregorio Fault near Point Ano Nuevo in Santa Cruz County. It is a right-lateral strike-slip fault zone oriented generally north-south consisting of two or more parallel and fairly continuous fault segments that extend at least 60 miles. The slip rate of the San Gregorio–Palo Colorado fault is between 1.0 and 5.0 mm/year.

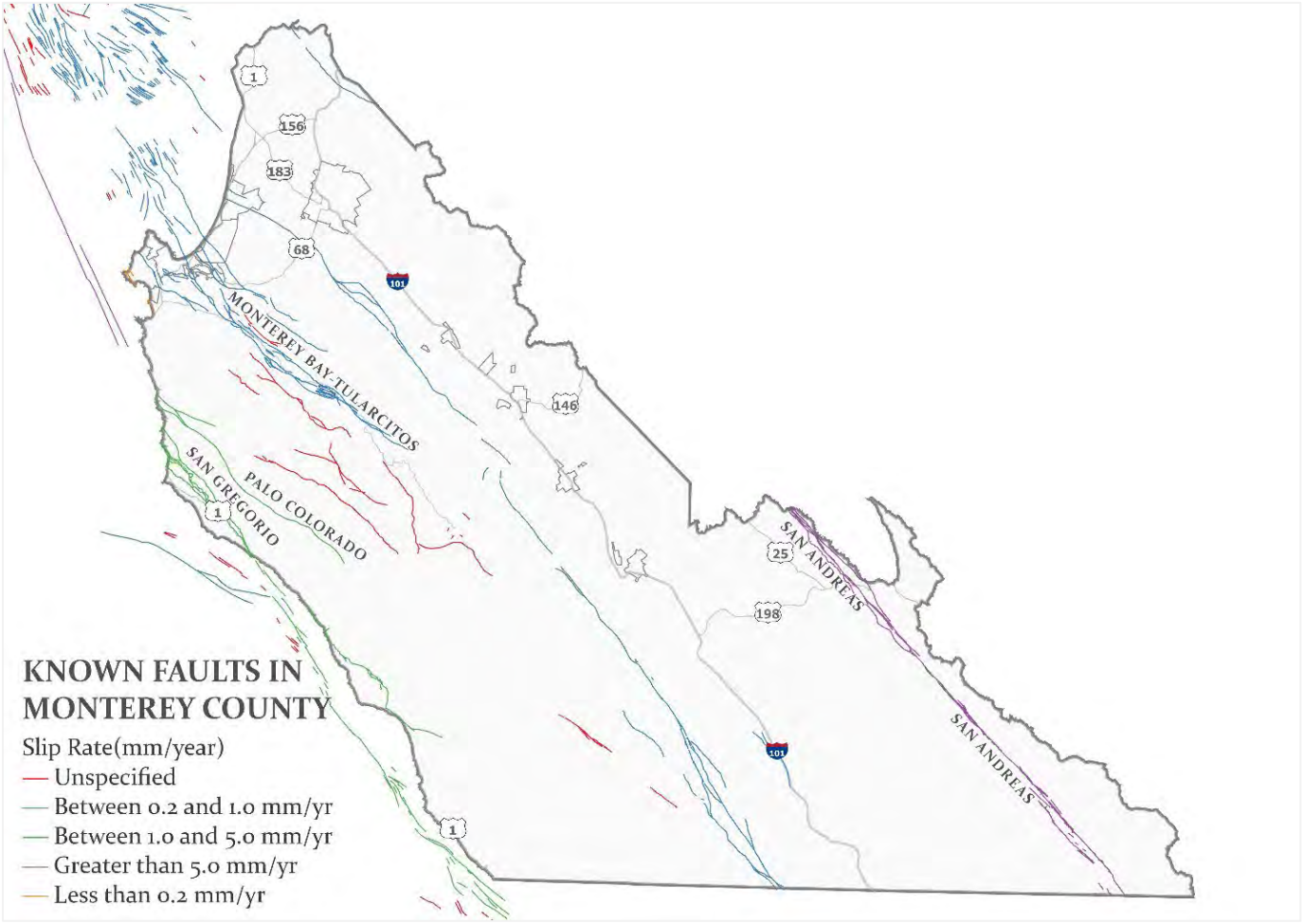
#### *Monterey Bay-Tularcitos Fault*

The Monterey Bay-Tularcitos Fault zone lies seaward of the city of Seaside, extending northwesterly to the Pacific Ocean. It is composed of short, discontinuous parallel fault segments ranging from 3 to 9 miles in length.

[32] USGS

The Monterey Bay Fault–Tularcitos zone is either truncated or merges with the San Gregorio fault segment of the Palo Colorado–San Gregorio Fault zone. The slip rate of the Monterey Bay-Tularcitos fault is between 0.2 and 1.0 mm/year.

**Figure 9-2**
**Known Faults in Monterey County by Slip Rate**

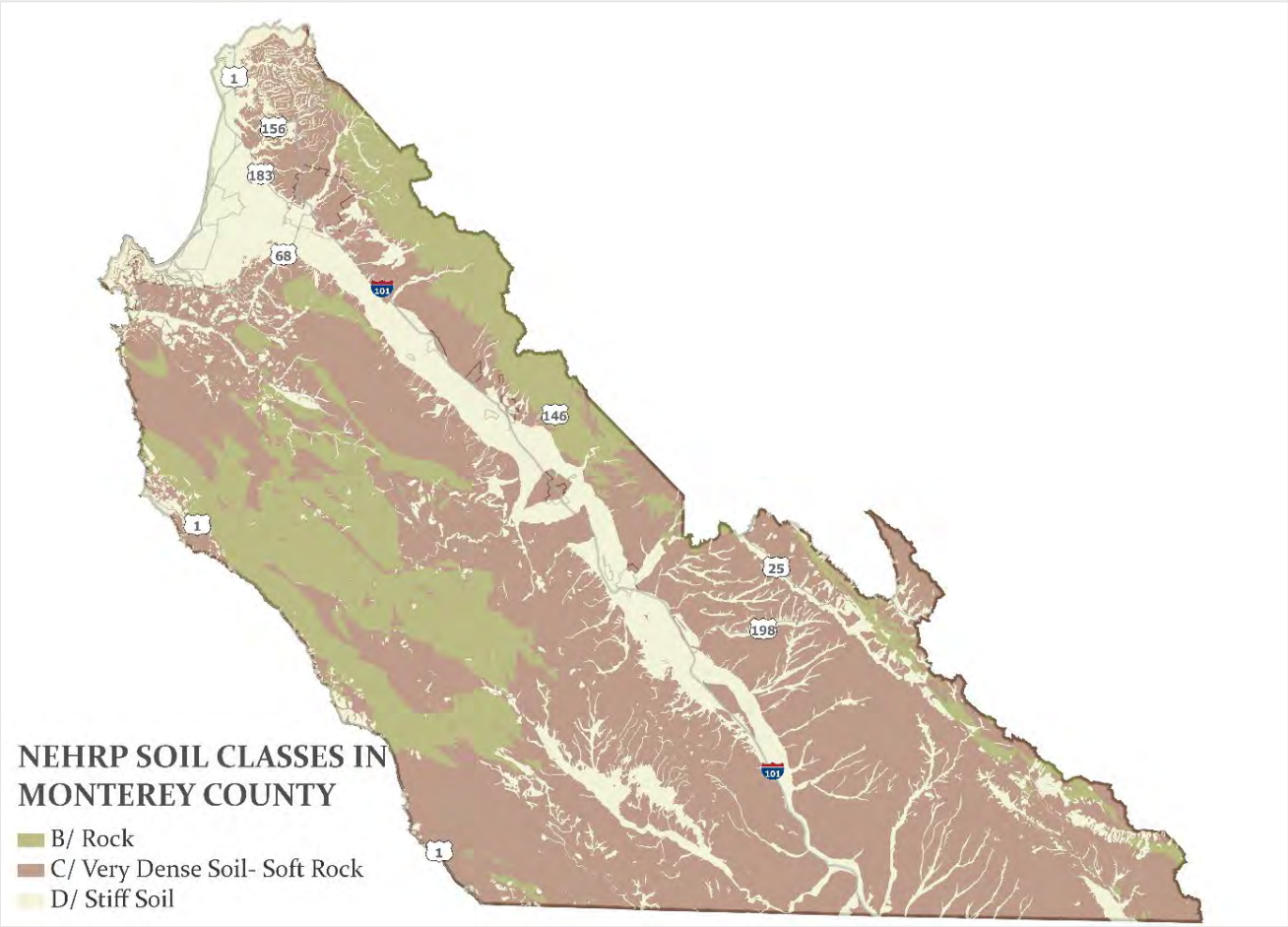



### *NEHRP Soil Maps*

NEHRP soil types define the locations that will be significantly impacted by an earthquake. *Table 9-4* summarizes NEHRP soil classifications. NEHRP Soils B and C typically can sustain low-magnitude ground shaking without much effect. The areas that are most commonly affected by ground shaking have NEHRP Soils D, E and F.

As shown in *Figure 9-3*, based on soil type, the location of the most extreme earthquake damage in Monterey County would likely be in some areas of the Monterey Peninsula, areas along the Monterey Bay, and in the Salinas Valley. These areas generally include the largest population centers in the County, and therefore are areas of high concern for earthquake risk reduction.

**Figure 9-3**
**NEHRP Soil Classes in Monterey County**




## 9.2.3 FREQUENCY

California experiences hundreds of earthquakes each year, most with minimal damage and magnitudes below 3.0 on the Richter Scale. Earthquakes that cause moderate damage to structures occur several times a year. According to the California State Hazard Mitigation Plan, earthquakes large enough to cause moderate damage to structures—those of Magnitude 5.5 or larger—occur three to four times a year statewide. Strong earthquakes of Magnitude 6 to 6.9 strike on an average of once every two to three years. Major earthquakes of Magnitude 7 to 7.9 occur in California about once every 10 years. According to the USGS, in the next 30 years, California has a 99.7% chance of a magnitude 6.7 or larger earthquake

Geologic studies show that over the past 1,400 to 1,500 years large earthquakes have occurred at about 150-year intervals on the southern segment of the San Andreas Fault (south of Parkfield). As the last large earthquake on the southern San Andreas Fault segment occurred in 1857, that section of the fault is considered a likely location for an earthquake within the next few decades. The northern segment of the fault (north of San Juan Baustista) has a slightly

lower potential for a great earthquake, as only about 100 years have passed since the 1906 earthquake. The USGS estimates there is a 72% probability (or likelihood) of at least one earthquake of magnitude 6.7 or greater striking somewhere in the greater San Francisco Bay region before 2043.[33] The 30-year probability of an M ≥ 6.7 earthquake on the northern segment of the San Andreas Fault is 21%.

The San Gregorio–Palo Colorado Fault zone has a 10% probability of a magnitude 6.7 or greater earthquake by 2032. The Calaveras-Paicines Fault, which does not run directly through Monterey County, could also be the location of a major earthquake, which would affect the County. The probability of experiencing a Magnitude 6.7 or greater earthquake along the Calaveras Fault in the next 30 years is 26%.

However, as noted above, Monterey County experiences several small detectable earthquakes every year. Also, moderate-sized, potentially damaging earthquakes could occur in this area at any time.

### 9.2.4 SEVERITY

The severity of an earthquake can be expressed in terms of intensity or magnitude. Intensity represents the observed effects of ground shaking at any specified location. The intensity of earthquake shaking lessens with distance from the earthquake epicenter. Magnitude represents the amount of seismic energy released at the hypocenter of the earthquake. It is based on the amplitude of the earthquake waves recorded on instrument.

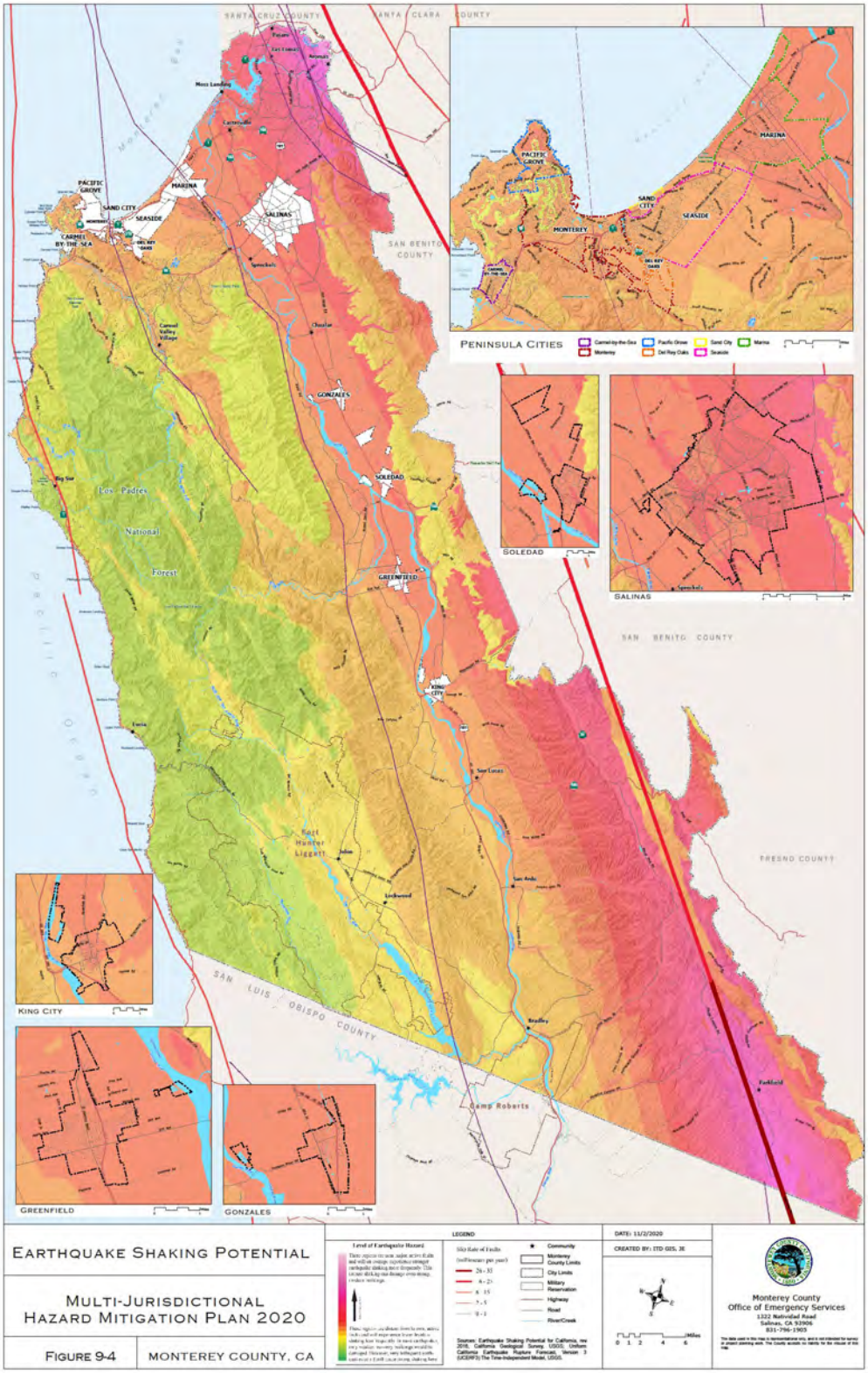
The impact of an earthquake is largely a function of the following components:

- Ground shaking (ground motion accelerations)
- Liquefaction (soil instability)
- Distance from the source (both horizontally and vertically)

USGS ground motion maps, based on current information about fault zones, show the PGA that has a certain probability of being exceeded in a 50-year period. Mapping of ground shaking potential was used to assess the risk of earthquakes. the hazard from ground shaking is most severe in areas near the San Andreas Fault and in the unconsolidated alluvial areas of the County such as the Salinas and Carmel Valleys.

Earthquake shaking potential in Monterey County is shown in *Figure 9-4*.

[33] USGS, Earthquake Outlook for the San Francisco Bay Region 2014–2043

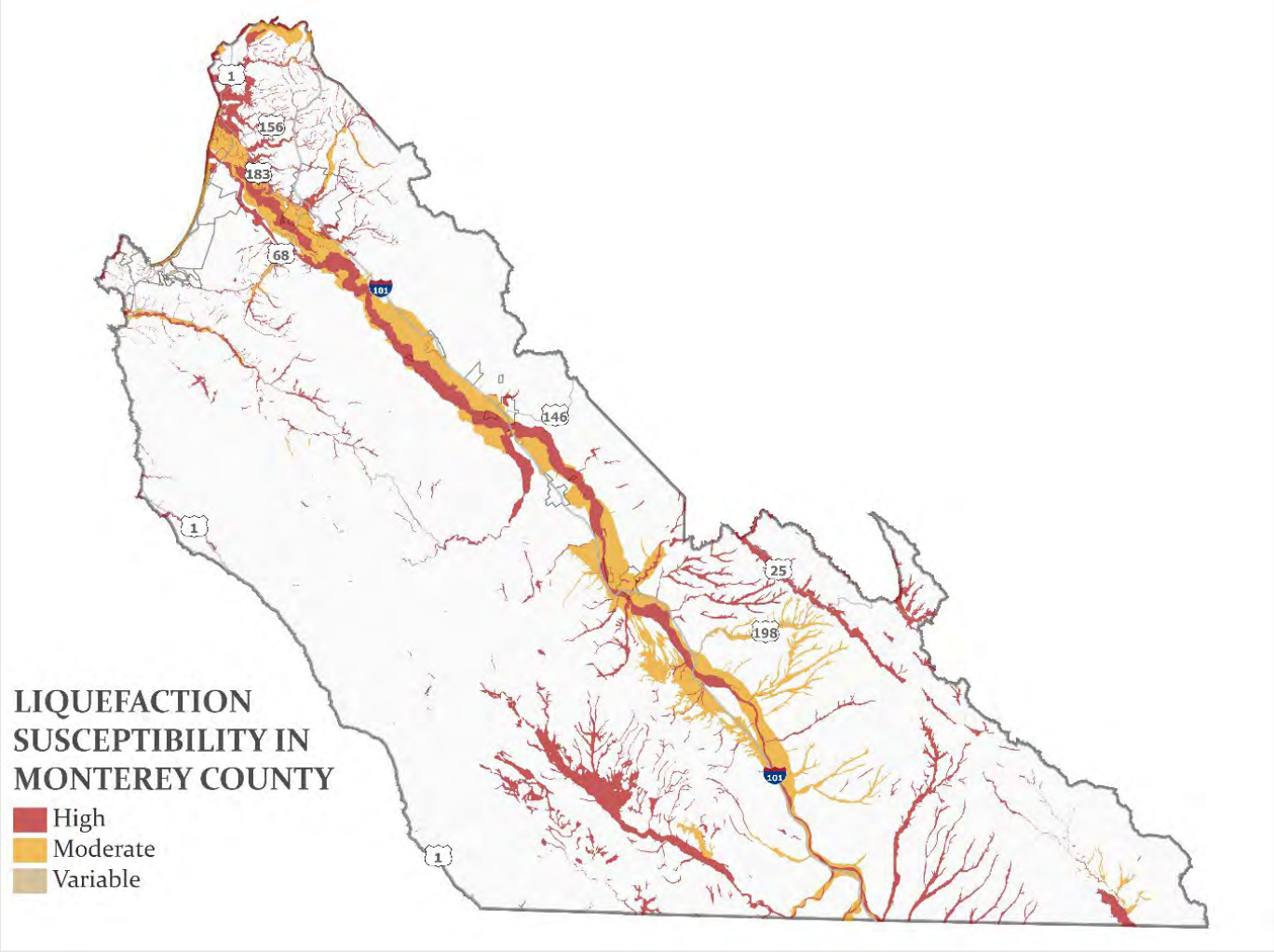

SANTA CRUZ COUNTY
SANTA CLARA COUNTY
SAN BENITO COUNTY
MONTEREY COUNTY
SAN LUIS OBISPO COUNTY
FRESNO COUNTY
PACIFIC GROVE
MARINA
SAND CITY
SEASIDE
CARMEL BY THE SEA
SALINAS
MONTEREY
GONZALES
SOLEDAD
GREENFIELD
KING CITY
Los Padres National Forest
Fort Hunter Liggett
Camp Roberts
PENINSULA CITIES
SOLEDAD
SALINAS
KING CITY
GREENFIELD
GONZALES
EARTHQUAKE SHAKING POTENTIAL
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 2020
FIGURE 9-4
MONTEREY COUNTY, CA
LEGEND
DATE: 11/2/2020
CREATED BY: ITD GIS, JE
Monterey County
Office of Emergency Services
1322 Natividad Road
Salinas, CA 93906
831-796-1905

*Liquefaction Susceptibility*

Soil liquefaction maps are also useful tools to assess potential damage from earthquakes. When the ground liquefies, sandy or silty materials saturated with water behave like a liquid, causing pipes to leak, roads and airport runways to buckle, and building foundations to be damaged. Areas in Monterey County most susceptible to liquefaction include the Salinas River and floodplain, the Moss Landing and Elkhorn Slough areas, the Carmel River and floodplain, the San Antonio and Lockwood Valleys, and the Peachtree and Cholame Valleys.

Liquefaction susceptibility in Monterey County is shown in *Figure 9-5*.

**Figure 9-5**
**Liquefaction Susceptibility in Monterey County**

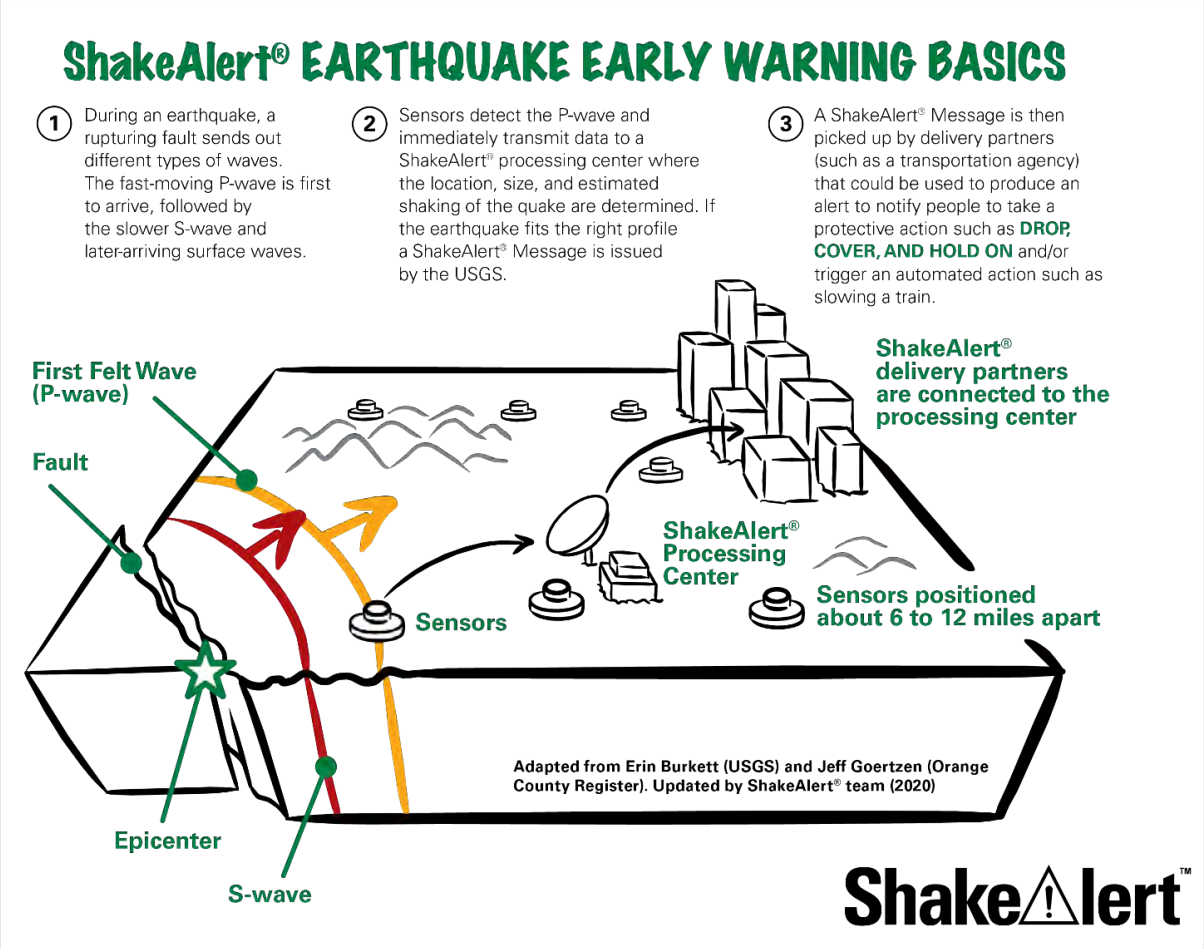


### 9.2.5 WARNING TIME

There is no current reliable way to predict the day or month that an earthquake will occur at any given location. Research is being done with warning systems that use the low energy waves that precede major earthquakes. These potential warning systems give approximately 40 seconds notice that a major earthquake is about to occur. The warning time is very short, but it could allow for someone to get under a desk, step away from a hazardous material they are working with, or shut down a computer system.

In 2019, the USGS released ShakeAlert, an earthquake early warning (EEW) system that detects significant earthquakes quickly so that alerts can reach many people before shaking arrives. ShakeAlert is not earthquake prediction, rather a ShakeAlert Message indicates that an earthquake has begun, and shaking is imminent. The USGS has estimated the warning time would range from seconds to tens of seconds. ShakeAlert can give enough time to take preventative actions before the shaking starts to reduce damage and casualties during an earthquake. *Figure 9-6* provides more information on how the ShakeAlert system works.

**Figure 9-6**
**ShakeAlert Earthquake Early Warning Basics**



## 9.3 SECONDARY HAZARDS

Earthquakes can cause collateral emergencies including dam and levee failures, seiches, hazmat incidents, urban conflagration, avalanches, and landslides. In addition to ground motion, several secondary natural hazards can occur from earthquakes. Additionally, urban conflagration can result from gas lines or power lines that are broken or downed during the earthquake. It may be difficult to control a fire, particularly if the water lines feeding fire hydrants are also broken.

### 9.3.1 DAM AND LEVEE FAILURE

Earthen dams and levees are highly susceptible to seismic events, and the impacts of their eventual failures can be considered secondary risk exposure to earthquakes.

For more information on dam and levee failure risk in Monterey County, refer to **Section 7**, *Dam and Levee Failure.*

### 9.3.2 LANDSLIDES

Earthquakes can cause disastrous landslides. Landslides occur because of horizontal seismic inertia forces induced in the slopes by the ground shaking. The most common earthquake-induced landslides include shallow, disrupted landslides such as rock falls, rockslides, and soil slides. Debris flows are created when surface soil on steep slopes becomes totally saturated with water. Once the soil liquefies, it loses the ability to hold together and can flow downhill at extremely high speeds, taking vegetation and/or structures with it. Slide risks increase after an earthquake during a wet winter.

For more information on landslide risk in Monterey County, refer to **Section 15**, *Slope Failure*.

### 9.3.3 TSUNAMIS

Depending on the location, earthquakes can trigger tsunamis. Tsunamis significantly damage many locations beyond what the earthquake struck; however, coastal communities near the earthquake epicenter that are also vulnerable to tsunamis could experience devastating impacts. As an Oceanic Plate is subducted beneath a Continental Plate, it sometimes brings down the lip of the Continental Plate with it. Eventually, too much stress is put on the lip, and it snaps back, sending shockwaves through the earth's crust, causing a tremor under the sea, known as an Undersea Earthquake. Factors that affect tsunami generation from an earthquake event include magnitude (generally, a 7.5 magnitude and above), depth of event (a shallow marine event that displaces seafloor), and type of earthquake (thrust as opposed to strike-slip).

For more information on tsunami risk in Monterey County, refer to **Section 16**, *Tsunami*.

## 9.4 RISK ASSESSMENT

### 9.4.1 POPULATION

According to the FEMA National Risk Index, 415,057 people, or the entire population is exposed to earthquake risk. Whether directly impacted or indirectly impact, the entire population will

have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of functions of utilities could impact populations that suffered no direct damage from an event itself.

As seen in *Table 9-6*, close to 200,000 people, almost half of the population of Monterey County, live in areas with high or moderate liquefaction susceptibility.

**Table 9-6**
**Population Exposed to Areas Susceptible to Liquefaction in Monterey County**

| Supervisorial District | High | Moderate |
|---|---|---|
| District 1 | 23,680 | 3,256 |
| District 2 | 45,825 | 9,223 |
| District 3 | 14,729 | 24,549 |
| District 4 | 7,622 | 19,936 |
| District 5 | 35,764 | 14,625 |
| **Total** | 127,620 | 71,589 |

Residents in high-risk areas are more vulnerable to the impact of earthquakes. The degree of vulnerability is dependent on many factors, including the age and construction type of the structures people live in, the soil their homes are constructed on, and their proximity to the fault location, etc.

Two groups are particularly vulnerable to earthquake hazards: the population below the poverty level and those with access and functional needs. Those below the poverty level may lack the financial resources to improve their homes to prevent or mitigate earthquake damage. Economically disadvantaged residents are also less likely to have insurance to compensate for losses in earthquakes. Those with access and functional needs are vulnerable because they are more likely to need special medical attention, which may not be available due to isolation caused by earthquakes. Some residents may also have more difficulty leaving their homes during earthquake events and could be stranded in dangerous situations.

### 9.4.2 PROPERTY

All structures in the County are susceptible to earthquake impacts to varying degrees. The most common type of damage from ground shaking is structural damage to buildings, which can range from cosmetic stucco cracks to total collapse. The overall level of structural damage from a nearby large earthquake would likely be moderate to heavy, depending on the characteristics of the earthquake, the type of ground, and the condition of the building. Besides damage to buildings, strong ground shaking can cause severe damage by falling objects such as bookcases or water heaters, or broken water or gas pipes. Fire and explosions resulting from ruptured gas pipes are also major hazards associated with strong ground shaking.

According to Monterey County Assessor records, there are 128,966 residential and non-residential buildings in the County, with a total value of $73,489,253,104. Since all structures in

the County are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Assessor's data value total includes land value. Since following an earthquake, the land is likely to still have value even if the structure is destroyed, the exposed value is likely an overestimate. Therefore, FEMA data was also included in this analysis in addition to the Assessor's data. According to the FEMA National Risk Index, in Monterey County, $41,169,506,000 in total building value is exposed to earthquake risk.

A large amount of property in the County is also exposed to liquefaction risk., As seen in *Table 9-7*, close to 20,000 residential properties, about $12 billion in property value is in areas with high or moderate liquefaction susceptibility. As seen in *Table 9-8*, close to 22,000 non-residential properties, about $11 billion in property value is in areas with high or moderate liquefaction susceptibility.

**Table 9-7**
**Residential Property Exposed to Areas Susceptible to Liquefaction in Monterey County**

| Supervisorial District | High | | Moderate | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 673 | $372,310,680 | 253 | $133,011,281 |
| District 2 | 3,547 | $1,591,632,718 | 472 | $282,454,095 |
| District 3 | 1,838 | $621,850,036 | 3,287 | $948,153,442 |
| District 4 | 837 | $398,868,120 | 4,514 | $1,933,056,731 |
| District 5 | 3,729 | $3,772,532,646 | 2,268 | $1,882,248,356 |
| **Total** | 10,624 | $6,757,194,200 | 10,794 | $5,178,923,905 |

**Table 9-8**
**Non-Residential Property Exposed to Areas Susceptible to Liquefaction in Monterey County**

| Supervisorial District | High | | Moderate | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 1,270 | $827,677,352 | 922 | $421,513,584 |
| District 2 | 4,000 | $1,109,321,385 | 1,638 | $397,837,469 |
| District 3 | 3,041 | $1,851,569,790 | 3,273 | $2,914,179,282 |
| District 4 | 745 | $744,052,338 | 2,608 | $1,124,210,594 |
| District 5 | 3,013 | $1,754,854,558 | 1,147 | $539,666,562 |
| **Total** | 12,069 | $6,287,475,423 | 9,588 | $5,397,407,491 |

Poorly constructed buildings and manufactured housing units are more vulnerable to structural failure during an earthquake, as well as secondary hazards such as utility disruption and urban conflagration. Older buildings are also more vulnerable to structural failure, as they may have been built before building and seismic code requirements that directly affect the structural integrity of development.

Of particular concern in Monterey County is unreinforced masonry buildings, which are constructed from materials such as adobe, brick, hollow clay tiles, or other masonry materials and do not contain an internal reinforcing structure, such as rebar in concrete or steel bracing for brick. Unreinforced masonry poses a significant danger during an earthquake because the mortar holding masonry together is typically not strong enough to withstand significant earthquakes. The brittle composition of these buildings can break apart and fall away or buckle, potentially causing a complete collapse of the building.

### 9.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

All critical facilities in the County are exposed to the earthquake hazard. Earthquakes pose numerous risks to critical facilities and infrastructure. Hazardous materials releases can occur during an earthquake from fixed facilities or transportation-related incidents. Facilities holding hazardous materials are of particular concern because of possible isolation of neighborhoods surrounding them. During an earthquake, structures storing these materials could rupture and leak into the surrounding area or an adjacent waterway, having a disastrous effect on the environment. Depending on the year of build and construction of each facility containing hazardous materials, the earthquake-initiated hazardous material release potential will vary. Hazardous materials contained within masonry or concrete structures built before certain benchmark years may be particularly vulnerable.

Transportation corridors can be disrupted during an earthquake, leading to the release of materials to the surrounding environment. Linear utilities and transportation routes are vulnerable to rupture and damage during and after a significant earthquake event. The cascading impact of a single failure can have affects across multiple systems and utility sectors. Degrading infrastructure systems and future large earthquakes with epicenters near critical regional infrastructure could result in system outages that last weeks for the most reliable systems, and multiple months for others.

Telecommunication systems can be affected by system failure, overloads, loss of electrical power and possible failure of some alternate power systems. Immediately following an event, numerous failures will occur, compounded by system use overload.

Large ground motions resulting from liquefaction, especially lateral spreading, can cause damage to buried pipelines. Most pipe breaks during the Loma Prieta earthquake were in areas with significant liquefiable soil. Broken pipelines represent a serious public safety issue as demonstrated by burning natural gas lines in the 1994 Northridge earthquake and broken water mains in San Francisco in the 1906 earthquake.

Critical facilities exposed to liquefaction risk are summarized in *Table 9-9*.

**Table 9-9**
**Critical Infrastructure in High Liquefaction Susceptibility Areas in Monterey County**

| Critical Infrastructure Type | High Liquefaction Susceptibility |
|---|---|
| **Facilities** | |
| Emergency Response | 5 |
| Fire Station | 7 |
| Police Station | 0 |
| Medical Facilities | 14 |
| Military Facility | 1 |
| Large Public Facilities | 0 |
| Educational Facilities | 17 |
| Power Plant | 1 |
| Water & Wastewater Facilities | 87 |
| Stormwater Facilities | 7 |
| Government Facilities | 53 |
| Communication Facilities | 175 |
| Rain Gauges | 17 |
| Lighthouses | 1 |
| Dams | 1 |
| **Hazardous Materials** | |
| Active or Idle Oil Well | 250 |
| Landfill | 0 |
| Underground Tank | 39 |
| Cal ARP Facility | 11 |
| **Transportation** | |
| Airport | 4 |
| Bridge | 111 |
| Harbor | 1 |
| Highway/Freeway (Miles) | 100 |
| Driveway (Miles) | 2 |
| Major Road (Miles) | 443 |
| Local (Miles) | 899 |
| Railroad (Miles) | 29 |

### 9.4.4 ENVIRONMENT

Environmental problems as a result of an earthquake can be numerous. Secondary hazards will likely have some of the most damaging effects on the environment. Earthquake-induced landslides can significantly damage surrounding habitat. It is also possible for streams to be rerouted after an earthquake. Rerouting can change the water quality, possibly damaging habitat and feeding areas. Streams fed by groundwater wells can dry up because of changes in underlying geology.

### 9.4.5 ECONOMIC IMPACT

A large earthquake could have a massive economic impact on Monterey County. The number of economic damages will likely vary greatly due to a variety of factors including magnitude and location of the epicenter. Other than direct economic losses due to an earthquake, indirect economic consequences can occur due to business interruption and loss of functions of utilities.

## 9.5 FUTURE TRENDS IN DEVELOPMENT

Land use in the County will be directed by general plans adopted under California's General Planning Law. The safety elements of the general plans establish standards and plans for the protection of the community from hazards. The information in this plan provides a tool to ensure that there is no increase in exposure in areas of high seismic risk. The geologic hazard portions of the County are heavily regulated under California's General Planning Law.

Development in the County is also be regulated through building standards and performance measures so that the degree of risk will be reduced. The International Building Code establishes provisions to address seismic risk.

## 9.6 ISSUES

Important issues associated with earthquakes in Monterey County include the following:

- Unreinforced masonry buildings and building stock built prior to 1975, when seismic provisions became uniformly applied through building code applications, are a major concern in the event of a large earthquake.
- An earthquake could trigger other natural hazard events such as dam failures and landslides, which could severely impact the County.
- A worst-case scenario would be the occurrence of a large seismic event during a flood or high-water event. Levee failures could happen at multiple locations, increasing the impacts of the individual events.
- Citizens would be expected to be self-sufficient up to 3 days after a major earthquake without government response agencies, utilities, private-sector services, and infrastructure components.
- After a major seismic event, Monterey County is likely to experience disruptions in the flow of goods and services resulting from the destruction of major transportation infrastructure across the broader region.

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# 10. FLOODING

## 10.1 OVERVIEW

Flooding is the accumulation of water where usually none occurs or the overflow of excess water from a stream, river, lake, reservoir, or coastal body of water onto adjacent floodplains. Floodplains are lowlands adjacent to water bodies that are subject to recurring floods. Floods are natural events that are considered hazards only when people and property are affected. Nationwide, floods result in more deaths than any other natural hazard. Physical damage associated with floods includes the following:

- Inundation of structures, causing water damage to structural elements and contents.
- Erosion or scouring of stream banks, roadway embankments, foundations, footings for bridge piers, and other features.
- Impact damage to structures, roads, bridges, culverts, and other features from high-velocity flow and from debris carried by floodwaters. Debris may also accumulate on bridge piers and in culverts, increasing loads on these features or causing overtopping.
- Destruction of crops, erosion of soil, and deposition of debris and sediment on croplands.
- Release of sewage and hazardous or toxic materials as wastewater treatment plants are inundated, storage tanks are damaged, and pipelines are severed.

### 10.1.1 FLOODPLAINS

A floodplain is the area adjacent to a river, creek or lake that becomes inundated during a flood. Floodplains may be broad, as when a river crosses an extensive flat landscape, or narrow,

as when a river is confined in a canyon. Floodplains generally contain unconsolidated sediments (accumulations of sand, gravel, loam, silt, and/or clay), often extending below the bed of the stream. These sediments provide a natural filtering system, with water percolating back into the ground and replenishing groundwater. These are often important aquifers, the water drawn from them being filtered compared to the water in the stream.

Connections between a river and its floodplain are most apparent during and after major flood events. These areas form a complex physical and biological system that not only supports a variety of natural resources but also provides natural flood and erosion control. When a river is separated from its floodplain with levees and other flood control facilities, natural, built-in benefits can be lost, altered, or significantly reduced.

Because they border water bodies, floodplains have historically been popular sites to establish settlements. Human activities tend to concentrate in floodplains for a number of reasons: water is readily available; land is fertile and suitable for farming; transportation by water is easily accessible; and land is flatter and easier to develop. But human activity in floodplains frequently interferes with the natural function of floodplains. It can affect the distribution and timing of drainage, thereby increasing flood problems. Human development can create local flooding problems by altering or confining drainage channels. This increases flood potential in two ways: it reduces the stream's capacity to contain flows, and it increases flow rates or velocities downstream during all stages of a flood event. Human activities can interface effectively with a floodplain as long as steps are taken to mitigate the activities' adverse impacts on floodplain functions.

### 10.1.2 NATIONAL FLOOD INSURANCE PROGRAM

The NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities. FEMA has prepared a detailed Flood Insurance Study for Monterey County and all incorporated areas, which was last revised in June of 2017.[34] The study presents water surface elevations for floods of various magnitudes, including the 1% annual chance flood (100-year flood) and the 0.2% annual chance flood (500-year flood).

Base flood elevations and the boundaries of the 100- and 500-year floodplains are shown on Flood Insurance Rate Maps (FIRMs), which are the principal tool for identifying the extent and location of the flood hazard. Participants in the NFIP must, at a minimum, regulate development in floodplain areas in accordance with NFIP criteria. Before issuing a permit to build in a floodplain, participating jurisdictions must ensure that three criteria are met:

- New buildings and those undergoing substantial improvements must, at a minimum, be elevated to protect against damage by the 100-year flood.
- New floodplain development must not aggravate existing flood problems or increase damage to other properties.

[34] Federal Emergency Management Agency, Flood Insurance Study, Monterey County

- New floodplain development must exercise a reasonable and prudent effort to reduce its adverse impacts on threatened salmonid species.

As listed in *Table 10-1*, Monterey County and all incorporated cities participate in the NFIP.

**Table 10-1**
**NFIP Coverage**

| Jurisdiction | Community Number | Policies in Force | Total Coverage | Total Written Premium + Federal Policy Fee |
|---|---|---|---|---|
| Carmel-By-The-Sea | 060196 | 29 | $9,940,000 | $13,888 |
| Del Rey Oaks | 060197 | 19 | $6,577,500 | $50,436 |
| Gonzales | 060198 | 14 | $5,474,500 | $18,502 |
| Greenfield | 060446 | 3 | $1,050,000 | $1,260 |
| King City | 060199 | 17 | $4,318,600 | $28,721 |
| Marina | 060727 | 45 | $13,664,400 | $61,833 |
| Monterey | 060200 | 58 | $19,847,400 | $49,129 |
| Monterey County | 060195 | 1,277 | $362,723,300 | $1,732,791 |
| Pacific Grove | 060201 | 35 | $11,144,000 | $14,846 |
| Salinas | 060202 | 317 | $95,459,500 | $320,007 |
| Sand City | 060435 | 3 | $1,400,000 | $3,109 |
| Seaside | 060203 | 10 | $2,789,000 | $3,748 |
| Soledad | 060204 | 1 | $350,000 | $467 |

### *FEMA Regulatory Flood Zones*

FEMA defines flood hazard areas as areas expected to be inundated by a flood of a given magnitude. These areas are determined via statistical analyses of records of river flow, storm tides, and rainfall; information obtained through consultation with the community; floodplain topographic surveys; and hydrologic and hydraulic analyses. Flood hazard areas are delineated on FIRMs, which provide the following information:

- Locations of specific properties in relation to Special Flood Hazard Area (SFHAs)
- Base flood elevations (1% annual chance) at specific sites
- Magnitudes of flood in specific areas
- Undeveloped coastal barriers where flood insurance is not available
- Regulatory floodways and floodplain boundaries (1% and 0.2% annual chance floodplain boundaries)

Land area covered by floodwaters of the base flood is the SFHA on a FIRM—an area where NFIP floodplain management regulations must be enforced, and where mandatory purchase of flood insurance applies. This regulatory boundary is a convenient tool for assessing vulnerability and

risk in flood-prone communities because many communities have maps showing the extent of the base flood and likely depths that would occur.

The base flood elevation (the water elevation of a flood that has a 1% chance of occurring in any given year) is one of the most important factors in estimating potential damage from flooding. A structure within a 1% annual chance floodplain has a 26% chance of undergoing flood damage during the term of a 30-year mortgage. The 1% annual chance flood is used by the NFIP as the basis for insurance requirements nationwide. FIRMs also depict 0.2% annual chance flood designations (500-year events). FIRMs, and other flood hazard information can be used to identify the expected extent of flooding from a 1% and 0.2% annual chance event. FIRM maps depict flood zones, defined in *Table 10-2*.

**Table 10-2**
**FEMA Flood Zones**

| Flood Zone | Definition |
|---|---|
| **Special Flood Hazard Areas (SFHA) Subject to Inundation by 100-Year Flood** | |
| Zone A | No base flood elevations determined |
| Zone AE | Base flood elevations determined |
| Zone AH | Flood depths of 1-3 feet (usually areas of ponding); base flood elevations determined |
| Zone AO | Flood depths of 1-3 feet (usually sheet flow on sloping terrain); average depths determined; for areas of alluvial fan flooding, velocities also determined |
| Zone AR | SFHA formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified; zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood |
| Zone A99 | Area to be protected from 1% annual chance flood by a federal flood protection system under construction; no base flood elevations determined |
| Zone VE | Area where waves and fast-moving water can cause extensive damage during the base flood event. Wave heights are larger than 3 feet. A detailed study has been done and BFEs have been calculated. |
| **Other Flood Areas** | |
| Zone X (shaded) | Areas of 0.2% annual chance flood (i.e., 500-year flood); areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood |
| **Other Areas** | |
| Zone X (unshaded) | Areas determined to be outside the 0.2% annual chance floodplain |
| Zone D | Areas in which flood hazards are undetermined, but possible |

*Community Rating System (CRS)*

The Community Rating System (CRS) is a voluntary program within the NFIP that encourages floodplain management activities that exceed the minimum NFIP requirements. Flood insurance premiums are discounted to reflect the reduced flood risk resulting from community actions that meet the three goals of the CRS: 1) reduce flood losses, 2) facilitate accurate insurance rating, and 3) promote awareness of flood insurance.

Flood insurance premium rates in Community Rating System communities are discounted in increments of 5%. A Class 10 community is not participating in the CRS and receives no discount. A Class 9 community receives a 5% discount for all policies in its Special Flood Hazard Areas, a Class 8 community receives a 10% discount, all the way to a Class 1 community, which receives a 45% premium discount. The CRS classes for local communities are based on 18 creditable activities related to public information, mapping and regulations, flood damage reduction, and flood preparedness. As noted in *Table 10-3*, Monterey County and the City of Salinas are currently participating in the CRS program.

**Table 10-3**
**Community Ratings System (CRS) Participation**

| Community Name | CRS Entry Date | Current Effective Date | Current Class | Discount for SFHA | Discount for Non- SFHA |
|---|---|---|---|---|---|
| Monterey County | 10/1/1991 | 10/1/2020 | 5 | 25% | 10% |
| Salinas | 10/1/1991 | 10/1/2013 | 7 | 15% | 5% |

## 10.1.3 TYPES OF FLOODING

In Monterey County four types of flooding occur: riverine flooding, coastal flooding, flash flooding, and stormwater runoff flooding.

*Coastal Flooding*

Coastal or tidal floods are characterized by inundation of normally dry lands by bay waters, often caused by extreme high tide events that result in shallow flooding of low-lying coastal areas. Colloquially known as “king tides,” extreme high-level tide events are the highest predicted high tide events of the year at a coastal location. These tides exceed the highest water level reached at high tide on an average day and normally occur once or twice per year. King tide events are the leading cause of flooding near bay waters.

Coastal flooding in Monterey County is generally associated with Pacific Ocean storms in the months of November through February. Coastal flooding in conjunction with high tides and strong winds is a significant hazard.

*Riverine Flooding*

Riverine flooding is overbank flooding of rivers and streams. Flooding in large river systems typically results from large-scale weather systems that generate prolonged rainfall over a wide geographic area, causing flooding in hundreds of smaller streams, which then drain into the

major rivers. Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions to wide, flat areas in plains and coastal regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics. Flooding in steep, mountainous areas is usually confined, strikes with less warning time, and has a short duration. Larger rivers typically have longer, more predictable flooding sequences and broad floodplains.

### *Flash Flooding*

The National Weather Service defines a flash flood as a rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level. Such floods generally begin within 6 hours of the rain event that causes them. Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising floodwaters.

Flash floods can tear out trees, undermine buildings and bridges, and scour new channels. In urban areas, flash flooding is an increasingly serious problem due to removal of vegetation and replacement of ground cover with impermeable surfaces such as roads, driveways, and parking lots. The greatest risk from flash floods is occurrence with little to no warning. Major factors in predicting potential damage are intensity and duration of rainfall, and steepness of watershed and streams.

### *Localized Stormwater Flooding*

Urban storm drainpipes and pump stations have a finite capacity, and prolonged heavy rainfall contributes to a large volume of runoff resulting in high peak flows of moderate duration. When rainfall exceeds this capacity, or the system is clogged, water accumulates in the street until it reaches a level of overland release.

Urban drainage systems can play a role in flooding in two ways:

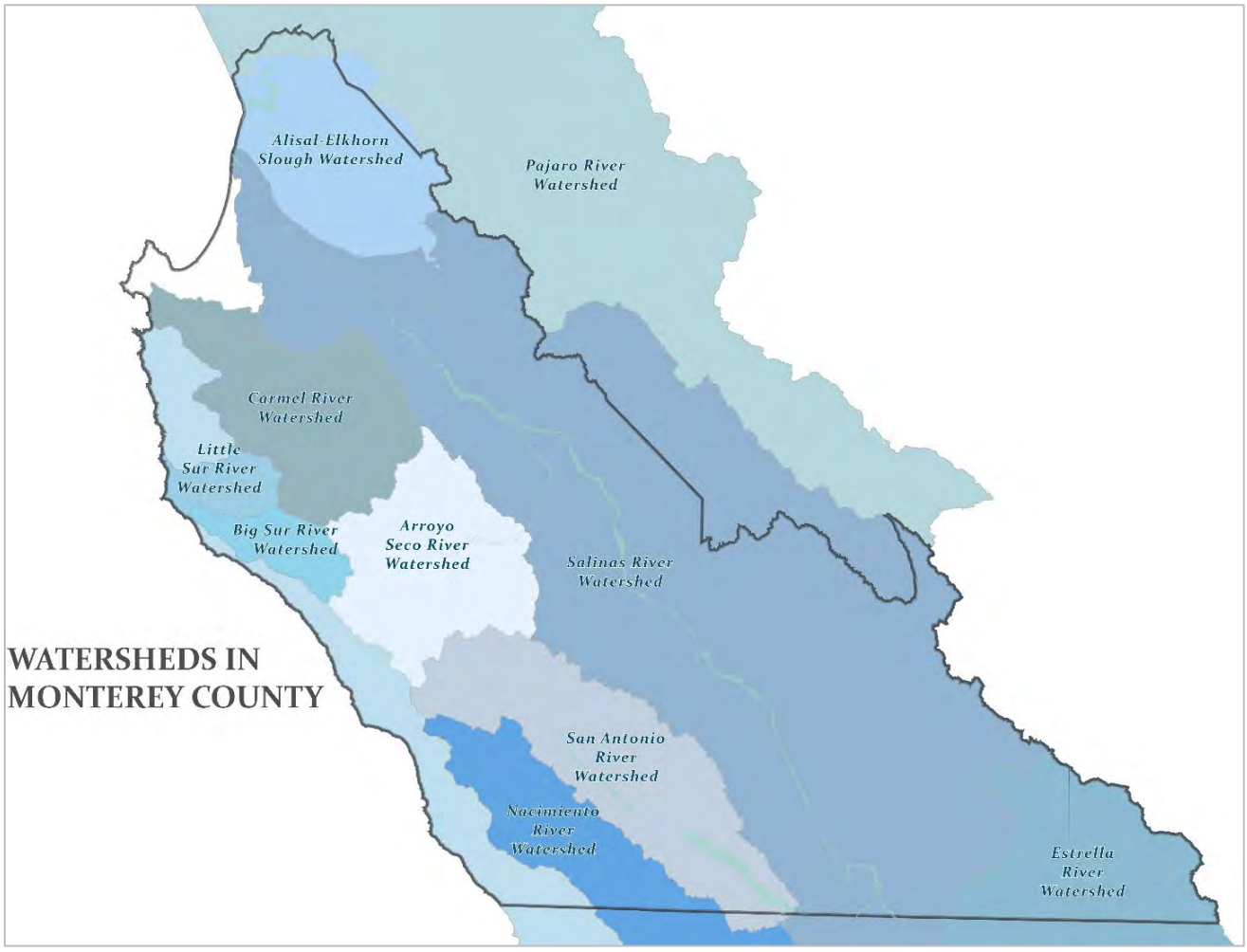
- Drainage systems reduce the amount of time surface water takes to reach surrounding streams, flooding in those streams can occur more quickly and reach greater depths than prior to development in the area
- If stormwater runoff exceeds the capacity of the drainage system, then stormwater runoff flooding can result throughout the system's service area. This is especially likely when groundwater levels are high and during high tides.

Stormwater flooding may occur outside of recognized drainage channels or delineated floodplains due to a combination of locally heavy precipitation, increased surface runoff, and inadequate facilities for drainage and stormwater conveyance. Such events frequently occur in flat areas and in urbanized areas with large impermeable surfaces. Local drainage may result in "nuisance flooding," in which streets or parking lots are temporarily closed, and minor property damage occurs.

### 10.1.4 WATERSHEDS IN MONTEREY COUNTY

Monterey County consists of four predominant watersheds draining to the Salinas River, the Pajaro River, the Carmel River, and the Big Sur River. These watersheds vary in patterns of land use from rural open space and permanent grazing to farmland and agricultural industrial, to low, medium, and high-density residential use. Increased development over the past 100 years has resulted in increased runoff that poses a flood threat. To accommodate the increasing runoff, many cities and communities in these watersheds have developed an extensive system of channels and storm drain facilities. The overall drainage pattern in the county is from south to north; this is the direction of flow for the Salinas River which is the largest river on the central coast of California. Watersheds in Monterey County are mapped in *Figure 10-1*.

**Figure 10-1**
**Watersheds in Monterey County**




*Source*: Monterey County Water Resources Agency (MCWRA)

The four predominant watersheds are described and listed in order of magnitude, from largest to smallest.

*Salinas River Watershed*

The Salinas River Watershed originates 4,000 feet above sea level in the La Panza Range near Santa Margarita in San Luis Obispo County and drains a 4,200 square mile area. The Gabilan and Santa Lucia Ranges are the sources of the principal watercourses in the area. The Salinas River has three main tributaries, namely, the Nacimiento, San Antonio, and Arroyo Seco Rivers. It flows for over 110 miles within Monterey County and empties into the Monterey Bay.

*Pajaro River Watershed*

The Pajaro River Watershed originates from 4,700 feet above sea level in the Diablo and Gabilan Ranges in San Benito County and drains a 1,300 square mile area. The watershed is bound by the Santa Cruz Mountains in the north, and the Gabilan Range in the south. The watershed area spans four counties, namely, Santa Cruz, Santa Clara, San Benito, and Monterey. The Pajaro River has numerous tributaries, which include Corralitos, Uvas, Llagas, San Benito, Pacheco, and Santa Ana Creeks, and flows for approximately 30 miles where it empties into Monterey Bay.

*Carmel River Watershed*

The Carmel River Watershed originates 4,000 feet above sea level in the Santa Lucia Range and drains a 256 square mile area. The Carmel River has two main tributaries, Cachagua and Tularcitos Creeks, and flows for approximately 26 miles where it empties into the Pacific Ocean.

*Big Sur River Watershed*

The Big Sur River Watershed originates from 3,000 feet above sea level along Pine Ridge in the Santa Lucia Mountains and drains a 60 square mile area. The Big Sur River has numerous tributaries which include Redwood Creek, Ventana Creek, Post Creek, and Pfeiffer-Redwood Creek, and flows for approximately 15 miles where it empties into the Pacific Ocean.

## 10.2 HAZARD PROFILE

### 10.2.1 HISTORY

Historic records show flooding and flood damage have occurred on a fairly regular basis (every few years) within Monterey County. The County experienced severe damages in:

**January 1966**: Flood conditions along the length of the Salinas River caused extensive damage during the storm of January 1966. Most of this damage was to agricultural crops; over 32,000 acres were inundated, at an estimated loss of $6,572,000. The cities in the county experienced some flooding and damage, although the rural areas and agricultural production were the most affected, with Salinas Valley agriculture sustaining a $3,755,000 loss.

**1969**: There were two distinct floods in 1969, one at the end of January and one at the end of February. In each flood, both the Salinas and Carmel Rivers flooded. Damage from the storms was extremely costly, causing an estimated $16 million in damages.

**1978**: A series of storms emanating from a southerly direction, caused extensive beachfront and coastal damage. Persistent rains in the Salinas Valley, caused an estimated $20,000,000 in flood damages, flooding more than 20,000 acres of irrigated farmland, with as much as 1,000 acres of the prime farmlands flooded beyond agricultural use for the year.

**March 1983**: "El Niño" storms brought an extremely unusual series of high tides, storm surges, and storm waves along the coast, and heavy rains causing extensive flooding and erosion in the Salinas Valley. Farmland and roadways were damaged, and Monterey County was declared a disaster area.

**January 1995**: In January 1995, a 10- to 20-year event caused prolonged and sustained precipitation resulting in extensive flooding throughout the region. Most river valleys were affected, with major damage experienced in the Pajaro Valley and Carmel Valley. Five localized areas within the Carmel Valley area were significantly affected by downstream flooding of the Carmel River. The January 1995 flood damaged 125 residences resulting in an estimated damage cost of approximately $2.5 million. In addition, an estimated $927,000 in damage to public facilities and utilities occurred.

**March 1995**: From March 10-13, 1995, Monterey County experienced a second significant winter storm which resulted in sustained precipitation falling on already-saturated watersheds. Devastating flooding occurred throughout the County, particularly along the Carmel, Arroyo Seco, Salinas, and Pajaro Rivers. Damage was extensive throughout the County with virtually every community affected. Pajaro, Castroville, Mission Fields, Carmel Valley, Cachagua, Carmel Highlands, Spreckels, and Big Sur sustained devastating damage. Over 1,500 residences were damaged, including 60 homes which were declared uninhabitable. In addition, an estimated 100 businesses were affected, and the tourism industry sustained substantial losses for a period of several months.

In all, over 11,000 people were directly affected, and major portions of the County's agricultural lands subjected to widespread destruction. At the height of the flood, 63 roads and 15 bridges were closed, including the Highway 1 bridge over the Carmel River. The closure of the Highway 1 bridge over the Carmel River resulted in the complete elimination of access to portions of Carmel Valley, Carmel Highlands, and Big Sur for a period of several days, requiring evacuations to take place with helicopters.

62 roads and three bridges sustained damage. Public and private water systems were damaged, affecting approximately 3,500 homes and businesses. Eight large water systems and over fifty small systems were affected. Many residents were without domestic water service for extended periods. A number of areas were required to boil domestic water prior to use.

Sewage treatment facilities and private septic systems along all three major rivers (Carmel, Salinas, and Pajaro) were flooded and untreated sewage was released into the rivers. The amount of untreated sewage released could not be confirmed, but it may have been many thousands of gallons. Major treatment plants affected included Carmel Ranch, Watsonville, King City, Soledad, and Gonzales. Gas and electric service provided by Pacific Gas and Electric were affected by the storm, resulting in serious disruptions in service to widespread areas. Many public facilities and services were closed or interrupted, including public schools in affected communities. Zmudowski State Beach was closed as a result of the discovery of 27 barrels of potentially hazardous materials on the beach.

**February 1998**: A series of "El Niño" winter storms hit Monterey County and the close timing of the rainfall events contributed to intense flooding and saturated ground. An estimated 50 roads and highways were closed or restricted, in most cases due to washouts, landslides, and mudslides. Several communities were evacuated, including Pajaro's entire population of 3,500 people, after the levee along the Pajaro River was breached in several places.

Drinking water quality warnings remained in effect for certain areas for some time afterward. By the end of the first week of February, at least 6,600 homes and businesses had been without power for varying periods of time. Countywide losses from that storm were estimated at over $38 million, with agriculture-related losses totaling over $7 million and involving approximately 29,000 damaged acres.

In the 1998 storm event, the Las Lomas area experienced severe damage of eight residential parcels. Monterey County acquired the parcels through the Federal Hazard

**Mitigation Success Story**
**Severe Repetitive Loss Property Elevation**

In 2015, Monterey County completed the elevation of a Severe Repetitive Loss (SRL) structure located along the Carmel River. Based on historical data and FEMA flood mapping it can be assumed this structure would have sustained damages during the major flood events in 2017 and 2019.

In 2017 damages would have been minimal, with estimated flooding at 1.5 feet above the finished floor elevation. This would have resulted in about $83,652 in damages with no mitigation. With mitigation, it is estimated that no damage would have occurred, a savings of $83,652.

In 2019, significant flooding of up to 6 feet above the finished floor elevation would have resulted in approximately $255,718 in damages with no mitigation. With mitigation it is estimated that $88,946 in damages would have resulted from flood depths of 6 feet, a savings of $166,772.

Taking in to account each event, this project has a combined estimated savings of $250,424 since its completion in 2015.

Mitigation Grant Program and all structures were removed. Each parcel was subsequently rezoned to "open space" in perpetuity.

**January 2008**: A strong coastal storm in January 2008 brought flooding rains, high winds, record high surf, and coastal flooding to Monterey County and resulted in nearly $1 million in property damages. Approximately 30 homes in the Carmel Lagoon area were affected by some degree of flooding.

**October 2010**: In October 2010, a strong low-pressure system made its way through Central California and led to record breaking heavy rains across the area, causing an estimated $200,000 in damages. In Salinas, the Pacific Coast Christian Academy and Little Lamb Preschool were flooded after Little Bear Creek breached its banks.

**March 2011**: A series of systems affected Monterey County with heavy rain and strong winds causing an estimated $1 million in property damages. Nearly 1,300 acres of crops or croplands were impacted by flooding from the Salinas River and its tributaries causing an estimated $1.5 million in losses.

**December 2014**: An atmospheric river brought heavy rain, gusty winds, and a strong winter storm that impacted the region for several days in mid-December. The Moro Cojo Slough backed up and flooded homes and roadway along its banks. Sandbagging operations were needed to protect the homes from significant damage. The slough flap gates were damaged and could not properly drain the slough into Moss Landing Harbor.

The unincorporated community of Bolsa Knolls along Santa Rita Creek was flooded when a nearby levee broke open. Emergency crews reported that homes on Paul Avenue and Russell Road where evacuated and more than 18 inches of water flooded homes in a short amount of time. Fifteen homes were

**Mitigation Success Story**
**Salinas River Stream Maintenance Program**

Monterey County is subject to major flood events along the Salinas River. In 2016, programmatic permits were approved for the Salinas River Stream Maintenance Program (SMP). The Salinas River SMP was developed as a collaboration between the Monterey County Water Resources Agency, the Resource Conservation District of Monterey County (RCDMC), the Salinas River Channel Coalition, the Grower Shipper Association of Central California, The Nature Conservancy, and the Conservation Collaborative.

The SMP employs a multi-benefit approach for stream maintenance that enhances conveyance capacity of the river corridor by mimicking the sandy-bottomed river's natural, braided form in a manner that protects habitat, while reducing flood risk.

flooded and damaged due to flooding along Santa Rita Creek. The heavy rain also overwhelmed the sewage plant in Castroville resulting in a sewage spill.

**2016**: Monterey County was hit with several significant storm events during the 2016 El Niño winter. The first one took place on January 19, 2016, the second from March 5 and 6, 2016, and the third on March 11, 2016. These storms caused severe roadway damage totaling $7,318,000 in repair costs.

**2017**: A series of atmospheric river events in January and February of 2017 caused widespread roadway flooding and damage in Monterey County. Combined, the January and February storms caused an estimated $52 million to County roads.

**2019**: An atmospheric river caused widespread heavy rainfall, roadway flooding, and strong winds. This caused flash flooding in Chualar where homes were flooded, and cars were stranded on a flooded highway. This event caused an estimated $2 million in damages.

## 10.2.2 LOCATION

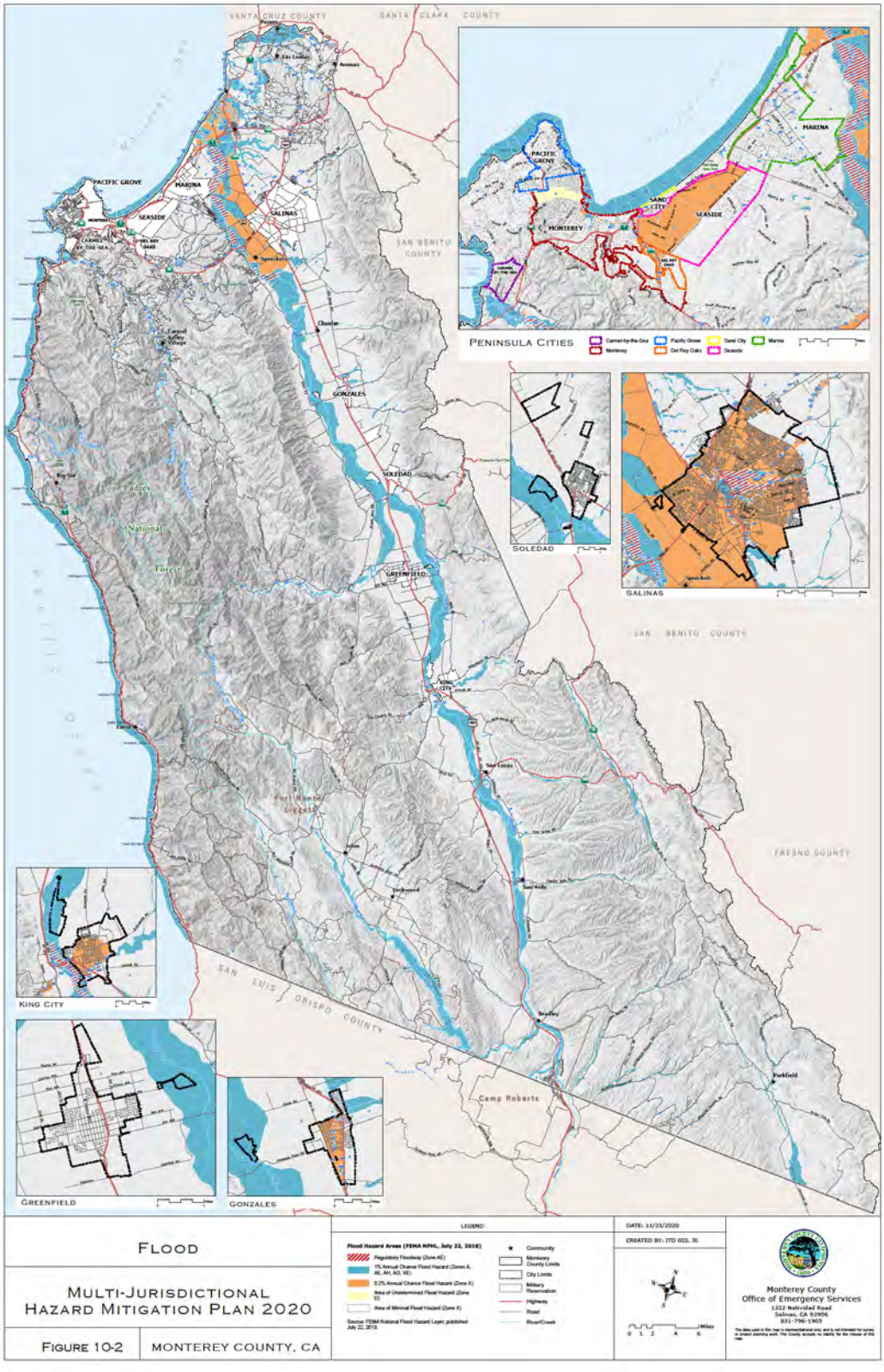
### Principal Flooding Sources

FEMA's Flood Insurance Study for Monterey County assessed several creeks, channels, and water bodies, including the following flooding sources:

- Arroyo Seco
- Big Sur River
- Bixby Creek
- Calera Creek
- Canyon Del Rey
- Carmel River
- Castroville Boulevard Wash
- Corncob Canyon Creek
- Del Monte Lake
- East Branch Gonzales Slough
- El Estero Lake
- El Toro Creek
- Elkhorn Slough
- Gabilan Creek
- Gonzales Slough
- Harper Creek
- Josselyn Canyon Creek
- Little Sur River
- Natividad Creek
- Pajaro River
- Pine Canyon Creek
- Salinas River
- San Benancio Gulch
- San Jose Creek
- San Lorenzo Creek
- San Miguel Canyon Creek
- Santa Rita Creek
- Seal Rock Creek
- Tembladero Slough
- Tomasello Creek
- Watson Creek

Shallow (1- to 3-foot) and sheet flooding conditions generally occur in the Salinas, Carmel, Pajaro, and Big and Little Sur Valleys. In addition, flooding can occur along the beach, where it is not uncommon to see winter storms produce 15-foot breakers. Flooding in these areas generally occurs during the rainy season, from October to April.

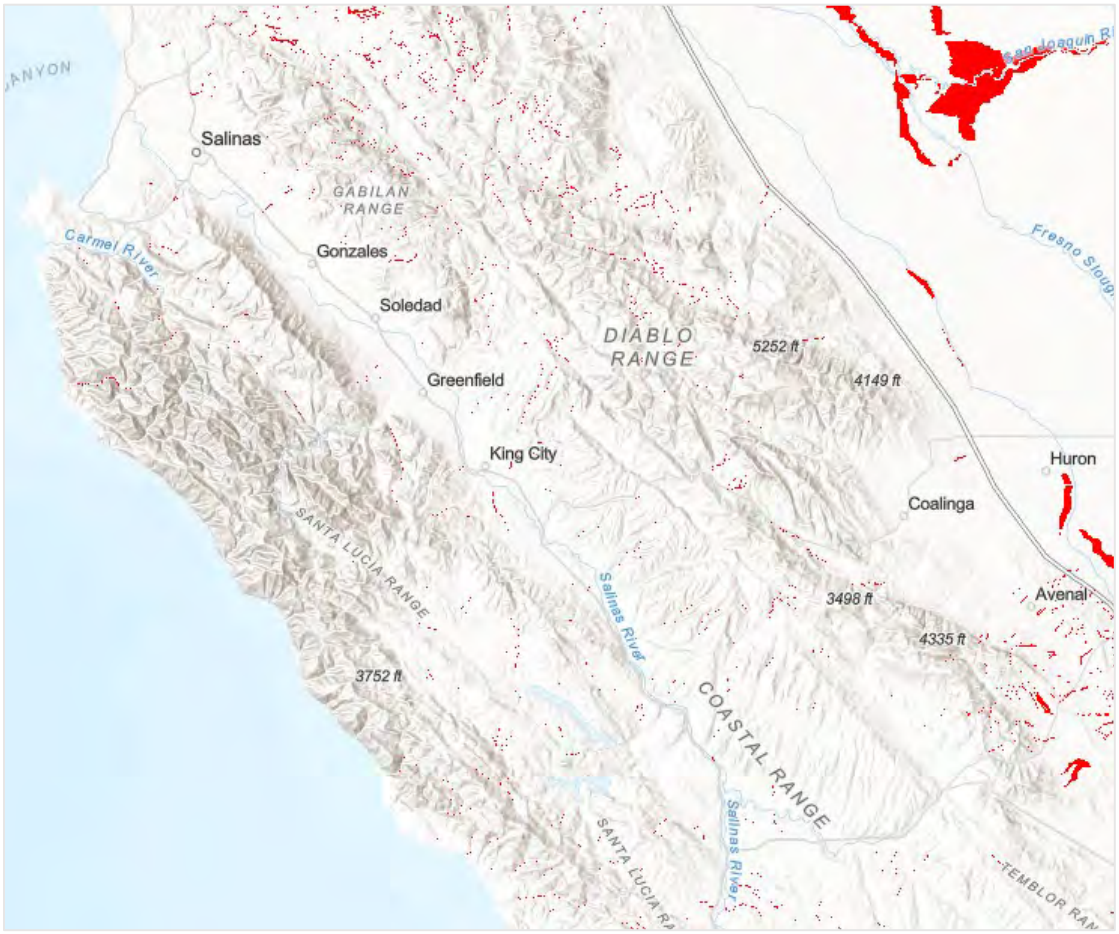
*Figure 10-2* shows the extent of the 100-year and 500-year floodplains, as well as the known localized flooding within the entire County according to current effective FIRMs (2017).


SANTA CRUZ COUNTY
SANTA CLARA COUNTY
SAN BENITO COUNTY
FRESNO COUNTY
SAN LUIS OBISPO COUNTY
PACIFIC GROVE
MARINA
SEASIDE
SALINAS
MONTEREY
SAND CITY
GONZALES
SOLEDAD
GREENFIELD
KING CITY
Los Padres National Forest
Fort Hunter Liggett
Camp Roberts
Bradley
Parkfield
PENINSULA CITIES
SOLEDAD
SALINAS
KING CITY
GREENFIELD
GONZALES
FLOOD
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 2020
FIGURE 10-2
MONTEREY COUNTY, CA
LEGEND:
Monterey County Office of Emergency Services

*Flood Awareness Zones*

Flood Awareness Zones have been developed by California DWR to map areas of additional flood threat throughout the state. The intent of the Awareness Floodplain Mapping project is to identify all pertinent flood hazards for areas that are not mapped under the NFIP and to provide the community and residents an additional tool in understanding potential flood hazards currently not mapped as a regulated floodplain. The awareness maps identify the 100-YR flood hazard areas using approximate assessment procedures. These floodplains are shown simply as flood prone areas without specific depths and other flood hazard data.

**Figure 10-3**
**DWR Flood Awareness Zones**




*Flood Insurance Claims*

A repetitive loss (RL) area is an area where multiple properties in close proximity to each other have experienced repetitive losses from flooding. RL property is a FEMA designation, defined as an insured property that has made two or more claims of more than $1,000 in any rolling 10-year period. RL properties may be classified as a Severe Repetitive Loss (SRL) property under certain conditions. A SRL property has had four or more claims of at least $5,000, or at least two claims that cumulatively exceed the building's value. A property that sustains repetitive flooding may or may not be on the County's RL property list for a number of reasons:

- Not everyone is required to carry flood insurance.
- Owners who have completed the terms of their mortgage or who purchased their property outright may choose not to carry flood insurance and instead bear the costs of recovery on their own.
- The owner of a flooded property that does carry flood insurance may choose not to file a claim. Even insured properties that are flooded regularly with filed claims may not meet the $1,000 minimum threshold to be recognized as an RL property.
- The owner adopted mitigation measures that reduce the impact of flooding on the structure, removing it from the RL threat and the RL list.

Many jurisdictions are required to address only the properties on the RL list. These properties are representative of the community's overall repetitive flooding problem, but do not include all damage. The Privacy Act of 1974 restricts the release of certain types of data to the public. Flood insurance policy and claims data are included in the list of restricted information. FEMA can only release such data to state and local governments, and only if the data are used for floodplain management, mitigation, or research. Therefore, this plan does not identify RL properties or include claim data for any individual property. Flood insurance statistics on loss can still help identify locations vulnerable to flooding, therefore *Table 10-4* summarizes loss statistics by jurisdiction.

**Table 10-4**
**NFIP Loss Statistics for Monterey County**

| Jurisdiction | Community Number | Total Losses Claims | Total Net Dollars Paid |
|---|---|---|---|
| Carmel-By-The-Sea | 060196 | 3 | $127,113 |
| Del Rey Oaks | 060197 | 1 | $750 |
| Gonzales | 060198 | 10 | $187,853 |
| Greenfield | 060446 | 1 | $0 |
| King City | 060199 | 12 | $715,518 |
| Marina | 060727 | 0 | $0 |
| Monterey | 060200 | 37 | $2,654,717 |
| Monterey County | 060195 | 1,163 | $23,735,682 |
| Pacific Grove | 060201 | 1 | $6,784 |
| Salinas | 060202 | 31 | $160,884 |
| Sand City | 060435 | 0 | $0 |
| Seaside | 060203 | 2 | $125,032 |
| Soledad | 060204 | 0 | $0 |
| | **Total** | **1,261** | **$27,714,334** |

### 10.2.3 FREQUENCY

Monterey County has experienced 10 significant flood events since 1995. This indicates an approximate 38% chance of a significant and damaging flood event in any given year, with a recurrence interval of 2.6 years. Smaller floods may occur more frequently and are an annual

hazard. The FEMA National Risk Index calculates an annualized frequency value for riverine and coastal flood hazards in Monterey County. For flooding, annualized frequency was based on the number of distinct hazard events that have occurred. Flooding in Monterey County has an annualized frequency of 2.7 distinct coastal flood events per year and 0.95 distinct riverine flood events per year.

### 10.2.4 SEVERITY

The principal factors affecting flood damage are flood depth and velocity. The deeper and faster flood flows become, the more damage they can cause. Shallow flooding with high velocities can cause as much damage as deep flooding with slow velocity. This is especially true when a channel migrates over a broad floodplain, redirecting high velocity flows and transporting debris and sediment. Although jurisdictions can implement mitigation and take preventative actions to significantly reduce the severity and threat of flood events, some type of residual risk will always exist (i.e., risk of a hazard event occurring despite technical and scientific measures applied to prevent it). Threats associated with residual risk include failure of a reservoir, a dam, levee, or other infrastructure, or a severe flood event that exceeds flood design standards or drainage capacity.

Flood risk has increased with population and urbanization. Increased impervious surfaces and channelization of streams has resulted in increased runoff and intensified flood flows. Increased development in floodplains has put more property and lives at risk for flooding. The damages caused by flooding in the Salinas Valley today, even with the construction of major flood control infrastructure, are far more substantial than they were a century ago. Along the Big Sur coast, streams and rivers draining the steep coastal mountains are subject to short, intense floods, capable of producing significant damage to property. Wildfires also exacerbate flood risk in Big Sur, denuding areas of vegetation, which can lead to increased sheet flow and greater velocities during subsequent rainstorms and causing water quality problems in coastal waters. The impact and severity of coastal flooding is additionally affected by tides, storm surge (the rise in water from wind stress and low atmospheric pressure), waves, and peak still-water elevation.

### 10.2.5 WARNING TIME

Due to the sequential pattern of meteorological conditions needed to cause serious flooding, it is unusual for a flood to occur without warning. Warning times for floods can be between 24 and 48 hours. Flash flooding can be less predictable, but potential hazard areas can be warned in advanced of potential flash flooding danger. The Monterey County Water Resources Agency (MCWRA) provides flood warning services to Monterey County. MCWRA staff monitors county wide hydrologic conditions during every significant storm event. A real time flood warning system allows MCWRA staff to provide hydrologic data as well as expertise to emergency managers and local law enforcement any hour of the day or night as needed for the protection of life and property in Monterey County.

## 10.3 SECONDARY HAZARDS

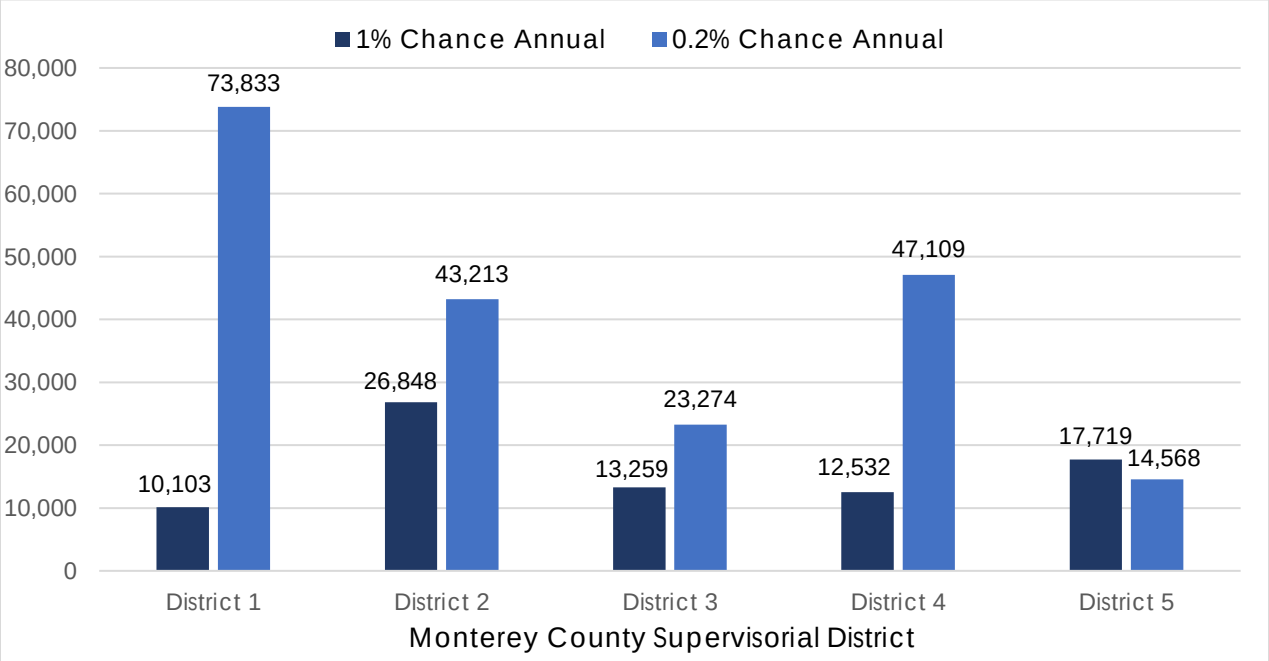
The most problematic secondary hazard for flooding is erosion, which in some cases can be more harmful than actual flooding. Flooding is also responsible for landslides when high flows over-saturate soils on steep slopes and cause them to fail. Hazardous materials spills are a secondary hazard of flooding if storage tanks rupture and spill into streams or storm sewers. It is also recognized that wildland fires within a watershed can exacerbate the flood hazard by virtue of increased rate and volume of runoff and attendant erosion and sediment discharge.

## 10.4 RISK ASSESSMENT

### 10.4.1 POPULATION

As seen in *Figure 10-4*, in Monterey County, 80,461 people are located in the 1% annual chance flood zone.

**Figure 10-4**
**Population Exposed to Flood Risk**




Floods can be extremely dangerous, and even six inches of moving water can knock over a person given a strong current. A car will float in less than two feet of moving water and can be swept downstream into deeper waters. This is one reason floods kill more people trapped in vehicles than anywhere else. During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs.

Certain health hazards are also common to flood events. Standing water and wet materials in structures can become breeding grounds for microorganisms such as bacteria, mold, and viruses. This can cause disease, trigger allergic reactions, and damage materials long after the

flood. When floodwaters contain sewage or decaying animal carcasses, infectious disease becomes a concern. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Where flooding occurs in populated areas, warning and evacuation will be of critical importance to reduce life and safety impacts.

### 10.4.2 PROPERTY

As noted in *Table 10-5,* about 35,000 residential properties, almost $16 billion in property value, in Monterey County is in a mapped FEMA Flood Zone.

**Table 10-5**
**Residential Property Exposed to Flood Hazard Risk by Flood Zone**

| Supervisorial District | 1% Annual Chance | | 0.2% Annual Chance | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 340 | $215,814,543 | 9,716 | $3,363,261,908 |
| District 2 | 1,094 | $496,002,748 | 7,941 | $3,458,129,047 |
| District 3 | 656 | $183,474,624 | 3,550 | $1,032,959,384 |
| District 4 | 118 | $67,526,512 | 10,974 | $4,751,738,760 |
| District 5 | 1,992 | $2,729,269,901 | 1,298 | $1,043,994,419 |
| **Total** | 4,200 | $3,692,088,328 | 33,479 | $13,650,083,518 |

As noted in *Table 10-6,* over 20,000 non-residential properties, about $10 billion in property value, in Monterey County is in a mapped FEMA Flood Zone.

**Table 10-6**
**Non-Residential Property Exposed to Flood Hazard Risk by Flood Zone**

| Supervisorial District | 1% Annual Chance | | 0.2% Annual Chance | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 423 | $218,575,592 | 4,405 | $1,607,035,317 |
| District 2 | 2,697 | $854,792,968 | 3,207 | $739,146,623 |
| District 3 | 2,133 | $2,351,465,862 | 2,193 | $724,778,875 |
| District 4 | 388 | $570,972,637 | 4,513 | $1,479,403,355 |
| District 5 | 1,734 | $1,173,086,410 | 1,022 | $508,954,540 |
| **Total** | 7,375 | $5,168,893,469 | 15,340 | $5,059,318,710 |

### 10.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

Flood events can significantly impact road bridges. These are important because often they provide the only ingress and egress to some neighborhoods. Roads or railroads that are blocked or damaged can isolate residents and can prevent access throughout the County, including for emergency service providers needing to get to vulnerable populations or to make repairs. Additionally, underground utilities can be damaged. Water and sewer systems can be affected by flooding. Floodwaters can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized urban flooding. Floodwaters can

get into drinking water supplies, causing contamination. Sewer systems can be backed up or overwhelmed by inflow and infiltration, causing sanitary sewer overflows.

Facilities that are known to manufacture, process, store, or otherwise use hazardous materials could be damaged in a flood. If damaged by a flood, these facilities could release chemicals that cause cancer or other significant adverse acute human health effects, or significant adverse environmental effects. During a flood, containers holding these materials can rupture and leak into the surrounding area, disastrously affecting the environment and residents. *Table 10-7* summaries critical infrastructure in the 100-year floodplain in Monterey County.

**Table 10-7**
**Critical Infrastructure in the 100-Year Floodplain in Monterey County**

| Critical Infrastructure Type | 1% Annual Chance |
|---|---|
| **Facilities** | |
| Emergency Response | 0 |
| Fire Station | 2 |
| Police Station | 0 |
| Medical Facilities | 3 |
| Military Facility | 0 |
| Large Public Facilities | 0 |
| Educational Facilities | 6 |
| Power Plant | 0 |
| Water & Wastewater Facilities | 61 |
| Stormwater Facilities | 8 |
| Government Facilities | 20 |
| Communication Facilities | 78 |
| Rain Gauges | 19 |
| Lighthouses | 0 |
| Dams | 0 |
| **Hazardous Materials** | |
| Active or Idle Oil Well | 853 |
| Landfill | 0 |
| Underground Tank | 15 |
| Cal ARP Facility | 9 |
| **Transportation** | |
| Airport | 1 |
| Bridge | 93 |
| Harbor | 3 |
| Highway/Freeway (Miles) | 89 |
| Driveway (Miles) | 1 |
| Major Road (Miles) | 310 |
| Local (Miles) | 527 |
| Railroad (Miles) | 23 |

### 10.4.4 ENVIRONMENT

Flooding is a natural event, and floodplains provide many natural and beneficial functions. Nonetheless, flooding can impact the environment in negative ways. Migrating fish can wash into roads or over dikes into flooded fields, with no possibility of escape. Pollution from roads, such as oil, and hazardous materials can wash into rivers and streams. During floods, these can settle onto normally dry soils, polluting them for agricultural uses. Human development such as bridge abutments and levees, and logjams from timber harvesting can increase stream bank erosion, causing rivers and streams to migrate into non-natural courses.

While the vulnerability assessment focuses on human vulnerability to flood events, the impact of human activities on flooding is also worth noting. Due to negative impacts of floods, many structural and other measures have been devised to limit how far a floodplain can extend. However, floodplains have many natural and beneficial functions, and disruption of natural systems can have long-term consequences for entire regions.

Some well-known, water-related functions of floodplains (noted by FEMA) include:

- Natural flood and erosion control
- Provide flood storage and conveyance
- Reduce flood velocities
- Reduce flood peaks
- Reduce sedimentation
- Filter nutrients and impurities from runoff
- Process organic wastes
- Moderate temperatures of water
- Surface water quality maintenance
- Promote infiltration and aquifer recharge

Areas in the floodplain that typically provide these natural functions are wetlands, riparian areas, sensitive areas, and habitats for rare and endangered species.

### 10.4.5 ECONOMIC IMPACT

Flooding can result in economic losses through closure of businesses and government facilities, disrupt communications, disrupt the provision of utilities such as water and sewer service, result in excessive expenditures for emergency response, and generally disrupt the normal function of a community.

Locations that are directly flooded experience the greatest economic impact. In these areas, renovations of commercial buildings may be necessary, disrupting associated services. Significant damage may occur in agricultural areas, with destruction of crops and agricultural products. The tourism industry may be affected by major flood events, as popular vacation areas tend to overlap flood hazard zones. Finally, flooding can cause extensive damage to public utilities and disruptions to delivery of services. Loss of power and communications may occur and drinking water and wastewater treatment facilities may be temporarily out of operation or running on backup generator power.

## 10.5 FUTURE TRENDS IN DEVELOPMENT

The planning partners are equipped to handle future growth within flood hazard areas. All municipal planning partners have general plans that address frequently flooded areas in the safety elements of their General Plans. Additionally, all municipal planning partners are participants in the NFIP and have adopted flood damage prevention ordinances in response to its requirements. All municipal planning partners have committed to maintaining their good standing under the NFIP through actions identified in this plan.

## 10.6 ISSUES

Important issues associated with flooding in Monterey County include the following:

- The accuracy of the existing flood hazard mapping produced by FEMA in reflecting the true flood risk within the County is questionable.
- The effect of climate change on flood risk is uncertain.
- More information is needed on flood risk to support the concept of risk-based analysis of capital projects.
- Ongoing flood hazard mitigation will require funding from multiple sources.
- Floodplain residents need to continue to be educated about flood preparedness and the resources available during and after floods.
- The concept of residual risk should be considered in the design of future capital flood control projects and should be communicated with residents living in the floodplain.
- The promotion of flood insurance as a means of protecting private property owners from the economic impacts of frequent flood events should continue.
- The economy affects a jurisdiction's ability to manage its floodplains. Budget cuts and personnel losses can strain resources needed to support floodplain management.

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# 11. HAZARDOUS MATERIALS INCIDENT

## 11.1 OVERVIEW

According to the Environmental Protection Agency (EPA), a hazardous material is any item or agent (biological, chemical, physical) which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. These substances may be highly toxic, reactive, corrosive, flammable, radioactive, or infectious. Hazardous materials can be present in any form, gas, solid, or liquid. Environmental or atmospheric conditions can influence hazardous materials if they are uncontained. Hazardous materials include hundreds of substances that pose a significant risk to humans.

Title 49 of the Code of Federal Regulations (CFR) lists thousands of hazardous materials, including gasoline, insecticides, household cleaning products, and radioactive materials. State-regulated substances that have the greatest probability of adversely impacting the community are listed in the CCR, Title 19. Numerous federal, state, and local agencies, including the US Environmental Protection Agency (EPA), US Department of Transportation (DOT), National Fire Protection Association, FEMA, the US Army, and the International Maritime Organization regulate hazardous materials.

Hazardous material releases can pose a risk to life, public health, air quality, water quality and the environment. A release or spill of bulk hazardous materials could result in fire, explosion, toxic cloud or direct contamination of water, people, and property. The effects may involve a

local area or many square miles. They may result in the evacuation of a facility or an entire neighborhood. In addition to the immediate risk, long-term public health and environmental impacts may result from sustained exposure to certain substances. Damage to property could range from immediate destruction by explosion to permanent contamination by a persistent hazardous material.

Natural hazards may cause the release of hazardous materials and complicate response activities. The impact of earthquakes on fixed facilities may be particularly serious due to the impairment or failure of the physical integrity of containment facilities. The threat of any hazardous material event may be magnified due to restricted access, reduced fire suppression and spill containment, and even complete cut-off of response personnel and equipment.

### 11.1.1 TYPES OF HAZARDOUS MATERIALS INCIDENTS

The following are the most common types of hazardous material incidents:

- **Fixed Facility Hazardous Materials Incident**: This is the uncontrolled release from a fixed site of materials that pose a risk to health, safety, and property. Fixed site facilities include refineries, chemical plants, storage facilities, manufacturing facilities, warehouses, wastewater treatment plants, swimming pools, dry cleaners, automotive sales/repair, and gas stations. It is possible to identify and prepare for fixed-site incidents because federal and state laws require those facilities to notify state and local authorities about materials being used or produced at the site.
- **Hazardous Materials Transportation Incident**: A hazardous materials transportation incident is any event during transport resulting in uncontrolled release of materials that can pose a risk to health, safety, and property. Transportation incidents are difficult to prepare for because there is little if any notice about what materials could be involved should an accident happen. Transported hazardous wastes include thousands of shipments of radiological materials moved across the United States by ground transportation, mostly medical materials, and low-level radioactive waste. Hazardous materials transportation incidents can occur on any transportation corridor, although most occur on interstate highways, other major federal or state highways, or major rail lines. Accidents may involve bulk petroleum products, reactive materials, chemical wastes, explosives, and other toxic substances that are being transported or temporarily stored while in transit.
- **Interstate Pipeline Hazardous Materials Incident**: There are a significant number of interstate natural gas, heating oil, and petroleum pipelines running through the State of California. These are used to provide natural gas to utilities and to transport these materials from production facilities to end-users.

#### *Hazard Materials Classifications*

The US Department of Transportation (USDOT) divides hazardous materials into nine major hazard classes. A hazard class is a group of materials that share a common major hazardous property, i.e., radioactivity, flammability, etc. These hazard classes include:

- *Class 1*: Explosives
- *Class 2*: Compressed Gases
- *Class 3*: Flammable Liquids
- *Class 4*: Flammable Solids; Spontaneously Combustible Materials; Dangers When Wet Materials/Water-Reactive Substances
- *Class 5*: Oxidizing Substances and Organic Peroxides
- *Class 6*: Toxic Substances and Infectious Substances
- *Class 7*: Radioactive Materials
- *Class 8*: Corrosives
- *Class 9*: Miscellaneous Hazardous Materials/Products, Substances, or Organisms

### 11.1.2 OVERSIGHT

Hazardous materials management is regulated by federal and state codes. The state fire marshal and the Pipeline and Hazardous Materials Safety Administration enforce oil and gas pipeline safety regulations. The federal government enforces hazardous material transport pursuant to its interstate commerce regulation authority. The Department of Toxic Substances Control (DTSC), a Division of the California Environmental Protection Agency, acts to protect California from exposure to hazardous waste by cleaning up existing contamination and looking for ways to reduce the amount of hazardous waste produced. DTSC regulates hazardous waste primarily under the authority of the Federal Resource Conservation and Recovery Act and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, cleanup, and emergency planning. DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow requirements.

Businesses are required to disclose all hazardous materials and waste above certain designated quantities that they use, store, or handle at their facility. They must prepare chemical inventory and business emergency plans, review the plans regularly, and conduct training. Any release or possible release of hazardous materials must be reported to the Cal OES Warning Center. Businesses using certain regulated substances (about 260 specific flammable or toxic chemicals) must develop a risk management plan. The plan must include an analysis of operations on-site, and projection of off-site consequences with accompanying mitigation plans.

## 11.2 HAZARD PROFILE

### 11.2.1 HISTORY

According to data from Cal OES Warning Center from 2016 through June 2, 2021. The records show 667 hazardous materials spills in Monterey County over the 5-year timeframe. *Table 11-1* lists the number of hazardous material incidents by spill site and type of substance spilled in Monterey County reported to the Cal OES Warning Center.

**Table 11-1**
**Hazardous Materials Spills in Monterey County by Spill Site and Substance Spilled (2016-2021)**

| Spill Site | Type of Substance Spilled | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Chemical | Petroleum | Radiological | Sewage | Vapor | Unnamed / Other | Railroad Derailment | Total |
| **Airport** | | 1 | | 1 | | | | 2 |
| **Industrial** | 2 | 4 | | | 5 | 2 | | 13 |
| **Business** | 10 | 21 | | 29 | 15 | 14 | | 89 |
| **Military Base** | | 6 | | 3 | 1 | | | 10 |
| **Oil Field** | | 17 | | | | 1 | | 18 |
| **Other** | 7 | 24 | | 29 | 7 | 10 | | 77 |
| **Pipeline** | | 1 | | | | | | 1 |
| **Railroad** | 1 | 2 | | 1 | | 1 | 44 | 49 |
| **Residence** | 3 | 8 | | 83 | 4 | 3 | | 101 |
| **Road** | 4 | 51 | 2 | 53 | 2 | 2 | | 114 |
| **School** | | 1 | | 5 | | 1 | | 7 |
| **Gas Station** | | 13 | | 1 | | | | 14 |
| **Ship/ Harbor** | 1 | 18 | | 1 | | 2 | | 22 |
| **Sewage Facility** | 1 | 1 | | 8 | | 2 | | 12 |
| **Utilities/ Substation** | | 3 | | 1 | | | | 4 |
| **Waterways** | 2 | 106 | | 13 | | 13 | | 134 |
| **Total** | 31 | 277 | 2 | 228 | 34 | 51 | 44 | 667 |

Source: Cal OES Spill Release Reporting Data (2016 through June 2, 2021)

As seen in *Table 11-2*, the most common causes of hazardous materials incidents were unknown (26%), followed by blockages (18%) and mechanical (18%).

**Table 11-2**
**Hazardous Materials Spills in Monterey County by Cause of Spill (2016-2021)**

| Cause | Number |
|---|---|
| Blockage | 121 |
| Broken Pipe | 20 |
| Collision | 57 |
| Human Error | 96 |
| Mechanical | 117 |
| Other | 67 |
| Overflow | 15 |
| Rail | 1 |
| Unknown | 173 |
| **Total** | **667** |

Source: Cal OES Spill Release Reporting Data (2016 through June 2, 2021)

Of the 667 reported incidents, 175 (26%) occurred in unincorporated Monterey County, including 49 in the vicinity of Moss Landing (7%). 157 reported incidents (24%) occurred in the City of Monterey and 135 incidents (30%) occurred in the City of Salinas. Additionally, over this 5-year timeframe hazardous material releases have been related to 40 injuries, 16 fatalities, and 23 evacuations. Further historical hazardous material spill report data is available on the Cal OES website.

### 11.2.2 LOCATION

The following locations have the potential of hazardous materials releases:

- **Business and Industrial Facilities**: Retail, manufacturing and light industrial firms are areas of concern. These facilities have the highest concentration of hazardous materials at fixed facilities in the planning area due to their manufacturing operations. Anhydrous ammonia and chlorine gas are the two most common extremely hazardous substances used in Monterey County. These materials are used primarily for cold storage by the produce industry, drinking water and wastewater treatment, and water treatment and cooling for pre-cut salad processing. It is anticipated that a release occurring at these businesses would present the greatest likelihood of having an off-site consequence and could have a major impact on the surrounding areas. In addition to these types of businesses, there are several large agricultural chemical wholesalers and applicators that handle large quantities of various pesticides. Another business that may present significant hazards because of the types and quantities of chemicals handled and the proximity to populated areas would include electric power generating facilities. Approximately 90 businesses have been identified under the California Accidental Release Prevention (CalARP) program as handling and storing a regulated hazardous substance in quantities above the California recognized threshold quantities.
- **Agricultural Areas**: Accidental releases of pesticides, fertilizers, and other agricultural chemicals may be harmful to both humans and the environment. Monterey's agricultural industry is a heavy user of pesticides and fertilizers, and the incorrect production and storage of these chemicals can only contaminate the soil, air, and water, and can cause a fire or an explosion. Agricultural pesticides are transported daily in and around the County.
- **Harbors**: Harbors are a potential location for hazardous materials spills. Marine tank vessels and refined petroleum products such as gasoline, diesel and bunker fuel used by ships are sources of potential oil spills. The Monterey and Moss Landing Harbors are potential locations for hazardous materials incidents.
- **Illegal Drug Operations**: Illegal operations such as laboratories for methamphetamine can pose a threat. Laboratory residues are often dumped along roadways or left in rented hotel rooms, creating a serious health threat to unsuspecting individuals and to the environment.

- **Illegal Dumping Sites**: Hazardous wastes such as used motor oil, solvents, or paint are occasionally dumped in remote areas or along roadways, creating a potential health threat to unsuspecting individuals and to the environment.
- **Transportation Routes**: The County's transportation system consists of a network of federal, state, and county roads, airports, and rail service that all have the potential for hazardous material incidents. The trucks and trains that use these transportation corridors commonly carry a variety of hazardous materials, including gasoline, other crude oil derivatives, and other chemicals known to cause human health problems. Major transportation routes in the County include:
  - US 101, State Route 1 (Highway 1), State Route 156, State Route 183, State Route 68, State Route 198, and County Routes G14, G15, and G18
  - Amtrak long distance and intercity trains through the County
  - Railroad lines
  - General Aviation Airports
- **Pipelines**: This information is provided by the National Pipeline Mapping System and is available to general public. Information does indicate that several pipelines conveying gas or hazardous liquids cross the County.
- **Oil Fields:** The County's active oil fields are subject to fire or explosion. The San Ardo Oil Fields are a possible location of a hazardous materials incident.

DTSC Hazardous Waste and Substances Site List (as of May 13, 2021), lists 110 sites in Monterey County with potential to release hazardous materials. Additionally, two sites in Monterey County are currently listed by the EPA on the Federal Superfund National Priorities List (NPL):

### *Crazy Horse Sanitary Landfill*

The Crazy Horse Sanitary Landfill site is a 125-acre sanitary landfill in Salinas, California. A landfill has operated on site since 1950. The landfill is owned by the City of Salinas and operated by Salinas Disposal Services. The facility receives about 162,000 tons of refuse a year. Landfill operations contaminated groundwater with hazardous chemicals. Following initial actions to protect human health and the environment, EPA is evaluating whether additional cleanup measures are needed.

### *Fort Ord*

The 27,827-acre Fort Ord site was established in 1917 by the US Army as a maneuver area and field artillery target range. In 1991, Fort Ord was selected for decommissioning, but the post did not formally close until 1994. Prior to closing in September 1994, the base's primary mission was training infantry military personnel. The EPA placed the site on the Superfund program's National Priorities List (NPL) in 1990. The site contained leaking petroleum underground storage tanks, a 150-acre landfill used to dispose of residential waste and small amounts of commercial waste generated by the base, a former fire drill area, motor pool maintenance areas, small dumpsites, small arms target ranges, an 8,000-acre firing range and other limited areas that pose threats from unexploded ordnance.

On November 20, 2020, the EPA published a Federal Register notice announcing its proposal to remove 11,934 acres of the 27,827-acre Fort Ord Superfund site from the NPL. This deletion is a "partial deletion" (meaning it includes only a part of the cleanup at a portion of the site where cleanup is finished); and only covers cleanup work for military munitions and soil pollution. EPA and the State of California will continue to oversee the US Army's cleanup at the rest of the site. The Army is the lead federal agency for the cleanup. The Army will continue to clean up the groundwater and soil gas on the 11,934 acres. It will also cleanup all pollution at the remaining 15,893 acres of the site. Both the groundwater and soil cleanup for the 11,934 acres and the entirety of the 15,893 acres are still in the Superfund program.

### 11.2.3 FREQUENCY

Hazardous material incidents may occur at any time in the County, given the presence of transportation routes dividing the County, the location of businesses and industry that use hazardous materials, the presence of scattered illegitimate businesses such as clandestine drug laboratories, and the improper disposal of hazardous waste. Based on previous occurrences (as noted above 667 incidents occurred over a 5-year period), Monterey County can expect small hazardous material incidents to occur many times a year. The likelihood of a significant hazardous materials release within the County is more limited and difficult to predict but is assumed to be highly likely.

### 11.2.4 SEVERITY

Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. Hazards can occur during production, storage, transportation, use or disposal. The release or spill of hazardous materials requires a different response depending on factors such as the amount, type, and location of the spill. Each location should have its own specific cleanup procedure, and all personnel handling such material should have received instruction on that procedure. The speed of onset of a hazardous materials spill is generally short. The duration is typically short as well, though certain chemicals can pollute earth and groundwater for long periods of time. Comprehensive information on the probability and magnitude of a hazardous material event is not available. Wide variations among the characteristics of hazardous material sources and among the materials themselves make such an evaluation difficult.

### 11.2.5 WARNING TIME

Hazardous material incidents occur without predictability under circumstances that give responders little time to prepare.

## 11.3 SECONDARY HAZARDS

Roadway or railroad closures due to a transportation-related hazardous material spill would have serious effects on the local economy and ability to provide services. Loss of major travel

routes would result in loss of commerce and could impact the ability to provide emergency services to citizens. The ability to receive fuel deliveries could be impacted. It is also common to see hazardous materials releases as escalating incidents resulting from other hazards such as floods, wildfires, and earthquakes. The release of hazardous materials can greatly complicate or even eclipse the response to the natural hazards disaster that caused the spill.

## 11.4 RISK ASSESSMENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggests distances useful to protect people from vapors resulting from spills involving dangerous and toxic substances. The recommended buffer distance, or "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk in the County to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release was analyzed using a one-mile buffer applied to facilities identified in the Monterey County 2019 Hazardous Materials Plan.

### 11.4.1 POPULATION

As seen in *Table 11-3*, close to 250,000 people could be exposed to mobile source hazardous materials incidents, and a little over 100,000 people could be exposed to a fixed source hazardous materials incident.

**Table 11-3**
**Population Exposed to Hazardous Materials Incident Risk in Monterey County**

| Supervisorial District | Mobile Source | Fixed Source |
|---|---|---|
| District 1 | 43,569 | 46,909 |
| District 2 | 41,632 | 15,718 |
| District 3 | 64,443 | 35,240 |
| District 4 | 58,962 | 16,439 |
| District 5 | 40,379 | 2,956 |
| **Total** | 248,985 | 117,262 |

Variables affecting exposure in the event of a hazardous materials incident include the type of product, the physical and chemical properties of the substance, the physical state of the product, the ambient temperature, wind speed, wind direction, barometric pressure, and

humidity. With so many variables, true population exposure numbers are difficult to determine. In general, those who live near transportation corridors or businesses with hazardous materials are more at risk; but each chemical incident is different, and the scenarios are numerous.

Hazardous materials pose a significant risk to emergency response personnel. All potential first responders and follow-on emergency personnel in the County currently are and will be properly trained to the level of emergency response actions required of their individual position at the response scene. Hazardous materials incidents can also pose a serious long-term threat to public health, and those who already are at high risk of health complications, the young, and the elderly, may be more vulnerable to health impacts.

### 11.4.2 PROPERTY

During a hazardous materials transportation spill, it is generally people that are at risk to the effects of the spill. During a spill, buildings, property, and their values are at a lesser risk; however, given the location of hazardous materials in the County, an analysis is performed here.

*Table 11-4* and *Table 11-5* summarizes property that is exposed to hazardous material incident risk from fixed and mobile source.

**Table 11-4**
**Residential Property Exposed to Hazardous Materials Incident Risk in Monterey County**

| Supervisorial District | Mobile Source | | Fixed Source | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 5,374 | $2,014,276,564 | 5,348 | $1,709,901,633 |
| District 2 | 7,762 | $3,094,087,641 | 1,400 | $529,147,582 |
| District 3 | 8,823 | $2,722,732,839 | 5,114 | $1,607,471,282 |
| District 4 | 11,156 | $5,267,765,844 | 3,512 | $1,511,657,663 |
| District 5 | 12,968 | $14,243,375,574 | 526 | $327,493,551 |
| **Total** | 46,083 | $27,342,238,462 | 15,900 | $5,685,671,711 |

**Table 11-5**
**Non-Residential Property Exposed to Hazardous Materials Incident Risk in Monterey County**

| Supervisorial District | Mobile Source | | Fixed Source | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 3,969 | $1,574,141,766 | 3,170 | $1,315,727,602 |
| District 2 | 5,299 | $1,581,922,328 | 1,218 | $575,693,618 |
| District 3 | 5,047 | $3,361,071,791 | 2,978 | $1,866,871,670 |
| District 4 | 5,799 | $2,233,416,936 | 1,878 | $675,704,517 |
| District 5 | 7,444 | $3,435,240,541 | 180 | $36,676,356 |
| **Total** | 27,558 | $12,185,793,362 | 9,424 | $4,470,673,763 |

### 11.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

Hazardous materials may be stored at or transported along critical facilities. These facilities are susceptible to accidents and are visible targets for terrorism. The impact of a hazardous material spill or transportation incident will likely be localized to the particular facility, hospital, port, airport, railroad, road, highway, or interstate. The potential losses vary because of the variable nature of the hazardous material spill, but costs from product loss, property damage and decontamination and other costs can add up to millions of dollars. Critical infrastructure exposed to hazardous materials risk is summarized in *Table 11-6*.

**Table 11-6**
**Critical Infrastructure Exposed to Hazardous Materials Incident Risk in Monterey County**

| Critical Infrastructure Type | Mobile Source | Fixed Source |
|---|---|---|
| **Facilities** | | |
| Emergency Response | 36 | 11 |
| Fire Station | 32 | 9 |
| Police Station | 0 | 5 |
| Medical Facilities | 0 | 22 |
| Military Facility | 3 | 0 |
| Large Public Facilities | 3 | 1 |
| Educational Facilities | 119 | 48 |
| Power Plant | 1 | 0 |
| Water & Wastewater Facilities | 233 | 61 |
| Stormwater Facilities | 4 | 6 |
| Government Facilities | 151 | 103 |
| Communication Facilities | 890 | 335 |
| Rain Gauges | 12 | 2 |
| Lighthouses | 1 | 0 |
| Dams | 0 | 0 |
| **Hazardous Materials** | | |
| Active or Idle Oil Well | 1522 | 20 |
| Landfill | 0 | 1 |
| Underground Tank | 121 | - |
| Cal ARP Facility | 72 | - |
| **Transportation** | | |
| Airport | 5 | 2 |
| Bridge | 52 | 12 |
| Harbor | 1 | 0 |
| Highway/Freeway (Miles) | - | 73 |
| Driveway (Miles) | - | 0 |
| Major Road (Miles) | - | 133 |
| Local (Miles) | - | 283 |
| Railroad (Miles) | - | 23 |

### 11.4.4 ENVIRONMENT

The risk of hazardous material spills to the environment is considerable. Hazardous materials spilled along roads or railways can pollute rivers, streams, wetlands, riparian areas, and adjoining fields. Other hazardous materials released into the air can severely impact plant and animal species. Reducing risk exposure to the built environment will also mitigate potential losses to the natural environment.

Depending on the characteristic of the hazardous material or the volume of product involved, the affected area can be as small as a room in a building or as large as many square miles that require soil remediation. More widespread effects occur when a product contaminates the municipal water supply or water system such as a port, river, lake, or aquifer. Such environmental damage can linger for decades.

### 11.4.5 ECONOMIC IMPACT

Hazardous materials incidents in Monterey County have the potential to impact many important economic sectors. Large hazardous material spills can drive away tourists. Hazardous materials incidents could impact the agricultural industry, which could have large economic implications.

## 11.5 FUTURE TRENDS IN DEVELOPMENT

The number and types of hazardous chemicals stored in and transported through the County will likely continue to increase. As population grows, the number of people vulnerable to the impacts of hazardous materials spills will increase. Development will continue to happen within hazardous materials incident risk zones.

Population and business growth along major transportation corridors increases the vulnerability to transportation-related hazardous material spills. Those who choose to develop in these areas should be made aware of the risks associated with living within close proximity to hazardous materials risk.

## 11.6 ISSUES

Key issues associated with hazardous materials incidents in Monterey County include:

- Train first responders and all appropriate local government staff to implement protocols contained in the *Monterey County Hazardous Materials Plan*.
- Anhydrous ammonia and chlorine gas, two chemicals commonly used in industrial processing in Monterey County are anticipated to present the greatest likelihood of having an off-site consequence and could have a major impact on the surrounding areas. The County should continue to monitor and regulate the use of these chemicals.
- Power generating facilities present a hazardous materials release risk.

- Accidental releases of pesticides, fertilizers, and other agricultural chemicals are a concern due to their potential to have harmful effects on both humans and the environment.
- Work proactively with hazardous materials facilities to follow best management practices:
  - Placards and labeling of containers
  - Emergency plans and coordination
  - Standardized response procedures
  - Notification of the types of materials being transported through the County at least annually
  - Random inspections of transporters as allowed by each company
  - Installation of mitigating techniques along critical locations
  - Routine hazard communication initiatives
  - Consideration of using alternative products that are safer

# 12. HUMAN-CAUSED HAZARDS

## 12.1 OVERVIEW

Although the Disaster Mitigation Act does not require an assessment of human-caused hazards, the Monterey County Steering Committee decided to include human-caused hazards in this hazard mitigation plan for the following reasons:

- Monterey County takes a proactive approach to disaster preparedness in order to protect the public safety of all citizens.
- Preparation for and response to a human-caused disaster involves much of the same staff, training, critical decision making, and commitment of resources as a natural hazard.
- The multi-hazard mitigation planning effort is an opportunity to inform the public about all hazards, including human-caused hazards.
- The likelihood of a human-caused hazard event in the County is greater than that of several of the natural hazards identified in this Plan.
- During public outreach events, many community members expressed concern for increasing amounts of human-caused hazards.

The following human-caused hazards discussed in this plan: Cyber-Attack, Targeted Violence, Terrorism, and Mass Migration.

### 12.1.1 CYBER-ATTACK

A cyber-attack is an intentional and malicious crime that compromises the digital infrastructure of a person or organization, often for financial or terror-related reasons. Such attacks vary in nature and are perpetrated using digital mediums or sometimes social engineering to target human operators. Generally, attacks last minutes to days, but large-scale events and their impacts can last much longer. As information technology continues to grow in capability and interconnectivity, cyber-attacks become increasingly frequent and destructive.

#### *Types of Cyber-Attacks*

Cyber-threats differ by motive, attack type and perpetrator profile. Motives range from the pursuit of financial gain to political or social aims. Cyber-threats are difficult to identify and combat. Types of threats include using viruses to erase entire systems, breaking into systems, and altering files, using someone's personal computer to attack others, or stealing proprietary, protected, or confidential information. The spectrum of cyber-risks is limitless, with threats having a wide range of effects on the individual, community, and all private and public organizations. This risk assessment includes cyber-attacks and cyber-terrorism under the inclusive hazard of cyber-threats. The terms often are used interchangeably, though they are not the same. While all cyber-terrorism is a form of cyber-attack, not all cyber-attacks are cyber-terrorism.

Public and private computer systems can experience a variety of cyber-attacks, from blanket malware infection to targeted attacks on system capabilities. Cyber-attacks specifically seek to breach Information Technology (IT) security measures designed to protect an individual or organization. The initial attack is followed by more severe attacks for the purpose of causing harm, stealing data, or financial gain. Organizations are prone to different types of attacks that can be automated or targeted.

#### *Ransomware Attacks*

Ransomware attacks, a type of cyber-attack, is becoming increasingly common against individuals, small- and medium-sized organizations, utilities, and local governments. Cyber ransom occurs when an individual downloads ransom malware, or ransomware, often through phishing, and the subsequent execution of code results in encryption of all data and personal files stored on the system. The victim then receives a message that demands a fee in the form of electronic currency or cryptocurrency, such as Bitcoin, for the decryption code. Cyber-attacks often target government networks to gain access to sensitive personal information of citizens and employees, as well as proprietary software, strategic plans, and other information.

Prior to the COVID-19 pandemic, state and local governments were already plagued by cybersecurity threats. Ransomware attacks, in which the attacker encrypts a system and demands money to unlock it, have increasingly impacted government entities across the nation over the past two years.

*Cyber-Terrorism*

Cyber-terrorism is the use of computers and information, particularly over the Internet, to recruit others to an organization's cause, cause physical or financial harm, or cause a severe disruption of infrastructure service. Such disruptions can be driven by religious, political, or other motives. Like traditional terrorism tactics, cyber-terrorism seeks to evoke strong emotional reactions, but it does so through information technology rather than a physically violent or disruptive action. Cyber-terrorism has three main types of objectives:

- **Organizational**: Cyber-terrorism with an organizational objective includes specific functions outside of or in addition to a typical cyber-attack. Terrorist groups today use the internet on a daily basis. This daily use may include recruitment, training, fundraising, communication, or planning. Organizational cyber-terrorism can use platforms such as social media as a tool to spread a message beyond country borders and instigate physical forms of terrorism. Additionally, organizational goals may use systematic attacks as a tool for training new members of a faction in cyber-warfare.
- **Undermining**: Cyber-terrorism with undermining as an objective seeks to hinder the normal functioning of computer systems, services, or websites. Such methods include defacing, denying, and exposing information. While undermining tactics are typically used due to high dependence on online structures to support vital operational functions, they typically do not result in grave consequences unless undertaken as part of a larger attack.
- **Destructive**: The destructive objective for cyber-terrorism is what organizations fear most. Through the use of computer technology and the Internet, terrorists seek to inflict destruction or damage on tangible property or assets, and death or injury to individuals.

### 12.1.2 TARGETED VIOLENCE

Targeted violence refers to any incident of violence in which an attacker selects a particular target prior to the violent attack. Unlike terrorism, targeted violence includes attacks otherwise lacking a clearly discernible political, ideological, or religious motivation, but that are of such severity and magnitude as to suggest an intent to inflict a degree of mass injury, destruction, or death commensurate with known terrorist tactics. Targeted violence has a significant impact on the safety and security of communities, schools, places of worship, and other public gatherings. The threats of terrorism and targeted violence increasingly intersect with one another.

Active shooter attacks are typically motivated by the desire to maximize human casualties. They are differentiated from other attack types by the indiscriminate nature of the victim's targets of opportunity rather than actions directed toward a specific target. Active shooter attacks have evolved over the last decade ranging from "lone wolf" shooters who act alone and without any organizational affiliation to organized groups acting in concert to achieve a specific objective.

An active shooter is an individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearms and there is no

pattern or method to their selection of victims. Active shooter situations are unpredictable and evolve quickly. Typically, the immediate deployment of law enforcement is required to stop the shooting and mitigate harm to victims. Active shooter situations are often over within 10 to 15 minutes, before law enforcement arrives on the scene.

### 12.1.3 TERRORISM

Terrorism is defined in the Code of Federal Regulations as "the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives" (28 CFR, Section 0.85). The FBI categorizes two types of terrorism in the US:

- Domestic terrorism involves groups or individuals without foreign direction whose terrorist activities, including the use of WMDs, are directed at the government or population. The FBI, the primary response agency for domestic terrorism, coordinates domestic preparedness programs and activities to limit domestic terrorism.
- International terrorism involves groups or individuals whose terrorist activities are foreign-based and/or directed by countries or groups outside the United States, or whose activities transcend national boundaries.

Terrorism can be perpetrated through several methods including Weapons of Mass Destruction (WMD), which includes biological, chemical, nuclear, and radiological weapons; arson, incendiary, explosive, and armed attacks; industrial sabotage and intentional hazardous materials releases; agriterrorism; and "cyber-terrorism." Within these general categories, however, there are many variations. Particularly in the area of biological and chemical weapons, there are a wide variety of agents and ways for them to be disseminated. *Table 12-1* provides a hazard profile summary for terrorism-related hazards.

**Table 12-1**
**Event Profiles for Terrorism**

| Hazard | Application Mode | Hazard Duration/ Extent | Mitigating and Exacerbating Conditions |
|---|---|---|---|
| **Conventional Bomb/ Improvised Explosive Device** | Detonation of explosive device on or near target; delivery via person, vehicle, or projectile. | Instantaneous; additional "secondary devices" may be used, lengthening the time duration of the hazard. Extent of damage is determined by type and quantity of explosive. Effects generally static other than cascading consequences, incremental structural failure. | Overpressure at a given standoff is inversely proportional to the cube of the distance from the blast; thus, each additional increment of standoff provides progressively more protection. Terrain, structures, etc. can provide shielding by absorbing and/or deflecting energy/debris. Exacerbating conditions: ease of access to target; lack of shielding; poor construction; ease of device concealment. |

**Table 12-1**
**Event Profiles for Terrorism**

| Hazard | Application Mode | Hazard Duration/ Extent | Mitigating and Exacerbating Conditions |
|---|---|---|---|
| **Chemical Agent** | Liquid/aerosol contaminants dispersed using sprayers or other aerosol generators; liquids vaporizing from puddles/ containers; or munitions. | Chemical agents may pose viable threats for hours to weeks depending on the agent and the conditions in which it exists. Contamination can be carried out of the initial target area by persons, vehicles, water, and wind. Chemicals may be corrosive or otherwise damaging over time if not remediated. | Air temperature affects evaporation of aerosols. Ground temperature affects evaporation of liquids. Humidity can enlarge aerosol particles, reducing inhalation hazard. Precipitation can dilute but also spread agent. Wind can disperse vapors but cause target area to be dynamic. Micro-meteorological effects of buildings/terrain can alter travel and duration of agents. Sheltering in place can protect people from harmful effects. |
| **Arson/ Incendiary Attack** | Initiation of fire or explosion on or near target via direct contact or remotely via projectile. | Generally, minutes to hours. Extent of damage determined by type and quantity of device, accelerant, and materials present at or near target. | Mitigation factors include built-in fire detection and protection systems and fire-resistive construction. Inadequate security can allow easy access to target and easy concealment of incendiary device. Noncompliance with fire and building codes, as well as failure to maintain existing fire protection systems, can increase the effectiveness of a fire weapon. |
| **Armed Attack** | Tactical assault or random attack. | Generally, minutes to days. Extent varies based on perpetrators' intent and capabilities. | Inadequate security can allow easy access to target, easy weapons concealment, and undetected initiation of attack. |
| **Biological Agent** | Liquid or solid contaminants dispersed using aerosols or by point or line sources such as munitions, covert deposits, moving sprayers. | Hours to years, depending on the agent and the conditions in which it exists. Depending on the agent used and the effectiveness of deployment, agent can spread via wind and water. Infection can spread via humans or animals. | Altitude of release above ground can affect dispersion; sunlight is destructive to many bacteria and viruses; light to moderate wind will disperse agents but higher winds can break up aerosol clouds; the micro-meteorological effects of buildings and terrain can influence aerosolization and travel of agents. |
| **Cyber-Terrorism** | Electronic attack, one computer against another. | Minutes to days. Generally, no direct effects on built environment. | Inadequate security can allow access to critical computer systems, letting them to be used to conduct attacks. |

**Table 12-1**
**Event Profiles for Terrorism**

| Hazard | Application Mode | Hazard Duration/ Extent | Mitigating and Exacerbating Conditions |
|---|---|---|---|
| **Agriterrorism** | Direct, covert contamination of food supplies or introduction of pests or disease agents to crops and livestock. | Days to months. Extent varies by type of incident. Food contamination may be limited to specific sites, while pests and diseases may spread widely. | Inadequate security can facilitate adulteration of food and introduction of pests and disease agents to crops and livestock. |
| **Radiological Agent** | Radioactive contaminants dispersed using sprayers/ aerosol generators, or by point or line sources. | Seconds to years, depending on material used. Initial effects will be localized to site of attack; based on climatic conditions, successive behavior of material may be dynamic. | Duration of exposure, distance from source of radiation, and the amount of shielding between source and target determine exposure to radiation |
| **Nuclear Bomb** | Detonation of nuclear device underground, at the surface, in the air, or at high altitude. | Light/heat flash and blast/shock wave last seconds; nuclear radiation and fallout can persist for years. Initial blast effects of a subsurface, ground or air burst are static, determined by device's characteristics/ employment; fallout of radioactive contaminants may be dynamic. | Harmful effects of radiation can be reduced by minimizing the time of exposure. Light, heat, and blast energy decrease logarithmically as a function of distance from seat of blast. Terrain, forestation, structures, etc. can provide shielding by absorbing and/or deflecting radiation and radioactive contaminants. |
| **Intentional Hazardous Material Release** | Solid, liquid, and/or gaseous contaminants released from fixed or mobile containers | Hours to days. Chemicals may be corrosive or otherwise damaging over time. Explosion and/or fire may be subsequent. Contamination may be carried out of the incident area by persons, vehicles, water, and wind. | Weather conditions directly affect how the hazard develops. The micro-meteorological effects of buildings and terrain can alter travel and duration of agents. Sheltering in place can protect people and property from harmful effects. Non-compliance with fire and building codes, as well as failure to maintain existing fire protection and containment features, can substantially increase the damage from a hazardous materials release. |

Source: FEMA 386-7, State and Local Mitigation Planning How-To Guide: Integrating Manmade Hazards

The effects of terrorism can include injuries, loss of life, property damage, or disruption of services such as electricity, water supplies, transportation, or communications. Effects may be immediate or delayed. Terrorists often choose targets that offer limited danger to themselves and areas with relatively easy public access. Foreign terrorists look for visible targets where they can avoid detection before and after an attack, such as international airports, large cities, major special events, and high-profile landmarks.

In dealing with terrorism, the unpredictability of human beings must be considered. People with a desire to perform such acts may seek out targets of opportunity that may not fall into established lists of critical areas or facilities. First responders train to respond not only to organized terrorism events, but also to random acts by individuals who, for a variety of reasons ranging from fear to emotional trauma to mental instability, may choose to harm others and destroy property. While education, heightened awareness, and early warning of unusual circumstances may deter terrorism, intentional acts that harm people and property are possible at any time. Public safety entities must react to the threat, locating, isolating, and neutralizing further damage and investigating potential scenes and suspects to bring criminals to justice.

### 12.1.4 MASS MIGRATION

Population migration of large scales can lead to resource pressure - such resources include water, gasoline, housing, transportation, first responders, medical care, government services - on communities receiving the migrants and can exacerbate existing instability. In communities lacking the capacity to manage a rapid influx or exodus or already managing underlying threats, migration of this scale greatly increases the potential to destabilize communities. Types of mass migration include large gatherings, planned events, tourism, migrant agriculture, and permanent retreats from hazard impacted areas.

#### *Large Gatherings/ Special Events*

Large gatherings refer to a planned or spontaneous event, indoors or outdoors, with a significant number of people participating or in attendance such as a community event or gathering, concert, festival, conference, parade, wedding, protests, or sporting event.

Special events result in concentrations of large numbers of people in limited geographic areas. Such concentrations exacerbate the effects of any other hazard that may result from or be coincidental to the event. Special events may increase the likelihood of human-caused hazards such as terrorism, civil unrest or high-occupancy building fires. Injuries and/or loss of life may be much greater if naturally occurring hazards such as earthquakes or adverse weather occur during a special event. Simply having a massive concentration of people requires additional planning and caution, regardless of the special risks associated with any particular event. Large-scale special events require the deployment of police, fire, and emergency medical personnel, rendering these resources unavailable for response to emergencies in other locations in the community. Many large-scale special events result in street closures and increased traffic congestion, slowing response time for emergency personnel and equipment.

*Transient and Non-Resident Populations*

The physical location and the geographic terrain of Monterey County has created a nexus for several economic drivers which attract transient, non-resident populations. In Monterey County, the Agriculture and Tourism sectors experience seasonal fluctuations, and subsequently an ongoing high rate of population influx and outflow.

A migrant farmworker is defined as an individual who is required to be absent from a permanent place of residence for the purpose of seeking employment in agricultural work. Due to the seasonal nature of agriculture, workers travel and work throughout the US, serving as the backbone for this major industry. The National Agricultural Workers Survey (NAWS) defines a migrant farmworker as a person who reported jobs that were at least 75 miles apart or who reported moving more than 75 miles to obtain a farm job during a 12-month period. While the vast majority of farmworkers in the US are settled (81%), around 19% are migratory.[35] California growers employ one out of three of the nation's farmworkers. Annual influxes of agricultural workers can place a strain on local resources.

Over the past decades, global tourism industry has been growing exponentially, more than doubling between 1992 and 2012. By 2030, annual international tourism is estimated to grow to up to 1.8 billion.[36] Therefore, tourism is becoming globally one of the most important economic activities, at the same time, the sector is regularly challenged by crises caused by natural, man-made or other often subjective risks. Risks associated with the tourism industry include:

- Tourism infrastructure is often located in areas exposed to sudden-onset natural disasters, in particular beach and coastal areas, river valleys and mountain regions.
- Many natural disasters, crime incidents, epidemics, acts of terrorism and civil strife are either deliberately targeted at places where tourists gather or coincidentally occur in areas with high concentrations of tourists.
- Tourists often lack familiarity with a destination region, local customs, language, or a lack of awareness of local security risks and threats often result in the tourists having a higher propensity to find themselves in dangerous situations than many local residents.
- As seen during the COVID-19 Pandemic, tourism has also been a significant contributing factor in the rapid spread of infectious diseases.
- A large-scale disaster is likely to stretch the capacity of emergency services in any jurisdiction, but large tourist populations can further strain the capabilities of medical, emergency rescue, police, ambulance, and hospital services to cope with a disaster.
- While residents are normally easy to locate and identify by local emergency agencies, tourists by virtue of their transient presence are not.

[35] Findings from the National Agricultural Workers Survey (NAWS) 2015-2016: A Demographic and Employment Profile of United States Farmworkers. JBS International (January 2018).
[36] Tourism and Disaster Risk. UN World Conference on Disaster Risk Reduction (2015)

*Retreat from Hazard Impacted Areas*

One of the most pressing concerns relates to the growth in climate-induced migration. In 2017, 68.5 million people were forcibly displaced, more than at any point in human history. While it is difficult to estimate, approximately one-third of these (22.5 million to 24 million people) were forced to move by "sudden onset" weather events, such as flooding, wildfires, and intensified storms.[37] While the remaining two-thirds of displacements are the results of other crises, it is becoming apparent that climate change is contributing to so-called slow onset events such as desertification, sea-level rise, ocean acidification, air pollution, rain pattern shifts and loss of biodiversity. Put simply, climate change will cause population movements by making certain parts of the world much less viable places to live; by causing food and water supplies to become more unreliable and increasing the frequency and severity of floods and storms. Migration is possibly the most direct adaptation strategy to climate change. As climate change continues with tremendous changes in local living conditions, populations in communities with worsening conditions consider moving to better places, provided the costs of migration are affordable. Additionally, sudden climatic changes or natural disasters might lead, in the absence of alternatives, to migration choices which are forced rather than the result of a well-planned process.

Evidence of sudden disaster-induced displacement can be found after catastrophic Camp Fire in 2018. The wildfire destroyed over 18,000 structures and led to the temporary displacement of approximately 56,000 residents and the longer-term displacement of over 20,000 residents. The majority of long-term displaced residents fled the Town of Paradise, where nearly 95% of the community's structures were damaged and destroyed. The sudden influx of people across the region for an extended period of time put a strain on the resources of municipalities surrounding the burn scar. In 2019, the City of Chico estimated more than $500 million in impacts associated with sudden growth and pressure on local infrastructure. The impacts of the Camp Fire have substantially changed the dynamics of growth in the region, with some communities, like the City of Chico, experiencing more than a decade worth of growth in one year. Meanwhile, the Town of Paradise experienced a population loss of about 83% from 2018 to 2019 and Butte County saw a loss of more than 10,000 residents between 2019 and 2020. It will likely take at least two decades for the Town of Paradise to approach its former population, but the level of losses means the community will never be made whole. Many former residents of both Paradise and Butte County are likely to never return. Understanding how many of these residents may return in the future will require more extensive research and outreach, but interviews and surveys conducted as part of the Town of Paradise Recovery Plan revealed between that about 25% and 35% were looking to return in the future.[38]

[37] The climate crisis, migration, and refugees. John Podesta, The Brookings Institute (July 25, 2019).
[38] The Impacts of Camp Fire Disaster on Housing Market Conditions and Housing Opportunities in the Tri-County Region. Peloton Research + Economics (September 1, 2020)

## 12.2 HAZARD PROFILE

### 12.2.1 HISTORY

#### *Cyber-Attack*

The County has experienced a number of coordinated attacks over recent years. In 2015, one large County department was hit by the CryptoWall ransomware as a result of a user downloading an infected file. Over 1,500 shared files were encrypted, became unrecoverable, and had to be restored from backup.

Another ransomware incident occurred in 2020, when an attacker successfully broke into and planted the "CrySIS" ransomware variant on a file server in one of the County's newly merged departments. A ransom note asking for $10,000 was left behind. The ransomware encrypted all shared files on the department's file server, effectively destroying years of work. The technology for this new department has since been upgraded and brought up to County standards.

On a monthly basis, the County is hit by credential stealing attacks. In these attacks, an end-user surrenders their Office365 credentials to an attacker, usually through a phishing attack. The attacker then logs into Office365 remotely, sets up automated Outlook rules so that the victim cannot see any replies to the emails sent from this account, and then proceeds to use the account to trick other County users into surrendering their credentials as well. The goal of the attacker in these cases is most likely financial gain through the sales of the credentials, spamming, and potential theft of information. This can be mitigated through the deployment of user-friendly two-factor authentication.

#### *Targeted Violence*

In the US, between 2000 to 2018 there were 277 active shooter incidents and 2,430 casualties, including 884 killed and 1,546 wounded.[39] In the neighboring jurisdiction of Santa Clara County, a mass shooting occurred at the Gilroy Garlic Festival in Gilroy, California, on July 28, 2019. The gunman killed himself and three others and wounded 17 people. The FBI opened a domestic terrorism investigation into the incident.

#### *Terrorism*

In May and June 2020 multiple attacks were made on federal and local law enforcement in Oakland and Ben Lomond, California. The actors were affiliated with the Boogaloo Movement, known for its extremist, anti-law enforcement views and ties to a movement that believes a second American Civil War is coming soon. The actors are accused of assassinating a Federal Protective Services Officer and injuring his partner on the night of May 29, after firing on them

[39] Quick Look: 277 Active Shooter Incidents in the United States From 2000 to 2018, Federal Bureau of Investigations Office of Partner Engagements

from a white van, in what is described as "an ambush." The actors purposefully chose the night of massive protests to gain cover for the attacks.

On June 6, 2020, Santa Cruz deputies responded to a call about a suspicious van parked off the road. The caller saw guns and bomb-making materials inside the van, according to the sheriff's department. The actor would later lob pipe bombs and open fire with assault weapons on law enforcement officers in Ben Lomond, killing one Santa Cruz deputy and injuring two other Santa Cruz deputies.

#### *Mass Migration*

An influx of agricultural workers to the Salinas and Pajaro Valleys occurs every year during peak growing season. For the three-year period 2014-16, the average monthly employment in the region reached 80,715 during July. The month of the lowest total, with 34,737 employed, was January, reflecting the seasonal pattern of agriculture sector jobs. The three-year annual average of monthly employment in the region increased from 49,035 during 2005-07 to 60,837 during 2014-16. Thus, annual average agricultural employment in the Salinas-Pajaro Valleys increased by a remarkable 24% during the past decade. [40]

Monterey County has more farmworkers per acre than any other county in the nation; half of those laborers will come from outside the county. The seasonal increase of migratory agricultural workers during the peak of the 2020 COVID-19 pandemic provided significant challenges for reducing the spread of COVID-19 and protecting vulnerable populations.

Monterey County receives 4.6 million visitors a year and hosts approximately 50 large events per year, therefore large population influxes of tourists and event attendees have historically happened regularly in the County.

### 12.2.2 LOCATION

#### *Cyber-Attack*

This hazard is not geographically based. Attacks can originate from any computer to affect any other computer in the world. If a system is connected to the Internet or operating on a wireless frequency, it is susceptible to exploitation. An international study released by Malwarebytes in 2016 found that 46% of all ransomware attacks originated from email. [41]

Targets of cyber-attacks can be individual computers, networks, organizations, business sectors, or governments. Financial institutions and retailers are often targeted to extract personal and financial data that can be used to steal money from individuals and banks. The most affected sectors are finance, energy and utilities, and defense and aerospace, as well as communication, retail, and health care. Both public and private operations in Monterey County are threatened

[40] Farmworker Housing Study and Action Plan for Salinas Valley and Pajaro Valley, California Institute for Rural Studies (April 2018)
[41] Understanding the Depth of the Global Ransomware Problem, Malwarebytes (August 2016)

on a near-daily basis by millions of currently existing cyber-attacks developed to automatically seek technological vulnerabilities.

### *Targeted Violence*

Active shooter incidents typically occur at the following locations: areas of commerce - 43.7%; educational environments - 20.6%; government property - 9.4%; open spaces - 13.4%; residences - 4.3%; houses of worship - 4%; health care facilities - 4.3%; and other location - 0.4%.[42]

### *Terrorism*

Monterey County has identified numerous high-profile targets for potential terrorists. Large population centers, high visibility tourist attractions, and critical infrastructure accessible to the public present security challenges of an ongoing nature in the County.

Some key assets considered as locations for terrorist attacks in Monterey County include:

- Government Offices
- Emergency Services
- Transportation infrastructure
- Health care system
- Agricultural facilities
- Recreational facilities
- Military Installations
- Politically or symbolically significant sites
- Energy, water, and related utility systems
- Telecommunications and information systems
- Mobile assets
- Events and attractions

### *Mass Migration*

The mass migration of agricultural workers is likely to affect the Salinas and Pajaro Valleys and cities along the Highway 101 corridor.

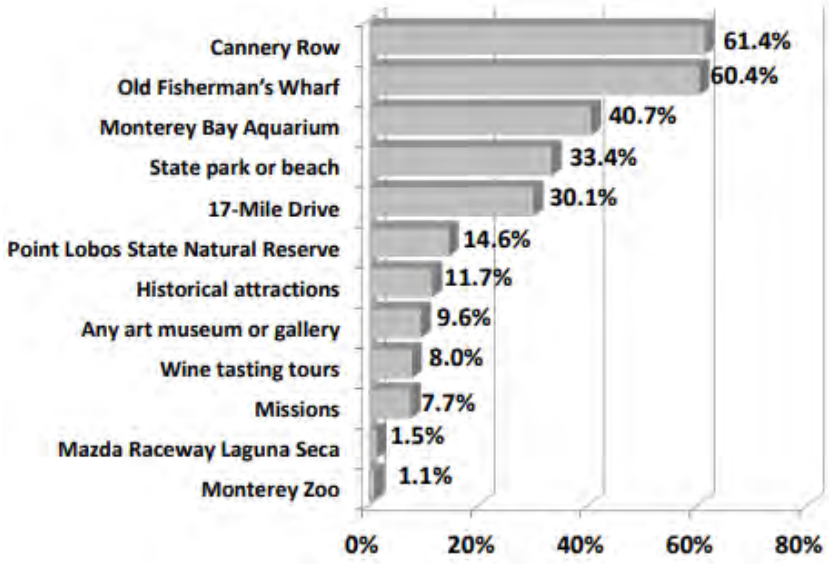
Large events in Monterey County include the AT&T Pebble Beach Pro-Am, the Sea Otter Classic, the California International Air Show, the Big Sur International Marathon, the Big Sur Food & Wine Festival, the Firestone Grand Prix, the California Rodeo Salinas, the Sand City West End Celebration, the Artichoke Festival, the Monterey Jazz Festival, and the Concours D'Elegance.

Major tourist attractions are primarily located on the coast and on the densely populated Monterey Peninsula. In 2016, the Monterey County Convention and Visitors Bureau, surveyed approximately 1,300 visitors to the County, both at area lodging properties and specific tourism locations. Based on the 2016 Monterey County Visitor Profile Report Findings,[43] major attractions include Cannery Row, Fisherman's Wharf, the 17-Mile Drive, state parks and beaches, and the Monterey Bay Aquarium. *Figure 12-1* shows the percentage visitors who indicated that they had visited or were planning to visit the listed Monterey County attractions.

[42] Quick Look: 277 Active Shooter Incidents in the United States From 2000 to 2018, Federal Bureau of Investigations Office of Partner Engagements

[43] 2016 Monterey County Visitor Profile Final Report of Findings, Monterey County Convention and Visitors Bureau (January 2017)

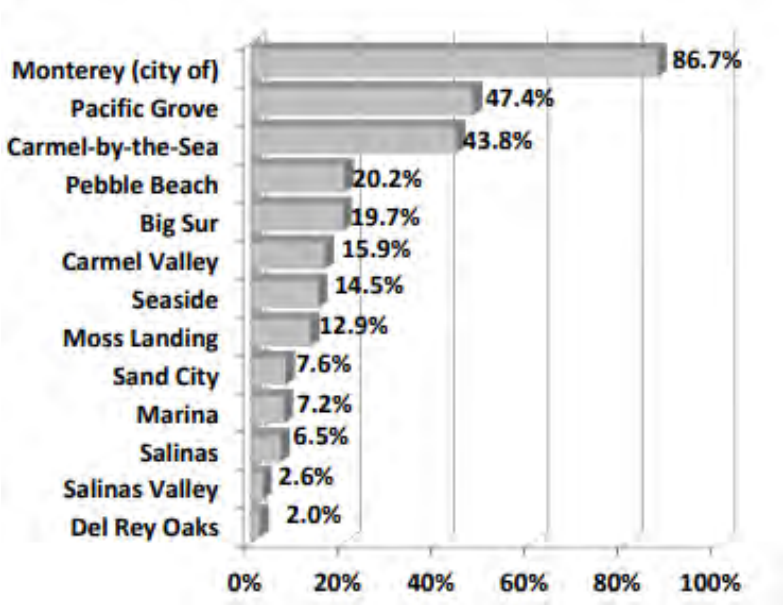
**Figure 12-1**
**Monterey County Attractions Visited**




*Source*: Monterey County Convention and Visitors Bureau

The most visited areas of the County are the Cities of Monterey, Pacific Grove, and Carmel-by-the-Sea, and the unincorporated area of Pebble Beach. *Figure 12-2* shows the percentage visitors who indicated that they had visited or were planning to visit the listed area.

**Figure 12-2**
**Monterey County Areas Visited**




*Source*: Monterey County Convention and Visitors Bureau

### 12.2.3 FREQUENCY

*Cyber-Attack*

Cyber-security threats are experienced on a daily basis, often without being noticed. Up-to-date virus protection software used in the public and private sector prevents most cyber-attacks from becoming successful, but regardless the number of security attacks is increasing. Nearly 80% of US companies have suffered a cyber-attack in the last year and more than half experienced a ransomware incident.[44]

State and local governments often struggle with cybersecurity due to limited resources, are often under attack by cyber-criminals and ransomware operators. COVID-19 has increased these challenges. The combination of reduced tax revenues and the additional costs caused by the pandemic are likely to strain budgets reducing expenditures on cybersecurity. This risk is exacerbated by an increasingly decentralized staff. Many employees are still working from home and therefore using their home Wi-Fi network, which is likely less secure than government networks.

*Targeted Violence*

Studies indicate that the rate at which public mass active shooter incidents occur has tripled since 2011. Between 1982 and 2011, a mass active shooter incident occurred roughly once every 200 days. Between 2011 and 2014 that rate has accelerated greatly with at least one mass shooting occurring every 64 days in the United States.[45]

*Terrorism*

The likelihood of a terrorist event varies with the method of attack, as follows:

- Chemical: The risk of a chemical event is present in the County. The petroleum and agricultural community use and store significant amounts of chemicals that could be used in destructive ways.
- Explosives: The elements necessary to construct a WMD explosive are readily available. Agricultural communities maintain sufficient products for use in explosive devices. Pipe bomb and suspicious package events have occurred in Monterey County, though none have been specifically identified as a WMD.
- Radiological/Nuclear: The major transportation arteries for vehicles or rail that cross through or near the County contribute to the risk of a radiological event. Such products can pass through any of the regional transportation corridors.
- Biological: Anthrax incidents that occurred in the US in October 2001 demonstrate the potential for spreading terror through biological weapons. An agent also could be introduced to livestock, causing harm to public health and the economy.

[44] Understanding the Depth of the Global Ransomware Problem, Malwarebytes (August 2016)
[45] Rate of Mass Shootings Has Tripled Since 2011, Harvard Research Shows, Amy P. Cohen, Deborah Azrael, and Matthew Miller (October 15, 2014)

- Combined Hazards: WMD agents can be combined to have a greater total effect. Given the risks associated with chemical agents in Monterey County, the possibility of a combined event exists.

### *Mass Migration*

Mass migration is possible anytime and is likely to occur every year. Mass migration of agricultural workers follows seasonal patterns each year. The peak average monthly employment occurs in July (80,715 average monthly employment from 2014-16) and is at its lowest in January (34,737 average monthly employment from 2014-16).[46]

Tourist populations tend to visit the County during the summer months. Monterey County visitors spend an average of 3.6 days and 2.7 nights in the area.[47]

## 12.2.4 SEVERITY

### *Cyber-Attack*

There is no official index for measuring the severity of a cyber-attack. An international study released by Malwarebytes in 2016 found that cyber-ransom threats caused 34% of business victims to lose revenue and 20% had to stop business immediately. The study also reported that nearly 60% of all cyber-ransom attacks demanded over $1,000, over 20% asked for more than $10,000, and 1% asked for over $150,000.[48]

### *Targeted Violence*

The severity of targeted violence may vary from a few injured people to multiple injuries and fatalities. A Multiple Casualty Incident (MCI) is defined as any incident with three or more fatalities or critically injuries. MCIs may result from acts of violence such as shootings or hostage situations. Effects may include serious injuries, loss of life, and associated property damage. Because large numbers of patients may be involved, significant MCIs may tax local emergency medical and hospital resources, and therefore require a regional response. First responders, including fire, police, and emergency room staffs at local hospitals, follow established protocols for MCIs. Emergency response mutual aid is requested should local officials be unable to respond appropriately with available personnel and equipment.

### *Terrorism*

The severity of a terrorist attack may vary from a few injured people to multiple injuries and fatalities. Terrorism can also cause the destruction of property, widespread illness and injury, the displacement of large numbers of people, and devastating economic loss.

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[46] Farmworker Housing Study and Action Plan for Salinas Valley and Pajaro Valley, California Institute for Rural Studies (April 2018)

[47] 2016 Monterey County Visitor Profile Final Report of Findings, Monterey County Convention and Visitors Bureau (January 2017)

[48] Understanding the Depth of the Global Ransomware Problem, Malwarebytes (August 2016)

*Mass Migration*

The severity of mass migration events varies by type of migration and the ability of the location of the migration to absorb the excess population. Mass migration can increase use of limited roadway infrastructure, reduce short-term housing inventory, and increase demand for public safety resources. Mass migration can affect the already limited housing inventory in the County and lead people to live in congested housing. California has severe housing challenges for both rental and homeownership in terms of both supply and affordability. The production of housing has not returned to the level required to meet the projected housing need. [49] The severity of incidents associated at a special event varies greatly but some special events present more risks than others (such as a political rally). It is not uncommon for people to be injured and killed as perpetrators, participants and/or innocent spectators.

### 12.2.5 WARNING TIME

*Cyber-Attack*

There is no warning time for cyber-attacks.

*Targeted Violence*

While active shooter situations are often unpredictable, paying careful attention to warning signs could go a long way in mitigating a potential incident. Some shooters demonstrate progressively escalating risk factors in their mindsets and behaviors that characterize them as violent prior to an attack. Recognizing these warning signs and reaching out for help could bring at-risk individuals to the attention of law enforcement sooner and prevent a future attack. Potential warning signs [50] include:

- Increasingly erratic, unsafe, or aggressive behaviors.
- Hostile behavior based on claims of injustice or perceived wrongdoing.
- Drug and alcohol abuse.
- Claims of marginalization or distancing from friends and colleagues.
- Changes in performance at work.
- Sudden and dramatic changes in home life or in personality.
- Financial difficulties.
- Pending civil or criminal litigation.
- Observable grievances and making statements of retribution.

*Terrorism*

Warning time for a terrorist attack varies greatly. The Federal Bureau of Investigation (FBI) and the Northern California Regional Intelligence Center (NCRIC) monitor intelligence related to threats of terrorism.

[49] California migration: The story of 40 million, CAL MATTERS (July 29, 2019)
[50] Active Shooter Attacks: Security Awareness for Soft Targets and Crowded Places, Department of Homeland Security

*Mass Migration*

There is no warning time associated with mass migration events. Peak agriculture employment and the tourism season occur during the summer months so the summer season could be considered a time for higher alert to the risk of mass migration. Large events generally have dates identified months in advanced and involve pre-planning efforts, such as permit acquisition, so warning time for the event itself is generally extensive. There is usually no warning time for special events incidents unless a person calls in or posts a specific threat on social media. Then authorities may have a few hours warning time.

## 12.3 SECONDARY HAZARDS

The following are the most likely secondary hazards associated with human-caused hazards:

*Cyber-Attack*

Computer security breaches associated with data and telecommunications losses can have significant economic impact. Ransomware attacks on local governments can have wide reaching impacts on services. In the short-term, it can impact emergency response; in the long-term, it can cause a large financial impact on a jurisdiction.

*Targeted Violence*

An active shooter incident or MCI can make the general public nervous about going out, so that more people stay at home.

*Terrorism*

The largest secondary impact caused by a terrorist event would be economic. Economic impacts from terrorism could be significant. The cost of a terrorist act would be felt in loss of life and property, disruption of business activity and long-term emotional impacts. Recovery would take significant resources and expense at the local level.

*Mass Migration*

Mass migration impacts to transportation infrastructure could cause roadway or railroad closures, which would have serious effects on the local economy and ability to provide services. Loss of major travel routes would result in loss of commerce and could impact the ability to provide emergency services to citizens. The ability to receive fuel deliveries could be impacted. Mass migration can also have impact on public health and lead to increased crime. The secondary impacts of special events incidents are possible copy-cats deploying the same tactics at an event in their area.

## 12.4 RISK ASSESSMENT

It is often quite difficult to quantify the potential losses from human-caused hazards. While the facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to

identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

### 12.4.1 POPULATION

#### *Cyber-Attack*

The entire County's population is exposed to cyber-attacks personally or at places of employment. All populations who directly use a computer or receive services from automated systems are exposed to cyber-terrorism. Because it is difficult to predict the particular target of cyber-terrorism, assessing vulnerability to the hazard is also difficult.

Although all individuals in the County are vulnerable to an attack, certain types of attacks would impact specific segments of the population. If the cyber-attack targeted the County's power or utility grid, individuals with medical needs would be impacted the greatest. These populations are most vulnerable because many of the life-saving systems they rely on require power. Also, if an attack occurred during months of extreme hot weather, those 65 years of age and older would be vulnerable to the effects of the lack of climate control. These individuals might require an air-conditioned shelter operating on a back-up generator. If a cyber-attack targeted a facility storing or manufacturing hazardous materials, individuals living adjacent to these facilities would be vulnerable to the secondary effects, should the attack successfully cause a critical failure at that facility.

#### *Targeted Violence*

A targeted violence event could range from an individual attack to a coordinated attack by multiple agents upon multiple targets. Large-scale incidents have the potential to kill or injure many people in the immediate vicinity and may also affect people a relative distance from the initial event.

#### *Terrorism*

A terrorist event could range from an individual attack to a coordinated attack by multiple agents upon multiple targets. Large-scale incidents have the potential to kill or injure many people in the immediate vicinity and may also affect people a relative distance from the initial event. Variables affecting exposure for a WMD attack include the physical and chemical properties of the WMD, the ambient temperature, wind speed, wind direction, barometric pressure, and humidity.

#### *Mass Migration*

The entire population of Monterey County could be impacted by a mass migration event, depending on the size and severity.

### 12.4.2 PROPERTY

#### *Cyber-Attack*

Structures are usually not impacted by cyber-attacks, but systems operated by electronics and computers are exposed. A catastrophic cyber-attack can have far-ranging effects on public and

private infrastructure systems. Cyber-attacks can cause physical damage if real assets or end consumers are affected by service disruption. This might occur if cyber-attacks target industries related to utilities, life support, transportation, human services, or telecommunications. In many cases, attacks on these systems initially will not be detected, and any malfunction will be thought to be system failure.

#### *Targeted Violence*

All structures in the County are physically vulnerable to a targeted violence event. The emphasis on accessibility, the opportunity for roof access, driveways underneath some structures, unmonitored areas, the proximity of many structures to transportation corridors and underground pipelines, and the potential for an active shooter to strike any structure randomly all have an impact on the vulnerability of structures. Schools, churches, large event venues, and workplaces are known locations of previous targeted violence incidents and are likely more vulnerable to attack.

#### *Terrorism*

All structures in the County are physically vulnerable to a terrorism event. The emphasis on accessibility, the opportunity for roof access, driveways underneath some structures, unmonitored areas, the proximity of many structures to transportation corridors and underground pipelines, and the potential for a terrorist to strike any structure randomly all have an impact on the vulnerability of structures.

#### *Mass Migration*

Structures are unlikely to be impacted by mass migration events but can restrict an already limited housing inventory in the County, both through increases in population and when housing is taken off the market for the purposes of vacation rental. Congested housing can lead structures to deteriorate faster. Increased use of facilities and visitor-serving amenities are also likely to deteriorate at faster rates when utilized by larger and larger populations.

### 12.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

#### *Cyber-Attack*

All critical facilities and infrastructure that are operated by a computer system are exposed to cyber-attacks. Cyber-attacks may affect structures if any critical electronic systems suffer service disruption. For instance, a cyber-attack may cripple the electronic system that controls a cooling system or pressure system within critical infrastructure. This may result in physical damage to the structure from components overheating, or an explosion if pressure relief systems are rendered inoperable.

#### *Targeted Violence*

All critical facilities and infrastructure could be impacted by targeted violence.

#### *Terrorism*

Terrorism events can pose a serious long-term threat to critical facilities and infrastructure. The exposure and vulnerability of critical facilities and infrastructure to a terrorism event is based

on the two distinct but complementary approaches. First, any given place in the built environment has a certain level of inherent vulnerability that exists independent of any protective or mitigation actions that are applied to it. Second, the security, design, and other mitigation tools used to protect a place determine its tactical vulnerability.[51] The inherent vulnerability of critical infrastructure is based on:

- *Visibility*: How aware is the public of the existence of the facility, system, or location?
- *Utility*: How valuable is the place in meeting the objective(s) of a potential terrorist?
- *Accessibility*: How accessible is the place to the public?
- *Asset mobility*: Is the asset's location fixed or mobile? If mobile, how often is it moved, relocated, or repositioned?
- *Presence of hazardous materials*: Are flammable, explosive, biological, chemical, and/or radiological materials present on site?
- *Potential for collateral damage*: What are the potential consequences for the surrounding area if the asset is attacked or damaged?
- *Occupancy*: What is the potential for mass casualties based on the maximum number of individuals on site at a given time?

The tactical vulnerability of each critical infrastructure is based on:

- *Site Perimeter*: Is the facility designed with security in mind—both site-specific and with regard to adjacent land uses? Are vehicle access and parking managed in a way that separates vehicles and structures?
- *Building Envelope*: Is the building's envelope designed to be blast-resistant? Does it provide collective protection against chemical, biological, and radiological contaminants?
- *Facility Interior*: Does security screening cover all public and private areas? Are public and private activities separated? Are critical building systems and activities separated? Are utilities and HVAC systems protected and/or backed up with redundant systems? Are emergency power and telecommunications available? Are alarm systems operational? Is lighting sufficient? Are the building's water supply and fire suppression systems adequate, code-compliant, and protected? Are on-site personnel trained appropriately? Are local first responders aware of the nature of the operations at the facility? Are systems and personnel in place to monitor and protect the facility?

### *Mass Migration*

All critical facilities and infrastructure have the potential to be impacted by mass migration events. In particular, water and road infrastructure capacity could quickly become overwhelmed.

[51] FEMA 386-7, State and Local Mitigation Planning How-To Guide: Integrating Manmade Hazards

### 12.4.4 ENVIRONMENT

*Cyber-Attack*

While effects of cyber-threats on the natural environment are unlikely, they can occur. It would only be through a secondary effect that the environment could be affected by a cyber-attack. Such effects may come from a system failure that, for example, allows a release of hazardous materials or improper disposal of waste or if a cyber-attack shut down a hydroelectric dam so that a river would be affected.

*Targeted Violence*

Targeted violence is unlikely to be associated with environmental impacts.

*Terrorism*

A terrorism event using a WMD can kill wildlife, destroy habitat, and contaminate critical resources in the food chain.

*Mass Migration*

Mass migration is unlikely to be associated with environmental impacts, though increased motorists on the road could lead to increases in pollution.

### 12.4.5 ECONOMIC IMPACTS

*Cyber-Attack*

Economic impacts can be far-reaching if a cyber-attack or space weather event is prolonged for a week or longer. Cyber-attacks can have extensive fiscal impacts. Companies and government services can lose large sums of unrecoverable revenue from site downtime and possible compromise of sensitive confidential data. Cyber incidents could result in the theft or modification of important data—including personal, agency, or corporate information— and the sabotage of critical processes, including the provision of basic services by government or private-sector entities.

*Targeted Violence*

The economic impact price tag of potential losses from targeted violence could be huge if lives are lost, jobs are lost, and assets are damaged. Violence can cause fear in residents and visitors to go into public spaces in the County, which could affect the economy.

*Terrorism*

The economic impact price tag of potential losses from terrorism could be huge if lives are lost, jobs are lost, and assets are damaged. Terrorism can cause fear in residents and visitors to go into public spaces in the County, which could affect the economy.

*Mass Migration*

Monterey County's economy is primarily based upon tourism in the coastal regions and agriculture in the Salinas Valley. In 2019, Monterey County agriculture accounted for a production value of over $4.4 billion. The Agricultural industry generates $11.7 billion in

economic output and one in five jobs in Monterey County directly attributable to the agricultural industry.[52] Tourism spending in the County annually is approximately $3.24 billion and supports 27,000 jobs and generates $153 million in local tax revenue.[53] Therefore, if mass migration risks impact either of these industries, economic impacts could be severe.

## 12.5 FUTURE TRENDS IN DEVELOPMENT

### *Cyber-Attack*

The County will continue to be impacted and compelled to respond to cyber-attacks in the future. The nature of these attacks is projected to evolve in sophistication over time. The County and its incorporated jurisdictions are expected to remain vigilant in their efforts to prevent attacks from occurring or disrupting business operations. The reality remains that many computers and networks in organizations of all sizes and industries around the US will continue to suffer intrusion attempts on a daily basis from viruses and malware that are passed through websites and emails.

### *Targeted Violence*

Future economic, cultural, and societal trends are likely to impact the frequency and magnitude of targeted violence incidents. Additionally, studies have linked high temperatures with increases in intense violence.[54] Increasing evidence indicates that climate change is causally associated with collective violence, generally in combination with other factors. Increased temperatures and extremes of precipitation with their associated consequences, including resultant scarcity of cropland and other key environmental resources, are major pathways by which climate change leads to collective violence.[55]

### *Terrorism*

The agencies and organizations involved with terrorism in the County, specifically threat analyses and threat reduction, are examining the challenges presented by future development and expansion. Individually, and in collaboration with task forces and other facilities, plans are underway for continuation, changes and/or expansion of current initiatives. Buildings and other structures constructed to resist earthquakes and fires usually have qualities that also limit damage from blasts and resist fire spread and spread of noxious fumes in the event of a terrorist attack.

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[52] Economic Contributions of Monterey County Agriculture, Monterey County Agricultural Commissioner's Office (June 2020)
[53] 2020-2021 Annual Report, Monterey County Convention & Visitors Bureau
[54] Heat and Violence, Craig A. Anderson, *Current Directions in Psychological Science* (February 2001)
[55] Climate Change and Collective Violence, Barry S. Levy, Victor W. Sidel, and Jonathan A. Patz, *Annual Review of Public Health* (March 2017)

*Mass Migration*

Agricultural employment in the County has seen large increases in the past 10-years and could continue to see increases. Tourism in Monterey County is likely to expand and therefore, the risk of tourism associated with mass migration could increase.

Special event incidents occur when any large crowd of persons gather. For events having the potential for large crowds or mob activity, pre-planning and permits are issued, so potential disturbances are quelled through the presence of sufficient law enforcement personnel, pre-planning for crowd and traffic control.

Climate change is likely to exacerbate hazard risk and therefore, the risk of hazard-induced migration is likely to increase in the future. This dangerous situation for vulnerable communities is a perfect example of how the climate crisis magnifies and upholds existing inequities associated with racism, extreme income inequality, and other structural disparities. As average temperatures rise and heat waves and wildfires get more frequent and severe, farmworkers will be at an ever-heightened risk of heat- and smoke-related illnesses. California as a whole is seeing this layering of crises unfold in real time, as the state battles COVID-19, wildfires of historic proportions, and scorching heat waves.

## 12.6 ISSUES

Issues associated with Human-Caused Hazards in Monterey County include:

- Continue regular and redundant emergency preparedness training for field level responders (police, fire, and public works) and public information staff in order to respond quickly in the event of a disaster associated.
- Continue to improve response times for public safety throughout the County so as to reduce exposure to human-caused incidents. Maintain appropriate staffing levels of public safety personnel to address vulnerabilities identified in this chapter.
- Work with the private sector to enhance and create business continuity plans to be followed in the event of an emergency
- Participate in regional, state, and federal efforts to gather terrorism information at all levels and keep public safety officials briefed at all times regarding local threats. Further develop response capabilities based on emerging threats.

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# 13. PUBLIC HEALTH HAZARDS

## 13.1 OVERVIEW

The US Center for Disease Control defines a disease outbreak as the occurrence of more cases of disease than normally expected within a specific place or group of people over a given period of time. An epidemic is the spread of an infectious disease beyond a local population, reaching people in a wider geographical area. Several factors determine whether an outbreak will become an epidemic including the ease with which the disease spreads from vectors, such as animals, to people and the ease with which it spreads from person to person.

A pandemic is an epidemic that occurs worldwide or over an exceptionally large area and affects a large number of people or animals. Pandemics can greatly increase morbidity and mortality over a wide geographic area and cause significant economic, social, and political disruption. Evidence suggests that the likelihood of pandemics has increased over the past century because of increased global travel and integration, urbanization, changes in land use, and greater exploitation of the natural environment.

Pandemics are hazards that have a long duration. Though daily impacts may be low, cumulative impacts are likely to be overwhelming for both the health system and the community. During a moderate pandemic, Monterey County could see a sustained increase in intensive care unit admissions, in emergency department (ED) admissions, in patients needing to be placed in respiratory isolation, and in deaths. Capacity to provide medical care, including basic emergency medical system (EMS), hospital ED services, and isolation rooms, will be reduced. At the same time, a higher than usual absenteeism rate for all employees is expected.

### 13.1.1 INFLUENZA

Epidemics of the flu typically occur in the fall and winter. The flu can cause mild to severe illness, and at times can lead to death. Anyone can get sick with the flu, but some people are at a higher risk of flu-related complications if they get sick. This includes older and younger people and people with certain chronic medical conditions.

Because flu seasons fluctuate in length and severity, a single estimate cannot be used to summarize influenza-associated deaths. The US Centers for Disease Control and Prevention (CDC) estimates that during the 2019–2020 flu season 38 million people fell ill, 18 million people went to a health care provider, 400,000 were hospitalized, and 22,000 died. Yearly vaccination is the primary method for preventing influenza.

#### *H1N1*

In April 2009, the World Health Organization (WHO) issued a health advisory on an outbreak of influenza-like illness caused by a new subtype of influenza A (A/H1N1) in Mexico and the United States. The disease spread rapidly, and in June the WHO declared an H1N1 pandemic, marking the first global pandemic since the 1968 Hong Kong flu. In October, the US declared H1N1 a national emergency. In August 2010, the WHO declared an end to the pandemic globally. H1N1 viruses and seasonal influenza viruses are co-circulating in many parts of the world. It is likely that the 2009 H1N1 virus will continue to spread for years to come, like a regular seasonal influenza virus.

#### *H5N1/H7N9*

The highly pathogenic H5N1 avian influenza virus is an influenza A subtype that occurs mainly in birds, causing high mortality among birds and domestic poultry. More than 700 human infections with H5N1 viruses have been reported to WHO from primarily 15 countries in Asia, Africa, the Pacific,

**Historic Hazards**
**1918 Influenza Pandemic**

The 1918 influenza pandemic was caused by an H1N1 virus of avian origin. The pandemic spread worldwide from 1918-1919. An estimated 500 million people became infected and 50 million died. An estimated 675,000 deaths occurred in the US.

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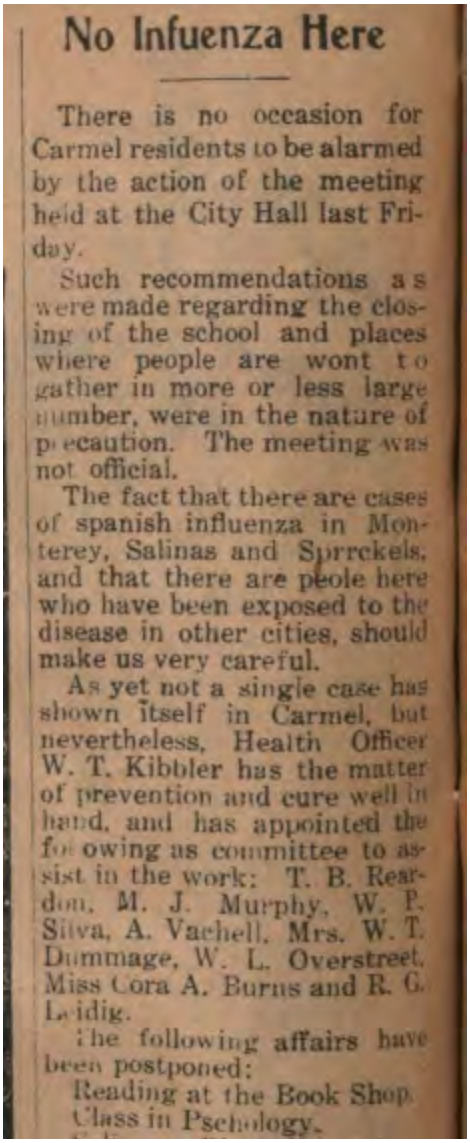

No Infuenza Here

There is no occasion for Carmel residents to be alarmed by the action of the meeting held at the City Hall last Friday.

Such recommendations as were made regarding the closing of the school and places where people are wont to gather in more or less large number, were in the nature of precaution. The meeting was not official.

The fact that there are cases of spanish influenza in Monterey, Salinas and Sprrckels, and that there are peole here who have been exposed to the disease in other cities, should make us very careful.

As yet not a single case has shown itself in Carmel, but nevertheless, Health Officer W. T. Kibbler has the matter of prevention and cure well in hand, and has appointed the following as committee to assist in the work: T. B. Reardon, M. J. Murphy, W. P. Silva, A. Vachell, Mrs. W. T. Dummage, W. L. Overstreet, Miss Cora A. Burns and R. G. Leidig.

The following affairs have been postponed:

Reading at the Book Shop

Class in Pschology.

Europe, and the Near East since November 2003. Indonesia, Vietnam, and Egypt have reported the highest number of human H5N1 cases to date. The first report of a human infection with H5N1 in the Americas was in Canada in January of 2014 and occurred in a traveler recently returning from China. Although human infections with this virus are rare, approximately 60% of the cases have died.

H5N1 virus infections of humans are rare, and most cases have been associated with direct poultry contact during poultry outbreaks. Rare cases of limited human-to-human spread of H5N1 virus may have occurred, but there is no evidence of sustained human-to-human transmission. Nonetheless, because all influenza viruses have the ability to change and mutate, scientists are concerned that H5N1 viruses one day could be able to infect humans more easily and spread more easily from one person to another, potentially causing another pandemic.

### 13.1.2 CORONAVIRUSES

Coronaviruses are a large group of viruses that cause diseases in animals and humans. They often circulate among camels, cats, and bats, and can sometimes evolve and infect people. In animals, coronaviruses can cause diarrhea in cows and pigs, and upper respiratory disease in chickens. In humans, the viruses can cause mild respiratory infections, like the common cold, but can lead to serious illnesses, like pneumonia. Coronaviruses are named for the crown-like spikes on their surface. Human coronaviruses were first identified in the mid-1960s. They are closely monitored by public health officials.

#### *Severe Acute Respiratory Syndrome (SARS)*

Severe Acute Respiratory Syndrome (SARS) is a viral respiratory illness caused by a coronavirus (SARS-CoV). SARS was first reported in Asia in February 2003. Over the next few months, the illness spread to more than two dozen countries in North America, South America, Europe, and Asia before the global outbreak was contained. According to the WHO, 8,098 people worldwide became sick with SARS during the 2003 outbreak and 774 died. In the United States, only 11 people had laboratory evidence of SARS-CoV infection. All of these people had traveled to parts of the world where SARS was present. SARS did not spread more widely in the United States. Since 2004, there have not been any known cases of SARS reported anywhere in the world.

In general, SARS begins with a high fever, headache, an overall feeling of discomfort and body aches. Some people also have mild respiratory symptoms at the outset. About 10% to 20% of patients have diarrhea. After two to seven days, SARS patients may develop a dry cough. Most patients develop pneumonia. The main way that SARS seems to spread is by close person-to-person contact. The virus that causes SARS is thought to be transmitted most readily by respiratory droplets produced when an infected person coughs or sneezes. Droplet spread can happen when droplets from the cough or sneeze of an infected person are propelled a short distance (generally up to 3 feet) through the air and deposited on the mucous membranes of the mouth, nose, or eyes of persons nearby. The virus also can spread when a person touches a surface or object contaminated with infectious droplets and then touches their mouth, nose, or

eyes. It is also possible that the SARS virus might spread more broadly through the air or by other ways that are not now known.

### *Middle East Respiratory Syndrome (MERS)*

Middle East Respiratory Syndrome (MERS) is an illness caused by a coronavirus called Middle East Respiratory Syndrome Coronavirus (MERS-CoV). Most MERS patients developed severe respiratory illness with symptoms of fever, cough, and shortness of breath. About 3 or 4 out of every 10 patients reported with MERS have died.

Health officials first reported the disease in Saudi Arabia in September 2012. Through retrospective (backward-looking) investigations, they later identified that the first known cases of MERS occurred in Jordan in April 2012. So far, all cases of MERS have been linked through travel to, or residence in, countries in and near the Arabian Peninsula. The largest known outbreak of MERS outside the Arabian Peninsula occurred in the Republic of Korea in 2015. The outbreak was associated with a traveler returning from the Arabian Peninsula.

MERS-CoV has spread from ill people to others through close contact, such as caring for or living with an infected person. MERS can affect anyone, and MERS patients have ranged in age from younger than 1 to 99 years old. The CDC continues to closely monitor MERS globally and recognizes the potential for MERS-CoV to spread further and cause more cases globally and in the US.

### *Novel Coronavirus (COVID-19)*

Coronavirus Disease 2019 (COVID-19) is a contagious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first known case was identified in Wuhan, China, in December 2019 and spread worldwide, leading to an ongoing pandemic. Symptoms of COVID-19 are variable, but often include fever, cough, headache, fatigue, breathing difficulties, and loss of smell and taste. The incubation period for COVID-19 is thought to extend to 14 days, with a median time of 4-5 days from exposure to symptoms onset.

COVID-19 transmits when people breathe in air contaminated by droplets and small airborne particles containing the virus. This risk is highest when people are in close proximity, but they can be inhaled over longer distances, particularly indoors. Transmission can also occur if splashed or sprayed with contaminated fluids in the eyes, nose, or mouth, and, rarely, via contaminated surfaces. People remain contagious for up to 20 days and can spread the virus even if they do not develop symptoms. Age and existing comorbidities are a strong risk factor for severe illness, complications, and death. A large cohort that included more than 44,000 people with COVID-19 from China, showed that illness severity can range from mild to critical:

- Mild to moderate (mild symptoms up to mild pneumonia): 81%
- Severe (dyspnea, hypoxia, or more than 50% lung involvement on imaging): 14%
- Critical (respiratory failure, shock, or multiorgan system dysfunction): 5%

In this study, all deaths occurred among patients with critical illness, and the overall case fatality ratio (CFR) was 2.3%. The CFR among patients with critical disease was 49%.[56] Among US COVID-19 cases reported January 22–May 30, 2020, the proportion of people who were hospitalized was 14%, including 2% admitted to the intensive care unit. Overall, 5% of patients died.[57]

Several COVID-19 vaccines have been approved and distributed in various countries, which have initiated mass vaccination campaigns. Other preventive measures include physical or social distancing, quarantining, ventilation of indoor spaces, covering coughs and sneezes, hand washing, and keeping unwashed hands away from the face. The use of face masks or coverings has been recommended in public settings to minimize the risk of transmissions. While work is underway to develop drugs that inhibit the virus, the primary treatment is symptomatic. Management involves the treatment of symptoms, supportive care, isolation, and experimental measures. COVID-19 is the most recent (and still active in 2022) pandemic declared by the World Health Organization.

### 13.1.3 VIRAL HEMORRHAGIC FEVERS

Viral hemorrhagic fevers (VHFs) are a group of illnesses caused by several distinct families of viruses. VHFs represent a multisystem syndrome (multiple systems in the body are affected). Characteristically, the overall vascular system is damaged and the body's ability to regulate itself is impaired. These symptoms are often accompanied by hemorrhage (bleeding); however, the bleeding itself is rarely life-threatening. While some types of hemorrhagic fever viruses can cause relatively mild illnesses, many cause severe, life-threatening disease. The viruses that cause VHFs are distributed over much of the globe. However, because each virus is associated with one or more host species, the virus, and the disease it causes are usually seen only where the host species live.

#### *Ebola*

The 2014 Ebola virus outbreak was unprecedented in geographical reach and impact on health care systems across the globe. This was the largest and deadliest Ebola virus outbreak ever recorded. It was the first occurrence of the virus in the West African countries of Guinea, Liberia, Sierra Leone, Nigeria, Mali, and Senegal. Ebola is more common in Central African countries, such as the Democratic Republic of Congo and Sudan, where it was first discovered in 1976. It was also the first time that Ebola made it to the United States and Europe, prompting world-wide preparedness and response efforts.

[56] Wu Z, McGoogan JM. Characteristics of and Important Lessons from the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72314 Cases from the Chinese Center for Disease Control and Prevention. JAMA. 2020 Feb 24;323(13):1239–42.
[57] Stokes EK, Zambrano LD, Anderson KN, et al. Coronavirus Disease 2019 Case Surveillance — United States, January 22–May 30, 2020. MMWR. 2020 Jun 19;69:759–765.

In August 2014, two US healthcare workers returned to the United States for treatment for Ebola. The case that most impacted the health care system in the United States was a patient diagnosed with Ebola in Dallas, Texas who died due to Ebola in October 2014. The nurse who provided care for him later tested positive for Ebola. This caused responses across the country from hospitals, emergency medical teams, fire departments and public health agencies to enhance isolation precautions, develop emergency policies, train with personal protective equipment, and conduct multi-agency emergency exercises in case the spread of Ebola became a pandemic.

#### *Hantavirus*

Hantavirus is a rodent-borne disease. It was discovered in 1993 in the southwestern US, and it has been determined that the disease had been present, but unrecognized, at least as early as 1959. It has now been identified in over half of the states of the US In 2013, seven cases of hantavirus occurred in Yosemite National Park. Hantavirus has also been detected in the Sierra Nevada region.

The hantavirus spreads when individuals touch or eat something contaminated with infected rodent urine, droppings, or saliva. It can also be transmitted through aerosolization, which occurs when dried materials contaminated by infected rodent droppings or saliva are disturbed and brought up into the air and inhaled.

Infected persons first develop symptoms one to five weeks after exposure. Early symptoms include fever, headache, and muscle aches, especially in the thighs, hips, back, and shoulders. Other early symptoms include dizziness, chills, nausea, vomiting, diarrhea, and abdominal pain. After two to seven days of these symptoms, patients develop breathing difficulties that range from cough and shortness of breath to severe respiratory failure. Approximately 40% of hantavirus patients die from the disease.

### 13.1.4 TICK & MOSQUITO BORNE ILLNESS

Ticks are small, insect-like creatures most often found in naturally vegetated areas. They feed by attaching to animals and humans, sticking their mouthparts into the skin, and sucking blood for up to several days. Ticks do not fall from trees, jump, or fly. Most species are found on wild grasses and low plants. Adult ticks wait at the ends of grass or other foliage for a host to brush by so they may attach. Sometimes ticks carry bacteria or viruses that can be transmitted to a person while the tick is attached and feeding. The following species of ticks are known to commonly bite humans:

- Western blacklegged tick (*Ixodes pacificus*)
- American dog tick (*Dermacentor variabilis*)
- Pacific Coast tick (*Dermacentor occidentalis*)
- Wood tick (*Dermacentor andersoni*)
- Brown dog tick (*Rhipicephalus sanguineus*)
- *Ornithodoros hermsi*
- *Ornithodoros parkeri*
- *Ornithodoros coriaceus*

### *Tularemia*

Tularemia, named after Tulare County in California, where it was first described in 1911, is a tick-borne disease of animals and humans caused by the bacterium *Francisella tularensis*. Tularemia is similar to plague but is typically spread differently. Humans usually become infected with Tularemia by tick and deer fly bites, skin contact with infected animals, ingestion of contaminated water or meat, or inhalation of contaminated dusts or aerosols. Symptoms vary depending upon the route of infection.

Rabbits, hares, and rodents are especially susceptible and often die in large numbers during outbreaks. Although Tularemia can be life-threatening, most infections can be treated successfully with antibiotics. Steps to prevent Tularemia include use of insect repellent, wearing gloves when handling sick or dead animals, and not mowing over dead animals. In the United States, naturally occurring infections have been reported from all states except Hawaii.

### *Lyme Disease*

Lyme disease, named after the city in Connecticut, where it was first identified in 1975, is a tick-borne disease caused by the bacterium *Borrelia burgdorferi*, which normally lives in mice, squirrels, and other small animals. It is transmitted among these animals and to humans through the bites of certain species of ticks. In the northeastern and north-central United States, the black-legged tick (or deer tick, *Ixodes scapularis*) transmits Lyme disease. In the Pacific coastal United States, the disease is spread by the western black-legged tick (*Ixodes pacificus*). Other major tick species found in the United States have not been shown to transmit the disease.

Typical symptoms include fever, headache, fatigue, and a skin rash. If left untreated, infection can spread to joints, the heart, and the nervous system. Lyme disease is diagnosed based on symptoms, physical findings (e.g., rash), and the possibility of exposure to infected ticks. Laboratory testing is helpful in later stages of the disease. Most cases of Lyme disease can be treated successfully with a few weeks of antibiotics. Steps to prevent Lyme disease include using insect repellent, removing ticks promptly, landscaping, and integrated pest management. The ticks that transmit Lyme disease can occasionally transmit other tick-borne diseases as well.

### *Rocky Mountain Spotted Fever*

Rocky Mountain spotted fever is a potentially fatal tick-borne disease caused by the bacterium *Rickettsia rickettsii*. It is transmitted to humans by the bite of an infected American dog tick (*Dermacentor variabilis*), Rocky Mountain wood tick (*Dermacentor andersoni*), or brown dog tick (*Rhipicephalus sanguineus*).

Typical symptoms include fever, headache, abdominal pain, vomiting, and muscle pain. A rash may also develop, but is often absent in the first few days, and in some patients, never develops. Rocky Mountain spotted fever can be a severe or even fatal illness if not treated in the first few days of symptoms. It can be treated successfully with a few weeks of antibiotics. Steps to prevent the disease include using insect repellent, removing ticks promptly,

landscaping, and integrated pest management. The ticks that transmit Rocky Mountain spotted fever can occasionally transmit other tick-borne diseases as well.

### *Malaria*

Malaria is a sometimes-fatal mosquito-borne disease caused by a parasite that commonly infects the Anopheles mosquito, which feeds on humans. People who contract malaria are typically extremely sick with high fevers, chills, and flu-like illness. Although malaria can be fatal, illness and death can usually be prevented.

On average 1,500 cases of malaria are diagnosed in the United States each year. The vast majority are in travelers and immigrants returning from countries where malaria transmission occurs, many from sub-Saharan Africa and South Asia. In many temperate areas, such as western Europe and the United States, economic development and public health measures have succeeded in eliminating malaria. However, most of these areas have Anopheles mosquitoes that can transmit malaria, and reintroduction of the disease is a constant risk.

### *West Nile Virus*

West Nile Virus is a potentially serious mosquito-borne that may affect residents in the County. Experts believe West Nile Virus is established as a seasonal epidemic in North America that flares up in the summer and continues into the fall. Mosquitoes transmit the virus to birds, livestock, and humans. Between 1999 and 2019, a total of 51,801 cases of West Nile Virus disease in people was reported to CDC, 7,026 of which were in California.

According to the CDC, approximately 80% of people who are infected with West Nile Virus will show no symptoms. Up to 20% have symptoms such as fever, headache, and body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach and back. Symptoms can last for as short as a few days, though even healthy people have become sick for several weeks. About 1% of people infected with West Nile Virus will develop severe illness, with symptoms that can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness, and paralysis. These symptoms may last several weeks, and neurological effects may become permanent. There is no specific treatment for West Nile Virus infection. In more severe cases, people may need to go to the hospital where they can receive supportive treatment including intravenous fluids, help with breathing and nursing care.

### *Dengue Fever*

Dengue is a mosquito-borne disease caused by any of four closely related dengue viruses (DENV-1, DENV-2, DENV-3, and DENV-4). People get dengue from the bite of an infected mosquito. The mosquito becomes infected when it bites a person who has dengue virus in their blood. It takes a week or more for the dengue virus to replicate in the mosquito; then the mosquito can transmit the virus to another person when it bites. Dengue is transmitted by the yellow fever mosquito (*Aedes aegypti*) and the Asian tiger mosquito (*Aedes albopictus*). Dengue virus cannot be transmitted from person to person.

Generally, younger children and those with their first dengue infection have a milder illness than older children and adults. The main symptoms are high fever, severe headache, severe pain behind the eyes, joint pain, muscle and bone pain, rash, bruising, and sometimes mild bleeding from the nose or mouth. Severe dengue patients proceed to experience more bleeding, severe pain in the abdomen, respiratory distress, and fluid accumulation in the abdomen and around the lungs as the smallest blood vessels (capillaries) begin to leak. If not treated, severe dengue can result in death. There is no specific treatment for dengue infection. Rest and fluids are generally sufficient for persons with dengue. Severe dengue may require hospitalization and intensive medical care.

#### *Zika Virus*

Zika is a mosquito-borne disease. The most common symptoms of Zika are fever, rash, joint pain, and conjunctivitis (red eyes). The illness is usually mild, with symptoms lasting for several days to a week after being bitten by an infected mosquito. People usually do not get sick enough to go to the hospital, and they rarely die of Zika. For this reason, many people might not realize they have been infected. However, Zika virus infection during pregnancy can cause a serious birth defect called microcephaly, as well as other severe fetal brain defects. Once a person has been infected, he or she is likely to be protected from future infections.

Zika virus is transmitted by yellow fever mosquito (Aedes aegypti) and the Asian tiger mosquito (Aedes albopictus). An Aedes mosquito can only transmit Zika virus after it bites a person who has this virus in their blood. Zika virus is not spread through casual contact but can be spread by infected men to their sexual partners. There is a growing association between Zika and microcephaly (abnormally small head and brain) in newborns, as well as Zika and Guillain-Barré Syndrome, a disease affecting the nervous system. Studies are ongoing to further evaluate these associations.

### 13.1.5 VALLEY FEVER

Valley Fever, also called coccidioidomycosis, is an infection caused by the fungus *Coccidioides*. The illness is caused by breathing in a fungus which lives naturally in the soil of nearby San Luis Obispo and Santa Barbara Counties. People get sick by breathing in a form of the Valley Fever fungus called spores. Spores are too small to be seen. They can get into the air with dust when it is windy or when dirt is disturbed. In extremely rare cases, the fungal spores can enter the skin through a cut, wound, or splinter and cause a skin infection. Valley Fever cannot be spread from one person to another or from an animal to a person.

Most people who become infected with Valley Fever (60%) do not experience any symptoms and do not need treatment. Around 30 to 40% of people develop flu-like symptoms such as severe fatigue, cough, fever, heavy sweating at night, loss of appetite, muscle, and joint aches, and sometimes a rash. Approximately 5 to 10% of people who get Valley Fever will develop serious or long-term problems in their lungs. In an even smaller percentage of people (about 1%), the infection spreads from the lungs to other parts of the body, such as the central

nervous system (brain and spinal cord), skin, or bones and joints. This type of infection can be serious and is sometimes fatal.

Symptoms of valley fever may appear between 1 and 3 weeks after a person breathes in the fungal spores and usually last for a few weeks to a few months. Valley Fever is more common among older adults, though anyone of any age can contract it. Several groups of people are at higher risk for developing the severe forms of Valley Fever, including African Americans, Filipinos, women in the third trimester of pregnancy, and people with weak immune systems.

Valley Fever appears to be on the rise in recent years, with 2017 bringing the highest number of recorded cases on record to California. According to the CDC, while the reasons for the increased incidence in Valley Fever in 2016 are not known, climatic and environmental factors favorable to Valley Fever proliferation and airborne release might have contributed, including rainfall after several years of drought and soil disturbance resulting from construction. The UC Davis Valley Fever Center attributes the increase in cases to drought conditions and firefighting equipment stirring up fungus in the soil. A March 2013 Morbidity and Mortality Weekly Report published by the Centers for Disease Control and Prevention (CDC) and referenced in the 2018 California State Hazard Mitigation Plan notes that more than 20,000 cases of Valley Fever are reported each year in the United States, but many more cases likely go undiagnosed. Some researchers estimate that each year the fungus infects more than 150,000 people, many of whom are sick without knowing the cause or have symptoms so mild they are not recognized.

### 13.1.6 POLICIES, PLANS, AND REGULATORY ENVIRONMENT

#### *United States Department of Health and Human Services*

The US Department of Health and Human Services has statutory responsibility for preventing the introduction, transmission, and spread of communicable diseases in the United States. The Center for Disease Control and Prevention (CDC) is housed within the Department of Health and Human Services and is responsible for controlling the introduction and spread of infectious diseases. The CDC's roles include:

- Instituting public education and awareness related to disease spread and prevention
- Studying and tracking transmission rates, treatment options, and vaccines
- Maintaining active surveillance of diseases through investigation and data collection, analysis, and distribution
- Developing and implementing operational programs and guidance relating to environmental health problems
- Conducting research aimed at developing and testing effective disease prevention, control, and health
- Implementing a program to sustain a strong national workforce in disease prevention and control, and conducts a national program for improving the performance of clinical laboratories

The Division of Global Migration and Quarantine works to control disease transmission internationally through the operation of Quarantine Stations at ports of entry, establishment of standards for medical examination of persons destined for the United States, and administration of interstate and foreign quarantine regulations, which govern the international and interstate movement of persons, animals, and cargo.

#### *California Department of Public Health*

The California Department of Public Health (CDPH) is responsible for protecting public health within the state of California. The CDPH consists of public health professions, researchers, scientists, doctors, nurses, and other staff members who aid in implementing the organizations programs and services. The essential functions of the CDPH are comprehensive in scope and include infectious disease control and prevention, food safety, environmental health, laboratory services, patient safety, emergency preparedness, chronic disease prevention and health promotion, family health, health equity and vital records and statistics.

#### *Monterey County Health Department*

The Monterey County Health Department exists to enhance, protect, and improve the health of the people in Monterey County. To accomplish this, the Department provides a wide variety of health-related services in the areas of public health, environmental health, behavioral health, and clinic services. The Public Health Bureau has programs that cover several essential public health services, including surveillance, disaster preparedness, diagnosing and addressing health problems, outreach, and education, and mobilizing community partnerships to identify and solve health problems. The Communicable Disease Prevention and Control Unit is responsible for preventing and controlling the spread of infectious diseases.

## 13.2 HAZARD PROFILE

The severity of human health hazards is dependent upon the hazard and the population exposed to it. As the population increases, so does the risk of exposure to public health hazards. The key to reducing the disease hazard is isolation so that the infected population does not continue to spread the hazard to the uninfected population. For disease health hazards, promoting education and personal preparedness will help to mitigate and reduce the severity of the hazard.

### 13.2.1 HISTORY

*Table 13-1* lists communicable disease cases in Monterey County from 2009 to 2019 for select disease discussed in this plan.

**Table 13-1**
**Selected Communicable Disease Cases in Monterey Country (2009-2019)**

| Disease | Year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Total |
| **Dengue Fever** | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 3 | 0 | 1 | **12** |
| **Hantavirus** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| **Lyme Disease** | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 0 | 3 | **12** |
| **Malaria** | 2 | 3 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | **13** |
| **Rickettsiosis** | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | **6** |
| **Tularemia** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | **2** |
| **Valley Fever** | 39 | 56 | 67 | 76 | 69 | 24 | 38 | 79 | 191 | 238 | 164 | **1,041** |
| **West Nile Virus** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | **4** |
| **Zika Virus** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | **6** |

Source: California Department of Public Health- West Nile Virus Cases, 2006-present and Infectious Diseases by Disease, County, Year, and Sex

There were two confirmed cases of SARS in California during the worldwide outbreak in 2002-2003, neither of them in Monterey County. From 2011 through 2015, there were 16 cases of hantavirus in California, neither occurred in Monterey County.

An estimated 22,500 to 90,000 Monterey County residents become ill from influenza each flu season. *Table 13-2* lists severe influenza cases by flu season for residents under 64 in Monterey County from 2013-2018.

**Table 13-2**
**Severe Influenza Cases in Monterey County (Age 64 and Younger) by Flu Season: 2013-2018**

| Flu Season | ICU Admissions | Fatalities |
|---|---|---|
| 2013-2014 Flu Season | 12 | 7 |
| 2014-2015 Flu Season | 6 | 2 |
| 2015-2016 Flu Season | 2 | 1 |
| 2016-2017 Flu Season | 8 | 4 |
| 2017-2018 Flu Season* | 6 | 7 |

*Data should be considered provisional
Source: Monterey County Health Department Epidemiology & Surveillance Unit, Influenza - Local Data, Current as of March 10, 2018

### *Pandemics*

There have been six pandemics since 1900. The previous pandemics occurred in 1918-1920, 1957-1958, 1968- 1969, 1977-1978, 2009-2010, and 2019-present.

**1918 Pandemic**: The 1918-1920 Pandemic, commonly referred to as the Spanish Flu, was unusually severe, infecting close to one-third of the world's population, or 500 million people. The 1918 pandemic had an extensive mortality rate, killing as much as 1% of the world's population, or 40 million people worldwide, including about 675,000 in the United States.

**1957-1958 (H2N2 Virus) Pandemic:** In February 1957, a new influenza A (H2N2) virus emerged in East Asia, triggering a pandemic ("Asian Flu"). This H2N2 virus was comprised of three different genes from an H2N2 virus that originated from an avian influenza A virus, including the H2 hemagglutinin and the N2 neuraminidase genes. It was first reported in Singapore in February 1957, Hong Kong in April 1957, and in coastal cities in the United States in summer 1957. The estimated number of deaths was 1.1 million worldwide and 116,000 in the United States.

**1968 (H3N2 Virus) Pandemic**: The 1968 pandemic was caused by an influenza A (H3N2) virus comprised of two genes from an avian influenza A virus, including a new H3 hemagglutinin, but also contained the N2 neuraminidase from the 1957 H2N2 virus. It was first noted in the United States in September 1968. The estimated number of deaths was 1 million worldwide and about 100,000 in the United States. Most excess deaths were in people 65 years and older. The H3N2 virus continues to circulate worldwide as a seasonal influenza A virus. Seasonal H3N2 viruses, which are associated with severe illness in older people.

**2009 (H1N1 Virus) Pandemic:** In the spring of 2009, a novel influenza A (H1N1) virus, commonly known as swine flu emerged. It was detected first in the United States and spread quickly across the US and the world. This new H1N1 virus contained a unique combination of influenza genes not previously identified in animals or people. The H1N1 virus was quite different from H1N1 viruses that were circulating at the time of the pandemic. Few young people had any existing immunity (as detected by antibody response) to the H1N1 virus, but nearly one-third of people over 60 years old had antibodies against this virus, likely from exposure to an older H1N1 virus earlier in their lives. Since the H1N1 virus was different from circulating viruses, vaccination with seasonal flu vaccines offered little cross-protection against H1N1 virus infection

In April 2009, the World Health Organization (WHO) issued a health advisory on an outbreak of influenza-like illness caused by a new subtype of influenza A (A/H1N1) in Mexico and the United States. The disease spread rapidly, and in June the WHO declared an H1N1 pandemic. In October, the US declared H1N1 a national emergency.

From April 12, 2009, to April 10, 2010, the CDC estimated there were 60.8 million cases (range: 43.3-89.3 million), 274,304 hospitalizations (range: 195,086-402,719), and 12,469 deaths (range: 8868-18,306) in the United States due to the H1N1 virus. Additionally, the CDC estimated that 151,700-575,400 people worldwide died from H1N1. Globally, 80% of virus-related deaths were estimated to have occurred in people younger than 65 years of age, which differs greatly from typical seasonal influenza epidemics, during which about 70% to 90% of deaths are estimated to occur in people 65 years and older. [58]

[58] 2009 H1N1 Pandemic (H1N1pdm09 virus), Centers for Disease Control and Prevention (CDC)

In Monterey County, the 2009 pandemic led to 16 ICU admissions and 3 fatalities.[59]

In August 2010, the WHO declared an end to the pandemic globally. H1N1 viruses and seasonal influenza viruses are co-circulating in many parts of the world. It is likely that the 2009 H1N1 virus will continue to spread for years to come, like a regular seasonal influenza virus.

**COVID-19 (SARS-CoV-2) Pandemic**: Currently, COVID-19, a contagious disease caused by a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is an ongoing pandemic, which has had a large effect worldwide and on Monterey County.

COVID-19 was declared a Public Health Emergency of International Concern in January 2020 by the World Health Organization. On February 4, 2020, the US declared a public health emergency. On February 28, 2020, the first case of community spread was detected in California and by March 4, the first COVID-19 death in California occurred. Therefore, on March 4, 2020, Governor Newsom declared a State of Emergency and on March 6th, the Monterey County Board of Supervisors also proclaimed a state of emergency. On March 13th, the President of the US declared a National Emergency. Local emergencies were also proclaimed by all incorporated jurisdictions in Monterey County by the end of March 2020.

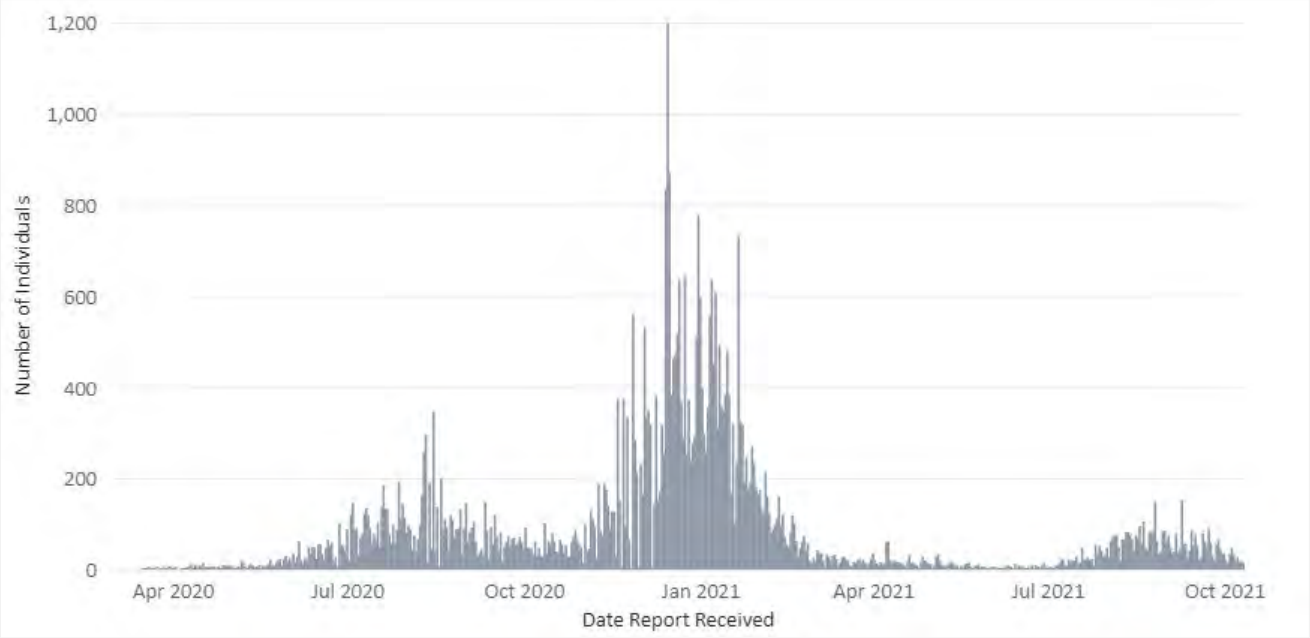
On March 13, 2020, 12 passengers from the Diamond Princess Cruise Ship were quarantined in Asilomar Hotel, Pacific Grove while undergoing testing. On March 17, the first two cases of COVID-19 in Monterey County were confirmed and the County of Monterey Health Officer issued a Shelter-in-Place Order. The first death due to complications from COVID-19 in Monterey County occurred on March 21.

As of October 9, 2021, according to data from the Centers for Disease Control and Prevention, the United States has had a total of 44,217,318 total cases of COVID-19 and 711,020 deaths caused by COVID-19.[60] As of October 11, 2021, the State of California has had 4,553,194 confirmed cases of COVID-19, resulting in 69,741 deaths. The current daily average of new cases is 5,212 with 92 daily average deaths per day. Statewide, 71.4% of people have been fully vaccinated, and 9.9% of people have been partially vaccinated against COVID-19.[61]

As of October 11, 2021, there have been 48,416 confirmed cases of COVID-19 and 584 COVID-19 deaths in Monterey County. *Figure 13-1* shows cases of COVID-19 among Monterey County residents by date of report.

[59] Influenza - Local Data, Monterey County Health Department
[60] United States COVID-19 Cases, Deaths, and Laboratory Testing (NAATs) by State, Territory, and Jurisdiction, Centers for Disease Control and Prevention (CDC), Accessed October 12, 2021
[61] Tracking COVID-19 in California, State of California, Accessed October 12, 2021

**Figure 13-1**
**COVID-19 Cases Among Monterey County Residents by Date**




As seen in the *Figure 13-1*, Monterey County saw cases start to grow in the summer of 2020, with its first large spike in COVID-19 cases in August of 2020. The largest spike in cases occurred in December and January 2021, and began to decline in the Spring of 2021, with some growth in cases occurring again in July and August of 2021.

*Table 13-3* lists COVID-19 cases by age group in Monterey County and *Figure 13-2* shows COVID-19 cases by region of residence, as of October 11, 2021.[62]

**Table 13-3**
**COVID-19 Cases Among Monterey County Residents by Age Group**

| Age in Years | Incident Cases | Percent of Total Cases |
|---|---|---|
| 0-17 | 6,851 | 14.15% |
| 18-24 | 6,469 | 13.36% |
| 25-34 | 9,800 | 20.23% |
| 35-44 | 9,044 | 18.67% |
| 45-54 | 7,361 | 15.20% |
| 55-64 | 5,123 | 10.58% |
| 65-74 | 2,300 | 4.75% |
| 75-110 | 1,471 | 3.04% |
| Other | 12 | 0.02% |

[62] 2019 Novel Coronavirus (2019-NCoV) - Local Data, Monterey County

**Figure 13-2**
**COVID-19 Cases Among Monterey County Residents by Region of Residence**

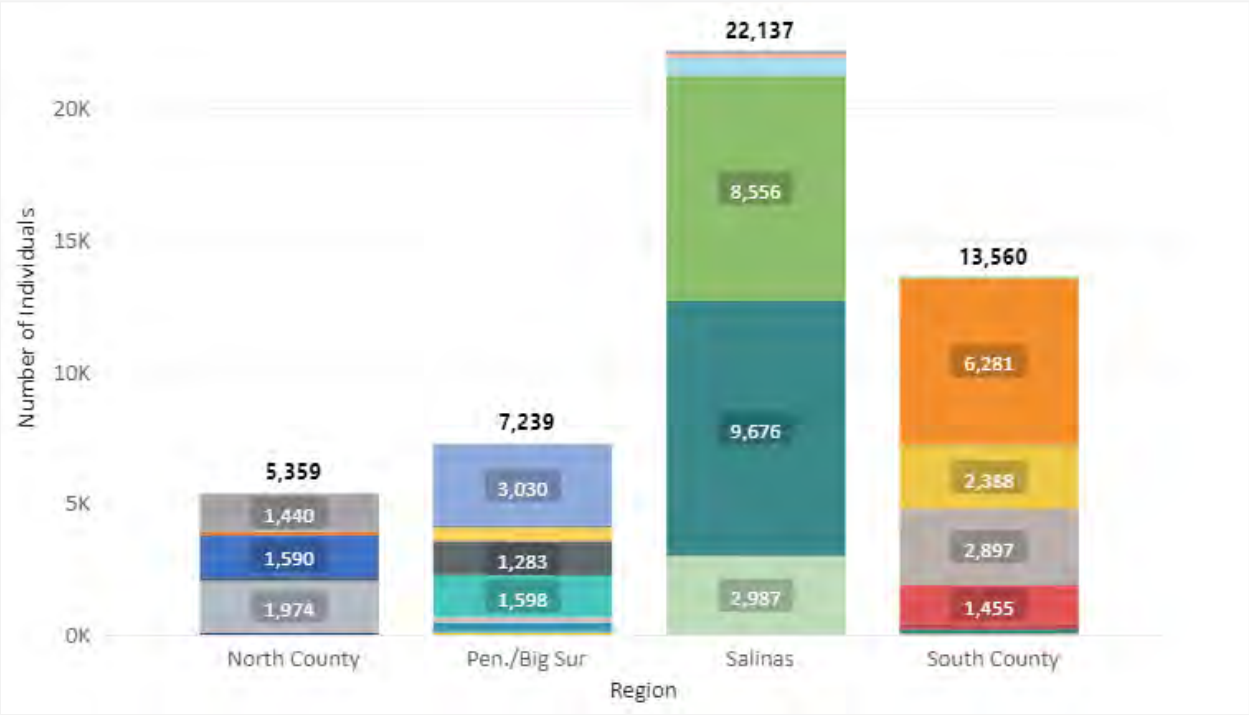



*Table 13-4* lists severe cases of COVID-19 by age group based on the number of hospitalized individuals in Monterey County.

**Table 13-4**
**Severe COVID-19 Cases Among Monterey County Residents by Age Group**

| Age in Years | Hospitalized Individuals | Proportion of Hospitalized Cases |
|---|---|---|
| 0-17 | 49 | 2.71% |
| 18-24 | 47 | 2.60% |
| 25-34 | 180 | 9.94% |
| 35-44 | 227 | 12.54% |
| 45-54 | 322 | 17.79% |
| 55-64 | 344 | 19.01% |
| 65-74 | 309 | 17.07% |
| 75-110 | 332 | 18.34% |
| **Total** | **1810** | **100.00%** |

*Table 13-5* lists COVID-19 fatalities by age group in Monterey County.

**Table 13-5**
**COVID-19 Fatalities Among Monterey County Residents by Age Group**

| Age in Years | Number of Fatalities | Proportion of Fatalities |
|---|---|---|
| 0-34 | 13 | 2.22% |
| 35-44 | 15 | 2.56% |
| 45-54 | 49 | 8.36% |
| 55-64 | 104 | 17.75% |
| 65-74 | 126 | 21.50% |
| 75+ | 279 | 47.61% |
| **Total** | **586** | **100.00%** |

### 13.2.2 LOCATION

All of the County is susceptible to the human health hazards discussed in this chapter. While some hazards, such as the West Nile Virus and Lyme Disease, can have a geographic presence within the County, other diseases can cause exposure to the County from outside the local region. Local residents who travel can become exposed to diseases while abroad and bring the diseases back with them, potentially placing the region at risk for exposure. COVID-19, for example, may be transported into the County, through residents and visitors who travel extensively. It is difficult to map the extent of human-health hazards compared to others, such as floods, wildfires, and dam failures.

### 13.2.3 FREQUENCY

Due to increased air travel and growing population, the probability of a communicable disease epidemic is a growing threat. Certain human health hazards, such as influenza, can be expected seasonally, with variations on specific strains year to year. Additionally, tick-borne diseases are likely to increase during spring and fall, when people participate in outdoor activities such as hiking.

The frequency of other health hazards is difficult to establish and depends largely on the unique circumstances surrounding a localized outbreak and its subsequent expansion into epidemics. While the probability of a major infectious disease outbreak is relatively low, it can have catastrophic social and economic consequences.

**Influenza**: According to the CDC, influenza has a predictable pattern and a near certainty of occurrence. The CDC estimated that on average, about 8% of the US population gets sick from flu each season, with a range of between 3% and 11%, depending on the season. [63]

**COVID-19**: A report released by the World Health Organization and the China Joint Commission found that transmission rates of COVID-19 vary based on location. In general, between 1% and

[63] Seasonal Incidence of Symptomatic Influenza in the United States, Centers for Disease Control and Prevention

5% of people in contact with a confirmed case of the virus subsequently, become a laboratory-confirmed case of COVID-19. [64]

**West Nile Virus**: In California, mosquitoes are monitored and controlled primarily to reduce cases of West Nile Virus, malaria, encephalitis, dog heartworm, and sensitivity to bites. Human mosquito-borne diseases, including West Nile Virus, have declined significantly in California since the creation of mosquito and vector control agencies.

**Lyme Disease**: There have been 12 confirmed cases of Lyme disease in Monterey County between 2009-2019. Cases are expected to continue to develop, and instances may increase with warming temperatures due to climate change.

The frequency and probability of other diseases discussed in this profile are unpredictable and contingent on factors such as public awareness, treatment options, and vaccination rates.

### 13.2.4 SEVERITY

The severity of the human health hazard varies from individual to individual. Typically, young children and older adults are more susceptible to acquiring communicable diseases due to developing or diminishing immune systems or experiencing adverse effects from extreme weather conditions. These populations often experience the most severe of symptoms, as their immune systems are not capable of fighting off infection or efficiently regulating temperature. In general, severity varies depending on the pathology of the disease, the health of the infected, and the availability of treatments for alleviating symptoms or curing the disease.

### 13.2.5 WARNING TIME

Warning time for public health risks varies from a few hours or days to a few months, depending on the illness and outbreak to the population.

## 13.3 SECONDARY HAZARDS

Human health hazards are not like natural hazards that have measurable secondary impacts, such as earthquakes, floods, or wildfires. This is primarily due to the fact that human health hazards do not generally impact buildings and critical infrastructure as natural hazards do. The largest secondary impact caused by human health hazards would be economic. Large outbreaks of any human health hazard could reduce the workforce significantly, causing businesses and agencies to close or be greatly impacted.

Moreover, as the COVID-19 pandemic is revealed, a pandemic can add significant challenges to ongoing hazard mitigation efforts, not to mention confusing and complicating response efforts for other natural hazard events. This is an emerging issue, and developments result in guidance

[64] Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)

changes. Mitigating the impacts of the pandemic, in many instances, means mitigating the impact of a pandemic to other hazards that could occur simultaneously.

Another secondary impact could be stigmatization. The fear of the health hazard and fear of the unknown could lead to isolation, violence, and self-inflicted injury. Hospitals and healthcare providers could be overwhelmed with the "worried well" seeking care and comfort. Education and providing key and critical information can reduce and mitigate this secondary risk.

## 13.4 RISK ASSESSMENT

### 13.4.1 POPULATION

All citizens in the County could be susceptible to the human health hazards discussed in this chapter. A large outbreak or epidemic, a pandemic, or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards discussed in this chapter, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as the plague or influenza could rapidly impact those at risk.

### 13.4.2 PROPERTY

None of the health hazards discussed in this chapter would have significant impact on the structural environment or property.

### 13.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

None of the health hazards discussed in this chapter would have significant impact on the critical facilities or infrastructure of the County. However, health care facilities (including long-term care and clinics and even veterinary offices) are prepared for pandemic disease hazards. Emergency management planning incorporates all disciplines responding to an event, (fire agencies, law enforcement, first responder ground and air ambulance agencies, public health, mental and spiritual health). Planning includes identifying shelters, alternate treatment facilities, isolation capacity, and methods to immediately expand physical and human resources.

### 13.4.4 ENVIRONMENT

None of the health hazards discussed in this chapter would have significant impact on the environment of the planning area. While many of the vectors of the health hazards discussed in this chapter (mosquitoes, rodents, fleas, ticks, and deer flies) rely on local or regional environments for their survival, the human health hazard that they carry or potentially transmit would have no significant impact on the environment.

### 13.4.5 ECONOMY

The economic impact of a human health hazard could be localized to a single region or population or could be widespread. The impact could be significant, depending on the hazard, number of cases and the availability of resources to care for those affected by the hazard. Other financial impacts could be absorbed or managed by the organization affected.

## 13.5 FUTURE TRENDS IN DEVELOPMENT

Unless a catastrophic incident occurs, it is estimated that the County's population will continue to grow. When more people visit Monterey County or move into the area, the impacts from and the potential for a pandemic outbreak rises. Urban areas, in particular, will become more vulnerable as density increases and illnesses or contamination spread more rapidly. The potential for communicable diseases and vector-borne diseases in the County is not likely to lessen or prohibit growth or development.

## 13.6 ISSUES

Important issues associated with the human health hazards include the following:

- Prevention through vaccination and personal emergency and disaster preparation will help to reduce the impacts of human health hazards
- Medical and response personnel need to be integrated in a unified command to provide care when needed in response to human health hazards.
- Medical and response personnel must be adequately trained and supplied.
- A system needs to be in place for informing the public with a unified message about a human health hazard.
- Health agencies and facilities require surge capacity management and adaptation to the rising number and needs of the region.
- Critical facilities may not have adequate fresh air/ ventilation to be appropriate for essential work during pandemic.
- Need for additional sheltering locations in event of pandemic social distancing needs paired with another hazard event (flood, wildfire, earthquake)
- COVID-19 exists as a threat to the entire population of Monterey County.

# 14. SEVERE WEATHER

## 14.1 OVERVIEW

Severe weather refers to any dangerous meteorological phenomena with the potential to cause damage, serious social disruption, or loss of human life. Severe weather can be categorized into two groups: general severe weather (systems that form over wide geographic areas) and localized severe weather (systems with a more limited geographic area). The most common severe weather events that impact Monterey County and that are profiled in this chapter are:

- Severe Winter Storms
- Extreme Cold and Freeze
- Windstorms
- Extreme Heat

Due to the size of the County and changes in elevation and climate, weather conditions can vary greatly. The proximity to the Pacific Ocean both moderates and exaggerates certain types of adverse weather. Winter storms impacting coastal portions of the County tend to be more extreme than in the inland portions. The ocean's influence is also a significant factor in moderating extreme hot and cold temperatures, hailstorms, and other cold weather events. These events are rare and short lived, causing little if any life-threatening situations and only occasional significant damage to property or agricultural concerns.

When reading this chapter, it is important to note that when the term "severe weather" is used, it is referring in aggregate to the sub-hazards profiled in this chapter. These hazards have been grouped because each hazard can impact and has impacted the entire County and has no

clearly defined extent or location mapping. Since there is no clearly defined extent or location mapping available for these hazards, no geospatial analysis is available to support exposure or vulnerability analysis. Quantitative analysis is included from the FEMA National Risk Assessment, but the analyses for these hazards are mainly qualitative.

### 14.1.1 SEVERE WINTER STORMS

Most severe winter storms in Monterey County consist of heavy rain events, sometimes accompanied by thunderstorms, high winds, dense fog, hail, and freeze events. Heavy rain refers to events where the amount of rain exceeds normal levels. The amount of precipitation needed to qualify as heavy rain varies with location and season.

Monterey County's weather is influenced by the Pacific Ocean and routine climate patterns such as El Niño. El Niño is the warm phase of the El Niño-Southern Oscillation cycle, a pattern found in the tropical Pacific when there are fluctuations in temperatures between the ocean and atmosphere. During El Niño, the surface winds across the entire tropical Pacific are weaker than normal and the ocean surface is at above-average temperatures in the central and eastern tropical Pacific Ocean. El Niño typically develops over North America during the winter season causing the severe winter storms experienced by the County. This climate pattern occurs every few years and brings with it above-average rain and snow across the southern region of United States, especially in California.

A relatively common weather pattern that brings southwest winds and heavy rain to California is often referred to as an atmospheric river. Atmospheric rivers are long, narrow regions in the atmosphere that transport most of the water vapor carried away from the tropics. These columns of vapor move with the weather, carrying large amounts of water vapor and strong winds. When the atmospheric rivers make landfall, they often release this water vapor in the form of rain or snow, causing flooding and mudslides.

For more information on flooding events or landslides caused by heavy rain, refer to *Flooding* in **Section 10** or *Slope Failure* in **Section 15**.

Hail is formed when water droplets freeze and thaw as they are thrown high into the upper atmosphere by the violent internal forces of thunderstorms. Hail is sometimes associated with severe storms within Monterey County. Hailstones are usually less than two inches in diameter and can fall at speeds of 120 miles per hour (mph). Severe hailstorms can be quite destructive, causing damage to roofs, buildings, automobiles, vegetation, and crops. Dense fog is also sometimes associated with severe storms in the County. Dense fog reduces visibility making driving more dangerous. The National Weather Service issues dense fog advisories when appropriate.

### 14.1.2 EXTREME COLD AND FREEZE

Extreme cold often accompanies a winter storm or is left in its wake. A freeze refers to a particularly cold spell of weather where the temperature drops below 32 degrees, most

typically in the early morning hours. Usually, these cold spells will last only two or three days when the ocean influence will overcome the cold front and the early morning temperatures will return to the normal 45 to 55-degree range. Rainfall during these periods may result in snowfall in the higher elevations of the County. Prolonged exposure to cold can be life-threatening, particularly to infants and the elderly. Freezing temperatures can cause significant damage to the agricultural industry.

### 14.1.3 WINDSTORM

Windstorms are generally short-duration events involving straight-line winds or gusts of over 50 mph, strong enough to cause property damage. Windstorms are especially dangerous in areas with significant trees and areas with exposed property, poorly constructed buildings, manufactured housing units, major infrastructure, and above-ground utility lines. A windstorm can topple trees and power lines, cause damage to residential, commercial, and critical facilities, and leave debris in its wake.

Damaging winds are classified as those exceeding 60 mph and can reach up to 100 mph, producing a damage path extending for hundreds of miles. There are seven types of damaging winds:

- **Straight-Line Winds**: Any thunderstorm wind that is not associated with rotation; this term is used primarily to differentiate from tornado winds. Most thunderstorms produce some straight-line winds as a result of outflow generated by the downdraft.
- **Downdrafts**: A small-scale column of air that rapidly sinks toward the ground.
- **Downbursts:** A strong downdraft with horizontal dimensions larger than 2.5 miles resulting in an outward burst or damaging winds on or near the ground. Downburst winds may begin as a microburst and spread out over a wider area, sometimes producing damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder.
- **Microbursts:** A small, concentrated downburst that produces an outward burst of damaging winds at the surface. Microbursts are generally less than 2.5 miles across and short-lived, lasting only 5-10 minutes, with maximum wind speeds up to 168 mph. There are both wet and dry microbursts. A wet microburst is accompanied by heavy precipitation. Dry microbursts, common in the high plains and the intermountain west, occur with little or no precipitation reaching the ground.
- **Gust Front:** A gust front is the leading edge of rain-cooled air that clashes with warmer thunderstorm inflow. Gust fronts are characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm. Sometimes the winds push up air above them, forming a shelf cloud or detached roll cloud.
- **Derecho:** A derecho is a widespread thunderstorm wind caused when new thunderstorms form along the leading edge of an outflow boundary (the boundary formed by horizontal spreading of thunderstorm cooled air). The word “derecho” is of

Spanish origin and means “straight ahead.” Thunderstorms feed on the boundary and continue to reproduce. Derechos typically occur in summer when complexes of thunderstorms form over plains, producing heavy rain and severe wind. The damaging winds can last a long time and cover a large area.

- **Bow Echo:** A bow echo is a linear wind front bent outward in a bow shape. Damaging straight-line winds often occur near the center of a bow echo. Bow echoes can be 200 miles long, last for several hours, and produce extensive wind damage at the ground.

High winds can occur during a severe thunderstorm, with a strong weather system, or can flow down a mountain. When winds are sustained at 40-50 mph, isolated wind damage is possible. Widespread significant wind damage can occur with higher wind speeds. During strong thunderstorms, straight line wind speeds can exceed 100 mph. High winds can blow objects around and pose a significant threat to public safety.

Windstorms can also be created by thermally forced circulations during the spring to summer months. Known as sea breezes, these winds are strongest when the land becomes warmer than the adjacent ocean. Driven by the differential heating of land versus water, sea breeze formation is conducive under synoptic conditions that allow strong heating of land areas. The wind direction associated with the sea breeze is directed inland along the surface pressure gradient. Therefore, sea breeze fronts generally push inland for approximately 25 miles as the day progresses. The sea breeze circulation will intensify as the daytime solar heating reaches its maximum before diminishing and reversing to a land breeze circulation as the land cools.

**Mitigation Success Story**
**City of Salinas Free Tree Program**

In February 2017, 60-mile per hour winds and heavy rainfall brought down power lines and trees. Over 600 trees were lost in the storm, exacerbating a long growing problem. The City had already lost close to 350 trees, largely due to drought. The City completed an Urban Forest Assessment and started the "Free Tree--Adopt A Tree Program.” Residents can apply to "Adopt-A-Tree" and the City will purchase and plant a tree if the resident agrees to water it until its established.

Planting trees is a great example of a multi-benefit mitigation project. Trees contribute significantly to environmental quality and human health and well-being. The urban forest is a form of “green infrastructure” that provides millions of dollars of benefit at a very low cost. Trees reduce the impact of weather and climate hazards. During storms, trees absorb rainwater, reducing runoff and preventing pollutants from entering waterways. Large tree canopies create shade and conserve energy, which reduces the impact of extreme heat and helps meet climate change goals.

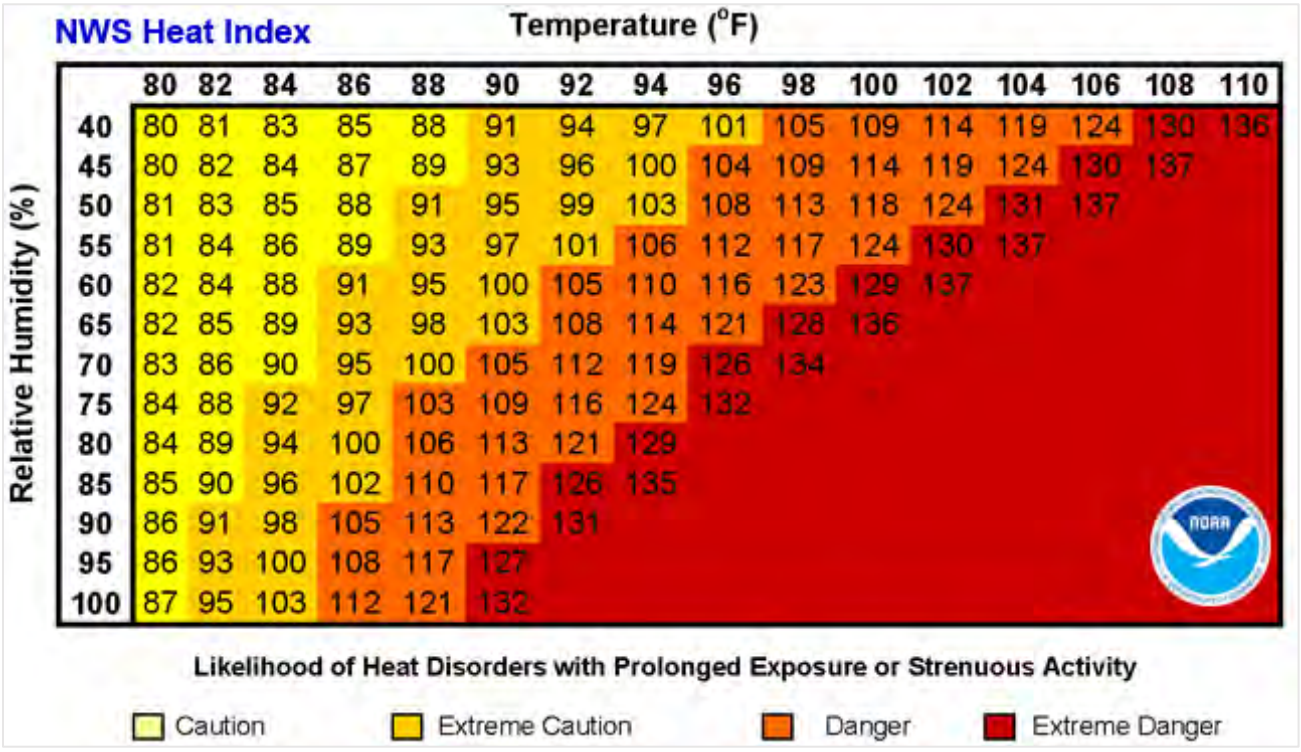
All of Monterey County is subject to strong southeasterly winds associated with powerful cold fronts. These winds, which are usually part of a strong Pacific storm, generally occur during the winter months, from November to February. As the wind passes through the narrowing Salinas valley, the wind velocity increases and moisture-holding capacity decreases. As such, this wind is relatively hot and dry in southern portions of the valley, such as Soledad. Sea breeze winds, with average winds speeds of 10–15 mph, can be expected annually from March through October.

### 14.1.4 EXTREME HEAT

Extreme heat is unexpected, unusual, or unseasonable hot temperature that can create dangerous situations. Heat waves are periods of abnormally hot weather lasting days to weeks. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Heat kills by taxing the human body beyond its abilities. In a normal year, about 175 Americans succumb to the demands of summer heat.

Ambient air temperature and relative humidity are components of heat conditions, together defining a heat index, as shown *Figure 14-1*. The Heat Index is a measure of how hot it really feels when relative humidity is factored in with the actual air temperature.

**Figure 14-1**
**National Weather Service Heat Index**



## 14.2 HAZARD PROFILE

### 14.2.1 HISTORY

*Severe Winter Storms and Extreme Freeze*

*Table 14-1* summaries severe winter storm and freeze events that have occurred in the County.

**Table 14-1**
**Severe Winter Storms and Extreme Freeze Events in Monterey County (2010-2020)**

| Date | Description |
|---|---|
| 11/10/2020 | A cold airmass brought below freezing temperatures. Overnight low temperature records were broken in King City. Warnings were issued for the Salinas Valley where lows dropped into the 20s. |
| 3/17/2020 | A storm brought several days of showers. Vehicles were reported as spinning out on US-101 S near King City due to accumulating hail on roadway. |
| 2/3/2020-2/5/2020 | As a low-pressure system exited, skies began to clear, and wind sheltered locations saw a drop in overnight temperatures to below freezing. Recorded temperatures reached as low as 18 degrees. |
| 11/29/2019 | An atmospheric river caused a closure of Hwy 1 at Paul's Slide. Parkfield recorded heavy rainfall. |
| 10/31/2019 | A dry airmass and lighter winds led to freezing temperatures in the interior valleys. A Freeze Warning was issued for the Salinas Valley and Interior Monterey County. |
| 2/17/2019 | Isolated thunderstorms developed late afternoon and produced hail and lightning over the region. |
| 2/10/2019 | A cold front moved through the region. Hail covered the greens at Pebble Beach suspending final rounds of the Pro Am. |
| 2/5/2019-2/6/2019 | A very cold airmass brought snow to lower elevation peaks prompting a rare Winter Weather Advisory. Junipero Serra Peak received about 1 ft of snow and Cone Peak received about 8 in of snow. |
| 1/1/2019-1/2/2019 | Cold overnight temperatures in the mid-30s to low 40s across Santa Clara County resulted in two fatalities. Widespread freezing temperatures were reported elsewhere across the region. |
| 12/28/2018-12/29/2018 | A cold dry air mass caused temperatures to drop below freezing overnight. This prompted the issuance of a freeze warning. |
| 11/29/2018 | A cool unstable air mass caused scattered thunderstorms that produced lightning and small hail. |
| 4/16/2018 | A late season storm brought rain, winds, hail, thunder, and lightning to the region. |
| 3/3/2018 | A strong cold front brought widespread rainfall causing localized flooding, strong winds, and lighting. |
| 1/22/2017 | A storm brought rain, lightning, wind, hail, snow, and record-breaking surf. |

**Table 14-1**
**Severe Winter Storms and Extreme Freeze Events in Monterey County (2010-2020)**

| Date | Description |
|---|---|
| 1/20/2017 | A storm brought heavy rain, strong winds, and hail. |
| 4/27/2016 | Low level urban flooding due to heavy rain and hail were reported. |
| 2/9/2015 | A strong winter storm impacted California following up the driest January on record. The storm brought heavy rain, winds, and damage to trees and power lines along with some minor flooding. The County gauge on Three Peaks at Elevation 3362 feet measured a 72-hour rainfall total of 10.4 inches. |
| 12/11/2014 | An atmospheric river brought a storm with heavy rain and winds. Boats in Monterey Harbor had to be pumped out to avoid sinking. Rain overwhelmed a sewage plant in Castroville causing a spill. |
| 11/30/2012 | A series of significant winter storms brought strong and gusty winds, heavy rainfall, high surf. Minor urban and small stream flooding was observed across Monterey County due to the heavy rainfall. |
| 1/1/2011 | A storm system brought strong gusty winds and heavy rain. A large tree fell on an occupied vehicle causing the closure of State Route 183 in Monterey. |
| 1/20/2010 | The third in a series of storms brought strong winds and heavy rain. An intense hailstorm occurred near Ryan Ranch just southeast of Del Rey Oaks. |

Source: NOAA Storm Events Database

### *Windstorm*

A windstorm in October 2009 was the result of a strong low-pressure system caused an estimated $1 million in damage, mainly due to falling trees hitting cars and buildings in the affected area. A wind event from November 2011 caused damage and one fatality in Big Sur due to a falling tree. In addition to winter windstorms, every year, between the months of March and October, when the Pacific High attains its greatest strength, prevailing northwest sustained surface winds in Salinas Valley reach average speeds of 10 to 15 mph with associated wind gusts up to 45 mph.

The County has also recorded five tornadoes between 1950 and 2020. All five tornadoes occurred in the northeastern portion of Monterey County. The largest tornado, occurred in 1992, reaching a magnitude of F1 (maximum wind speeds of 73–112 mph) resulted in two injuries from flying glass.

### *Extreme Heat*

In October 2012, an unseasonable heat wave gripped the Monterey area. Temperatures soared well into the 90s and 100s, which resulted in all-time record high temperatures for October, reaching 100 and 101 in Salinas. Farm workers who were picking in the fields near Salinas were negatively impacted by the excessive heat, which lead to a fatality of a farm worker on October

2. In July of 2006, intense heat settled over the County with temperatures soaring to as high as 115°F. Temperatures exceeded 100°F for 15 consecutive days in July, with high temperatures soaring to over 110°F. Overnight lows stayed in the mid-60s for several nights.

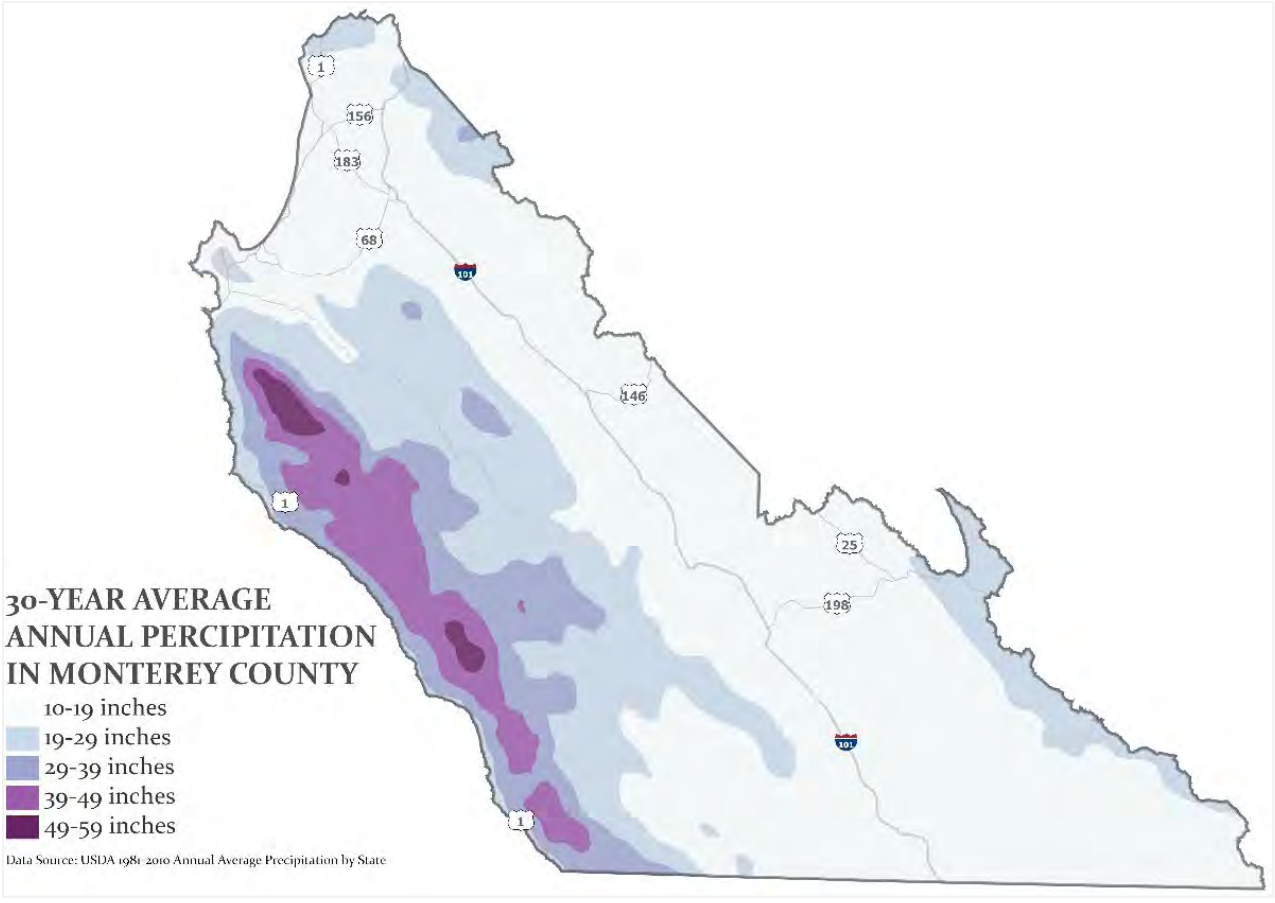
### 14.2.2 LOCATION

All severe weather events profiled in this assessment have the potential to happen anywhere in the County. Maps of the average distribution of weather conditions were used to provide an indication of which areas may be more vulnerable to different severe weather hazards.

#### *Severe Winter Storms*

As seen in *Figure 14-2*, higher annual precipitation occurs along the Big Sur coast, in the Del Monte Forest, and in the hills above the Salinas Valley. These areas therefore may be more likely to experience heavy rain during a winter storm. Communities in low lying areas next to streams, lakes, or the ocean are likely more susceptible to flooding following heavy rain events.

**Figure 14-2**
**30-Year Average Annual Precipitation in Monterey County**

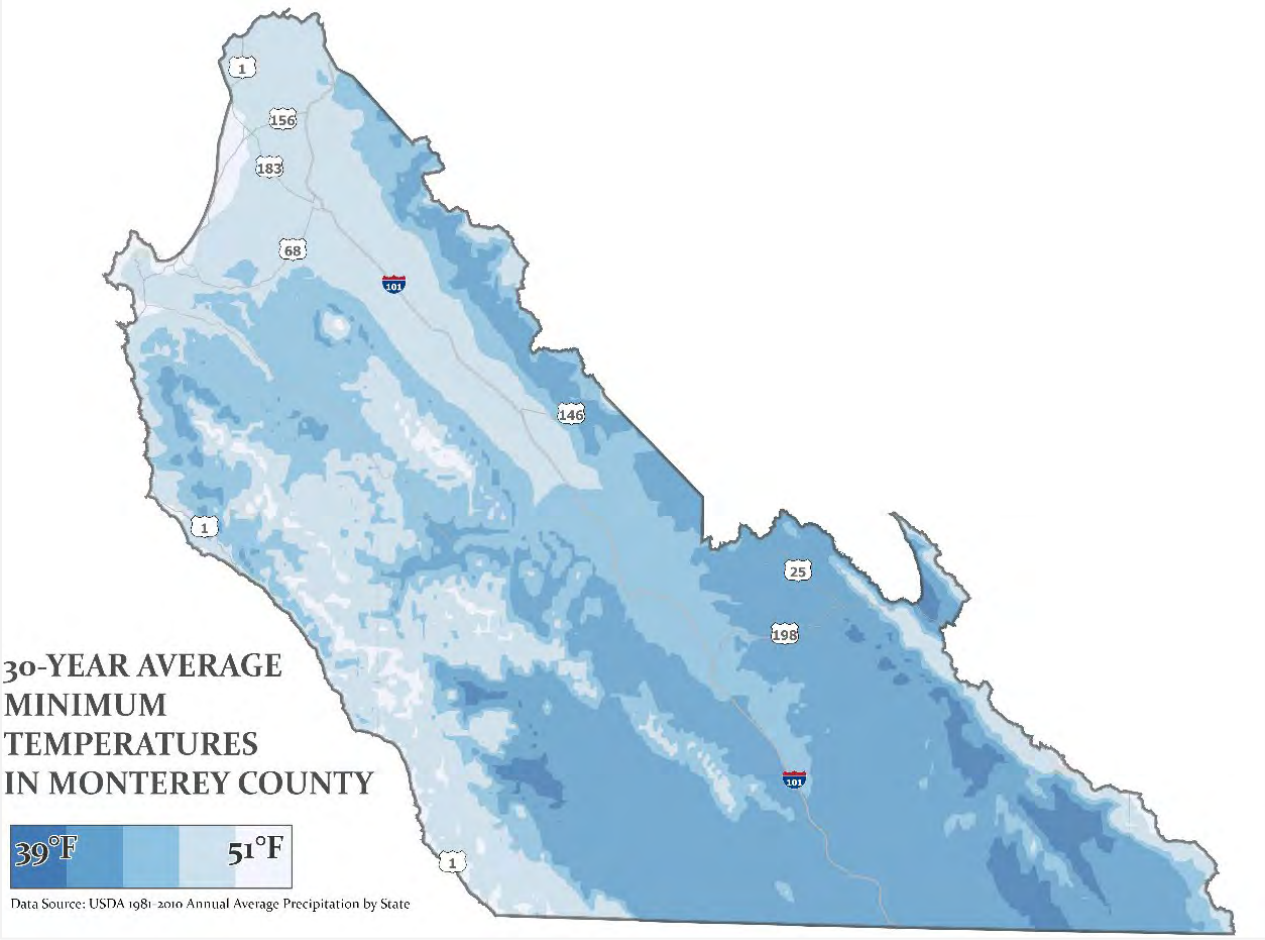


### *Extreme Cold and Freeze*

Exposure to extremely cold temperatures varies depending on distance from the coast and elevation. Coastal temperatures are lower, while inland and higher elevation areas experience a greater range of temperatures. Historically extreme freeze events have been most frequently experienced in the mountains and interior valleys in the County, notably the Southern end of the Salinas Valley.

As seen in *Figure 14-3*, mountainous areas of the County, including the Santa Lucia and Gabilan Ranges, areas along the Big Sur Coast, and the Southern portion of the Salinas Valley experience the coldest average temperatures. These areas therefore may be more likely to experience colder than average temperatures during extreme cold and freeze events.

**Figure 14-3**
**30-Year Average Minimum Temperatures in Monterey County**



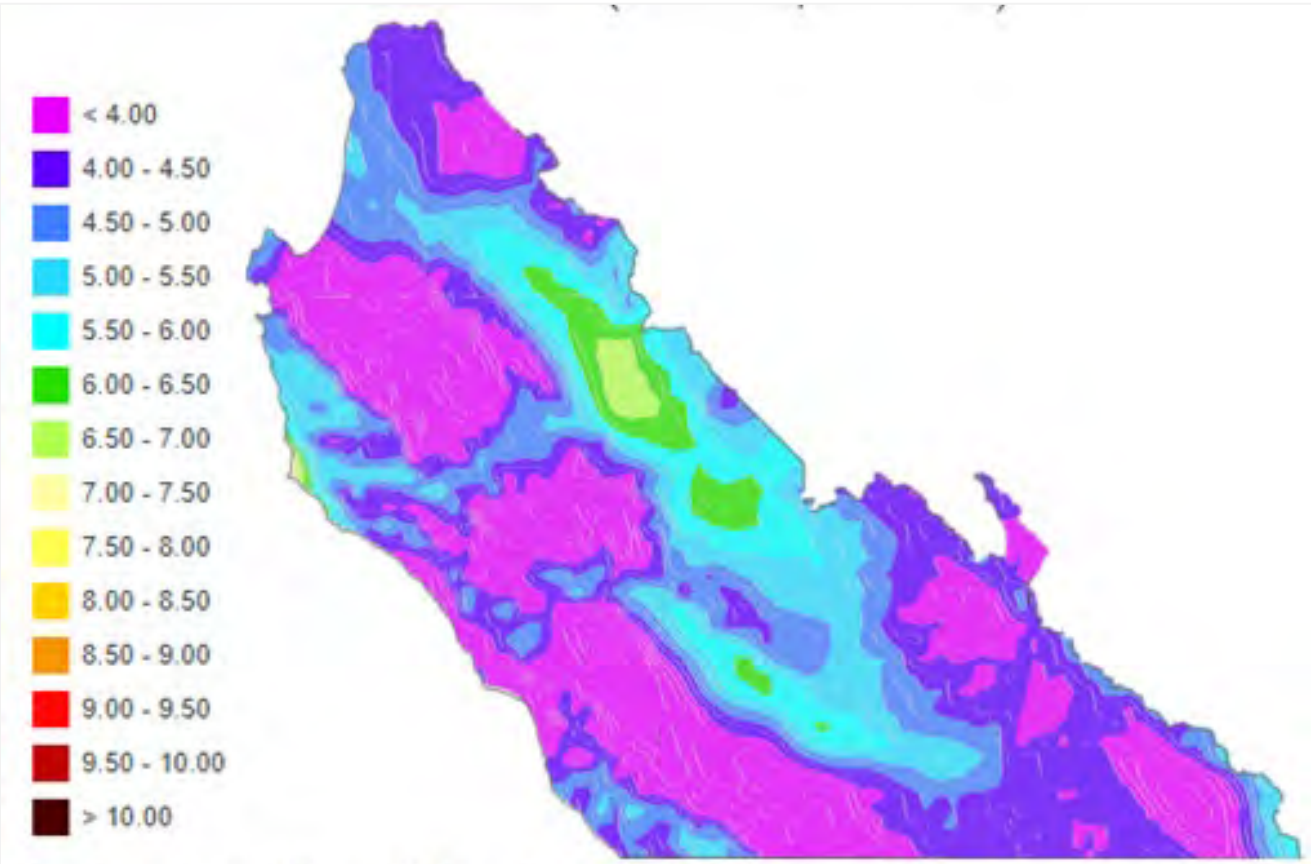

### *Windstorm*

The Monterey Bay acts as a funnel, channeling ocean air through the Salinas Valley. Warmer air from the southern end of the valley warms and rises, producing pressure that in its turn draws in cooler air from Monterey Bay. The wind created as a result is shifted from the broad expanse

of the Bay through the narrower Salinas Valley. The geographical constriction produces a decrease in air pressure, which correspondingly increases the flow of cold ocean air across the valley.

As seen in *Figure 14-4,* the fastest wind speeds occur in the Salinas Valley. Portions of the Peninsula, Carmel Highlands, and Monterey Bay may also experience high winds. Wind events are likely to be most damaging in areas that are heavily wooded.

**Figure 14-4**
**Land-Based Wind Speed (Meters/Second)**



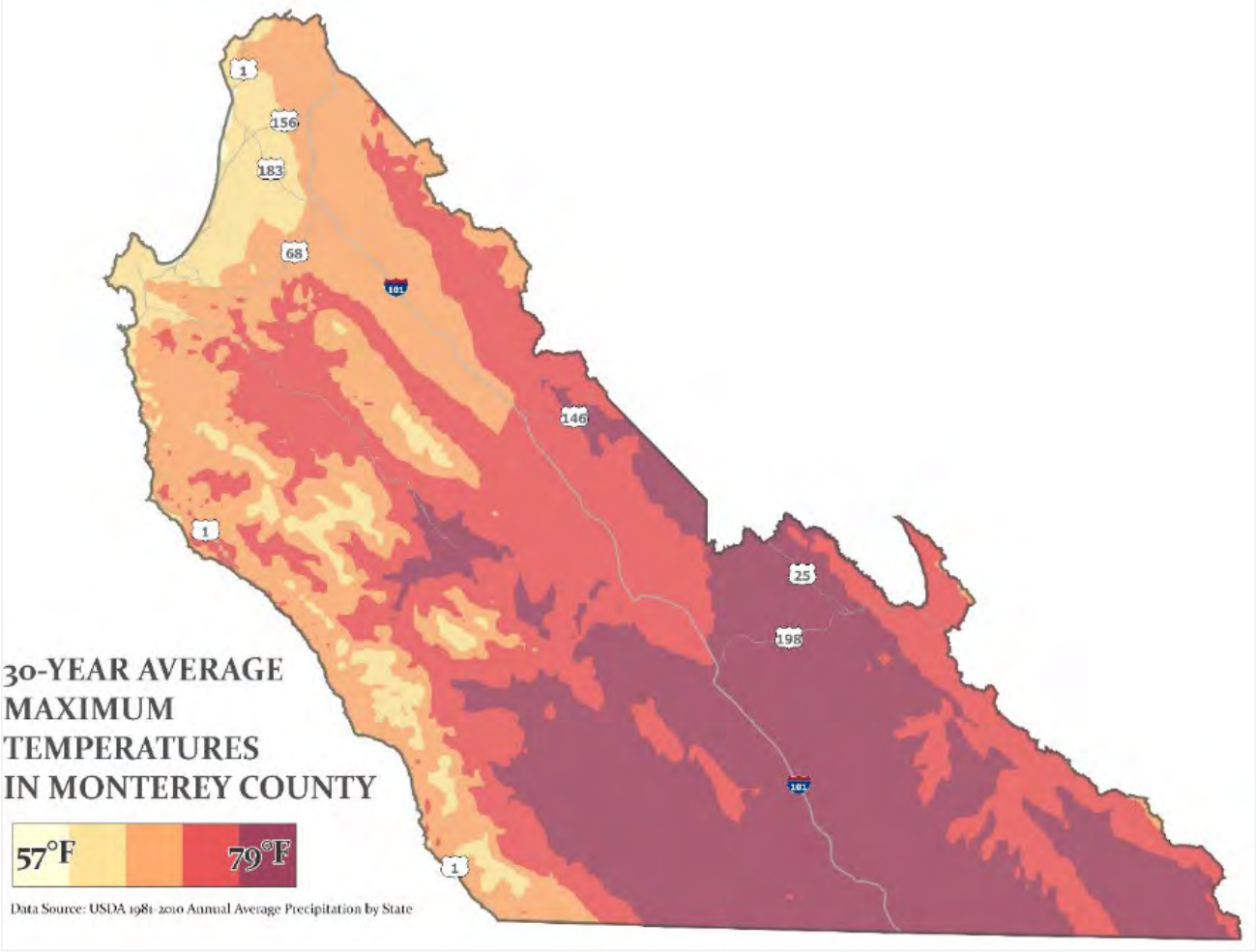

### *Extreme Heat*

Proximity to extreme heat varies depending on distance from the coast and elevation. Coastal temperatures are lower, while inland and higher elevation areas experience a greater range of temperatures. The inland regions of the County have historically been the most likely to experience high heat conditions.

As seen in *Figure 14-5*, areas of South County, the lower Salinas Valley, and mountainous areas in the southern region of the County, including the Santa Lucia and Gabilan Ranges are the

most prone to high temperatures and are the area's most likely to experience extreme heat or heat waves.

**Figure 14-5**
**30-Year Average Maximum Temperatures in Monterey County**




## 14.2.3 FREQUENCY

Predicting the frequency of severe weather events in a constantly changing climate is a difficult task. The County can expect to experience exposure to and adverse impacts from some type of severe weather event at least annually. Severe storms and rainfall are limited almost entirely to the winter season (November - April), while extreme heat is mostly limited to summer months.

The FEMA National Risk Index calculates an annualized frequency value for certain natural hazards in Monterey County. The natural hazard annualized frequency was defined by FEMA as the expected frequency or probability of a hazard occurrence per year. Annualized frequency was derived either from the number of recorded hazard occurrences each year over a given period or the modeled probability of a hazard occurrence each year. Since most severe weather

hazards have tracked actual hazard occurrences, annualized frequency was based on either the number of distinct hazard events that have occurred or the count of days on which a hazard has occurred.

*Table 14-2* summarizes the annualized frequency values and hazard occurrence basis (event or event-day) provided by the FEMA National Risk Index for the severe weather hazards that were included in the Index.

**Table 14-2**
**Annualized Frequency of Severe Weather Hazards in Monterey County**

| Hazard | Hazard Occurrence Basis | Annualized Frequency |
|---|---|---|
| Hail | Distinct Events | 0.47 Events per Year |
| Heat Wave | Event-Days | 1.21 Event Days per Year |
| Lightning | Distinct Events | 0.36 Events per Year |
| Strong Wind | Distinct Events | 0.13 Events per Year |
| Tornado | Distinct Events | 1.22 Events per Year |
| Winter Weather | Event-Days | 0.07 Event Days per Year |
| Source: FEMA National Risk Index | | |

### 14.2.4 SEVERITY

#### *Severe Winter Storms*

The most common problems associated with severe storms are immobility and loss of utilities. Fatalities are uncommon but can occur. Roads may become impassable due to flooding, downed trees, or a landslide. Power lines may be downed due to high winds, and services such as water or phone may not be able to operate without power.

Heavy rain can have significant impacts, including flash flooding, mudslides, and landslides. Stormwater runoff from heavy rains can also impair water quality by washing pollutants into water bodies. Thunderstorms carry the same risks as heavy rain events, and depending on the type of storm, they can also include tornados, lightning, and heavy winds, increasing risk of injury and property damage. Lightning strikes are a danger during thunderstorms and can cause death or injury to one or several persons. Long-term injuries from lightning strike can include memory and attention loss, chronic numbness, muscle spasm, stiffness, depression, hearing loss and sleep disturbance.

#### *Extreme Cold and Freeze*

Late or early freeze events can have a devastating effect on agriculture and the economy of the region. Crops can be damaged by below-freezing temperatures. Prolonged exposure to cold can cause frostbite or hypothermia and can be life-threatening. Infants and the elderly are most susceptible. Pipes may freeze and burst in homes or buildings that are poorly insulated or without heat.

### *Windstorms*

Windstorms are a frequent problem in the County and have been known to cause damage to utilities. The predicted wind speed given in wind warnings issued by the National Weather Service is for a one-minute average; gusts may be 25 to 30% higher. Tornadoes are potentially the most dangerous of local storms, but they are not common. If a major tornado were to strike within the populated areas of the County, damage could be widespread. Businesses could be forced to close for an extended period or permanently, fatalities could be high, many people could be homeless for an extended period, and routine services such as telephone or power could be disrupted. Buildings may be damaged or destroyed.

### *Extreme Heat*

Extreme heat is the primary weather-related cause of death in the US Extreme heat can kill by taxing the human body beyond its abilities. Since heat affects everybody differently and to better address heat risk the National Weather Service (NWS) developed an experimental HeatRisk forecast, which provides one value each day that indicates the approximate level of heat risk concern for any location, along with identifying the groups who are most at risk.

The scale is summarized in *Table 14-3*.

**Table 14-3**
**NWS Experimental HeatRisk Forecast Risk Levels**

| Category | Level | Meaning |
|---|---|---|
| Green | 0 | No Elevated Risk |
| Yellow | 1 | Low Risk for those extremely sensitive to heat, especially those without effective cooling and/or adequate hydration |
| Orange | 2 | Moderate Risk for those who are sensitive to heat, especially those without effective cooling and/or adequate hydration |
| Red | 3 | High Risk for much of the population, especially those who are heat sensitive and those without effective cooling and/or adequate hydration |
| Magenta | 4 | Very High Risk for entire population due to long duration heat, with little to no relief overnight |

Heat can cause a variety of health-related issues including:

- **Heat Exhaustion**: Heat exhaustion is a mild form of heat-related illness that can develop after several days of exposure to high temperatures and inadequate or unbalanced replacement of fluids. It is the body's response to an excessive loss of the water and salt contained in sweat. Those most prone to heat exhaustion are elderly people, people with high blood pressure, and people working or exercising in a hot environment.
- **Heat Cramps**: Heat cramps usually affect people who sweat a lot. Sweating depletes the body's salt and moisture. The low salt level in the muscles can cause heat cramps. Heat cramps may also be a symptom of heat exhaustion.

- **Heat Stroke**: Heat stroke is a severe, dangerous form of heat-related illness. It occurs when the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. Body temperature may rise to 106°F or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability.

### 14.2.5 WARNING TIME

Meteorologists can often predict the likelihood of a severe weather event. This can give several days of warning time. However, meteorologists cannot predict the exact time of onset or severity of the storm. Some storms may come on more quickly and have only a few hours of warning time. The Monterey Weather Forecast Office of the NWS monitors weather stations and issues watches and warnings when appropriate to alert government agencies and the public of possible or impending weather events. The watches and warnings are broadcast over NOAA weather radio and are forwarded to the local media for retransmission using the Emergency Alert System.

## 14.3 SECONDARY HAZARDS

The most significant secondary hazards associated with severe local storms are floods, falling and downed trees, mudslides, landslides, and downed power lines. Rapidly melting snow combined with heavy rain can overwhelm both natural and man-made drainage systems, causing overflow and property destruction. Landslides occur when the soil on slopes become oversaturated and fail. As noted previously, for information on the impacts of hazards related to severe weather, refer to *Flooding* in **Section 10***, Slope Failure* in **Section 15**, *and Utility Interruption* in **Section 17**.

## 14.4 RISK ASSESSMENT

A lack of clearly defined extent and location mapping for the severe weather hazards profiled in this chapter prevented a detailed analysis for exposure and vulnerability. However, it can be assumed that the entire County is exposed to some extent to the severe weather hazards profiled in this assessment. Certain areas are more exposed due to geographic location and local weather patterns.

The FEMA National Risk Index calculates exposure and annual expected loss of building value and population for some severe weather hazards in Monterey County. Though the entire County is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide some scale for the potential risk and impacts.

### 14.4.1 POPULATION

Population exposed in Monterey County to severe weather based on the FEMA National Risk Index is summarized in *Table 14-4*.

**Table 14-4**
**Population Exposed to Severe Weather Hazards in Monterey County**

| Hazard | Exposed Population |
|---|---|
| Hail | 415,057 |
| Heat Wave | 413,337 |
| Lightning | 415,057 |
| Strong Wind | 415,057 |
| Tornado | 85 |
| Winter Weather | 12,879 |

Source: FEMA National Risk Index

Populations living at higher elevations with large stands of trees or power lines may be more susceptible to wind damage and black out, while populations in low-lying areas are at risk for possible flooding following severe winter storms.

Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Power outages can be life threatening to those dependent on electricity for life support. Isolation of these populations is a significant concern. These populations face isolation and exposure during severe weather events and could suffer more secondary effects of the hazard.

### 14.4.2 PROPERTY

All property is vulnerable during the severe weather events profiled in this chapter. Building value exposed and the expected annual loss of building value in Monterey County to severe weather based on the FEMA National Risk Index is summarized in *Table 14-5*.

**Table 14-5**
**Exposed and Expected Annual Loss of Building Value to Severe Weather Hazards**

| Hazard | Exposed Building Value | Expected Annual Loss- Building Value |
|---|---|---|
| Hail | $41,169,506,000 | $1 |
| Heat Wave | $40,973,571,144 | $72 |
| Lightning | $41,169,506,000 | $5,966 |
| Strong Wind | $41,169,506,000 | $16,331 |
| Tornado | $8,429,968.67 | $204,827 |
| Winter Weather | $2,219,002,076 | $4,195 |

Source: FEMA National Risk Index

Properties in poor condition or in particularly vulnerable locations may be at risk of the most damage. Those in higher elevations and on ridges may be more prone to wind damage. Those that are located under or near overhead lines or near large trees may be vulnerable to falling ice or may be damaged in the event of a collapse. Extreme heat events are not known for

causing direct damage to buildings, but may damage building systems such as heating, ventilation, and air conditioning systems.

### 14.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

All critical facilities are likely exposed to all of the severe weather hazards profiled in this assessment. The most common problems associated with severe weather are loss of utilities. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling. Downed power lines associated with wind and/or thunderstorm events can cause blackouts, leaving large areas isolated. Phone, water, and sewer systems may not function. Roads may become impassable due to secondary hazards such as mudslides and landslides.

### 14.4.4 ENVIRONMENT

The environment is highly exposed to severe weather events profiled in this assessment. Natural habitats such as streams and trees are exposed to the elements during a severe storm and risk major damage and destruction. Prolonged rains can saturate soils and lead to slope failure. Flood events caused by severe weather or snowmelt can produce river channel migration or damage riparian habitat. Storm surges can erode beachfront bluffs and redistribute sediment loads. Vegetation can die as a result of prolonged periods of extreme heat.

### 14.4.5 ECONOMIC IMPACT

Economic impact of a severe storm is typically short term. Lightning can cause power outages and fires. Hail can destroy exposed property; an example is car lots, where entire inventories can be damaged. Generally, long-term economic impacts center more around hazards that cascade from a severe thunderstorm, including wildfires ignited by lightning, and flooding. In general, all severe weather poses a risk to the agriculture economy in the County.

## 14.5 FUTURE TRENDS IN DEVELOPMENT

All future development will be affected by severe storms, extreme heat, and high winds. The ability to withstand impacts lies in sound land use practices and consistent enforcement of codes and regulations for new construction. New critical facilities, such as communication towers should be built to withstand heavy rain, wind, and hail damage. Future development projects should consider adverse weather hazards at the planning, engineering, and architectural design stage with the goal of reducing vulnerability. Stormwater master planning and site review should account for buildings to withstand adverse weather events considered for all new development. Thus, development trends in the County are not expected to increase overall vulnerability to the hazard but all development will be affected by adverse weather and storm events and population growth will increase potential exposure to hazards such as thunderstorms and dense fog.

## 14.6 ISSUES

Important issues associated with a severe weather in Monterey County include the following:

- Older building stock in the County is built to low code standards or none at all. These structures could be highly vulnerable to severe weather events such as windstorms.
- Cities may need to open cooling centers during extreme heat events.
- Redundancy of power supply must be evaluated.
- The capacity for backup power generation is limited.
- Dead or dying trees as a result of drought conditions are more susceptible to falling during severe storm events.
- Public education on dealing with the impacts of severe weather needs to continue to be provided so that citizens can be better informed and prepared for severe weather events. In particular, fog should be considered since fog may be downplayed despite its potential for transportation accidents.
- Debris management (downed trees, etc.) must be addressed, because debris can impact the severity of severe weather events, requires coordination efforts, and may require additional funding.
- The effects of climate change may result in an increase of heavy rain or more atmospheric storm events and will likely lead to increased temperatures and changes in overall precipitation amounts.

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# 15. SLOPE FAILURE

## 15.1 OVERVIEW

The term “slope failure” describes a wide variety of processes that result in the downward and outward movement of slope-forming materials including rock, soil, artificial fill, or a combination of these. The materials may move by falling, toppling, sliding, spreading, or flowing. Slope failure can range from slow moving rotational slumps and earth flows, which can slowly distress structures but are less threatening to personal safety, to fast-moving rock avalanches and debris flows that are a serious threat to structures and have been responsible for most fatalities during landslide events.

Slope failure occurs when the strength of the soils forming the slope is exceeded by pressure, such as weight, gravity, or saturation. This can be initiated by storms, earthquakes, fires, or human modification of the land. Large debris can block transportation routes, dam creeks and drainages, and contaminate water supplies. When these hazards affect transportation routes, they are frequently expensive to clean-up and can have significant economic impacts.

### 15.1.1 TYPES OF SLOPE FAILURE

The various types of slope failure can be differentiated by the kinds of material involved and the mode of movement. The term encompasses five modes of slope movement: falls, topples, slides, spreads, and flows. These are further subdivided by the type of geologic material.

**Falls:** Falls are abrupt, downward movements of rock or earth, or both, that detach from steep slopes or cliffs. Falls are triggered by the undercutting of the slope by natural processes such as

streams and rivers or differential weathering, human activities such as excavation during road building and/or maintenance, and earthquake shaking or other intense vibration. Steep or vertical slopes, particularly in coastal areas, and along rocky banks of rivers and streams are susceptible to falls.

**Topple**: A topple is the forward rotation out of a slope of a mass of soil or rock. Toppling is driven by gravity exerted by the weight of material upslope from the displaced mass or is due to cracks in the mass. Topples can consist of rock, debris, or earth materials.

**Slides:** A slide is a mass movement of soil or rock occurring where there is a distinct zone of weakness that separates the slide material from more stable underlying material. Slides can be triggered by intense and/or sustained rainfall or rapid snowmelt which can saturate slopes. Rapid drops in river level following floods, ground-water levels rising because of filling reservoirs, or the rise in level of streams, lakes, and rivers, which cause erosion at the base of slopes. Slides can also be earthquake induced.

**Spreads**: Lateral spreads are distinctive because they usually occur on very gentle slopes or flat terrain. The dominant mode of movement is lateral extension accompanied by shear or tensile fractures. The failure is caused by liquefaction, the process whereby saturated, loose, cohesionless sediments (usually sands and silts) are transformed from a solid into a liquefied state. Failure is usually triggered by rapid ground motion, such as that experienced during an earthquake, but can also be artificially induced.

**Flows**: A form of rapid mass movement in which loose soil, rock and sometimes organic matter combine with water to form a slurry that flows downslope.

Debris flows, rockslides, and flood flows will be described in more detail in this plan as they the most likely to occur in Monterey County.

### *Debris Flows*

Debris flows are common types of fast-moving landslides in Monterey County. These flows generally occur during periods of intense rainfall. They usually start on steep hillsides as shallow landslides that liquefy and accelerate to speeds that are typically about 10 mph, but can exceed 35 mph. The consistency of debris flows ranges from watery mud to thick, rocky mud that can carry large items such as boulders, trees, and cars. They are particularly dangerous to life and property because of their high speeds and the sheer destructive force of their flow.

Debris flow risk in the County is primarily associated with burn scars. Vegetation and soil changes after a fire increase the runoff and erosion in a watershed, and significantly increase the likelihood of debris flows. Debris flows can initiate during even moderate rainstorms over burn areas and often occur with little warning. Post-fire flow can alternate between flood and debris flow. It is important to distinguish between flood flows and debris flows as both are risks in the County. Distinguishing between debris flow and flood deposits can be difficult, but certain sedimentary structures and textures can give clues to the mechanism of deposition.

Debris flows are more dangerous and more destructive and dangerous than floods because they often have peak discharge levels that are 10-50 times greater. Flow height can be up to 5 times greater with flow velocity that is flow velocity same or greater. They also contain much higher levels of sediment content which can cause faster and more uncontrollable flows.

#### *Flood Flows*

A flood flow differs from a flood in that the amount of suspended sediment is sufficient to significantly change fluid properties and sediment transport mechanisms. Large volumes of sand are transported in dynamic suspension throughout the water column, although maintenance of high sediment loads depends on flow velocity and turbulence. Flows can be highly erosive.

#### *Rockslides*

A rockslide, common along the Big Sur coast, is a slow-moving or "creeping" landslide in weathered, fractured, or otherwise-weakened rock. Movement on deep-seated rockslides typically is only fractions of an inch per year; however, an increase in rainfall or slope instability can accelerate movement to several yards a minute or faster.

### 15.1.2 SLOPE FAILURE CAUSES

Mass movements are caused by a combination of geological and climate conditions, as well as encroaching urbanization. Vulnerable natural conditions related to the geology, topography, and vegetation are affected by residential, agricultural, commercial, and industrial development and the infrastructure that supports it. Relative susceptibility to landslides can be described according to the following geologic conditions:

- *Low*: Flatlands and low relief terrain, includes mainly Quaternary deposits. In steep terrain, includes mainly crystalline basement rock, volcanic rock, and Cretaceous sandstone.
- *Moderate*: Moderately steep terrain underlain by mainly unconsolidated and weakly cemented sandstone, shale, and Franciscan Complex.
- *High*: Steep terrain underlain by mainly unconsolidated and weakly cemented sandstone, shale, Franciscan Complex, and existing landslides.

The factors that can contribute to slope failure include: Change in slope of the terrain; Increased load on the land; Shocks, vibrations, and earthquakes; Change in water content; Groundwater movement; Frost action; Weathering of rocks and erosion; Removing or changing the type of vegetation covering slopes.

Landslides can be initiated in slopes already on the verge of movement by rainfall, snowmelt, changes in water level, stream erosion, changes in ground water, earthquakes, volcanic activity, disturbance by human activities, or any combination of these factors. Earthquake shaking and other factors can also induce landslides underwater. These landslides are called submarine landslides. Submarine landslides sometimes cause tsunamis that damage coastal areas.

## 15.2 HAZARD PROFILE

### 15.2.1 HISTORY

*Big Sur Coastline*

The Big Sur area is one of the most landslide-prone stretches of the California coast, with over 1,500 mapped historic large landslides. *Table 15-1* summarizes the most destructive landslides that have occurred along the Big Sur coast.

Historically, landslide activity has increased during severe El Niño years. During the 1972–1973 El Niño season, a landslide along the Big Sur coast resulted in one death. Throughout the 1997–1998 El Niño season, Highway 1 closed all along the Big Sur Coast due to flooding and mudslides and about 40 different sections of the highway were damaged.

In more recent year's numerous landslide events have been recorded in Big Sur, damaging structures, and forcing the closure of Highway 1. 2017 saw record damage along Highway 1. In February, a column of the Pfeiffer Canyon Bridge was displaced by an active landslide, which moved eight inches in one night and destabilized the bridge. This section of Highway 1 was closed for eight months and the new bridge cost about $24 million.

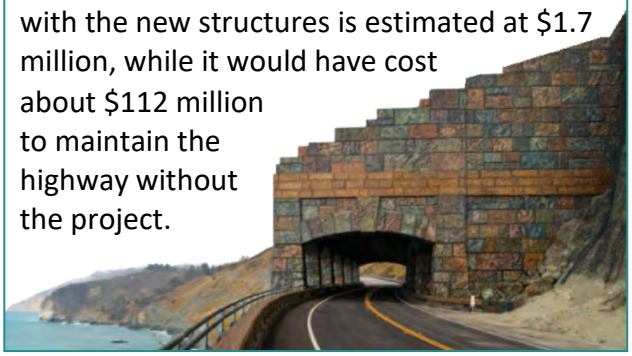
In March of 2017, Paul's Slide buried Highway 1 with debris and left only 11 feet of roadway. Around 2 million cubic yards of material came down the hill. In May, at Mud Creek, a deep-rooted debris flow caused by the heavy winter rains, covered a quarter mile of the Highway 1 in 6 million cubic yards of debris, close to 40 feet of debris slid down the hillside. Caltrans rebuilt the highway atop the slide in a $54 million, 14-month project.

**Mitigation Success Story**
**Rain Rocks Shed/Pitkin's Curve Bridge**

Landslides repeatedly damaged Highway 1 at Pitkins Curve and Rain Rocks.

| | |
|---|---|
| 1998 | A landslide at Pitkins Curve caused $1 million damage. A rockfall at Rain Rocks, required emergency slope stabilization at cost of $1 million. |
| 2000 | A landslide washed out the highway. Crews hauled away 7,000 truckloads of debris at a cost of $3.4 million. |
| 2001 | After a landslide and a rockfall, crews to haul away 1,400 truckloads of debris at a cost of $1.5 million. |
| 2002<br>2009 | Every year, about 700 truckloads of debris was hauled from the site, averaging about $1 million in maintenance annually. |
| 2013 | The Rain Rocks Shed/Pitkin's Curve Bridge was completed. |

The Rain Rocks Shed/Pitkin's Curve Bridge is an innovative mitigation strategy. The new bridge and shed allow rocks to keep rolling. This is a unique and sustainable solution to what was once an ongoing problem. Though the project cost $39 million, over the 50-year lifespan the cost of maintaining the highway with the new structures is estimated at $1.7 million, while it would have cost about $112 million to maintain the highway without the project.



In 2021, an atmospheric river resulted in a post-fire debris flow washing out a 150-foot-long stretch of Highway 1 near Rat Creek below the Dolan Fire burn scar. Flows also damaged another 60 locations along the highway.

**Table 15-1**
**Historic Large Landslides Along Highway 1 on the Big Sur Coast, Monterey County**

| Location | Date | Event | Event Narrative | Cost |
|---|---|---|---|---|
| Big Sur | 3/1/1983 | Landslide | A series of storms caused four major slides between January and April. A slide in March, near Julia Pfeiffer Burns State Park, was at the time the largest slide to affect Hwy 1. | $10 million |
| Gorda | 1/2/1997 | Landslide | A landslide near Gorda, closed Hwy 1 for one month. | $5.5 million |
| Big Sur | 2/6/1998 | Mudslide | El Niño storms caused severe damage to Hwy 1. About 40 sections of Hwy 1 were affected by flooding and landslides. | $32 million |
| Gorda | 2/14/2000 | Landslide | Hwy 1 at Pitkin's Curve was closed due to a landslide that took out both lanes and created 7,000 truckloads of debris. A secondary landslide occurred during repair in March. | $3.4 million |
| Big Sur | 2/1/2001 | Landslide | A landslide above Pitkin's Curve disrupted traffic for 2 months, requiring removal of 1,400 truckloads of debris. | $1.5 million |
| Big Sur | 11/1/2008 | Landslide | Heavy rain following the Basin Complex fire resulted in debris flows and flash flooding. A foot bridge, 2 fishponds, and 2 residences were damaged by a 6-foot debris flow. | |
| Big Sur | 4/7/2009 | Debris Flow | Heavy rain on the Basin-Complex burn scar, caused flash flooding and debris flows. At least 3 separate debris flows were reported along Hwy 1. At Big Sur Lodge, vehicles were stuck in mud, and one was forced into a culvert and buried. | |
| Big Sur | 3/16/2011 | Landslide | Heavy rain in Big Sur washed out a 40 ft section of Hwy 1 section near the Bixby Creek Bridge and Rocky Creek. | $2.5 million |
| Gorda | 4/14/2011 | Landslide | A rock and mudslide closed Hwy 1 near Alder Creek. The initial small slide was cleared, but the storms from March provided the necessary moisture to cause the hillside to fail weeks later, producing another much debris flow later in April. | $5 million |

**Table 15-1**
**Historic Large Landslides Along Highway 1 on the Big Sur Coast, Monterey County**

| Location | Date | Event | Event Narrative | Cost |
|---|---|---|---|---|
| Posts | 12/22/2012 | Debris Flow | An atmospheric river caused several slides, including one at Partington Creek that blocked Hwy 1 and a private road. 32 homes were isolated, and 40 tourists were stranded. | |
| Posts | 2/9/2017 | Debris Flow | A slide closed Hwy 1 and displaced a column of the Pfeiffer Canyon Bridge, moving 8 inches in one night and destabilizing the bridge. Caltrans determined it was unrepairable and closed the road for 8 months to build a new bridge. | $24 million |
| Lucia | 3/11/2017 | Landslide | Paul's Slide buried Hwy 1 with 2 million cubic yards of debris leaving only 11 ft of roadway. 435 residents were caught between the slide and the closure at Pfeiffer Canyon Bridge. | |
| Gorda | 5/19/2017 | Debris Flow | A deep-rooted debris flow at Mud Creek, covered a quarter mile of the Hwy 1 in 6 million cubic yards of debris. | $54 million |
| Lucia | 1/27/2021 | Debris Flow | An atmospheric river washed out a 150-foot-long stretch of Hwy 1 near Rat Creek below the Dolan Fire burn scar. Flows damaged another 60 locations along the highway. | |

*Sources*: NOAA Storm Events Database; A History of Road Closures Along Highway 1, Big Sur Monterey and San Luis Obispo Counties, California

### *Historic Slope Failure in Other Geographic Regions*

Besides the Big Sur coastline other areas of the County are vulnerable to debris flows. Throughout the 1997–1998 El Niño season, a series of debris slides failed along the northern flank of Saddle Mountain in Carmel Valley and impacted Saddle Mountain Recreation Area. A landslide in Las Lomas in rural north Monterey County caused several homes to be destroyed and resulted in a Hazard Mitigation Grant Program (HMGP) project that involved buying out the affected homes and preserving the land where the slide occurred as perpetual open space.

The 2017 storms caused flooding and debris flows in Prunedale and Spreckels resulting in mud, and rocks covering various sections of roadway, including Crazy Horse Canyon Road, Live Oak Road, Garin Road, and Elkhorn Road. Highway 101 was blocked at Crazy Horse Canyon Road and Highway 68 was blocked with over 1 foot of mud at River Road. One heavy slide caused

mud, about 3 feet deep, to block Moro Road. In 2019, heavy rainfall caused large rocks to block Carmel Valley Road at Laureles Grade. In 2021 an annual expected storm caused a large debris flow in the River Fire burn scar. The flow damaged 25 homes and caused one injury.

### 15.2.2 LOCATION

The best available predictor of where slides and earth flows might occur is the location of past movements. Past landslides can be recognized by their distinctive topographic shapes, which can remain in place for thousands of years. Most landslides recognizable in this fashion range from a few acres to several square miles. Most show no evidence of recent movement and are not currently active. A small proportion of them may become active in any given year, with movements concentrated within all or part of the landslide masses or around their edges.

Debris and sediment flows are a particular threat to life and property in mountainous areas of Monterey County. Areas of highest susceptibility to large landslides include Carmel Valley, the Arroyo Seco district, and the foothills of southern Salinas Valley. In this area, rocks have been weakened through faulting, fracturing, and uplift, and are vulnerable to earthquake or rain induced landslides.

Landslides are most common along the steep slopes of the Big Sur coast. Recurrent uplift, in combination with relentless erosion by ocean waves, creates extreme topography, making the area highly susceptible to landslides. Rocks that have been weakened through faulting and fracturing also help provide ideal conditions for large landslides. During the winter months, Big Sur receives both heavy rainfall (as much as 80 inches per year) and high wave energy. In summer and fall, occasional wildfires remove vegetation, making the areas slopes more vulnerable to erosion. All these factors produce chronic landslides, such as those that block, undermine, or damage the Coast Highway.

The potential for debris flows increases significantly in areas recently burned by large wildfires. Wildfires can greatly reduce the amount of vegetation, which reduces the ability for the ground to absorb rainwater, allowing excessive water runoff that can include large amounts of debris. An area of current particular concern is the burn scars of the 2020 Dolan, River, and Carmel fires. While post-fire assessment data and detailed mapping on vulnerability to debris flow is not available, structures located anywhere near the burn area should be considered potentially at risk during and following high intensity rainfall events until the vegetation is restored.

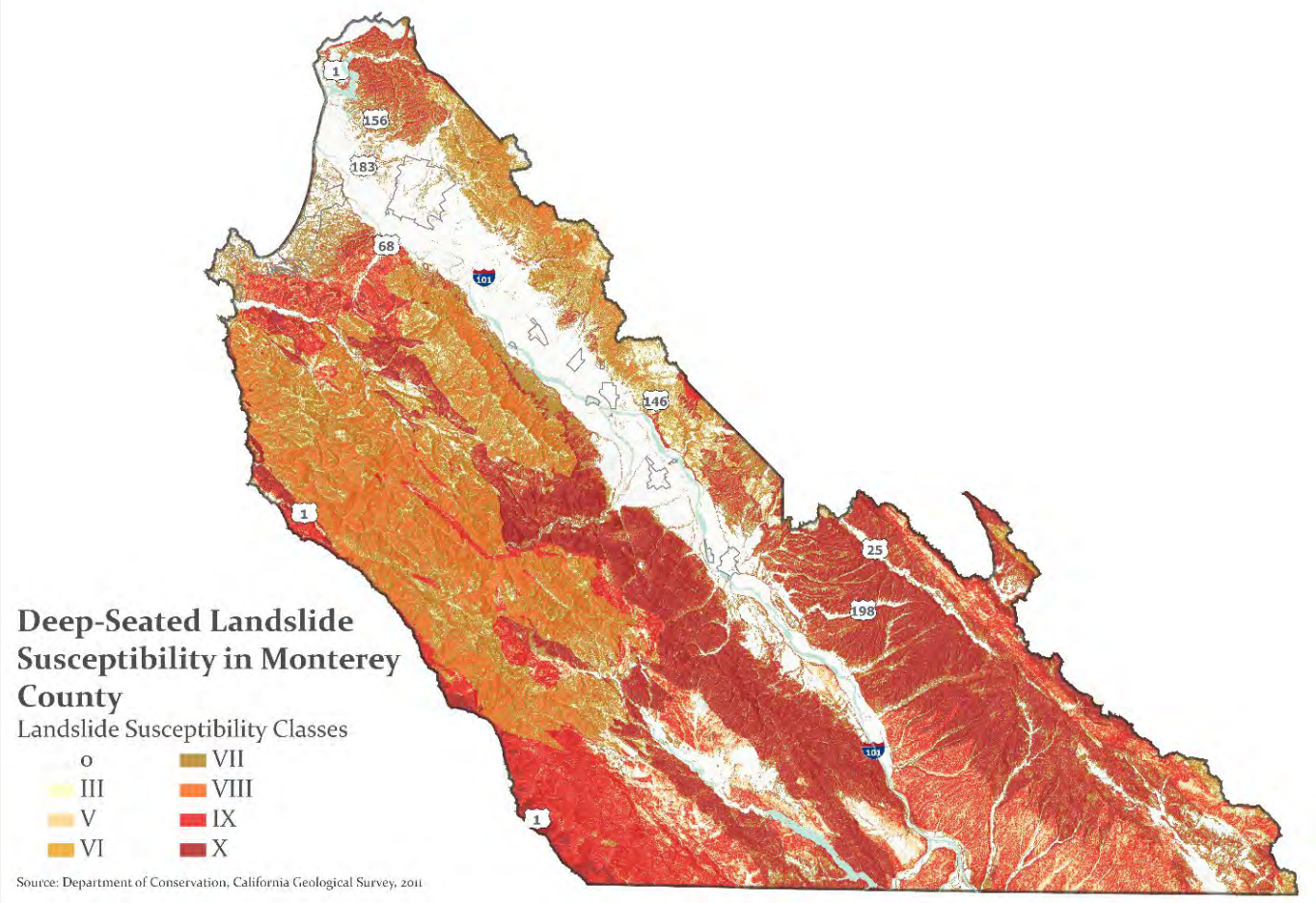
The California Geological Survey maps the relative likelihood of deep land sliding based on regional estimates of rock strength and steepness of slopes. On the most basic level, weak rocks and steep slopes are more likely to generate landslides. Their mapping uses detailed information on the location of past landslides, the location and relative strength of rock units, and steepness of slope.

This mapping shows the distribution of landslide hazards and provides an overview of where landslides are more likely. This mapping does not include information on landslide triggering

events, such as rainstorms or earthquake shaking, nor does it address susceptibility to shallow landslides such as debris flows and is not appropriate for evaluation of landslide potential at any specific site.

Mapping of deep-seated landslide susceptibility in Monterey County based on data from the California Geological Survey[65] is shown in *Figure 15-1*.

**Figure 15-1**
**Deep-Seated Landslide Susceptibility in Monterey County**




Additionally, areas in the County are susceptible to earthquake induced landslides. *Figure 15-2* shows earthquake induced landslide susceptibility in Monterey County.

[65] CGS Map Sheet 58: Deep-Seated Landslide Susceptibility, California Geological Survey (May 2011)

SANTA CRUZ COUNTY
SANTA CLARA COUNTY
SAN BENITO COUNTY
SAN LUIS OBISPO COUNTY
FRESNO COUNTY
PACIFIC GROVE
MARINA
SAND CITY
SEASIDE
SALINAS
MONTEREY
GONZALES
SOLEDAD
GREENFIELD
KING CITY
Los Padres National Forest
Camp Roberts
Parkfield
PENINSULA CITIES
SOLEDAD
SALINAS
KING CITY
GREENFIELD
GONZALES
EARTHQUAKE INDUCED LANDSLIDE SUSCEPTIBILITY
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 2020
FIGURE 15-2
MONTEREY COUNTY, CA
LEGEND
DATE: 11/2/2020
Monterey County
Office of Emergency Services
1322 Natividad Road
Salinas, CA 93906
831-796-1905

### 15.2.3 FREQUENCY

Landslides are often triggered by other natural hazards such as earthquakes, heavy rain, floods, or wildfires, so landslide frequency is often related to the frequency of these other hazards. In Monterey County, landslides typically occur during and after severe storms, so the potential for landslides largely coincides with the potential for sequential severe storms that saturate steep, vulnerable soils. The FEMA National Risk Index estimates that the annualized frequency of landslide events in Monterey County is 0.43 distinct events per year.

In general Monterey County can expect to experience significant landslide events during strong El Niño years, large atmospheric rivers, or during a large earthquake event. In areas recently burned by wildfires, landslides may occur more frequently and are possible during annual rain events.

### 15.2.4 SEVERITY

Slope failures destroy property and infrastructure and can take the lives of people. When landslides occur — in response to such changes as increased water content, earthquake shaking, addition of load, or removal of downslope support — they deform and tilt the ground surface. The result can be destruction of foundations, offset of roads, breaking of underground pipes, or overriding of downslope property and structures.

Slope failure can pose a serious hazard to properties on or below hillsides. They can block access to roads, which can isolate residents and businesses and delay commercial, public, and private transportation. This can result in economic losses for businesses. Vegetation or poles on slopes can be knocked over, resulting in possible losses to power and communication lines. Slope failures can also damage rivers or streams, potentially harming water quality, fisheries, and spawning habitat.

In Monterey County, landslides and mudslides are a common occurrence and have caused damage to homes, public facilities, roads, parks, and sewer lines. Landslides along the county's coastline, in conjunction with wave action, have resulted in road failure, severe erosion, cliff failure, and loss of bluff top area that threatens development. In Big Sur, landslides have caused millions of dollars in damages and have led to closures of Highway 1, which can range from a few days to over a year.

### 15.2.5 WARNING TIME

The velocity of landslides ranges from a slow creep of inches per year to many feet per second, depending on slope angle, material, and water content. Some types of slope failure, occur slowly but can have significant property or health consequences. The identification of those hazards generally takes site-specific analysis to determine if the site soils and geology are susceptible to these hazards and what mitigation is most relevant and prudent for a site. For these types of hazards, warning time is long.

For other hazards, such as debris flows, rockfalls, and landslides, warning time is often very short and may not occur at all. Identifying areas where these events are known have occurred, or which have ideal characteristics for these hazards to occur, could help with hazard preparedness when triggering-type events like intense rainfall occur.

Some methods used to monitor landslides can provide an idea of the type of movement and the amount of time prior to failure. It is also possible to determine what areas are at risk during general time periods. Assessing the geology, vegetation, and amount of predicted precipitation for an area can help in these predictions. However, there is no practical warning system for individual landslides.

When wildfire-induced landslide threats exist a state team of foresters, hydrologists, and GIS specialists from CAL FIRE, engineering geologists from the California Geological Survey (CGS) and Regional Water Quality Control Boards (RWQCB), and civil engineers from the Department of Water Resources (DWR), can be assembled into a Watershed Emergency Response Team (WERT) to assess potential life-safety hazards from post-fire debris flows, hyper-concentrated flows, and flood flows on Local and State Responsibility Areas.

An Emergency Stabilization-Burned Area Emergency Response (BAER) is a rapid assessment of burned watersheds that identifies imminent post-wildfire threats to human life and safety, property, and critical natural or cultural resources on federal land. The BAER identifies emergency stabilization measures that can be implemented before the first post-fire damaging events. BAER measures include actions such as: mulching, seeding, installation of erosion and water run-off control structures, temporary barriers to protect recovering areas, and the installation of warning signs.

The USGS also conducts post-fire debris-flow hazard assessments for select fires using geospatial data related to basin morphometry, burn severity, soil properties, and rainfall characteristics to estimate the probability and volume of debris flows that may occur in response to a storm. This identification and analysis will not reduce the warning time, but it will make proactive response to potential triggering events more effective.

## 15.3 SECONDARY HAZARDS

There are some hazards that can trigger or exacerbate slope failure. Flooding, for example, can undercut the toe of a slope which can remove the support for the slope and cause a landslide. Wildfires create long-term impacts by altering the soil structure, impeding its ability to absorb moisture, and destroying vegetation that binds the soil with roots and absorbs rainfall and runoff. Post-wildfire, even small rainfall events can cause devastating landslides. Areas that are mapped currently as low to moderate risk of these hazards may have high risk after a wildfire.

Landslides can cause several types of secondary effects, such as blocking access to roads, which can isolate residents and businesses and delay commercial, public, and private transportation.

This could result in economic losses for businesses. Other potential problems resulting from landslides are power and communication failures. Vegetation or poles on slopes can be knocked over, resulting in possible losses to power and communication lines. Landslides also have the potential of destabilizing the foundation of structures, which may result in monetary loss for residents. They also can damage rivers or streams, potentially harming water quality, fisheries, and spawning habitat.

## 15.4 RISK ASSESSMENT

Data developed for the Monterey County 2010 General Plan Update - *Relative earthquake-induced landslide susceptibility of Monterey County (Lewis Rosenberg)* - was used to assess earthquake induced slope failure risk in Monterey County.

Additionally, data from the FEMA National Risk Index was used to capture a wider swath of slope failure risk.

### 15.4.1 POPULATION

The FEMA National Risk Index estimates that a population of 79,208 people is exposed to landslide risk in Monterey County. As summarized in *Table 15-2*, close to 90,000 people are exposed to high or moderate earthquake induced landslide risk in Monterey County.

**Table 15-2**
**Population Exposed to Earthquake Induced Landslide Risk in Monterey County**

| Supervisorial District | High | Moderate |
|---|---|---|
| District 1 | 0 | 0 |
| District 2 | 10,603 | 20,284 |
| District 3 | 3,940 | 4,109 |
| District 4 | 307 | 760 |
| District 5 | 18,752 | 28,902 |
| **Total** | 33,602 | 54,055 |

Increasing population and the fact that many homes are built on view property atop or below bluffs and on steep slopes subject to failure, increases the number of lives endangered by this hazard. Populations with access and functional needs as well as elderly populations and the young are more vulnerable to the landslide hazards as they may not be able to evacuate quickly enough to avoid the impacts of a landslide.

### 15.4.2 PROPERTY

The FEMA National Risk Index estimates that $10,420,650,330 of building value in Monterey County is exposed to landslide risk. On average, $16,721 in building value is exposed annually to landslide risk.

As summarized in *Table 15-3*, about 10,000 residential properties, around $9 billion in value, is exposed to high or moderate earthquake-induced landslide risk in Monterey County.

**Table 15-3**
**Residential Property Exposed to Earthquake Induced Landslide Risk in Monterey County**

| Supervisorial District | High | | Moderate | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 0 | $0 | 0 | $0 |
| District 2 | 255 | $121,610,859 | 2,985 | $1,462,850,110 |
| District 3 | 402 | $111,813,559 | 587 | $168,618,666 |
| District 4 | 0 | $837,871 | 129 | $61,419,691 |
| District 5 | 1,889 | $2,237,652,534 | 4,665 | $5,235,107,467 |
| **Total** | 2,546 | $2,471,914,823 | 8,366 | $6,927,995,934 |

As summarized in *Table 15-4*, close to 11,000 non-residential properties, around $3 billion in value, is exposed to high or moderate earthquake-induced landslide risk in Monterey County.

**Table 15-4**
**Non-Residential Property Exposed to Earthquake Induced Landslide Risk in Monterey County**

| Supervisorial District | High | | Moderate | |
|---|---|---|---|---|
| | # | Value | # | Value |
| District 1 | 0 | $0 | 0 | $0 |
| District 2 | 170 | $42,267,723 | 1,604 | $205,569,876 |
| District 3 | 2,714 | $882,625,037 | 3,298 | $1,067,573,258 |
| District 4 | 7 | $0 | 38 | $10,636,707 |
| District 5 | 1,196 | $472,577,390 | 2,039 | $1,025,327,227 |
| **Total** | 4,087 | $1,397,470,150 | 6,979 | $2,309,107,068 |

### 15.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

A significant amount of linear infrastructure and critical lifelines are exposed to slope failure. Access to major roads is crucial to life-safety, response, and recovery operations after a disaster event. Slope failure events can block egress and ingress on roads, causing isolation for neighborhoods, traffic problems, and delays for public and private transportation. This can result in economic losses for businesses. Slope failure can significantly impact bridges, by knocking out bridge abutments or significantly weaken the soil supporting them. Highly susceptible areas of the County include mountain and coastal roads and transportation infrastructure.

Power lines are generally elevated above steep slopes, but the towers supporting them can be subject to slope failure. A landslide could trigger failure of the soil underneath a tower, causing it to collapse and rip down the lines. Power and communication failures due to landslides can create problems for vulnerable populations and businesses

Critical infrastructure determined to be exposed to earthquake-induced landslide risk is summarized in *Table 15-5*.

**Table 15-5**
**Critical Infrastructure Exposed to Earthquake Induced Landslide Risk in Monterey County**

| Critical Infrastructure Type | High | Moderate |
|---|---|---|
| **Facilities** | | |
| Emergency Response | 2 | 1 |
| Fire Station | 2 | 3 |
| Police Station | 0 | 0 |
| Medical Facilities | 0 | 2 |
| Military Facility | 0 | 0 |
| Large Public Facilities | 0 | 0 |
| Educational Facilities | 0 | 2 |
| Power Plant | 0 | 0 |
| Water & Wastewater Facilities | 11 | 53 |
| Stormwater Facilities | 0 | 0 |
| Government Facilities | 6 | 9 |
| Communication Facilities | 142 | 205 |
| Rain Gauges | 2 | 3 |
| Lighthouses | 0 | 0 |
| Dams | 0 | 0 |
| **Hazardous Materials** | | |
| Active or Idle Oil Well | 268 | 822 |
| Landfill | 0 | 0 |
| Underground Tank | 0 | 2 |
| Cal ARP Facility | 0 | 0 |
| **Transportation** | | |
| Airport | 0 | 0 |
| Bridge | 8 | 9 |
| Harbor | 0 | 0 |
| Highway/Freeway (Miles) | 2 | 26 |
| Driveway (Miles) | 0 | 3 |
| Major Road (Miles) | 192 | 278 |
| Local (Miles) | 780 | 780 |
| Railroad (Miles) | 10 | 10 |

### 15.4.4 ENVIRONMENT

Landslides that fall into streams may significantly impact fish and wildlife habitat, as well as affecting water quality. Hillsides that provide wildlife habitat can be lost for prolonged periods of time due to landslides. Disposal of landslide debris into the Monterey Bay National Marine Sanctuary (MBNMS) could damage critical marine habitats.

### 15.4.5 ECONOMIC IMPACT

Millions of visitors travel annually along the Highway 1 in Big Sur, bringing many millions of dollars to the local economy. Maintaining safe access along the Highway is essential for both tourism and the livelihood of residents. Landslides in Big Sur frequently damage the popular and economically essential Highway 1 and can close the road for weeks or months at a time. Maintenance of the highway is expensive and controversial.

## 15.5 FUTURE TRENDS IN DEVELOPMENT

Land use controls (such as prohibiting development on unstable soils or steep slopes) are the most cost-effective way to prevent loss of life and property. The planning partners are equipped to handle future growth within landslide hazard areas. Landslide risk areas are addressed in the safety elements of local general plans. The State of California has adopted the International Building Code (IBC) by reference in its California Building Standards Code. The IBC includes provisions for geotechnical analyses in steep slope areas that have soil types considered susceptible to landslide hazards. These provisions assure that new construction is built to standards that reduce the vulnerability to landslide risk.

## 15.6 ISSUES

Key issues related to slope failure in Monterey County include:

- There are existing homes in landslide risk areas throughout the County. The degree of vulnerability of these structures depends on the codes and standards the structures were constructed to. Information to this level of detail is not currently available.
- The impact of landslides on tourism in Big Sur.
- Future development could lead to more homes in landslide risk areas.
- Mapping and assessment of landslide hazards are constantly evolving. As new data and science become available, assessments of landslide risk should be reevaluated.
- The impact of climate change on landslides is uncertain. If climate change impacts atmospheric conditions, then exposure to landslide risks is likely to increase.
- Landslides may cause negative environmental consequences, including water quality degradation.
- The risk associated with the landslide hazard overlaps the risk associated with other hazards such as earthquake, flood, and wildfire. This provides an opportunity to seek mitigation alternatives with multiple objectives that can reduce risk for multiple hazards.

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# 16. TSUNAMI

## 16.1 OVERVIEW

A tsunami is a wave or series of waves, caused by a displacement of the ocean floor, generated by an earthquake, landslide, volcanic eruption, or even large meteor hitting the ocean. What typically happens is a large, submarine earthquake (magnitude 8 or higher) creates a significant upward movement of the sea floor resulting in a rise or mounding of water at the ocean surface. The mound of water moves away from this center in all directions as a tsunami. These events are also often referred to as tidal waves or seismic sea waves.

A tsunami wave is not a tall breaking wave or a tidal wave, although that term is a common misnomer for a tsunami. A tsunami actually resembles a flood or surge, consisting of several waves or surges. The first tsunami surge is often not the highest and the largest surge may occur hours after the first wave. It is not possible to predict how many surges or how much time will elapse between waves for a particular tsunami. This will become a major issue for public safety officials responding to a tsunami.

Visually, tsunamis differ from typical wind waves as well. A tsunami is virtually undetectable to the eye until it has nearly reached the shore. A tsunami looks more like a storm surge experienced in a large hurricane than it does a wind wave. Similar to a hurricane's storm surge, a tsunami is capable of bringing in large amounts of water inland very quickly, and can inundate areas that are normally dry, even during highest tides. The surges are extremely strong, and the currents uproot and carry everything within its path. These debris filled surges are deadly and destructive to everything in their path.

In deep ocean water, tsunamis may travel as fast as 600 miles per hour. As they approach the shore, waves may increase in size and can cause extensive damage to coastal structures. As a tsunami enters the shoaling waters near a coastline, its speed diminishes, its wavelength decreases, and its height increases greatly. The first wave usually is not the largest. Several larger and more destructive waves often follow the first one. As tsunamis reach the shoreline, they may take the form of a fast-rising tide, a cresting wave, or a bore (a large, turbulent wall-like wave). The bore phenomenon resembles a step-like change in the water level that advances rapidly (from 10 to 60 miles per hour).

The configuration of the coastline, the shape of the ocean floor, and the characteristics of advancing waves play important roles in the destructiveness of the waves. Offshore canyons can focus tsunami wave energy and islands can filter the energy. The orientation of the coastline determines whether the waves strike head-on or are refracted from other parts of the coastline. A wave may be small at one point on a coast and much larger at other points. Bays, sounds, inlets, rivers, streams, offshore canyons, islands, and flood control channels may cause various effects that alter the level of damage. It has been estimated, for example, that a tsunami wave entering a flood control channel could reach a mile or more inland, especially if it enters at high tide.

The first visible indication of an approaching tsunami may be recession of water caused by the trough preceding the advancing, large inbound wave crest. Rapid draw down can create strong currents in harbor inlets and channels that can severely damage coastal structures due to erosive scour around piers and pilings. As the water's surface drops, piers can be damaged by boats or ships straining at or breaking their mooring lines. The vessels can overturn or sink due to strong currents, collisions with other objects, or impact with the harbor bottom.

Conversely, the first indication of a tsunami may be a rise in water level. The advancing tsunami may initially resemble a strong surge increasing the sea level like the rising tide, but the tsunami surge rises faster and does not stop at the shoreline. Even if the wave height appears to be small, 3 to 6 feet for example, the strength of the accompanying surge can be deadly. Waist-high surges can cause strong currents that float cars, small structures, and other debris. Boats and debris are often carried inland by the surge and left stranded when the water recedes.

At some locations, the advancing turbulent wave front will be the most destructive part of the wave. In other situations, the greatest damage will be caused by the outflow of water back to the sea between crests, sweeping all before it and undermining roads, buildings, bulkheads, and other structures. This outflow action can carry enormous amounts of highly damaging debris with it, resulting in further destruction. Ships and boats, unless moved away from shore, may be dashed against breakwaters, wharves, and other craft, or be washed ashore and left grounded after the withdrawal of the seawater.

### 16.1.1 TSUNAMI TYPES

Tsunamis are typically classified as local or distant. Locally generated tsunamis have minimal warning times, leaving few options except to run to high ground. They may be accompanied by damage resulting from the triggering earthquake due to ground shaking, surface faulting, liquefaction, or landslides. Distant tsunamis may travel for hours before striking a coastline, giving a community a chance to implement evacuation plans.

#### *Local Source*

Local tsunami sources, like large offshore faults and massive submarine landslides, can put adjacent coastal communities at the greatest risk because the public must respond quickly with little or no official guidance. The time between the earthquake that generates the tsunami and the first wave coming ashore can be as little as 10-20 minutes, certainly not enough time for a full response.

#### *Distant Source*

A tsunami caused by an exceptionally large earthquake elsewhere on the Pacific Rim could reach the California coast many hours (4-15) after the earthquake. Scientific equipment from across the globe is able to measure the earthquake, and the amplitude and speed of a resulting tsunami, thus adequate warning and response can be accomplished through proper planning and exercising.

## 16.2 HAZARD PROFILE

### 16.2.1 HISTORY

As shown in *Table 16-1*, ten observed tsunamis generated waves in Monterey County. Almost all of the tsunamis were produced by earthquakes and resulted in wave run-ups of 1 meter or less. In Monterey County, two earthquakes have caused recorded tsunami run-up heights that exceeded 1 meter. The 1960 Chilean Earthquake of estimated magnitude 9.5 (largest ever recorded) caused a 1.1-meter run-up-and killed one person, while the slightly smaller but nearer 1964 Alaska earthquake of magnitude 9.2 caused a 1.4-meter run up and significant boat damage at harbors in the Monterey Bay area.

In 1989, the magnitude 6.9 Loma Prieta earthquake, which was centered inland on the San Andreas fault in the Santa Cruz Mountains, triggered a small to moderate landslide offshore in Monterey Canyon. This caused a 1-foot tsunami measured at the tide gauge in Monterey. In 2011, a tsunami caused by an earthquake off the coast of Japan created large and rapid changes in water level (up to 6 feet) at Moss Landing, causing large volumes of water to rush in and out of the north and south harbor areas. This ebbing and flowing combined with large sediment transport resulted in shear stresses on dock structures in the harbor, causing approximately $1.5 million in damages to 220 timber dock piles.

**Table 16-1**
**Historic Monterey County Tsunami Events**

| Date | Origin | Cause | Location of Effects | Wave Run-Up | Damage |
|---|---|---|---|---|---|
| 04/01/1946 | Aleutian Islands | Earthquake (M8.8) | Monterey, Pacific Grove | 3-5 feet | Slight turbulence, localized flooding |
| 03/09/1957 | Aleutian Islands | Earthquake (M8.6) | Monterey | 2 feet | No damage |
| 05/22/1960 | Chile | Earthquake (M9.5) | Monterey, Moss Landing, Pacific Grove | 2-4 feet | Severe currents, seawall submerged, no damage |
| 03/28/1964 | Alaska | Earthquake (M9.2) | Monterey, Moss Landing, Pacific Grove | 5-8 feet | Strong currents, boats damaged, minor damage to utilities |
| 10/18/1989 | Northern California | Earthquake (M6.9) | Monterey, Moss Landing | 1-3 feet | No damage |
| 02/27/2010 | Chile | Earthquake (M8.8) | Monterey | 1 foot | No damage |
| 03/11/2011 | Japan | Earthquake (M9.0) | Monterey, Moss Landing | 2-6 feet | $1.5 million in damages to dock piles in Moss Landing Harbor |
| 01/15/2022 | Tonga | Volcano | Monterey, Moss Landing, Pacific Grove | 2-3 feet | TBD |

### 16.2.2 LOCATION

The entire coastal area of Monterey County is susceptible to a tsunami. The Big Sur coast is less susceptible to significant tsunami run-up due to the rugged and steep cliffs of the coastal mountains. However, the coastal low-lying areas and riverine valleys to the north are highly susceptible to tsunamis.

If a large enough earthquake occurs in the Monterey Bay and produces a tsunami it would reach the shore in a matter of minutes. The San Gregorio Fault, which runs more or less parallel to the coastline, is the likeliest point of origin for a near-shore tsunami event. Although not generally considered a fault capable of producing a “mega-earthquake” (>8.0), it is capable of a large enough earthquake that could trigger an offshore landslide in a submarine canyon in the Monterey Bay. If an event such as this were to occur, any potentially resulting tsunami would reach shore in less than 30 minutes, and possibly as little as 10 minutes.

A tsunami caused by an exceptionally large earthquake elsewhere on the Pacific Rim could reach the California coast many hours (4-15) after the earthquake. A thrust-type earthquake

(vertical displacement) is more likely to produce a tsunami than an earthquake from a lateral strike-slip fault, such as the San Andreas. Because of this, subduction zones, where dense oceanic crust burrows underneath less-dense continental crust, are more likely to produce a large tsunami.

Perhaps the most likely source for a significant tsunami exceeding 1 meter in run-up height would be from a rupture along the Cascadia Subduction zone in the Pacific Northwest, which evidence indicates has not had a major rupture since 1700 and could produce an earthquake in the Richter magnitude 9.0 range. The Aleutian Islands and Gulf of Alaska are also capable of producing large offshore earthquakes that may produce large tsunamis.

Since large tsunamis are infrequent and the likelihood that the largest potential tsunamis have not yet occurred in Monterey County, the state tsunami program developed a suite of maximum credible tsunami scenarios as part of their tsunami inundation mapping project for local evacuation planning. The general tsunami wave heights (flow depths) for key locations from these scenarios are provided in *Table 16-2*, *Table 16-3*, and *Table 16-4*.[66]

*NOTE*: The projections do not include any adjustments for ambient conditions, such as storm surge and tidal fluctuations, and model error (it is important to note this difference, as those numbers can increase the projected water height during an event).

**Table 16-2**
**Tsunami Source Scenario Model Results- North County**

| Tsunami Source | Travel Time | Location- Near Shore Tsunami Heights *Feet Above Mean Sea Level* | | | | |
|---|---|---|---|---|---|---|
| | | Pajaro River | Moss Landing | Salinas River | Marina | Sand City |
| Monterey Canyon Landslide | 10-15 min | 7 | 5 | 8 | 14 | 7 |
| M9 Cascadia- Full Rupture | 1hr | 4 | 3 | | | 4 |
| M9.2 Alaska 1964 EQ | 5hr | 10 | 7 | 7 | 6 | 10 |
| M8.9 Central Aleutians I | 5hr | 7 | 5 | 7 | 6 | 6 |
| M8.9 Central Aleutians II | 5hr | 4 | 3 | | | 4 |
| M9.2 Central Aleutians III | 5hr | 12 | 10 | 12 | 12 | 12 |
| M8.8 Kuril Islands II | 9hr | 3 | 3 | | | 3 |
| M8.8 Kuril Islands III | 9hr | 3 | 3 | | | 4 |
| M8.8 Kuril Islands IV | 9hr | 4 | 3 | | | 3 |
| M8.8 Japan II | 10hr | 3 | 3 | | | 4 |
| M.8.6 Marianas Trench | 11hr | 4 | 2 | 3 | 2 | 3 |
| M9.5 Chile 1960 EQ | 13hr | 4 | 3 | | | 4 |
| M9.4 Chile North | 13hr | 7 | 3 | | | 5 |
| **Maximum Runup- Local Source** | | 8 | 6 | 9 | 15 | 8 |
| **Maximum Runup- Distant Source** | | 13 | 11 | 12 | 13 | 13 |

[66] Monterey County Tsunami Playbook

**Table 16-3**
**Tsunami Source Scenario Model Results- Monterey**

| Tsunami Source | Travel Time | Location- Near Shore Tsunami Heights *Feet Above Mean Sea Level* | | |
|---|---|---|---|---|
| | | Monterey - Marina | Monterey - Aquarium | Monterey - Point Pinos |
| Monterey Canyon Landslide | 10-15 min | 7 | 17 | 16 |
| M9 Cascadia- Full Rupture | 1hr | 4 | 3 | 3 |
| M9.2 Alaska 1964 EQ | 5hr | 10 | 8 | 7 |
| M8.9 Central Aleutians I | 5hr | 6 | 5 | 4 |
| M8.9 Central Aleutians II | 5hr | 3 | 3 | 3 |
| M9.2 Central Aleutians III | 5hr | 12 | 9 | 7 |
| M8.8 Kuril Islands II | 9hr | 2 | 2 | 2 |
| M8.8 Kuril Islands III | 9hr | 4 | 3 | 3 |
| M8.8 Kuril Islands IV | 9hr | 3 | 3 | 3 |
| M8.8 Japan II | 10hr | 4 | 3 | 3 |
| M.8.6 Marianas Trench | 11hr | 3 | 2 | 2 |
| M9.5 Chile 1960 EQ | 13hr | 4 | 3 | 3 |
| M9.4 Chile North | 13hr | 5 | 4 | 3 |
| **Maximum Runup- Local Source** | | 8 | 18 | 17 |
| **Maximum Runup- Distant Source** | | 13 | 10 | 8 |

**Table 16-4**
**Tsunami Source Scenario Model Results- South County**

| Tsunami Source | Travel Time | Location- Near Shore Tsunami Heights *Feet Above Mean Sea Level* | | |
|---|---|---|---|---|
| | | Cypress Point | Carmel | Monastery Beach |
| Monterey Canyon Landslide | 10-15 min | 13 | 4 | 4 |
| M9 Cascadia- Full Rupture | 1hr | 3 | 3 | 2 |
| M9.2 Alaska 1964 EQ | 5hr | 7 | 8 | 7 |
| M8.9 Central Aleutians I | 5hr | 5 | 6 | 5 |
| M8.9 Central Aleutians II | 5hr | 3 | 3 | 3 |
| M9.2 Central Aleutians III | 5hr | 9 | 10 | 9 |
| M8.8 Kuril Islands II | 9hr | 2 | 2 | 2 |
| M8.8 Kuril Islands III | 9hr | 3 | 3 | 3 |
| M8.8 Kuril Islands IV | 9hr | 3 | 3 | 3 |
| M8.8 Japan II | 10hr | 3 | 3 | 3 |
| M.8.6 Marianas Trench | 11hr | 2 | 2 | 2 |
| M9.5 Chile 1960 EQ | 13hr | 3 | 3 | 3 |
| M9.4 Chile North | 13hr | 3 | 3 | 3 |
| **Maximum Runup- Local Source** | | 14 | 4 | 4 |
| **Maximum Runup- Distant Source** | | 10 | 12 | 11 |

### 16.2.3 FREQUENCY

The frequency of tsunamis is related to the frequency of the events that cause them, so it is similar to the frequency of seismic activity or landslides. As noted above, Monterey County has experienced 10 notable tsunamis over the past 100 years and has been impacted significantly by one. Although these numbers could be averaged to generate an expected occurrence rate, there have been as few as 1 and as many as 45 years in between events, and an averaged recurrence interval would not be meaningful. For the purposes of this plan, the probability that Monterey County will experience a tsunami has been estimated to be possible, averaging a 1-foot to 11-foot wave run-up for all coastal and low-lying areas within the county.

### 16.2.4 SEVERITY

Tsunamis are a threat to life and property to anyone living near the ocean, but the impact of a tsunami can vary widely. The tsunami's size and speed, as well as the coastal area's form and depth, affect the impact of a tsunami. A small tsunami may result in unusual tides or currents that can be dangerous to swimmers or cause damage to berthed boats. Powerful tsunamis, such as the one that struck Southeast Asia in December 2004, can level structures, and result in significant loss of human life. Tsunami waves can persist for many hours because of complex interactions with the coast. Large tsunamis cause strong rips and currents in oceans around the world for up to a few days after the initiating earthquake.

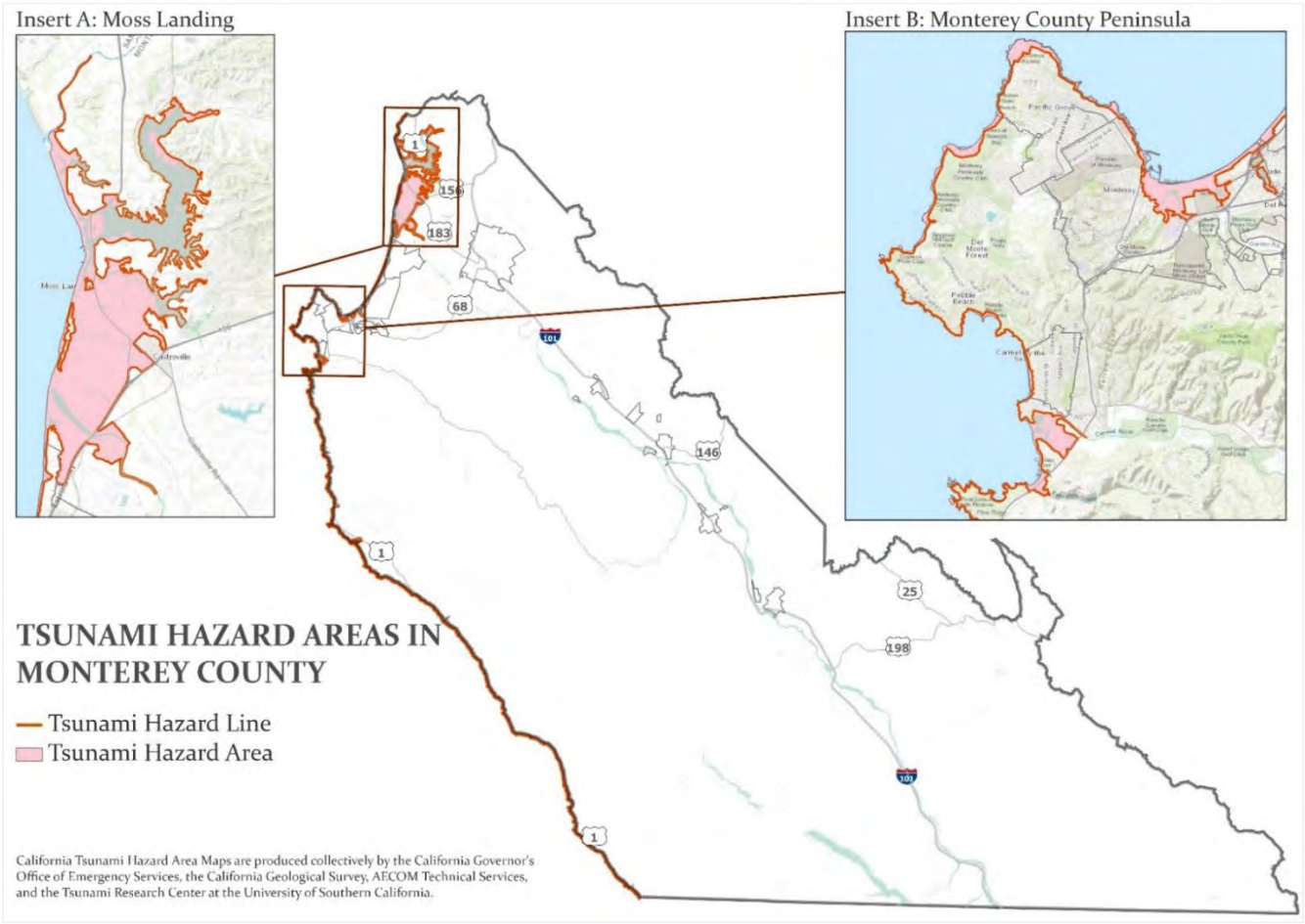
When they strike land, most tsunamis are less than 10 feet high, but in extreme cases, they can exceed 100 feet near their source. A tsunami may come onshore like a fast-rising flood or a wall of turbulent water, and a large tsunami can flood low-lying coastal areas more than a mile inland. Rushing water from waves, floods, and rivers is incredibly powerful. Just six inches of fast-moving water can knock adults off their feet, and twelve inches can carry away a small car. Tsunamis can be particularly destructive because of their speed and volume. They are also dangerous as they return to the sea, carrying debris and people with them. Harbors in particular are vulnerable to damage from strong tsunami currents, potential damage includes:

- Sudden and significant water-level fluctuations can cause boats and docks to hit bottom (grounded) as water levels drop, and docks to overtop piles as water levels rise
- Strong and unpredictable currents can occur, especially where there are narrow passages, channels, or harbor openings, or other natural or man-made structures that form constrictions
- Tsunami-induced bores, seiches, and amplified waves can cause swamping of boats and damage to docks
- Eddies/whirlpools can cause boats to break their moorings and float uncontrolled
- Drag on deep draught boats can cause damaging forces to the docks they are moored to
- Free floating boats, docks, and/or debris in the water can damage structures and infrastructures in the harbor

- Dangerous tsunami conditions which may potentially last tens of hours after first wave arrival, can cause problems for inexperienced and unprepared boaters who may try to move their boats within harbors, take their boats offshore, or reenter the harbor during a tsunami
- Sediment movement from both erosion and deposition can create hazards to navigation
- Environmental issues with debris and contaminants in the water can slow/delay recovery efforts for long periods of time

Overall, the County could see moderate impacts from a tsunami originating in the Pacific Ocean. This could have severe impacts, and the resulting floodwater waves can carry damaging debris and inundate homes, businesses, and government buildings. *Figure 16-1* shows the tsunami inundation zones in Monterey County, which demonstrates the extent of potential impacts from a tsunami.

**Figure 16-1**
**Tsunami Hazard Areas in Monterey County**



### 16.2.5 WARNING TIME

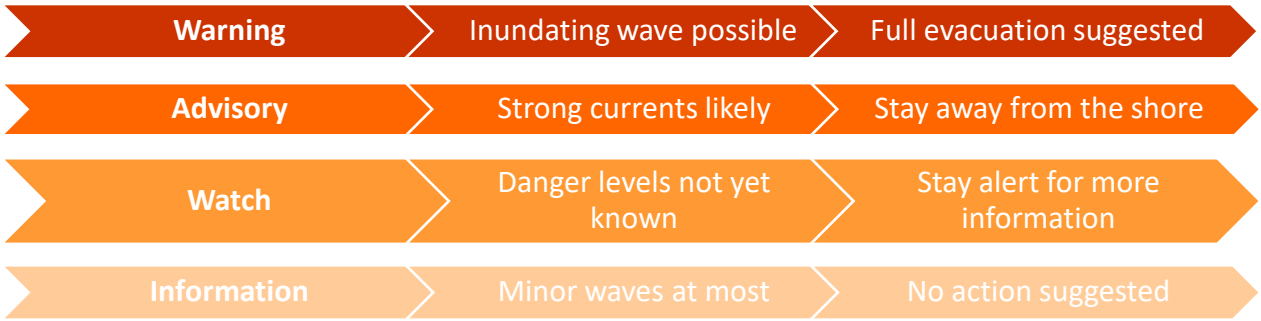
There are two ways to identify if a tsunami may be coming: natural warning and official warning. Strong ground shaking, a loud ocean roar, or the water receding unusually far exposing the sea floor are all nature's warnings that a tsunami may be coming. If any of these warning signs are observed, the public should immediately go to higher ground. A tsunami may arrive within minutes and may last for eight hours or longer. The public should be instructed to stay away from coastal areas until officials announce that it is safe to return.

Official warnings are issues by the National Tsunami Warning Center (NTWC), which provides information about the tsunami in "bulletins" to the state and local jurisdictions. These bulletins include information about the tsunami source, typically an earthquake (location, depth, magnitude), and forecasts about the impending tsunami itself (alert level, first arrival, maximum amplitudes, or wave height). The National Tsunami Warning Center (NTWC) in Palmer, AK, is the primary warning center for the California coastline and issues four types of tsunami statements, these four levels of "alert" are (from least to greatest significance):

- **Tsunami Information Statement**: Issued to inform and update emergency managers and the public that an earthquake has occurred, or that a tsunami Watch, Advisory or Warning has been issued elsewhere in the ocean.
- **Tsunami Watch:** Issued to alert emergency managers and the public of an event which may later impact the Watch area. May be upgraded to an Advisory or Warning - or canceled - based on updated information and analysis.
- **Tsunami Advisory:** Issued due to the threat of a tsunami which may produce strong currents or waves dangerous to those in or near the water; typically called when forecasted tsunami amplitudes between 0.3m and 1m (1ft and 3ft) above existing tidal conditions are expected. Coastal communities are advised that beach and harbor areas could expect rapid, moderate tidal changes and strong currents.
- **Tsunami Warning:** Issued when a tsunami with significant widespread inundation is imminent or expected; typically called when forecasted tsunami amplitudes are equal to or greater than 1m (3ft). Coastal communities are advised to evacuate people from low-lying areas identified as vulnerable to tsunamis.

It is important to note that Tsunami Advisories and Warnings are situations where coastal emergency managers and harbor masters are recommended to take action to protect lives and property, including limiting access to beaches or waterfront areas to full evacuation of the local official evacuation zone identified in their emergency response plans. While the potential for disaster exists with a Tsunami Watch, the situation is truly unknown at the time a watch is issued. The public is only asked to monitor the situation in case an advisory or warning may be issued at a later time.

The following actions and impacts are recommended based on the type of tsunami alert that is issued:




This official alert system is not considered to be effective for communities close to the tsunami source, because the first wave would arrive before the data can be processed and analyzed, and communications systems may be impacted by the precipitating event. In this case, strong ground shaking would provide the first warning of a potential tsunami and evacuations should begin immediately.

## 16.3 SECONDARY HAZARDS

A tsunami is always a secondary hazard because it requires an earthquake or landslide to displace a vast volume of water. Secondary hazards can trigger tertiary hazards, for example in 2011 Japan experienced a triple disaster, a subduction zone earthquake with a magnitude of 9.0 that triggered the devastating tsunami which in turn caused a cooling system failure at the Fukushima Nuclear plant.

Additionally, evacuation routes could be blocked as a result of the source of the tsunami such as landslides, power lines, or other debris. People could be trapped in damaged buildings along the waterfront and not be able to evacuate before a tsunami arrives.

## 16.4 RISK ASSESSMENT

### 16.4.1 POPULATION

In Monterey County, as seen, in *Table 16-5*, close to 8,000 people are exposed to tsunami inundation areas.

**Table 16-5**
**Population in Tsunami Inundation Zone**

| Supervisorial District | Population |
|---|---|
| District 1 | 0 |
| District 2 | 3,725 |
| District 3 | 0 |
| District 4 | 122 |
| District 5 | 3,740 |
| **Total** | 7,587 |

### 16.4.2 PROPERTY

As seen in *Table 16-6*, in Monterey County, about 850 residential properties, close to $2 billion in residential property value, is located in tsunami inundation areas.

**Table 16-6**
**Residential Property in Tsunami Inundation Zone**

| Supervisorial District | Number of Properties | Property Value |
|---|---|---|
| District 1 | 0 | $0 |
| District 2 | 232 | $151,714,929 |
| District 3 | 0 | $0 |
| District 4 | 3 | $735,480 |
| District 5 | 610 | $1,784,859,471 |
| **Total** | 845 | 1,937,309,880 |

Summarized in *Table 16-7*, about 3,500 non-residential properties, close to $1.5 billion in value is located in tsunami inundation areas.

**Table 16-7**
**Non-Residential Property in Tsunami Inundation Zone**

| Supervisorial District | Number of Properties | Property Value |
|---|---|---|
| District 1 | 0 | $0 |
| District 2 | 1,661 | $255,042,798 |
| District 3 | 0 | $0 |
| District 4 | 183 | $219,994,034 |
| District 5 | 1,718 | $1,050,596,597 |
| **Total** | 3,562 | $1,525,633,429 |

### 16.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

Roads are the primary resource for evacuation to higher ground before and during a tsunami event. Roads also can serve as flood control facilities for low depth, low velocity floods by acting as levees or berms and diverting or containing flood flows. The major road in the County that intersect tsunami inundation areas is Highway 1. This is a major road that may be impacted by a tsunami, based on exposure; it is NOT an evacuation route for tsunami events. Evacuation routes are identified in emergency response plans in effect within the County. Bridges exposed to tsunami events can be extremely vulnerable to forces transmitted by wave run-up and by debris carried by the wave action. Additionally, a tsunami would impact and damage the infrastructure and equipment in the Monterey and Moss Landing Harbors.

Water and sewer systems can be affected by the flooding associated with tsunami events. Floodwaters can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized urban flooding. Floodwaters can get into

drinking water supplies, causing contamination. Sewer systems can be backed up, causing waste to spill into homes, neighborhoods, rivers, and streams. Tsunami waves can knock down power lines and radio/cellular communication towers. Power generation facilities can be severely impacted by wave action and by inundation from floodwater.

*Table 16-8* summarizes critical infrastructure in the mapped tsunami inundation zone in Monterey County.

**Table 16-8**
**Critical Infrastructure in Tsunami Inundation Zone in Monterey County**

| Critical Infrastructure Type | Tsunami Inundation Zone |
|---|---|
| **Facilities** | |
| Emergency Response | 0 |
| Fire Station | 0 |
| Police Station | 0 |
| Medical Facilities | 0 |
| Military Facility | 0 |
| Large Public Facilities | 0 |
| Educational Facilities | 2 |
| Power Plant | 0 |
| Water & Wastewater Facilities | 10 |
| Stormwater Facilities | 1 |
| Government Facilities | 0 |
| Communication Facilities | 7 |
| Rain Gauges | 2 |
| Lighthouses | 0 |
| Dams | 0 |
| **Hazardous Materials** | |
| Active or Idle Oil Well | 3 |
| Landfill | 0 |
| Underground Tank | 0 |
| Cal ARP Facility | 0 |
| **Transportation** | |
| Airport | 0 |
| Bridge | 7 |
| Harbor | 2 |
| Highway/Freeway (Miles) | 0 |
| Driveway (Miles) | 0 |
| Major Road (Miles) | 9 |
| Local (Miles) | 10 |
| Railroad (Miles) | 4 |

### 16.4.4 ENVIRONMENT

Inundation of water by tsunami and introduction of foreign debris could be hazardous to the environment. All wildlife inhabiting the inundation area is exposed. The vulnerability of aquatic habit and associated ecosystems would be highest in low-lying areas of the Monterey Bay coastline and the protected wetland habitats in the Elkhorn and Moro Cojo Slough. Tsunami waves can carry destructive debris and pollutants that can devastate the environment. Millions of dollars spent on habitat restoration and conservation in Monterey County could be wiped out by one significant tsunami. There are currently no tools available to measure these impacts. However, the potential financial impact of a tsunami event on the environment could equal or exceed the impact on property. Community planners and emergency managers should take this into account when preparing for the tsunami hazard and considering future development.

### 16.4.5 ECONOMIC IMPACT

A tsunami along the coast of Monterey could have an impact on the tourism industry, which is the second largest industry in the County. A tsunami could also impact coastal dependent industries such as harbors, marine sciences, and commercial fishing, as well as effect agricultural operations near the coast.

## 16.5 FUTURE TRENDS IN DEVELOPMENT

Future development is possible in tsunami inundation zones, but it is likely to be limited due to already regulated flood risk in the areas at risk to tsunami inundation.

## 16.6 ISSUES

Important issues associated with a tsunami in the County include the following:

- As tsunami warning technologies evolve, the tsunami warning capability within Monterey County will need to be enhanced to provide the highest degree of warning.
- With the possibility of climate change, the issue of sea level rise may become an important consideration as tsunami inundation areas are identified through future studies.
- Lack of understanding of inundation areas has resulted in over self-evacuation; in past incidents people have self-evacuated to the City of Salinas. Further public information and socialization of tsunami risks may be required.
- Special attention will need to be focused on the vulnerable communities in the tsunami zone and on hazard mitigation through public education and outreach.

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# 17. UTILITY INTERRUPTION

## 17.1 OVERVIEW

Utility interruptions are electrical, natural gas, sewage, telecommunication, or water failures or interruptions that affect people.

### *Power Failure*

A power failure is any interruption or loss of electrical service due to disruption of power generation or transmission caused by an accident, sabotage, natural hazards, equipment failure, or fuel shortage. These interruptions can last anywhere from a few seconds to several days. Power failures are considered significant only if the local emergency management organization is required to coordinate basic services such as the provision of food, water, and heating as a result. Power failures are common with severe weather and winter storm activity. Pacific Gas and Electric (PG&E) is responsible for operating and maintaining the electrical transmission and distribution system in the County.

The scope and scale of electrical power disruption impacts will vary based on how widespread the disruption is, when and where it occurs, its duration, its cause, the characteristics of the affected population and region, and other concurrent emergencies. While the electric power industry does not have a universal agreement for classifying disruptions, it is important to recognize that different types of outages are possible, so that plans may be made to handle them effectively. Electric power disruptions can generally be grouped into two categories:

- **Intentional Electrical Disruptions**: Some disruptions are purposefully done to upgrade, fix, or protect electrical power systems and/or the surrounding area. Intentional power

disruptions can be scheduled or done without notice and can last several minutes to several days; when possible, the electrical service provider will give the Operational Area and its customers advance notice of the disruption.

- **Unintentional Electrical Disruptions**: Unintentional disruptions are not done purposefully, range in duration and often occur without notice. These types of disruptions include:
    - Accidents by the utility provider, contractor, or others
    - Malfunctions or equipment failures, due, for example, to age, improper operation, excessive operation, or manufacturing defect
    - Overloads on either the utility's equipment or a customer's equipment
    - Equipment that cannot operate within its design criteria (known as reduced capability)
    - Tree contact
    - Vandalism or intentional damage
    - Disasters, such as extreme weather/winds, earthquakes, floods, and wildfires

**Load Shedding:** Load Shedding occurs when the power system is under extreme stress, due to heavy demand and/or failure of critical components, the electrical service provider may interrupt or cut service (or load) to select customers to prevent the entire system from collapsing. This can be done with or without warning.

**Public Safety Power Shutoff (PSPS):** The State's investor-owned electric utilities, including Pacific Gas and Electric Company (PG&E), may shut off electric power, referred to as "de-energization" or Public Safety Power Shut-offs (PSPS), to protect public safety under California law, specifically California Public Utilities Code (PU Code) Sections 451 and 399.2(a). This is done to reduce the chance of fire ignition in high fire threat areas. PG&E has stated they may de-energize, or shutoff power, to electrical grids or blocks of areas in advance of or during periods of heightened risk of wildland fires. In these instances, power will remain out for as long as extreme and dangerous conditions pose a potential fire risk and until PG&E can inspect and repair power lines and equipment. Once the electrical service provider deems it is safe to do so, power will be systematically restored.

### *Water or Wastewater Disruption*

Water or wastewater disruption is a secondary impact from a natural disaster or intentional act. A breach in the pipelines that carry water through the County would have significant temporary impacts until alternative water sources are pumped and treated. Long-term disruption would have significant impacts on residences and businesses in the planning area if demand exceeds secondary supplies and water conservation measures do not provide enough relief to reduce demand to equal the secondary supplies.

Disruption of the County’s wastewater collection and wastewater treatment plants would have significant regional impacts. Such disruption could result if the system were to be overwhelmed by a significant storm or discharge of materials in such quantities that the treatment plant could not adequately treat the waste. Natural hazards such as earthquake or flood, major power

outages, or terrorism directed at the facilities and systems could disrupt the process of collecting and treating millions of gallons of sewage. Wastewater treatment plants may also have emergencies internal to the plant such as oxygen deficiencies that render them incapable of treating waste. The disruption of service may also have significant environmental impacts on the waterways adjacent to the treatment plants.

#### *Data and Telecommunications Interruptions*

The loss of data or telecommunications is often a secondary hazard to natural and other human-caused hazards. Data and telecommunications provide a primary method for service to the community by the government and the private sector. A loss of data and telecommunications could result in loss of emergency dispatch capabilities, emergency planning services, infrastructure monitoring capabilities, access to statistical data, and access to financial and personnel records.

#### *Pipeline Interruptions*

Pipelines are often considered the safest and most reliable way to transport natural gas, crude oil, liquid petroleum products, and chemical products, but there is still an inherent risk due to the nature of the hazardous materials. Failures of pipelines can occur when pipes corrode, are damaged during excavation, are incorrectly operated, or are damaged by other forces.

Intra-state liquid petroleum pipelines are regulated by the Office of the State Fire Marshal Pipeline Safety Division. Natural gas pipelines are regulated by the California Public Utilities Commission. Pipelines are also monitored by supervisory control and data acquisition systems that measure flow rate, temperature, and pressure. These systems transfer real-time data via satellite from the pipelines to a control center where valves, pumps, and motors are remotely operated. If tampering with the pipeline occurs, an alarm will sound. The ensuing valve reaction is instantaneous, with the system isolating any rupture and setting off a chain reaction that shuts down pipeline pumps and alerts pipeline operators within seconds.

Transmission pipelines and distribution pipelines provide different services. Transmission pipelines transport raw material for further refinement. These pipes are large and far reaching, operating under high pressure. Distribution pipelines provide processed materials to end users. These are smaller in diameter, some as small as a half an inch, and operate under lower pressure. More serious accidents occur on distribution pipelines than on any other type due to their number, intricate networking, and location in highly populated areas.

### 17.1.1 SPACE WEATHER

All weather on Earth, from the surface of the planet into space, is influenced by the small changes the sun undergoes during its solar cycle. These variations are referred to as space weather. Sudden bursts of plasma and magnetic field structures from the sun's atmosphere—called coronal mass ejections—together with sudden bursts of radiation, or solar flares, all cause weather effects on Earth. Extreme space weather can cause damage to critical infrastructure, especially the electric grid. It can produce electromagnetic fields that induce

extreme currents in wires, disrupting power lines, and even causing wide-spread blackouts. In severe cases, it produces solar energetic particles, which can damage satellites used for commercial communications, global positioning, intelligence gathering, and weather forecasting.

NOAA's Space Weather Prediction Center has developed space weather scales ranging from minor to extreme effects as a way to communicate to the general public the current and future space weather conditions and their possible effects on people and systems. Descriptions of three general NOAA classifications of space weather— geomagnetic storms, solar radiation storms and radio blackouts—are included in *Figure 17-1*. NOAA Space Weather Prediction Center studies have determined that different types of space weather may occur separately.

The most important impact the sun has on Earth is related to its brightness or irradiance. The sun produces energy in the form of photons of light. The variability of the sun's output is wavelength dependent:

- Most of the energy from the sun is emitted in the visible wavelengths. The output from the sun in these wavelengths is nearly constant and changes by only 0.1% over the course of the 11-year solar cycle.
- At ultraviolet or UV wavelengths, solar irradiance is more variable, with changes up to 15% over the course of the 11-year solar cycle. This has a significant impact on the absorption of energy by ozone and in the stratosphere.
- At still shorter wavelengths, like extreme ultraviolet, solar irradiance changes by 30 to 300% over a period of minutes. These wavelengths are absorbed in the upper atmosphere, so they have minimal impact on the climate of Earth.
- At the other end of the light spectrum, at infrared wavelengths, solar irradiance is very stable and only changes by a percent or less over the solar cycle.

Other types of space weather can impact the atmosphere. Energetic particles penetrating into the atmosphere can change chemical constituents. These changes in minor species such as nitrous oxide can have long lasting consequences in the upper and middle atmosphere; however, it has not been determined if these have a major impact on the Earth's climate.

Space weather (geomagnetic storms, solar radiation storms, solar flare radio blackouts, solar radio bursts, and cosmic radiation) can impact aviation operations at the Monterey Airport. Effects include degradation or loss of HF radio transmission and satellite navigation signals; navigation system disruptions; and avionics errors. Airport dispatchers use space weather forecasts for flight planning at high latitudes, especially for polar routes.

**Figure 17-1**

# NOAA Space Weather Scales

| Category | | Effect | Physical measure | Average Frequency (1 cycle = 11 years) |
|---|---|---|---|---|
| Scale | Descriptor | Duration of event will influence severity of effects | | |
| **Geomagnetic Storms** | | | Kp values* determined every 3 hours | Number of storm events when Kp level was met; (number of storm days) |
| G 5 | Extreme | Power systems: widespread voltage control problems and protective system problems can occur, some grid systems may experience complete collapse or blackouts. Transformers may experience damage. Spacecraft operations: may experience extensive surface charging, problems with orientation, uplink/downlink and tracking satellites. Other systems: pipeline currents can reach hundreds of amps, HF (high frequency) radio propagation may be impossible in many areas for one to two days, satellite navigation may be degraded for days, low-frequency radio navigation can be out for hours, and aurora has been seen as low as Florida and southern Texas (typically 40° geomagnetic lat.).** | Kp=9 | 4 per cycle (4 days per cycle) |
| G 4 | Severe | Power systems: possible widespread voltage control problems and some protective systems will mistakenly trip out key assets from the grid. Spacecraft operations: may experience surface charging and tracking problems, corrections may be needed for orientation problems. Other systems: induced pipeline currents affect preventive measures, HF radio propagation sporadic, satellite navigation degraded for hours, low-frequency radio navigation disrupted, and aurora has been seen as low as Alabama and northern California (typically 45° geomagnetic lat.).** | Kp=8 | 100 per cycle (60 days per cycle) |
| G 3 | Strong | Power systems: voltage corrections may be required, false alarms triggered on some protection devices. Spacecraft operations: surface charging may occur on satellite components, drag may increase on low-Earth-orbit satellites, and corrections may be needed for orientation problems. Other systems: intermittent satellite navigation and low-frequency radio navigation problems may occur, HF radio may be intermittent, and aurora has been seen as low as Illinois and Oregon (typically 50° geomagnetic lat.).** | Kp=7 | 200 per cycle (130 days per cycle) |
| G 2 | Moderate | Power systems: high-latitude power systems may experience voltage alarms, long-duration storms may cause transformer damage. Spacecraft operations: corrective actions to orientation may be required by ground control; possible changes in drag affect orbit predictions. Other systems: HF radio propagation can fade at higher latitudes, and aurora has been seen as low as New York and Idaho (typically 55° geomagnetic lat.).** | Kp=6 | 600 per cycle (360 days per cycle) |
| G 1 | Minor | Power systems: weak power grid fluctuations can occur. Spacecraft operations: minor impact on satellite operations possible. Other systems: migratory animals are affected at this and higher levels; aurora is commonly visible at high latitudes (northern Michigan and Maine).** | Kp=5 | 1700 per cycle (900 days per cycle) |

* Based on this measure, but other physical measures are also considered.
** For specific locations around the globe, use geomagnetic latitude to determine likely sightings (see www.swpc.noaa.gov/Aurora)

| **Solar Radiation Storms** | | | Flux level of ≥ 10 MeV particles (ions)* | Number of events when flux level was met** |
|---|---|---|---|---|
| S 5 | Extreme | Biological: unavoidable high radiation hazard to astronauts on EVA (extra-vehicular activity); passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk. *** Satellite operations: satellites may be rendered useless, memory impacts can cause loss of control, may cause serious noise in image data, star-trackers may be unable to locate sources; permanent damage to solar panels possible. Other systems: complete blackout of HF (high frequency) communications possible through the polar regions, and position errors make navigation operations extremely difficult. | $10^5$ | Fewer than 1 per cycle |
| S 4 | Severe | Biological: unavoidable radiation hazard to astronauts on EVA; passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk.*** Satellite operations: may experience memory device problems and noise on imaging systems; star-tracker problems may cause orientation problems, and solar panel efficiency can be degraded. Other systems: blackout of HF radio communications through the polar regions and increased navigation errors over several days are likely. | $10^4$ | 3 per cycle |
| S 3 | Strong | Biological: radiation hazard avoidance recommended for astronauts on EVA; passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk.*** Satellite operations: single-event upsets, noise in imaging systems, and slight reduction of efficiency in solar panel are likely. Other systems: degraded HF radio propagation through the polar regions and navigation position errors likely. | $10^3$ | 10 per cycle |
| S 2 | Moderate | Biological: passengers and crew in high-flying aircraft at high latitudes may be exposed to elevated radiation risk.*** Satellite operations: infrequent single-event upsets possible. Other systems: effects on HF propagation through the polar regions, and navigation at polar cap locations possibly affected. | $10^2$ | 25 per cycle |
| S1 | Minor | Biological: none. Satellite operations: none. Other systems: minor impacts on HF radio in the polar regions. | 10 | 50 per cycle |

* Flux levels are 5 minute averages. Flux in particles·$s^{-1}$·$ster^{-1}$·$cm^{-2}$ Based on this measure, but other physical measures are also considered.
** These events can last more than one day.
*** High energy particle (>100 MeV) are a better indicator of radiation risk to passenger and crews. Pregnant women are particularly susceptible.

# NOAA Space Weather Scales

| Category | | Effect | Physical measure | Average Frequency (1 cycle = 11 years) |
|---|---|---|---|---|
| **Radio Blackouts** | | | GOES X-ray peak brightness by class and by flux* | Number of events when flux level was met; (number of storm days) |
| **R 5** | Extreme | HF Radio: Complete HF (high frequency**) radio blackout on the entire sunlit side of the Earth lasting for a number of hours. This results in no HF radio contact with mariners and en route aviators in this sector. Navigation: Low-frequency navigation signals used by maritime and general aviation systems experience outages on the sunlit side of the Earth for many hours, causing loss in positioning. Increased satellite navigation errors in positioning for several hours on the sunlit side of Earth, which may spread into the night side. | X20 ($2x10^{-3}$) | Fewer than 1 per cycle |
| **R 4** | Severe | HF Radio: HF radio communication blackout on most of the sunlit side of Earth for one to two hours. HF radio contact lost during this time. Navigation: Outages of low-frequency navigation signals cause increased error in positioning for one to two hours. Minor disruptions of satellite navigation possible on the sunlit side of Earth. | X10 ($10^{-3}$) | 8 per cycle (8 days per cycle) |
| **R 3** | Strong | HF Radio: Wide area blackout of HF radio communication, loss of radio contact for about an hour on sunlit side of Earth. Navigation: Low-frequency navigation signals degraded for about an hour. | X1 ($10^{-4}$) | 175 per cycle (140 days per cycle) |
| **R 2** | Moderate | HF Radio: Limited blackout of HF radio communication on sunlit side of the Earth, loss of radio contact for tens of minutes. Navigation: Degradation of low-frequency navigation signals for tens of minutes. | M5 ($5x10^{-5}$) | 350 per cycle (300 days per cycle) |
| **R 1** | Minor | HF Radio: Weak or minor degradation of HF radio communication on sunlit side of the Earth, occasional loss of radio contact. Navigation: Low-frequency navigation signals degraded for brief intervals. | M1 ($10^{-5}$) | 2000 per cycle (950 days per cycle) |

* Flux, measured in the 0.1-0.8 nm range, in $W \cdot m^{-2}$. Based on this measure, but other physical measures are also considered.
** Other frequencies may also be affected by these conditions.
URL: *www.swpc.noaa.gov/NOAAscales* April 7, 2011

## 17.2 HAZARD PROFILE

### 17.2.1 HISTORY

The Monterey County Emergency Operations Center (EOC) was activated for a PSPS in 2019. On October 26-29, 2019, Pacific Gas and Electric Company de-energized areas of incorporated and unincorporated Monterey County resulting in prolonged complete loss of electricity due to a Public Safety Power Shutoff (PSPS). Those impacted included:

- Customers De-Energized: 10,607 Total Customers
- 279 Medical Baseline Customers
- 79 Critical Facilities, including the Salinas Valley State Prison

During 2021, multiple utility interruptions occurred. The January 2021 atmospheric river event caused both telecommunications and power outages in the County. On August 5, 2021, the explosion of multiple transformers in the City of Soledad caused at one point in time, the loss of power to over 3,500 customers. On the same day, a car crash into a power pole caused outages in the City of Greenfield.

On August 15, 2021, over 2,500 customers in the Carmel Valley lost power due to unknown causes. From October 9-10, 2021, Pacific Gas and Electric Company de-energized areas of incorporated and unincorporated Monterey County resulting in prolonged complete loss of electricity due to a Public Safety Power Shutoff (PSPS). Around 850 customers lost power for some amount of time.

There have also been a number of telecommunications outages that have impacted County residents. In November of 2021, AT&T had a major fiber cut between Salinas and Gonzales,

which affected every AT&T provided service in South County, including the transport from cell sites to AT&T's backbone. AT&T's Big Sur cellular service was also affected since it connects at Greenfield.

### 17.2.2 LOCATION

Electrical generation, transmission, and distribution system are located throughout the County. Previous significant Public Safety Power Shutoff events have impacted Unincorporated Monterey County: Aromas, Gabilan Foothills, Carmel Valley, Chualar; and Incorporated Cities of Monterey County: City of Gonzales, City of Soledad, City of Greenfield.

#### *Space Weather*

Different types of space weather can affect different technologies in the County. Solar flares can produce strong x-rays that degrade or block high-frequency radio waves used for radio communication during events known as radio blackout storms. Solar energetic particles can penetrate satellite electronics and cause electrical failure. These energetic particles also block radio communications at high latitudes during solar radiation storms. Coronal mass ejections can cause geomagnetic storms on Earth and induce extra currents in the ground that can degrade power grid operations and modify the signal from radio navigation systems (GPS), causing accuracy to be degraded.

### 17.2.3 FREQUENCY

The frequency of utility failure and power interruption is likely to remain constant, but the length of time a utility is shut down should lessen in the future as more redundancies are built into infrastructure and utilities. In addition, leak detection sensors alert utilities to faults and failures more quickly.

#### *Space Weather*

Space weather events occur daily, but do not always affect residents in the County. They are all monitored and reported by NOAA’s Space Weather Prediction Center.

### 17.2.4 SEVERITY

The severity of utility failure and power interruptions varies too widely to be able to measure. Electricity, for example, may be out for a few hours to several weeks, depending on the cause of the event.

#### *Space Weather*

The severity of space weather can be far-reaching, as virtually all infrastructure and services depend on the electric power grid. Ground currents induced during geomagnetic storms can melt copper windings of transformers, which are the primary components of power distribution systems. Power lines traversing the County can pick up the currents and spread the problem over the entire area.

### 17.2.5 WARNING TIME

Utility failure and power interruptions occur at any time without warning. However, they usually are a secondary effect from a storm event, landslide, or human-caused issues.

*Space Weather*

Space weather prediction services in the United States are provided primarily by NOAA's Space Weather Prediction Center and the US Air Force's Weather Agency, which work closely together to address the needs of civilian and military user communities. The Space Weather Prediction Center draws on a variety of data sources, both space and ground-based, to provide forecasts, watches, warnings, alerts, and summaries as well as operational space weather products to civilian and commercial users.

## 17.3 SECONDARY HAZARDS

Utility losses can cause a reduction in employment and in wholesale and retail sales, require utility repairs, and increase medical risk. Local government may lose tax revenue, and the finances of private utility companies and the businesses that rely on them can be disrupted.

*Space Weather*

The most likely secondary impact of space weather on residents, businesses and visitors to the County is disruption of the electric power grid. Space weather can have an impact on advanced technologies, which has a direct impact on daily life.

## 17.4 RISK ASSESSMENT

### 17.4.1 POPULATION

All residents and visitors in the County are exposed to utility interruptions. This will continue as people are dependent on basic utility services such as electricity, water, wastewater, natural gas, etc. Utility disruptions can have both a direct impact on society and trigger or worsen disruptions to water, transportation, and other systems, that in turn may cause further societal impacts. Additional emergencies occurring during power disruptions can compound these effects and influence the timeline of restoration. Depending on the circumstances surrounding the incident, utility disruption can impact transportation/fuel, communications, housing, critical infrastructure, first response, and the economy.

*Space Weather*

Space weather exposure of the County's population is minimal. The main exposure is of satellite operations, HF radio communications, and the power grid that people use.

### 17.4.2 PROPERTY

All property throughout the County is exposed to some type of utility infrastructure failure.

*Space Weather*

It is unlikely that the impacts of space weather would have a negative impact on property and structures themselves, but a magnetic or black-out event caused by space weather, would affect public and private infrastructure systems.

### 17.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

All critical facilities and infrastructure that are operated by electricity are exposed to utility interruption and a space weather phenomenon. Damage to critical facilities can disrupt health care, fire and police services and impair search and rescue and emergency medical care.

### 17.4.4 ENVIRONMENT

The environment is usually not exposed to utility interruption unless it is a spill that contaminates water or open land or creates a wildfire that burns acres.

*Space Weather*

Migratory animals are exposed to geomagnetic storms associated with space weather.

### 17.4.5 ECONOMIC IMPACT

Utility losses could cause a reduction in employment and wholesale and retail sales, a need for utility repairs, and increased medical risks. Local governments might lose tax revenues, and the finances of private utility companies and the businesses that rely on them would be disrupted. Utility interruption can also affect agricultural production, which can have a large economic effect on Monterey County.

FEMA has developed standard loss-of-use estimates in conjunction with its benefit-cost analysis methodologies to estimate the cost of lost utilities on a per-person, per-use basis, as summarized in *Table 17-1*.

**Table 17-1**
**FEMA Standard Value for Loss of Service for Utilities and Roads/Bridges**

| Interruption | Total Economic Impact |
|---|---|
| Complete Loss of Electric Power | $126 per person per day |
| Complete Loss of Potable Water Service | $93 per person per day |
| Complete Loss of Wastewater Service | $41 per person per day |
| Complete Loss of Road/Bridge Service | $38.15 per vehicle per hour of vehicle delay; $0.55 per mile of vehicle delay (current mileage rate) |

Source: FEMA BCA Reference Guide, June 2009, Appendix C FEMA Standard Values

## 17.5 FUTURE TRENDS IN DEVELOPMENT

The likelihood of utility interruption in the future will continue as development and population growth continue in the County. The majority of utilities in the County are privately owned, and market forces are, as a rule, insufficient to induce needed investments in protection. Private organizational strategies and policies will need to work together to ensure reliable and resilient services for the long term.

## 17.6 ISSUES

Key issues associated with utility interruptions in Monterey County include:

- Heat-related equipment failures and electrical infrastructure igniting wildfires has resulted in unintentional and intentional rolling blackouts and power shutoffs throughout the County. Public Safety/ Utility Initiated Power Shut Offs to prevent wildfire ignition can have notably significant impacts due to the length of disruption time, limited efficacy of the strategy, and the effect on first responder capabilities.
- The economic impact of utility interruptions on industry, particularly the agricultural industry is a large concern in the County. Loss of power for more than a few hours can result in large economic losses.
- More vulnerable populations in isolated areas or who rely on medical devices are at increased risk during prolonged power outages.
- Extreme and prolonged heatwaves across the state increase the demand for use of the aging electrical grid significantly depleting electricity reserves resulting in blackouts. Heatwaves are expected to increase in intensity and magnitude due to climate change, which will likely exacerbate this problem.
- Monterey County has limited microgrids and reliance on the macro-grid makes the County vulnerable to rolling and prolonged power outages.

# 18. WILDFIRE

## 18.1 OVERVIEW

A wildfire is any uncontrolled fire occurring on undeveloped land that requires fire suppression. Wildfires can be caused by human activities (such as arson or campfires) or by natural events such as lightning. Wildfires are costly, putting lives and property at risk and compromising rivers and watersheds, open space, timber, range, recreational opportunities, wildlife habitats, historic and cultural areas assets, scenic assets, and local economies. Vulnerability to flooding increases due to the destruction of forest and ground cover within watersheds. The potential for significant damage to life and property increases in areas where development is adjacent to dense vegetation, known as wildland urban interface (WUI) areas.

Reported outcomes of wildfire typically include only those that are attributable to the physical fire itself; these outcomes largely occur during the fire event and within or near the wildfire perimeter. However, wildfires can also generate smoke plumes or increase the risk of post-wildfire landscape events such as erosion, debris flows, and flooding.

### 18.1.1 WILDFIRE PROTECTION RESPONSIBILITY AREAS

Local, state, tribal, and federal organizations all have legal and financial responsibility for wildfire protection. In many instances, two fire organizations have dual primary responsibility on the same parcel of land—one for wildfire protection and the other for structural fire protection. To address wildfire jurisdictional responsibilities, the California State Legislature outlined various wildfire responsibilities, described below, in Cal. Pub. Res.Code§4291.5 and Cal. Health & SafetyCode§13108.5. *Figure 18-1* shows the Fire Protection Responsibility areas

(Federal Responsibility Areas, State Responsibility Areas, and Local Responsibility Areas) in Monterey County.

### *Federal Responsibility Area (FRA)*

Federal Responsibility Areas (FRA) are fire-prone wildland areas that are owned or managed by a federal agency. Primary financial and rule-making jurisdictional authority rests with the federal land agency. In many instances, FRAs are interspersed with private land ownership or leases. Fire protection for developed private property is usually not the responsibility of the federal land management agency; structural protection responsibility is that of a local government agency.

The agencies that control federal lands within Monterey County include:

- US Forest Service: Los Padres National Forest
- National Park Service: Pinnacles National Park
- Dept. of Defense: Fort Hunter Liggett, Defense Language Institute, Presidio of Monterey
- Bureau of Land Management: Various
- California National Guard: Camp Roberts

### *State Responsibility Area (SRA)*

State Responsibility Areas (SRA) are lands in California where California Department of Forestry and Fire (CAL FIRE) has legal and financial responsibility for wildfire protection and administers fire hazard classifications and building standard regulations. SRAs include forested lands and land that is generally considered wildland. SRAs do not include incorporated cities or federal lands. CAL FIRE is responsible for carrying out the mandate for wildland fire protection within SRAs. The CAL FIRE San Benito-Monterey Unit (BEU) provides wildland fire protection to the 2.1 million acres of SRA land in the County.

The law also allows CAL FIRE to provide fire protection services to local communities under contract. When contracting to provide services, authority is delegated to CAL FIRE by the contracting agency. CAL FIRE will respond to reported fires and may provide EMS and other incident responses as contracted for. SRAs may overlap some or all of a special district's jurisdiction, as is the case in unincorporated Monterey County.

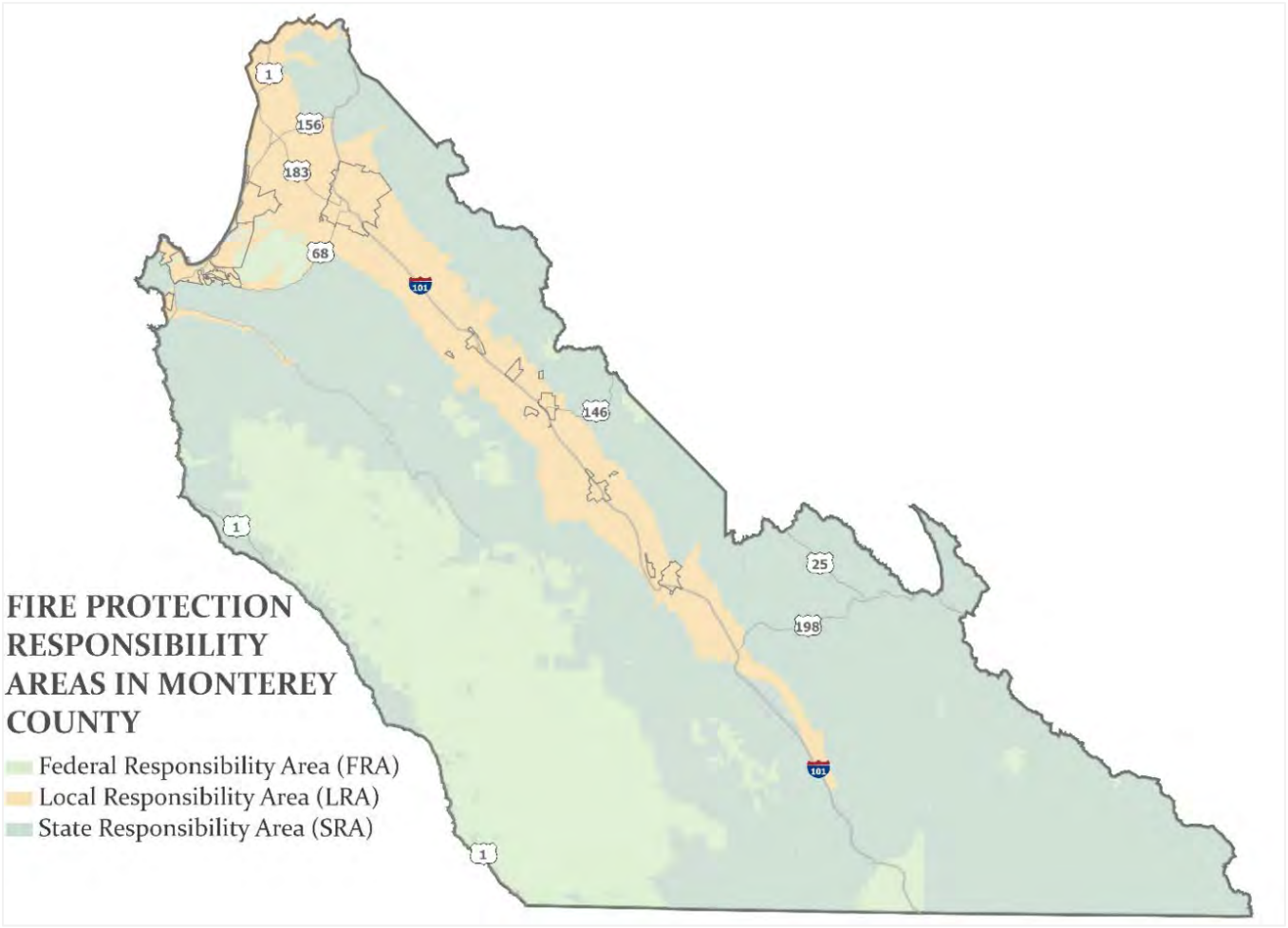
CAL FIRE BEU has Cooperative Fire Protection Agreements with the Pebble Beach Community Services District, the Cypress Fire Protection District, the Carmel Highlands Fire Protection District, the Aromas Tri-County Fire Protection District, the South Monterey County Fire Protection District, and the Soledad Fire Department. They have Dispatch Agreements with the Cachagua Fire Protection District and the Mid Coast Volunteer Fire Brigade.

### *Local Responsibility Area (LRA)*

Local Responsibility Areas (LRAs) include land in cities, cultivated agriculture lands, nonflammable areas in unincorporated areas, and lands that do not meet the criteria for SRA or FRA. LRA fire protection is typically provided by city fire departments, fire protection districts,

and counties, or by CAL FIRE under contract to local governments. LRAs may include flammable vegetation and wildland urban interface areas where the financial and jurisdictional responsibility for improvement and wildfire protection is that of a local government agency.

**Figure 18-1**
**Fire Protection Responsibility Areas in Monterey County**




## 18.1.2 FIRE PROTECTION DISTIRCTS AND AGENCIES

The special districts providing fire protection services cover about 1,497 square miles, almost half of the 3,281 square miles of land area in Monterey County.

*Table 18-1* summarizes the Fire Protection Districts and service areas of the Fire Protection Districts are mapped in *Figure 18-2*.

**Table 18-1**
**Fire Protection Districts in Monterey County**

| Fire Protection District | Estimated Area (Square Miles) | Estimated Population | Responding Agency | ISO Public Protection Classification |
|---|---|---|---|---|
| Aromas Tri-County Fire Protection District | 17.3 | 5,800 | CAL FIRE BEU | 4 / 4X |
| Big Sur Volunteer Fire Brigade | 254.0 | 4,350 | Big Sur Fire | 8 / 10 |
| Cachagua Fire Protection District | 108.0 | 1,000 | Cachagua Fire | 9 / 10 |
| Carmel Highlands Fire Protection District | 9.3 | 1,075 | CAL FIRE BEU | 2 / 9 |
| Cypress Fire Protection District | 11.4 | 7,600 | CAL FIRE BEU | 2 / 9 |
| Gonzales Rural Fire Protection District | 58.4 | 650 | Gonzales Fire | 3 / 3X (5 in City) |
| Greenfield Fire Protection District | 43.2 | 700 | Greenfield Fire | 5 / 10 |
| Mid-Coast Volunteer Fire Brigade | 41.0 | 270 | Mid-Coast Fire | 5 / 7B |
| Mission Soledad Rural Fire Protection District | 59.6 | 1,150 | CAL FIRE BEU | 3 / 10 (4 in City) |
| Monterey County Regional Fire Protection District | 399.6 | 38,350 | Regional Fire | 3 / 10 |
| North County Fire Protection District | 122.9 | 42,000 | North County Fire | 4 /10 |
| Pebble Beach Community Services District | 8.3 | 4,100 | CAL FIRE BEU | 1 |
| South Monterey County Fire Protection District | 637.2 | 4,600 | CAL FIRE BEU | 8 / 10 |

### *Aromas Tri-County Fire Protection District*

The Aromas Tri-County Fire Protection District provides fire protection and emergency medical services to approximately 5,800 people throughout forty square miles in the northeast corner of Monterey County and adjacent areas of San Benito and Santa Cruz Counties. Monterey County is the district's principal county because it has the highest assessed value among the three counties within the district's boundaries. The district provides services through a contract with CAL FIRE.

### *Big Sur Volunteer Fire Brigade*

The Big Sur Volunteer Fire Brigade provides services to the rural community of Big Sur. The Brigade is a 501(c)3 nonprofit and is not a public agency. The Brigade provides fire protection and emergency medical services to approximately 4,350 people over an area of 254 square miles along the southern half of Monterey County coastline and to the inland to areas within the Los Padres National Forest. The Brigade is staffed by volunteers.

### *Cachagua Fire Protection District*

The Cachagua Fire Protection District provides fire suppression and emergency medical services to the rural and mountainous areas at the eastern end of Carmel Valley, known as the Cachagua area. The district comprises approximately 108 square miles of territory and serves over 1,000 residents. The Fire Protection District is staffed by volunteers.

### *Carmel Highlands Fire Protection District*

The Carmel Highlands Fire Protection District provides services through a contract with CAL FIRE. The district provides a high level of fire protection and emergency paramedic medical services to approximately 1,075 people throughout 9 square miles in the coastal area south of Carmel-by-the-Sea. The district works closely with two adjacent districts - the Cypress Fire Protection District and the Pebble Beach Community Services District - that are both also serviced by CAL FIRE. These three special districts operate what is essentially a seamless regional fire department. The residents of these three special districts benefit from a sharing of stations, apparatus, and staffing. The arrangement has been formed through cost sharing agreements, without the formality or bureaucracy of consolidation.

### *Cypress Fire Protection District*

The Cypress Fire Protection District provides services through a contract with CAL FIRE. The district provides a high level of fire protection and emergency paramedic medical services to approximately 7,600 people throughout 11 square miles within the mouth of the Carmel Valley, and unincorporated portions of Carmel and Monterey. As mentioned above, the district works closely with the Carmel Highlands FPD and the Pebble Beach Community Services District, which are also staffed through CAL FIRE.

### *Gonzales Rural Fire Protection District*

The Gonzales Rural Fire Protection District provides fire protection and emergency medical services to approximately 650 people throughout 58 square miles in the rural area surrounding the City of Gonzales. The small size of the district does not allow it to economically maintain independent fire protection service, so the district has contracted with the City of Gonzales to provide fire protection and emergency medical services within District boundaries.

### *Greenfield Fire Protection District*

The Greenfield Fire Protection District provides fire protection and emergency medical services to approximately 700 people throughout 43 square miles in the rural area surrounding the City

of Greenfield. The district contracts with the City of Greenfield to receive fire protection and emergency medical services from the City Fire Department.

### *Mid-Coast Volunteer Fire Brigade*

The Mid-Coast Volunteer Fire Brigade provides services to the rural communities of Garrapata, Palo Colorado, Rocky Creek, Bixby, and the coast from Garrapata State Park south to "South Forty" on Hurricane Point. The Brigade is a 501(c)3 nonprofit and is not a public agency. The Brigade provides fire protection and emergency medical services to approximately 270 people over an area of 41 square miles along the middle of Monterey County's coastline and to the inland rural areas. The Brigade is staffed by volunteers.

### *Mission Soledad Rural Fire Protection District*

The Mission Soledad Rural Fire Protection District provides fire protection and emergency medical services to approximately 1,150 people throughout 60 square miles in the rural area surrounding the City of Soledad. The district has provided services through a contract with the City of Soledad. The City of Soledad, in turn, contracts with CAL FIRE to provide services to the City and District.

### *Monterey County Regional Fire District*

Monterey County Regional Fire District provides services from rural areas north of the City of Salinas south to the Federal Ventana Wilderness and the outskirts of the City of Gonzales, from the Cities of Marina, Seaside, and Monterey on the west to the San Benito County line in the east. The district provides a high level of fire protection and emergency paramedic medical services to approximately 38,350 people throughout its 400-square mile district. The district also provides ambulance service to Carmel Valley residents.

### *North County Fire Protection District of Monterey County*

North County Fire Protection District of Monterey County provides services to rural communities in northern Monterey County. The district provides fire protection and emergency medical services to approximately 42,000 people throughout 123 square miles.

### *Pebble Beach Community Services District*

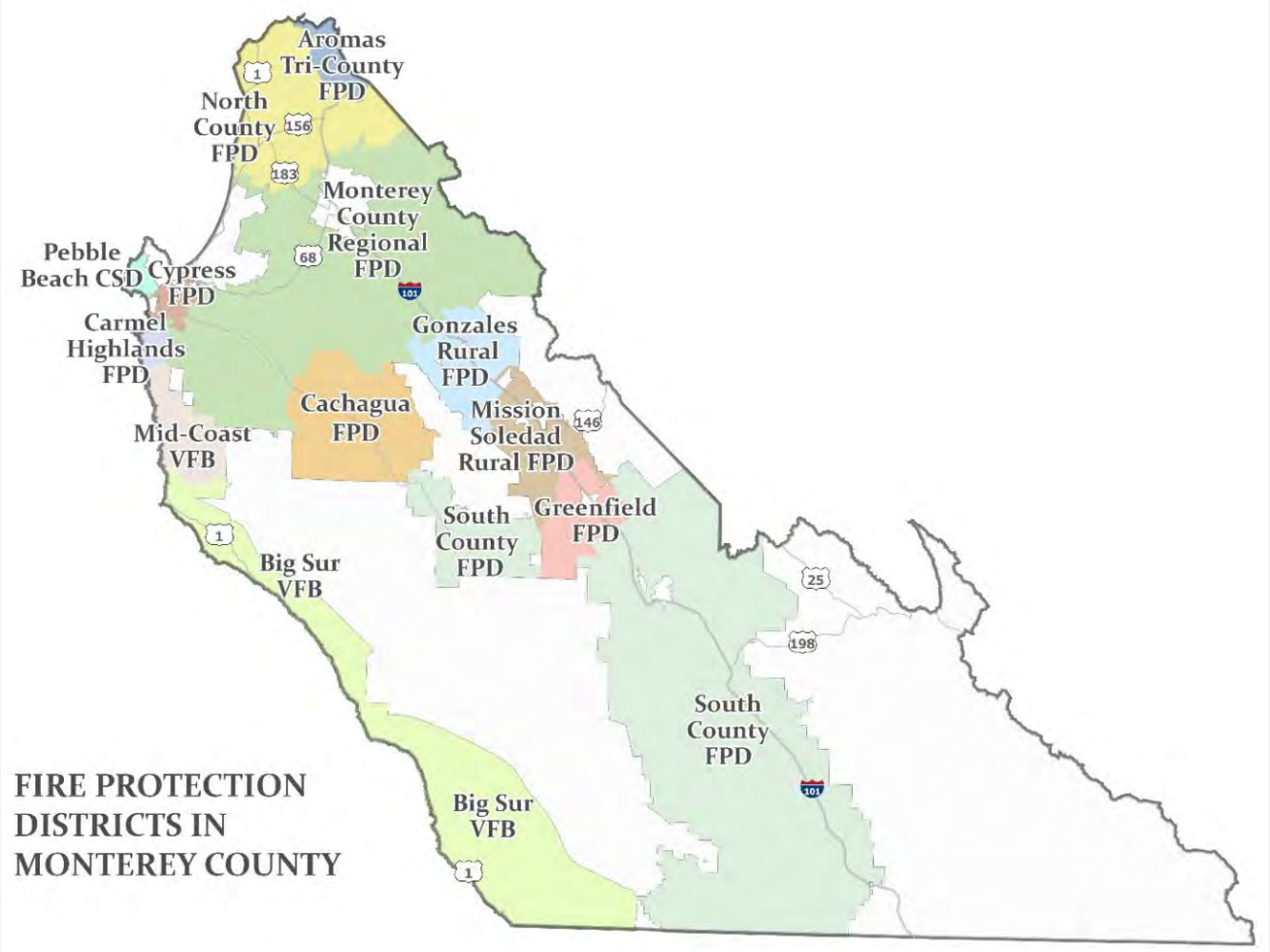
The Pebble Beach Community Services District provides a high level of fire protection and emergency paramedic medical services to approximately 4,100 people throughout 8 square miles to the north of the City of Carmel and to the west of Cities of Monterey and Pacific Grove. The district provides services through a contract with CAL FIRE. As noted previously, the district works closely with the Carmel Highlands and Cypress Fire Protection Districts, which are also staffed through CAL FIRE.

### *South Monterey County Fire Protection District*

The South Monterey County Fire Protection District provides fire protection and emergency medical services to a large unincorporated portion of the southern Salinas Valley, including Arroyo Seco, the San Antonio Valley, and the unincorporated area around King City. The district provides services to approximately 4,600 people throughout its 637-square mile district. South

Monterey County FPD serves the largest geographic area of any of the County's fire protection districts. The district provides services through a contract with CAL FIRE.

**Figure 18-2**
**Fire Protection Districts in Monterey County**




## 18.1.3 THE FIRE EQUATION

The following three factors contribute significantly to wildland fire behavior and can be used to identify wildland fire hazard areas.

- **Topography**: As slope increases, the rate of fire spread increases. South-facing slopes are subject to more solar radiation, making them drier, which intensifies fire behavior.
- **Fuel**: The type and condition of vegetation plays a significant role in the occurrence and spread of wildland fires. Certain types of plants are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available to fuel the fire. The ratio of living to dead plant matter and the fuel's continuity, both horizontally and vertically are also important factors. The

risk of fire is increased significantly during periods of prolonged drought as the moisture content of both living and dead plant matter decreases.

- **Weather**: The most variable factor affecting fire behavior is weather. Temperature, humidity, wind, and lightning can affect ignition and spread. High temperatures and low humidity can lead to extreme wildfire activity. By contrast, cooling and higher humidity often signal reduced wildfire occurrence and easier containment.

*Vegetation Management and Fuel Reduction*

Since fuel reduction is the one element of the fire equation that can be impacted, vegetation management and clearance around structures is key to reducing risk. A number of agencies in the County are involved in various fuel reduction activities. A variety of strategies and projects have been deployed in an effort to reduce the threat of wildfires.

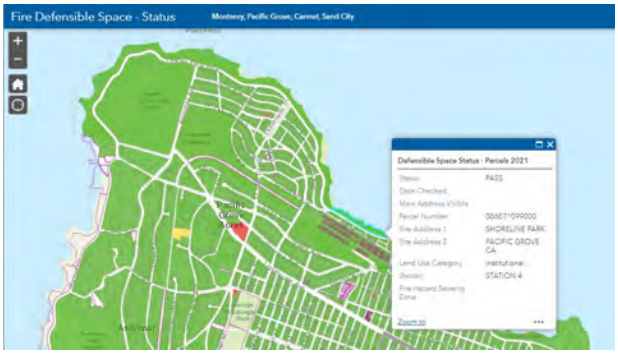
CAL FIRE BEU administers a Vegetation Management Program. The purpose of the program is to reintroduce fire to the landscape, restoring aspects of historic fire regimes, and to reduce flammable vegetation that may contribute to large, damaging wildfires and high fire suppression costs. The Vegetation Management Program is a cost-sharing program that focuses on the use of prescribed fire and mechanical means for addressing wildland fire fuel hazards and other resource management issues on State Responsibility Area (SRA) lands. The program allows private landowners to enter into a contract with CAL FIRE to use prescribed fire to accomplish a combination of fire protection and resource management goals. CAL FIRE also manages some significant shaded fuel break projects at strategic, high-risk locations.

Local fire agencies conduct property inspections for defensible space, implement community projects, and share public

**Mitigation Success Story**
**Monterey Fire Defensible Space Inspection**

In order to mitigate the threat of wildfires, the City of Monterey Fire Department conducts annual Defensible Space Inspections of all residential parcels in its response area, which includes the cities of Monterey, Pacific Grove, Carmel-by-the-Sea, and Sand City, as well as the Monterey Regional Airport. Tracking the inspection status of each parcel was a challenge.

In 2020, Monterey Fire collaborated with the City to develop a collector app using GIS technology. The app allows fire crews to conduct inspections and record if a parcel is compliant with defensible space requirements. The results of the inspection are immediately visible online in a public facing portal. As follow-up inspections are completed, the information can be quickly updated. Staff can immediately see which parcels need follow-up and the completion rate. A project that used to take several months and often resulted in some missed parcels, can now be completed in a few weeks with a higher success rate.



information on wildfire risk. Monterey County Public Works conducts roadside clearance operations with priority given to roadways considered to be primary evacuation routes.

Other agencies and organizations also take a role in vegetation management and fuel reduction. The Fire Safe Council of Monterey County is a non-profit organization committed to protecting lives and property from harm by wildfires, and to educating the public on wildfire dangers and how to reduce them. The Council coordinates projects and is a conduit for fuel reduction grants. They also coordinated the publication of the Monterey County Community Wildfire Protection Plan.

The Resource Conservation District of Monterey County (RCDMC) administers a Fire and Fuels Mitigation Program. Through the program the RCDMC has assisted with grant funding and coordination for fuels projects, fire infrastructure and natural resources mapping, prescribed burning, and wildfire prevention outreach in Monterey County. The program also has been instrumental in assisting other local groups with work that includes promoting prescribed burning, mapping, and defensible space. Key projects include:

- Los Padres Strategic Community Fuel Break Collaborative Project
- Prescribed burn association for Monterey, San Benito, and Santa Cruz counties

### 18.1.4 DEVELOPMENT PATTERNS AND WILDFIRE HAZARD

It is important to differentiate wildland fires from fires that occur in the wildland urban interface (WUI). The WUI refers to the area where houses intermingle with undeveloped wildland vegetation. The potential for significant damage to life and property exists in the WUI where development is adjacent to vegetated areas. The impacts and strategies for prevention and mitigation differ significantly between wildland fires and fires in the WUI. For example, fuel loads for wildland fires consist primarily of vegetation, whereas WUI fires have fuel loads consisting of vegetation and houses.

WUI fires have become a defining challenge for California as development continues to expand into less densely populated regions, putting more homes and people at risk. CAL FIRE classifies development into two WUI classes, interface and intermix, each presenting unique fire protection problems and opportunities for risk mitigation.

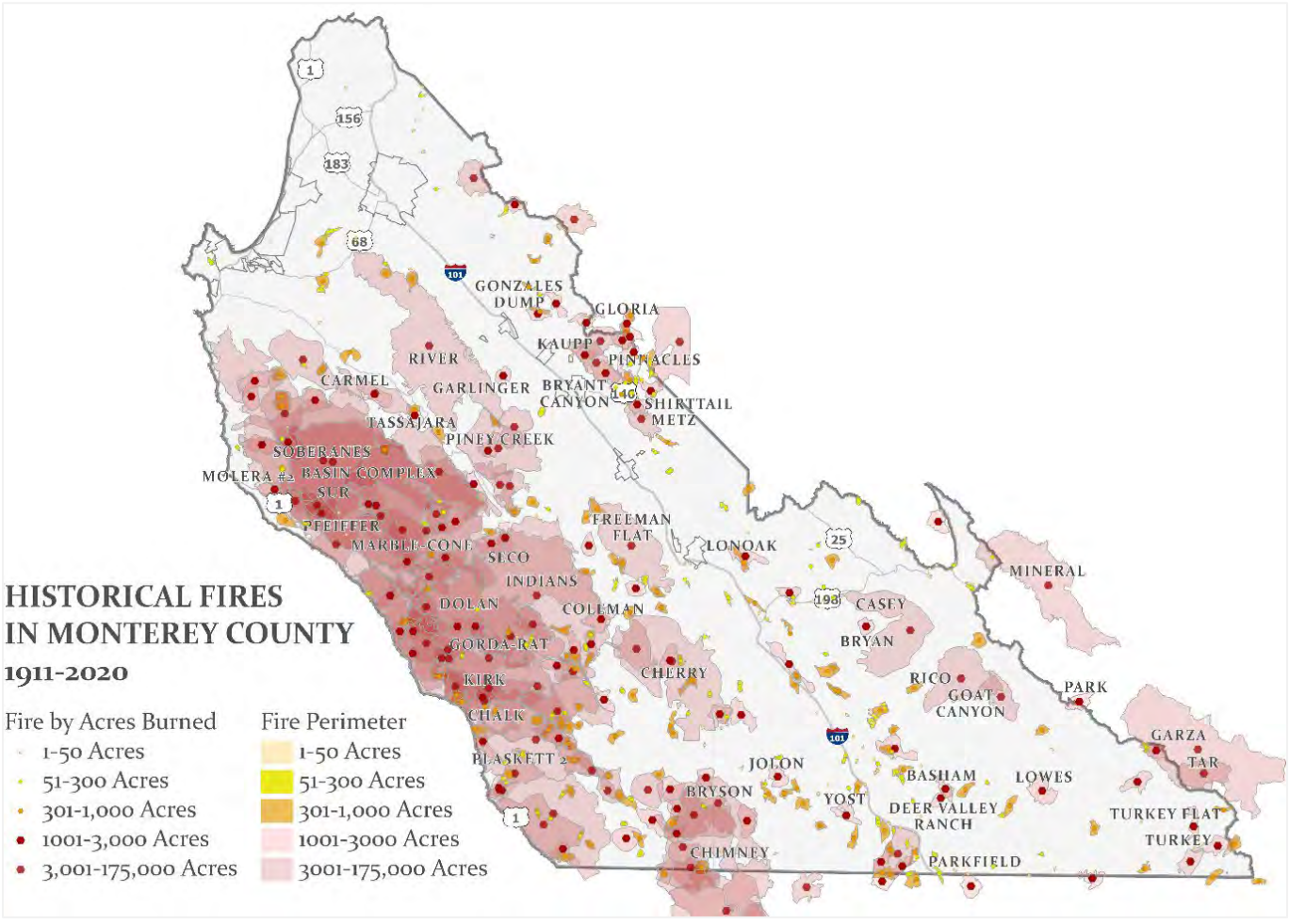
- **Interface**: Interface represents dense urban development adjacent to wildland. The definable boundary between houses and wildland provides a line of defense and focuses mitigation efforts along this boundary.
- **Intermix**: Intermix represents sparse development interspersed within a landscape that maintains much of the wildland characteristics. Intermix areas often require fire agencies to devote resources to protect individual houses. Mitigation includes prevention efforts, fire resistant building materials, and defensible space.

## 18.2 HAZARD PROFILE

### 18.2.1 HISTORY

Fire history is an important component in understanding fire frequency, fire type, significant ignition sources, and vulnerable areas. The history of wildfires in the County is significant. Since 1911, there has been an average of 4 wildfires a year, with an average of 17,000 acres burning annually. Historic wildfires from 1911 to 2020 in Monterey County are mapped in *Figure 18-3*.

**Figure 18-3**
**Historical Wildfires in Monterey County (1911-2020)**




The Marble-Cone Fire in August 1977 burned almost 178,000 acres of land, making it the largest wildfire in recorded California history at that time. Since the Marble-Cone Fire, Monterey County has had over 50 large wildfires, listed in *Table 18-2*.

**Table 18-2**
**Large (Over 900 Acre) Historical Wildfires in Monterey County (1977-2020)**

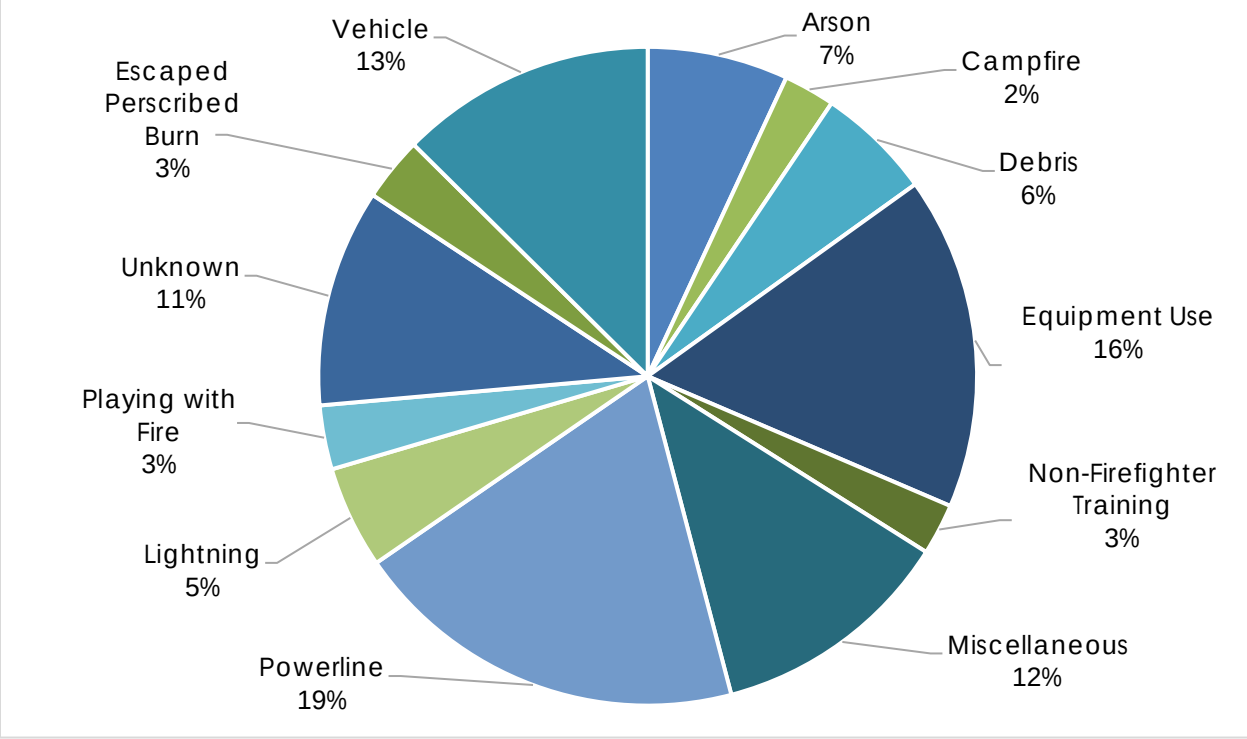
| Year | Fire Name | Acres Burned | Cause | Year | Fire Name | Acres Burned | Cause |
|---|---|---|---|---|---|---|---|
| 2020 | Carmel | 6,905 | Lightning | 1996 | Wild | 25,620 | Arson |
| 2020 | River | 48,088 | Vehicle | 1994 | Pinnacles | 939 | Unknown |
| 2020 | Dolan | 124,924 | Arson | 1994 | Basham | 1,098 | Unknown |
| 2019 | Lonoak | 2,546 | Powerline | 1993 | Metz | 1,359 | Unknown |
| 2018 | Turkey | 2,225 | Miscellaneous | 1993 | Rancho | 5,415 | Unknown |
| 2017 | Garza | 48,887 | Vehicle | 1992 | Unnamed | 3,738 | Miscellaneous |
| 2017 | Park | 1,649 | Equipment Use | 1992 | Seco | 2,559 | Miscellaneous |
| 2017 | Parkfield | 1,816 | Powerline | 1992 | Jolon | 1,625 | Arson |
| 2016 | Chimney | 46,235 | Vehicle | 1989 | Molera #2 | 2,745 | Unknown |
| 2016 | Metz | 3,876 | Debris | 1986 | Bryant Canyon | 2,428 | Unknown |
| 2016 | Soberanes | 132,127 | Campfire | 1986 | Deer Valley Ranch | 1,073 | Unknown |
| 2016 | Coleman | 2,520 | Debris | 1986 | Lowes | 2,852 | Unknown |
| 2015 | Tassajara | 1,100 | Arson | 1986 | River | 5,469 | Debris |
| 2013 | Pfeiffer | 917 | Powerline | 1986 | Bottcher | 2,285 | Campfire |
| 2012 | Turkey | 2,700 | Equipment Use | 1985 | Gorda-Rat | 65,700 | Lightning |
| 2009 | Bryson | 2,257 | Structure | 1985 | Wizard | 5,215 | Miscellaneous |
| 2009 | Gloria | 6,436 | Miscellaneous | 1985 | Unnamed | 14,370 | Unknown |
| 2008 | Chalk | 11,200 | Miscellaneous | 1985 | Seco | 1,800 | Arson |
| 2008 | Indians | 81,378 | Campfire | 1985 | Cherry | 40,642 | Arson |
| 2008 | Basin Complex | 162,818 | Lightning | 1985 | Garlinger | 1,078 | Miscellaneous |
| 2007 | Tar | 5,670 | Unknown | 1985 | Piney Creek | 1,563 | Equipment Use |
| 2006 | Rico | 14,507 | Lightning | 1981 | Gonzales | 4,850 | Miscellaneous |
| 2005 | Johnson Fire | 1,393 | Equipment Use | 1980 | Shirttail | 2,045 | Unknown |
| 2000 | Plaskett 2 | 5,856 | Miscellaneous | 1979 | Nacimiento | 5,371 | Arson |
| 2000 | North Fork | 1,736 | Equipment Use | 1979 | Freeman Flat | 3,207 | Unknown |
| 2000 | Unnamed | 2,073 | Non-Firefighter Training | 1979 | Kaupp | 1,609 | Unknown |
| 1999 | Kirk | 86,700 | Lightning | 1978 | Turkey Flat | 1,330 | Unknown |
| 1998 | Unnamed | 8,702 | Non-Firefighter Training | 1978 | Yost | 1,619 | Unknown |
| 1996 | Sur | 4,410 | Miscellaneous | 1977 | Marble-Cone | 173,333 | Lightning |

In more recent years the frequency, intensity, and impact of large wildland fires in Monterey County have increased, specifically in the Los Padres National Forest. The Basin Complex Fire, a

massive wildfire near Big Sur in 2008, burned more than 162,000 acres, destroyed 58 structures, and damaged an additional 9 structures. This fire burned the majority of the Ventana Wilderness. State and federal officials spent more than $120 million to fight the fire, making it is the most expensive fire in California history up to that time, and the second most expensive in US history. The Indians Fire during this same event period burned an additional 81,000 acres, leaving 15 structures destroyed and one damaged. These combined events made 2008 the most destructive year in recorded history for fires in Monterey County.

In December 2013, the Pfeiffer Fire burned 917 acres near Big Sur and damaged or destroyed 38 structures, including 34 residential structures and 4 outbuildings. On July 22, 2016, the Soberanes Fire began as an illegal campfire located in Garrapata State Park in Monterey County. Fed by winds and dry, unmanaged vegetation resulting from several years of extreme drought, the fire quickly spread beyond the park to threaten lives, homes, property, and the environment. It was the costliest firefight in US history, costing a total of $260 million. 2020, was another record year for fires in Monterey County, with the River, Carmel, and Dolan burning 48,000, 6,905, and 124,924 acres, respectively. Shown in *Figure 18-4*, the most commonly known causes of fires in Monterey County since the year 2000, are powerlines (19%), other mechanical or electrical equipment (16%), vehicles (13%), miscellaneous (12%), and arson (7%). Sometimes the cause of a fire cannot be determined, and this represents another large category, with 11% of fires in the County having an unknown cause.

**Figure 18-4**
**Causes of Wildfires in Monterey County (2000-2020)**

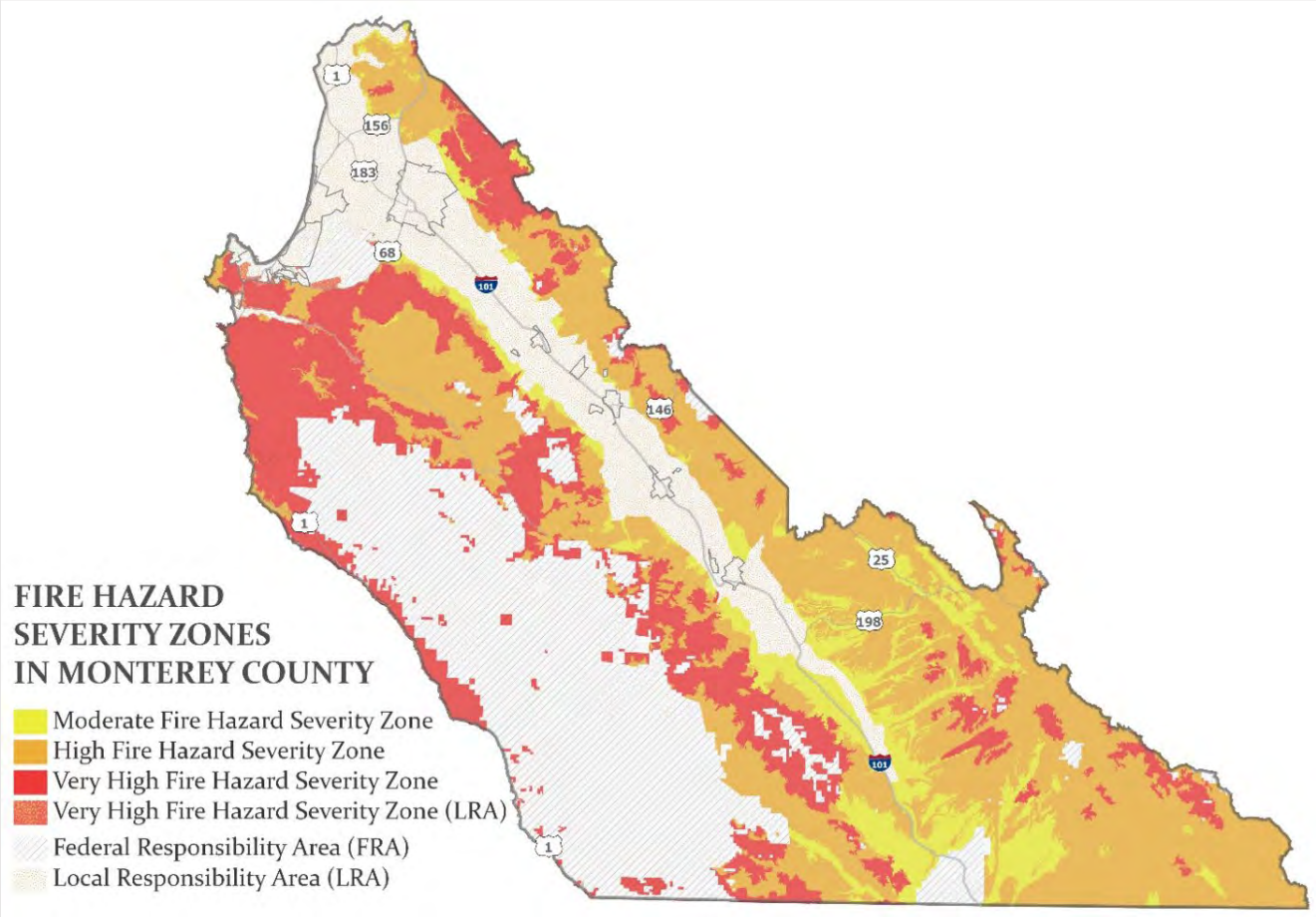


## 18.2.2 LOCATION

Fire Hazard Severity Zones (FHSZ) are areas mapped by CAL FIRE that designate zones (based on factors such as fuel, slope, and fire weather) with varying degrees of fire hazard (i.e., moderate, high, and very high). While FHSZ do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern. The FHSZ model inputs frequency of fire weather, ignition patterns, expected rate-of spread, and past fire history. It also accounts for flying ember production based on the area of influence where embers are likely to land and cause ignitions.

Fire Hazard Severity Zones in Monterey County are mapped in *Figure 18-5*

**Figure 18-5**
**Fire Hazard Severity Zones in Monterey County**




CAL FIRE also maps fire threat, which combines expected fire frequency with potential fire behavior. About 80% of land in Monterey County is categorized as high, very high, or extreme fire threat.

Based on historical fire data, some portions of the County are more susceptible to wildfires, with some areas having burned 6-7 times during the recorded fire history period. The mountainous, highly combustible areas in and around the Los Padres National Forest are very susceptible to wildland fires. The communities along the Big Sur coast, including Big Sur, Post, Lucia, Gorda, and Plaskett, are also at great risk to wildland fires. Sudden Oak Death is present and expanding in this area and presents a serious and growing wildland fire danger.

Homes and property in the wildland urban interface (WUI) are likely areas of concern for future fires. Of the about 35,000 housing units located in the WUI, 38% are in an intermix zone and 62% are in an interface zone.[67] As both types of WUI account for significant area in Monterey County, mitigation strategies should address both zones.

The CAL FIRE BEU Unit Strategic Plan[68] has identified the following high risk fire areas in Monterey County:

- State Highway 68 Corridor between Salinas and Monterey Peninsula / Laureles Grade
- Carmel Valley, Carmel Valley Village, and Cachagua
- Carmel Highlands / Palo Colorado Canyon
- Pine Canyon (King City)
- North Monterey County / Aromas
- Jacks Peak / Pebble Beach

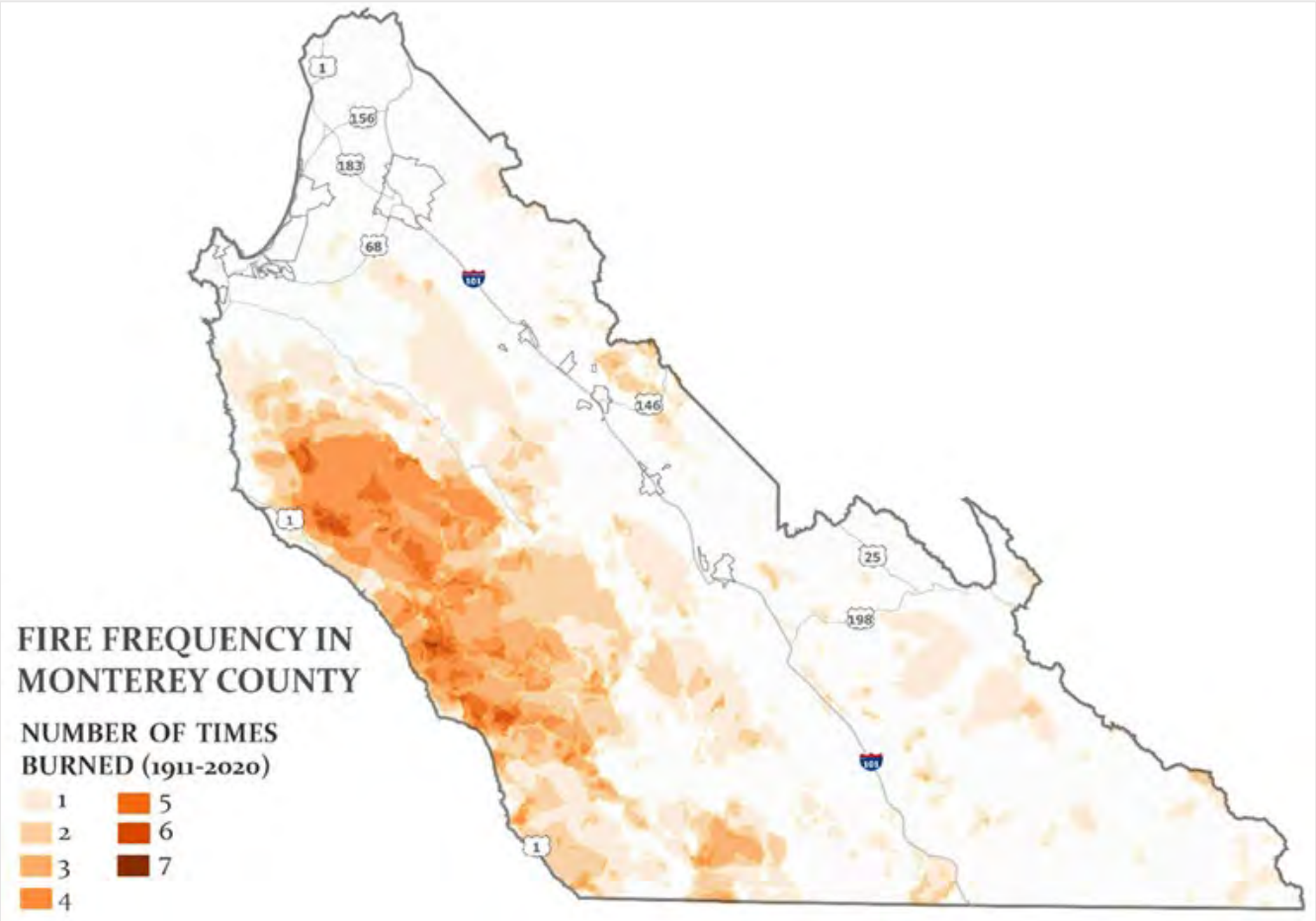
### 18.2.3 FREQUENCY

The geography, weather patterns and vegetation in the County provide ideal conditions for recurring wildfires. As noted previously, there has been an average of 4 wildfires a year, with an average of 17,000 acres burning annually. In the past 20 years, close to 750 thousand acres of the County has burned. Therefore, Monterey County is likely to face a wildland fire threat each and every year and can expect a large wildland fire to occur every few years.

Fire frequency, defined as number of times burned between 1911 and 2021 is mapped in *Figure 18-6*. Areas in the Los Padres National Forest, along the Big Sur coast, and the Ventana Wilderness, are the most frequently burned areas in the County, burning in some areas more than 4-5 times in the last 100 years.

[67] CAL FIRE, California's Forests and Rangelands, 2017 Assessment
[68] Unit Strategic Fire Plan San Benito-Monterey, June 2020

**Figure 18-6**
**Fire Frequency in Monterey County**




## 18.2.4 SEVERITY

As outlined in the Monterey County Community Wildfire Protection Plan[69] each area of the County is unique in the various aspects that impact fire behavior. Variations in type of vegetation, slope, and microclimate weather all play a role in fire spread potential. Density of structures, road access, water supply, and available timely fire suppression resources also impact the fire spread potential. The severity of the wildland fire hazard is determined by the relationship between three factors: fuel classification, topographic slope, and critical fire weather frequency.

### *Fuels*

Hazardous levels of fire fuels can cause fire intensities to exceed firefighting tactical ability to contain and control them. Vegetation distribution throughout the county varies by location and topography, with dramatic differences observed between coastal, valley, and inland regions.

[69] Fire Safe Council for Monterey County, Monterey County Community Wildfire Protection Plan, 2010

Dominant vegetative cover within Monterey County is herbaceous or grassland cover, distributed primarily in the low-lying valley areas along the Highway 101 corridor. While this fuel type can burn quickly under strong, dry wind patterns, it does not produce the high heat intensity and high flame lengths associated with chaparral fuel types. Other significant vegetative cover types include light brush, light grass/woodland, and hardwood litter, which are primarily associated with the steeper, upland areas in the southern, western, and northern portions of the County. Fire behavior in brush fuel types may produce flame lengths greater than 12 feet, and resistance to control may be high. Fire behavior in woodlands is variable, depending on surface fuel conditions and the presence of ladder fuels. However, crown fire is common if slope and wind conditions are favorable to allowing fire to enter the canopy.

In extreme warm/wet years, abundant precipitation and intense rainfall followed by high spring and summer temperatures rapidly dry the abundant fuels produced by the high precipitation. Another concern within Monterey County is the presence of the Sudden Oak Death (SOD) pathogen and Pitch Canker disease. These infections can cause rapid tree mortality which can lead to a marked increase in surface fuel loads and subsequent fire behavior.

### *Topography*

The topography of Monterey County is extremely variable, with elevations ranging from sea level to over 5,800 feet above mean sea level. Within the Salinas Valley, slopes are relatively flat across the valley floor, with elevations ranging from sea level to about 400 feet above mean sea level in the southern portions of the valley. More significant topographic variation is found in the eastern and western portions of the County, often characterized by steep slopes, deeply incised canyons, and narrow valleys. Slope measurements reach up to 175% gradients, most notably in the Los Padres National Forest located in the western portion of the County and the Gabilan Range located along the eastern County boundary. The regional topographic conditions within Monterey County have considerable effect on wildland fire behavior, as well as on the ability of firefighters to access and respond to wildfires. Steep slope and canyon alignments are conducive to channeling, deflecting, concentrating, or dispersing winds, and creating extremely erratic wildfire conditions, especially during wind driven fire events

### *Weather*

In Monterey County, the joining of marine and land air masses over uneven topography significantly compounds fire behavior. Erratic fire behavior due to rapidly shifting winds and humidity under "normal" conditions is common. During warmer and drier offshore wind flow regimes, which occur several times each year, wind patterns shift from onshore northwest to offshore east-northeast in the northern section of the County, and east-southeast in the southern portions of the County, often with above-average velocities. These conditions are associated with "Severe Fire Weather" and "Red Flag" fire warnings. Fire behavior under rare or extreme fire weather conditions constitute the greatest threat of destructive uncontrolled wildland fires, and historically are immune to planned tactical response and aggressive initial

attack. During extreme fire-weather conditions, fuel factors like age, density and moisture content may be overshadowed by weather factors such as high wind and low humidity.

### 18.2.5 WARNING TIME

Regardless of the circumstances that start a wildfire, warning time can be short since there is no way to predict when a wildfire might break out. Hazardous levels of fire fuels can cause fire intensities to exceed firefighting tactical ability to contain and control. High wind events that occur across much of California in autumn can create fires that are difficult to control, greatly increasing area burned and loss of life. Special attention should be paid to fires during severe wind events to improve warning time for those that might be affected or need to evacuate. Dry lightning may trigger wildfires as seen during the SCU Lightning Complex in 2020. Reliable NWS lightning warnings are available on average 24 to 48 hours prior to a significant electrical storm. If a fire does break out and spreads rapidly, residents may need to evacuate within hours or minutes. A fire's peak burning period generally is between 1 and 6 p.m. Once a fire has started, fire alerting is reasonably rapid in most cases. The rapid spread of cellular and two-way radio communications has contributed to a significant improvement in warning time.

In Monterey County, the safety of ingress and egress is not uniform in all areas. It is possible that some communities may become trapped without the option to evacuate, forcing them to shelter in place and defend themselves. Examples are the Big Sur coast, Palo Colorado, Partington Ridge, Los Burros Road, Cachagua, and White Rock.

## 18.3 SECONDARY HAZARDS

Wildfires can generate a range of secondary effects, which in some cases may cause more widespread and prolonged damage than the fire itself. The indirect effects of wildfires can be catastrophic.

### 18.3.1 WILDFIRE SMOKE

Smoke and air pollution from wildfires can be a health hazard, especially for sensitive populations including children, the elderly, and those with respiratory and cardiovascular diseases. Smoke generated by wildfire contains visible and invisible emissions comprising particulate matter such as soot and tar; gases such as carbon monoxide, carbon dioxide, and nitrogen oxides; and toxics such as formaldehyde and benzene. Emissions from wildfires depend on the type of fuel, the moisture content of the fuel, the efficiency or temperature of combustion, and the weather. Wildfire may also threaten the health and safety of those fighting the fires. First responders are exposed to the dangers from the initial incident and after-effects from smoke inhalation and heat stroke.

### 18.3.2 POST-FIRE INDUCED DEBRIS FLOWS AND FLOOD FLOWS

Fires can have devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the County by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water storage capacity, and degrading water quality. Wildfires strip the land of vegetation and destroy forest resources. Exposed soils erode quickly and enhance siltation of rivers and streams, thereby enhancing flood potential, harming aquatic life, and degrading water quality. Wildfires can also bake soils, thus increasing the imperviousness of the ground. This increases the amount and speed of the runoff generated by storm events, further increasing the chance of flooding.

Lands stripped of vegetation are also subject to increased debris flow hazards. Slopes stripped of vegetation are exposed to greater amounts of runoff. This in turn can weaken soils and cause failures on slopes. The soils in a burn scar are highly erodible so flood waters can contain significant amounts of mud, boulders, and vegetation. For example, following the record fires in 2020, annual winter storms in 2021 caused flash floods and debris flows in the County. Fast moving mud and debris in the River Fire burn scar damaged 25 homes and injured 2 people. A large mudslide in the Dolan Fire burn scar took out a 150-foot section of Highway 1.

When wildfire-induced threats to life and safety are present, a state team of foresters, hydrologists, and geographic information systems specialists from CAL FIRE, engineering geologists from the California Geological Survey (CGS) and Regional Water Quality Control Boards (RWQCB), and civil engineers from the Department of Water Resources (DWR), can be assembled into a Watershed Emergency Response Team (WERT) to assess potential life-safety hazards from post-fire debris flows, hyper-concentrated flows, and flood flows.

An Emergency Stabilization-Burned Area Emergency Response (BAER) is a rapid assessment of burned watersheds that identifies imminent post-wildfire threats to human life and safety, property, and critical natural or cultural resources. The BAER identifies emergency stabilization measures that can be implemented before the first post-fire damaging events. BAER measures include actions such as: mulching, seeding, installation of run-off control structures, temporary barriers to protect recovering areas, and the installation of warning signs. The USGS also conducts post-fire debris-flow hazard assessments for select fires using geospatial data related to basin morphometry, burn severity, soil properties, and rainfall characteristics to estimate the probability and volume of debris flows that may occur in response to a storm.

## 18.4 RISK ASSESSMENT

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate. Wildland Fire Threat in Monterey County is mapped in *Figure 18-7.*

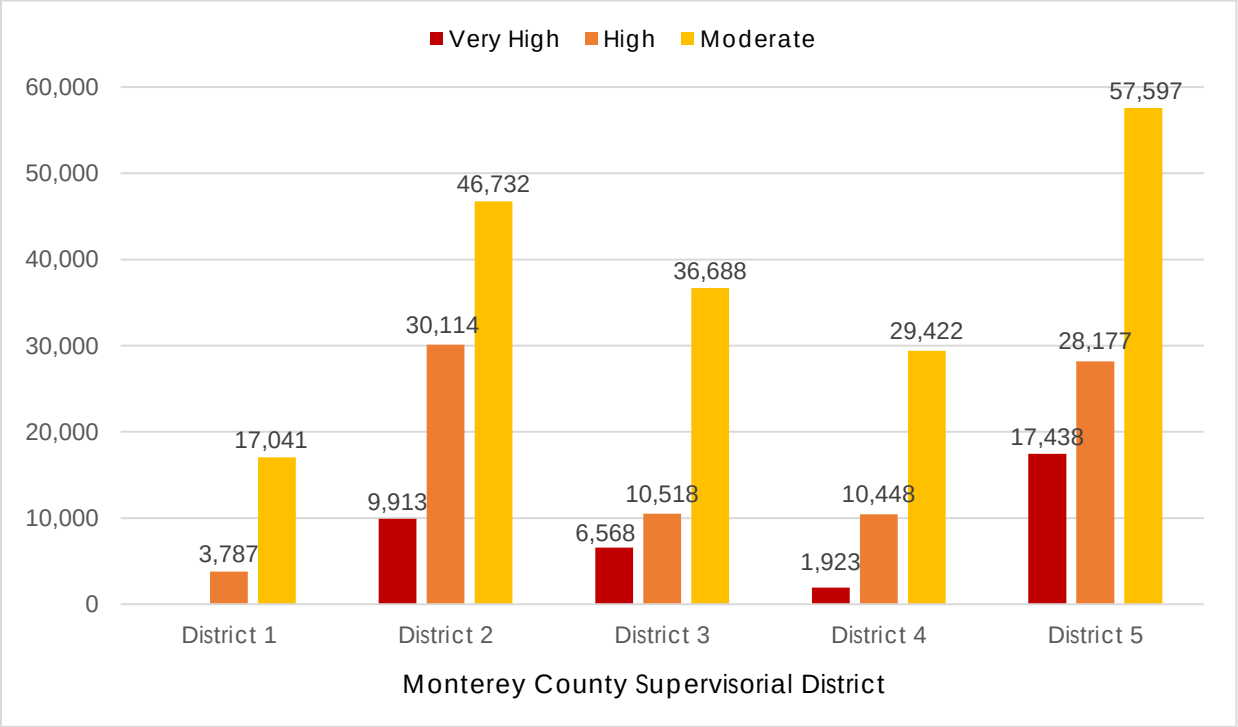
SANTA CRUZ COUNTY
SANTA CLARA COUNTY
SAN BENITO COUNTY
FRESNO COUNTY
SAN LUIS OBISPO COUNTY
PENINSULA CITIES
SOLEDAD
SALINAS
KING CITY
GREENFIELD
GONZALES
Los Padres National Forest
Camp Roberts
WILDLAND FIRE THREAT
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 2020
FIGURE 18-7
MONTEREY COUNTY, CA
LEGEND
Wildland Fire Threat Class (CAL FIRE)*
Very High
High
Moderate
Low
No data available
DATE: 11/30/2020
CREATED BY: ITD GIS, JE
Monterey County
Office of Emergency Services
1322 Natividad Road
Salinas, CA 93906
831-796-1905

### 18.4.1 POPULATION

Wildfire is of greatest concern to populations residing in the moderate, high, and very high fire hazard threat zones. US Census data was used to estimate populations within the CAL FIRE identified fire threat zones.

As seen in *Figure 18-8*, 306,366 people, representing 74% of the population in Monterey County live in a very high, high, or moderate fire threat zone. 35,842 people, or 9% of the total population live in a very high fire threat zone. 83,044 people, or 20% of the total population live in a high fire threat zone. 187,480 people, or 45% of the total population live in a moderate fire threat zone.

**Figure 18-8**
**Population Exposed to Wildfire Risk**




Those who live in more rural intermix areas of the County, such as the Big Sur coast, Palo Colorado, Partington Ridge, Los Burros Road, Cachagua, and White Rock may be particularly vulnerable to a wildfire due to their isolated location. It is possible these communities could become trapped without the option to evacuate, forcing them to shelter in place.

Farmworkers are particularly vulnerable to wildfire impacts because of the potential degradation of transportation infrastructure, the increased exposure to wildfire smoke while working outdoors, and direct economic effects on the agricultural industry. Because many agricultural workers are migrant and/or cannot afford to live in the County due to the lack of affordable housing, they may not be fully captured in these population numbers.

### 18.4.2 PROPERTY

As summarized in *Table 18-3*, in Monterey County, 35,252 residential properties are in either very high, high, or moderate fire risk zones. This accounts for about $33 billion in residential property value.

**Table 18-3**
**Residential Property Exposed to Wildfire Risk by Fire Hazard Threat Zone**

| Supervisorial District | Very High | | High | | Moderate | |
|---|---|---|---|---|---|---|
| | # | Value | # | Value | # | Value |
| District 1 | 0 | $0 | 23 | $13,604,833 | 324 | $202,243,637 |
| District 2 | 676 | $391,324,023 | 3,138 | $1,584,293,526 | 5,380 | $2,644,748,875 |
| District 3 | 1,292 | $415,516,076 | 1,599 | $474,881,281 | 1,372 | $426,980,382 |
| District 4 | 12 | $94,828,547 | 177 | $336,350,806 | 1,140 | $862,189,835 |
| District 5 | 2,469 | $2,833,126,759 | 5,144 | $5,981,555,168 | 12,506 | $16,833,680,153 |
| **Total** | 4,449 | $3,734,795,405 | 10,081 | $8,390,685,614 | 20,722 | $20,969,842,882 |

As summarized in *Table 18-4*, In Monterey County, 33,344 non-residential properties are in either very high, high, or moderate fire risk zones. This is account for about $16 billion in non-residential property values.

**Table 18-4**
**Non-Residential Property Exposed to Wildfire Risk by Fire Hazard Threat Zone**

| Supervisorial District | Very High | | High | | Moderate | |
|---|---|---|---|---|---|---|
| | # | Value | # | Value | # | Value |
| District 1 | 0 | $0 | 21 | $29,381,019 | 578 | $425,871,786 |
| District 2 | 492 | $161,328,159 | 1,930 | $429,905,806 | 3,634 | $1,158,346,855 |
| District 3 | 4,913 | $2,049,593,977 | 5,675 | $2,626,148,904 | 4,422 | $3,128,901,995 |
| District 4 | 37 | $4,709,738 | 219 | $175,659,923 | 1,135 | $875,700,350 |
| District 5 | 1,670 | $454,937,569 | 3,581 | $1,537,735,682 | 5,037 | $2,981,931,211 |
| **Total** | 7,112 | $2,670,569,443 | 11,426 | $4,798,831,334 | 14,806 | $8,570,752,197 |

### 18.4.3 CRITICAL FACILITIES AND INFRASTRUCTURE

Critical facilities made of wood frame construction are especially vulnerable during wildfire events. In the event of a wildfire, there would likely be damage to infrastructure dependent on the severity of the wildfire and nature of the infrastructure. Most roads and railroads would sustain minimal to moderate damage except in the worst scenarios.

Power lines are the most at risk from wildfire since most transmission poles are made of wood and susceptible to burning. Fires can create conditions that block or prevent access and can isolate residents and emergency service providers. Wildfire typically does not have a major direct impact on bridges, but it can create conditions in which bridges are obstructed. Many

bridges in areas of high to moderate fire risk are important because they provide the only ingress and egress to large areas and in some cases to isolated neighborhoods.

Critical facilities of high concern and priority to protect from wildfires include communications infrastructure such as repeater sites, cell towers, radio towers, FAA communications, and the Big Sur Very High Frequency Omni-Directional Range (VOR). They are among the highest priorities to protect from wildfires.

*Table 18-5* summarizes critical infrastructure in very high, high, or moderate fire risk zones.

**Table 18-5**
**Critical Infrastructure Exposed to Wildfire Risk by Fire Hazard Threat Zone**

| Critical Infrastructure Type | Very High | High | Moderate |
|---|---|---|---|
| **Facilities** | | | |
| Emergency Response | 0 | 8 | 7 |
| Fire Station | 1 | 6 | 4 |
| Police Station | 0 | 0 | 0 |
| Medical Facilities | 0 | 2 | 7 |
| Military Facility | 0 | 0 | 2 |
| Large Public Facilities | 0 | 0 | 0 |
| Educational Facilities | 0 | 3 | 8 |
| Power Plant | 0 | 0 | 0 |
| Water & Wastewater Facilities | 23 | 46 | 103 |
| Stormwater Facilities | 0 | 0 | 2 |
| Government Facilities | 12 | 14 | 24 |
| Communication Facilities | 498 | 401 | 253 |
| Rain Gauges | 10 | 15 | 6 |
| Lighthouses | 0 | 0 | 0 |
| Dams | 0 | 0 | 0 |
| **Hazardous Materials** | | | |
| Active or Idle Oil Well | 735 | 728 | 284 |
| Landfill | 0 | 0 | 0 |
| Underground Tank | 1 | 0 | 1 |
| Cal ARP Facility | 0 | 3 | 1 |
| **Transportation** | | | |
| Airport | 0 | 4 | 2 |
| Bridge | 20 | 53 | 29 |
| Harbor | 0 | 0 | 0 |
| Highway/Freeway (Miles) | 47 | 93 | 160 |
| Driveway (Miles) | 0 | 2 | 3 |
| Major Road (Miles) | 335 | 456 | 543 |
| Local (Miles) | 1,008 | 1,311 | 1,331 |
| Railroad (Miles) | 23 | 37 | 56 |

### 18.4.4 ENVIRONMENT

Many ecosystems adapt to historical patterns of fire occurrence. These patterns, called "fire regimes," include temporal attributes such as frequency and seasonality, spatial attributes such as size and spatial complexity, and magnitude attributes such as intensity and severity, each of which have ranges of natural variability. Ecosystem stability is threatened when any of the attributes for a given fire regime diverge from its range of natural variability. Severe environmental impacts associated with wildfires in Monterey County include:

- Soil Erosion—The protective covering provided by foliage and dead organic matter is removed, leaving the soil fully exposed to wind and water erosion. Accelerated soil erosion occurs, causing landslides and threatening aquatic habitats.
- Soil Sterilization—Topsoil exposed to extreme heat can become water repellant, and soil nutrients may be lost. It can take decades or even centuries for ecosystems to recover from a fire. Some fires burn so hot that they can sterilize the soil.
- Damaged Fisheries—Critical fisheries can suffer from increased water temperatures, sedimentation, and changes in water quality.
- Spread of Invasive Plant Species—Non-native woody plant species frequently invade burned areas. When weeds become established, they can dominate the plant cover over broad landscapes, and become difficult and costly to control.
- Disease and Insect Infestations—Unless diseased or insect-infested trees are swiftly removed, infestations and disease can spread to healthy forests and private lands. Timely active management actions are needed to remove diseased or infested trees.
- Destroyed Endangered Species Habitat—Fire can have devastating consequences for endangered species.

### 18.4.5 ECONOMIC IMPACT

Local economic impacts from catastrophic wildfires include the cost of fire suppression, disruptions to consumption and production of local goods and services. Immediate effects may include decreased recreation/tourism and timber harvest, as well as disruptions from evacuations and transportation delays. Other effects include direct property losses (in the form of buildings, timber, livestock, and other capital), damage to human health, and possible changes in the long-term structure of the local economy.

The tourism sector is critical economic sector in Monterey County, which is especially vulnerable to increasing risks of forest fires. The Big Sur area is a popular attraction bordering the Los Padres National Forest which is highly prone to fire risk. Big Sur was heavily impacted during the Basin Complex Fires in 2008, the Pfeiffer Fire in December of 2013, the Soberanes Fire of 2016, and the Dolan Fire in 2020. Laguna Seca is a popular recreational facility playing host to several large events throughout the year is also in a fire risk area. Increased fire threats and active wildfire will make these tourist areas less attractive, which, in turn, could negatively

impact local businesses. These may include small, medium, and large-scale businesses such as hotels, restaurants, and transportation, which are important contributors to the local economy.

Agriculture, the other key economic sector in the County, is also vulnerable to wildfire risk. Structures, irrigation systems, and equipment, crops, livestock, and stored commodities can be lost to wildfire. Fires can also affect soil quality, which can have a ripple effect lasting many, many years. Smoke also can have many negative impacts on crops. When less sunlight reaches crops, crops develop more slowly. Less sunlight can lead to higher disease loads. When ash coats leaves and fruit, crops have even less access to light. Some crops can absorb enough smoke to change the flavor. Fires also create a high-risk environment for agricultural workers and protecting workers can delay harvest, leading to destroying overly ripe crops. There is no well-established protocol to mitigate the occupational health and safety risks associated with wildfires, which can leave workers vulnerable. In addition to the dangers of an active fire, wildfire smoke, ash, and chemicals used to treat fires negatively affect air and water quality.

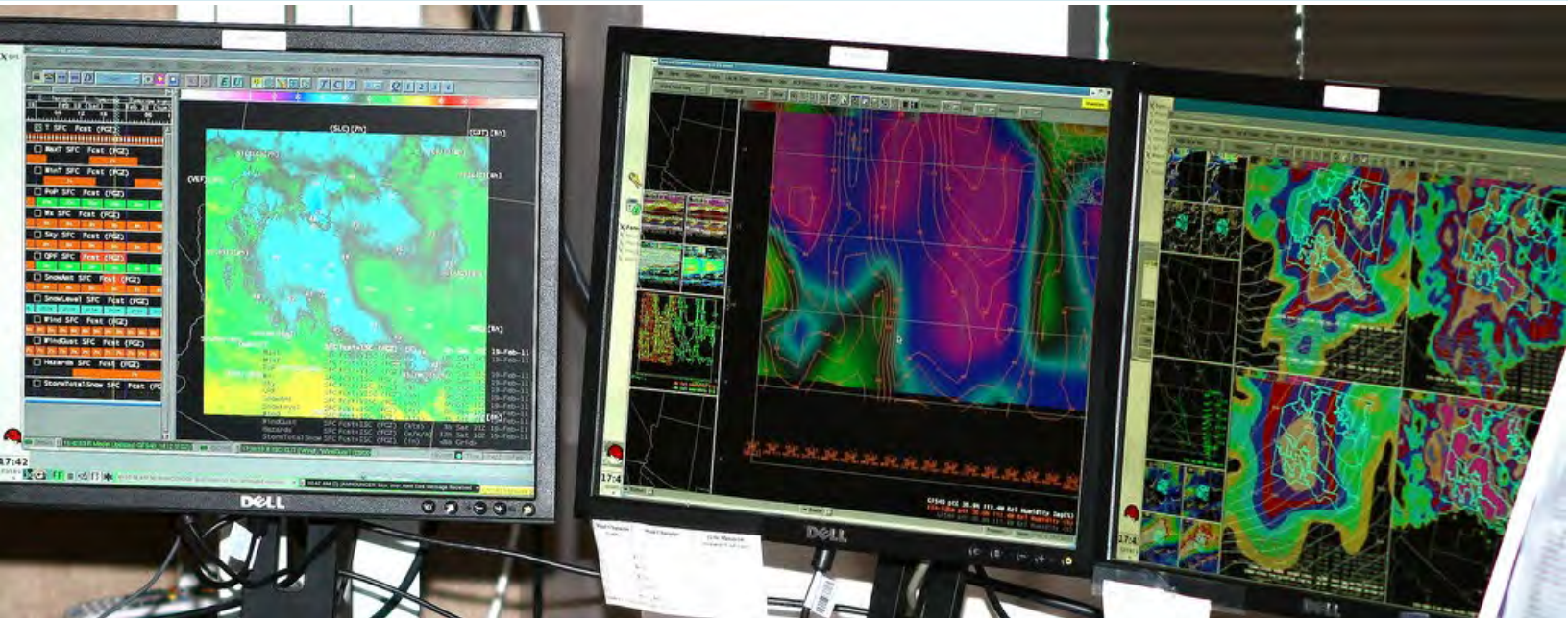
## 18.5 FUTURE TRENDS IN DEVELOPMENT

The expansion of the wildland urban interface can be managed with strong land use and building codes. Monterey County is well equipped with these tools and this planning process has assessed capabilities with regards to the tools. As the County experiences future growth, it is anticipated that the exposure to this hazard will remain as assessed over time due to these capabilities.

## 18.6 ISSUES

The major issues associated with wildfire in Monterey County include the following:

- Public education and outreach to people living in or near the fire hazard zones should include information about and assistance with mitigation activities such as defensible space, and advance identification of evacuation routes and safe zones.
- Wildfires could cause landslides as a secondary natural hazard.
- Climate change is likely to increase the frequency and severity of wildland fires in Monterey County.
- Future housing growth and development in the WUI should continue to be managed.
- Limited water supply for firefighting in high-risk wildfire areas can limit response capabilities.
- Ingress and egress in interface and intermix areas can be limited due to a lack of road infrastructure.
- Wildfire poses a large threat to key economic sectors: Agriculture and Tourism.
- Continuing and expanding hazardous fuels reduction programs. Fuel mitigation regulations hinder the ability of private property owner's ability to reduce risk on their property.



# 19. CLIMATE CHANGE

## 19.1 OVERVIEW

Climate is a description of long-term weather patterns. Climate change refers to any distinct change in measures of climate lasting for a long period of time, more specifically major changes in temperature, rainfall, snow, or wind patterns. Climate change may be limited to a specific region or may occur across the whole Earth. Climate change may result from:

- Natural factors, such as changes in the Sun's energy or slow changes in the Earth's orbit around the Sun
- Natural processes within the climate system, such as changes in ocean circulation
- Human activities that change the atmosphere's make-up, and the land surface, such as burning fossil fuels, cutting down forests, planting trees, or building developments in cities and suburb

The effects of climate change are varied and include warmer and more varied weather patterns, melting ice caps, and poor air quality, for example. Climate change will affect the people, property, economy, and ecosystems in Monterey County. The most important effect for the development of this plan is that climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will continue to affect people's livelihoods and local economies. Changing weather patterns and more extreme conditions will impact tourism and rural economies, along with changes to agriculture and crops, which are a critical backbone of Monterey County's economic

success. There will also be negative impacts to our ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

### 19.1.1 SEA LEVEL RISE

Another outcome of global climate change is sea-level rise. The sea level rose during the 20th century, and observations and projections suggest that it will rise at a higher rate during the 21st century. Rising seas increase the risk of coastal flooding, storm surge inundation, coastal erosion and shoreline retreat, and wetland loss. The cities and infrastructure that line many coasts are already vulnerable to damage from storms, which is likely to increase as sea level continues to rise and inundate areas further inland.

Globally, sea level is rising primarily because global temperatures are rising, causing ocean water to expand and land ice to melt. However, sea-level rise varies from place to place. Sea-level rise along the Pacific coast depends on the global mean sea-level rise and also on regional factors, such as ocean and atmospheric circulation patterns in the northern Pacific Ocean, gravitational and deformational effects of land ice mass changes, and tectonics along the coast. The comparative importance of these factors determines whether local sea level is higher or lower than the global mean, and how fast it is changing which has enormous implications for coastal planning.

### 19.1.2 CLIMATE CHANGE AND HAZARD MITIGATION

The *2018 California State Hazard Mitigation Plan* states that California is already experiencing the impacts of climate change, including prolonged drought, increased coastal flooding and erosion, and tree mortality. The state has also seen increased average temperatures, more extreme heat days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and both snowmelt and rainwater running off sooner in the year. The intensity of extreme weather events is also increasing. Extreme weather events and resulting hazards, such as heat waves, wildfires, droughts, and floods are already being experienced.

An essential aspect of hazard mitigation is predicting the likelihood of hazard events. Typically, predictions are based on records of past events, which assumes that the likelihood of hazard events remains essentially unchanged over time. Thus, averages based on the past frequencies are used to estimate future frequencies. For hazards that are affected by climate conditions, the assumption that future behavior will be equivalent to past behavior is not valid if climate conditions are changing. Information about how climate patterns are changing can increase the reliability of future hazard projections. The risk, severity, and likelihood of many hazards in Monterey County are affected by climate patterns. For this reason, an understanding of climate change is essential to efforts to effective hazard mitigation.

*A Hazard Mitigation Framework for Climate Adaptation*

A hazard mitigation framework for adaptation planning creates a beneficial risk management focus for climate adaptation. The complexity and cumulative nature of climate impacts in Monterey County requires a multi-hazard approach to climate change risk. Therefore, addressing climate change in the plan as a separate hazard that will increase the risk of other hazards in this plan was determined to be the most appropriate strategy. Examples of the cumulative impacts of climate change that could affect Monterey County include:

- Wildfires are likely to increase in severity and frequency due to climate change, and more frequent and severe wildfires will release more carbon into the atmosphere exacerbating climate change.
- Precipitation variability can increase the length of fire season and worsen floods and coastal storms.
- As sea levels rise more extreme storm events will cause increased flooding impacts and increase coastal erosion rates.
- Wildfires followed by storm events increase the risk of landslides. Increased erosional forces related to sea-level rise will affect sea cliffs, creating steeper slopes while undermining the base of sea cliffs, increasing the risk and magnitude of landslides.
- Exposure to wildfires, wildfire smoke, and post-wildfire events such as erosion, debris flow, and flooding can affect a watershed's functioning and its associated ecosystem services, including water quantity and water quality. Increased sedimentation in the watershed will increase flood risk.
- Sea level rise will cause wetlands to recede reducing critical ecosystem services, including carbon sequestration, flood risk reduction, water filtration, erosion control, and groundwater recharge.
- Droughts will be more extreme and last longer due to climate change and this will have a large effect on water availability and agricultural production. Droughts increase the probability of wildfire occurrence and as fires burn more intensely, the chances heat destroys valuable topsoil increases, further affecting agriculture. Droughts decrease water availability when fire risk is highest, which could be an issue when fighting fires.
- Drought can lead to groundwater overdraft, which causes land subsidence and increases the risk of seawater intrusion. Land subsidence increases sea level rise risk by creating more low-lying areas vulnerable to flooding and increasing the risk of groundwater daylighting, while seawater intrusion further reduces water supply.
- Worsened hazards can affect multiple sectors of the local economy including recreation, tourism, agriculture, and forestry. Homes that are destroyed or in hazardous areas could lose value reducing homeowner's ability to recover and effecting government revenue needed for recovery and adaptation.

In order to capture these cumulative effects and avoid maladaptation, the County decided to approach climate change resilience with a systematic multi-hazard approach.

## 19.2 HAZARD PROFILE

### 19.2.1 HISTORY

Though climate change has not been proven solely responsible for any disasters, past flooding, wildfire, and drought disasters may have been exacerbated by it. It is difficult to make direct connections to individual disasters but increases in both the magnitude and impact of hazards over the last few years is likely linked to climate change.

The powerful El Niño of 2015-16 was one of the three largest in the historical record and resulted in winter wave energy over 25% larger than a typical winter, driving unprecedented beach erosion that was 45% higher than normal.[70] The impacts from flooding and debris flows have also been increasing. Storms in 2017 caused a record amount of damage across the County. In 2021, storms caused a mudslide in the burn scar left by the River Fire that damaged 25 homes in Chualar. Flooding also occurred near the Carmel Lagoon and the Carmel River State Beach. The County has experienced an increase in wildfires, with 2018, 2019 and 2020 growing the acreage of forest burned due to extremely dry conditions. In 2020, the River, Carmel, Dolan, and Coleman fires burned a combined 180,000 acres.

Previous studies have indicated that important areas and public infrastructure will be increasingly at risk from climate change hazards. Additionally, unlike earthquakes and floods that occur over a finite time period, climate change is an ongoing hazard. Many communities are already experiencing the effects, while other effects may not be seriously experienced for decades or may be avoided altogether by mitigation actions taken today.

**Mitigation Success Story**
**City of Gonzales Growing Green**

One of the best ways to reduce the impact of future climate hazards is to make progress on climate goals today. The City of Gonzales was the first city in the County with a certified climate action plan and has already met its 2020 target for reducing energy use and greenhouse gas emissions.

Gonzales harnesses the wind and sun to reduce its carbon footprint and demonstrates how a community can use its stewardship of the environment as a way of encouraging economic vitality. Solar panels power the community pool, police headquarters, a wastewater treatment plant, and water wells.

Work on the environment and economy falls under the direction of the Gonzales Grows Green (G3) initiative. Harnessing the strong valley breeze that arises every afternoon, the City partnered with Taylor Farms to build a wind turbine on City owned land. Nonprofit developer, Foundation Windpower, built and financed the project and another food processor, Mann Packing/DelMonte Fresh, will use energy from a second wind turbine when it opens a new plant, creating 525 jobs.

[70] California Fourth Climate Change Assessment, Central Coast Region Report

### 19.2.2 LOCATION

The effects of climate change are not limited by geographical borders. Monterey County, the State of California, the United States, and the rest of the world are all at risk of climate change. As such, the entire County is at risk to the effects of climate change.

### 19.2.3 FREQUENCY

In terms of how likely and quickly impacts will occur, temperature related impacts are the most likely near-term climate change exposure facing the County and should be addressed and prioritized in future adaptation planning efforts. While sea-level rise has a high certainty rating and is already occurring, its onset is not expected to occur until closer to the end of the century in terms of changes in areas already vulnerable to flooding or causing permanent inundation in tidally influenced areas of the County. Addressing increases in flooding and wildfire risk have mid-term onsets and should be prioritized accordingly.

### 19.2.4 SEVERITY

The State of California has been taking action to address climate change for over 20 years, focusing on both greenhouse gas emissions reduction and adaptation. The California Adaptation Planning Guide (APG) provides guidance and support for communities addressing the unavoidable consequences of climate change. The *California Fourth Climate Change Assessment*[71] identifies the following climate change impacts of concern to the Central Coast:

- Maximum and minimum temperatures will continue to increase through the next century, with greater increases in inland areas. Precipitation is expected to increase slightly, but precipitation variability will increase substantially
- Projected future droughts are likely to be a serious challenge to already stressed water supplies. Higher temperatures may result in increases in water demand for agriculture and landscaping. Reduced surface water will lead to increases in groundwater extractions that may result in increased seawater intrusion. Lower surface flows will lead to higher pollutant concentrations and will impact aquatic species.
- Impacts to the region's public health include increases in heat-related illnesses for agricultural workers, harmful particulate matter from wildfires, and an increase in ground-level ozone. Infectious/Vector-borne diseases include an increase in Valley Fever and Pacific Coast tick fever, and an increase in harmful algal blooms will have detrimental effects on animals and people exposed to toxins released from the algae.
- Agricultural production is highly sensitive to climate change, including amounts, forms, and distribution of precipitation, changes in temperatures, and increased frequency and intensity of climate extremes. The Salinas Valley is identified as one of the most vulnerable agricultural regions under climate change.

[71] California Fourth Climate Change Assessment, Central Coast Region Report

- Periodic El Niño events dominate coastal hazards while atmospheric rivers, expected to increase, are the dominant drivers of locally extreme rainfall events.
- Recently observed and projected acceleration in sea level rise poses a significant threat to coastal communities. Future flooding is also a serious concern.
- Estuarine systems will be affected by accelerated sea level rise, warming of water and air, ocean acidification, and changes in runoff. Some marshes may drown or become shallow mudflats, leading to a loss of the ecosystem services that marshes provide.
- Many beaches will narrow considerably. As many as two-thirds will be completely lost over the next century, along with the ecosystems supported by those beaches. The landward erosion of beaches will be driven by accelerating sea level rise combined with a lack of ample sediment, effectively drowning the beaches between the rising ocean and the backing cliffs and/or urban hardscape.
- Frequent and sometimes large wildfires will continue to be a major disturbance and post-fire recovery time may be lengthened.

Some of these changes are direct or primary climatic changes, such as increased temperature, while others are indirect climatic changes or secondary impacts resulting from these direct changes, such as heat and air pollution. Some direct changes may interact with one another to create unique secondary impacts.

Climate change projections contain inherent uncertainty, largely derived from the fact that they depend on future greenhouse gas emission scenarios. Generally, the uncertainty in greenhouse gas emissions is addressed by the presentation of differing scenarios. Uncertainty in outcomes is generally addressed by averaging a variety of model outcomes.

Despite this uncertainty, climate change projections present valuable information to help guide decision-making for possible future conditions. Representative concentration pathways, or RCPs, are different scenarios for the future severity of climate change. The following sections summarize information developed for the County by Cal-Adapt, a resource for public information on how climate change might impact local communities, based on the most current data available. The projections are averaged across the countywide planning area and include information from two emissions scenarios, which were developed by the IPCC:

- Medium Emissions Scenario (RCP 4.5): Emissions peak around 2040 and then decline
- High Emissions Scenario (RCP 8.5): Emissions continue to rise strongly through 2050 and plateau around 2100

### *Temperature*

The historical (1961-1990) average maximum temperature in Monterey County was 70.1°F and the average minimum temperature was 41.5°F. While average temperatures may fluctuate from year-to-year, and may differ from one municipality to the next, the trend for the County indicates that average temperatures are increasing. By Mid-Century, average annual maximum temperatures are expected to increase 3.4°F – 4.2°F, depending on the emissions scenario. By

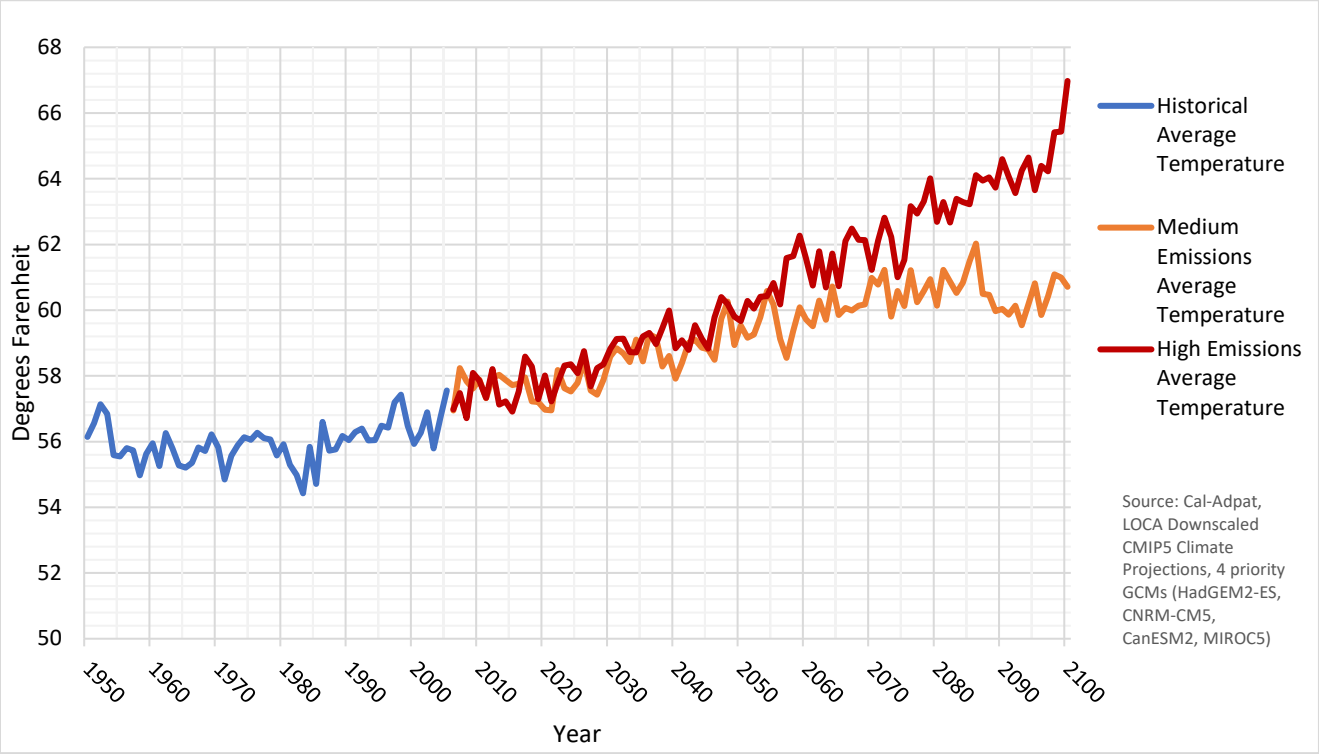
the end of the century, annual maximum temperatures could increase 4.5°F – 7.4°F. Predicted changes in annual average minimum and maximum temperatures in Monterey County is summarized in *Table 19-1*.

**Table 19-1**
**Predicted Change in Annual Average Temperatures in Monterey County (Cal Adapt)**

| Emissions Scenario | Average Minimum Temperatures | | | Average Maximum Temperatures | | |
|---|---|---|---|---|---|---|
| | Change | 30-Year Average | 30-Year Range | Change | 30-Year Average | 30-Year Range |
| **Baseline (1961-1990)** | | | | | | |
| Modeled Historical | - | 41.7 °F | 41.0 - 42.3 °F | - | 70.0 °F | 69.5 - 70.5 °F |
| **Mid-Century (2035-2064)** | | | | | | |
| Medium Emissions (RCP 4.5) | +3.1 °F | 44.8 °F | 43.1 - 46.2 °F | +3.4 °F | 73.4 °F | 71.8 - 74.8 °F |
| High Emissions (RCP 8.5) | +3.9 °F | 45.6 °F | 43.9 - 47.1 °F | +4.2 °F | 74.2 °F | 72.3 - 76.1 °F |
| **End-Century (2070-2099)** | | | | | | |
| Low Emissions (RCP 4.5) | +4.1 °F | 45.8 °F | 43.5 - 47.7 °F | +4.5 °F | 74.5 °F | 72.4 - 76.9 °F |
| High Emissions (RCP 8.5) | +7.0 °F | 48.7 °F | 45.8 - 51.5 °F | +7.4 °F | 77.4 °F | 74.6 - 81.4 °F |

*Figure 19-1* shows the projected increases in average temperatures in Monterey County under various climate change scenarios.

**Figure 19-1**
**Projected Increase in Average Temperature in Monterey County**

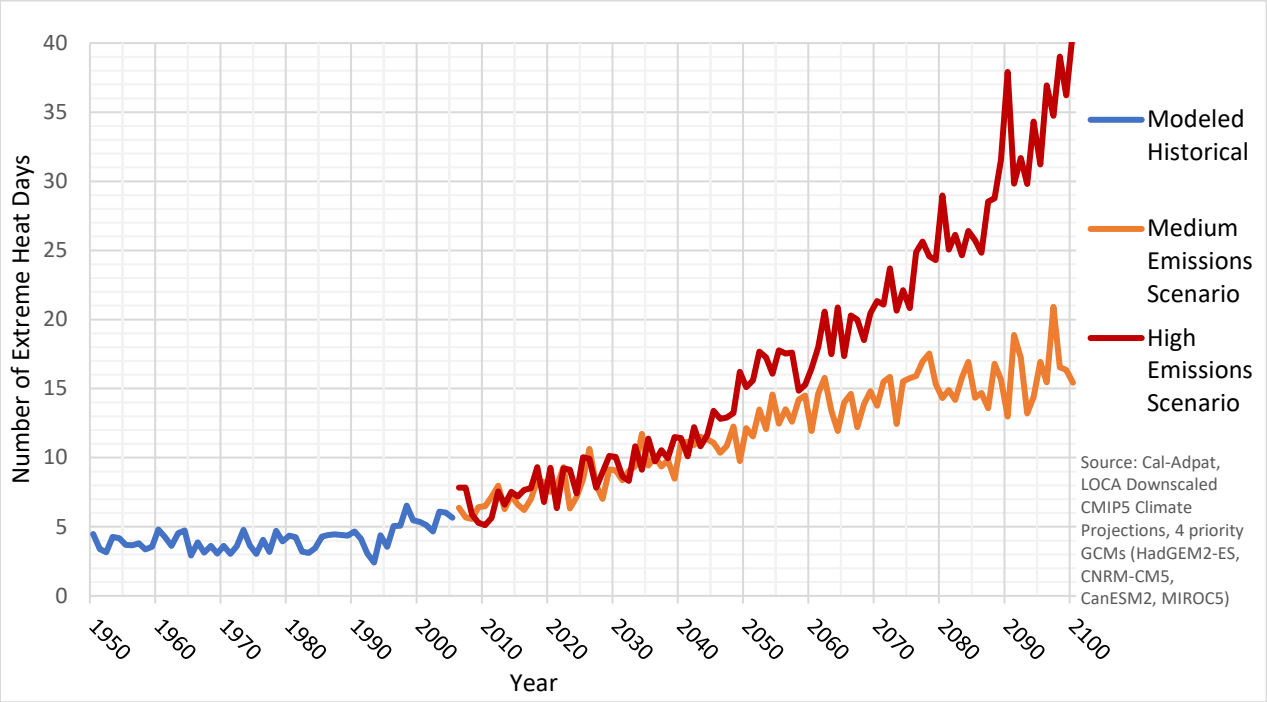


### *Extreme Heat*

Extreme hot temperatures are likely to become more common. The extreme heat day temperature threshold for Monterey County is 92.5°F. The historical average (1961-1990) number of extreme heat days is 4 days. By Mid-Century, there are projected to be an annual average of 8-11 days with temperatures over the extreme heat day threshold. By the end of the century, there are projected to be an annual average of 12-24 days per year with temperatures over the extreme heat day threshold.

*Figure 19-2* shows the projected increases in extreme heat days in Monterey County under various climate change scenarios.

**Figure 19-2**
**Projected Increase in Extreme Heat Days in Monterey County**




### *Precipitation*

Projections of changes in precipitation are more nuanced than projected changes in temperature and have less separation between emissions scenarios. There is a projected increase of year-to-year variability with wetter days during periods of precipitation, but with fewer total days with precipitation. Average annual precipitation under RCP8.5 shows significant increases by 2100. Precipitation is generally expected to increase throughout Monterey County. Historical annual average precipitation in Monterey County is 19.3 inches and annual average precipitation is projected to increase by 1.8 to 5.1 inches annually.

While average precipitation is expected to increase by a relatively small amount, annual variability increases substantially by the end of the century. Projections suggest that extremely

wet and dry years may become more severe, and that the wettest day of the year will become wetter relative to historical conditions.

*Fog*

A key feature of the Coastal regions of Monterey County is summertime coastal fog and low clouds. Low clouds reflect solar radiation, which cools the land surface. Fog droplets also add water to coastal systems. The landscape pattern of coastal fog and low clouds is remarkably stable. Low elevation sites and valleys that are open to northwest summer winds, such as Salinas Valley and Monterey Peninsula, average 15 hours/day of summertime fog and low cloud cover annually. Agriculture benefits when fog and low clouds reduce evapotranspiration rates, reducing crop demand for water and irrigation.

The future of coastal fog under climate change remains uncertain. Coastal fog formation and onshore transport are a result of complex feedbacks between ocean, air, and land systems and provide a unique focal point to better understand global to local climate change dynamics.

### 19.2.5 WARNING TIME

As this section has described, many existing hazards could be intensified as a result of climate change, decreasing warning times and exacerbating impacts. Warning times are discussed under the various other hazards. Other climate change impacts are more long-term; scientists have a high confidence in predicting the rise in global temperatures and have reached a consensus on the future impacts of climate change and the time frame in which they will occur.

## 19.3 RESPONSES TO CLIMATE CHANGE

Communities and governments worldwide are working to address, evaluate and prepare for climate change impacts that are likely to affect communities in coming decades. Generally, climate change discussions encompass two separate but inter-related considerations: mitigation and adaptation. The term “mitigation” can be confusing because the term’s meaning changes across disciplines:

- Mitigation in emergency management - as generally addressed in this hazard mitigation plan - is typically defined as the effort to reduce loss of life and property by lessening the impact of disasters.
- Mitigation in climate change discussions is defined as a human intervention to reduce impacts on the climate system. It includes strategies to reduce greenhouse gas sources and emissions and enhance greenhouse gas sinks.

In this chapter, mitigation is used as defined by the climate change community. In the other chapters of this plan, mitigation is primarily used in an emergency management context.

Adaptation refers to adjustments in natural or human systems in response to the actual or anticipated effects of climate change and associated impacts. These adjustments may moderate

harm or exploit beneficial opportunities. Mitigation and adaptation are related, as the world's ability to reduce greenhouse gas emissions will affect the degree of adaptation that will be necessary. Some initiatives and actions can both reduce greenhouse gas emissions and support adaptation to likely future conditions.

Societies across the world are facing the need to adapt to changing conditions associated with natural disasters and climate change. Farmers are altering crops and agricultural methods to deal with changing rainfall and rising temperature; architects and engineers are redesigning buildings; planners are looking at managing water supplies to deal with droughts or flooding.

Adaptive capacity is the potential or ability of a system, region, or community to adapt to the effects or impacts of climate change. Enhancement of adaptive capacity represents a practical means of coping with changes and uncertainties in climate, including variability and extremes. Adaptive capacity goes beyond human systems, as some ecosystems are able to adapt to change and to buffer surrounding areas from the impacts of change. Forests can bind soils and hold large volumes of water during times of plenty, releasing it through the year; floodplains can absorb vast volumes of water during peak flows; coastal ecosystems can hold out against storms, attenuating waves and reducing erosion. Other ecosystem services, such as food provision, timber, materials, medicines, and recreation, can provide a buffer to societies in the face of changing conditions. Ecosystem-based adaptation is the use of biodiversity and ecosystem services as part of an overall strategy to help people adapt to the adverse effects of climate change. This includes the sustainable management, conservation and restoration of specific ecosystems that provide key services.

Assessment of the current climate action planning efforts of the planning partners are included in the jurisdiction-specific annexes in **Volume 2.**

### 19.3.1 COMMUNITY RESILIENCE

Adaptation and resilience are not the same thing, although they are related. As noted previously, adaptation refers to adjustments in natural or human systems in response to the actual or anticipated effects of climate change and associated impacts. Resilience is the capacity of any entity - an individual, a community, an organization, or a natural system - to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience. A community's resilience is determined by its ability to survive, adapt, and thrive no matter what acute shock or chronic stressor it experiences. Put simply, adaptation is an action or set of actions, and resilience describes a desired outcome.

Flooding, drought, and other climate-hazards increase risk to already vulnerable populations. Becoming more resilient by anticipating and addressing community threats, holds the potential to save lives, to save billions in recovery dollars and economic losses, and encourages social equity and connectedness, fostering communities that grow and recover in ways that make them stronger than before.

Monterey County is taking steps to prepare for the impacts of a changing climate and a series of adaptive steps can greatly contribute to resilience. In a resilient Monterey County:

- Built infrastructure systems can withstand changing conditions and shocks, including changes in climate conditions, while continuing to provide critical services.
- People and communities can respond to changing average conditions, shocks, and stresses in a manner that minimizes risks to public health, safety, and economic disruption; and maximizes equity and protection of the most vulnerable so that they do not simply survive climate-related events but thrive after these events.
- Natural systems can adjust and maintain functioning ecosystems in the face of change.

The Monterey County Community Resilience Plan is a countywide framework outlining the challenges and opportunities to building a more resilient Monterey County. Through the resilience assessment and community discussions, Monterey County has identified six strategies to build community resilience and address the unpredictable impacts of environmental, social, and economic shocks and stresses.

### *Strategy 1: Build Social Capital*

Social capital encompasses the social networks, associations, and the trust that they generate among groups and individuals within the community. Social capital has the potential to contribute to resilience by enhancing sense of belonging and strengthening bonds between individuals and groups within communities. By building social capital and creating a strong sense of community, Monterey County can build a network of social support, which can help the community work together to be more prepared before, during, and after disasters. A socially connected community is more resilient and better able to withstand disasters and foster community recovery.

### *Strategy 2: Enhance Emergency Services Infrastructure*

Emergency preparedness, response, and recovery, efforts can help protect the community from the impacts of disasters. Enhancing emergency services infrastructure can make it easier to withstand, respond to and recover from emergencies. Further, advanced planning for critical facilities and infrastructure, transportation, and communication systems can make response and recovery efforts easier. For communities to function and prosper, they need buildings and infrastructure systems that are operational. When buildings and infrastructure systems are damaged, social services frequently are interrupted, economic losses soar, and resources must be re-allocated to repair and rebuild. Continual improvements in preparedness in response to threats and disruptions will build a stronger and more resilient Monterey County.

### *Strategy 3: Move Toward Sustainability*

Resilience and sustainability represent complementary values. Sustainability is the ability to continue important functions indefinitely without a decline in quality. Resilience is the ability to thrive in the face of change. Together, these two concepts identify a key social, economic, and environmental goal: to create systems that enhance, rather than degrade, the world around

them, and in turn that can withstand inevitable shocks from environmental and technological changes.

*Strategy 4: Create Healthy Communities*

Health, meaning physical, behavioral, social, and environmental health and wellbeing, is a big part of overall resilience. In many ways, health is a key foundation of resilience because almost everything done to prepare for disasters and protect infrastructure is ultimately in the interest of preserving human health and welfare. A resilient community has accessible health systems that are able to withstand disasters. The community can take collective action after an adverse event because it has developed resources that reduce the impact of major disturbances and help protect people's health. Resilient communities promote individual and community physical, behavioral, and social health to strengthen their communities for daily, as well as extreme, challenges.

*Strategy 5: Encourage Resilient Households*

A resilient community has the capacity, resources, and tools necessary to prepare for, withstand, and respond to system shocks and unexpected events, and this can start at the household level. Preparing families and households to anticipate the impacts of natural hazards and disasters, will increase their ability to persevere through the event and get back to normal life as quickly as possible.

*Strategy 6: Empower Social Mobility*

A resilient community understands that hazards and disasters have disproportionately adverse impacts on vulnerable populations (including economically disadvantaged, racial and ethnic minorities, the uninsured, low-income children, and elderly residents, the homeless, and those with chronic health conditions) and works to understand and meet the needs of all.

## 19.4 RISK ASSESSMENT- SEA LEVEL RISE

This Plan highlights sea-level rise within the climate change section because this hazard has delineated hazard boundaries and quantifiable exposure and damage estimations directly related to climate change.

While flooding already poses a risk in Monterey County, rising seas will put new areas at risk and increase the likelihood and intensity of floods in areas already at risk. Rising sea levels will affect Monterey County in several ways including increased tidal inundation, coastal erosion, tsunami inundation, and seawater intrusion, as well as worsened storm surge leading to increased coastal and fluvial flooding. Coastal levees and flood control structures will be undersized to manage the combined influences of higher flow events and sea level rise. Erosion of barrier dunes will expose previously protected areas to flooding.

Under medium to medium-high emissions scenario, projections indicate mean sea level along the coast of Monterey County could rise close to 5 feet by 2100.[72] The current sea level rise projections for the Monterey Tide Gauge are summarized in *Table 19-2.*

**Table 19-2**
**Monterey Tide Gauge Projected Sea Level Rise (in feet)**

| Year | Low Risk Aversion[1]* | Medium-High Risk Aversion[2]* | Extreme Risk Aversion** |
|---|---|---|---|
| | *Upper Limit of Likely* | *1-in-200 Chance* | *Single Scenario* |
| 2030 | 0.5 | 0.8 | 1.0 |
| 2040 | 0.8 | 1.2 | 1.7 |
| 2050 | 1.1 | 1.9 | 2.7 |
| 2060 | 1.4 | 2.6 | 3.8 |
| 2070 | 1.8 | 3.4 | 5.1 |
| 2080 | 2.3 | 4.4 | 6.6 |
| 2090 | 2.8 | 5.5 | 8.2 |
| 2100 | 3.3 | 6.9 | 10.1 |

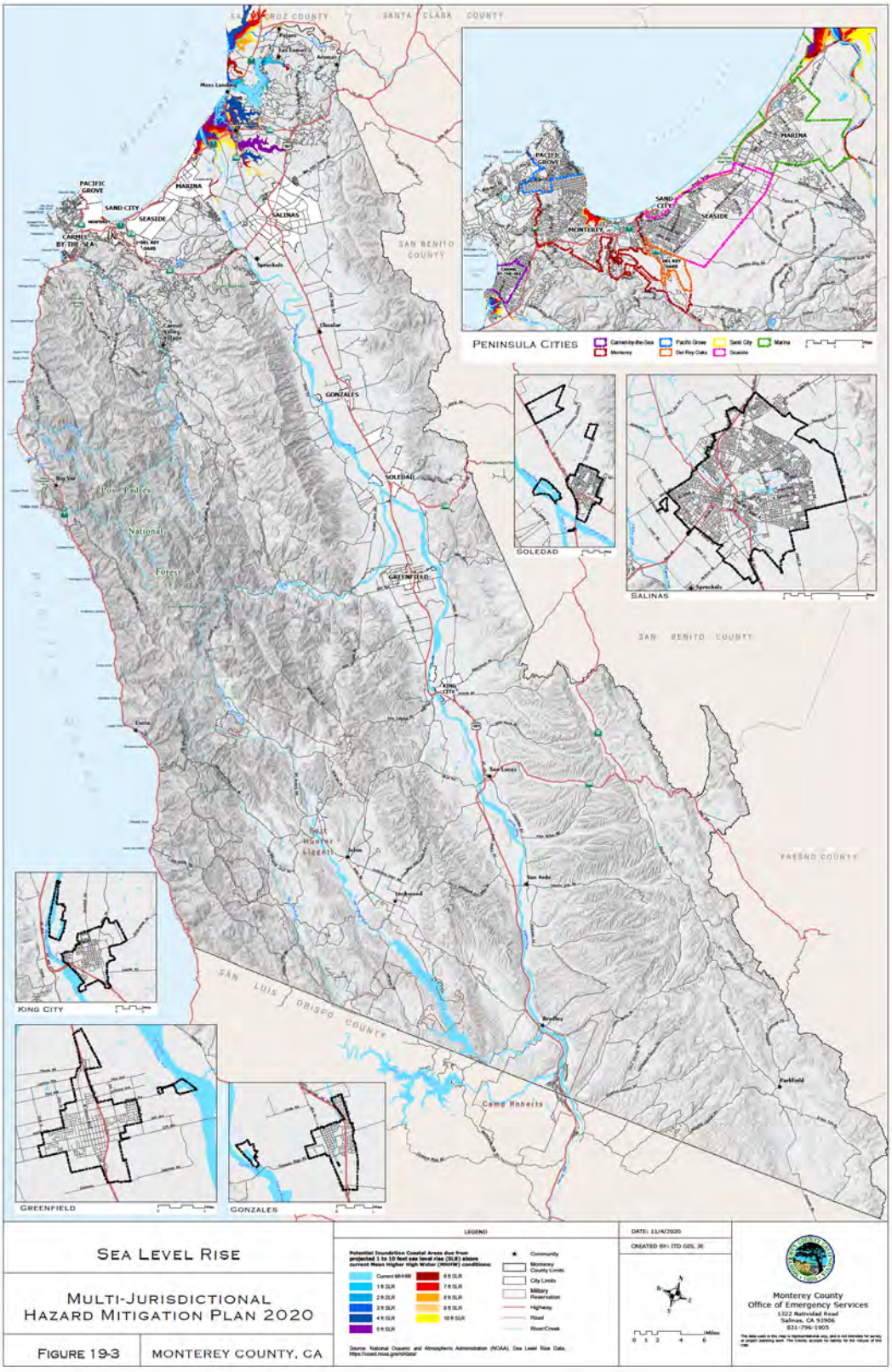
[1] ~17% probability sea level rise exceeds number listed
[2] 0.5% probability sea level rise exceeds number listed
* Probabilistic Projections (in feet) (based on Kopp et al. 2014)
** H++ Scenario, no associated probability (Sweet et al. 2017)

While mean sea level will rise across the County, it is relative. Locational differences in elevation between the height of the sea surface and the height of the land surface will lead to a variation in the risks posed to communities and ecosystems from coastal flooding. Relative sea level rise across the County will be determined by vertical land motion, changes in the height of the geoid (the gravitationally determined surface of the ocean in the absence of tides and ocean currents), and changes in the height of the sea surface relative to the geoid. Additionally, land use patterns and development, flood control structures, habitat, and geomorphology vary greatly. Therefore, the change in relative sea level will vary across the County coastline.

Sea level rise risk exposure was calculated based on the NOAA Office for Coastal Management's sea level rise projections.[73] Based on NOAA's scenarios*, Figure 19-3* shows the potential inundation coastal areas from projected 1 to 10 feet sea level rise above the current Mean Higher High Water (MHHW) condition.

Three sea level rise levels (25 cm, 75 cm, and 200 cm) were chosen to represent planning horizons based on Ocean Protection Council (OPC) Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk. This assessment is based on current conditions and does consider any adaptation or mitigation measures that may be taken in the coming decades.

[72] State of California Sea-Level Rise Guidance, Ocean Protection Council (2018)
[73] Sea Level Rise Viewer, NOAA Office for Coastal Management




SEA LEVEL RISE

MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 2020

FIGURE 19-3 | MONTEREY COUNTY, CA

### 19.4.1 POPULATION AND PROPERTY

*Table 19-3*, *Table 19-4*, and *Table 19-5* summarize people and property that will be exposed to sea level rise risk in the Supervisorial District 2, 4, and 5, respectively. Districts 1 and 3 are not located on the coast and were not considered exposed to sea level rise risk.

**Table 19-3**
**Population and Property Exposed to Sea Level Rise in Monterey County District 2**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 2,129 | 39 | $12,796,994 | 1,342 | $153,665,283 |
| 3 ft Sea Level Rise (2060) | 2,570 | 54 | $19,137,706 | 1,449 | $212,686,695 |
| 7 ft Sea Level Rise (2100) | 7,000 | 294 | $140,045,288 | 1,757 | $334,589,838 |

**Table 19-4**
**Population and Property Exposed to Sea Level Rise in Monterey County District 4**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 85 | 1 | $170,236 | 73 | $172,367,581 |
| 3 ft Sea Level Rise (2060) | 85 | 1 | $170,236 | 78 | $173,380,493 |
| 7 ft Sea Level Rise (2100) | 127 | 4 | $1,443,035 | 96 | $199,664,235 |

**Table 19-5**
**Population and Property Exposed to Sea Level Rise in Monterey County District 5**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 1,056 | 165 | $901,001,664 | 391 | $463,086,630 |
| 3 ft Sea Level Rise (2060) | 1,070 | 183 | $1,044,954,182 | 418 | $593,512,581 |
| 7 ft Sea Level Rise (2100) | 1,830 | 218 | $1,212,814,204 | 708 | $747,868,671 |

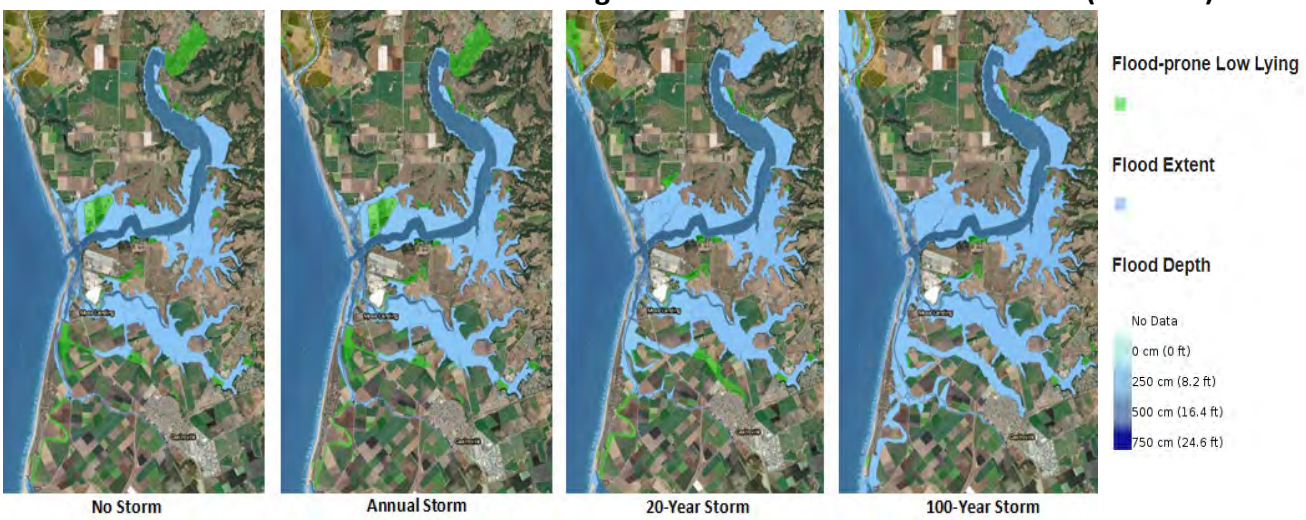
It is also important to consider the combined effect of sea level rise with worsened storm surge. During a 1% annual chance flood, 5 feet of sea level rise would leave around 14,000 people and $2.2 billion in property vulnerable to flooding in the County.[74]

Coastal Storm Modeling System (CoSMoS) expands and improves on earlier sea level rise studies by dynamically modeling storm and sea level rise scenarios across California, and incorporating fluvial discharge, ocean swell, storm surge, and sea level anomalies (as during El Niño). CoSMoS modeling indicates some areas will be increasingly vulnerable to the cumulative impacts of sea level rise.

[74] California Climate Change Center, The Impacts of Sea Level Rise on the California Coast (May 2009)

For example, as seen in *Figure 19-4,* with 1.6 feet of sea level rise flood extent in the Moss Landing area will vary based on the storm magnitude.

**Figure 19-4**
**1.6 Feet Sea Level Rise in the Moss Landing Area with Various Storm Scenarios (CoSMoS)**




## 19.4.2 CRITICAL FACILITIES AND INFRASTRUCTURE

Some critical infrastructure and facilities are at increased risk of coastal flooding in the County due to sea level rise. Portions of Highway 1 in the northern end of the County will become increasingly vulnerable to sea level rise risk. Critical facilities and other important assets may be damaged by temporary inundation, resulting in loss of services such as power or wastewater treatment.

*Table 19-6* summarizes critical infrastructure exposed to sea level rise risk.

**Table 19-6**
**Critical Infrastructure Exposed to Sea Level Rise Risk**

| Critical Infrastructure Type | 1 ft Sea Level Rise (2030) | 3 ft Sea Level Rise (2060) | 7 ft Sea Level Rise (2100) |
|---|---|---|---|
| **Facilities** | | | |
| Emergency Response | 0 | 0 | 0 |
| Fire Station | 0 | 0 | 0 |
| Police Station | 0 | 0 | 0 |
| Medical Facilities | 0 | 0 | 0 |
| Military Facility | 0 | 0 | 0 |
| Large Public Facilities | 0 | 0 | 0 |
| Educational Facilities | 0 | 1 | 2 |
| Power Plant | 0 | 0 | 0 |
| Water & Wastewater Facilities | 1 | 1 | 11 |

**Table 19-6**
**Critical Infrastructure Exposed to Sea Level Rise Risk**

| Critical Infrastructure Type | 1 ft Sea Level Rise (2030) | 3 ft Sea Level Rise (2060) | 7 ft Sea Level Rise (2100) |
|---|---|---|---|
| Stormwater Facilities | 0 | 0 | 3 |
| Government Facilities | 0 | 0 | 0 |
| Communication Facilities | 4 | 7 | 17 |
| Rain Gauges | 0 | 1 | 0 |
| Lighthouses | 0 | 0 | 0 |
| Dams | 0 | 0 | 0 |
| **Hazardous Materials** | | | |
| Active or Idle Oil Well | 2 | 3 | 4 |
| Landfill | 0 | 0 | 0 |
| Underground Tank | 0 | 0 | 0 |
| Cal ARP Facility | 0 | 0 | 0 |
| **Transportation** | | | |
| Airport | 0 | 0 | 0 |
| Bridge | 8 | 0 | 9 |
| Harbor | 3 | 3 | 3 |
| Highway/Freeway (Miles) | 0.2 | 2 | 36 |
| Driveway (Miles) | 0 | 0 | 0 |
| Major Road (Miles) | 8 | 12 | 49 |
| Local (Miles) | 6 | 9 | 20 |
| Railroad (Miles) | 3 | 1 | 9 |

As noted previously, it is also important to consider the combined effect of sea level rise with worsened storm surge. During a 1% annual chance flood, 5 feet of sea level rise would leave around 141 miles of highways and roads, and 23 miles of railway vulnerable to flooding in the County.[75]

### 19.4.3 ENVIRONMENT

Important coastal habitat may be lost as sea level rise permanently inundates areas, or it may be damaged due to extreme tide and storm surge events. Seawater intrusion into freshwater resources may occur, further altering habitat and ecosystems. Protective ecosystem services may be lost as land area and wetlands are permanently inundated.

Monterey County contains many important protected habitats, including the Monterey Bay National Marine Sanctuary, the largest marine protected area in the United States, as well as the Elkhorn Slough State National Estuarine Research Reserve, the Moss Landing State Wildlife Area, the Moro Cojo State Marine Reserve, and the Salinas River Dunes Natural Wildlife Refuge.

[75] California Climate Change Center, The Impacts of Sea Level Rise on the California Coast (May 2009)

The Elkhorn Slough, a unique tidal salt marsh, provides critical habitats for many species, including a large variety of aquatic birds, marine invertebrates, and fish, as well as sea otters, sea lions, and harbor seals. Biodiversity in the Elkhorn Slough is among the highest in the US. The Moro Cojo Slough and Old Salinas River also provide important habitats for threatened species. This is currently the third largest extent of estuarine marsh in the State, but around 85% is at risk of degradation and could become open water due to sea level rise. Researchers have estimated the slough and the adjacent Moss Landing Harbor area host roughly 5% of the statewide population of sea otters.[76] These areas likely will play an important role in the recovery of the California sea otter population and therefore conservation of this area is particularly important. Beach dunes provide important habitat for many native plants and animals, including the western snowy plover, western fence lizard, beach wild rye, and many more species. Loss of coastal dunes means loss of important habitat for species as well as loss of an important protective buffer.

### 19.4.4 ECONOMIC IMPACT

Sea level rise will impact the local economy. Tourism is a major economic driver in Monterey County, and future sea level rise could threaten popular beaches and recreational facilities. Sea level rise could affect vertical and lateral beach access points, which would prevent residents and visitors from accessing the beach and may increase the risk of injuries.

Beach tourism is important to the County' economy and generates significant revenue as many visitors rent hotels or other accommodations, dine out or shop at area stores. Visitor-serving areas such as those on the Monterey Peninsula and in Big Sur include local businesses and hotels that benefit the local economy. These businesses depend on tourism, and cities and communities within the County benefit from sales tax revenues. Disruption of these areas due to impacts of sea level rise could decrease economic activity and affect the local economy. Future sea level rise in the County may also negatively impact coastal businesses and households and decrease coastal real estate opportunities. Coastal businesses may relocate to other areas rather than face high costs from increased risk to storm surge and costs associated with managed retreat. Local tax revenue may decline as areas that were previously occupied by houses and businesses are permanently inundated.

Sea level rise is also likely to increase the risk of flooding in the lower Salinas Valley. This could lead to the flooding on large swaths of agricultural land and threaten a major economic driver. Sea level rise in addition to coastal storms and erosion impacts could lead to severe flooding and inundation of economically important infrastructure such as harbors and buildings related to commercial and recreational fisheries.

[76] Elkhorn Slough, Technical Report Series

## 19.5 RISK ASSESSMENT- HAZARDS OF CONCERN

This section discusses the increased risk posed by specific hazards previously profiled in this plan that were identified as likely to increase in impact due to climate changes. The following sections provide information on how each identified hazard of concern for this planning process may be impacted by climate change and how these impacts may alter current exposure and vulnerability to these hazards for the people, property, critical facilities, and the environment in Monterey County.

### 19.5.1 AGRICULTURAL EMERGENCIES

The Salinas Valley is identified as one of the most vulnerable agricultural regions under climate change. [77] The amounts, forms, and distribution of precipitation, as well as the increased frequency and intensity of climate extremes, will affect water availability as well as pests, crop yields, and the length of the growing season.

Many weeds, pests, and fungi thrive under warmer temperatures, wetter climates, and increased CO2 levels. The ranges and distribution of weeds and pests are likely to increase with climate change. This could cause new problems for farmers' crops previously unexposed to these species. Plant and livestock diseases are also affected by temperature related climate factors. [78] Warmer temperatures could allow some parasites and pathogens to survive more easily and increased rainfall, moisture-reliant pathogens could thrive. [79]

For any particular crop, the effect of increased temperature will depend on the crop's optimal temperature for growth and reproduction. Many permanent crops are sensitive to small temperature changes during development stages and/or close to harvest. Threshold temperature impacts can affect dairy production and wine grape quality. For example, the yields for wine grapes and strawberries may be reduced due to warm winters. [80] Extreme events, especially floods and droughts, can harm crops and reduce yields. Dealing with drought could become a challenge in areas where rising summer temperatures cause soils to become drier. Heat could also directly threaten livestock. Heat stress affects animals both directly and indirectly. Over time, heat stress can increase vulnerability to disease, reduce fertility, and reduce milk production.

Climate change also has the potential to impact water availability. It may cause farmers to change the crops they plant, affecting water demand and the amount of water they apply. Adaptation options to shift varieties or locations of production would require significant time

[77] Vulnerability and Adaptation to Climate Change in California Agriculture, California Energy Commission
[78] Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources, US Climate Change Science Program and the Subcommittee on Global Change Research (2008)
[79] The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States, US Climate Change Science Program and the Subcommittee on Global Change Research (2008)
[80] Ch. 6: Agriculture. Climate Change Impacts in the United States: The Third National Climate Assessment, US Global Change Research Program (2014)

and capital investment. Climate change could also impact agriculture in the region by increasing the demand for irrigation to meet higher evaporative processes. Monterey County is highly reliant on groundwater for agricultural operations. As climate change exacerbates drought conditions overdraft of the aquifers is likely to increase. Seawater intrusion is already a major threat to groundwater supply, and this is likely to increase as sea levels rise.

### 19.5.2 COASTAL EROSION

Sea level rise is likely to increase rates of coastal erosion due to the increase in the frequency, severity, and duration of high tides and wind-driven waves associated with severe storms. Higher sea level will expose beaches, cliffs, and coastal dunes to more persistent erosional forces. High tides may also coincide with heavy rain exacerbating coastal flooding, coastal erosion, and landslides, such as were experienced during the 1998 and 2016 El Nino storms.[81] Over the next 50 years, sea level rise is predicted to increase coastal erosion 20-25% over historic erosion rates and in the 50-100-year timeframe, erosion rates are projected to increase an additional 40-50% over historic rates.[82]

To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center CoSMos shoreline change, and cliff retreat projection data was used. For cliff retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion. Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk. *Table 19-7* summarizes coastal erosion risk in Monterey County based on sea level rise scenario and erosion type.

**Table 19-7**
**Population and Property Exposed to Coastal Erosion Risk in Monterey County**

| Sea Level Rise Scenario/ Erosion Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| **Cliff Erosion** | | | | | |
| Sea Level Rise (25 cm) | 1,027 | 206 | $1,183,367,352 | 226 | $221,988,454 |
| Sea Level Rise (75 cm) | 1,642 | 226 | $1,244,106,508 | 227 | $223,536,860 |
| Sea Level Rise (200 cm) | 1,932 | 253 | $1,323,971,611 | 248 | $240,099,182 |
| **Shoreline Erosion** | | | | | |
| Sea Level Rise (25 cm) | 489 | 4 | $3,099,857 | 24 | $196,070,566 |
| Sea Level Rise (75 cm) | 213 | 4 | $3,099,857 | 54 | $196,070,566 |
| Sea Level Rise (200 cm) | 213 | 4 | $3,099,857 | 49 | $190,008,411 |

[81] Governor's Office of Emergency Services (Cal OES), State of California Hazard Mitigation Plan
[82] Association of Monterey Bay Area Governments, Coastal Regional Sediment Management Plan

### 19.5.3 DAM AND LEVEE FAILURE

On average, changes in California's annual precipitation levels are not expected to be dramatic; however, small changes may have significant impacts for water resource systems, including dams and levees. Dams and levees are designed partly based on assumptions about a river's flow behavior, expressed as hydrographs. Changes in weather patterns can have significant effects on the hydrograph used for the design of a dam or levee. If the hygrograph changes, it is conceivable that the dam or levee can lose some or all of its designed margin of safety, also known as freeboard. In the case of dams, if freeboard is reduced, dam operators may be forced to release increased volumes earlier in a storm cycle in order to maintain the required margins of safety. Such early releases of increased volumes can increase flood potential downstream.

For levees, a reduction in freeboard caused by a changing hydrograph means that a levee may no longer protect an area against the design-storm standard for which it was originally built (for example 1-%-annual chance). This means that risk to the area that a levee is protecting from inundation will increase. Levee accreditation may be rescinded, resulting in currently protected areas being mapped within a flood hazard area.

Dams are constructed with safety features known as "spillways." Spillways are put in place on dams as a safety measure in the event of the reservoir filling too quickly. Spillway overflow events, often referred to as "design failures," result in increased discharges downstream and increased flooding potential. Although climate change will not increase the probability of catastrophic dam failure, it may increase the probability of design failures.

Climate change could lead to increases in flood flows, which would result in that water infrastructure, such as dams, would need to manage flows for which they were not designed. Climate change may result in the need for increased safety precautions to address higher winter runoff, frequent fluctuations of water levels, and increased potential for sedimentation and debris accumulation from changing erosion patterns and increases in wildfires. Climate change will likely impact the ability of dam operators to estimate extreme flood events.

### 19.5.4 DROUGHT

With a warmer climate, droughts could become more frequent, more severe, and longer lasting. While climate models tend to differ about future precipitation trends and their magnitudes in California, projections show an increase in extreme dry events and only modest changes in mean precipitation. When combined with increasing temperatures, even minor fluctuations will increase pressure on Monterey County's water resources, which are already over-stretched by the demands of a growing agriculture economy and population. Existing local surface storage and groundwater recharge will become less reliable and more expensive. Decreasing snowmelt and spring stream flows coupled with increasing demand for water resulting from both a growing population and hotter climate could lead to increasing water shortages.

Some areas could experience longer, more intense droughts, resulting from higher summer temperatures and reduced precipitation. Reduction in precipitation coupled with heat stress could adversely impact crop production and dry out soils. Drought may threaten pasture and feed supplies. Drought reduces the amount of quality forage available to grazing livestock. For animals that rely on grain, changes in crop production due to drought could also become a problem. Drought is likely to lead to reduced water supplies, leaving less water available for irrigation when more is needed.

More extreme droughts and higher temperatures will also alter the natural recharge of groundwater and potentially exacerbate groundwater overdraft. Reduced groundwater storage limits the use of groundwater as a backup supply during drought. One of the most persistent water quality problems in the region, the intrusion of salt water into groundwater aquifers and wells, could potentially increase under climate change depending on the implementation of adaptation projects.

### 19.5.5 EARTHQUAKE

The impacts of global climate change on earthquake probability are unknown. Some scientists say that melting glaciers could induce tectonic activity. As ice melts and water runs off, tremendous amounts of weight are shifted on the earth's crust. As newly freed crust returns to its original, pre-glacier shape, it could cause seismic plates to slip and stimulate volcanic activity, according to research into prehistoric earthquakes and volcanic activity. NASA and USGS scientists found that retreating glaciers in southern Alaska may be opening the way for future earthquakes. The study found that as glaciers melt, they lighten the load on the Earth's crust. Tectonic plates, which are mobile pieces of the Earth's crust, can then move more freely. [83]

Secondary impacts of earthquakes could be magnified by climate change. Soils saturated by repetitive storms or heavy precipitation could experience liquefaction or an increased propensity for slides during seismic activity due to the increased saturation. Dams storing increased volumes of water due to changes in the hydrograph could fail during seismic events.

### 19.5.6 FLOODING

Scientist's project greater storm intensity with climate change, resulting in more direct runoff and flooding. High frequency flood events in particular will likely increase with a changing climate. What is currently considered a 1-%-annual-chance flood may also strike more often, leaving many communities at greater risk. Extreme atmospheric river events, the dominant driver of locally extreme rainfall events and associated flooding, are expected to increase under projected climate change.

[83] Retreating Glaciers Spur Alaskan Earthquakes, NASA (August 2004)

The amount of snow is critical for water supply and environmental needs, but so is the timing of snowmelt runoff into rivers and streams. Rising snowlines caused by climate change will allow more mountain areas, such as the Sierra Nevada watersheds, to contribute to peak storm runoff. Changes in watershed vegetation and soil moisture conditions will likewise change runoff and recharge patterns. As stream flows and velocities change, erosion patterns will also change, altering channel shapes and depths, possibly increasing sedimentation behind dams, and affecting habitat and water quality. With potential increases in the frequency and intensity of wildfires due to climate change, there is potential for more floods following fire, which increase sediment loads and water quality impacts.

### 19.5.7 HUMAN CAUSED HAZARDS

Studies have linked high temperatures with increases in intense violence.[84] Increasing evidence indicates that climate change is causally associated with collective violence, generally in combination with other factors. Increased temperatures and extremes of precipitation with their associated consequences, including resultant scarcity of cropland and other key environmental resources, are major pathways by which climate change leads to collective violence.[85]

Large-scale human migration due to resource scarcity, increased frequency of extreme weather events, and other factors is likely to increase with climate change. Populations in communities with worsening conditions may consider moving to better places, provided the costs of migration are affordable. However, sudden climatic changes or natural disasters might lead, in the absence of alternatives, to migration choices which are forced rather than the result of a well-planned process. The exact impact of climate induced migration is uncertain at this time. More favorable areas are likely to see increases in population, while other areas see dramatic decreases.

### 19.5.8 PUBLIC HEALTH HAZARDS

Increased temperatures that manifest as heat waves directly harm human health through heat-related illnesses and the exacerbation of pre-existing conditions in vulnerable populations. Heat waves are defined as five days over 79°F to 85°F along the coast and 99°F to 101°F inland. Coastal areas should expect one more heat wave per year by 2050 and four to eight more per year by 2100. Inland, three to four more heat waves are expected to 2050 and eight to ten more per year in 2100.[86] Some populations in Monterey County are especially vulnerable to the effects of more frequents extreme heat events. Heat waves and prolonged heat days in the

[84] Heat and Violence, Craig A. Anderson, *Current Directions in Psychological Science* (February 2001)
[85] Climate Change and Collective Violence, Barry S. Levy, Victor W. Sidel, and Jonathan A. Patz, *Annual Review of Public Health* (March 2017)
[86] Climate Change and Health Profile Report: Monterey County, California Department of Public Health (February 2017)

area would increase the exposure of thousands of outdoor workers to heat related illnesses, including vulnerable populations such as agricultural field workers.

Rising temperatures and more extreme drought events are increasingly associated with an uptick in vector-borne and infectious disease transmission. Climate is one of the factors that influence the distribution of diseases borne by vectors (such as fleas, ticks, and mosquitoes), which spread pathogens that cause illness. The geographic and seasonal distribution of vector populations, and the diseases they can carry, depends not only on climate but also on land use, socioeconomic and cultural factors, pest control, access to health care, and human responses to disease risk, among other factors. Daily, seasonal, or year-to-year climate variability can sometimes result in vector/pathogen adaptation and shifts or expansions in their geographic ranges. Such shifts can alter disease incidence depending on vector-host interaction, host immunity, and pathogen evolution. Additionally, lack of soil moisture due to drought and evaporation from high temperatures increases dust particle concentration, which sometimes house harmful fungal spores and viruses.[87]

Cases of vector-borne disease, including Lyme disease, are expected to rise with climate change. A newly identified vector-borne disease, Pacific Coast Tick Fever, is spread by *Dermacentor occidentalis*, which harbors *Rickettsia philipii*, the causative agent of the disease. Although still an emerging illness, a few of the human cases originated in the Central Coast. With Pacific Coast Tick Fever exhibiting a summer trend so far, climate change and increasing temperatures have the potential to extend transmittal season in the Central Coast.

West Nile Virus, a mosquito-borne illness has also made a presence in the Monterey County, though to a much smaller extent than other parts of California. Rising temperatures, changing precipitation patterns, and a higher frequency of some extreme weather events associated with climate change will influence the distribution, abundance, and prevalence of infection in the mosquitoes that transmit West Nile virus and other pathogens by altering habitat availability and mosquito and viral reproduction rates. Alterations in the distribution, abundance, and infection rate of mosquitoes will influence human exposure to bites from infected mosquitoes, which is expected to alter risk for human disease.

The California Department of Public Health (CDPH) has also identified the Central Coast, and Monterey County as a high-risk area for Valley Fever. The illness, transmitted by the *Coccidioides immitis* fungus, is found in disturbed, dry soil particles that are breathed in. Its symptoms include chest pain, exhaustion, fever, coughing, joint and muscle pain, and difficulty breathing, among other symptoms, and can persist for weeks or even months. In particular, the 2006 Santa Barbara fires, driven to a great extent by high winds, may have exposed some

[87] The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment, US Global Change Research Program (2016)

firefighters to the illness while they engaged in soil disruption and removing vegetation to prevent wildfire spread.

Vector-borne pathogens are expected to emerge or reemerge due to the interactions of climate factors with many other drivers, such as changing land-use patterns. The impacts to human disease, however, will be limited by the adaptive capacity of human populations, such as vector control practices or personal protective measures.

### 19.5.9 SEVERE WEATHER

Climate change has already increased the number and strength of severe weather events and is likely to continue to increase in prolonged periods of excessively high temperatures, heat waves, extended frost, and severe winter storms. Extreme atmospheric river events, the dominant driver of locally extreme rainfall events and associated flooding, are expected to increase under projected climate change. Climate change impacts on other severe weather events such as thunderstorms and high winds are still not well understood.

### 19.5.10 SLOPE FAILURE

Climate change may impact storm patterns, increasing the probability of more frequent, intense storms with varying duration. Increase in global temperature is likely to affect the snowpack and its ability to hold and store water. Warming temperatures also could increase the occurrence and duration of droughts, which would increase the probability of wildfire, reducing the vegetation that helps to support steep slopes. All of these factors would increase the probability for landslide occurrences.

The entire County will continue to be at risk for large, intense fires and thus as precipitation extremes increase, the probability also increases that an intense rain event will follow soon after a fire. Many areas of the County not previously in high landslide risk areas, may become increasingly at risk of post-fire debris flows due to increasing wildfire risk.

### 19.5.11 TSUNAMI

The impacts of global climate change on tsunami probability are unknown. Some scientists say that melting glaciers could induce tectonic activity, inducing earthquakes. Other scientists have indicated that underwater avalanches (also caused by melting glaciers), may also result in tsunamis. Even if climate change does not increase the frequency with which tsunamis occur, it may result in more destructive waves. As sea levels continue to rise, tsunami inundation areas would likely reach further into communities than current mapping indicates.

### 19.5.12 WILDFIRE

Climate change has the potential to affect multiple elements of the wildfire system: fire behavior, ignitions, fire management, and vegetation fuels. Hot dry spells create the highest fire risk. Increased temperatures may intensify wildfire danger by warming and drying out vegetation. Prediction of fire severity and frequency change in Monterey County is challenging

given the uncertainty in climate predictions of precipitation and wind for the region and the high and complex sensitivity of fire regimes in Mediterranean type Ecosystems to precipitation and climatic water deficits. It is important to recognize, however, that the basic characterization of this system as one that is dominated by fire is unlikely to change, and it is highly likely that that Monterey County will continue to see large, severe fires. Consequently, growing populations and expansion into the WUI will increase vulnerability to fires and projected increases in precipitation intensity during storms may increase post-fire impacts.

Changes in climate patterns may impact the distribution and perseverance of insect outbreaks that create dead trees (increase fuel). When climate alters fuel loads and fuel moisture, forest susceptibility to wildfires changes. Climate change also may increase winds that spread fires. Faster fires are harder to contain, and thus are more likely to expand into residential neighborhoods.

## 19.6 ISSUES

The major issues for climate change are the following:

- Planning for climate change related impacts can be difficult due to inherent uncertainties in projection methodologies.
- Average temperatures are expected to continue to increase in the County, which may lead to a host of primary and secondary impacts, such as an increased incidence of heat waves. Expected changes in precipitation patterns are still poorly understood and could have significant impacts on the water supply and flooding in the County.
- Increased average temperatures along with changes in precipitation could affect groundwater supplies in the County
- Some impacts of climate change are poorly understood such as potential impacts on the frequency and severity of earthquakes, thunderstorms, and tsunamis.
- Heavy rain events may result in inland stormwater flooding after stormwater management systems are overwhelmed.
- Permanent and temporary inundation resulting from sea level rise has the potential to impact significant portions of the population and assets in the County.
- A warmer climate will have an impact on the agriculture industry requiring research to better understand future impacts.
- Sea level rise has the potential to have major impacts on tourism industry.

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# PART C: MITIGATION CAPABILITY AND STRATEGY

THIS PART DESCRIBES THE OVERALL CAPABILITY TO IMPLEMENT HAZARD MITIGATION ACTIVITIES AND PROVIDES A VISION FOR FUTURE MITIGATION IN THE COUNTY. IT CONSISTS OF THE FOLLOWING SECTIONS:

20. CAPABILITY ASSESSMENT
21. MITIGATION STRATEGY
22. PLAN IMPLEMENTATION AND MAINTENANCE

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# 20. CAPABILITY ASSESSMENT

Thus far, the planning process has identified the hazards posing a threat to Monterey County and described, in general, the vulnerability of the County to these risks. The next step is to assess what loss prevention mechanisms are already in place, through the completion of a hazard mitigation Capability Assessment. The Capability Assessment helps determine the ability of a local jurisdiction to implement a comprehensive mitigation strategy, and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, or projects. As in any planning process, it is important to try to establish which goals and actions are feasible, based on an understanding of the organizational capacity of the agencies or departments tasked with their implementation.

The Capability Assessment is an important tool in determining which mitigation actions are practical and likely to be implemented over time based on a local government's existing authorities, policies, programs, and resources available to support such implementation. The combination of the hazard Risk Assessment with the mitigation Capability Assessment results in the County's net vulnerability to disasters, and more accurately focuses the goals, objectives, and proposed actions of this Plan. The Capability Assessment had three primary components:

1. An analysis of federal and state laws, ordinances, plans and programs that can support or impact hazard mitigation actions
2. An inventory of a jurisdiction's plans, ordinances, programs, technical studies, or activities already in place and their relevancy to hazard mitigation
3. An analysis of a jurisdiction's current capacity and resources to carry out relevant plans, ordinances, programs, or activities related to hazard mitigation

A careful examination of local capabilities will detect any existing gaps, shortfalls, or weaknesses associated with ongoing government activities that could hinder proposed mitigation activities and possibly even exacerbate hazard vulnerability. The Capability Assessment also highlights the positive mitigation measures already in place or being implemented at the local government level, which should be leveraged and continue to be supported and enhanced, if possible, through future mitigation efforts.

The Capability Assessment serves as a critical part of the planning process and helps identify and target meaningful mitigation actions for incorporation into the Mitigation Strategy. It helps establish both the countywide and jurisdiction-specific mitigation goals and ensures that those goals and the mitigation actions that follow are realistically achievable given current local conditions.

## 20.1 INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS, AND TECHNICAL INFORMATION

Existing laws, ordinances, plans and programs at the federal, state, and local level can support or impact hazard mitigation actions identified in this plan. Hazard mitigation plans are required to include a review and incorporation, if appropriate, of existing plans, studies, reports, and technical information as part of the planning process (44 CFR, Section 201.6(b)(3)). The following federal and state programs have been identified as programs that may interface with the actions identified in this plan. Each program enhances capabilities to implement mitigation actions or has a nexus with a mitigation action in this plan. Information presented in this section can be used in review local capabilities to implement the actions found in the jurisdictional annexes of **Volume 2**.

Each planning partner has individually reviewed existing local plans, studies, reports, and technical information in its jurisdictional annex. The Local process is described in Section 20.2 *Local Capability Assessment* and individual jurisdiction results are presented in **Volume 2**.

### 20.1.1 FEDERAL

#### *Disaster Mitigation Act*

The DMA is the current federal legislation addressing hazard mitigation planning. It emphasizes planning for disasters before they occur. It specifically addresses planning at the local level, requiring plans to be in place before Hazard Mitigation Assistance grant funds are available to communities. This plan is designed to meet the requirements of DMA, improving eligibility for future hazard mitigation funds.

#### *National Incident Management System*

The National Incident Management System (NIMS) is a systematic approach for government, nongovernmental organizations, and the private sector to work together to manage incidents involving hazards. The NIMS provides a flexible but standardized set of incident management

practices. Incidents typically begin and end locally, and they are managed at the lowest possible geographical, organizational, and jurisdictional level. In some cases, success depends on the involvement of multiple jurisdictions, levels of government, functional agencies, and emergency responder disciplines. These cases necessitate coordination across a spectrum of organizations.

Communities using NIMS follow a comprehensive national approach that improves the effectiveness of emergency management and response personnel across the full spectrum of potential hazards (including natural hazards, terrorist activities, and other human-caused disasters) regardless of size or complexity. Although participation is voluntary, Federal departments and agencies are required to make adoption of NIMS by local and state jurisdictions a condition to receive Federal Preparedness grants and awards.

### *Community Development Block Grant Disaster Resilience Program*

In response to disasters, Congress may appropriate additional funding for the US Department of Housing and Urban Development Community Development Block Grant programs to be distributed as Disaster Recovery grants (CDBG-DR). These grants can be used to rebuild affected areas and provide seed money to start the recovery process. CDBG-DR assistance may fund a broad range of recovery activities, helping communities that otherwise might not recover due to limited resources. CDBG-DR grants often supplement disaster programs of the Federal Emergency Management Agency, the Small Business Administration, and the US Army Corps. Housing and Urban Development generally awards noncompetitive, nonrecurring CDBG-DR grants by a formula that considers disaster recovery needs unmet by other disaster assistance programs. CDGB-DR funding is a potential alternative source of funding for actions identified in this plan.

To be eligible for CDBG-DR funds, projects must meet the following criteria:

- Address a disaster-related impact (direct or indirect) in a presidentially declared county for the covered disaster
- Be a CDBG-eligible activity (according to regulations and waivers)
- Meet a national objective. Incorporating preparedness and mitigation into these actions is encouraged, as the goal is to rebuild in ways that are safer and stronger.

### *Emergency Watershed Program*

The USDA Natural Resources Conservation Service (NRCS) administers the Emergency Watershed Protection (EWP) Program, which responds to emergencies created by natural disasters. Eligibility for assistance is not dependent on a national emergency declaration. The program is designed to help people and conserve natural resources by relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. EWP is an emergency recovery program. This federal program could be a possible funding source for actions identified in this plan.

Financial and technical assistance are available for the following activities:

- Removing debris from stream channels, road culverts, and bridges
- Reshaping and protect eroded banks
- Correcting damaged drainage facilities
- Establishing cover on critically eroding lands
- Repairing levees and structures
- Repairing conservation practices

### *Emergency Relief for Federally Owned Roads Program*

The US Forest Service's Emergency Relief for Federally Owned Roads Program was established to assist federal agencies with repair or reconstruction of tribal transportation facilities, federal lands transportation facilities, and other federally owned roads that are open to public travel and have suffered serious damage by a natural disaster over a wide area or by a catastrophic failure. The program funds both emergency and permanent repairs. Eligible activities under this program meet some of the goals and objectives for this plan and the program is a possible funding source for actions identified in this plan.

### *National Flood Insurance Program*

The National Flood Insurance Program (NFIP) provides federally backed flood insurance in exchange for communities enacting floodplain regulations. Participation and good standing under NFIP are prerequisites to grant funding eligibility under the Robert T. Stafford Act. Monterey County and all of the municipal planning partners participate in the NFIP and have adopted regulations that meet the NFIP requirements. At the time of the preparation of this plan, all participating jurisdictions were in good standing with NFIP requirements. Full compliance and good standing under the NFIP are application prerequisites for all FEMA grant programs for which participating jurisdictions are eligible under this plan.

### *Presidential Executive Orders 11988 and 13690*

Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. It requires federal agencies to provide leadership and take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values of floodplains. The requirements apply to the following activities:

- Acquiring, managing, and disposing of federal lands and facilities
- Providing federally undertaken, financed, or assisted construction and improvements
- Conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing.

Executive Order 13690 expands Executive Order 11988 and acknowledges that the impacts of flooding are anticipated to increase over time due to the effects of climate change and other threats. It mandates a federal flood risk management standard to increase resilience against

flooding and help preserve the natural values of floodplains. This standard expands management of flood issues from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain. The goal is to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended.

All actions identified in this plan will seek full compliance with all applicable presidential executive orders.

### *The Clean Water Act*

The federal Clean Water Act (CWA) employs regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's surface waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

Evolution of CWA programs over the last decade has included a shift from a program-by-program, source-by-source, and pollutant-by-pollutant approach to more holistic watershed-based strategies. Under the watershed approach, equal emphasis is placed on protecting healthy waters and restoring impaired ones. A full array of issues is addressed, not just those subject to CWA regulatory authority. Involvement of stakeholder groups in the development and implementation of strategies for achieving and maintaining water quality and other environmental goals is a hallmark of this approach.

The CWA is important to hazard mitigation in several ways. There are often permitting requirements for any construction within 200 feet of water of the United States, which may have implications for mitigation projects identified by a local jurisdiction. Additionally, CWA requirements apply to wetlands, which serve important functions related to preserving and protecting the natural and beneficial functions of floodplains and are linked with a community's floodplain management program.

Finally, the National Pollutant Discharge Elimination System is part of the CWA and addresses local stormwater management programs. Stormwater management plays a critical role in hazard mitigation by addressing urban drainage or localized flooding issues within jurisdictions. FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

### *Presidential Executive Order 11990*

Executive Order 11990 requires federal agencies to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. The requirements apply to the following activities:

- Acquiring, managing, and disposing of federal lands and facilities

- Providing federally undertaken, financed, or assisted construction and improvements
- Conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing.

All actions identified in this plan will seek full compliance with all applicable presidential executive orders.

### *Endangered Species Act*

The federal Endangered Species Act (ESA) was enacted in 1973 to conserve species facing depletion or extinction and the ecosystems that support them. The act sets forth a process for determining which species are threatened and endangered and requires the conservation of the critical habitat in which those species live. The ESA provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered.

Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. The ESA outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species and contains exceptions and exemptions. It is the enabling legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Criminal and civil penalties are provided for violations of the ESA and the Convention. Federal agencies must seek to conserve endangered and threatened species and use their authorities in furtherance of the ESA's purposes.

The ESA defines three fundamental terms:

- **Endangered** means that a species of fish, animal or plant is "in danger of extinction throughout all or a significant portion of its range." (For salmon and other vertebrate species, this may include subspecies and distinct population segments.)
- **Threatened** means that a species "is likely to become endangered within the foreseeable future." Regulations may be less restrictive for threatened species than for endangered species.
- **Critical habitat** means "specific geographic areas that are essential for the conservation and management of a listed species, whether occupied by the species or not."

FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

### *National Environmental Policy Act*

The National Environmental Policy Act (NEPA) requires federal agencies to consider the environmental impacts of proposed actions and reasonable alternatives to those actions, alongside technical and economic considerations. NEPA established the Council on Environmental Quality (CEQ), whose regulations (40 CFR Parts 1500-1508) set standards for NEPA compliance. Consideration and decision-making regarding environmental impacts must be documented in an environmental impact statement or environmental assessment.

Environmental impact assessment requires the evaluation of reasonable alternatives to a proposed action, solicitation of input from organizations and individuals that could be affected, and an unbiased presentation of direct, indirect, and cumulative environmental impacts. FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

### *Americans with Disabilities Act*

The Americans with Disabilities Act (ADA) seeks to prevent discrimination against people with disabilities in employment, transportation, public accommodation, communications, and government activities. Title II of the ADA deals with compliance with the Act in emergency management and disaster-related programs, services, and activities. It applies to state and local governments as well as third parties, including religious entities and private nonprofit organizations.

The ADA has implications for sheltering requirements and public notifications. During an emergency alert, officials must use a combination of warning methods to ensure that all residents have all necessary information. Those with hearing impairments may not hear radio, television, sirens, or other audible alerts, while those with visual impairments may not see flashing lights or other visual alerts. Two technical documents for shelter operators address physical accessibility needs of people with disabilities, as well as medical needs and service animals. The ADA intersects with disaster preparedness programs in regard to transportation, social services, temporary housing, and rebuilding. Persons with disabilities may require additional assistance in evacuation and transit (e.g., vehicles with wheelchair lifts or paratransit buses).

Evacuation and other response plans should address the unique needs of residents. Local governments may be interested in implementing a special-needs registry to identify the home addresses, contact information, and needs for residents who may require more assistance. FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

### *Civil Rights Act of 1964*

The Civil Rights Act of 1964 prohibits discrimination based on race, color, religion, sex, or nation origin and requires equal access to public places and employment. The Act is relevant to emergency management and hazard mitigation in that it prohibits local governments from favoring the needs of one population group over another. Local government and emergency response must ensure the continued safety and well-being of all residents equally, to the extent possible. FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

*Army Corps of Engineers Programs*

The US Army Corps of Engineers has several civil works authorities and programs related to flood risk and flood hazard management. The Floodplain Management Services program offers 100-% federally funded technical services such as development and interpretation of site-specific data related to the extent, duration, and frequency of flooding. Special studies may be conducted to help a community understand and respond to flood risk. These may include flood hazard evaluation, flood warning and preparedness, or flood modeling.

For more extensive studies, the Army Corps offers a cost-shared program called Planning Assistance to States and Tribes. Studies under this program generally range from $25,000 to $100,000 with the local jurisdiction providing 50% of the cost. The Army Corps has several cost-shared programs (typically 65% federal and 35% non-federal) aimed at developing, evaluating, and implementing structural and non-structural capital projects to address flood risks at specific locations or within a specific watershed, including:

- The Continuing Authorities Program for smaller-scale projects includes Section 205 for Flood Control, with a $7 million federal limit and Section 14 for Emergency Streambank Protection with a $1.5 million federal limit. These can be implemented without specific authorization from Congress.
- Larger scale studies, referred to as General Investigations, and projects for flood risk management, for ecosystem restoration or to address other water resource issues, can be pursued through a specific authorization from Congress and are cost-shared, typically at 65% federal and 35% nonfederal.
- Watershed management planning studies can be specifically authorized and are cost-shared at 50% federal and 50% non-federal.

The Army Corps also provides emergency response assistance during and following natural disasters. Public Law 84-99 enables the Corps to assist state and local authorities in flood fight activities and cost share in the repair of flood protective structures. The Flood Control and Coastal Emergency Act establishes an emergency fund for preparedness for emergency response to natural disasters; for flood fighting and rescue operations; for rehabilitation of flood control and hurricane protection structures. Funding for the Army Corps emergency response under this authority is provided by Congress through the annual Energy and Water Development Appropriation Act. Disaster preparedness activities include coordination, planning, training and conduct of response exercises with local, state, and federal agencies.

Under PL 84-99, the Army Corps can supplement state and local entities in flood fighting urban and other non-agricultural areas under certain conditions (Engineering Regulation 500-1-1 provides specific details). All flood fight efforts require a project cooperation agreement signed by the public sponsor and the sponsor must remove all flood fight material after the flood has receded. PL 84-99 also authorizes emergency water support and drought assistance in certain

situations and allows for “advance measures” assistance to prevent or reduce flood damage conditions of imminent threat of unusual flooding.

Under PL 84-99, an eligible flood protection system can be rehabilitated if damaged by a flood event. The flood system would be restored to its pre-disaster status at no cost to the federal system owner, and at 20% cost to the eligible non-federal system owner. All systems considered eligible for PL 84-99 rehabilitation assistance have to be in the Rehabilitation and Inspection Program prior to the flood event. Acceptable operation and maintenance by the public levee sponsor are verified by levee inspections conducted by the Corps on a regular basis. The Corps has the responsibility to coordinate levee repair issues with interested federal, state, and local agencies following natural disaster events where flood control works are damaged. All of these authorities and programs are available to the planning partners to support any intersecting mitigation actions.

### 20.1.2 STATE

#### *Alquist-Priolo Earthquake Fault Zoning Act*

The Alquist-Priolo Earthquake Fault Zoning Act was enacted in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Earthquake Fault Zoning Acts main purpose is to prevent construction of buildings used for human occupancy on the surface trace of active faults. Before a new project is permitted, cities and counties require a geologic investigation to demonstrate that proposed buildings will not be constructed on active faults. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards, such as liquefaction or seismically induced landslides.

The law requires the State of California Geologist to establish regulatory zones around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones. Projects include all land divisions and most structures for human occupancy. All seismic hazard mitigation actions identified in this plan will seek full compliance with the Alquist-Priolo Earthquake Fault Zoning Act.

#### *California General Planning Law*

California state law requires that every county and city prepare and adopt a comprehensive long-range plan to serve as a guide for community development. The general plan expresses the community’s goals, visions, and policies relative to future land uses, both public and private. The general plan is mandated and prescribed by state law (Cal. Gov. Code §65300 et seq.) and forms the basis for most local government land use decision-making.

The plan must consist of an integrated and internally consistent set of goals, policies, and implementation measures. In addition, the plan must focus on issues of the greatest concern to the community and be written in a clear and concise manner. City and county actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review,

redevelopment, and capital improvements, must be consistent with the plan. All municipal planning partners to this plan have general plans that are currently compliant with this law and have committed to integrating this mitigation plan with their general plans through provisions referenced below (AB-2140 and SB-379).

### *California Environmental Quality Act*

The California Environmental Quality Act (CEQA) was passed in 1970, shortly after the federal government enacted the National Environmental Policy Act, to institute a statewide policy of environmental protection. CEQA requires state and local agencies in California to follow a protocol of analysis and public disclosure of the potential environmental impacts of development projects. CEQA makes environmental protection a mandatory part of every California state and local agency's decision-making process.

CEQA establishes a statewide environmental policy and mandates actions all state and local agencies must take to advance the policy. Jurisdictions conduct analysis of the project to determine if there are potentially significant environmental impacts, identify mitigation measures, and possible project alternatives by preparing environmental reports for projects that requires CEQA review. This environmental review is required before an agency acts on any policy, program, or project.

Monterey County has determined that this plan update is categorically exempt from the formal CEQA protocol. The County will initiate the formal CEQA protocol on any project recommended in this plan that requires adherence to this protocol at the initiation of the project. Any project action identified in this plan will seek full CEQA compliance upon implementation.

### *California Disaster Assistance Act*

The California Disaster Assistance Act (CDAA) authorizes the Director of the California Governor's Office of Emergency Services (Cal OES) to administer a disaster assistance program that provides financial assistance from the state for costs incurred by local governments as a result of a disaster event. Funding for the repair, restoration, or replacement of public real property damaged or destroyed by a disaster is made available when the Director concurs with a local emergency proclamation requesting state disaster assistance.

The program also provides for the reimbursement of local government costs associated with certain emergency activities undertaken in response to a state of emergency proclaimed by the Governor. In addition, the program may provide matching fund assistance for cost sharing required under federal public assistance programs in response to a Presidential Major Disaster or Emergency Declaration. The implementing regulations for CDAA can be found in Title 19 of the California Code of Regulations, Chapter 6.

### *Assembly Bill 162: Flood Planning*

This California State Assembly Bill passed in 2007 requires cities and counties to address flood-related matters in the land use, conservation, and safety and housing elements of their general plans. The land use element must identify and annually review the areas covered by the general

plan that are subject to flooding as identified in floodplain mapping by either FEMA or the state Department of Water Resources (DWR). During the next revision of the housing element on or after January 1, 2009, the conservation element of the general plan must identify rivers, creeks, streams, flood corridors, riparian habitat, and land that may accommodate floodwater for the purpose of groundwater recharge and stormwater management.

The safety element must identify information regarding flood hazards, including:

- Flood hazard zones
- Maps published by FEMA, DWR, the US Army Corps of Engineers, the Central Valley Flood Protection Board, and the Governor's Office of Emergency Services (Cal OES)
- Historical data on flooding
- Existing and planned development in flood hazard zones

The general plan must establish goals, policies, and objectives to protect from unreasonable flooding risks, including:

- Avoiding or minimizing the risks of flooding new development
- Evaluating whether new development should be located in flood hazard zones
- Identifying construction methods to minimize damage

AB 162 establishes goals, policies, and objectives to protect from unreasonable flooding risks. It establishes procedures for the determination of available land suitable for urban development, which may exclude lands where FEMA or DWR has concluded that the flood management infrastructure is not adequate to avoid the risk of flooding.

#### *Assembly Bill 2140: General Plans—Safety Element*

This bill provides that the state may allow for more than 75% of public assistance funding under the California Disaster Assistance Act only if the local agency is in a jurisdiction that has adopted a local hazard mitigation plan as part of the safety element of its general plan. The local hazard mitigation plan needs to include elements specified in this legislation. In addition, this bill requires Cal OES to give preference for federal mitigation funding to cities and counties that have adopted local hazard mitigation plans. The intent of the bill is to encourage cities and counties to create and adopt hazard mitigation plans.

#### *Assembly Bill 70: Flood Liability*

This bill provides that a city or county may be required to contribute a fair and reasonable share to compensate for property damage caused by a flood to the extent that it has increased the state's exposure to liability for property damage by unreasonably approving new development in a previously undeveloped area that is protected by a state flood control project, unless the city or county meets specified requirements.

#### *Assembly Bill 32: The California Global Warming Solutions Act*

This bill identifies the following potential adverse impacts of global warming:

- Exacerbation of air quality problems
- Reduction in the quality and supply of water to the state from the Sierra snowpack
- A rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment
- An increase in the incidences of infectious diseases, asthma, and other human health-related problems

AB 32 establishes a state goal of reducing greenhouse gas emissions to 1990 levels by 2020 (a reduction of approximately 25% from forecast emission levels), with further reductions to follow. The law requires the state Air Resources Board to establish a program to track and report greenhouse gas emissions, approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions from sources of greenhouse gas emissions, adopt early reduction measures to begin moving forward, and adopt, implement, and enforce regulations, including market mechanisms such as "cap and-trade" programs, to ensure that the required reductions occur. The Air Resources Board has adopted a statewide greenhouse gas emissions limit and an emissions inventory, along with requirements to measure, track, and report greenhouse gas emissions by the industries it determined to be significant sources of greenhouse gas emissions.

#### *Senate Bill 97: Guidelines for Greenhouse Gas Emissions*

Senate Bill 97, enacted in 2007, amends CEQA to clearly establish that greenhouse gas emissions and the effects of greenhouse gas emissions are appropriate subjects for CEQA analysis. It directs the Governor's Office of Planning and Research to develop draft CEQA guidelines for the mitigation of greenhouse gas emissions or their effects by July 2009 and directs the California Natural Resources Agency to certify and adopt the CEQA Guidelines by January 1, 2010.

#### *Senate Bill 1241: General Plans: Safety Element—Fire Hazard Impacts*

In 2012, Senate Bill 1241 was enacted, requiring that all future General Plans address fire risk in state responsibility areas and very high fire hazard severity zones in their safety element. In addition, the bill requires cities and counties to make certain findings regarding available fire protection and suppression services before approving a tentative map or parcel map.

#### *Senate Bill 1000: General Plan Amendments—Safety and Environmental Justice Elements*

In 2016, Senate Bill 1000 amended California's Planning and Zoning Law in two ways. The original law established requirements for initial revisions of general plan safety elements to address flooding, fire, and climate adaptation and resilience. It also required subsequent review and revision as necessary based on new information. Senate Bill 1000 specifies that the subsequent reviews and revision based on new information are required to address only flooding and fires (not climate adaptation and resilience).

Additionally, Senate Bill 1000 adds a requirement that, upon adoption or revision of any two other general plan elements on or after January 1, 2018, an environmental justice element be

adopted for the general plan or environmental justice goals, policies and objectives be incorporated into other elements of the plan.

### *Senate Bill 379: General Plans: Safety Element—Climate Adaptation*

Senate Bill 379 builds upon the flood planning inclusions into the safety and housing elements and the hazard mitigation planning safety element inclusions in general plans outlined in AB 162 and AB 2140, respectively. SB 379 focuses on a new requirement that cities and counties include climate adaptation and resiliency strategies in the safety element of their general plans beginning January 1, 2017. In addition, this bill requires general plans to include a set of goals, policies and objectives, and specified implementation measures based on the conclusions drawn from climate adaptation research and recommendations.

This update process for this hazard mitigation plan was conducted with the intention of full compliance with this bill. However, at the time of the update, there was no clear guidance from the state on what constitutes full compliance or what protocol is to be used to determine compliance. When such guidance has been established, the planning partners will submit this plan or its subsequent updates to the state for review and approval.

### *California State Building Code California Code of Regulations*

Title 24 (CCR Title 24), also known as the California Building Standards Code, is a compilation of building standards from three sources:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions
- Building standards authorized by the California legislature that constitute extensive additions not covered by the model codes adopted to address particular California concerns.

The state Building Standards Commission is authorized by California Building Standards Law (Health and Safety Code Sections 18901 through 18949.6) to administer the processes related to the adoption, approval, publication, and implementation of California's building codes. These building codes serve as the basis for the design and construction of buildings in California. The national model code standards adopted into Title 24 apply to all occupancies in California, except for modifications adopted by state agencies and local governing bodies. Since 1989, the Building Standards Commission has published new editions of Title 24 every three years.

### *Standardized Emergency Management System*

CCR Title 19 establishes the Standardized Emergency Management System (SEMS) to standardize the response to emergencies involving multiple jurisdictions. SEMS is intended to be flexible and adaptable to the needs of all emergency responders in California. It requires emergency response agencies to use basic principles and components of emergency

management. Local governments must use SEMS by December 1, 1996, to be eligible for state funding of response-related personnel costs under CCR Title 19 (Sections 2920, 2925 and 2930). The roles and responsibilities of Individual agencies contained in existing laws, or the state emergency plan are not superseded by these regulations. This hazard mitigation plan is considered to be a support document for all phases of emergency management, including those associated with SEMS.

### *State of California State Hazard Mitigation Plan (SHMP)*

Under the DMA, California must adopt a federally approved state multi-hazard mitigation plan to be eligible for certain disaster assistance and mitigation funding. The intent of the *State of California Hazard Mitigation Plan* is to reduce or prevent injury and damage from hazards in the state through the following:

- Documenting statewide hazard mitigation planning in California
- Describing strategies and priorities for future mitigation activities
- Facilitating the integration of local and tribal hazard mitigation planning activities into statewide efforts
- Meeting state and federal statutory and regulatory requirements

The plan is an annex to the State Emergency Plan, and it identifies past and present mitigation activities, current policies and programs, and mitigation strategies for the future. It also establishes hazard mitigation goals and objectives. The plan will be reviewed and updated annually to reflect changing conditions and new information, especially information on local planning activities. Under 44 CFR Section 201.6, local hazard mitigation plans must be consistent with their state's hazard mitigation plan. In updating this plan, the Steering Committee reviewed the California State Hazard Mitigation Plan to identify key relevant state plan elements.

### *California Adaptation Planning Guide*

The California Adaptation Planning Guide (APG), updated in 2020, is designed to support local government, regional organizations, and climate collaborative groups to integrate best practices and current science into their adaptation planning efforts. The APG provides helpful resources to local governments as they comply with state requirements for local adaptation planning and provides recommendations and advice on community-level climate change adaptation planning.

### *Safeguarding California Plan*

The Safeguarding California Plan– California's Climate Adaptation Strategy was updated in 2018. The update is the State's roadmap for the strategies that will be used by state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. This holistic strategy primarily covers state agencies' programmatic and policy responses across different policy areas, but it also discusses the ongoing related work to with coordinated local and regional adaptation action and developments in climate impact science.

### *California Coastal Act*

The California Coastal Act is umbrella legislation designed to encourage each city or county lying wholly or partly within the coastal zone to create Local Coastal Programs (LCPs) to govern decisions that determine the short- and long-term conservation and use of coastal resources. These LCPs can be thought of as the equivalent of General Plans for areas within the Coastal Zone. The specific contents of such plans are not specified by state law, but they must be certified by the Coastal Commission as consistent with policies of the Coastal Act (Public Resources Code, Division 20). Until the Coastal Commission certifies an LCP, the Commission makes the final decisions on all development within a jurisdiction (city or county) within the Coastal Zone. Once an LCP is certified for a jurisdiction, decisions are handled locally, but can be appealed to the Commission.

Section 30253(1) of the Coastal Act states that new development shall minimize risks to life and property in areas of high geologic, flood, and fire hazard. Development should be prevented or limited in high hazard areas whenever possible. However, where development cannot be prevented or limited, land use density, building value, and occupancy should be kept at a minimum. Additionally, the Coastal Act has provisions relating to geologic hazards but does not mention tsunamis specifically.

There are identified coastal zones in Monterey County and affected planning partners have developed local coastal plans to address them. Any mitigation project identified in this plan that intersects the mapped coastal zone will be consistent with the recommendations of the local coastal plan.

### *Governor's Executive Order S-13-08*

Governor's Executive Order S-13-08 enhances the state's management of climate impacts from sea level rise, increased temperatures, shifting precipitation and extreme weather events. There are four key actions in the executive order:

- Initiate California's first statewide climate change adaptation strategy to assess expected climate change impacts, identify where California is most vulnerable, and recommend adaptation policies. This effort will improve coordination within state government so that better planning can more effectively address climate impacts on human health, the environment, the state's water supply and the economy.
- Request that the National Academy of Science establish an expert panel to report on sea level rise impacts in California, to inform state planning and development efforts.
- Issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new projects.
- Initiate a report on critical infrastructure projects vulnerable to sea level rise.

### *Senate Bill 99 General Plans: Safety Element: Emergency Evacuation Routes*

SB 99 requires that, upon the next revision of the housing element on or after January 1, 2020, local governments to review and update the safety element of their General Plan to include

information identifying residential developments in hazard areas that do not have at least 2 emergency evacuation routes.

### *Assembly Bill 747 Planning and Zoning: General Plan: Safety Element*

AB 747 requires, that upon the next revision of a local hazard mitigation plan on or after January 1, 2022, the safety element to be reviewed and updated as necessary to identify evacuation routes and their capacity, safety, and viability under a range of emergency scenarios. The bill authorizes a city or county that has adopted a local hazard mitigation plan, emergency operations plan, or other document that fulfills commensurate goals and objectives to use that information in the safety element to comply with this requirement by summarizing and incorporating by reference that other plan or document in the safety element.

### *Strategic Fire Plan for California*

The Strategic Fire Plan for California is the state's road map for reducing the risk of wildfire. The Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and the California Department of Forestry and Fire Protection. The 2018 update reflects a focus on (1) fire prevention and suppression activities to protect lives, property, and ecosystem services, and (2) natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. By placing the emphasis on what needs to be done long before a fire starts, the Strategic Fire Plan looks to reduce firefighting costs and property losses, increase firefighter safety, and contribute to overall ecosystem health.

### *Fire Hazard Planning: General Plan Technical Advice Series*

CA Governor's Office of Planning and Research (OPR) Fire Hazard Planning technical advisory provides guidance on those policies and programs and is also intended to assist city and county planners in discussions with professionals from fire hazard prevention and mitigation, disaster preparedness, and emergency response and recovery agencies as they work together to develop effective fire hazard policies for the general plan. The 2020 update includes specific land use strategies to reduce fire risk to buildings, infrastructure, and communities and was prepared in consultation with the Department of Forestry and Fire Protection, the State Board of Forestry and Fire Protection, and other fire and safety experts.

## 20.2 LOCAL CAPABILITY ASSESSMENT

In order to facilitate the inventory and analysis of participating jurisdictions capabilities, several survey instruments were distributed and discussed with staff from each jurisdiction planning team during the jurisdiction-specific planning meetings. The surveys included a Safe Growth Survey, a National Flood Insurance Program (NFIP) Survey, and a Capability Assessment Survey, each of which was completed by the appropriate staff member as determined by Local Jurisdiction Leads. Each of these three survey instruments is described below and summarized, if possible, in aggregate.

Details are provided in each respective jurisdiction annex in **Volume 2**. Full copies of completed surveys are available upon request.

## 20.3 SAFE GROWTH SURVEY

The Safe Growth Survey is a survey instrument adapted from a technique[88] recommended by organizations such as the American Planning Association (APA) and FEMA.[89] The Safe Growth Survey helped evaluate the extent to which each local jurisdiction in Monterey County is positioned to grow safely relative to its natural hazards. The survey consists of nine distinct topic areas, including:

- Land Use
- Transportation
- Environmental Management
- Public Safety
- Zoning
- Subdivision Regulations
- Capital Improvements
- Building Codes
- Economic Development

The Safe Growth Survey was completed by appropriate planning, zoning, and/or community development staff for each participating municipal jurisdiction. This information is not provided for participating special districts since they do not regulate land use and development.

While a somewhat subjective exercise, the Safe Growth Survey was used to provide some quantitative measures of how adequately existing planning mechanisms and tools are being used to address the notion of safe growth. The goal of the survey was to further integrate the subject of hazard risk management into the dialogue of local planners. The survey assisted in gaining an understanding of how an individual jurisdiction's various comprehensive plans, capital improvement plans, and zoning and subdivision ordinances may allow growth in hazardous areas. This understanding helps identify how these documents can be amended to guide growth to safe locations and assisted in identifying new mitigation actions as they relate to planning policies or programs already in place and to future growth and community development practices.

The Safe Growth Survey was used as part of the 2013-2014 MJHMP Plan update, which allowed the survey results to be compared over time, in order to measure progress. It is anticipated that the Safe Growth Survey will be used again during future plan updates to continue to measure progress over time.

### *Safe Growth Survey Results*

The Safe Growth Survey included a number of statements for each topic area listed above. Statements were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it related to the respective jurisdiction's current plans, policies, and programs for guiding future community growth and development. Scores

[88] Safe Growth Audits, David R. Godschalk, FAICP (October 2009)
[89] Local Mitigation Planning Handbook, *Worksheet 4.2: Safe Growth Audit*, FEMA (March 2013)

for each statement were averaged by topic area to provide a topic area score and the topic area scores were averaged to provide an overall survey score.

Results were averaged for all participating jurisdictions and are presented in aggregate in *Table 20-1*. Individual jurisdiction results are presented in ***Volume 2*** for each jurisdiction in their respective Annex, in the *Land Use & Development Trends* Section.

**Table 20-1**
**Countywide Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 3.67 | 3.79 |
| Transportation | 3.59 | 3.49 |
| Environmental Management | 4.13 | 3.76 |
| Public Safety | 3.56 | 3.77 |
| Zoning Ordinance | 3.48 | 3.53 |
| Subdivision Regulations | 2.90 | 3.12 |
| Capital Improvement Program & Infrastructure Policies | 3.28 | 2.97 |
| Building Code | 4.31 | 4.50 |
| Economic Development | 3.54 | 3.38 |
| **Average Survey Ratings** | **3.61** | **3.59** |

## 20.4 NFIP SURVEY

Per 44 CFR Section 201.6(c)(3)(ii), the Plan must address a jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate. It should be noted that Special Districts are not eligible for flood insurance under the NFIP. The NFIP contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to identified flood hazards. In return for meeting minimum regulatory standards, communities may purchase flood insurance through the NFIP. Participation in the NFIP is voluntary but is promoted by FEMA as a critical means to make flood insurance available to community residents and to implement and sustain an effective, long-term hazard mitigation program aimed at reducing future flood losses.

The NFIP Survey was designed to help gather information from each jurisdiction on the current status of their participation in the NFIP, including existing floodplain management programs and continued compliance with federal requirements and standards. The NFIP Survey, adapted from the FEMA recommended tool,[90] asked the following questions in order to determine a community's participation in and continued compliance with the NFIP:

- Please identify your jurisdiction's designated Floodplain Administrator.

[90] Local Mitigation Planning Handbook, *Worksheet 4.3: National Flood Insurance Program*, FEMA (March 2013)

- How many NFIP flood insurance policies are in effect in your jurisdiction and what is the total premium and coverage?
- How many loss claims have been made in your jurisdiction and what is the total amount of paid claims?
- Please list the regulations that were adopted to meet federal NFIP requirements, including the date and section number.
- What is the date of your jurisdiction's last NFIP Community Assistance Visit (CAV) of Community Assistance Contact (CAC)?
- Describe any local "higher standards" that exceed NFIP minimum requirements.
- Describe any additional floodplain management provisions that are integrated into other plans or processes that the community uses to guide development.
- Describe any other floodplain management activities your jurisdiction performs that go beyond FEMA minimum requirements.
- Please describe any existing impediments to running an effective NFIP program in your jurisdiction, if any.
- Please identify some specific actions that your jurisdiction can take related to continued compliance with the NFIP.

### *NFIP Survey Results*

All municipal jurisdictions in Monterey County actively participate in, and are in good standing with, the NFIP. Each jurisdiction has adopted and enforces a local flood damage prevention ordinance in compliance with at least the minimum federal standards for new construction located in identified Special Flood Hazard Areas (SFHA). These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the 1-%-annual-chance flood event, and that new floodplain development will not aggravate existing flood problems or increase damage to other properties.

Another key service provided by the NFIP is the mapping of identified flood hazard areas. Once prepared, the Flood Insurance Rate Maps (FIRMs) are used to assess flood hazard risk, regulate construction practices, and set flood insurance rates. FIRMs are an important source of information to educate residents, government officials, and the private sector about the likelihood of flooding in their community. All jurisdictions in Monterey County have coordinated with FEMA in the development and update of FIRMs to identify the regulatory Special Flood Hazard Areas for their jurisdictions.

Responses to the questions listed above and more information on the current administration of the NFIP in each jurisdiction is provided **Volume 2**, in respective jurisdiction annexes, in the *Capability Assessment* Section, under *National Flood Insurance Program (NFIP) Compliance*.

As previously included in the *Flooding*, **Section 10**, NFIP Participation in Monterey County is summarized in *Table 20-2*.

**Table 20-2**
**NFIP Participation**

| Jurisdiction | Community Number | Policies in Force | Total Coverage | Total Written Premium + Federal Policy Fee |
|---|---|---|---|---|
| Carmel-By-The-Sea | 060196 | 29 | $9,940,000 | $13,888 |
| Del Rey Oaks | 060197 | 19 | $6,577,500 | $50,436 |
| Gonzales | 060198 | 14 | $5,474,500 | $18,502 |
| Greenfield | 060446 | 3 | $1,050,000 | $1,260 |
| King City | 060199 | 17 | $4,318,600 | $28,721 |
| Marina | 060727 | 45 | $13,664,400 | $61,833 |
| Monterey | 060200 | 58 | $19,847,400 | $49,129 |
| Monterey County | 060195 | 1,277 | $362,723,300 | $1,732,791 |
| Pacific Grove | 060201 | 35 | $11,144,000 | $14,846 |
| Salinas | 060202 | 317 | $95,459,500 | $320,007 |
| Sand City | 060435 | 3 | $1,400,000 | $3,109 |
| Seaside | 060203 | 10 | $2,789,000 | $3,748 |
| Soledad | 060204 | 1 | $350,000 | $467 |

## 20.5 CAPABILITY ASSESSMENT SURVEY

Hazard mitigation planning must include review and incorporation, if appropriate, of existing plans, studies, reports, and technical information (44 CFR, Section 201.6(b)(3)). Additionally, per 44 CFR Section 201.6(c)(3), the plan must include a mitigation strategy based on existing authorities, policies, programs, and resources, therefore each jurisdiction undertook a review of their current capabilities to implement hazard mitigation actions.

The Capability Assessment Survey requested information on a variety of "capability indicators" such as existing local plans, policies, programs, or ordinances that may reduce, or in some circumstances, increase the community's hazard vulnerability. Other indicators included information related to each jurisdiction's fiscal, administrative, and technical capabilities such as access to local budgetary and personnel resources necessary to implement hazard mitigation measures. Survey respondents were also asked to comment on existing activities or capabilities to conduct public education and outreach, as well as the current political climate in their jurisdiction to implement hazard mitigation actions.

The Survey was based on the FEMA recommended tool and included a summary of a jurisdiction's overall capability in the following four different types of capabilities as defined by FEMA.[91]

[91] Local Mitigation Planning Handbook, *Worksheet 4.1: Capability Assessment Worksheet*, FEMA (March 2013)

- *Planning and Regulatory Capabilities*: capabilities based on the jurisdiction's implementation of ordinances, policies, local laws, and State statutes, and plans and programs that relate to guiding and managing growth and development.
- *Administrative and Technical Capabilities*: capabilities associated with the jurisdiction's staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions.
- *Fiscal Capabilities*: refers to the fiscal resources that a jurisdiction has access to or is eligible to use to fund mitigation actions.
- *Education and Outreach Capabilities:* refers to education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

At a minimum, survey results provide an extensive inventory of existing local plans, ordinances, programs, and resources in place or under development in addition to their overall effect on hazard loss reduction as perceived by local government staff. The Survey also required the respondent to conduct a self-assessment of their jurisdiction's specific capabilities (on a scale of Degree of Capability from Limited to High).

The survey instrument thereby not only helps to accurately assess each jurisdiction's degree of local capability, but also serves as a source of introspection for jurisdictions to assess their capability and recast identified gaps, weaknesses, or conflicts as opportunities to be addressed in the development of new mitigation actions.

For participating special districts, a slightly different capability assessment was used in order to capture capabilities more specific to their individual services. Special district capability assessments are included in the respective annexes.

For participating municipal jurisdictions, the documents and/or resources included and assessed under each of the capability categories is summarized in *Table 20-3.*

**Table 20-3**
**Capability Assessment Survey- Documents and Resources Assessed**

| | |
|---|---|
| **Planning and Regulatory Capability** | |
| **Planning Documents** | |
| • General Plan | • Emergency Operations Plan |
| • Capital Improvement Plan | • Continuity of Operations Plan |
| • Floodplain Management Plan | • Community Wildfire Protection Plan |
| • Open Space Management Plan | • Evacuation Plan |
| • Stormwater Management Plan | • Historic Preservation Plan |
| • Coastal or Shoreline Management Plan | • Transportation Plan |
| • Local Coastal Program | • Disaster Recovery Plan |
| • Climate Action/ Adaptation Plan | • Economic Development Plan |
| **Code, Ordinance, or Requirements** | |
| • Floodplain Ordinance | • Unified Development Ordinance |
| • Zoning Ordinance | • Post-Disaster Redevelopment Ordinance |
| • Subdivision Ordinance4 | • Building Code |
| • Site Plan Review Requirements | • Fire Prevention Code |
| **Administrative and Technical Capability** | |
| • Planner(s) or engineer(s) with knowledge of land development and land management practices | |
| • Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | |
| • Planner(s) or engineer(s) with an understanding of manmade or natural hazards | |
| • Building Inspector | • Emergency Manager |
| • Floodplain Manager | • Land Surveyors |
| • Resource development staff or grant writers | • Public Information Officer |
| • Scientist(s) familiar with the hazards of the community | • Personnel skilled in Geographic Information Systems (GIS) |
| • Staff with education or expertise to assess the community's vulnerability to hazards | • Warning systems/services |
| • Maintenance programs to reduce risk | • Mutual Aid Agreements |

| | | |
|---|---|---|
| **Fiscal Capabilities** | | |
| **Funds and Taxes** | **Bonds and Grants** | **Fees** |
| • General Funds | • General Obligation Bonds | • Stormwater Utility Fees |
| • Special Purpose Taxes | • Special Tax and Revenue Bonds | • Gas / Electric Utility Fees |
| • Capital Improvements Project Funding | • Community Development Block Grants | • Water / Sewer Fees |
| | | • Development Impact Fees |
| **Education and Outreach Capabilities** | | |
| • Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access, and functional needs populations, etc. | | |
| • Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | | |
| • Natural disaster or safety related school programs | | |
| • Public-private partnership initiatives addressing disaster-related issues | | |

Additionally, classifications under various community mitigation programs were included. Other programs, such as the Community Rating System, Storm/Tsunami Ready, and Firewise USA, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum requirements set forth by local, state, and federal regulations in order to create a more resilient community. These programs complement each other by focusing on communication, mitigation, and community preparedness to save lives and minimize the impact of natural hazards on a community. The programs reviewed here are applicable to municipal partners only, so they are not included in the capability assessments for special-purpose districts.

Community programs in the survey included:

- Community Rating System (CRS)
- ISO Public Protection Classification
- StormReady Certification
- TsunamiReady Certification
- Firewise Communities Certification

### *Capability Assessment Survey Results*

Survey results are summarized in each individual Jurisdiction Annex in the *Capability Assessment* Section. *Table 20-4* summarizes the communities who participate in various community mitigation programs.

**Table 20-4**
**Jurisdictions Participating in Various Community Mitigation Programs**

| **Community Ratings System (CRS) Participation** | |
|---|---|
| Monterey County | *Current CRS Class*: 5 |
| City of Salinas | *Current CRS Class*: 7 |
| **Storm Ready Communities** | **Tsunami Ready Communities** |
| Monterey County | Monterey County |
| Unincorporated Community of Pebble Beach | Unincorporated Community of Pebble Beach |
| City of Marina | City of Carmel-by-the-Sea |
| City of Monterey | City of Marina |
| City of Pacific Grove | City of Monterey |
| | City of Pacific Grove |
| **Firewise Ready Communities** | |
| Unincorporated Community of Robles del Rio | |
| Unincorporated Community of Rancho Tierra Grande | |

The overall self-assessment of capability classifications provided in *Table 20-5* are designed to provide a general overview of capability assessment results and indicate each individual jurisdiction's perceived local capability. More information on the specific capabilities that are unique to each jurisdiction is provided in each jurisdiction's respective annex.

**Table 20-5**
**Participating Jurisdictions Self-Assessment of Capability Ratings**

| Jurisdiction | Planning & Regulatory Capability | Administrative & Technical Capability | Financial Capability | Education & Outreach Capability | Political Capability | Overall Capability |
|---|---|---|---|---|---|---|
| Monterey County | High | Moderate | Limited | Moderate | Moderate | Moderate |
| City of Carmel-by-the-Sea | Moderate | Moderate | Limited | Limited | Limited | Limited |
| City of Del Rey Oaks | Moderate | High | Limited | Moderate | Moderate | Moderate |
| City of Gonzales | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| City of Greenfield | Moderate | Limited | Limited | Moderate | Moderate | Moderate |
| City of King | Moderate | Moderate | Limited | Limited | Moderate | Moderate |
| City of Marina | Moderate | Moderate | High | Moderate | Moderate | Moderate |
| City of Monterey | High | High | High | High | High | High |
| City of Pacific Grove | High | High | Moderate | High | Moderate | High |
| City of Salinas | High | Moderate | Limited | Moderate | Moderate | Moderate |
| City of Sand City | Moderate | Limited | Limited | Limited | Moderate | Limited |
| City of Seaside | High | High | Limited | High | Moderate | Moderate |
| City of Soledad | Moderate | Moderate | Limited | Moderate | High | Moderate |
| Carmel Area Wastewater District | Moderate | High | High | High | High | High |
| Monterey One Water | High | High | Limited | Moderate | Limited | Moderate |
| Monterey Regional Waste Management District | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| Moss Landing Harbor District | Moderate | Moderate | Limited | Limited | Moderate | Moderate |

# 21. MITIGATION STRATEGY

Hazard mitigation plans must identify goals for reducing long-term vulnerabilities to identified hazards (44 CFR Section 201.6(c)(3)(i)). The mitigation strategy section is a blueprint for Monterey County to follow to become less vulnerable to the negative effects of the hazards identified and addressed in this Plan. The Steering Committee established guiding principles and a set of goals for this plan, based on data from the risk assessments, stakeholder input, and the results of the public involvement strategy.

The intent of the mitigation strategy is to provide Monterey County with a vision and overall goals that will serve as guiding principles for future mitigation policy and project administration, along with an analysis of mitigation techniques deemed available to meet those goals and reduce the impact of identified hazards.

## 21.1 GUIDING PRINCIPLE

A guiding principle focuses the range of objectives and actions to be considered. The purpose of the guiding principle is to represent the overall intended outcome of the MJHMP. The guiding principle for this hazard mitigation plan is as follows:

**Reduce the risk to life and property in Monterey County in an efficient and effective manner by decreasing the long-term vulnerability from hazards through coordinated planning, partnerships, capacity building, and implementation of effective risk reduction measures.**

## 21.2 MITIGATION GOALS

Hazard mitigation plans must identify goals for reducing long-term vulnerabilities to identified hazards (44 C.F.R. § 201.6(c)(3)(i)). Mitigation goals represent broad statements that are achieved through the implementation of more specific mitigation actions. Each goal, purposefully broad in nature, serves to establish the parameters that were used to review and update existing mitigation actions and to aid in formulating new ones.

Goals discussed in this section describe what actions should occur. Specific, measurable mitigation actions explain how to accomplish the goals. The goals form the basis for the development of the Mitigation Action Strategy and specific mitigation projects. The effectiveness of a mitigation strategy is assessed by determining how well these goals are achieved. The consistent implementation of mitigation actions over time will ensure that these mitigation goals are achieved.

Mitigation goals for this Plan update include:

| | |
|---|---|
| **Goal #1** | Minimize risk and vulnerability of Monterey County to hazards and protect lives and prevent losses to property, public health, economy, and the environment. |
| **Goal #2** | Increase the resilience of infrastructure and critical facilities and reduce long-term vulnerabilities of existing and future critical facilities, property, infrastructure, and high hazard potential dams due to natural hazards. |
| **Goal #3** | Build and support capacity to enable local government and the public to prepare for, respond to, and recover from the impact of natural hazards. |
| **Goal #4** | Encourage the development and implementation of long-term, cost-effective, and environmentally sound mitigation projects. |
| **Goal #5** | Promote and implement hazard mitigation policies and projects that are consistent with state, regional, and local climate action, and adaptation goals. |
| **Goal #6** | Inform the public on the risk from hazards of concern and increase awareness, preparation, mitigation, response, and recovery activities to promote public safety. |
| **Goal #7** | Enhance codes and their enforcement where feasible, so that new construction can withstand the impacts of known hazards and to lessen the impact of development on the environment's ability to absorb the impact of natural hazards. |
| **Goal #8** | Consider the impacts of known hazards in all planning mechanisms that address current and future land uses within the County. |
| **Goal #9** | Establish a partnership among all levels of government and the business community to improve and implement methods to protect property. |
| **Goal #10** | Encourage hazard mitigation measures that promote and enhance natural processes and minimize adverse impacts on the ecosystem. |

## 21.3 IDENTIFICATION OF MITIGATION ACTIONS

In formulating the mitigation strategy, a wide range of actions was considered in order to help achieve the established mitigation goals, in addition to addressing any specific hazard concerns. These activities were discussed during the Planning Team meetings. In general, all activities considered by the Planning Team can be classified under one of the following five broad categories of mitigation techniques: local plans and regulations, structure and infrastructure projects, natural systems protection, education and outreach, and emergency preparedness and response. All of these categories are described in detail below.

### *Local Plans and Regulations*

Mitigation actions that fall under this category include government authorities, policies, or codes that influence the way land and buildings are developed and built.

Examples of these types of actions include:

- Comprehensive and General Plans
- Climate Action and Adaptation Plans
- Land Use Ordinances and Subdivision Regulations
- Zoning and Building Code Updates
- Capital Improvement Plans, Stormwater Management Regulations, and Master Plans

### *Structure and Infrastructure Projects*

Mitigation actions that fall under this category involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.

Examples of these types of actions include:

- Elevation of Flood-Prone Structures
- Utility Undergrounding
- Structural Retrofits
- Stormwater System Upgrades

### *Natural Systems Protection*

Mitigation actions that fall under this category minimize damage and losses and also preserve or restore the functions of natural systems.

Examples of these types of actions include:

- Stream Corridor and Wetland Restoration
- Sediment and Erosion Control
- Forest and Vegetation Management
- Conservation Easements and Open Space Preservation

*Education and Outreach*

Mitigation actions that fall under this category inform and educate the public, elected officials, and property owners about hazards and potential ways to mitigate them. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.

Examples of these types of actions include:

- Risk Communication and Education Programs
- Real Estate Disclosures
- Participation in StormReady or Firewise Program

*Emergency Preparedness and Response*

Though emergency preparedness and response activities do not always fall under hazard mitigation, stakeholders in Monterey County believe this is an incredibly important category of strategies for reducing the risk to life and property posed by the hazards in the MJHMP.

Examples of these types of actions include:

- Warning Systems
- Emergency Operations Center Improvements
- Emergency Operations Plan Updates
- Community Emergency Response Team (CERT) Programs
- Communications Enhancements
- Emergency Response Training and Exercises
- Evacuation Planning
- Sandbagging for Flood Protection

## 21.4 MITIGATION ACTION PRIORITIZATION

Multiple factors were considered to determine the mitigation priorities for the next five-year implementation period and which mitigation actions should be given highest priority for implementation. FEMA's recommended prioritization criteria, STAPLEE, were used to assist in deciding why one recommended action might be more important, more effective, or more likely to be implemented than another.

STAPLEE stands for the following:

- *Social*: Does the measure treat people fairly? (e.g., different groups, different generations) Does it consider social equity, disadvantaged communities, or vulnerable populations?
- *Technical*: Will it work? (Is the action technically feasible? Does it solve the problem?)

- *Administrative*: Is there capacity to implement and manage the project? Is there adequate staffing, funding, and other capabilities to implement the project?
- *Political*: Who are the stakeholders? Did they get to participate? Will there be adequate political and public support for the project?
- *Legal*: Does the jurisdiction have the legal authority to implement the action? Is it legal? Are there liability implications?
- *Economic*: Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?
- *Environmental*: Does the action comply with environmental regulations? Will there be negative environmental consequences from the action?

In accordance with the Disaster Mitigation Act requirements, an emphasis was placed on the importance of a benefit-cost analysis in determining action priority (44 CFR, Section 201.6(c)(3)(iii)). The benefits of proposed actions were weighed against estimated costs as part of the prioritization process.

The benefit/cost analysis was not of the detailed variety required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program. A less formal approach was used because some projects may not be implemented for up to 10 years, and associated costs and benefits could change dramatically in that time. Therefore, a review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to the costs and benefits of these projects.

Cost ratings were defined as follows:

- *High*: Existing funding will not cover the cost of the project; implementation would require new revenue through an alternative source.
- *Medium*: The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
- *Low*: The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.

Benefit ratings were defined as follows:

- *High*: Project will provide an immediate reduction of risk exposure for life and property.
- *Medium*: Project will have a long-term impact on the reduction of risk exposure for life and property, or project will provide an immediate reduction in the risk exposure for property.
- *Low*: Long-term benefits of the project are difficult to quantify in the short term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.

### 21.4.1 MITIGATION ALTERNATIVES

In compliance with 44 CFR (Section 201.6(c)(3)(ii)): A section is included that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure

## 21.5 HAZARD PRIORITIZATION

As described previously, hazards were prioritized using a combination of historical data, local knowledge, and consensus opinions to produce a matrix that illustrates the degree of risk of each profiled hazard. Details on the creation of the matrix and the full results of the risk ranking process are included in **Section 4.4**, *Hazard Prioritization and Risk Ranking*.

*Table 21-1* lists the highest-ranking hazards from the prioritization process.

**Table 21-1**
**High and Substantial Hazards from Countywide Risk Prioritization**

| Ranking | Hazard | Degree of Risk Score (Out of 16) | Degree of Risk |
|---|---|---|---|
| **1** | Drought & Water Shortage | 12.3 | High |
| **2** | Earthquake | 11.9 | Substantial |
| **3** | Pandemic | 11.2 | Substantial |
| **4** | Wildfire | 10.8 | Substantial |
| **5** | Epidemic | 10.7 | Substantial |
| **6** | Cyber-Attack | 10.5 | Substantial |
| **7** | Utility Interruption/ PSPS | 10.2 | Substantial |
| **8** | Localized Stormwater Flooding | 10.2 | Substantial |
| **9** | Severe Winter Storms | 10.1 | Substantial |

### 21.5.1 COUNTYWIDE PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the Steering Committee identified key vulnerabilities and hazards of concern applicable to the entire County. Hazard Problem Statements helped the Steering Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation.

The Countywide Hazard Problem Statements were based on the risk assessments, the risk prioritization process, the vulnerability analysis, and local knowledge, as well as the jurisdiction

specific problem statements and community and stakeholder input. While only risks which ranked as High were prioritized for mitigation actions in individual annexes, for the purposes of the countywide plan, High and Substantial risk hazards were included in problem statements and countywide mitigation actions. For simplicity, the Hazard Problem Statement for Pandemic and Epidemic were combined. Countywide Hazard Problem Statements are identified below:

### *Drought & Water Shortage*

In Monterey County, water supply is extremely limited during non-drought years. As such, droughts are a serious threat in the County and could have devastating impacts on the agricultural industry, a major economic driver and job provider. Additionally, prolonged periods of drought can reduce water available for residential users and increase water prices. Governing authorities have been established to limit water use and protect water supply. Procurement of water credits/rights may limit new development necessary to meet increasing housing demands. Periods of drought also lead to increased pumping of groundwater wells, which can exacerbate sea water intrusion into the aquifer, increase land subsidence risks, and effect water quality. Contamination of drinking water, though unlikely, could be catastrophic. Drought conditions are likely to increase in future climate change scenarios.

### *Earthquake*

Monterey County has several fault systems, including three major active faults: The San Andreas Fault, the Palo Colorado-San Gregorio Fault, and the Monterey Bay-Tularcitos Fault. Due to the location of population centers and building history in the County, any large earthquake will likely have significant impacts on people, property, and critical infrastructure including water systems, telecommunications infrastructure, roads, bridges, healthcare systems, and utilities. Damages and debris could isolate large populations from these critical lifelines. Older unreinforced-masonry structures in the County are particularly vulnerable to earthquake risk. An earthquake can also produce cascading impacts due to urban conflagration, wildfires, seiches, landslides, tsunamis, dam failure, and levee failure.

### *Pandemic/ Epidemic*

The whole population of Monterey County is vulnerable to disease. The impacts of the COVID-19 Pandemic on the County have demonstrated the catastrophic risks that can be associated with large-scale disease outbreaks. Critical healthcare systems can become overwhelmed, limiting access to life-saving medical services. Continuity of government due to impacted workforces can result in limitations to essential government services. Disease outbreaks can place a disproportionate burden on the County's most vulnerable populations. Additionally, due to the large number of transient populations, such as tourists and migrant farmworkers, eradication of any new disease outbreak can be difficult without significant impacts to industry and the local economy.

### *Wildfire*

California, and subsequently Monterey County, is in cycle of extreme heat, drought, and fire, all amplified by climate change. Wildfires are a natural part of the California environment; however, fire behavior has increased in frequency, size, and impact from longer wildfire "seasons." Deferred vegetation management and population sprawl in the wildland urban interface and intermix, have increased probability and impact of wildfires. Sudden oak death and invasive species have created unhealthy forests. Large wildfires, such as the 2020 Wildfires in Monterey County, can cause housing inventories to become significantly limited thus increasing the demand on the housing market; additionally, many property owners have been unable to obtain or retain fire insurance at an affordable price or at all. Pre-existing water supply challenges in the County can lead to limited water available for fire suppression.

### *Cyber-Attack*

Nearly every aspect of life in Monterey County is dependent on systems and resources connected and managed through computer systems. Cyber-attacks can have catastrophic impacts on the ability of government, public and private entities to access banking, electricity, water, telecommunications, transportation, and other information systems necessary for survival. Due to the tightly coupled nature of technological system and critical lifelines, any failure of service continuity could cost lives.

### *Utility Interruption/ PSPS*

Heat-related equipment failures and electrical infrastructure igniting wildfires has resulted in unintentional and intentional rolling blackouts and power shutoffs throughout the County. Public Safety/ Utility Initiated Power Shut Offs to prevent wildfire ignition can have notably significant impacts due to the length of disruption time, limited efficacy of the strategy, and the effect on first responder capabilities. Extreme and prolonged heatwaves across the state increase the demand for use of the aging electrical grid, significantly depleting electricity reserves resulting in blackouts. Heatwaves are expected to increase in intensity and magnitude due to climate change, which will likely exacerbate this problem. Traditional energy sources increase climate change risk and are failing more consistently, but energy alternative technology cannot meet current nighttime demand.

Additionally, Monterey County has limited microgrids and reliance on the macro-grid makes the County vulnerable to rolling and prolonged power outages. Over the last decade Monterey County residents have begun adjusting to the increasing unreliability of macro utilities. Loss of power for more than a few hours can result in large economic losses, specifically related to food and agriculture. More vulnerable populations in isolated areas or who rely on medical devices are at increased risk during prolonged power outages.

### *Localized Stormwater Flooding*

Localized flooding has the potential to significantly impact people, property, and critical infrastructure in the County. Undersized and aging drainage infrastructure, deferred maintenance, increased run-off due to drought conditions, the built environment, and trends in

precipitation and weather can all increase the risk of localized stormwater flooding. Climate change is likely to exacerbate the intensity and magnitude of precipitation events, increasing the risk associated with localized stormwater flooding causing drainage infrastructure to be undersized in increasingly more common events.

Additionally, unhoused residents living in stormwater drainage areas can lead to increasing flood risk due to accumulated debris and trash, which can complicate both flood response and mitigation activities.

#### *Severe Winter Storms*

Severe winter storms have been increasing in intensity, magnitude, and severity in Monterey County and are associated with a variety of hazards in this Plan. Severe winter storms and heavy rain can have significant impacts including flash flooding, localized stormwater flooding, mudslides, and landslides. Secondary hazards can cause immobility and loss of utilities. Roads may become impassable due to flooding, downed trees, or landslides. Power lines may be downed due to high winds, and services such as water or telecommunications infrastructure may not be able to operate without power.

Stormwater runoff from heavy rains can also impair water quality by washing pollutants into water bodies. Severe winter storms can also cause large storm surge and wave action along the coastline, flooding low lying areas and causing dramatic erosion. Coastal bluff and cliff failure due to erosion can create hazardous conditions due to roadway collapse, undermined home foundations and damage to utilities. Additionally, future sea level rise scenarios are likely to exacerbate coastal and inland flood risks during winter storms.

#### *Road Infrastructure*

The occurrence of any hazard profiled in this Plan in combination with aging and limited road infrastructure can result in limited egress of evacuees and minimal ingress of first responders. Roadways can be compromised in severe weather incidents, further limiting road capacity. Road infrastructure is not developing at a rate commensurate with the rate that population and housing is expanding. Further, the topography of the County limits where new roads can be built.

## 21.6 MITIGATION ACTION PLAN

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the planning process. The Hazard Mitigation Action Plan Matrix for each jurisdiction, included in each participating jurisdictions respective annex in **Volume 2**, lists each priority mitigation action, identifies a time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000. It should be noted that each jurisdiction has also prioritized the countywide actions listed below within their respective mitigation action plans.

### 21.6.1 COUNTYWIDE MITIGATION ACTION PLAN

The Steering Committee reviewed the catalogs of hazard mitigation alternatives and selected area-wide actions to be included in a hazard mitigation action plan. The selection of area-wide actions was based on the risk assessment of identified hazards of concern and the defined hazard mitigation goals and objectives.

*Table 21-2* summarizes Countywide mitigation actions by hazard.

**Table 21-2**
**Countywide Mitigation Action Plan**

| Hazard | Mitigation Action |
|---|---|
| **Drought** | Provide public information on water conservation and assess the potential for community-wide water conservation programs. |
| **Earthquake** | Provide information on earthquake risk and preparedness to the public. Continue to adopt and implement current earthquake building standards and upgrade, remove, or replace unreinforced masonry buildings, as feasible. |
| **Pandemic/ Epidemic** | Provide unified information to the public regarding personal protective measures and mitigating strategies in accordance with CDC guidelines. Implement public health measures in government facilities. |
| **Wildfire** | Continue to collaborate across the operational area with all jurisdictions with fire protection and suppression responsibility on wildfire mitigation efforts. |
| **Cyber-Attack** | Seek to increase redundancy in IT infrastructure, implement protective cyber-security measures, and train staff on common cyber-attack methods. |
| **Utility Interruption** | Encourage the development of and use of microgrids and the hardening of utility of infrastructure, where possible. Provide backup generators for critical infrastructure and facilities. |
| **Localized Stormwater Flooding** | Maintain good standing in the National Flood Insurance Program and encourage coordination on drainage system maintenance. |
| **Severe Winter Storms** | Maintain StormReady and TsunamiReady certification, as applicable. |
| **Climate Change** | Support, encourage, and implement, when feasible, countywide climate action, adaptation, and resiliency initiatives. |
| **All Hazards** | Incorporate and make consistent other planning documents with appropriate goals, policies, and objectives to address hazards identified within the Multi-Jurisdictional Hazard Mitigation Plan. |

# 22. PLAN IMPLEMENTATION AND MAINTENANCE

## 22.1 PLAN ADOPTION

A hazard mitigation plan must document that it has been formally adopted by the governing bodies of the jurisdictions requesting federal approval of the plan (44 CFR Section 201.6(c)(5)). For multi-jurisdictional plans, each jurisdiction requesting approval must document that it has been formally adopted. This plan will be submitted for a pre-adoption review to Cal OES and FEMA Region IX. Once pre-adoption approval has been provided, all planning partners will formally adopt the plan. DMA compliance and its benefits cannot be achieved until the plan is adopted. Copies of the resolutions adopting this plan for all planning partners can be found in *Appendix 1*.

## 22.2 PLAN MAINTENANCE

A hazard mitigation plan must present a plan maintenance process that includes the following (44 CFR Section 201.6(c)(4)):

- A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan over a 5-year cycle
- A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate

- A discussion on how the community will continue public participation in the plan maintenance process.

This section details the formal process that will ensure that the Hazard Mitigation Plan remains an active and relevant document and that the planning partners maintain their eligibility for applicable funding sources. The plan maintenance process includes a schedule for monitoring and evaluating the plan annually and producing an updated plan every five years. This section also describes how public participation will be integrated throughout the plan maintenance and implementation process.

It also explains how the mitigation strategies outlined in this Plan will be incorporated into existing planning mechanisms and programs, such as comprehensive land-use planning processes, capital improvement planning, and building code enforcement and implementation. The Plan's format allows sections to be reviewed and updated when new data become available, resulting in a plan that will remain current and relevant.

### 22.2.1 PLAN IMPLEMENTATION

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in their locally adopted Annex. In each Annex's Mitigation Action Plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their own unique mitigation action list as needed without altering the county level Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for the monitoring and implementation of actions belonging to other jurisdictions involved in the planning process.

In addition to the assignment of a local lead department or agency, an implementation time period or a specific implementation date or window has been assigned to each mitigation action to help assess whether actions are being implemented in a timely fashion. The jurisdictions present within Monterey County will seek outside funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. When applicable, potential funding sources have been identified for proposed actions listed in the Mitigation Action Plans.

It will be the responsibility of each participating jurisdiction to determine additional implementation procedures beyond those listed within their Mitigation Action Plan. This includes integrating the requirements of the MJHMP into other local planning documents, processes, or mechanisms such as comprehensive or capital improvement plans, when appropriate. The members of the Steering Committee will remain charged with ensuring that the goals and strategies of new and updated local planning documents for their jurisdictions or agencies are consistent with the goals and actions of the MJHMP and will not contribute to increased hazard vulnerability in Monterey County.

Although the development and maintenance of this stand-alone MJHMP is deemed by the Steering Committee to be the most effective and appropriate method to implement local hazard mitigation actions at this time, the planning team recognizes that resilient communities proactively protect themselves against hazards through the institution of mitigation principles into daily actions and policy decisions.

The planning team and the communities they represent will continue to create opportunities to weave the thread of hazard mitigation and the strategies and goals identified in this plan into all community and emergency planning processes.

### 22.2.2 INCORPORATION INTO OTHER PLANNING MECHANISMS

The information on hazard, risk, vulnerability, and mitigation contained in this Plan is based on the best science and technology available at the time this plan was prepared. The general plans of the planning partners are considered to be integral parts of this plan. The planning partners, through adoption of general plans and zoning ordinances, have planned for the impact of natural hazards. The plan development process provided them with the opportunity to review and expand on policies contained within these planning mechanisms. The planning partners used their general plans and the hazard mitigation plan as complementary documents that work together to achieve the goal of reducing risk exposure to the citizens of the planning area. An update to a general plan may trigger an update to the hazard mitigation plan.

All municipal planning partners are committed to creating a linkage between the hazard mitigation plan and their individual general plans by identifying a mitigation action as such and giving that action a high priority. Additionally, all planning partners are committed to being in full compliance with California Assembly Bill 2140 and Senate Bill 379, which promote the integration of local hazard mitigation plans and general plans and mandate that these plans address climate change.

Moving forward, hazard mitigation strategies and goals should be incorporated into other community planning efforts. Examples may include but are not limited to:

- Emergency Operations Plans can address threat and hazard vulnerability and ensure jurisdictions strengthen their core capabilities to address the highest risks.
- County and local general plans, especially the safety element, is an appropriate document to codify hazard mitigation goals and strategies. Other relevant policy areas with the general plan include land use, transportation, resource management and conservation, and recreation and open space.
- Climate Action and Adaptation plans should recognize that the long-term impacts of climate change can potentially affect hazards by increasing their severity.

Other planning processes and programs to be coordinated with the recommendations of the hazard mitigation plan could include the following:

- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans.

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be incorporated via the update process.

More information on plan integration is included in each jurisdictions respective annex in **Volume 2**.

### 22.2.3 PLAN MONITORING AND EVALUATION

The agency with the overall responsibility for monitoring this Plan is the Monterey County Office of Emergency Services. Periodic revisions and updates of the MJHMP are required to ensure that the goals of the Plan are kept current, considering potential changes in hazard vulnerability and mitigation priorities. In addition, revisions may be necessary to ensure that the Plan is in full compliance with applicable federal and state regulations. Periodic evaluation of the Plan will also ensure that specific mitigation actions are being reviewed and carried out according to each jurisdiction's individual Mitigation Action Plan.

The Steering Committee meets on an annual basis, or "as needed" determined by the Monterey County Office of Emergency Services, in order to maintain oversight of key elements of the plan maintenance strategy. The principal role of the Steering Committee in the plan maintenance strategy will be to review progress made on current plan goals, actions, and strategies, and identify any new opportunities for collaboration. The Committee will also provide a review forum for enhancements to be considered at the next update.

Future plan updates will be overseen by a steering committee similar to the one that participated in this update process, so keeping a steering committee intact will provide a head start on future updates.

*Annual Progress Report*

As part of this monitoring, evaluation, and enhancement process, each participating jurisdiction will be expected to provide an annual status report and an update at annual Steering Committee meetings. Prior to annual meetings the Monterey County Office of Emergency Services will send out the Countywide Mitigation Goals and Action Plan, in addition to the respective jurisdictions Mitigation Action Plan. Annual progress reports will provide an opportunity for jurisdictions to review their respective Mitigation Action Plan and evaluate the Plan's implementation effectiveness.

Completion of the progress report will be the responsibility of each participating jurisdiction, not the Steering Committee. The Steering Committee will serve as a resource to the planning partners as needed to review the progress report in an effort to identify issues needing to be addressed by future plan updates.

The planning team has created a template that shows the minimum level of detail that will be sought for preparing a progress report (see *Appendix 2*). The annual progress report will ensure that the plan is continuously maintained and updated to reflect changing conditions and needs within Monterey County. If determined appropriate or as requested, the annual report will be presented to local governing bodies of participating jurisdictions and/or to the public in order to report progress on the actions identified in the Plan.

*Post-Disaster Mitigation Webinars*

Following state or federally declared disasters in the Monterey County Operational Area, the Monterey County Office of Emergency Services will host, as a part of the recovery process, informational webinars on FEMA Post-Disaster Mitigation Funding opportunities. After-Action Reports will also include a discussion item on how to mitigate future incidents.

### 22.2.4 PLAN UPDATE

Local hazard mitigation plans must be reviewed, revised if appropriate, and resubmitted for approval in order to remain eligible for benefits under the DMA (44 CFR, Section 201.6(d)(3)). The planning partners intend to update the hazard mitigation plan on a 5-year cycle from the date of initial plan adoption.

It will not be the intent of future updates to develop a completely new hazard mitigation plan for the planning area. The Plan will be reviewed by the planning team every five years to determine whether there have been any significant changes in Monterey County or the surrounding area that may, in turn, necessitate changes in the types of mitigation actions proposed. New development in identified hazard areas, an increased exposure to hazards, the increase or decrease in capability to address hazards, and changes to federal or state legislation are examples of factors that may affect the necessary content of the Plan.

The plan review provides community officials with an opportunity to evaluate those actions that have been successful and to explore the possibility of documenting potential losses avoided due to the implementation of specific mitigation measures. The plan review also

provides the opportunity to address mitigation actions that may not have been successfully implemented as assigned.

During the five-year plan review process, the following questions will be considered as criteria for assessing the effectiveness and appropriateness of the Plan:

- Do the goals address current and expected conditions?
- Has the nature or magnitude of risks changed?
- Are the current resources appropriate for implementing the Plan?
- Are there implementation problems, such as technical, political, legal, or coordination issues with other agencies?
- Have the outcomes occurred as expected?
- Did the jurisdictions, agencies, and other partners participate in the plan implementation process as proposed?

Following the five-year update, any revisions deemed necessary will be summarized and implemented according to the reporting procedures outlined herein. Upon completion of the review and update/amendment process, the MJHMP will be submitted to the State Hazard Mitigation Officer at the California Governor's Office of Emergency Services (Cal OES) for final review and approval in coordination with the Federal Emergency Management Agency.

#### *Disaster Declaration*

Following a disaster declaration, the Plan will be revised as necessary to reflect lessons learned, or to address specific issues and circumstances arising from the event. It will be the responsibility of the Monterey County Office of Emergency Services to convene the Steering Committee and ensure the appropriate stakeholders are invited to participate in the plan revision and update process following declared disaster events.

#### *Reporting Procedures*

The results of the five-year review will be summarized by the Planning Team in the relevant sections of the updated plan. This includes: a comprehensive description of the plan update process including an evaluation of plan effectiveness; any updates to the planning area profile; any notable revisions or updates to the risk assessment or capability assessment; updated mitigation goals and consideration of mitigation action alternatives; status updates on previously adopted mitigation action plans (including the identification of reasons for delays or obstacles to their implementation) as well as the identification of newly proposed mitigation actions; and revisions or updates to plan maintenance procedures.

Any necessary revisions or changes to the countywide Plan elements must follow the monitoring, evaluation, and enhancement procedures outlined herein. For changes and updates to the individual Mitigation Action Plans, appropriate local designees will assign responsibility for the completion of the task.

### 22.2.5 CONTINUED PUBLIC INVOLVEMENT

Public participation is an integral component of the mitigation planning process and will continue to be essential as this Plan evolves and is updated over time. The most appropriate

and meaningful opportunities for the general public to be involved in the maintenance and implementation of the MJHMP is during the five-year plan review process as described earlier in this section. The participating jurisdictions of Monterey County have been diligent and successful in gaining widespread public involvement during the five-year plan review process through multiple methods. While the five-year plan review process represents the greatest opportunity for such involvement, other efforts to involve the public in the maintenance, evaluation, and revision process will continue to be made, as necessary.

Each participating jurisdiction has agreed to provide links to the hazard mitigation plan website on their individual jurisdictional websites to increase avenues of public access to the plan. The Monterey County Office of Emergency Services will maintain the hazard mitigation plan website, which will house the final plan and become the one-stop shop for information regarding the plan implementation. Copies of the plan will also be distributed to local libraries.

Additionally, as determined feasible, information on mitigation progress discussed at annual Steering Committee Meetings will be announced to the public.

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# APPENDIX 1
# PLAN ADOPTION RESOLUTIONS FROM PLANNING PARTNERS

# APPENDIX 2
# PLAN PROGRESS REPORT TEMPLATE

# PROGRESS REPORT TEMPLATE

**Reporting Period**: Click or tap to enter a date.

**Background**: Monterey County and participating local cities and special districts developed a hazard mitigation plan to reduce risk from all hazards by identifying resources, information, and strategies for risk reduction. The federal Disaster Mitigation Act of 2000 requires state and local governments to develop hazard mitigation plans as a condition for federal disaster grant assistance. To prepare the plan, the participating planning partners organized resources, assessed risks from natural hazards, developed planning goals and objectives, reviewed mitigation alternatives, and developed an action plan to address probable impacts from natural hazards. By completing this process, participating jurisdictions are in compliance with the Disaster Mitigation Act, achieving eligibility for mitigation grant funding opportunities afforded under the Robert T. Stafford Act.

The plan can be viewed on-line at:

**Purpose**: The purpose of this report is to provide an annual update on the implementation of the action plan identified in the Hazard Mitigation Plan. The objective is to ensure that there is a continuing and responsive planning process that will keep the Hazard Mitigation Plan dynamic and responsive to the needs and capabilities of the planning partners. This report discusses the following:

- Natural hazard events that have occurred within the last year
- Changes in risk exposure within the planning area
- Mitigation success stories
- Review of the action plan
- Changes in capabilities that could impact plan implementation
- Recommendations for changes/enhancement.

**Hazard Events within the Planning Area**: During the reporting period, the following hazard events in the planning area that had a measurable impact on people or property occurred:

- Click or tap here to enter text.
- Click or tap here to enter text.
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**Mitigation Success Stories**: *Insert brief overview of mitigation accomplishments during the reporting period.*

Click or tap here to enter text.

**Review of the Action Plan:** *Provide a description of the implementation of each action item in the action plan, including a statement on how the project was implemented or not implemented during the reporting period.*

Address the following in the "status" column of the following table:

- Project Completed
- Action ongoing toward completion
- No progress at this time

In the "narrative update" column address the following questions"

- Was any element of the action carried out during the reporting period?
- If no action was completed, why?
- Is the timeline for implementation for the action still appropriate?
- If the action was completed, does it need to be changed or removed from the action plan?

**Mitigation Action Status**

| # | Description | Status | Narrative Update |
|---|---|---|---|
| | | Choose an item. | |
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Reviewers of this report should refer to the Hazard Mitigation Plan for more detailed descriptions of each action and the prioritization process.

**Changes That May Impact Implementation of the Plan:** *Insert brief overview of any significant changes in the planning area that would have a profound impact on the implementation of the plan. Specify any changes in technical, regulatory, and financial capabilities identified during the plan's development.*

Click or tap here to enter text.

**Recommendations for Changes or Enhancements:** *Note any recommendations for new projects or revised recommendations for future updates or revisions to the plan.*

- Click or tap here to enter text.
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***Public review notice***: *The contents of this report are considered to be public knowledge and have been prepared for total public disclosure. Copies of the report have been provided to the governing boards of all planning partners and to local media outlets. The report is posted on the Monterey County Office of Emergency Services website.*

Any questions or comments regarding the contents of this report should be directed to:

**Name**: Click or tap here to enter text.

**Agency**: Click or tap here to enter text.

**Title**: Click or tap here to enter text.

**Email**: Click or tap here to enter text.

**Phone Number**: Click or tap here to enter text.

# APPENDIX 3
# STEERING COMMITTEE MEETING AGENDAS

# 2021 MONTEREY COUNTY

## MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## MEETING INFORMATION

| | |
|---|---|
| **MEETING:** Pre-Planning Meeting | **DATE:** 5/22/19 |
| **LOCATION:** 1441 Schilling Place, Salinas CA, Saffron Conference Room | **TIME:** 9:00AM-11:00AM |
| **CONFERENCE CALL:**<br>• Meeting link: https://monterey-county-oes.my.webex.com/monterey-county-oes.my/j.php?MTID=mcabf817afb7d21224a71a6b9bb19a830<br>• Phone: +1-510-338-9438<br>• Meeting number/ Access code: 625 637 402<br>• Password: ZbaMhUkm<br>• Host key: 131101 | |

## AGENDA

**1. WELCOME AND INTRODUCTIONS** *Gerry Malais, Monterey Co. OES* *09:00*

**2. HAZARD MITIGATION OVERVIEW** *Kelsey Scanlon, Monterey Co. OES* *09:10*

- **Purpose:** Review purpose and scope of hazard mitigation efforts.
- **Outcomes**: Identify short and long-term outcomes of effective hazard mitigation planning efforts.

**3. GRANT UPDATE** *Kelsey Scanlon, Monterey Co. OES* *09:20*

- **Purpose:** Review grant application milestones; provide status update of grant application; discuss next steps if grant is obligated; review proposed reimbursement amount; review eligible activities; recommendations for tracking time and resources.
- **Outcomes:** All jurisdictions should begin tracking time and resources assigned to hazard mitigation planning activities.

**4. PLAN UPDATE PROCESS** *Kelsey Scanlon, Monterey Co. OES* *09:30*

- **Purpose**: Review Code of Federal Regulations; discuss the planning timeline, significant dates, and milestones.
- **Outcomes:** Consensus on planning timeline, milestones, and responsibilities.

**5. PLANNING MEETINGS** *Kelsey Scanlon, Monterey Co. OES* *09:40*

- **Purpose:** Discuss Steering Committee participants and meetings; discuss and plan jurisdiction specific meetings; and discuss technical expert/hazard specific meetings; review organization chart.
- **Outcomes**: Identify quantity of meetings, dates, times, and members of the Steering Committee, Jurisdiction Specific Planning Teams, and Technical / Hazard Specific planning meetings.

**6. PUBLIC OUTREACH STRATEGY** *Kelsey Scanlon, Monterey Co. OES* *09:50*
*Lubna Mohammad, Monterey Co. OES*

- **Purpose:** Discuss public outreach requirements and proposed strategy; present public outreach toolkit; review hazard mitigation website and jurisdiction specific webpages.
- **Outcomes:** Identify quantity and scope of public outreach per jurisdiction; provide guidance on overall public outreach strategy.

**7. GENERAL PLAN SAFETY ELEMENT** *Capt. Gene Potkey, CAL FIRE* *10:15*
*Capt. Kevin Lindo, CAL FIRE*

- **Purpose:** Review General Plan Safety Element requirements for MJHMP update process; Discuss integration and adoption of MJHMP into General Plan Safety Element; Review fire hazard severity zones; subdivision map act; CEQA.
- **Outcomes:** Identify requirements, deliverables and review process.

**8. NEXT MEETING** *Kelsey Scanlon, Monterey Co. OES* *10:55*

- Next Meeting TBD - grant obligation pending

**9. ADJOURN** 11:00

# 2021 MONTEREY COUNTY

## MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

| MEETING INFORMATION | |
|---|---|
| **MEETING:** Steering Committee Meeting #1 | **DATE:** 01/22/20 |
| **LOCATION:** 1322 Natividad Rd, Salinas CA | **TIME:** 9:00AM-11:00AM |
| **CONFERENCE CALL:**<br>• https://montereycty.zoom.us/j/256487941<br>• Dial: 1 669 900 6833 US (San Jose)<br>• Meeting ID: 256 487 941 | |

## AGENDA

1. **Welcome and Introductions**
2. **Grant Update**
3. **Hazard Mitigation Overview**
   - **Handout: Review FEMA Evaluation Of 2016 Plan**
4. **Workplan**
   - **Handout: Progress Tracker**

| Activity | Timeframe |
|---|---|
| Community & Public Outreach | May 2019 – March 2021 |
| Update Period | January 2020 – August 2020 |
| Plan Review & Revisions | September 2020 – March 2021 |
| Approval | March 2021 – December 2021 |
| Adoption | December 2021 – December 2022 |
| Closeout | January 2022 |

5. **Planning Meetings**
   a. **Decision**: Approve Workplan and Planning Process

| | |
|---|---|
| ~~Pre-Planning Meeting~~ | ~~May 22, 2019~~ |
| ~~Initial Planning Meeting # 1~~ | ~~January 22, 2020~~ |
| Planning Meeting #2 | February 19, 2020 |
| Planning Meeting #3 | March 18, 2020 |
| Planning Meeting #4 | April 15, 2020 |
| Planning Meeting #5 | May 20, 2020 |
| Final Planning Meeting #6 | July 15, 2020 |
| Final Planning Meeting #7 | August 12, 2020 |

6. **Roles, Responsibilities, Tasks**
    - 35 Tasks
    - **Handout: Planning Task List**
7. **Public Outreach Strategy**
    - Public Information Resources
    - **Handout: Review and Approve Public Outreach Strategy**
    - Review Public Forum Outcomes
    - Public Outreach Action Items
8. **Stakeholder Forum**
    - June 5, 2020
    - Handout: 2016 Stakeholder List
9. **Information Requirements**
    - Executive Summary Introduction
        - **Decision**: Approve Organization of Plan
    - Community Profile
    - Hazard Analysis & Maps
        - **Decision**: Inclusion of new hazards (Power Disruption, Acts of Violence/Terrorism, Train Derailment, Public Health)
    - Vulnerability Analysis
    - Capability Assessment
    - Mitigation Strategy / Appendices
    - Maintenance
10. **Next Meeting**

Next Meeting:

- Planning Meeting #2 | February 19, 2020 | 9:00am-11:00am | 1322 Natividad Rd, Salinas CA

**Action Items:**

- *Kelsey to send out presentation, handouts and follow up material.*
- *Publish 1 Press Release Announcing Update*
- *Identify Public Outreach Event*
- *Review Community Profile Chapter*
- *Submit updates by February 22, 2020 COB*

11. **Adjourn**

# 2021 MONTEREY COUNTY

## MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

| MEETING INFORMATION | |
|---|---|
| **MEETING:** Steering Committee Meeting #2 | **DATE:** 02/19/20 |
| **LOCATION:** 1322 Natividad Rd, Salinas CA | **TIME:** 9:00AM-11:00AM |
| **CONFERENCE CALL:**<br>• https://montereycty.zoom.us/j/656290816<br>• +1 669 900 6833<br>• Meeting ID: 656 290 816 | |

## AGENDA

1. **Welcome and Introductions**
2. **Grant Update**
3. **Workplan**
   - Progress on Schedule
   - Handout: Progress Tracker

**Action Items:**

- Jurisdictions to submit documentation of Jurisdiction Planning Meeting

| Activity | Timeframe |
|---|---|
| Community & Public Outreach | May 2019 – March 2021 |
| Update Period | January 2020 – August 2020 |
| Plan Review & Revisions | September 2020 – March 2021 |
| Approval | March 2021 – December 2021 |
| Adoption | December 2021 – December 2022 |
| Closeout | January 2022 |

4.
5. **Public Outreach Strategy**

**Action Items:**

- Kelsey to send Press Release and Social Media Language on 2/19/20
- The following jurisdictions still need to identify a date for a Public Forum or Governing Body Presentation: Carmel-by-The-Sea, Del Rey Oaks, Greenfield, King City, Marina, Monterey, Salinas, Sand City, Soledad.

6. **Community Profile Review**
   - Draft attached for review.
   - New to the Chapter:
     - Cover page and format.

- Addition of Plan Requirements Boxes throughout the plan.
- Addition of "References and Resources" Section in each chapter.
- Update of census information; new census information (i.e. county-to-county commute, native language statistics, poverty, health).
- Addition of Disabilities, Access, and Functional Needs Demographic Information
- Addition of Social Vulnerability Assessment of the community.
- Addition of housing and infrastructure trends
- Addition of participating special districts in the "Community Descriptions"
- Integration of Community priorities based on the results of the public outreach strategy.

- **Action Items:**
  - County to complete social vulnerability, disabilities, and community priorities sections.
  - County to include language regarding multi-family use of single structures and occupancy of illegal structures.
  - The following jurisdictions still need to submit changes: City of Gonzales, City of Greenfield, King City, Marina, Monterey County Water Resources Agency.

## 7. Information Requirements

- Decision: Modification of planning timeline. See Task List.

**Action Items:**

- Jurisdictions to complete and submit 1 Capability Assessment Survey by May 13, 2020.
- Jurisdictions to complete and submit 1 Safe Growth Survey by May 13, 2020.
- Jurisdictions to complete and submit 1 NFIP Survey by May 13, 2020.
- County to update and distribute Hazard Analysis Chapter for review at March meeting.

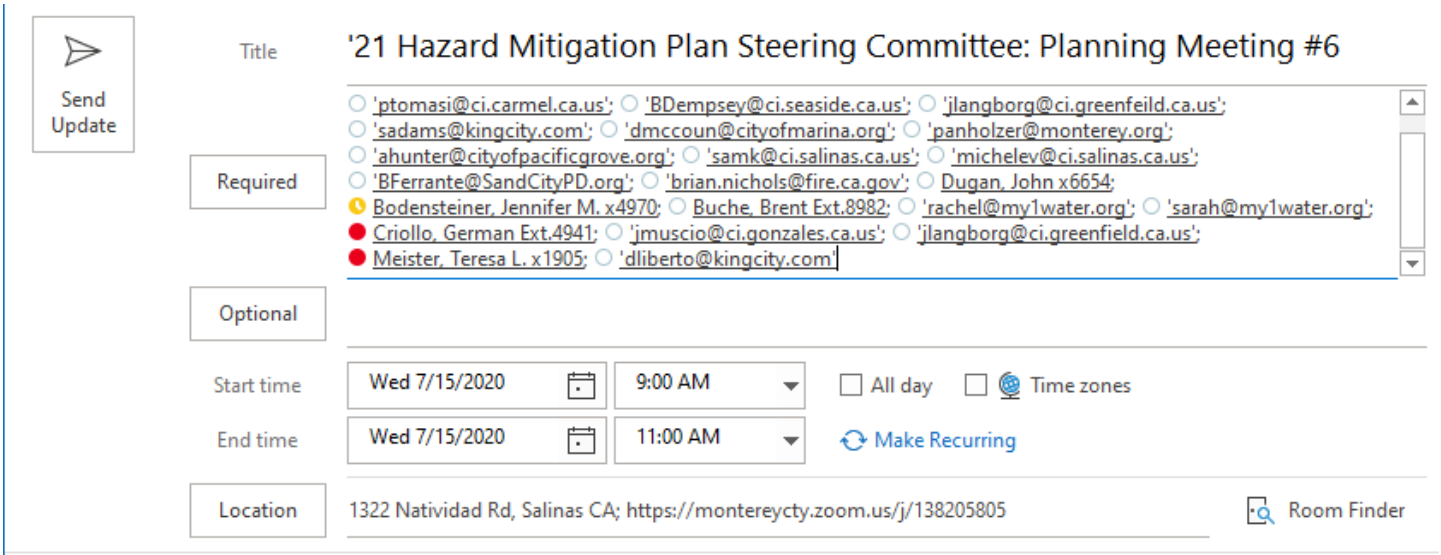
## 8. Next Steps

Next Meeting:

- Planning Meeting #3 | March 18, 2020| 9:00am-11:00am | 1322 Natividad Rd, Salinas CA

| | |
|---|---|
| ~~Pre-Planning Meeting~~ | ~~May 22, 2019~~ |
| ~~Initial Planning Meeting # 1~~ | ~~January 22, 2020~~ |
| ~~Planning Meeting #2~~ | ~~February 19, 2020~~ |
| Planning Meeting #3 | March 18, 2020 |
| Planning Meeting #4 | April 15, 2020 |
| Planning Meeting #5 | May 20, 2020 |
| Stakeholder Forum | June 5, 2020 |
| Final Planning Meeting #6 | July 15, 2020 |
| Final Planning Meeting #7 | August 12, 2020 |

## 9. Adjourn




Hazard Mitigation Plan Partners,

This meeting is still scheduled to occur virtually. Likely it will not take that full hour but we will discuss the workplan moving forward.

Please join us for the Planning Meeting #6 of the 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan Update. Agenda, workplan, and PowerPoint forthcoming. If you would like to host this meeting in your jurisdiction, please let me know.

Thanks,

Kelsey

---

Join Zoom Meeting
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Find your local number: https://montereycty.zoom.us/u/adzMXAU5Ao

# 2021 MONTEREY COUNTY

## MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

| MEETING INFORMATION | |
|---|---|
| **MEETING:** Steering Committee Meeting #8 | **DATE: April 15, 2021** |
| **LOCATION:** Virtual or In-Person (1322 Natividad Rd, Salinas CA) | **TIME: 9:00-10:30AM** |
| **CONFERENCE CALL Information:**<br>• https://montereycty.zoom.us/j/97936426204?pwd=RytIeW44bXhRemRkWWNNMkNGMVF6Zz09<br>• Password: 311561<br>• 1 669 900 6833 US (San Jose)<br>• Meeting ID: 979 3642 6204 | |

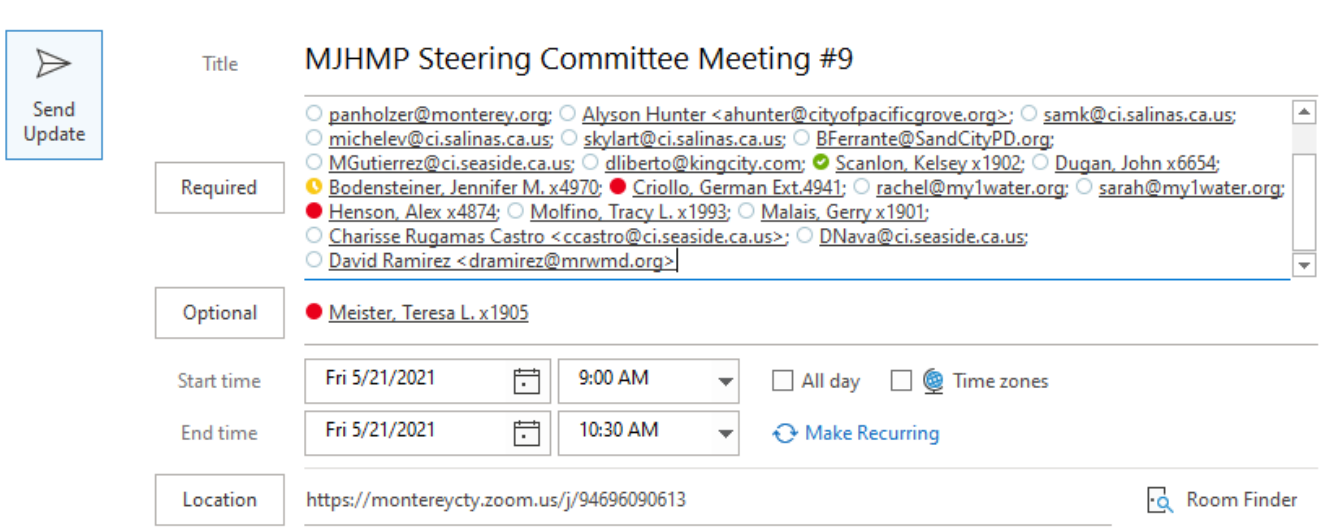
## AGENDA

1. **Welcome and Introductions**
2. **Grant Update**
3. **Staffing Update**
4. **Updated Timeline**
5. **Public Meetings**
   **Action Items:** The following jurisdictions still need to identify a date for a Public Forum or Governing Body Presentation: Carmel-by-The-Sea, Del Rey Oaks, Marina, Salinas, Seaside, Soledad.
6. **Jurisdiction Mitigation Strategies Listening Sessions**
   **Action Items:**
   - Send Date for Jurisdiction Stakeholder Listening Session
   - OES will send out agenda and calendar invite for meeting
7. **Information Requirements**
   **Action Items:**
   - Jurisdictions to complete and submit 1 Capability Assessment Survey by
   - Jurisdictions to complete and submit 1 Safe Growth Survey by
   - Jurisdictions to complete and submit 1 NFIP Survey by
   - Jurisdictions to review and update critical facilities list.
   - Jurisdictions to complete and submit land use and development trend information
   - County to update and distribute Hazard Analysis Chapter for review at May meeting
   - County to provide updated format of City Appendices at May meeting

## 8. Next Steps

| | | |
|---|---|---|
| Steering Committee: Pre-Planning Meeting / Public Outreach Strategy Development | Complete | May 22, 2019 |
| Steering Committee: Initial Planning Meeting # 1 | Complete | January 22, 2020 |
| Steering Committee: Planning Meeting #2 | Complete | February 19, 2020 |
| ~~Steering Committee: Planning Meeting #3~~ | ~~Cancelled~~ | ~~March 20~~ |
| ~~Steering Committee: Planning Meeting #4~~ | ~~Cancelled~~ | ~~April 20~~ |
| ~~Steering Committee: Planning Meeting #5~~ | ~~Cancelled~~ | ~~May 20~~ |
| ~~Stakeholder Committee Meeting~~ | ~~Cancelled~~ | ~~June 20~~ |
| Steering Committee: Planning Meeting #6 | Complete | July 15, 2020 |
| ~~Steering Committee: Planning Meeting #7~~ | ~~Cancelled~~ | ~~August 20~~ |
| Steering Committee: Planning Meeting #8 | On Schedule | April15, 2021 |
| Steering Committee: Planning Meeting #9 | On Schedule | May 20, 2021 |
| Jurisdiction Mitigation Strategy Listening Sessions | On Schedule | June-August 21 |
| Steering Committee: Planning Meeting #10 (FINAL Before DC) | On Schedule | September23, 2021 |
| Steering Committee: Planning Meeting #11 (FINAL) | On Schedule | November11, 2021 |

## 9. Adjourn




Hold for May Multi-Jurisdictional Hazard Mitigation Plan Steering Committee Meeting. Agenda to Follow.

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# 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan Update

MEETING: STEERING COMMITTEE MEETING #9

DATE: MAY 21, 2021

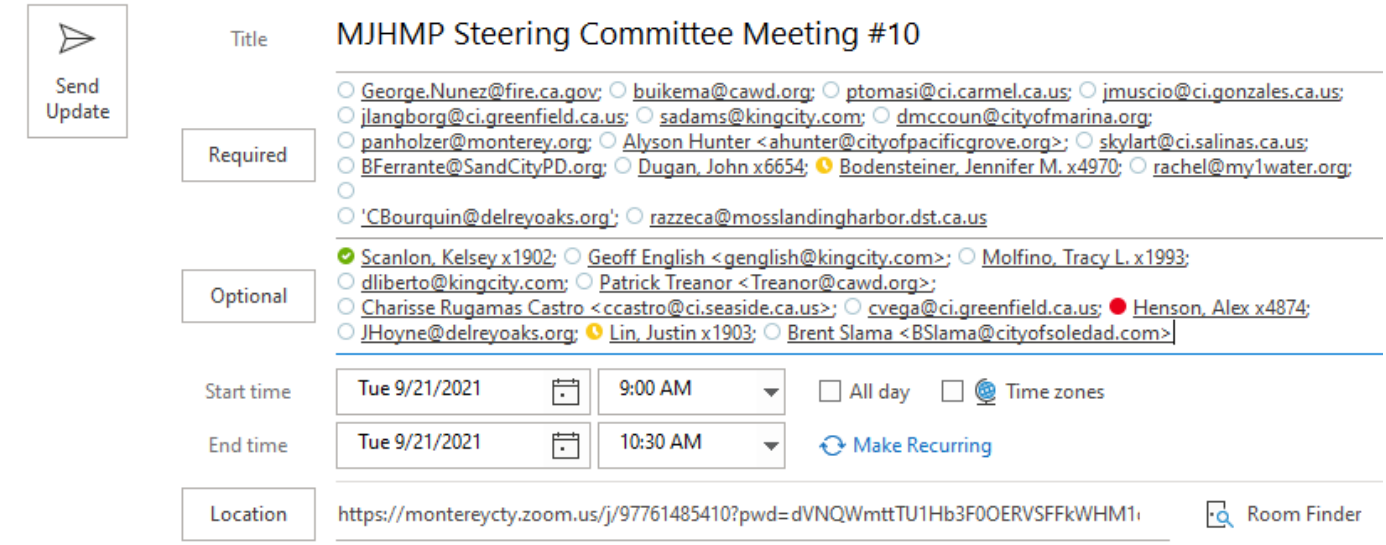
TIME: 9:00AM -10:30AM

1

## Agenda

1. Welcome and Introductions
2. Timeline
3. Action Items from Last Meeting
4. Jurisdiction Mitigation Strategies Listening Sessions
5. Jurisdiction Annex Overview
6. Next Steps & Action Items
7. Adjourn

2

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**Laura Emmons**
Emergency Services Planner
emmonsl@co.monterey.ca.us
(831) 521-0089

---

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# 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan Update

MEETING: STEERING COMMITTEE MEETING #10

DATE: SEPTEMBER 21, 2021

TIME: 9:00AM -10:30AM

1

## Agenda

1. Welcome and Introductions
2. Timeline Update
3. Countywide Mitigation Strategy
4. Threat Hazard Risk Assessment Preliminary Results
5. Countywide Mitigation Actions
6. Plan Maintenance Strategy
7. Jurisdiction Annex Overview
8. Next Steps & Action Items
9. Adjourn

2

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Attachment 3

# COUNTY OF MONTEREY

## MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

VOLUME 2

March 2022

Carmel-by-the-Sea
Del Rey Oaks
Gonzales
Greenfield
King City
Marina
Monterey
Pacific Grove
Salinas
Sand City
Seaside
Soledad
Carmel Area Wastewater District
Monterey County Water Resources Agency
Monterey One Water
Monterey Regional Waste Management District
Moss Landing Harbor District

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## MONTEREY COUNTY OFFICE OF EMERGENCY SERVICES

GERRY MALAIS, EMERGENCY MANAGER
TERESA MEISTER, SENIOR SECRETARY
KELSEY SCANLON, EMERGENCY SERVICES PLANNER
JUSTIN LIN, EMERGENCY SERVICES PLANNER
LAURA EMMONS, EMERGENCY SERVICES PLANNER
DANIEL GONZALEZ, EMERGENCY SERVICES PLANNER
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TRACY MOLFINO, EMERGENCY SERVICES PLANNER

1322 NATIVIDAD RD, SALINAS, CA
INFO.OES@CO.MONTEREY.CA.US
831-796-1905

IT IS THE POLICY OF THE COUNTY OF MONTEREY THAT NO PERSON SHALL BE DENIED THE BENEFITS OF OR BE SUBJECTED TO DISCRIMINATION IN ANY CITY PROGRAM, SERVICE, OR ACTIVITY ON THE GROUNDS OF RACE, RELIGION, COLOR, NATIONAL ORIGIN, ENGLISH PROFICIENCY, SEX, AGE, DISABILITY, SEXUAL ORIENTATION, GENDER IDENTITY, OR SOURCE OF INCOME. THE COUNTY OF MONTEREY ALSO REQUIRES ITS CONTRACTORS AND GRANTEES TO COMPLY WITH THIS POLICY.

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# JURISDICTIONAL ANNEXES

This Volume, **Volume 2** of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan contains the following Jurisdictional Annexes for each participating jurisdiction.

**A** Unincorporated County of Monterey (and Monterey County Water Resources Agency)
**B** City of Carmel-by-the-Sea
**C** City of Del Rey Oaks
**D** City of Gonzales
**E** City of Greenfield
**F** City of King
**G** City of Marina
**H** City of Monterey
**I** City of Pacific Grove
**J** City of Salinas
**K** City of Sand City
**L** City of Seaside
**M** City of Soledad
**N** Carmel Area Wastewater District
**O** Monterey One Water
**P** Monterey Regional Waste Management District
**Q** Moss Landing Harbor District

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# INTRODUCTION

## BACKGROUND

The hazards assessed in Volume 1 of this Plan know no legal and political boundaries and therefore, the County of Monterey determined that a multi-jurisdictional planning approach to hazard mitigation was important for long-term risk reduction. The multi-jurisdictional planning processes offered many benefits including:

- Improving communication and coordination among Monterey County jurisdictions and Operational Area partners on hazard mitigation
- Enabling a comprehensive mitigation approach to reduce risks that affect multiple jurisdictions
- Maximizing economies of scale by leveraging individual capabilities and sharing costs and resources

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. All participating jurisdictions must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR §201.6). For the Monterey County Hazard Mitigation Plan, a Planning Partnership was formed to leverage resources and to meet requirements of the federal Disaster Mitigation Act (DMA) for as many eligible local governments as possible. There are two types of Planning Partners that participated in this process, with distinct needs and capabilities:

- Incorporated Cities and the unincorporated County
- Special Purpose Districts

Each participating planning partner has prepared a jurisdiction-specific annex to this plan. These annexes, as well as information on the process by which they were created, are contained in this Volume.

## PURPOSE

Annexes included in **Volume 2** of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan detail the hazard mitigation planning elements specific to the participating jurisdictions.

The Annexes are not intended to be standalone documents but append to and supplement the information contained in **Volume 1**. As such, all sections of the base plan, including the planning process and other procedural requirements apply to and were met by the participating jurisdictions. The Annexes provide additional information specific to participating jurisdictions, with a focus on providing additional details on the planning process, risk assessment, and mitigation strategy for individual jurisdictions.

# THE PLANNING PARTNERSHIP

For this update of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan, the Monterey County OES Planning Team formed a Steering Committee, which contained a representative from each participating jurisdiction. Each jurisdiction's Steering Committee representative was also the lead for their respective Jurisdictional Hazard Mitigation Plan Stakeholder Team.

## INITIAL SOLICITATION

The Monterey County OES Planning Team solicited the participation of all eligible municipalities and special purpose districts at the outset of this project. A kickoff meeting was held on May 22, 2019, to identify potential stakeholders and planning partners for this process. The purpose of the meeting was to introduce the planning process to jurisdictions in the County that could have a stake in the outcome of the planning effort. All eligible local governments, including prior and potential planning partners, within the County were invited to attend. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Review the 2016 MJHMP and Planning Partnership
- Outline the work plan for this hazard mitigation plan.
- Describe the benefits of multi-jurisdictional planning.
- Solicit planning partners.
- Outline planning partner expectations.
- Solicit volunteers/recommendations for the Steering Committee.

## PLANNING PARTNERSHIP EXPECTATIONS

The Monterey County OES Planning Team developed the following list of planning partner expectations:

- Assign a Jurisdictional representative to the Steering Committee, who will concurrently serve as the lead for their respective Jurisdictional Hazard Mitigation Plan Stakeholder Team.
- Participate in Steering Committee Meetings.
- Hold At least one Jurisdiction Specific Hazard Mitigation Planning Meeting.
- Conduct at least one Public Presentation on the MJHMP Update and support the public involvement strategy.
- Perform a capability assessment, which includes completing the Capability Assessment, National Flood Insurance (NFIP), and Safe Growth Surveys.
- Complete and review all elements of the Jurisdictional Annex template.
- Participate in the creation of the Countywide mitigation strategy, including the development of Countywide hazard problem statements and mitigation actions.
- Develop Jurisdiction-specific hazard problem statements and mitigation actions.
- Review and approve **Volume 1** of the MJHMP.
- Adopt the plan, including both **Volume 1**, and the respective Jurisdiction Annex.

By adopting this plan, each planning partner also agrees to the plan implementation and maintenance protocol established in **Volume 1**. Failure to meet these criteria may result in a partner being dropped from the partnership by the Steering Committee, and thus losing eligibility under the scope of this plan.

# ANNEX-PREPARATION PROCESS

## JURISDICTION HAZARD MITIGATION PLAN STAKEHOLDER TEAM

Each jurisdiction's respective Steering Committee representative established their own Jurisdiction Hazard Mitigation Plan Stakeholder Team. Jurisdiction-specific Stakeholder Teams included, as applicable, representatives from the following departments: City Management, Economic Development, Emergency Management, Fire Department/District, Floodplain Administration (NFIP Coordinator), GIS and/or IT, Parks & Recreation, Planning/Community Development, Police Department, and Public Works. Additionally, Jurisdiction Leads included anyone else they deemed relevant for local hazard mitigation and disaster risk reduction efforts.

Details on the members of each Jurisdiction Hazard Mitigation Plan Stakeholder Team is included in each jurisdictions respective Annex.

## CAPABILITY ASSESSMENT

Per 44 CFR Section 201.6(c)(3), the plan must include a mitigation strategy based on existing authorities, policies, programs, and resources, therefore all participating jurisdictions undertook a review of their current capabilities to implement hazard mitigation actions. A capability assessment creates an inventory of a jurisdiction's mission, programs, and policies, and evaluates its capacity to carry them out. This assessment identifies potential gaps in the jurisdiction's capabilities. If the capability assessment identified an opportunity to add a missing core capability or expand an existing one, then doing so has been selected as an action in the jurisdiction's action plan.

Specific capabilities evaluated under the assessment fell into in the following four different types of capabilities as defined by FEMA. [1]

- *Planning and Regulatory Capabilities*: capabilities based on the jurisdiction's implementation of ordinances, policies, local laws, and State statutes, and plans and programs that relate to guiding and managing growth and development.
- *Administrative and Technical Capabilities*: capabilities associated with the jurisdiction's staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions.
- *Fiscal Capabilities*: refers to the fiscal resources that a jurisdiction has access to or is eligible to us to fund mitigation actions.
- *Education and Outreach Capabilities:* refers to education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

[1] Local Mitigation Planning Handbook, *Worksheet 4.1: Capability Assessment Worksheet*, FEMA (March 2013)

The capability assessment also included an assessment of safe growth, defined as the extent to which each jurisdiction is positioned to safely grow relative to its natural hazards. This was used to provide some quantitative measures of how adequately existing planning mechanisms and tools are being used to address the notion of safe growth. Per 44 CFR Section 201.6(c)(3)(ii), the capability assessment addressed each jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Additionally, classifications under various community mitigation programs were included. Other programs, such as the Community Rating System, Storm/Tsunami Ready, and Firewise USA, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum requirements set forth by local, state, and federal regulations in order to create a more resilient community. These programs complement each other by focusing on communication, mitigation, and community preparedness to save lives and minimize the impact of natural hazards on a community.

For participating special districts, a slightly different capability assessment was used in order to capture capabilities more specific to their individual services. Special district capability assessments are included in the respective annexes.

## JURISDICTION SPECIFIC HAZARD MITIGATION PLANNING MEETINGS

Each participating jurisdiction held at least one Jurisdiction Specific Hazard Mitigation Planning Meeting. At these meetings, the respective Hazard Mitigation Plan Stakeholder Team discussed hazard vulnerabilities, mitigation activities that had occurred since the last Plan update, hazard problem statements, and the mitigation action plan.

Each jurisdiction also went through a risk ranking process using the Threat Hazard Risk Assessment (THIRA) Survey. In the risk-ranking exercise, each planning partner was asked to review and rank the hazards identified in **Volume 1**, specifically for their jurisdiction. This ranking was based on the geographic extent, the likelihood of future occurrences, the expected magnitude/ severity of the hazard, and the potential impact on people, property, and the economy. The methodology was the same as the one used for the Countywide risk ranking that was presented in **Volume 1**. The objectives of this exercise were to familiarize the Hazard Mitigation Plan Stakeholder Team with how to use the risk assessment as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as "high" for each jurisdiction as a result of this exercise were considered to be priorities for identifying appropriate mitigation actions.

## HAZARD PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the Hazard Mitigation Plan Stakeholder Teams identified key vulnerabilities and hazards of concern applicable to their jurisdiction. Hazard Problem Statements helped the Hazard Mitigation Plan Stakeholder Teams identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation.

## IDENTIFICATION OF MITIGATION ACTIONS

Each jurisdiction who participated in the 2016 planning process reviewed and updated their actions from the 2016 Plan. In order to improve the mitigation action plan for this Plan update and align with the Countywide Mitigation Action Plan, jurisdictions added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

In formulating the mitigation strategy, a wide range of actions were considered in order to help achieve mitigation goals and address specific hazard concerns. These activities were discussed during the Planning Team meetings. In general, all activities considered can be classified under one of the following five broad categories of mitigation techniques: local plans and regulations, structure and infrastructure projects, natural systems protection, education and outreach, and emergency preparedness and response. All of these categories are described in detail below.

### *Local Plans and Regulations*

Mitigation actions that fall under this category include government authorities, policies, or codes that influence the way land and buildings are developed and built. Examples of these types of actions include:

- Comprehensive and General Plans
- Climate Action and Adaptation Plans
- Land Use Ordinances and Subdivision Regulations
- Zoning and Building Code Updates
- Capital Improvement Plans, Stormwater Management Regulations, and Master Plans

### *Structure and Infrastructure Projects*

Mitigation actions that fall under this category involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. Examples of these types of actions include:

- Elevation of Flood-Prone Structures
- Utility Undergrounding
- Structural Retrofits
- Stormwater System Upgrades

### *Natural Systems Protection*

Mitigation actions that fall under this category minimize damage and losses and also preserve or restore the functions of natural systems. Examples of these types of actions include:

- Stream Corridor and Wetland Restoration
- Sediment and Erosion Control
- Forest and Vegetation Management
- Conservation Easements and Open Space Preservation

### *Education and Outreach*

Mitigation actions that fall under this category inform and educate the public, elected officials, and property owners about hazards and potential ways to mitigate them. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions. Examples of these types of actions include:

- Risk Communication and Education Programs
- Real Estate Disclosures
- Participation in StormReady or Firewise Program

### *Emergency Preparedness and Response*

Though emergency preparedness and response activities do not always fall under hazard mitigation, stakeholders in Monterey County believe this is an incredibly important category of strategies for reducing the risk to life and property posed by the hazards in the MJHMP. Examples of these types of actions include:

- Warning Systems
- Emergency Operations Center Improvements
- Emergency Operations Plan Updates
- Community Emergency Response Team (CERT) Programs
- Emergency Response Training and Exercises
- Evacuation Planning

## MITIGATION ACTION PRIORITIZATION AND BENEFIT/COST REVIEW

44 CFR requires actions identified in the action plan to be prioritized (44 CFR, Section 201.6(c)(3)(iii))). The Planning Team and the Steering Committee decided to use FEMA's recommended prioritization criteria, STAPLEE, to assist in deciding why one recommended action might be more important, more effective, or more likely to be implemented than another. STAPLEE stands for the following:

- *Social*: Does the measure treat people fairly? (e.g., different groups, different generations) Does it consider social equity, disadvantaged communities, or vulnerable populations?
- *Technical*: Will it work? (Is the action technically feasible? Does it solve the problem?)
- *Administrative*: Is there capacity to implement and manage the project? Is there adequate staffing, funding, and other capabilities to implement the project?
- *Political*: Who are the stakeholders? Did they get to participate? Will there be adequate political and public support for the project?
- *Legal*: Does the jurisdiction have the legal authority to implement the action? Is it legal? Are there liability implications?
- *Economic*: Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?
- *Environmental*: Does the action comply with environmental regulations? Will there be negative environmental consequences from the action?

44 CFR requires the prioritization of the action plan to emphasize a benefit/cost analysis of the proposed actions. Because some actions may not be implemented for up to 10 years, the benefit/cost analysis was qualitative and not of the detail required by FEMA for project grant eligibility under the Hazard Mitigation Assistance (HMA) grant program. A review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to benefits and costs as follows:

Cost ratings were defined as follows:

- High: Existing funding will not cover the cost of the project; implementation would require new revenue through an alternative source.
- Medium: The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
- Low: The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.

Benefit ratings were defined as follows:

- High: Project will provide an immediate reduction of risk exposure for life and property.
- Medium: Project will have a long-term impact on the reduction of risk exposure for life and property, or project will provide an immediate reduction in the risk exposure for property.
- Low: Long-term benefits of the project are difficult to quantify in the short term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly. For many of the strategies identified in this action plan, funding might be sought under FEMA's HMA program. This program requires detailed benefit/cost analysis as part of the application process. These analyses will be performed on projects at the time of application preparation. The FEMA benefit-cost model will be used to perform this review. For projects not seeking financial assistance from grant programs that require this sort of analysis, the Partners reserve the right to define "benefits" according to parameters that meet their needs and the goals and objectives of this Plan.

## HAZARD MITIGATION ACTION PLAN MATRICES

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the planning process. The Hazard Mitigation Action Plan Matrix for each jurisdiction lists each priority mitigation action, identifies a time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

It should be noted that in addition to the mitigation actions within this Volume, jurisdictions have also prioritized the countywide actions included in **Volume 1** of this plan. Collectively, this multi-jurisdictional mitigation strategy focuses on those actions and projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5- years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each priority hazard for the five-year coverage of this planning process, each jurisdiction has focused on identifying those projects which are realistic and reasonable for them to implement and would like to

preserve their hazard priorities should future projects be identified where the implementing jurisdiction has the future capacity to implement. All actions included in this Plan update were determined to have a positive benefit cost ratio.

Hazard Mitigation Actions Plan Matrices for each jurisdiction are available on the following pages:

A Unincorporated Monterey County Hazard Mitigation Action Plan Matrix ..... A-26
B City of Carmel-by-the-Sea Hazard Mitigation Action Plan Matrix ..... B-23
C City of Del Rey Oaks Hazard Mitigation Action Plan Matrix ..... C-18
D City of Gonzales Hazard Mitigation Action Plan Matrix ..... D-19
E City of Greenfield Hazard Mitigation Action Plan Matrix ..... E-19
F City of King Hazard Mitigation Action Plan Matrix ..... F-21
G City of Marina Hazard Mitigation Action Plan Matrix ..... G-21
H City of Monterey Hazard Mitigation Action Plan Matrix ..... H-23
I City of Pacific Grove Hazard Mitigation Action Plan ..... I-24
J City of Salinas Hazard Mitigation Action Plan Matrix ..... J-28
K City of Sand City Hazard Mitigation Action Plan Matrix ..... K-20
L City of Seaside Hazard Mitigation Action Plan Matrix ..... L-23
M City of Soledad Hazard Mitigation Action Plan Matrix ..... M-19
N Carmel Area Wastewater District Hazard Mitigation Action Plan Matrix ..... N-19
O Monterey One Water Hazard Mitigation Action Plan Matrix ..... O-27
P Monterey Regional Waste Management District Hazard Mitigation Action Plan Matrix ..... P-14
Q Moss Landing Harbor District Hazard Mitigation Action Plan Matrix ..... Q-15

## JURISDICTION ANNEX TEMPLATES

Following respective jurisdiction Specific Hazard Mitigation Planning Meetings, the Monterey County OES Planning Team compiled information from the capability assessment surveys, the risk ranking process, and discussions on hazard vulnerabilities, problem statements, and mitigation actions into Jurisdiction-Specific Annex Templates.

The templates were created to help the Planning Partners prepare and review their jurisdiction-specific Annexes. Since special purpose districts operate differently from incorporated municipalities, separate templates were created for the two types of jurisdictions. The templates were created so that all criteria of Section 201.6 of 44 CFR would be met, based on the partners' capabilities and mode of operation.

Jurisdictions then edited, reviewed, and updated their respective Jurisdiction Annex template and provided final edits and approval to the Monterey County OES Planning Team.

## FINAL COVERAGE UNDER THIS PLAN

All jurisdictions that intended to participate in the planning process fully met the participation requirements for this update, completed an annex template, and will be covered by the updated hazard mitigation plan upon FEMA approval and adoption by their governing bodies. This final coverage will apply to the following jurisdictions:

- Unincorporated Monterey County
- Monterey County Water Resources Agency (MCWRA) (Included with unincorporated Monterey County)
- City of Carmel-by-the-Sea
- City of Del Rey Oaks
- City of Gonzales
- City of Greenfield
- City of King
- City of Marina
- City of Monterey
- City of Pacific Grove
- City of Salinas
- City of Sand City
- City of Seaside
- City of Soledad
- Carmel Area Wastewater District (CAWD)
- Monterey Regional Waste Management District (MRWMD)
- Monterey One Water (M1W)
- Moss Landing Harbor District

All participating jurisdictions will adopt **Volume 1** in its entirety and their own jurisdiction-specific annex in **Volume 2**. It should also be noted that the Monterey County Water Resources Agency as a dependent special district is covered under the Unincorporated Monterey County Annex. The Agency participated extensively in both the Steering Committee and the unincorporated County Hazard Mitigation Planning Team. The Plan will also be adopted by the Monterey County Water Resources Agency Board, in addition to its adoption by the Monterey County Board of Supervisors.

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# ANNEX A: MONTEREY COUNTY

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

# A. UNINCORPORATED MONTEREY COUNTY

## A.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Kelsey Scanlon
Emergency Services Planner
1322 Natividad Road
Salinas, CA 93906
(831) 796-1902
ScanlonK@co.monterey.ca.us

**Alternate Point of Contact**
Laura Emmons
Emergency Services Planner
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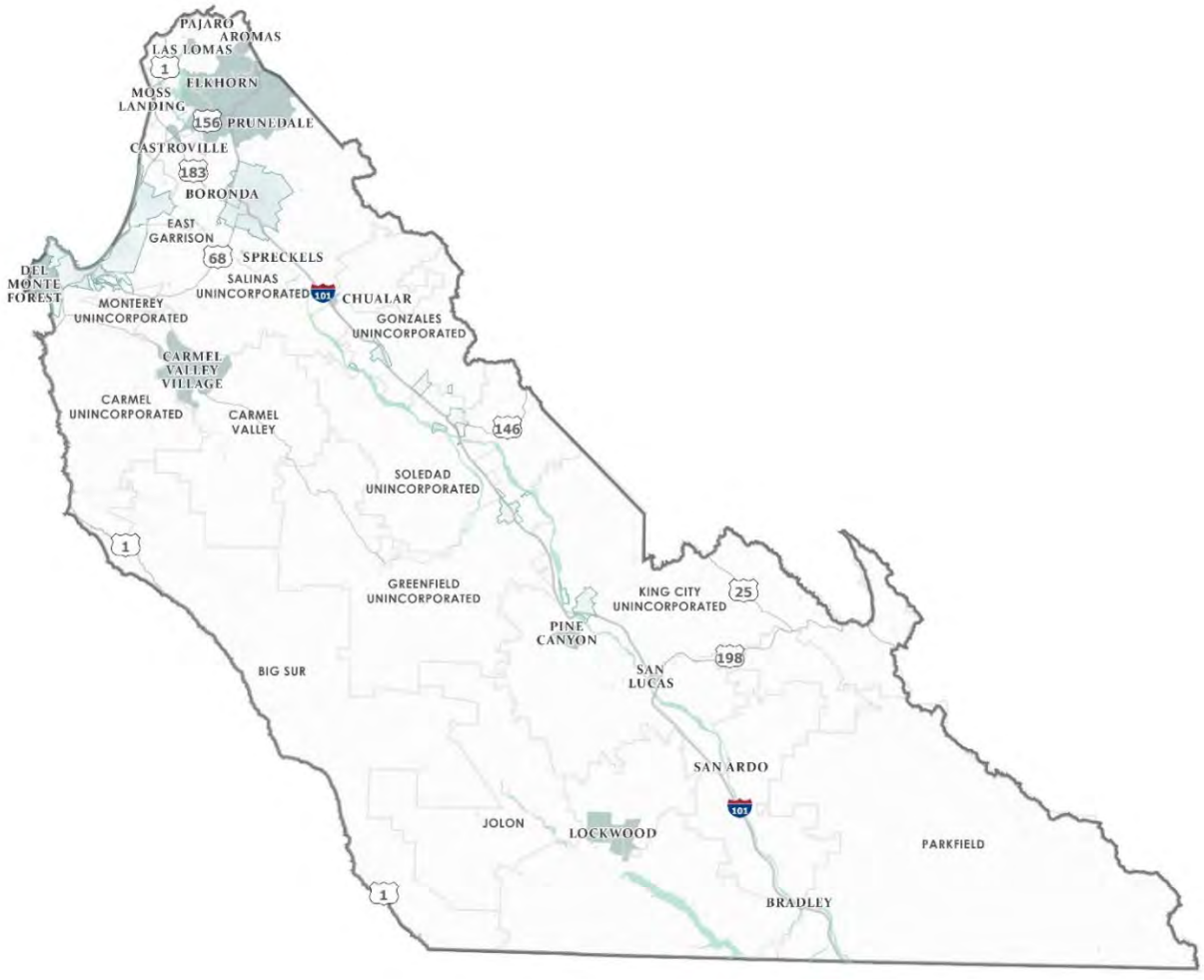
Salinas, CA 93906
(831) 796-1993
EmmonsL@co.monterey.ca.us

## A.2 COMMUNITY PROFILE

### A.2.1 LOCATION



## A.2.2 GEOGRAPHY AND CLIMATE

Monterey County is located on the north-central coast of California. Monterey County is bordered by Santa Cruz County to the North, San Benito, Fresno, and King Counties to the East, San Luis Obispo County to the South, and the Pacific Ocean to the West. Prominent land features in the county include two major northwest-southeast trending mountain ranges—the Santa Lucia Range along the coast, and the Gabilan Range along the county's eastern border, both of which are part of the Pacific Coast Range. Between the Santa Lucia and Gabilan mountain ranges lies the Salinas Valley; and at the center of the Valley flows the Salinas River, the largest river on California's Central Coast.

Unincorporated Monterey County has many communities. Because of Monterey County's large geographic area, the unincorporated communities are Census Designated Places:

- **North County**: Pajaro, Moss Landing, Las Lomas, Aromas, Elkhorn, Castroville and Prunedale
- **Salinas Valley**: Boronda, Spreckels, Toro Park, East Garrison, San Benancio, and Corral de Tierra
- **Coastal Area:** Carmel Valley Village, Del Monte Forest, Cachagua, and Big Sur
- **South County**: Chualar, Pine Canyon, Lockwood, Bradley, San Lucas, and San Ardo

The climate in Monterey County is considered Mediterranean, with dry summers, rainy winters, and moderate temperatures year-round. Precipitation in the region falls mainly between November and April. Large variations exist in rainfall amounts between coastal and inland areas, as well as from year to year and from sea level to altitude along the coast.

## A.2.3 HISTORY

Before the European colonization, the Monterey area had been inhabited for over 8,000 years. Indigenous peoples lived in the valleys and near the seaside and the area was inhabited by three major native groups: the Costanoan (Ohlone), Esselen, and Salinan groups. The Salinan Indigenous Americans lived in southern region of the County and had about 3,500-4,000 members. The Esselen Indigenous Americans had several hundred members and resided on the northwest coast of the County. The Costanoan (Ohlone) group was the largest in the area with around 7,000 people, occupying Monterey Peninsula and northern region of the County.

Spanish explorers first settled in Monterey Bay in the early 1600s and Franciscan missionaries began constructing missions in the late 1700s. The Presidio of Monterey was first founded on June 3, 1770, by Spanish soldiers. Spain established a formal pueblo government in 1791. By 1814, several non-Spanish immigrants had begun to settle in Monterey and in 1826, after Mexico's secession from Spain, Alta California was controlled by Mexico. Following the Mexican American War, the Treaty of Guadalupe Hidalgo, signed in February 1848, formally ceded Alta California, which included Monterey County, to the United States.

Monterey County was one of the original counties of California, created in 1850 at the time of statehood. The discovery of gold in the Sierra Nevada foothills in 1849 brought droves of homesteaders to the county, and as the best parcels in Monterey and the Salinas Valley became occupied, homesteading spread to the rugged Big Sur coast. By 1870, commercial agriculture was well underway in the Salinas Valley. A major drought in 1863 and 1864 essentially wiped out the cattle industry, and grain production became the County's principal agricultural activity. Sugar beet cultivation and dairying began to replace grain farming by 1897. The extension of the Southern Pacific

Railroad from Pajaro to Salinas, along with improved irrigation systems, refrigerated freight cars, and other innovations in technology, encouraged more and more intensive row crop cultivation and set the stage for the Salinas Valley to become one of the most productive agricultural regions in the world.

### A.2.4 POPULATION

Unincorporated Monterey County has a population of 104,482 people, a decrease of 4% since 2010. Population of unincorporated communities in Monterey County, including percentage change since 2010, is summarized in *Table A-1*.

**Table A-1**
**Population of Unincorporated Monterey County**

| Community | 2020 Population | 2010 Population | Percent Change |
|---|---|---|---|
| Aromas | 2,708 | 1,358 | 99% |
| Boronda | 1,760 | 1,710 | 3% |
| Bradley | 69 | 93 | -26% |
| Carmel Valley Village | 4,524 | 4,407 | 3% |
| Castroville | 7,515 | 6,481 | 16% |
| Chualar | 1,185 | 1,190 | 0% |
| Del Monte Forest | 4,204 | 4,514 | -7% |
| Elkhorn | 1,588 | 1,565 | 1% |
| Las Lomas | 3,046 | 3,024 | 1% |
| Lockwood | 368 | 379 | -3% |
| Moss Landing | 237 | 204 | 16% |
| Pajaro | 2,882 | 3,070 | -6% |
| Pine Canyon | 1,871 | 1,822 | 3% |
| Prunedale | 18,885 | 17,560 | 8% |
| San Ardo | 392 | 517 | -24% |
| San Lucas | 324 | 269 | 20% |
| Spreckels | 692 | 673 | 3% |
| Remaining Unincorporated Areas | 52,250 | 51,377 | 2% |
| **Total Unincorporated Population** | **104,482** | **100,213** | **4%** |

### A.2.5 GOVERNING BODY FORMAT

Unincorporated Monterey County is governed by the Monterey County Board of Supervisors. Like all governing bodies in California, the Monterey County Board of Supervisors is empowered with both legislative and executive authority over the entirety of Monterey County and is the primary governing body for all unincorporated areas within the County boundaries.

The Board of Supervisors appoints members of the public to serve on a variety of advisory committees and commissions. The County Administrative Officer (CAO) is responsible for managing the day-to-day operations of the County.

The Board has five elected members, each of whom represents one of five supervisorial districts summarized below:

- **District 1** is geographically the smallest supervisorial district in Monterey County and is entirely within the city limits of the city of Salinas.
- **District 2** is the northernmost supervisorial district in Monterey County, the 2nd District includes the communities of Boronda, Castroville, Las Lomas, Moss Landing, Pajaro, Prunedale, Royal Oaks, the northern neighborhoods of the city of Salinas, and those portions of the community of Aromas that are located within Monterey County.
- **District 3** covers the majority of the Salinas Valley and southern Monterey County, extending to its border with San Luis Obispo County. The district includes the unincorporated communities of Spreckels, Chualar, Jolon, the eastern portion of the city of Salinas, and the cities of Gonzales, Greenfield, Soledad, and King City. Additionally, it includes the military installations at Fort Hunter Liggett and Camp Roberts, as well as portions of the Los Padres National Forest.
- **District 4** includes the southwest portion of the city of Salinas, the cities of Del Rey Oaks, Marina, Seaside, Sand City, and the former military installation at Fort Ord.
- **District 5** is geographically the largest of the five supervisorial districts and covers most of the Monterey Peninsula and southern coastline of Monterey County down to the southern county border with San Luis Obispo County. The 5th District includes the cities of Carmel-by-the-Sea, Monterey, and Pacific Grove, the unincorporated communities of Carmel Valley, Big Sur, Pebble Beach, San Benancio, Corral de Tierra, and Jamesburg. Additionally, it includes the military installations at the Presidio of Monterey, the Defense Language Institute, and the Naval Postgraduate School, as well as the Ventana Wilderness area of the Los Padres National Forest.

### *Monterey County Water Resources Agency (MCWRA)*

The Monterey County Water Resources Agency (MCWRA), which is included and covered under this Annex is a dependent special district. Dependent special districts are governed by other, existing legislative bodies (either a city council or a county board of supervisors). Prior to being formally established in 1991, the Monterey County Water Resources Agency (MCWRA) was the Monterey County Flood Control and Water Conservation District, established in 1947 and organized as a division of the Public Works Department of the County of Monterey.

MCWRA provides services related to the control of flood and storm waters in Monterey County, conservation, protection of water quality, reclamation of water and the exchange of water. Fundamental to the agency's mission to sustainably manage water resources while minimizing impacts from flooding, MCWRA owns and operates two dams on principal tributaries to the Salinas River (Nacimiento and San Antonio) along with associated reservoirs.

The Board of Supervisors of Monterey County is ex officio the Board of Supervisors of the Agency. The Agency is governed by a nine-member Board of Directors who are appointed by the Monterey County Water Resources Agency Board of Supervisors and the Board of Directors is under the governance of the Monterey County Water Resources Agency Board of Supervisors. Directors must be residents of Monterey County and possess backgrounds and experience indicating a high level of interest or expertise in areas relating to the Agency's work. Each of the five members of the Board of Supervisors selects one member for the Board of Directors, with the remaining four directors being appointed by a majority vote of the Supervisors from nominees submitted by the following groups or organizations: Monterey County Farm Bureau; Grower-Shipper Association; City Select Committee; and the Monterey

County Agricultural Advisory Committee. The term of office for each director is four years. Directors may be reappointed at the end of their terms.

Duties of the Board of Directors, with the assistance of staff, include the following:

- Establishes short and long-term policy objectives for the Agency, subject to review by the Board of Supervisors
- Prepares an annual budget
- Holds public hearings on proposed budget
- Approves all contracts for which funds have been budgeted

### A.2.6 ECONOMY AND TAX BASE

Monterey County's economy is primarily based upon tourism in the coastal regions and agriculture in the Salinas Valley. It is also home to an extensive array of education and research institutions which contribute greatly to the economy. The non-profit sector is also one of the largest business sectors in the County.

## A.3 PLANNING PROCESS

Unincorporated Monterey County followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the County formulated their own internal planning team to support the broader planning process.

Monterey County held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on August 30, 2021. Key stakeholders present at the meeting included:

- Erik V. Lundquist, Housing and Community Development Director
- Bryan Flores, Interim Chief of Parks
- Randell Ishii, Director of Public Works, Facilities and Parks
- Eric Chatham, Director Information Technology Department
- John Dugan, Housing & Community Development Special Project Manager
- Jennifer Bodensteiner, Monterey County Water Resources Agency (MCWRA), Associate Hydrologist
- Melanie Beretti, Housing & Community Development Services Manager
- Ashley Paulsworth, Sustainability Manager
- Shandy Carroll, Housing & Community Development Management Analyst III
- Lindsay Lerable, Public Works Chief of Facilities
- Jamie Tuitele-Lewis, Fire Fuel Mitigation Program and Forest Health Coordinator, RCDMC
- Kelsey Scanlon, Emergency Services Planner
- Laura Emmons, Emergency Services Planner
- Tracy Molfino, Emergency Services Planner

It should be noted that the Monterey County Water Resources Agency as a dependent special district is covered under this Annex, the Unincorporated Monterey County Annex. The Agency participated

extensively in both the Steering Committee and the unincorporated County Hazard Mitigation Planning Team. The Plan will also be adopted by the Monterey County Water Resources Agency Board, in addition to its adoption by the Monterey County Board of Supervisors.

## A.4 LAND USE AND DEVELOPMENT

Monterey County began land use planning in 1930 with the creation of a Planning Commission followed by the establishment of a Planning Department 20 years later. The Planning Department completed its first general plan in 1968 and by the mid-1970s had adopted the State of California's mandated Safety Element as part of the plan.

Monterey County adopted its most recent General Plan in 2010. The 2010 General Plan applies in the unincorporated non-coastal area of the County. The policies of the General Plan underlie land use development decisions, and the County's zoning ordinances, specific plans, development projects, and capital improvement programs must be consistent with the General Plan. Monterey County has historically been planned as a rural county. Approximately 1% of the unincorporated county has been developed with residential, commercial, and industrial uses. Most of this development has been concentrated in the northern one-third of the county. Public and quasi-public uses, such as educational, transportation, military, recreational, cultural, and religious facilities, account for about an additional 28% of the county's total land area. Agriculture accounts for the largest land use, representing almost 60% of the unincorporated county's total land area.

The County has a variety of Area Plans which include: Central Salinas Valley Area Plan, Agricultural & Winery Corridor Plan, Cachagua Area Plan, Carmel Valley Master Plan, Toro Area Plan, Fort Ord Master Plan, Greater Monterey Peninsula Area Plan, North County Inland Area Plan, South County Area Plan, and Greater Salinas Area Plan. The County also has community plans for the communities of Fort Ord, Chualar, Boronda, Castroville, Pajaro, Carmel Valley Village, and Spreckels. Within the coastal zone, the governing general plan is the County's certified Local Coastal Program, which is broken into four segments represented by four Land Use Plans (LUPs) for specific defined areas: North County, Del Monte Forest, Carmel Area, and Big Sur.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the County's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The Monterey County Safe Growth Survey was completed by Dina Northcut, Management Analyst with the Monterey County Housing and Community Development Department. The results are summarized in *Table A-2.*

**Table A-2**
**Monterey County Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 3.50 | 3.50 |
| Transportation | 4.00 | 3.00 |
| Environmental Management | 5.00 | 4.33 |
| Public Safety | 4.33 | 4.00 |
| Zoning Ordinance | 4.25 | 3.50 |
| Subdivision Regulations | 3.67 | 4.67 |
| Capital Improvement Program & Infrastructure Policies | 4.00 | 2.33 |
| Building Code | 4.00 | 5.00 |
| Economic Development | 3.00 | 2.00 |
| **Average Survey Ratings** | **3.97** | **3.59** |

## A.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the Unincorporated Monterey County's hazards and assess the vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to Unincorporated Monterey County is included in this Annex.

The Unincorporated Monterey County's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The County's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the unincorporated County. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**.

*Table A-3* displays the results of the hazard risk ranking exercise that was performed by the Unincorporated Monterey County's Planning Team.

**Table A-3**
**Threat Hazard Identification Risk Assessment (THIRA): Unincorporated Monterey County**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 2.6 | 2.4 | 2.2 | 2.7 | 9.9 | Moderate |
| Coastal Erosion | 2.5 | 2.9 | 2.8 | 2.7 | 10.9 | Substantial |
| Coastal Flooding | 2.6 | 2.9 | 2.8 | 2.7 | 11.0 | Substantial |
| Cyber-Attack | 2.3 | 2.2 | 2.5 | 2.4 | 9.4 | Moderate |
| Dam Failure | 2.8 | 1.5 | 2.9 | 3.0 | 10.1 | Substantial |
| Drought & Water Shortage | 3.1 | 2.9 | 3.2 | 3.2 | 12.4 | High |
| Earthquake | 2.9 | 2.4 | 2.9 | 2.9 | 11.1 | Substantial |
| Epidemic | 2.6 | 2.1 | 2.4 | 2.3 | 9.4 | Moderate |
| Extreme Cold & Freeze | 2.0 | 1.9 | 1.9 | 1.8 | 7.6 | Possible |
| Extreme Heat | 2.8 | 2.7 | 2.3 | 2.1 | 9.9 | Moderate |
| Flash Flood | 2.4 | 2.1 | 2.3 | 2.3 | 9.0 | Moderate |
| Hazardous Materials Incident | 1.8 | 1.9 | 1.7 | 1.8 | 7.1 | Possible |
| Invasive Species | 2.6 | 2.4 | 2.1 | 2.0 | 9.1 | Moderate |
| Levee Failure | 2.4 | 2.1 | 2.2 | 2.6 | 9.3 | Moderate |
| Localized Stormwater Flooding | 2.8 | 3.0 | 2.6 | 2.6 | 11.0 | Substantial |
| Mass Migration | 2.0 | 1.7 | 1.6 | 1.6 | 6.8 | Possible |
| Pandemic | 2.9 | 2.6 | 2.9 | 2.9 | 11.2 | Substantial |
| Riverine Flooding | 2.3 | 2.8 | 2.6 | 2.6 | 10.2 | Substantial |
| Sea Level Rise | 2.6 | 2.8 | 2.9 | 2.6 | 10.9 | Substantial |
| Severe Winter Storms | 2.8 | 2.8 | 2.6 | 2.5 | 10.6 | Substantial |
| Slope Failure | 2.6 | 2.7 | 2.9 | 2.7 | 10.8 | Substantial |
| Targeted Violence | 1.8 | 1.8 | 1.8 | 1.9 | 7.1 | Possible |
| Terrorism | 1.8 | 1.8 | 1.9 | 1.9 | 7.3 | Possible |
| Tsunami | 2.1 | 2.0 | 2.4 | 2.5 | 9.0 | Moderate |
| Utility Interruption/ PSPS | 2.4 | 2.7 | 2.2 | 2.1 | 9.4 | Moderate |
| Water Contamination | 2.6 | 2.1 | 2.6 | 2.8 | 10.1 | Substantial |
| Wildfire | 3.2 | 3.2 | 3.5 | 3.3 | 13.1 | High |
| Windstorms | 2.3 | 2.1 | 2.1 | 1.9 | 8.4 | Moderate |

### A.5.1 AGRICULTURAL EMERGENCIES

The agricultural industry is a major economic driver in the County. Agricultural disasters pose a serious threat to the local economy and populations directly employed by the agriculture industry. Including production and local processing, and after subtracting significant subsidies, estimates put agriculture's net 2018 tax contribution at $61.9 million to $122.7 million. This included excise, sales, and property

taxes, as well as fees, licenses, and permits (but not income taxes). [2] Therefore, even small impacts from agricultural emergencies could have a large impact on County services.

### A.5.2 COASTAL EROSION

To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center Coastal Storm Modeling (CoSMos) shoreline change, and cliff retreat projection data was used. For cliff retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on Ocean Protection Council (OPC) High Risk Aversion Guidance.

For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion. Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk. *Table A-4* summarizes population and property exposure to coastal erosion risk.

**Table A-4**
**Population and Property Exposed to Coastal Erosion Risk in Unincorporated Monterey County**

| Sea Level Rise Scenario/ Erosion Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| **Cliff Erosion** | | | | | |
| Sea Level Rise (25 cm) | 909 | 199 | $1,107,044,203 | 180 | $212,903,839 |
| Sea Level Rise (75 cm) | 1,470 | 219 | $1,167,783,359 | 179 | $212,903,839 |
| Sea Level Rise (200 cm) | 1,646 | 233 | $1,231,807,382 | 186 | $154,510,855 |
| **Shoreline Erosion** | | | | | |
| Sea Level Rise (25 cm) | 455 | 4 | $3,099,857 | 28 | $73,864,312 |
| Sea Level Rise (75 cm) | 179 | 4 | $3,099,857 | 28 | $73,864,312 |
| Sea Level Rise (200 cm) | 179 | 4 | $3,099,857 | 29 | $74,374,903 |

### A.5.3 DAM AND LEVEE FAILURE

*Dam Failure*

*Table A-5* summarizes population and property in the County exposed to spillway and dam failure of the Nacimiento, San Antonio, Los Padres, and Forest Lake dams. It should be noted that both the San Antonio and Nacimiento dams are owned and managed by MCWRA.

[2] Monterey County Agricultural Commissioner, 2020, Economic Contributions of Monterey County Agriculture

**Table A-5**
**Population and Property Exposed to Dam Failure Risk in Unincorporated Monterey County**

| Dam Failure Scenario | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Nacimiento Spillway Failure | 8,451 | 170 | $81,972,951 | 2,389 | $1,710,686,191 |
| Nacimiento Dam Failure | 13,466 | 1,163 | $475,463,687 | 3,165 | $2,649,111,539 |
| San Antonio Spillway Failure | 3,581 | 62 | $22,456,021 | 1,941 | $1,085,304,869 |
| San Antonio Dam Failure | 12,361 | 977 | $450,695,254 | 3,178 | $2,303,214,030 |
| Los Padres Dam | 5,784 | 943 | $779,795,548 | 419 | $196,382,343 |
| Forest Lake Dam Scenario 1 North Embankment Failure | 302 | 38 | $47,663,347 | 12 | $97,873,581 |
| Forest Lake Dam Scenario 2 South Embankment Failure | 403 | 48 | $54,833,015 | 16 | $62,584,773 |
| Forest Lake Dam Scenario 3 Outlet Structure Failure | 23 | 0 | $0 | 0 | $0 |
| Forest Lake Dam Scenario 4 NW South Embankment Failure | 834 | 266 | $356,389,582 | 52 | $77,207,153 |

*Levee Failure*

Data on levee location, leveed area, and population and property exposed to levee failure risk was from the US Army Corp of Engineers, National Levee Database. Leveed Area, which is defined as the estimated area of a floodplain from which flood water is excluded by the levee system, was used to determine the population and property exposed to levee failure. Population and property exposed to levee failure in unincorporated Monterey County by waterbody is summarized in *Table A-6*.

**Table A-6**
**Population and Property Exposed to Levee Failure in Unincorporated Monterey County**

| Waterbody | Miles of Levee | Leveed Area in Square Miles | Population | Structures | Property Value |
|---|---|---|---|---|---|
| Bennett Slough | 0.9 | 0.35 | 6 | 1 | $544,000 |
| Carmel River | 2.1 | 0.17 | 633 | 111 | $258,000,000 |
| Elkhorn Slough | 5.6 | 0.62 | 0 | 0 | $0 |
| Moro Cojo Slough | 4.3 | 0.87 | 0 | 0 | $0 |
| Pajaro River | 9.2 | 5.97 | 3,597 | 811 | $481,000,000 |
| Salinas River | 29.6 | 8.51 | 23 | 8 | $55,501,000 |
| **Total** | **51.7** | **16.49** | **4,259** | **931** | **$795,045,000** |

Source: US Army Corp of Engineers, National Levee Database

Many levees in the County also protect important agricultural lands and a significant levee failure could have a large economic effect on the agricultural industry and the economy. Additionally, it should be noted that left (southern) bank of the Pajaro River Levee System is maintained by the Monterey County Water Resources Agency (MCWRA). The MCWRA has an emergency plan that identifies critical stages of the river and the related actions that the Office of Emergency Services takes such as declaring

an emergency and mobilizing emergency responders. The MCWRA also has an ALERT system that monitors river levels whenever significant storms approach the area.

### A.5.4 DROUGHT AND WATER SHORTAGE

The entire population of Unincorporated Monterey County is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, relatively affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and could impact the County economically.

### A.5.5 EARTHQUAKE

The entire population of the unincorporated County is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the County is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 128,966 residential and non-residential buildings in the unincorporated County, with a total value of $73,489,253,104. Since all structures in the County are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table A-7* summarizes population and property in the County exposed to liquefaction risk.

**Table A-7**
**Population and Property Exposed Liquefaction Risk in Unincorporated Monterey County**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 67,840 | 6,777 | $4,468,219,528 | 8,240 | $4,277,956,816 |
| Moderate Liquefaction Susceptibility | 26,413 | 2,941 | $1,932,144,395 | 4,353 | $3,427,952,047 |

### A.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table A-8* summarizes population and property in the County in the 100-year and 500-year floodplain.

**Table A-8**
**Population and Property Exposed to Flooding Risk in Unincorporated Monterey County**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 48,259 | 3,474 | $3,179,753,966 | 6,015 | $4,194,752,812 |
| 500-Year Flood Zone | 33,756 | 3,806 | $1,782,983,176 | 3,472 | $1,328,314,568 |

## A.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table A-9* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table A-9**
**Population and Property Exposed to Hazardous Materials Risk in Unincorporated Monterey County**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 54,877 | 12,901 | $10,393,026,686 | 9,171 | $4,695,598,628 |
| Fixed Source | 18,968 | 1,971 | $894,344,653 | 1,917 | $1,897,531,429 |

## A.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## A.5.9 PUBLIC HEALTH HAZARDS

All citizens in the County could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health

hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the County, specifically vulnerable populations.

### A.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the County. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the County likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract County-wide data was used to identify annualized frequency, exposure, and annual expected loss in the County from severe weather hazards. Though the entire County is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts.

FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table A-10.*

**Table A-10**
**Annualized Frequency and Exposure to Severe Weather Events in Unincorporated Monterey County**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.93 | Frequency (*Distinct Events)* | 0.24 |
| Exposed Population | 126,327 | Exposed Population | 126,327 |
| Exposed Building Values | $15,543,681,000 | Exposed Building Values | $15,543,681,000 |
| Expected Annual Loss of Building Value | $0.41 | Expected Annual Loss of Building Value | $7,156.12 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 2.02 | Frequency (*Distinct Events)* | 1.47 |
| Exposed Population | 125,672 | Exposed Population | 10,997 |
| Exposed Building Values | $15,431,313,849 | Exposed Building Values | $1,095,753,342 |
| Expected Annual Loss of Building Value | $38.91 | Expected Annual Loss of Building Value | $24,994,532 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.53 | Frequency (*Event-Days)* | 0.16 |
| Exposed Population | 126,327 | Exposed Population | 12,797 |
| Exposed Building Values | $15,543,681,000 | Exposed Building Values | $2,211,140,076 |
| Expected Annual Loss of Building Value | $2,476.82 | Expected Annual Loss of Building Value | $4,179.83 |

Source: FEMA National Risk Index

### A.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 57,314 people and $8,028,885,261 in building value in the unincorporated Monterey County is exposed to landslide risk.

Additionally, exposure of population and property in the unincorporated Monterey County to earthquake induced landslides is summarized in *Table A-11*.

**Table A-11**
**Population and Property Susceptible to Earthquake Induced to Landslides in Unincorporated County**

| Landslide Susceptibility | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High | 33,185 | 2,525 | $2,451,693,405 | 4,080 | $13,97,470,150 |
| Moderate | 75,118 | 7,553 | $6,362,285,018 | 6,378 | $1,869,376,327 |

### A.5.12 TSUNAMI

Population and property in the County located in a mapped tsunami inundation zone is summarized in *Table A-12.*

**Table A-12**
**Population and Property in Tsunami Inundation Zone in Unincorporated Monterey County**

| Inundation Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Tsunami Inundation Zone | 5,320 | 490 | $1,544,367,267 | 1,971 | $652,059,712 |

### A.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the County is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the County that is operated by electricity is exposed and vulnerable to utility interruption.

### A.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table A-13* summarizes population and property in the County in very high, high, and moderate fire threat areas.

**Table A-13**
**Population and Property Exposed to Wildfire Risk in Unincorporated Monterey County**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 35,842 | 4,449 | $3,734,795,405 | 7,109 | $2,670,537,241 |
| High Fire Threat | 65,901 | 9,885 | $8,135,807,203 | 10,242 | $4,421,792,063 |
| Moderate Fire Threat | 82,713 | 14,086 | $14,585,627,278 | 10,060 | $5,653,773,683 |

### A.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in unincorporated Monterey County and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the local economy, along with changes to agriculture and crops, which are a critical backbone of the County's economy. There will also be negative impacts to ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

Sea level rise risk exposure in the unincorporated County was calculated based on the NOAA Office for Coastal Management sea level rise viewer projections. Three sea level rise levels (25 cm, 75 cm, and 200 cm) were chosen to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

Population and property exposed to sea level rise risk is summarized in *Table A-14.*

**Table A-14**
**Population and Property Exposed to Sea Level Rise in Unincorporated Monterey County**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 2,876 | 202 | $903,841,574 | 1,562 | $486,030,632 |
| 3 ft Sea Level Rise (2060) | 3,677 | 235 | $1,054,134,804 | 1,682 | $579,033,642 |
| 7 ft Sea Level Rise (2100) | 7,297 | 496 | $1,285,737,327 | 2,033 | $750,288,107 |

## A.6 CAPABILITY ASSESSMENT

Unincorporated Monterey County performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table A-15*
- An assessment of administrative and technical capabilities is presented in *Table A-16*
- An assessment of fiscal capabilities is presented in *Table A-17*
- An assessment of education and outreach capabilities is presented in *Table A-18*
- Classifications under various community mitigation programs are presented in *Table A-19*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section A.6.1 in *Table A-20*
- An overall self-assessment of capability is presented in Section A.6.2 in *Table A-21*

**Table A-15**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • HCD | |
| Capital Improvement Plan | ☒ | • Public Works | |
| Floodplain Management Plan | ☒ | • Public Works<br>• HCD | |
| Open Space Management Plan | ☒ | • Public Works | |
| Stormwater Management Plan | ☒ | • Public Works | |
| Coastal or Shoreline Management Plan | ☒ | • HCD | |
| Local Coastal Program | ☒ | • HCD | Four LCP segments: North County, Del Monte Forest, Carmel Area, and Big Sur Coast. |
| Climate Action/ Adaptation Plan | ☒ | • Sustainability | In progress |
| Emergency Operations Plan | ☒ | • OES | |
| Continuity of Operations Plan | ☒ | • All Departments<br>• OES | All Departments have developed Continuity of Operations Plans |
| Community Wildfire Protection Plan | ☒ | • Fire Safe Council | The plan was last updated in 2010 |
| Evacuation Plan | ☒ | • OES | Update in progress. |
| Disaster Recovery Plan | ☒ | • OES | |
| Economic Development Plan | ☒ | • CAO<br>• HCD | The plan was last updated in 2015. |
| Historic Preservation Plan | ☐ | • | Historical Preservation during disasters has been identified as a future annex to the EOP. |
| Transportation Plan | ☒ | • Public Works | |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works | Chapter 16.16 - REGULATIONS FOR FLOODPLAINS IN MC |
| Zoning Ordinance | ☒ | • HCD | Title 21 - ZONING |
| Subdivision Ordinance | ☒ | • HCD | Title 19 - SUBDIVISIONS |
| Site Plan Review Requirements | ☒ | • HCD | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☒ | • HCD | Following significant disasters, the BOS will adopt resolutions to streamline the rebuilding process |
| Building Code | ☒ | • HCD | CHAPTER 18.02 - BUILDING CODE |
| Fire Prevention Code | ☒ | • HCD | CHAPTER 18.09 - FIRE CODE |

**Table A-16**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • HCD<br>• Public Works | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • HCD<br>• Public Works | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • HCD<br>• Public Works<br>• OES | |
| Building Inspector | ☒ | • Building | |
| Emergency Manager | ☒ | • OES | Emergency Manager |
| Floodplain Manager | ☒ | • HCD<br>• Public Works | |
| Land Surveyors | ☐ | • | |
| Resource development staff or grant writers | ☒ | • Various | Monterey County departments apply for grants individually |
| Public Information Officer | ☒ | • Health Department<br>• CAO | |
| Scientist(s) familiar with the hazards of the community | ☒ | • Water Resources | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • HCD<br>• Public Works<br>• OES | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Information Technology | |
| Maintenance programs to reduce risk | ☒ | • Public Works | |
| Warning systems/services | ☒ | • OES | Nixle/ Everbridge |
| Mutual Aid Agreements | ☒ | • OES | |

**Table A-17**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Public Works<br>• Finance | |
| Special Purpose Taxes | ☒ | • Finance | |
| Stormwater Utility Fees | ☐ | | |

**Table A-17**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | • | |
| Development Impact Fees | ☒ | • HCD | |
| General Obligation Bonds | ☒ | • Finance | |
| Special Tax and Revenue Bonds | ☒ | • Finance | |
| Community Development Block Grants (CDBG) | ☐ | | |

**Table A-18**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☒ | | CCIL, CERV, CERT, SPCA, etc. |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • OES | Monterey County OES has full-time Community Resilience Planner focused on outreach and education. |
| Natural disaster or safety related school programs | ☒ | • Sherriff's Office<br>• MCOE | Run, Hide, Fight Program, General disaster preparedness education |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table A-19**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | Yes | 5 | 10/1/2020 |
| ISO Public Protection Classification | - | - | - |
| *StormReady* Certification | Yes | | 8/2/2018 |
| *TsunamiReady* Certification | Yes | | 8/2/2018 |
| *Firewise Communities* Certification | Community of Robles del Rio<br>Community of Rancho Tierra Grande | | |

### *Political Capability*

The Monterey County Board of Supervisors has outlined their vison for the long-term development and health and safety of the community in the Strategic Plan.

## A.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table A-20**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Josh Bowling, Chief of Building Services |
| **NFIP Community Number:** | 060195 |
| **Flood Insurance Policies in Force:** | 1,277 |
| Insurance Coverage in Force: | $362,723,300 |
| Written Premium in Force: | $1,732,791 |
| **Total Loss Claims:** | 1,163 |
| Total Payments for Losses: | $23,735,682 |

**Adopted Regulations that meet NFIP Requirements:**

- Chapter 16.16 - REGULATIONS FOR FLOODPLAINS IN MONTEREY COUNTY
  Ord. No. 5139, § 1, adopted October 6, 2009, amended Chapter 16.16 in its entirety to read as herein set out. Formerly, Chapter 16.16 pertained to similar subject matter, and derived from Ord. No. 2966, adopted 1984; Ord. No. 3152, §§ 1—5, adopted 1986; Ord. No. 3272, adopted 1987; Ord. No. 3568, adopted 1991, and Ord. No. 3876, adopted 1996.

**Date of last NFIP Community Assistance Visit (CAV):**

Unknown.

**Higher standards that exceed minimum NFIP requirement:**

- MC Code, Chapter 16.16, requires 1.0 ft freeboard
- Monterey County ensures building codes standards are enforced for protection against differential settling, scour/erosion, and positive drainage for building foundations and ground surface within 10 ft of any structure. MC Chapter 18 – Buildings and Construction, Ord. No. 5337 adopted the 2019 California Building Standards Code (BCSC) with County amendments. BCSC Section 1803.5.8 and 1804.4 which include all buildings on compacted fill be protected from erosion and scour (but no compensatory storage); BCSC Sections 1803 and 1805 have positive foundation drainage requirements; BCSC Appendix J, § J109 has drainage and terracing requirements for earthwork involving cuts and fills.
- MC Code, Chapter 16.16 enforces cumulative substantial improvement regulations
- Monterey County regulates development along the shoreline for coastal erosion protection. Section 30253 of the California Coastal Act is the key policy that applies to new development and why MC addresses coastal erosion hazards.
- Bluff top and shoreline set-back requirements are based on coastal erosion rates established in various Local Coastal Programs (LCP) to help minimize coastal hazards. For example, the LCP within MC typically use a 50-year economic lifetime setback, approximately 40 to 50 feet from a designated setback point (either bluff top or point of maximum wave run-up). To determine the 50-year economic lifetime setback, the average coastal erosion rates are evaluated.

**Additional floodplain management provisions:**

Monterey County's 2010 General Plan, Safety Element:

- S-1.6 prohibits development in areas of (a) moderate or high relative landslide susceptibility, (2) high relative erosion susceptibility, (c) moderate or high relative liquefaction susceptibility, (d) coastal erosion and sea cliff retreat, or (e) tsunami run-up hazards.

**Table A-20**
**National Flood Insurance Program (NFIP) Compliance**

- S-2 reduces the amount of new development in floodplains and, for any development that does occur, minimize the risk from flooding and erosion.
- S-3 ensures effective storm drainage and flood control to protect life, property, and the environment.
- S-5 assures the County is prepared to anticipate, respond, and recover from emergencies.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**

- MC Environmental services in coordination with MC Information Technology department maintain a Geographic Information System (GIS) map of the County's drainage system and the MC Public Works department and MC Water Resources Agency (RMA) provide maintenance and clearing of the drainage system.
- MC WRA maintains the ALERT2 flood warning system.
- Monterey County's public education or outreach activities related to promoting flood risk awareness, risk reduction, and the availability of flood insurance are performed by the HCD, Public Works, WRA, the Monterey County OES, the Monterey Regional Stormwater Management Program (MRSWMP). Examples of outreach activities include:
  - Annual flood preparedness mailers and print ads in local newspapers
  - "Do Not Dump – Drains to the river where fish live" stencils next to storm drain inlets in the urbanized storm water boundary for MRSWMP
  - Social media Twitter and Facebook posts from OES, HCD, and Public Works
  - MRSWMP school outreach (K-12) classroom presentations and assemblies
  - Our Water Our World flyers and in-store events in local Home Depot stores

**Existing impediments to running an effective NFIP program:**

The only difficulty is identifying resources for the program.

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

- Develop a checklist for review of building/development permit plans and for inspection of development in floodplains.
- Establish a goal to have each plan reviewer and building inspector attend training periodically.
- Sponsor a periodic NFIP workshop for local surveyors and builders.
- Hold informative work sessions for newly elected officials and new appointees to planning commissions and appeals/variance boards, to provide an overview of floodplain management, the importance of participating in the NFIP, and the implications of failing to enforce the requirements of the program or failing to properly handle variance requests.
- Obtain FEMA's Substantial Damage Estimator and attend training to be prepared to use it when damage occurs; develop mutual aid agreements with other jurisdictions to augment local inspection personnel after major disasters.
- Develop handouts for permit applications on specific issues such as installation of manufactured homes in flood hazard areas according to HUD's installation standards, or guidance on improving/repairing existing buildings to better withstand potential hazards.

## A.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table A-21**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | High |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Moderate |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## A.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## A.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the County made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The County will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new

possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Building Code**: The County's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the County's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance
- **Salinas River Management Program**: This program approved over the previous performance period incorporates the principles of hazard mitigation and provides a comprehensive river ecosystem and flood mitigation planning and restoration program for the river vegetation and channel.
- **Community Resilience Plan**: The Monterey County Community Resilience Plan is a countywide framework outlining the challenges and opportunities to building a more resilient Monterey County. This Plan incorporates the hazard mitigation plan into its framework.
- **Monterey County Operational Area Emergency Operations Plan**: The Emergency Operations Plan addresses the County's responsibilities in emergencies associated with natural disaster, human-caused emergencies and technological incidents. It provides a framework for coordination of response and recovery efforts within the operational area in coordination and with local, State, and federal agencies. The Plan establishes an emergency organization to direct and control operations during a period of emergency by assigning responsibilities to specific personnel. Information from the hazard mitigation plan is incorporated as appropriate.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. Monterey County, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. Monterey County will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs to be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments

- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## A.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, Unincorporated Monterey County Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for Unincorporated Monterey County are identified below:

- Overgrown vegetation and sediment build-up in the Carmel River and Salinas River channels have increased the potential for destructive flooding and vegetation fires for many communities in Monterey County.
- Multiple low-lying communities in the County near rivers and water bodies, such as the Pacific Ocean, the Elkhorn Slough, the Pajaro River, the Salinas River, the Carmel River, and the Carmel Lagoon, are susceptible to flooding and flood damage.
- Following a significant earthquake critical infrastructure, such as the Natividad Medical Center, may experience structural damage and service interruptions that pose risks to the public.
- The water and wastewater infrastructure for the unincorporated communities of Castroville, San Lucas, and San Ardo is not mapped and deemed particularly vulnerable to unmitigated losses.
- Due to the topography and terrain of unincorporated areas, telecommunications and radio communications can be extremely limiting to first responders and residents during emergencies.
- The extensive inventory of roads in moderate to high-risk wildfire areas which require annual vegetation maintenance exceed the County's current capability.
- The Nacimiento Reservoir Dam Spillway is eroding at a concerning rate.
- While flooding already poses a risk in Monterey County, rising seas will put new areas at risk and increase the likelihood and intensity of floods in areas already at risk. Sea level rise poses a threat to various communities in Monterey, including Moss Landing and the Carmel Lagoon, as well as several natural habitats, such as the Elkhorn Slough. Additionally, agriculture in the Salinas Valley is incredibly vulnerable to sea level rise, with approximately 15,000 acres of agricultural land less than 10ft above the current mean sea level elevation.

## A.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The Unincorporated Monterey County Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the County's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table A-23* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the County during the planning process. *Table A-22* includes the status of actions completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the County added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table A-22**
**Unincorporated Monterey County Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **2** | Develop a sustained public outreach program that encourages consistent hazard mitigation content. For example, consider publishing tsunami inundation maps in telephone books, wildland fire defensible space tips with summer water bills, and the safe handling and disposal of hazardous waste and chemicals with garbage bills. | **Completed** | Completed as part of MJHMP update |
| **3** | Review and update County inundation maps every five years and participate in DSOD mapping updates. | **Completed / Ongoing** | Completed and maps will continue to be reviewed and updated as required. |
| **4** | Examine and mitigate critical infrastructure that has been identified as currently being too narrow to ensure the safe transportation of truck loads within Monterey County. | **Deleted** | Major throughfares in the County meet this standard. |

**Table A-22**
**Unincorporated Monterey County Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **6** | Include provisions for dust erosion control methods in building, grading, and land clearing permits. | **Completed** | Permit applications include and require these provisions. |
| **11** | Conduct bi-annual core capability assessments of Monterey County public safety agencies. | **Completed / Ongoing** | This item has been removed from future mitigation actions since it is a sustainable implementation practice. |
| **13** | Implement Business Operations Center and Private Sector Advisory Committee to ensure private/public partnerships. | **Deleted** | Staff time and resources are not available for implementation. |
| **15** | Require and maintain safe access for fire apparatus to wildland/urban interface neighborhoods/properties, and defensible space around structures. | **Complete/ Ongoing** | Roads meet current state standards for fire apparatus access and safe access will continue to be maintained. Defensible space is covered in other actions listed below. |
| **18** | Create and fund positions to support the Fire Warden and Fuel Mitigation Officer. | **Partially Completed** | The County funded RCDMC as Fuel Mitigation Officer. Fire Warden included in new action. |
| **19** | Support outreach and education programs, in conjunction with fire authorities having jurisdiction. | **Complete/ Ongoing** | The County does and will continue to support outreach and education programs in conjunction with fire authorities. |
| **20** | Salinas River Management Program will provide a comprehensive river ecosystem and flood mitigation planning and restoration program for the river vegetation and channel. | **Completed / Ongoing** | Permits have been obtained for the Salinas River Stream Maintenance Program and this is ongoing |
| **21** | Elkhorn Slough Road Improvement: develop plan to improve circulating tidal waters, emergency access that Elkhorn Road is currently blocking during periods of king tides and future sea level rise. | **Deleted** | Long term mitigation for this road will not occur and the County is not familiar with this project. |

**Table A-23**
**Unincorporated Monterey County Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | Ongoing | All | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures, as necessary. | Moderate | Public Works | General Fund, Grants |
| **2** | Ongoing | Wildfire | Continue to conduct fuel management programs and investigate and apply new and emerging fuel management techniques. Create and maintain community fuel breaks and other fuel management projects. Use prescribed burning to reduce fuel loads that threaten public safety and property, and to manage for ecological values and functions. | Priority / High | Public Works, RCDMC | General Fund, Grants, California Fire Safe Council |
| **3** | In Progress | Flooding | Implement the Carmel River Floodplain Restoration and Environmental Enhancement (CRFREE) Project | Priority / High | Public Works | General Fund, HMGP Grants |
| **4** | Ongoing | Flooding | Work with property owners subject to flood losses to implement property protection activities including constructing retaining walls, berms, and terrace drains, as well as installing debris fences and high-capacity pumping ability. Additionally, work with property owners to elevate structures such that the lowest habitable floor is a minimum of 1-foot above the base flood elevation. | Priority / High | HCD | General Fund, HMGP Grants |
| **5** | In Progress | All, Climate Change | Develop and implement a multi-hazard public awareness program to include risks of sea level rise and climate change impacts. | Moderate | OES, HCD Sustainability | General Fund, Grants |
| **6** | 5-Year Timeframe | All, Earthquake, Wildfire | Develop a debris management plan. | Low/ Moderate | Public Works, Environmental Health, OES | General Fund |
| **7** | Ongoing | Drought | Encourage water conservation measures to home and business owners through public awareness outlets. | Moderate | OES | General Fund |

**Table A-23**
**Unincorporated Monterey County Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **8** | In Progress | Tsunami | Develop and implement new tsunami evacuation and maritime response playbooks to improve decision making for protective actions that are specific for local jurisdictions and coastal effects. Utilize maritime playbooks to determine where maritime facilities and infrastructure in Moss Landing Harbor can be strengthened. | High | OES, Cal OES and CGS Tsunami Steering Committee | State and Federal Tsunami Funding |
| **9** | Ongoing | Flooding | Continue to implement the Salinas River Steam Maintenance Program in order to reduce risk and seek flood control solutions along the Salinas River. | Moderate | MCWRA, RCDMC | General Fund, MCWRA Enterprise Fund, Grants, Private |
| **10** | New | All | Update the safety element of the Monterey County General Plan and adopt the MJHMP. | High | HCD | General Fund |
| **11** | Ongoing | Earthquake | Consider seismic requirement updates to the Monterey County Building Code. | Moderate | HCD | General Fund |
| **12** | In Progress | Climate Change | Complete the County's Climate Action Plan and incorporate climate adaption. | High | Sustainability, OES | General Fund, Grants |
| **13** | New | Wildfire | Create and fund the position of County Fire Warden. | Moderate | HCD | General Fund |
| **14** | New | Flooding | Assess solutions to flood control issues along the Pajaro River. | Moderate | MCWRA, HCD, Public Works, Santa Cruz County | General Fund, MCWRA Enterprise Fund, Grants |
| **15** | New | Dam Failure | Implement the Nacimiento Dam Spillway Plunge Pool Erosion Mitigation Project. | High | MCWRA | MCWRA Enterprise Fund, HMGP Grants |
| **16** | New | Dam Failure | Install a new low-level flow control valve on the Nacimiento Dam. | High | MCWRA | MCWRA Enterprise Fund, HMGP Grants |

**Table A-23**
**Unincorporated Monterey County Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **17** | New | Dam Failure | Implement the San Antonio Dam spillway rehabilitation or replacement project. | High | MCWRA | MCWRA Enterprise Fund, HMGP Grants |
| **18** | New | Dam Failure | Complete low-level outlet repairs on the San Antonio Dam. | Moderate | MCWRA | MCWRA Enterprise Fund, HMGP Grants |
| **19** | New | All | Create a standardized post-disaster rebuilding ordinance. | Moderate | HCD | General Fund |
| **20** | New | Wildfire | Streamline the fuel reduction permitting process. | Moderate | HCD | General Fund |
| **21** | New | Wildfire | Consider opportunities to work with private property owners to implement hazardous fuels reduction and ignition resistant construction projects | Moderate | OES | General Fund, HMGP Grants, Private Funding |
| **22** | New | Wildfire | Continue to work cooperatively with public agencies with responsibility for fire protection | Moderate | OES, HCD | General Fund, HMGP Grants, |
| **23** | New | Wildfire | Locate, when feasible, new essential public facilities outside of high fire risk areas, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, or identify construction or other methods to minimize damage if these facilities are located in a state responsibility area or very high fire hazard severity zone | Moderate | HCD | General Fund, HMGP Grants, |
| **24** | New | Wildfire | Avoid and/or minimize the wildfire hazards associated with new uses of land. Design adequate infrastructure if a new development is located in a state responsibility area or in a very high fire hazard severity zone, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression. | Moderate | HCD | General Fund, HMGP Grants |

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# ANNEX B: CARMEL-BY-THE SEA

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

# B. CITY OF CARMEL-BY-THE-SEA

## B.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Brandon Swanson
Director of Community Planning and Building
Community Planning and Building Department
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**Alternate Point of Contact**
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Monterey Fire Department
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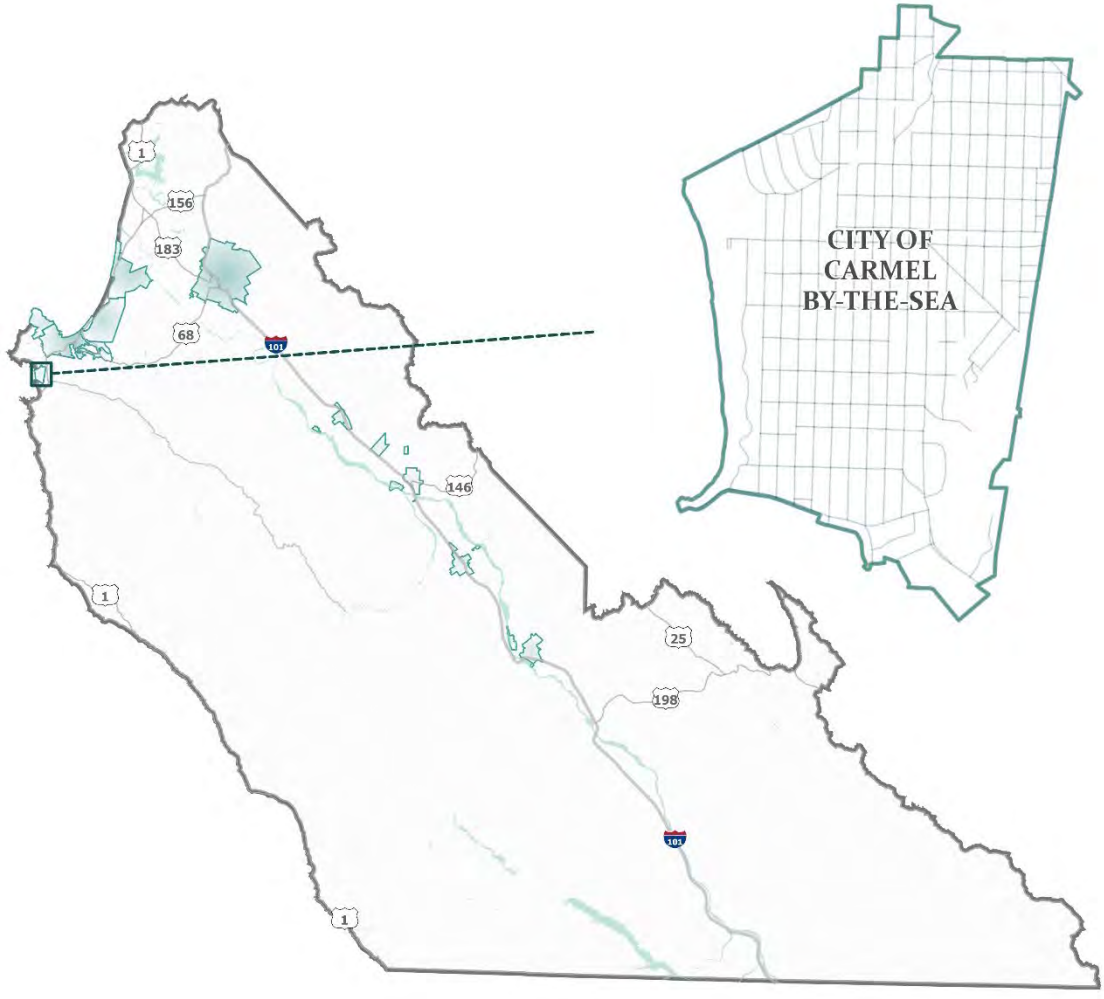
Monterey, CA 93940
(831) 646-3900
panholzer@monterey.org

## B.2 COMMUNITY PROFILE

### B.2.1 LOCATION



### B.2.2 GEOGRAPHY AND CLIMATE

Carmel-by-the-Sea is primarily a residential community on the Monterey Peninsula covering approximately one square mile in area. It is a densely forested city with a popular commercial district that attracts tourists and visitors to California's central coast from near and far. The city, known for its natural scenery and rich artistic history. Carmel-by-the-Sea experiences a cool summer Mediterranean climate. Summers are typically mild, with overcast mornings produced by marine layer clouds which can bring drizzles that typically give way to clear skies in the afternoon.

### B.2.3 HISTORY

Mission San Carlos Borromeo de Carmelo was founded on 3 June 1770 in the nearby settlement of Monterey but was relocated to Carmel Valley by Junípero Serra due to interactions between soldiers stationed at the nearby Presidio and the native populations. A welder, John Martin, acquired lands surrounding the Carmel Mission in 1833, which he named Mission Ranch.

Known as "Rancho Las Manzanitas", the area that was to become Carmel-by-the-Sea was purchased by French businessman Honore Escolle in the 1850s. Escolle was well known and prosperous in the City of Monterey, owning the first commercial bakery, pottery kiln, and brickworks in Central California. In 1888, Escolle and Santiago Duckworth, a young developer from Monterey with dreams of establishing a Catholic retreat near the Carmel Mission, filed a subdivision map with the County Recorder of Monterey County. By 1889, 200 lots had been sold. Abbie Jane Hunter first used the name "Carmel-by-the-Sea" on a promotional postcard. In 1902 James Frank Devendorf and Frank Powers, on behalf of the Carmel Development Company, filed a new subdivision map of the core village that became Carmel. The Carmel post office opened the same year. Carmel-by-the-Sea incorporated in 1916.

In 1905, the Carmel Arts and Crafts Club was formed to support and produce artistic works. After the 1906 San Francisco earthquake the village was inundated with musicians, writers, painters, and other artists turning to the establishing artist colony after San Francisco was destroyed. The Carmel Arts and Crafts Club held exhibitions, lectures, dances, and produced plays and recitals at numerous locations in Carmel, including the Pine Inn Hotel, the Old Bath House on Ocean Ave, the Forest Theater, a small building in the downtown area donated by the Carmel Development Company, and finally, purchasing their own lot on Casanova Street, where they built their own clubhouse in 1907.

### B.2.4 POPULATION

The City of Carmel-by-the-Sea has a population of 3,220 people (2020 Census), a 13% decrease since 2010.

### B.2.5 GOVERNING BODY FORMAT

The City of Carmel-by-the Sea is a General Law city. The City Council consists of an elected Mayor holding a two-year term and four Council Members elected at large for four-year staggered terms. The Mayor and City Council appoint the City Administrator.

### B.2.6 ECONOMY AND TAX BASE

The City is primarily residential, with Tourism and the Arts as its major industries. Retail trade and other businesses oriented toward visitors, including many inns and hotels, art galleries, boutiques, restaurants, and other small businesses drive the primary economic activity in the City.

## B.3 PLANNING PROCESS

The City of Carmel-by-the-Sea followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Carmel-by-the-Sea held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on June 15, 2021. Key stakeholders present at the meeting included:

- Chip Rerig, City Administrator
- Paul Tomasi, Director of Public Safety/ Chief of Police
- Robert Harary, Director of Public Works
- Wanda Vollmer, Team Captain Carmel CERT
- Brandon Swanson, Director of Community Planning and Building
- Rob Culver, Public Works Superintendent
- Gaudenz Panholzer, Fire Chief
- Ashlee Wright, Library and Community Activities Director
- Scot Smythe, Team Captain Carmel CERT
- Jeff Watkins, Admin Sergeant

## B.4 LAND USE AND DEVELOPMENT

The Carmel General Plan was adopted in 2003 and their Local Coastal Program was certified in 2004. The General Plan was combined with its Local Coastal Land Use Plan to ensure coordination of the two policy documents. All of the incorporated City is located in the Coastal Zone. Carmel is a small coastal community with a residential village character. Early development was predominantly residential and commercial development was originally small-scale, designed to serve the needs of the local residents. Over the years, commercial uses have expanded to cater largely to visitors.

Little development is expected as the City is generally considered “built-out” with very little buildable vacant land. The land use pattern within the City of Carmel-by-the-Sea is well established and unlikely to change. The predominant land use in the City is residential (approximately 55%), and most of the residences are single-family dwellings. The City’s Commercial District accounts for approximately 6% of the land area in the City. No land is designated for industrial use. The City limits include a significant amount of land devoted to parks and beaches (approximately 10%), including Carmel Beach Park, Mission Trail Nature Preserve, Devendorf Park, Piccadilly Park, First Murphy Park, and Forest Hill Park.

The City's land use policies focus on maintaining the predominance of the residential character in the City through appropriate zoning and land development regulations in all districts.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The Carmel Safe Growth Survey was completed by Brandon Swanson, Director of Community Planning and Building and Robert Harary, P.E., Director of Public Works for the City of Carmel-by-the-Sea. The results are summarized in *Table B-1*.

**Table B-1**
**City of Carmel-by-the-Sea Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 2.8 | 4.3 |
| Transportation | 3.7 | 3.0 |
| Environmental Management | 4.3 | 5.0 |
| Public Safety | 3.0 | 4.7 |
| Zoning Ordinance | 1.8 | 4.5 |
| Subdivision Regulations | 3.3 | 2.3 |
| Capital Improvement Program & Infrastructure Policies | 4.0 | 3.7 |
| Building Code | 2.0 | 3.0 |
| Economic Development | 5.0 | 4.0 |
| **Average Survey Ratings** | **3.3** | **3.8** |

## B.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Carmel-by-the-Sea's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to City of Carmel-by-the-Sea's is included in this Annex.

The City of Carmel-by-the-Sea's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table B-2* displays the results of the hazard risk ranking exercise that was performed by the City of Carmel-by-the-Sea's Planning Team.

**Table B-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Carmel-by-the-Sea**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 1.2 | 1.2 | 1.3 | 1.4 | 5.2 | Slight |
| Coastal Erosion | 3.0 | 2.8 | 2.7 | 3 | 11.5 | Substantial |
| Coastal Flooding | 2.4 | 2.7 | 2.0 | 2.3 | 9.4 | Moderate |
| Cyber-Attack | 2.9 | 2.6 | 3.0 | 3.3 | 11.8 | Substantial |
| Dam Failure | 1.3 | 1.1 | 1.1 | 1.4 | 5 | Slight |
| Drought & Water Shortage | 3.6 | 3.7 | 3.1 | 3.1 | 13.5 | High |
| Earthquake | 3.4 | 2.8 | 3.4 | 3.6 | 13.2 | High |
| Epidemic | 3.4 | 2.9 | 3.3 | 3.7 | 13.3 | High |
| Extreme Cold & Freeze | 1.8 | 1.8 | 2.1 | 2.1 | 7.8 | Possible |
| Extreme Heat | 2.2 | 2.0 | 2.0 | 2.3 | 8.6 | Moderate |
| Flash Flood | 2.0 | 2.0 | 2.2 | 2.4 | 8.7 | Moderate |
| Hazardous Materials Incident | 2.6 | 2.1 | 2.1 | 2.6 | 9.3 | Moderate |
| Invasive Species | 3.0 | 2.7 | 2.6 | 2.3 | 10.6 | Substantial |
| Levee Failure | 1.6 | 1.3 | 1.7 | 1.6 | 6.1 | Possible |
| Localized Stormwater Flooding | 3.0 | 2.7 | 2.9 | 2.9 | 11.5 | Substantial |
| Mass Migration | 1.3 | 1.3 | 1.6 | 1.6 | 5.8 | Slight |
| Pandemic | 3.4 | 3.0 | 3.8 | 3.8 | 13.9 | High |
| Riverine Flooding | 2.0 | 2.1 | 2.0 | 2 | 8.1 | Moderate |
| Sea Level Rise | 2.8 | 3.1 | 2.6 | 3 | 11.5 | Substantial |
| Severe Winter Storms | 2.9 | 2.8 | 2.5 | 2.6 | 10.8 | Substantial |
| Slope Failure | 2.5 | 2.5 | 2.4 | 2.5 | 9.9 | Moderate |
| Targeted Violence | 2.0 | 2.5 | 2.5 | 2.7 | 9.7 | Moderate |
| Terrorism | 2.2 | 1.0 | 3.0 | 3.3 | 9.5 | Moderate |
| Tsunami | 2.8 | 2.5 | 2.9 | 3 | 11.1 | Substantial |
| Utility Interruption/ PSPS | 3.5 | 3.5 | 3.0 | 3.3 | 13.3 | High |
| Water Contamination | 3.0 | 2.3 | 3.3 | 3.0 | 11.6 | Substantial |
| Wildfire | 3.8 | 3.1 | 3.4 | 3.8 | 14 | High |
| Windstorms | 3.4 | 3.4 | 3.0 | 3.1 | 12.9 | High |

### B.5.1 AGRICULTURAL EMERGENCIES

There is no agricultural land located within the City, so therefore an agricultural emergency does not pose a direct threat. Since agriculture is a major economic driver in the County, an agricultural emergency could have indirect economic impacts on the City.

### B.5.2 COASTAL EROSION

To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center Coastal Storm Modeling (CoSMos) shoreline change, and cliff retreat projection data was used. For cliff retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on Ocean Protection Council (OPC) High Risk Aversion Guidance. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion. Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

*Table B-3* summarizes population and property exposure to coastal erosion risk.

**Table B-3**
**Population and Property Exposed to Coastal Erosion Risk in Carmel-by-the-Sea**

| Sea Level Rise Scenario/ Erosion Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| **Cliff Erosion** | | | | | |
| Sea Level Rise (25 cm) | 34 | 4 | $58,980,750 | 4 | $857 |
| Sea Level Rise (75 cm) | 34 | 4 | $58,980,750 | 4 | $857 |
| Sea Level Rise (200 cm) | 34 | 4 | $58,980,750 | 4 | $857 |
| **Shoreline Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 0 | $0 |

Erosion on sloped inland areas and at the shoreline has been a problem for Carmel. Erosion of the beach bluffs is addressed in the City's Shoreline Management and Emergency Operations plans.

### B.5.3 DAM AND LEVEE FAILURE

#### *Dam Failure*

There is no population or property in the City located in a mapped dam inundation zone of any of the dams (Nacimiento, San Antonio, Los Padres, and Forest Lake) analyzed in this Plan.

#### *Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

### B.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### B.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree.

Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 3,377 residential and non-residential buildings in the City, with a total value of $4,762,701,075. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table B-4* summarizes population and property in the City exposed to liquefaction risk.

**Table B-4**
**Population and Property Exposed to Liquefaction Risk in Carmel-by-the-Sea**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 589 | 129 | $314,606,407 | 30 | $15,820,742 |
| Moderate Liquefaction Susceptibility | 43 | 1 | $2,930,757 | 2 | $4,395,452 |

### B.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table B-5* summarizes population and property in the City in the 100-year and 500-year floodplain. Only a small portion of the City's southern tip is designated as a FEMA 100-year Flood Zone. Mission Fields, a residential area, is within the 100-year floodplain, as are the Carmel Center/Carmel Rancho shopping centers.

**Table B-5**
**Population and Property Exposed to Flooding Risk in Carmel-by-the-Sea**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 14 | 3 | $44,702,609 | 7 | $4,396,309 |
| 500-Year Flood Zone | 22 | 2 | $17,454,593 | 0 | $0 |

There is also a high level of risk of localized stormwater flooding after major rain events. There are several areas of the City, which have been identified as being prone to localized flooding. The main area subject to localized flooding is located within the Mission Trail Nature Preserve. The City's Storm Drain Master Plan identified citywide problems, with much of the City's drainage infrastructure identified as only designed to handle 10-year storm event.

Historically, the City's stormwater system has had sufficient capacity to accommodate a rainfall of up to two inches a week. However, several factors, such as an increased amount of debris and reduced ability for maintenance affect stormwater system capacity. The stormwater systems are maintained regularly, however, during storm events the maintenance often cannot keep up with the amount of debris entering the system. As a result, the system experiences serious failures during rainfall of approximately 10 inches in a week.

Carmel Beach is subject to flooding during high tide and beach sand is lost yearly during winter storms. The beach is a clearly separated from adjacent roads and houses by a moderately steep hill, therefore, due to that topographical feature, the coastal flooding rarely extends past the beach.

### B.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table B-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table B-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in Carmel-by-the-Sea**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 3,451 | 2,441 | $3,786,046,381 | 883 | $691,543,641 |
| Fixed Source | 0 | 0 | $0 | 0 | $0 |

The City of Carmel-by-the-Sea has no facilities for permanent storage or transfer of hazardous waste. The City has no industrial zone or zoning district compatible with a hazardous waste site. The City is not in the vicinity of any pipeline, nor on the route of an airline transporting potentially hazardous materials. As such the most probable exposure would be due to transport of hazardous materials on state highways.

Proximity to Highway 1 is the largest hazardous materials concern for the City. A portion of the City located east of Junipero Avenue is located within the one-mile hazards corridor along Highway 1. Residents and structures located within this buffer would potentially be exposed to hazardous materials if there was an incident during transport of such materials on Highway 1. The City has a steep grade down to the ocean and a big spill from the Highway could move quickly and would be hard to contain.

### B.5.8 HUMAN-CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

### B.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

### B.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City are likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts. FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table B-7.*

**Table B-7**
**Annualized Frequency and Exposure to Severe Weather Events in Carmel-by-the-Sea**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.19 | Frequency (*Distinct Events)* | 0.03 |
| Exposed Population | 3,715 | Exposed Population | 3,715 |
| Exposed Building Values | $1,118,991,000 | Exposed Building Values | $1,118,991,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $175 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.08 | Frequency (*Distinct Events)* | 0.88 |
| Exposed Population | 3,715 | Exposed Population | 3,569 |
| Exposed Building Values | $1,118,991,000 | Exposed Building Values | $1,078,397,319 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $18,535,687 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.36 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 3,715 | Exposed Population | 0 |
| Exposed Building Values | $1,118,991,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $160 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

## B.5.11 SLOPE FAILURE

Landslides in Carmel area historically have been caused by waterlogged soil rather than ground shaking due to an earthquake. Based on the FEMA National Risk Index, 533 people and $168,687,758 in building value in the City is exposed to landslide risk. Additionally, the City is susceptible to earthquake induced landslides. Exposure of population and property in the City to earthquake induced landslides is summarized in *Table B-8.*

**Table B-8**
**Population and Property Susceptible to Earthquake Induced to Landslides in Carmel-by-the-Sea**

| Landslide Susceptibility | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High | 0 | 0 | $0 | 0 | $0 |
| Moderate | 273 | 5 | $8,311,546 | 3 | $0 |

There are two areas historically prone to landslides within the City limits. The first area is located in the northcentral portion of the City, which encompasses the Pescadero Canyon, including portions of 2nd, 3rd, and 4th Avenues, and Camino Del Monte Avenue, between 2nd and 3rd Avenues. The second area prone to landslides is located in the eastern portion of the City and encompasses the eastern portion of the Mission Trail Nature Preserve.

### B.5.12 TSUNAMI

Population and property in the City located in a mapped tsunami inundation zone is summarized in *Table B-9.*

**Table B-9**
**Population and Property in Tsunami Inundation Zone in Carmel-by-the Sea**

| Inundation Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Tsunami Inundation Zone | 47 | 2 | $44,423,372 | 6 | $857 |

The City would be minimally affected by a moderate to extreme tsunami event. This can be accredited to coastal topography along the western boundary. The steep cliff between the Scenic Road and the beach, acts as a protective boundary during a tsunami. The relatively flat topography in the southern portion, on the other hand, lends itself to a more significant wave run-up.

### B.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption. Additionally, the City has a large elderly population who would be particularly vulnerable in the event of a power outage or Public Safety Power Shut-Off.

### B.5.14 WILDFIRE

For this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate. *Table B-10* summarizes population and property in very high, high, and moderate fire threat areas.

**Table B-10**
**Population and Property Exposed to Wildfire Risk in Carmel-by-the-Sea**

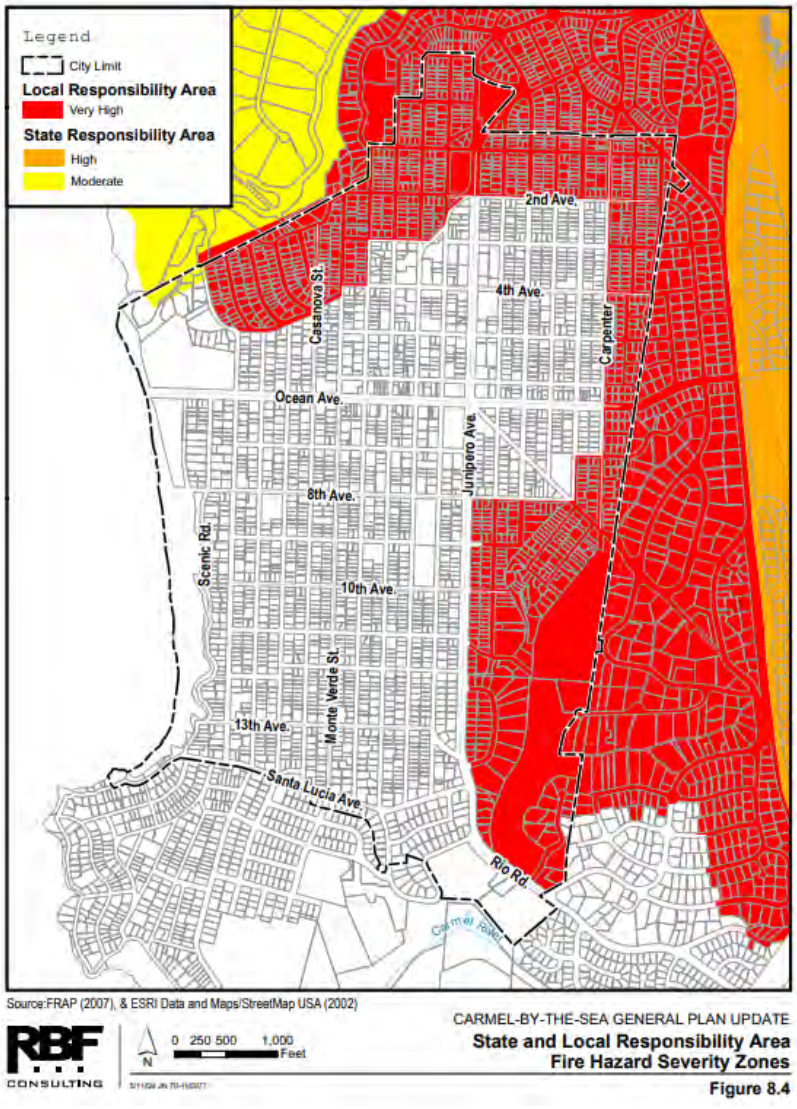
| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| Moderate Fire Threat | 3,155 | 1,965 | $3,077,482,448 | 218 | $155,375,684 |

Areas in the City have also been mapped as located in Fire Hazard Severity Zones (FHSZ) by CAL FIRE. These zones are designated Very High or High Fire Hazard Severity based on factors such as fuel, slope, and fire weather. Areas designated as Fire Hazard Severity Zones in the City are mapped in *Figure B-1.* Any future revisions or updates to the FHSZ maps will supersede current mapping.

Carmel's land area is largely forested and contains a significant amount of open space. There are several areas in and around the City that qualify as wildland fire hazard areas. These areas are located to the north and east of the City boundaries and include to the north, Pescadero Canyon, Forest Hill Park, and Del Monte Forest; and to east the Mission Trails Nature Preserve. The City is also located on a hillside. Steep slopes promote spread of fire and increase its speed due to preheating of vegetation. Canyons and hillsides also promote gusts of wind, which increase the unpredictable and uncontrollable nature of wildfires. The topography also creates access issues. The unimproved and narrow roads are an obstacle to fighting fires. Firefighting personnel as well as fire trucks and heavy equipment have difficulty reaching some of the City's areas. Containment being a key objective, areas of limited accessibility have a correspondingly greater potential for fire spreading.

**Figure B-1**

**Fire Hazard Severity Zones in Carmel-by-the-Sea**




Source: Carmel-by-the-Sea General Plan, Environmental Safety Element

### B.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the rural economies, along with changes to agriculture and crops, which are a critical backbone of Monterey County's economic success. There will also be negative impacts to ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

Sea level rise risk exposure in the City was calculated based on the NOAA Office for Coastal Management sea level rise viewer projections. Three sea level rise levels (25 cm, 75 cm, and 200 cm) were chosen to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

Population and property exposed to sea level rise risk is summarized in *Table B-11.*

**Table B-11**
**Population and Property Exposed to Sea Level Rise in Carmel-by-the-Sea**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 0 | 1 | $621,268 | 2 | 0 |
| 3 ft Sea Level Rise (2060) | 14 | 1 | $621,268 | 5 | 0 |
| 7 ft Sea Level Rise (2100) | 14 | 2 | $44,423,372 | 5 | 0 |

## B.6 CAPABILITY ASSESSMENT

The City of Carmel-by-the-Sea performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table B-12*
- An assessment of administrative and technical capabilities is presented in *Table B-13*
- An assessment of fiscal capabilities is presented in *Table B-14*
- An assessment of education and outreach capabilities is presented in *Table B-15*
- Classifications under various community mitigation programs are presented in *Table B-16*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section L.6.1 in *Table B-17*
- An overall self-assessment of capability is presented in Section L.6.2 in *Table B-18*

**Table B-12**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Planning & Building | Housing Element will be updated in 2023, may be opportunity to look at safety element |
| Capital Improvement Plan | ☒ | • Public Works | Have 5-year CIP that is implemented and updated on a yearly basis |
| Floodplain Management Plan | ☒ | • Public Works | New Storm Drainage Master Plan Completed |
| Open Space Management Plan | ☒ | • Public Works | Forestry Master Plan Budgeted |
| Stormwater Management Plan | ☒ | • Public Works | Have an ASBS Compliance Plan |
| Coastal Management Plan | ☒ | • Public Works | Outdated Plan |
| Local Coastal Program | ☒ | • Community Planning & Building | City has adopted LCP |
| Climate Action/ Adaptation Plan | ☒ | • Public Works<br>• Community Planning & Building | Completed Vulnerability Report |
| Emergency Operations Plan | ☐ | • Police Department | |
| Continuity of Operations Plan | ☐ | • Police Department | |
| Community Wildfire Protection Plan | ☐ | • Fire Department | |
| Evacuation Plan | ☒ | • Fire Department<br>• Police Department | Carmel is participating in the development of the Countywide Evacuation Plan |
| Disaster Recovery Plan | ☐ | • Police Department | |
| Economic Development Plan | ☐ | | City does not have an ED office, no official ED plan in place. Work with Chamber and Visit Carmel. |
| Historic Preservation Plan | ☒ | • Community Planning & Building | Have Historic Preservation Ordinance and Historic Context Statement |
| Transportation Plan | ☒ | • Community Planning & Building<br>• Public Works | |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works | Municipal Code Section 15.56 – Community Floodplain |
| Zoning Ordinance | ☒ | • Community Planning & Building | |

**Table B-12**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| Subdivision Ordinance | ☒ | • Community Planning & Building | |
| Site Plan Review Requirements | ☒ | • Community Planning & Building | Zoning ordinance being updated in 2022, could provide opportunity for additional site plan requirements |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | |
| Building Code | ☒ | • Community Planning & Building | Updated on an ongoing basis as code cycle changes |
| Fire Prevention Code | ☒ | • Fire | Carmel adopts and reinforces the latest version of the California Fire Code |

**Table B-13**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Planning & Building<br>• Public Works | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Public Works | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Public Works | |
| Building Inspector | ☒ | • Community Planning & Building | |
| Emergency Manager | ☒ | • Police Department | Chief of Police is Emergency Manger (in tandem with City Administrator) |
| Floodplain Manager | ☒ | • Public Works | |
| Land Surveyors | ☐ | | Contracted out |
| Resource development staff or grant writers | ☐ | | |
| Public Information Officer | ☐ | | |

**Table B-13**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Scientist(s) familiar with the hazards of the community | ☐ | | May have members of the community with expertise in various sciences |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Community Planning & Building<br>• Public Works | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Community Planning & Building<br>• Public Works | |
| Maintenance programs to reduce risk | ☒ | • Public Works | |
| Warning systems/services | ☒ | • Police Department<br>• Fire Department | Carmel participates with Monterey County's implementation of Everbridge (reverse 911) and Nixle |
| Mutual Aid Agreements | ☐ | | Carmel participates in the Monterey County Fire Mutual Aid Plan and the California Fire Assistance Agreement |

**Table B-14**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Funding | ☒ | • Finance | |
| Special Purpose Taxes | ☒ | • Finance | 20-Year Measure "C" Approved |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | |
| Development Impact Fees | ☒ | • Finance<br>• Community Planning & Building<br>• Public Works<br>• Police Department | |
| General Obligation Bonds | ☐ | • Finance | |
| Special Tax and Revenue Bonds | ☐ | • Finance | |
| Community Development Block Grants (CDBG) | ☐ | • Finance | |

**Table B-15**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☒ | • Public Works<br>• Police Department<br>• Fire Department | Friends of Mission Trail Nature Preserve, Carmel Cares; Carmel has an active CERT program. |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • Public Works<br>• Community Planning & Building | The City has a Climate Action Committee |
| Natural disaster or safety related school programs | ☐ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☒ | • Public Works<br>• Carmel Cares | Local Volunteer group called "Carmel Cares" |

**Table B-16**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | Yes | 2 | June 17, 2015 |
| *StormReady* Certification | No | - | - |
| *TsunamiReady* Certification | Yes | - | |
| *Firewise Communities* Certification | No | - | - |

*Political Capability*

Two city council members sit on the City's Climate Change Committee/climate action and climate adaptation program.

## B.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table B-17**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Brandon Swanson, Community Planning and Building Director |
| **NFIP Community Number:** | 060196 |
| **Flood Insurance Policies in Force:** | 29 |
| Insurance Coverage in Force: | $9,940,000 |
| Written Premium in Force: | $13,888 |

**Table B-17**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Total Loss Claims:** | 3 |
| Total Payments for Losses: | $127,113 |

**Adopted Regulations that meet NFIP Requirements:**

- Municipal Code Section 15.56 – Community Floodplain (Adopted 2018: Ord # 2018-03)

**Date of last NFIP Community Assistance Visit (CAV):**

Unknown.

**Higher standards that exceed minimum NFIP requirement:**

None.

**Additional floodplain management provisions:**

Municipal Code Section 17.43 (Zoning Code) – Water Quality Protection Ordinance. This section has controls in place for construction BMPs to not aggravate flooding. Some measures include specific requirements (when appropriate) for things like retention ponds, restored wetlands, curbs, and gutters.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**

Regular drainage system maintenance is performed by Public Works.

**Existing impediments to running an effective NFIP program:**

Unknown.

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

- Evaluate permit application forms to determine possible modifications focused on flood hazard prevention.
- Develop a checklist for review of building/development permit plans and for inspection of development in floodplains.
- Establish a goal to have each plan reviewer and building inspector attend a related training periodically.
- Maintain supplies of FEMA/NFIP materials to help property owners evaluate measures to reduce potential hazard damage. Make available in public buildings, local library, website, etc. and inform people who they can call to learn more information.

## B.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table B-18**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Limited |
| Political Capability | Limited |
| **Overall Capability** | **Limited** |

### B.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

### B.6.1 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

#### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.

#### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City,

through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## B.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Carmel-by-the-Sea Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Carmel-by-the-Sea are identified below:

- Mission Trails Park and Pescadero Canyon are considered at particularly high risk to wildland fire, for which controlling excessive buildup of flammable vegetative material on vacant lots is an ongoing priority for the City. Other areas of primary concern include Forest Hill Park and Del Monte Forest.

- There are two areas historically prone to landslides within city limits. The first area is located in the north-central portion of the City, which encompasses the Pescadero Canyon, including portions of 2nd, 3rd, and 4th Avenues, and Camino Del Monte Avenue, between 2nd and 3rd Avenues. The second area prone to landslides is located in the eastern portion of the City and encompasses the eastern portion of the Mission Trail Nature Preserve.
- High winds associated with winter storms are a major concern for the City due to the vast amount of trees (50% tree cover) that have proven to exacerbate damage and power outages.
- The primary area of concern for coastal flooding is along Carmel Beach and within areas in proximity to Carmel Lagoon, including Mission Fields
- Localized flooding caused by drainage issues are a constant concern, as existing stormwater infrastructure is incapable of conveying runoff during heavy rainstorms or prolonged rainfall events. Storm drains also frequently become clogged with debris (pine needles, etc.) which makes the problem even worse. Primary areas of concern include the Mission Trail Nature Preserve (owned by the City and used as a park, with some on-site retention), the intersection area of Camino Real and 4th Street, and portions of 2nd Avenue along Pescadero Canyon. The Harrison Memorial Library is a critical community asset that has been flooded in the past.
- Managing large events has become increasingly difficult for public safety partners and can place a strain on lifeline resources. The City is concerned with limited ingress/egress to the community following major disaster events. Following large winter storm events, downed trees can cause a major traffic hazard in the City. This can pose a threat to first responders who are unable to deploy in order to do their job.

## B.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Carmel-by-the-Sea Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table B-20* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table B-19* includes the status of action previous plan completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table B-19**
**City of Carmel-by-the-Sea Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **1** | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary. | **Completed** | Completed and ongoing on an as needed basis. |
| **2** | Develop an unreinforced masonry grant program that helps correct earthquake-risk nonmasonry building problems, including chimney bracing and anchoring water heaters. | **Deleted** | The City does not have adequate staff resources to implement this program. |

**Table B-20**
**City of Carmel-by-the-Sea Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | Ongoing/ Continuous | All | Continue to include hazard mitigation and disaster preparedness content in community programming and outreach materials, such as the City's Friday Letter. | Priority / High | City Administration | General Funds, HMGP, and PDM Grants |
| **2** | Ongoing/ Continuous | Wildfire | Continue to conduct and support current fuel management programs and investigate, as determined feasible, and apply new and emerging fuel management techniques. | Priority / High | Fire, Public Works | General Funds and PDM Grant |
| **3** | Ongoing/ Continuous | All, Utility Interruption, Severe Weather | Continue to work with the Utility Companies (especially PG&E) to build and strengthen relationships to improve communication regarding emergency situations and develop an emergency response plan that includes all emergency responders and 911 communications. | Priority / Moderate | Public Safety/Police | General Funds |
| **4** | New | Utility Interruption, Wildfire | Work with PG&E on identifying and implementing priority utility undergrounding projects in the very high fire hazard zone. | Priority / Moderate | Public Safety, Public Works | General Fund, Grants |
| **5** | Ongoing/ Continuous | Earthquake, Utility Interruption, Severe Weather | Incorporate hazard-prone critical facilities and infrastructure into the City's Capital Improvement Plan and consider hazard mitigation when implementing structural and nonstructural retrofitting. Consider opportunities for seismic retrofitting and utility undergrounding in capital projects. | Priority/ High | Public Works, Planning & Building | HMGP and PDM Grants |
| **6** | New | Climate Change | Develop and implement strategies identified in the Climate Action and Adaptation Plan in order to increase the community's resiliency to climate change hazards. | Priority/ High | Planning, Public Works | General Fund, Grants |
| **7** | Ongoing/ Continuous | Tsunami | Continue to participate in the NOAA National Weather Service TsunamiReady Program. | Priority/ Moderate | Public Safety | General Funds |

**Table B-20**
**City of Carmel-by-the-Sea Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **8** | New | Coastal Erosion, Coastal Flooding | Conduct a Coastal engineering study to evaluate the City's revetments and other shoreline protection structures. | Priority/ High | Public Works, Planning & Building | General Fund, Grants |
| **9** | New | Coastal Erosion, Coastal Flooding | Implement the recommendations of the Shoreline Management Plan related to coastal infrastructure monitoring, maintenance, and protection. | Priority/ High | Public Works, Planning & Building | General Fund, Grants |
| **10** | In Progress | Flooding | Continue to implement the Mission Trails Nature Preserve Restoration Program, including implementation of the recommended projects of the Mission Trail Stream Stability Study. | Priority/ High | Public Works, Planning & Building | General Fund, Grants |
| **11** | In Progress | Flooding | Implement identified storm drainage improvements in the Storm Drain Master Plan to reduce the risk of localized flooding. | Priority/ High | Public Works, Planning & Building | General Fund, Grants |
| **12** | New | Flooding | Implement projects identified in the Monterey Peninsula Region Stormwater Resource Plan to increase resilience to storms over time. | Priority/ Moderate | Public Works | General Fund, Grants |
| **13** | Ongoing/ Continuous | Drought, Flooding | Continue to implement stormwater recapture efforts, which provide the dual benefit of capturing rain flow for irrigation and other purposes while increasing capacity of the existing system. | Priority/ High | Public Works, Planning & Building | General Fund, Grants |
| **14** | New | Utility Interruption, Wildfire, Severe Weather | Update the City's Zoning Code to strengthen requirements for new development to underground utilities. | Priority/ Moderate | Planning | General Fund, Grants |

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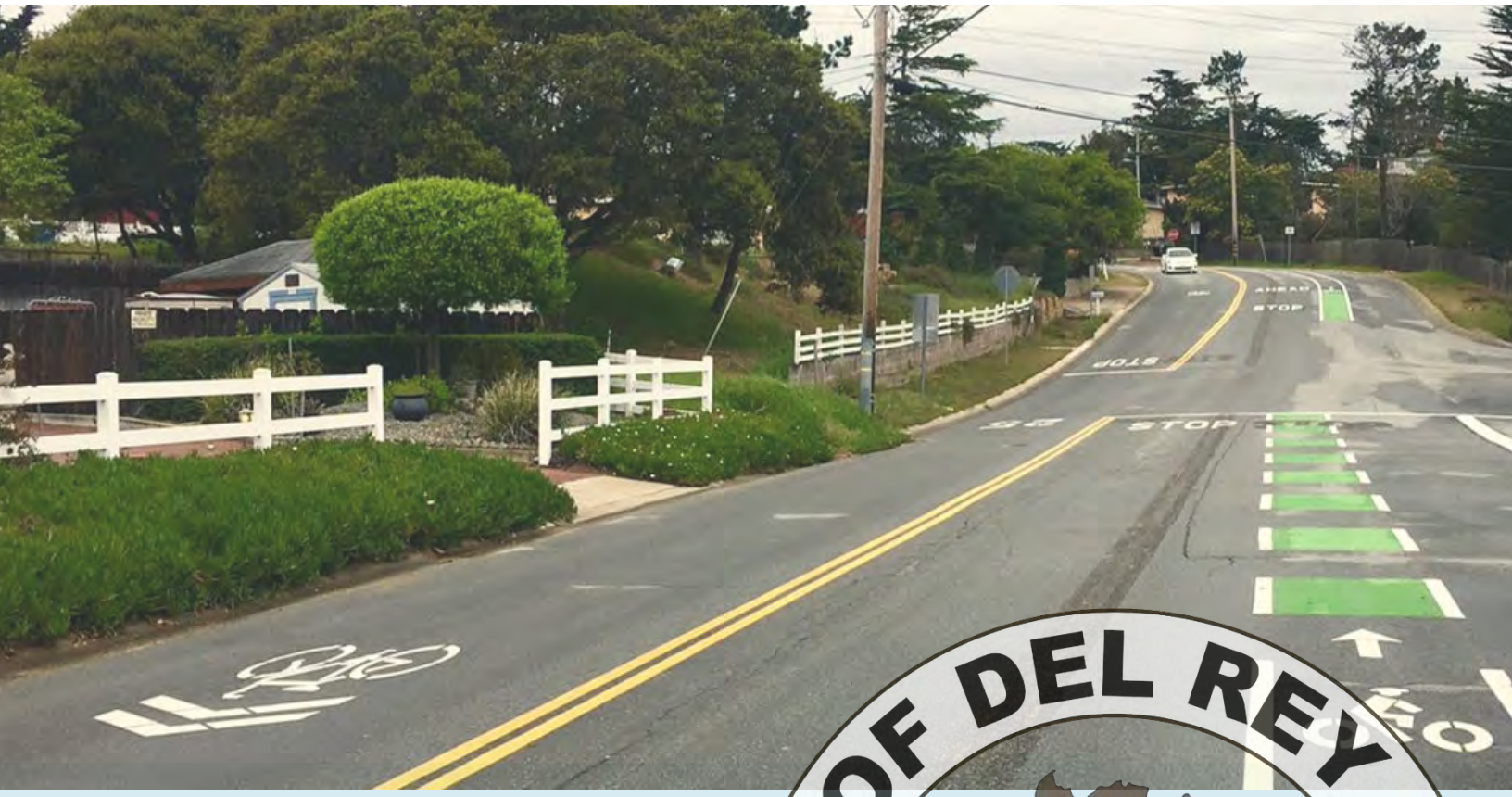
# ANNEX C:
# CITY OF DEL REY OAKS




## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

CITY OF DEL REY OAKS
INCORPORATED 1953

# C. CITY OF DEL REY OAKS

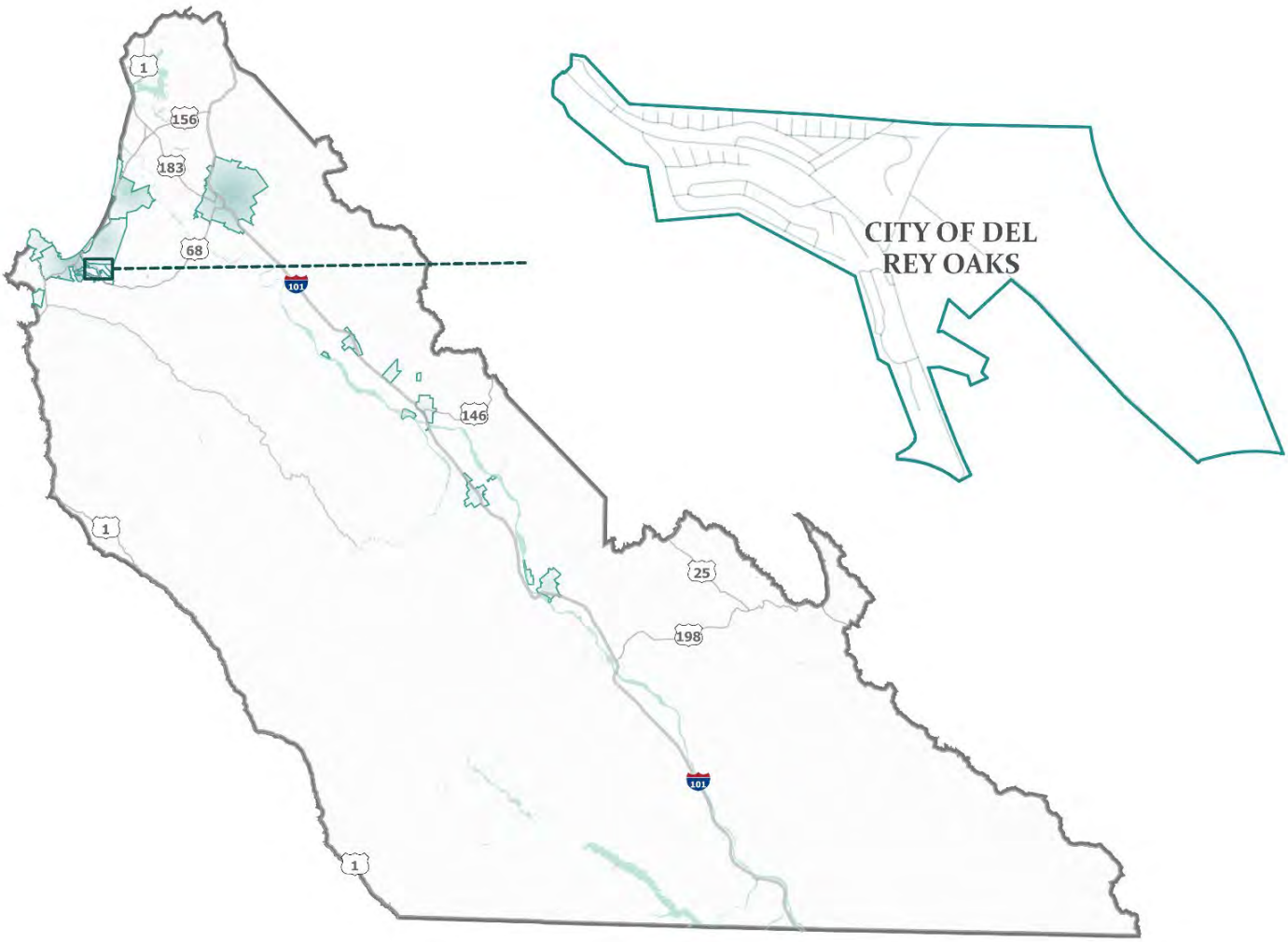
## C.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Jeff Hoyne
Chief of Police
650 Canyon Del Rey Blvd.
Del Rey Oaks, CA 93940
(831) 394-8511
JHoyne@delreyoaks.org

**Alternate Point of Contact**
Chris Bourquin
Police Commander
650 Canyon Del Rey Blvd.
Del Rey Oaks, CA 93940
(831) 394-8511
cberkwin@delreyoaks.org

## C.2 COMMUNITY PROFILE

### C.2.1 LOCATION



### C.2.2 GEOGRAPHY AND CLIMATE

Del Rey Oaks is a small city, approximately half a square mile in size, nestled in a narrow-wooded canyon (Canyon Del Rey) between the cities of Seaside and Monterey. State Highway 218 forms the central spine of the community, which is primarily a "bedroom community" with most private land devoted to residential use. The city has many natural habitats including the Frog Pond, a 17-acre wetland preserve managed by the Monterey Peninsula Regional Park District, and Del Rey Park which features Old Town Hall for community events.

### C.2.3 HISTORY

Prior to incorporation, the town was called Del Rey Woods. The Del Rey Oaks post office opened in 1968.The City of Del Rey Oaks was incorporated in 1953.

### C.2.4 POPULATION

The City has population of 1,592 people, a slight decrease (2%) since 2010.

### C.2.5 GOVERNING BODY FORMAT

Del Rey Oaks is a General Law city. The City Council consists of an elected Mayor holding a two-year term and four Council Members elected at large for four-year staggered terms.

### C.2.6 ECONOMY AND TAX BASE

Del Rey Oaks is primarily a residential community. The City also received sales tax revenues from the Stone Creek Shopping Center at Highway 68 and Canyon Del Rey Road, and the Safeway at Canyon Del Rey and Fremont Boulevard.

## C.3 PLANNING PROCESS

The City of Del Rey Oaks followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Del Rey Oaks held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on September 21, 2021. Key stakeholders present at the meeting included:

- John Guertin, City Manager
- Jeff Hoyne, Chief of Police
- Chris Bourquin, Police Commander
- Dave Nava, Division Chief, Seaside Fire

## C.4 LAND USE AND DEVELOPMENT

The Del Rey Oaks General Plan was adopted in 1997. The City has a total land area of 295 acres, or 0.45 square miles. The City is primarily built out, except for the Fort Ord lands annexed in 1997. The City is predominately a "bedroom community" with about 40% of their land devoted to residential uses.

Recent commercial development includes the Stone Creek Village Shopping Center located at the intersection of highways 218 and 68. Significant non-residential growth is planned for the Fort Ord lands. The City will begin an update of their General Plan in the near future.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The Del Rey Oaks Safe Growth Survey was completed by all stakeholders listed above during the Mitigation Planning Meeting. The results are summarized in *Table C-1*.

**Table C-1**
**City of Del Rey Oaks Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 4.00 | 3.75 |
| Transportation | 4.33 | 3.33 |
| Environmental Management | 4.00 | 3.17 |
| Public Safety | 5.00 | 3.33 |
| Zoning Ordinance | 3.50 | 3.38 |
| Subdivision Regulations | 3.00 | 2.83 |
| Capital Improvement Program & Infrastructure Policies | 5.00 | 2.67 |
| Building Code | 5.00 | 3.50 |
| Economic Development | 5.00 | 3.00 |
| **Average Survey Ratings** | **4.31** | **3.22** |

## C.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Del Rey Oak's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to City of Del Rey Oaks is included in this Annex.

The City of Del Rey Oak's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table C-2* displays the results of the hazard risk ranking exercise that was performed by the City of Del Rey Oak's Planning Team.

**Table C-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Del Rey Oaks**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | - | - | - | - | - | - |
| Coastal Erosion | - | - | - | - | - | - |
| Coastal Flooding | - | - | - | - | - | - |
| Cyber-Attack | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Dam Failure | - | - | - | - | - | - |
| Drought & Water Shortage | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Earthquake | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Epidemic | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Extreme Cold & Freeze | - | - | - | - | - | - |
| Extreme Heat | - | - | - | - | - | - |
| Flash Flood | - | - | - | - | - | - |
| Hazardous Materials Incident | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Invasive Species | 1.0 | 1.0 | 1.0 | 1.0 | 4.0 | Negligible |
| Levee Failure | - | - | - | - | - | - |
| Localized Stormwater Flooding | 1.0 | 2.0 | 2.0 | 1.0 | 6.0 | Slight |
| Mass Migration | - | - | - | - | - | - |
| Pandemic | 3.0 | 4.0 | 3.0 | 3.0 | 13.0 | High |
| Riverine Flooding | 2.0 | 1.0 | 2.0 | 2.0 | 7.0 | Possible |
| Sea Level Rise | - | - | - | - | - | - |
| Severe Winter Storms | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Slope Failure | 1.0 | 1.0 | 1.0 | 1.0 | 4.0 | Negligible |
| Targeted Violence | 1.0 | 1.0 | 1.0 | 1.0 | 4.0 | Negligible |
| Terrorism | 2.0 | 2.0 | 3.0 | 3.0 | 10.0 | Moderate |
| Tsunami | - | - | - | - | - | - |
| Utility Interruption/ PSPS | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Water Contamination | 1.0 | 1.0 | 3.0 | 3.0 | 8.0 | Possible |
| Wildfire | 2.0 | 2.0 | 3.0 | 3.0 | 10.0 | Moderate |
| Windstorms | - | - | - | - | - | - |

### C.5.1 AGRICULTURAL EMERGENCIES

There is no agricultural land located within the City, so therefore an agricultural emergency does not pose a direct threat. Since agriculture is a major economic driver in the County, an agricultural emergency could have indirect economic impacts on the City.

### C.5.2 COASTAL EROSION

The City is not located on the coast, and therefore coastal erosion is not a major threat. Coastal erosion does threaten agricultural land in the Salinas Valley, which if impacted could have indirect economic effects on the local economy. The City could also be impacted by other types of erosion not profiled in this Plan.

### C.5.3 DAM AND LEVEE FAILURE

*Dam Failure*

There is no population or property in the City located in a mapped dam inundation zone of any of the dams (Nacimiento, San Antonio, Los Padres, and Forest Lake) analyzed in this Plan.

*Levee Failure*

Based on Leveed Area from the US Army Corp of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic effect.

### C.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### C.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 728 residential and non-residential buildings in the City, with a total value of $332,512,614. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table C-3* summarizes population and property in the City exposed to liquefaction risk.

**Table C-3**
**Population and Property Exposed to Liquefaction Risk in Del Rey Oaks**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 331 | 23 | $8,997,524 | 45 | $35,628,204 |
| Moderate Liquefaction Susceptibility | 0 | 0 | $0 | 0 | $0 |

## C.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table C-4* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table C-4**
**Population and Property Exposed to Flooding Risk in Del Rey Oaks**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 331 | 8 | $4,376,220 | 51 | $40,252,457 |
| 500-Year Flood Zone | 1,000 | 584 | $276,553,256 | 129 | $35,245,077 |

## C.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table C-5* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table C-5**
**Population and Property Exposed to Hazardous Materials Incident Risk in Del Rey Oaks**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 1,000 | 546 | $255,848,392 | 139 | $55,959,358 |
| Fixed Source | 0 | 0 | $0 | 0 | $0 |

## C.5.8 HUMAN-CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## C.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

## C.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts.

FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table C-6.*

**Table C-6**
**Annualized Frequency and Exposure to Severe Weather Events in Del Rey Oaks**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.19 | Frequency (*Distinct Events)* | 0.03 |
| Exposed Population | 1,624 | Exposed Population | 1,624 |
| Exposed Building Values | $224,941,000 | Exposed Building Values | $224,941,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $35 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.08 | Frequency (*Distinct Events)* | 0.88 |
| Exposed Population | 1,624 | Exposed Population | 1,624 |
| Exposed Building Values | $224,941,000 | Exposed Building Values | $224,941,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $3,927,437 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.42 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 1,624 | Exposed Population | 0 |
| Exposed Building Values | $224,941,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $43 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

## C.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 1,406 people and $200,275,934in building value in the City is exposed to landslide risk. Exposure of population and property in the City to earthquake induced landslides is summarized in *Table C-7.*

**Table C-7**
**Population and Property Susceptible to Earthquake Induced to Landslides in Del Rey Oaks**

| Landslide Susceptibility | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High | 0 | 0 | $0 | 0 | $0 |
| Moderate | 292 | 129 | $58,655,845.00 | 22 | $8,670,542.00 |

## C.5.12 TSUNAMI

The City is not located in a mapped tsunami inundation zone.

## C.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

### C.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table C-8* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table C-8**
**Population and Property Exposed to Wildfire Risk in Del Rey Oaks**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 278 | 9 | $3,198,361 | 26 | $15,124,293 |
| Moderate Fire Threat | 870 | 155 | $75,592,991 | 64 | $39,098,693 |

### C.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures will have direct impacts on public health and infrastructure. Drought, flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the local economy. There will also be negative impacts to our ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

## C.6 CAPABILITY ASSESSMENT

The City of Del Rey Oaks performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table C-9*
- An assessment of administrative and technical capabilities is presented in *Table C-10*
- An assessment of fiscal capabilities is presented in *Table C-11*
- An assessment of education and outreach capabilities is presented in *Table C-12*
- Classifications under various community mitigation programs are presented in *Table C-13*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section C.6.1 in *Table C-14*
- An overall self-assessment of capability is presented in Section C.6.2 in *Table C-15*

**Table C-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • City Manager | Update underway |
| Capital Improvement Plan | ☒ | • City Manager<br>• Public Works | |
| Floodplain Management Plan | ☒ | • Public Works | |
| Open Space Management Plan | ☒ | • City Manager | Conservation Element of the General Plan |
| Stormwater Management Plan | ☒ | • Public Works | |
| Coastal Management Plan | ☐ | | N/A |
| Local Coastal Program | ☐ | | N/A |
| Climate Action/ Adaptation Plan | ☐ | | |
| Emergency Operations Plan | ☒ | • Police Department | |
| Continuity of Operations Plan | ☒ | • Police Department | Identified in EOP |
| Community Wildfire Protection Plan | ☒ | • Seaside Fire | |
| Evacuation Plan | ☒ | • Police Department | Multi-Hazard/ Wildfire Evacuation Plan |
| Disaster Recovery Plan | ☐ | | |
| Economic Development Plan | ☒ | • City Manager<br>• Planning Department | |
| Historic Preservation Plan | ☐ | | N/A |
| Transportation Plan | ☒ | • City Manager<br>• Planning Department | Circulation Element of the General Plan |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works | Flood Damage Prevention Ordinance (Municipal Code 15.44) |
| Zoning Ordinance | ☒ | • Planning Department | |
| Subdivision Ordinance | ☒ | • Planning Department | |
| Site Plan Review Requirements | ☒ | • Planning Department | |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | |
| Building Code | ☒ | • Building Inspector | |
| Fire Prevention Code | ☒ | • Seaside Fire | |

**Table C-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Planning Department | In addition to contract planning and engineering services |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Building Inspector | In addition to contract planning and engineering services |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Building Inspector | In addition to contract planning and engineering services |
| Building Inspector | ☒ | • Building Inspector | |
| Emergency Manager | ☒ | • Police Department | Chief of Police |
| Floodplain Manager | ☒ | • Public Works | City Engineer |
| Land Surveyors | ☒ | | Contract as needed |
| Resource development staff or grant writers | ☒ | • City Manager<br>• City Clerk | |
| Public Information Officer | ☒ | • City Manager<br>• Police Department | |
| Scientist(s) familiar with the hazards of the community | ☐ | | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Planning Department<br>• Police Department<br>• Seaside Fire | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Monterey County | Contract as needed |
| Maintenance programs to reduce risk | ☒ | • Public Works | Annual creek maintenance, fire fuel reduction, tree clearing |
| Warning systems/services | ☒ | • Monterey County | Everbridge/ Nixle |
| Mutual Aid Agreements | ☒ | • Police Department<br>• Seaside Fire | |

**Table C-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • City Manager | |
| Capital Improvements Project Funding | ☒ | • Public Works | |
| Special Purpose Taxes | ☒ | • City Manager<br>• Public Safety | Gas Tax, Public Safety Tax |

**Table C-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | |
| Development Impact Fees | ☒ | • Planning Department | |
| General Obligation Bonds | ☒ | • City Manager | Could issue as needed |
| Special Tax and Revenue Bonds | ☒ | • City Manager<br>• Public Safety | |
| Community Development Block Grants (CDBG) | ☒ | • City Manager | |
| Other: | • Wildfire Fuel Mitigation Grants<br>• Parks and RTSP Grants | | |

**Table C-12**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☒ | • Sustainable Del Rey Oaks | |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • City Clerk<br>• Seaside Fire | Outreach on website and in bi-annual city newsletter, in addition to community events |
| Natural disaster or safety related school programs | ☐ | | N/A |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table C-13**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | Yes | 2 | - |
| *StormReady* Certification | No | - | - |
| *TsunamiReady* Certification | No | - | - |
| *Firewise Communities* Certification | No | - | - |

*Political Capability*

Overall, political capability in the City is moderate. A good example of political capability in the City is the consolidation of the Police Department in 2018, which increased the size and capability of the Department and was supported by citizens and the Council. There is also consensus among the current City Council to move forward with a General Plan update.

## C.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table C-14**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Sherman Low, City Engineer |
| **NFIP Community Number:** | 060197 |
| **Flood Insurance Policies in Force:** | 19 |
| Insurance Coverage in Force: | $6,577,500 |
| Written Premium in Force: | $50,436 |
| **Total Loss Claims:** | 1 |
| Total Payments for Losses: | $750 |
| **Adopted Regulations that meet NFIP Requirements:** | |
| • Flood Damage Prevention Ordinance (Municipal Code 15.44) | |
| **Date of last NFIP Community Assistance Visit (CAV):** | |
| Unknown. | |
| **Higher standards that exceed minimum NFIP requirement:** | |
| None. | |
| **Additional floodplain management provisions:** | |
| None. | |
| **Floodplain management activities performed that go beyond FEMA minimum requirements:** | |
| • Annual creek maintenance program | |
| • Storm drain inspections and maintenance | |
| • Major projects to address property flooding including rebuilding an intersection and installing larger drains each to address property flooding | |
| **Existing impediments to running an effective NFIP program:** | |
| Lack of staff capacity. | |
| **Specific actions that are ongoing or considered related to continued compliance with the NFIP:** | |
| The City will continue to do the required actions to maintain NFIP compliance. | |

## C.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table C-15**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | High |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Moderate |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## C.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## C.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new

possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.
- **Multi-Hazard/ Wildfire Evacuation Plan**: Information from the hazard mitigation plan is incorporated as appropriate.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## C.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Del Rey Oaks Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Del Rey Oaks are identified below:

- Primary hazard concerns include any event that threatens to shut down State Highway 218, the central spine and main transportation corridor providing ingress and egress to all areas within the City.
- Other identified critical community assets that must be protected from hazard risks include City Hall, the main pump station (located across the street from City Hall), the Public Works yard, and access to/from the school bus facility.
- The City is the law enforcement response agency for the Monterey Airport and in the event of an incident at the airport, the City would need to manage their resources carefully since they would likely be stretched thin.
- The City Hall/ Police Station Building is a critical facility that does not have a backup generator. The City would like to ensure this facility is self-sufficient in the event of a power outage.

## C.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Del Rey Oaks Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table C-17* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table C-16* includes the status of actions completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table C-16**
**City of Del Rey Oaks Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **1** | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary. | **Completed/ Ongoing** | This has been completed and will be continued on an as needed basis. |
| **3** | Develop an unreinforced masonry grant program that helps correct earthquake-risk nonmasonry building problems, including chimney bracing and anchoring water heaters. | **Deleted** | The City does not have the bandwidth to operate a residential program and there is little to no unreinforced masonry buildings in the City. |
| **4** | Examine and mitigate critical infrastructure that has been identified as currently being too narrow to ensure the safe transportation of truck loads within Monterey County. | **Completed** | The City examined this problem and determined this was a risk that did not need mitigation. |

**Table C-17**
**City of Del Rey Oaks Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | **Ongoing/ Continuous** | All | Develop a sustained public outreach program that encourages consistent hazard mitigation content, including providing information online, in the newspaper, and in the annual City newsletter. | Priority / High | City Clerk | General Funds |
| **2** | **Ongoing/ Continuous** | Wildfire | Continue to conduct current fuel management programs and investigate and apply new and emerging fuel management techniques. | Priority / High | Public Works, Seaside Fire | General Funds and Grants |
| **3** | **New/ Mid-term** | All, Earthquake | Ensure the redundancy and resilience of municipal infrastructure, including installing a backup generator in the City Hall/ Police Station facility and planning for power outages. | Priority / High | City Manager, Police Department | General Funds and Grants |
| **4** | **New/ Long-term** | All, Flooding, Earthquake, Utility Interruption | Identify risks associated with aging water and sewer lines. | Priority / Moderate | Public Works, Seaside Sanitation | |
| **5** | **Ongoing/ Continuous** | Flooding | Continue annual creek maintenance program in order to reduce flood risk. | Priority / Moderate | Public Works | |
| **6** | **New/ Mid-term** | All | Begin the General Plan update and include relevant information on hazards in the Safety Element. | Priority / High | City Manager, Planning Department | |
| **7** | **Ongoing/ Continuous** | Wildfire, Hazardous Materials Incidents | Continue wildfire fuel risk abatement on the City's Fort Ord property and continue routine inspections of encampments in order to address fire and hazardous materials risks. | Priority / Moderate | Public Works, Police Department | |

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# ANNEX D: CITY OF GONZALES

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

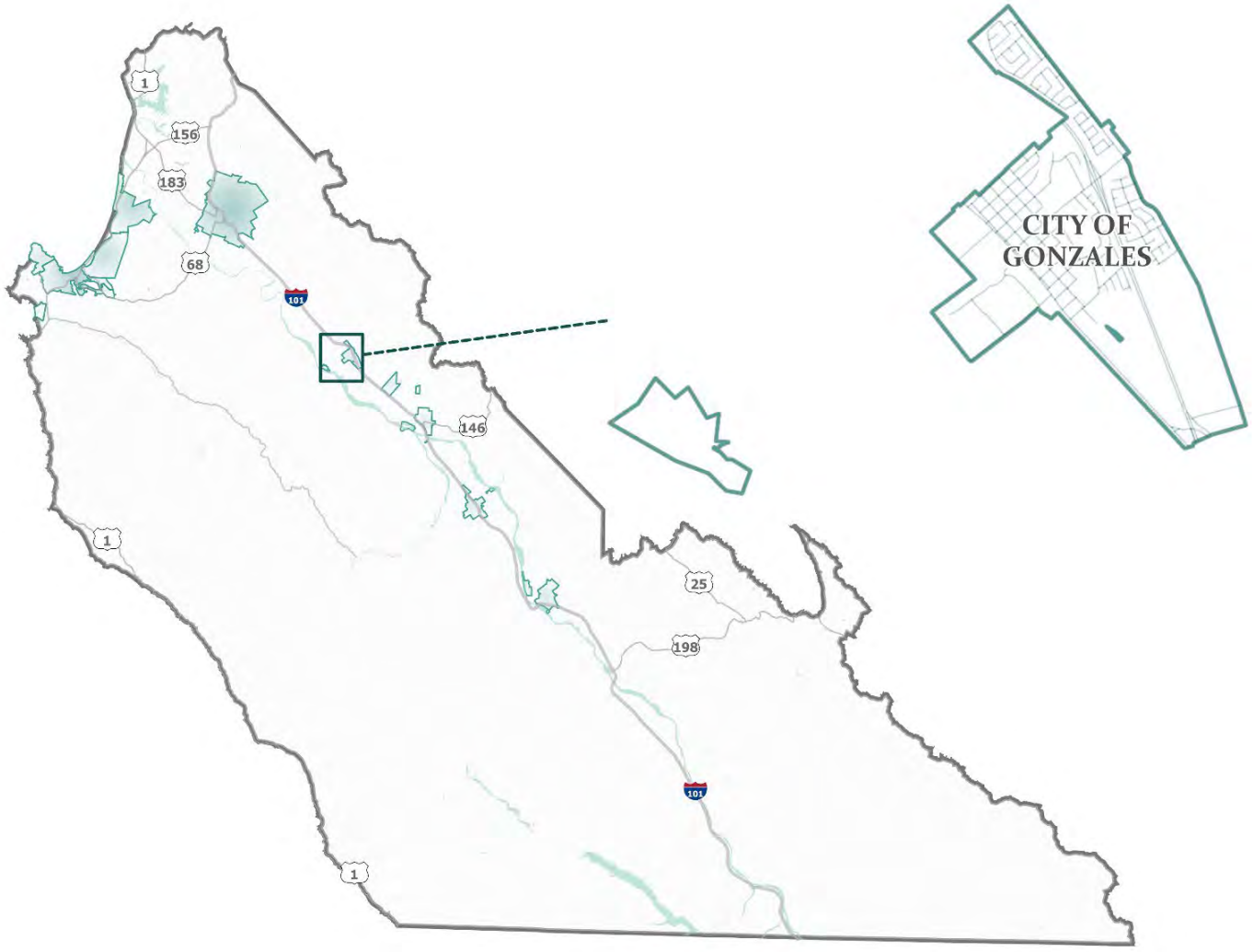
# D. CITY OF GONZALES

## D.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Jason Muscio
Fire Chief/Fire Marshall
Gonzales Fire Department
147 4th Street
Gonzales, CA 93926
jmuscio@ci.gonzales.ca.us

## D.2 COMMUNITY PROFILE

### D.2.1 LOCATION



### D.2.2 GEOGRAPHY AND CLIMATE

Gonzales is a small city of nearly 2 square miles surrounded by surrounded by prime agricultural land in the heart of the Salinas Valley. The City is located along Highway 101, 17 miles south of Salinas and nine miles north of Soledad. The city maintains a small-town character and rural atmosphere consistent with its agricultural heritage, and in so doing, has concentrated on improving its historic downtown while also conserving farmland on the city's perimeter.

### D.2.3 HISTORY

The town of Gonzales was established in 1874 on land previously deeded from Mexico to Teodoro Gonzales, a member of the Mexican Army. He left his land to his sons, who developed the layout of the town. The earliest recorded population of Gonzales was in 1894, when an estimated 500 people resided in the town. The Southern Pacific Railroad had been in place almost two years when the town was established, tracks connected Soledad and Salinas had been laid through the area in 1872 Later, a depot was built in the City to service freight and passenger trains.

Cattle and grain raising dominated the area until the 1890s when Swiss immigrants founded dairies. At the turn of the century, the Alpine Condensary was established to produce condensed milk, a process originated by a local resident. In the 1920s, dairy farming gave way to row crops which thrived because of rich soils and advancements in irrigation, machinery, and transportation. The first schoolhouse was built in 1874. The Gonzales Baptist Church was built in 1884 and still holds worship services at the corner of Fourth and Day Streets. In January 1947, Gonzales residents voted to incorporate the City. The most significant change after incorporation was the relocation of Highway 101 in the 1960s.

### D.2.4 POPULATION

The City of Gonzales has a population of 8,647 people (2020 Census), a 5.6% increase since 2010.

### D.2.5 GOVERNING BODY FORMAT

The City of Gonzalez has a Council-Manager form of government. The five-member City Council is elected at large. The Mayor is elected every two years and Council Members are elected every four years.

### D.2.6 ECONOMY AND TAX BASE

Gonzales is an established regional leader in agricultural-technology and innovation, environmental awareness, and sustainable practices. As an agriculturally based city, the City of Gonzales is well served with the types of businesses that supply services to the agricultural industry. Some of the City's most successful small-scale business operations are agricultural service related and include agricultural service and supply, agricultural equipment sales and service, farm supply and irrigation services, seedlings, warehousing, agricultural equipment servicing and repair. The farmlands surrounding the City of Gonzales contribute to its prominence as an agricultural business center. Head and leaf lettuce, broccoli, cauliflower, asparagus, and wine grapes are grown in the fields around the City. The City has several notable food processing/ manufacturing and fresh vegetable processing and cooling businesses. Many local businesses are directly involved in the Ag-Tech revolution as it is developing to face current challenges and those we will face in the near future.

Known as the 'Wine Capital of Monterey County" and located at the base of the Santa Lucia Appellation, Gonzales is a short distance from many world class wineries, with more than 46 vineyard properties and approximately 5,900 acres in production. Gonzales also has an agricultural tourism industry, which enables those interested in knowing where and how their food is grown to have a first-hand experience. To further strengthen agriculture as a key part of its economic base, the City worked successfully to develop the Gonzales Agricultural Business Park, a 50-acre state-of-the-art facility on the west side of the community to enhance the industrial area and central business district.

## D.3 PLANNING PROCESS

The City of Gonzales followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Gonzales held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on September 14, 2021. Key stakeholders present at the meeting included:

- Mark L. Hartunian, Deputy City Manager
- Keith Wise, Police Chief
- Patrick Dobbins, Public Works Director
- Matthew Sundt, Community Development Director
- Jason Muscio, Fire Chief

## D.4 LAND USE AND DEVELOPMENT

The *Gonzales 2010 General Plan* is a long-range plan with an urban growth area containing approximately 2,150 acres of land for urbanization. The General Plan update focuses substantial future urban development to the east of Highway 101, thereby enabling preservation of the majority of the most productive agricultural soils near the City. The 2010 General Plan establishes a long-term vision to discourage incremental development that could result in an incoherent or sprawling development pattern, with major objectives that include creating a self-sustaining local economy, preserving the small town-character, discouraging suburban sprawl, protecting the best agricultural lands, building energy efficient projects, and providing residents abundant opportunities to enjoy open space and the natural environment.

Residential use in Gonzales represents approximately one-third of all land use, and of this amount about 80% is single-family residential housing. Industrial use represents almost 13% of land use. Streets and highways represent approximately 17%, and public/ semipublic use represents approximately 8%. Commercial use represents about 2% of land use. While there is some mixing of land uses, most of the residential, industrial, commercial, and public areas are clearly separated. Given the lack of physical constraints and the precedent of new housing and shopping areas east of Highway 101, Gonzales is a likely candidate for additional growth during the coming decades. The main areas of growth in the City are industrial, on the west end of the City, and residential and retail on the east end of the City.

*Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The Gonzales Safe Growth Survey was completed by Matthew Sundt, Community Development Director for the City of Gonzales. The results are summarized in *Table D-1*.

**Table D-1**
**City of Gonzales Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 4.00 | 5.00 |
| Transportation | 4.33 | 5.00 |
| Environmental Management | 5.00 | 4.67 |
| Public Safety | 4.33 | 4.33 |
| Zoning Ordinance | 3.00 | 3.00 |
| Subdivision Regulations | 3.00 | 5.00 |
| Capital Improvement Program & Infrastructure Policies | 3.67 | 4.67 |
| Building Code | 5.00 | 5.00 |
| Economic Development | 5.00 | 5.00 |
| **Average Survey Ratings** | **4.15** | **4.63** |

## D.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Gonzales's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Gonzales is included in this Annex.

The City of Gonzales's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/

catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**.

*Table D-2* displays the results of the hazard risk ranking exercise that was performed by the City of Gonzales's Planning Team.

**Table D-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Gonzales**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 2.6 | 2.4 | 2.6 | 2.6 | 10.2 | Substantial |
| Coastal Erosion | - | - | - | - | - | - |
| Coastal Flooding | - | - | - | - | - | - |
| Cyber-Attack | 2.3 | 2.0 | 2.6 | 3.0 | 9.9 | Moderate |
| Dam Failure | 1.4 | 1.4 | 2.0 | 2.0 | 6.8 | Possible |
| Drought & Water Shortage | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Earthquake | 2.6 | 2.6 | 3.0 | 3.0 | 11.2 | Substantial |
| Epidemic | 3.2 | 3.0 | 3.2 | 3.2 | 12.6 | High |
| Extreme Cold & Freeze | 1.8 | 1.8 | 1.6 | 1.6 | 6.8 | Possible |
| Extreme Heat | 2.2 | 2.2 | 2.4 | 2.4 | 9.2 | Moderate |
| Flash Flood | 1.8 | 1.6 | 1.8 | 1.8 | 7.0 | Possible |
| Hazardous Materials Incident | 2.2 | 2.0 | 2.6 | 2.4 | 9.2 | Moderate |
| Invasive Species | 1.4 | 1.4 | 1.4 | 1.6 | 5.8 | Slight |
| Levee Failure | 1.6 | 1.6 | 1.8 | 1.8 | 6.8 | Possible |
| Localized Stormwater Flooding | 2.4 | 2.2 | 2.4 | 2.4 | 9.4 | Moderate |
| Mass Migration | 1.3 | 1.3 | 1.5 | 1.5 | 5.5 | Slight |
| Pandemic | 2.8 | 2.6 | 2.6 | 3.0 | 11.0 | Substantial |
| Riverine Flooding | 1.8 | 1.6 | 1.8 | 1.8 | 7.0 | Possible |
| Sea Level Rise | - | - | - | - | - | - |
| Severe Winter Storms | 2.0 | 1.8 | 2.0 | 2.0 | 7.8 | Possible |
| Slope Failure | 1.6 | 1.6 | 1.8 | 1.8 | 6.8 | Possible |
| Targeted Violence | 1.2 | 1.4 | 1.6 | 1.6 | 5.8 | Slight |
| Terrorism | 1.2 | 1.2 | 1.4 | 1.6 | 5.4 | Slight |
| Tsunami | - | - | - | - | - | - |
| Utility Interruption/ PSPS | 2.4 | 2.6 | 2.6 | 2.6 | 10.2 | Substantial |
| Water Contamination | 1.6 | 1.6 | 2.0 | 2.0 | 7.2 | Possible |
| Wildfire | 1.8 | 1.8 | 1.6 | 1.6 | 6.8 | Possible |
| Windstorms | 1.4 | 1.4 | 1.4 | 1.4 | 5.6 | Slight |

### D.5.1 AGRICULTURAL EMERGENCIES

The agricultural industry is a major economic driver in the City. Agricultural disasters pose a serious threat to the local economy and populations directly employed by the agriculture industry.

### D.5.2 COASTAL EROSION

The City is not located on the coast, and therefore coastal erosion is not a major threat. Coastal erosion does threaten agricultural land in the Salinas Valley, which if impacted could have indirect economic effects on the local economy. The City could also be impacted by other types of erosion not profiled in this Plan.

### D.5.3 DAM AND LEVEE FAILURE

*Dam Failure*

There is no population or property in the City located in the dam inundation zones of the Los Padres and Forest Lake dams. *Table D-3* summarizes population and property in the City exposed to spillway and dam failure of the Nacimiento and San Antonio dams.

**Table D-3**
**Population and Property Exposed to Dam Failure Risk by Dam and Failure Type in Gonzalez**

| Dam Failure Scenario | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Nacimiento Spillway Failure | 0 | 0 | $0 | 8 | $818 |
| Nacimiento Dam Failure | 0 | 0 | $0 | 14 | $6,519,342 |
| San Antonio Spillway Failure | 0 | 0 | $0 | 0 | $0 |
| San Antonio Dam Failure | 0 | 0 | $0 | 18 | $7,384,413 |

*Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact on the City.

### D.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Drought also is often accompanied by extreme heat, exposing people to the risk of sunstroke, heat cramps and heat exhaustion. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most

significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### D.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 1,782 residential and non-residential buildings in the City, with a total value of $630,088,033. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table D-4* summarizes population and property in the City exposed to liquefaction risk.

**Table D-4**
**Population and Property Liquefaction Risk in Gonzalez**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 0 | 0 | $0 | 8 | $818 |
| Moderate Liquefaction Susceptibility | 4,296 | 388 | $102,456,287 | 349 | $178,050,637 |

### D.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table D-5* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table D-5**
**Population and Property Exposed to Flooding Risk in Gonzalez**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 3,432 | 54 | $24,099,061 | 55 | $48,318,809 |
| 500-Year Flood Zone | 0 | 0 | $0 | 0 | $0 |

### D.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances

will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table D-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table D-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in Gonzalez**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 6,758 | 1,303 | $437,053,854 | 471 | $193,033,361 |
| Fixed Source | 5,896 | 1,002 | $307,965,433 | 443 | $193,033,361 |

### D.5.8 HUMAN-CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

### D.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

### D.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip

code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts. FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table D-7.*

**Table D-7**
**Annualized Frequency and Exposure to Severe Weather Events in Gonzales**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.34 | Frequency (*Distinct Events)* | 0.09 |
| Exposed Population | 5,029 | Exposed Population | 5,029 |
| Exposed Building Values | $324,436,000 | Exposed Building Values | $324,436,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $446 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.82 | Frequency (*Distinct Events)* | 1.28 |
| Exposed Population | 5,029 | Exposed Population | 79 |
| Exposed Building Values | $324,436,000 | Exposed Building Values | $5,109,534 |
| Expected Annual Loss of Building Value | $1 | Expected Annual Loss of Building Value | $130,631 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.40 | Frequency (*Event-Days)* | 0.06 |
| Exposed Population | 5,029 | Exposed Population | 82 |
| Exposed Building Values | $324,436,000 | Exposed Building Values | $7,862,000 |
| Expected Annual Loss of Building Value | $54 | Expected Annual Loss of Building Value | $15 |

Source: FEMA National Risk Index

### D.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 180 people and $16,644,258 in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible earthquake induced to landslides.

### D.5.12 TSUNAMI

The City is not located in a mapped tsunami inundation zone.

### D.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

### D.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table D-8* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table D-8**
**Population and Property Exposed to Wildfire Risk in Gonzalez**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 1,033 | 0 | $0 | 4 | $1,318,537 |
| Moderate Fire Threat | 3,554 | 107 | $50,153,625 | 75 | $135,295,821.00 |

### D.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures will have direct impacts on public health and infrastructure. Drought, flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the local economy, along with changes to agriculture and crops, which are a critical backbone of the City's economy.

## D.6 CAPABILITY ASSESSMENT

The City of Gonzales performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table D-9*
- An assessment of administrative and technical capabilities is presented in *Table D-10*
- An assessment of fiscal capabilities is presented in *Table D-111*
- An assessment of education and outreach capabilities is presented in *Table D-12*
- Classifications under various community mitigation programs are presented in *Table D-13*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section D.6.1 in *Table D-14*
- An overall self-assessment of capability is presented in Section D.6.2 in *Table D-15*

**Table D-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Development | |
| Capital Improvement Plan | ☒ | • Public Works | |
| Floodplain Management Plan | ☒ | • Public Works | |
| Open Space Management Plan | ☒ | • Public Works | |
| Stormwater Management Plan | ☒ | • Public Works | |
| Coastal Management Plan | ☐ | | |
| Local Coastal Program | ☐ | | |
| Climate Action/ Adaptation Plan | ☒ | • Community Development | |
| Emergency Operations Plan | ☒ | • Fire Department | Under review for re-adoption by City Council |
| Continuity of Operations Plan | ☒ | • City Manager | |
| Community Wildfire Protection Plan | ☐ | | |
| Evacuation Plan | ☒ | • Fire Department<br>• Police Department | Under review |
| Disaster Recovery Plan | ☒ | • All Departments | |
| Economic Development Plan | ☒ | • Community Development | |
| Historic Preservation Plan | ☒ | • Community Development | |
| Transportation Plan | ☒ | • Community Development | |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works | |
| Zoning Ordinance | ☒ | • Community Development | |
| Subdivision Ordinance | ☒ | • Community Development | |
| Site Plan Review Requirements | ☒ | • Community Development | |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | |
| Building Code | ☒ | • Community Development | |
| Fire Prevention Code | ☒ | • Fire Department | |

**Table D-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Development | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Community Development<br>• Public Works | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Community Development<br>• Public Works | |
| Building Inspector | ☒ | • Community Development | |
| Emergency Manager | ☒ | • City Manager | |
| Floodplain Manager | ☒ | • Public Works | |
| Land Surveyors | ☒ | • Public Works | |
| Resource development staff or grant writers | ☒ | • Contractual Services<br>• All Departments | |
| Public Information Officer | ☒ | • City Manager | |
| Scientist(s) familiar with the hazards of the community | ☐ | | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Fire Department | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Public Works | |
| Maintenance programs to reduce risk | ☒ | • Public Works | |
| Warning systems/services | ☒ | • Fire Department | |
| Mutual Aid Agreements | ☒ | • Police Department<br>• Fire Department<br>• Public Works | |

**Table D-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Finance | |
| Special Purpose Taxes | ☒ | • Finance | |
| Stormwater Utility Fees | ☐ | | |

**Table D-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☒ | • Finance | |
| Development Impact Fees | ☒ | • Finance | |
| General Obligation Bonds | ☒ | • Finance | |
| Special Tax and Revenue Bonds | ☒ | • Finance | |

**Table D-12**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☐ | | |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • Fire Department<br>• Public Works | |
| Natural disaster or safety related school programs | ☒ | • Fire Department | |
| Public-private partnership initiatives addressing disaster-related issues | ☒ | • City Manager | |

**Table D-13**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | Yes | 3/3X | |
| *StormReady* Certification | No | - | - |
| *TsunamiReady* Certification | No | - | - |
| *Firewise Communities* Certification | No | - | - |

## D.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table D-14**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Patrick Dobbins, City Engineer |
| **NFIP Community Number:** | 060198 |
| **Flood Insurance Policies in Force:** | 14 |

**Table D-14**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| Insurance Coverage in Force: | $5,474,500 |
| Written Premium in Force: | $18,502 |
| **Total Loss Claims:** | 10 |
| Total Payments for Losses: | $187,853 |

**Adopted Regulations that meet NFIP Requirements:**

- Gonzales City Code CHAPTER 14.04 FLOODPLAIN MANAGEMENT

**Date of last NFIP Community Assistance Visit (CAV):**
Unknown

**Higher standards that exceed minimum NFIP requirement:**
None identified.

**Additional floodplain management provisions:**
None identified.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**
None identified.

**Existing impediments to running an effective NFIP program:**
None identified.

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**
The City will continue to comply with NFIP requirements.

## D.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table D-15**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | Moderate |
| Education and Outreach Capability | Moderate |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## D.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

### D.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

#### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.
- **Climate Action Plan**: Highlights potential programs that could be implemented to reduce greenhouse gas emissions and discusses possible impacts of climate change.

#### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans

- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans

## D.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Gonzales Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Gonzales are identified below:

- The Fifth Street Overpass is a vital infrastructure asset for the city to protect from any damage or disruption caused by hazards, as it not only serves as critical transportation artery but is also used for all sewer and water lines that provide service for the city.
- The City's wastewater treatment facility is vulnerable to flooding along the Salinas River. It is currently located in a special flood hazard area and protected by two uncertified earthen levees, with privately-owned farmland in between. These levees, which have been overtopped in past flood events, should be bolstered to increase protection against future flood damages and service disruptions.
- Three schools are designated as community shelters (La Gloria Elementary, Fairview Middle, and Gonzales High) but currently the portable classrooms are deemed more structurally safe to seismic events.
- Past flood losses/claims have all occurred along the slough (and within the mapped special flood hazard area) on west side of city between First and Fifth Streets.
- Agricultural facilities are known to store extremely hazardous substances for production, such as ammonia, so hazardous materials events remain a primary concern for the City. Additionally, hazardous materials travel along Highway 101 and pose a hazardous materials threat.
- Highway 101 is the only lifeline/ingress egress route in the event of a major evacuation. A closure of the freeway would severely limit movement in the event of an evacuation.

- Utility interruption and Public Safety Power Shutoffs (PSPS) can significantly impact industrial uses in the City. Past PSPS events have resulted in millions of dollars of losses to the agricultural industry. Additionally, utility interruption and PSPS events can significantly impact telecommunications and cellular operations in the City, as the main cellular provider has no back-up generator.
- Drought is a major concern for the City. Long-term drought conditions could devastate the local economy.

## D.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Gonzales Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table D-17* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table D-16* includes the status of action previous plan completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table D-16**
**City of Gonzales Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **1** | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary. | **Completed** | Completed and ongoing as the City's grows. |
| **2** | Develop an unreinforced masonry grant program that helps correct earthquake-risk nonmasonry building problems, including | **Completed** | The City received grants to seismically retrofit the fire house. Additionally, the Fire Department inspects water heaters to ensure they are anchored. |

**Table D-16**
**City of Gonzales Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| | chimney bracing and anchoring water heaters. | | |
| **4** | Identify and carry-out minor flood and stormwater management projects that would reduce damage to infrastructure and damage due to local flooding/inadequate drainage. | **Continuous** | This action is included in the 2021 Action Plan, but it is of note that the City completed a variety of storm drain upgrades over the previous planning cycle, including a new lift station and installation of additional bioswales. |
| **7** | Implement adopted climate action plan. | **Completed** | The City completed and implemented, Climate Action Plans in 2013 and 2018. |
| **11** | Improve disaster response training between all responders. | **Completed/ Ongoing** | The City completed two emergency drills across all departments. City Council and Management staff have all completed NIMS/ICS training. The City also conducts a drill annually on the anniversary of the Loma Prieta Earthquake and will continue to ensure that at least one major emergency drill is completed every year. |
| **13** | Develop public-private partnerships with local businesses to increase business and government resilience. | **Completed/ Ongoing** | This is included in the 2021 Action Plan because of its strategic importance, but it should be noted that the City created a new position, Director of Strategic Partnerships. During Covid-19 the City worked in conjunction with local business on a variety of initiatives and has built very strong partnerships with the business community. |

**Table D-17**
**City of Gonzales Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | **Continuous / Ongoing** | Flooding | Explore mitigation opportunities for repetitively flooded properties, and if necessary, carry-out acquisition, relocation, elevation, and flood-proofing measures to protect these properties. | Priority / High | Public Works Department | Federal and State Grants (e.g., FMA grants) |
| **2** | **Continuous / Ongoing** | Flooding | Identify and carry-out minor flood and stormwater management projects that would reduce damage to infrastructure and damage due to local flooding/ inadequate drainage. | Priority / High | Public Works Department | Federal and State Grants (e.g., PDM grants) |
| **3** | **Continuous / Ongoing** | All | Examine and mitigate critical infrastructure that has been identified as currently being too narrow to ensure the safe transportation of truckloads within Monterey County. | Priority / High | Planning Department | Federal and State Grants (e.g., PDM grants) |
| **4** | **Continuous / Ongoing** | All | Promote Disaster Resilient Community, including the creation of a Community Emergency Response Team (CERT) and continued public education for disaster resilience. | Priority / High | Office of Emergency Services | Local General Fund, PG&E Grants |
| **5** | **Continuous / Ongoing** | All | Monitor all existing critical facilities for susceptibility to impacts from natural and manmade disasters. | Priority / Low | Building Department | Local General Fund |
| **6** | **Continuous / Ongoing** | Flooding | Improve floodway management. | Priority / High | Public Works Department | Various Grants |
| **7** | **In Progress** | All | Improve Emergency Operations Center capability. | Priority / Moderate | Office of Emergency Services | Unknown, Grants Needed |
| **8** | **Continuous / Ongoing** | All | Develop and continue to build on existing public-private partnerships with local businesses to increase business and government resilience. | Priority / High | Community Engagement and Strategic Partnerships | Local General Fund |

**Table D-17**
**City of Gonzales Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **9** | **In Progress** | Flooding | Increase flood resilience of wastewater treatment facility. | Priority / Moderate | Public Works Department | Mitigation Grants Matched by Local Funds |
| **10** | **In Progress** | Drought | Develop redundant systems for water system resilience, including development of new wells. | Priority / Moderate | Public Works Department | Mitigation Grants Matched by Local Funds |
| **11** | **In Progress** | Climate Change | Continue work on Community Microgrid Project in order to increase energy independence and community resiliency. | Priority / High | Public Works Department | General Fund, Grants |
| **12** | **New** | All | Expand the wastewater treatment system. | Priority / Moderate | Public Works Department | General Fund, Grants |
| **13** | **In Progress** | All | Implement Enhanced Infrastructure Finance District (EIFD) for the new Agricultural Business Park. | Priority / Moderate | City Manager | General Fund |
| **14** | **New** | All | Build new Police Substation and Fire Station on the other side of Highway 101 in order to provide public safety services and support new residential development. | Priority / Moderate | Community Development Department | General Fund, Grants |

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# ANNEX E:
# CITY OF GREENFIELD

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

# E. CITY OF GREENFIELD

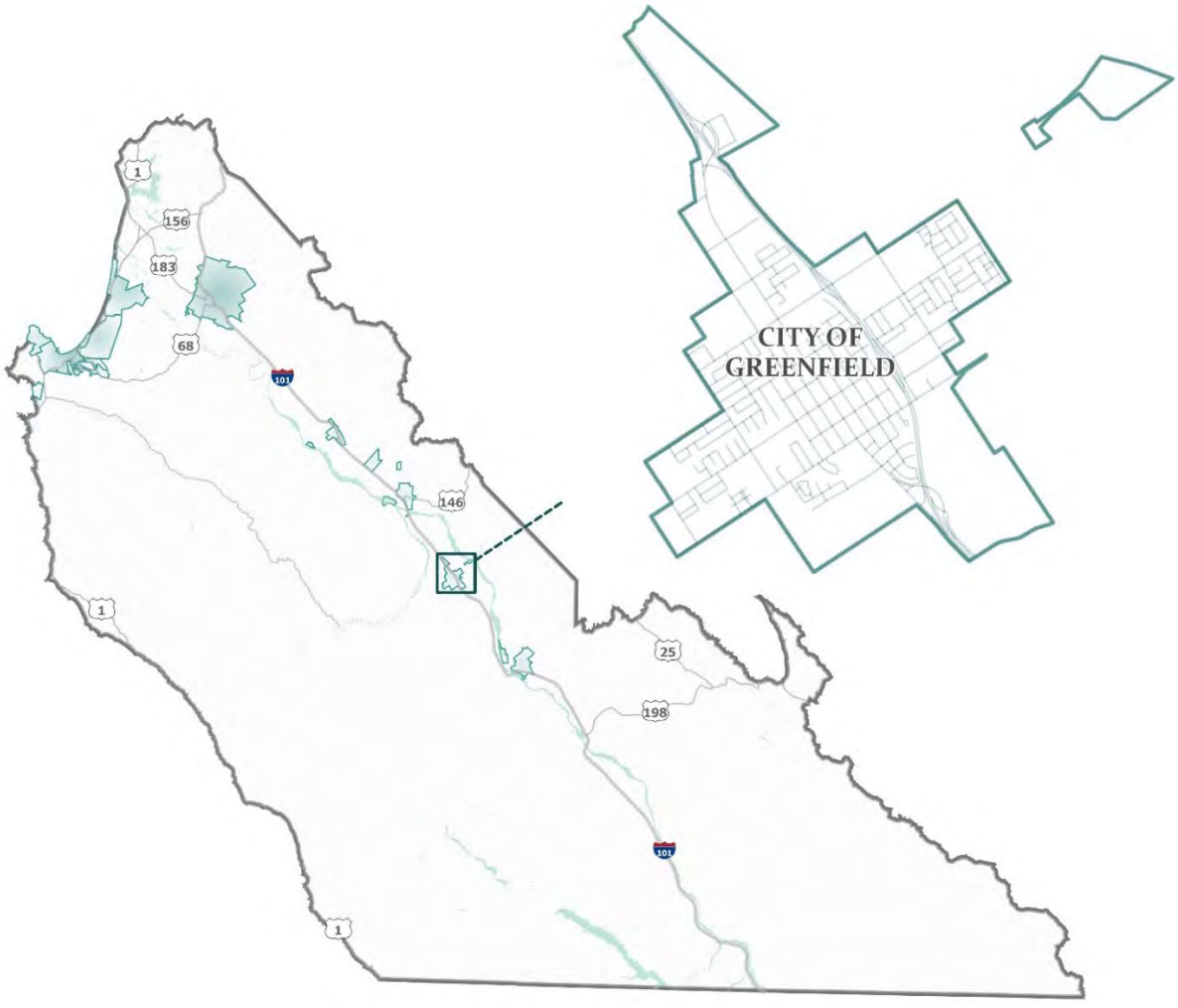
## E.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Chief Jim Langborg
Fire Chief
Greenfield Fire
380 Oak Avenue
Greenfield, CA 93927
(831) 674-5484
jlangborg@ci.greenfield.ca.us

**Alternate Point of Contact**
Paul Wood
City Manger
City of Greenfield
599 El Camino Real
PO Box 127
Greenfield, CA 93927
831-674-5591

## E.2 COMMUNITY PROFILE

### E.2.1 LOCATION



### E.2.2 GEOGRAPHY AND CLIMATE

The City of Greenfield is located in the heart of the Salinas Valley, formed by the Gabilan Mountains range to the east and the Santa Lucia Mountains range to the west. The City of Greenfield covers slightly more than 2 square miles along US Highway 101. Salinas, the county seat, is located 35 miles to the north. Soledad and Gonzales are located 8 and 17 miles north, respectively. King City is located 11 miles to the south. The climate for Greenfield is moderate with average temperatures around 40 degrees in winter and about 80 degrees in summer.

### E.2.3 HISTORY

The City of Greenfield, began as Clark Colony in April of 1905, created by a subdivision of 4,000 acres of valley bottomland by the California Home Extension Association, a branch of Rancho Arroyo Seco. A public drawing was held at their branch office in Los Angeles on April 5, 1905. The average price per acre was $37.50, including water rights.

The organization of the water distribution system, the Clark Colony Water Company, was formed on April 7, 1905. The organization would be in charge of distributing water to the stockholders who paid the debt at the rate of $25 for each of the subdivision's acres. With a water canal system and good growing conditions, people of Danish, Swiss and other nationalities from surrounding areas settled in Greenfield. The Clark Colony settlers then constructed the largest irrigation and domestic water supply system in the Salinas Valley. Today, the Clark Colony Water Company still holds 1916 Prior Rights guaranteeing delivery to its members a certain amount of water from the Arroyo Seco River before any other agencies' use of the river water.

On April 6, 1906, the district purchased a lot from Edward Greenfield for $33.75 along with two adjacent to the Arroyo Seco Development Company for $145.80. By 1906, local carpenters including R.D. Hall, Alfred Hansen and Al Leoni had completed a new school building on the property, located at El Camino Real and Walnut Avenue consisting of two classrooms with a library between them. Romie School District officially became Greenfield School District on July 1, 1909.

Clark Colony evolved into Clark City and was eventually renamed Greenfield, after the United States Postal Service informed the City that there were too many "Clark Cities" in the state. The name was picked to honor a long-time settler of the area, Mr. Greenfield, who was instrumental in the formation of the City and was active in public affairs of the City. Greenfield was recognized as a municipality by the State of California legislature and incorporated on January 7, 1947.

### E.2.4 POPULATION

The City of Greenfield has a population of 18,937 people, an increase of 16% since 2010. Greenfield is among Monterey County’s fastest growing cities, also experiencing an increase in population of nearly 30% between 2000 and 2010. The Association of Monterey Bay Area Governments projects that the population will grow to 24,912 by 2025 and 30,337 by 2035.

### E.2.5 GOVERNING BODY FORMAT

The City of Greenfield is run by a City Manager form of government, with a five-member City Council. The City Council is composed of a Mayor and four Council Members who are elected at large for four-year terms.

### E.2.6 ECONOMY AND TAX BASE

The City of Greenfield is a densely populated city that has a small-town charm that mixes rural and suburban lifestyles with ongoing agricultural activities, and comparatively affordable housing prices that has fueled a growing population of professional and skilled workers.

The City of Greenfield is located in one of the most productive agricultural areas in the world, the Salinas Valley. The area around Greenfield is also the heart of Monterey County's premier wine grape growing region due to favorable soils and climate with over twenty vineyards and wineries within a thirty-mile radius. Local tourism is increasing as more people are attracted to the area.

## E.3 PLANNING PROCESS

The City of Greenfield followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Greenfield held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on September 23, 2021. Key stakeholders present at the meeting included:

- Jim Langborg, Fire Chief
- Captain Carlos Vega, Administrative Fire Captain
- Paul Mugan, Planning Director
- Manuel Ayala, Public Works Division Manager

## E.4 LAND USE AND DEVELOPMENT

Greenfield adopted its General Plan in 2005. Between 1985 and 1990 Greenfield's growth kept pace with neighboring Salinas Valley cities, and this trend has generally continued in the period between 2000 and 2005. The growth of agriculture and related business and industries in the Greenfield area has contributed to the city's significant growth since 1970. The City of Greenfield currently contains over 1,000 acres of land within the City limits. Most of this area is currently built out or committed to urban land uses. Approximately 270 acres are undeveloped in the City limits. The largest land use is residential, which represents about 47% of the acreage in the City. Commercial and light industrial uses each constituted approximately 3%. Other uses were Public and Quasi-Public uses (19%), Agriculture (15%), mixed-use (3%) and Recreation & Open Space (less than 1%). 10% of the City's land was categorized as vacant.

#### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The Greenfield Safe Growth Survey was completed by Chief Jim Langborg, Fire Chief for the City of Greenfield Fire Department in collaboration with other key members of City Staff. The results are summarized in *Table E-1*.

**Table E-1**
**City of Greenfield Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 3.75 | 3.50 |
| Transportation | 2.67 | 3.33 |
| Environmental Management | 4.00 | 3.33 |
| Public Safety | 3.00 | 3.33 |
| Zoning Ordinance | 3.00 | 3.00 |
| Subdivision Regulations | 3.00 | 3.00 |
| Capital Improvement Program & Infrastructure Policies | 3.00 | 3.00 |
| Building Code | 4.00 | 4.00 |
| Economic Development | 3.00 | 4.00 |
| **Average Survey Ratings** | **3.27** | **3.39** |

## E.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Greenfield's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Greenfield is included in this Annex.

The City of Greenfield's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table E-2* displays the results of the hazard risk ranking exercise that was performed by the City of Greenfield's Planning Team.

**Table E-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Greenfield**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 3.0 | 4.0 | 3.0 | 3.0 | 13.0 | High |
| Coastal Erosion | - | - | - | - | - | - |
| Coastal Flooding | - | - | - | - | - | - |
| Cyber-Attack | 2.0 | 2.0 | 3.0 | 3.0 | 10.0 | Moderate |
| Dam Failure | 2.0 | 1.0 | 2.0 | 2.0 | 7.0 | Possible |
| Drought & Water Shortage | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Earthquake | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Epidemic | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Extreme Cold & Freeze | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Extreme Heat | 3.0 | 3.0 | 2.0 | 2.0 | 10.0 | Moderate |
| Flash Flood | 2.0 | 2.0 | 2.0 | 3.0 | 9.0 | Moderate |
| Hazardous Materials Incident | 2.0 | 2.0 | 3.0 | 3.0 | 10.0 | Moderate |
| Invasive Species | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Levee Failure | - | - | - | - | - | - |
| Localized Stormwater Flooding | 2.0 | 3.0 | 2.0 | 2.0 | 9.0 | Moderate |
| Mass Migration | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Pandemic | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Riverine Flooding | 2.0 | 3.0 | 2.0 | 3.0 | 10.0 | Moderate |
| Sea Level Rise | - | - | - | - | - | - |
| Severe Winter Storms | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Slope Failure | 1.0 | 1.0 | 1.0 | 1.0 | 4.0 | Negligible |
| Targeted Violence | 2.0 | 2.0 | 3.0 | 3.0 | 10.0 | Moderate |
| Terrorism | 2.0 | 1.0 | 3.0 | 3.0 | 9.0 | Moderate |
| Tsunami | - | - | - | - | - | - |
| Utility Interruption/ PSPS | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Water Contamination | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Wildfire | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Windstorms | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |

### E.5.1 AGRICULTURAL EMERGENCIES

The agricultural industry is a major economic driver in the City. Agricultural disasters pose a serious threat to the local economy and populations directly employed by the agriculture industry.

### E.5.2 COASTAL EROSION

The City is not located on the coast, and therefore coastal erosion is not a major threat. Coastal erosion does threaten agricultural land in the Salinas Valley, which if impacted could have indirect economic

effects on the local economy. The City could also be impacted by other types of erosion not profiled in this Plan.

## E.5.3 DAM AND LEVEE FAILURE

### *Dam Failure*

There is no population or property in the City located in the dam inundation zones of the Los Padres and Forest Lake dams. *Table E-3* summarizes population and property in the City exposed to spillway and dam failure of the Nacimiento and San Antonio dams.

**Table E-3**
**Population and Property Exposed to Dam Failure Risk by Dam and Failure Type in Greenfield**

| Dam Failure Scenario | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Nacimiento Spillway Failure | 0 | 0 | $0 | 3 | $3,950 |
| Nacimiento Dam Failure | 0 | 0 | $0 | 3 | $4,423,463 |
| San Antonio Spillway Failure | 0 | 0 | $0 | 2 | $3,935 |
| San Antonio Dam Failure | 0 | 0 | $0 | 4 | $235,401 |

### *Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

## E.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

## E.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that

suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 3,159 residential and non-residential buildings in the City, with a total value of $925,392,759. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table E-4* summarizes population and property in the City exposed to liquefaction risk.

**Table E-4**
**Population and Property Exposed to Liquefaction Risk in Greenfield**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 0 | 0 | $0 | 3 | $3,950 |
| Moderate Liquefaction Susceptibility | 0 | 0 | $0 | 2 | $4,887,460 |

## E.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table E-5* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table E-5**
**Population and Property Exposed to Flooding Risk in Greenfield**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 0 | 0 | $0 | 3 | $3,950 |
| 500-Year Flood Zone | 0 | 0 | $0 | 0 | $0 |

## E.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure.

For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table E-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table E-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in Greenfield**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 13,026 | 2,244 | $655,971,950 | 561 | $176,072,277 |
| Fixed Source | 8,969 | 1,314 | $346,157,777 | 349 | $66,305,431 |

## E.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## E.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

## E.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage.

All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts.

FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table E-7.*

**Table E-7**
**Annualized Frequency and Exposure to Severe Weather Events in Greenfield**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.38 | Frequency (*Distinct Events)* | 0.13 |
| Exposed Population | 14,041 | Exposed Population | 14,041 |
| Exposed Building Values | $821,527,000 | Exposed Building Values | $821,527,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $152 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 1.24 | Frequency (*Distinct Events)* | 1.28 |
| Exposed Population | 14,041 | Exposed Population | 10,792 |
| Exposed Building Values | $821,527,000 | Exposed Building Values | $646,495,439 |
| Expected Annual Loss of Building Value | $5 | Expected Annual Loss of Building Value | $16,528,440 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.30 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 14,041 | Exposed Population | 0 |
| Exposed Building Values | $821,527,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $96 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

### E.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 0 people and $0 in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible earthquake induced to landslides.

### E.5.12 TSUNAMI

The City is not located in a mapped tsunami inundation zone.

### E.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

### E.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table E-8* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table E-8**
**Population and Property Exposed to Wildfire Risk in Greenfield**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| Moderate Fire Threat | 5,024 | 149 | $53,031,867 | 113 | $39,928,531 |

### E.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures will have direct impacts on public health and infrastructure. Drought, flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the local economy, along with changes to agriculture and crops, which are a critical backbone of the City's economy.

## E.6 CAPABILITY ASSESSMENT

The City of Greenfield performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table E-9*
- An assessment of administrative and technical capabilities is presented in *Table E-10*
- An assessment of fiscal capabilities is presented in *Table E-11*
- An assessment of education and outreach capabilities is presented in *Table E-12*
- Classifications under various community mitigation programs are presented in *Table E-13*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section E.6.1 in *Table E-14*
- An overall self-assessment of capability is presented in Section E.6.2 in *Table E-15*

**Table E-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Services | |
| Capital Improvement Plan | ☒ | • Fire Department | The FD has one but it's the only department that has one at this time. |
| Floodplain Management Plan | ☐ | | |
| Open Space Management Plan | ☐ | | |

**Table E-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| Stormwater Management Plan | ☐ | | |
| Coastal Management Plan | ☐ | | N/A |
| Local Coastal Program | ☐ | | N/A |
| Climate Action/ Adaptation Plan | ☐ | | |
| Emergency Operations Plan | ☒ | • Fire Department<br>• Police Department | A major update has been started but not worked on for a while. |
| Continuity of Operations Plan | ☐ | | |
| Community Wildfire Protection Plan | ☐ | | |
| Evacuation Plan | ☒ | • Fire Department<br>• Police Department<br>• Monterey County | Working with the County on this now. |
| Disaster Recovery Plan | ☐ | | |
| Economic Development Plan | ☐ | | |
| Historic Preservation Plan | ☐ | | |
| Transportation Plan | ☐ | | |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | | Chapter 8.48 FLOODPLAIN MANAGEMENT |
| Zoning Ordinance | ☒ | • Community Services | |
| Subdivision Ordinance | ☒ | • Community Services | |
| Site Plan Review Requirements | ☒ | • Community Services | |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | |
| Building Code | ☒ | • Community Services | |
| Fire Prevention Code | ☒ | • Fire Department | |
| Other Hazard-Specific Ordinances | | | |

**Table E-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Services | |
| Engineer(s) or professional(s) trained in construction practices | ☒ | • Public Works | |

**Table E-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| related to buildings and/or infrastructure | | | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☐ | | |
| Building Inspector | ☒ | • Community Services | |
| Emergency Manager | ☐ | | |
| Floodplain Manager | ☐ | | |
| Land Surveyors | ☐ | | |
| Resource development staff or grant writers | ☐ | | |
| Public Information Officer | ☐ | | |
| Scientist(s) familiar with the hazards of the community | ☐ | | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☐ | | |
| Personnel skilled in Geographic Information Systems (GIS) | ☐ | | |
| Maintenance programs to reduce risk | ☒ | • Public Works | |
| Warning systems/services | ☐ | | |
| Mutual Aid Agreements | ☐ | | |

**Table E-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Finance | |
| Special Purpose Taxes | ☒ | • Finance | |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | |
| Development Impact Fees | ☒ | • Finance | |
| General Obligation Bonds | ☒ | • Finance | |
| Special Tax and Revenue Bonds | ☒ | • Finance | |

**Table E-12**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☐ | | The Greenfield Community Science Workshop is a community-based organization committed to enriching the educational experience of historically underserved youth by providing them with a safe, fun, and stimulating environment where they can explore their world through science. |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | | |
| Natural disaster or safety related school programs | ☒ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table E-13**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | Yes | 5 | - |
| *StormReady* Certification | No | | |
| *TsunamiReady* Certification | N/A | - | - |
| *Firewise Communities* Certification | No | - | - |

## E.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table E-14**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | None identified. |
| **NFIP Community Number:** | 060446 |
| **Flood Insurance Policies in Force:** | 3 |
| Insurance Coverage in Force: | $1,050,000 |
| Written Premium in Force: | $1,260 |
| **Total Loss Claims:** | 1 |
| Total Payments for Losses: | $0 |

**Table E-14**
**National Flood Insurance Program (NFIP) Compliance**

| |
|---|
| **Adopted Regulations that meet NFIP Requirements:** |
| • Chapter 8.48 FLOODPLAIN MANAGEMENT |
| **Date of last NFIP Community Assistance Visit (CAV):** |
| Unknown. |
| **Higher standards that exceed minimum NFIP requirement:** |
| None. |
| **Additional floodplain management provisions:** |
| None. |
| **Floodplain management activities performed that go beyond FEMA minimum requirements:** |
| None. |
| **Existing impediments to running an effective NFIP program:** |
| None identified. |
| **Specific actions that are ongoing or considered related to continued compliance with the NFIP:** |
| The City will continue to do the required actions to maintain NFIP compliance. |

## E.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table E-15**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Limited |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Moderate |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## E.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## E.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes

- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## E.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Greenfield Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Greenfield are identified below:

- The City's wastewater treatment operation is vulnerable to flooding along the Salinas River. While protected by an earthen levee, the effluent ponds are located in the special flood hazard area and should be better protected to withstand future flood and earthquake events to prevent damages, service disruption, and environmental contamination. There is also currently no on-site generator for backup power at the treatment facility.
- Isolation caused by Highway 101 bridge closures/failures is a major concern for the City (losing bridge access at Soledad to the north and King City to the south). This nearly occurred as a result of the major flood event in 1995.
- The City experiences frequent nuisance flooding at the intersection of Apple Avenue and El Camino Real due to inadequately sized stormwater drainage systems.
- Five URM structures remain in the City, all of which are privately-owned and have been posted with warning placards.
- The generator at City Hall is currently capable of only providing backup power to the Police Department, preventing the use of approximately half the building during power outage. This is identified as a threat to sustaining post-disaster recovery operations following major events.
- The City's Council Chambers has been designated by default as the Emergency Operations Center, but a dedicated and fortified structure is needed for the City to be better prepared in dealing with future hazard events.

- The City is concerned with hazardous associated with agricultural facilities and the chemicals used in their processes.
- The fire station has no emergency backup generator. This has caused delays in response, problems with communication and dispatch systems, day to day operations, and station security.

## E.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Greenfield Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table E-17* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table E-16* includes the status of action previous plan completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table E-16**
**City of Greenfield Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **3** | Develop an unreinforced masonry grant program that helps correct earthquake-risk nonmasonry building problems, including chimney bracing and anchoring water heaters. | **Deleted** | There are limited unreinforced masonry buildings left in the City and there is not currently capacity to run a grant program. An action to inform the public about the risk of unreinforced masonry was added to the updated action plan. |
| **4** | Examine and mitigate critical infrastructure that has been identified as currently being too narrow to ensure the safe transportation of truck loads within Monterey County. | **Deleted** | This is not in the City's jurisdiction, but they would support this effort. |

**Table E-16**
**City of Greenfield Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **7** | Develop windstorm building requirements (e.g., fasteners for roof sheathing and singles) in high wind hazard areas. | **Completed** | The City has adopted all California Standard building codes. |

**Table E-17**
**City of Greenfield Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | Ongoing/ Continuous | All | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary. | Priority / High | Planning | HMGP and PDM Grants |
| **2** | Ongoing | All, Severe Weather | Develop a sustained public outreach program that encourages consistent hazard mitigation content. Include content on the risks associated with winter storms, extreme heat, and extreme cold events. | Priority / High | Various | General Funds, HMGP, and PDM Grants |
| **3** | Ongoing | Wildfire | Continue to conduct current fuel management programs and investigate and apply new and emerging fuel management techniques. | Priority / High | Fire Department | General Funds and PDM Grant |
| **4** | Ongoing | Wildfire | Develop and provide funding and/or incentives for defensible space measures (e.g., free chipping day, free collection day for tree limbs). | Priority / High | Fire Department | General Funds, HMGP, and PDM Grants, State Fire Marshal |
| **5** | Ongoing | Windstorm, Severe Weather | Include provisions for dust erosion control methods in building, grading, and land clearing permits. | Priority / High | Planning | General Funds |
| **6** | Ongoing | Earthquake | Inform the public about the risks associated with unreinforced masonry and earthquake preparedness. | Priority / Moderate | Various | General Funds, HMGP, and PDM Grants |
| **7** | Ongoing | All | Find ways to provide critical infrastructure and emergency facilities with backup generators. | Priority / High | Various | General Funds, Grants |

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# ANNEX F: CITY OF KING

2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

KING CITY
CALIFORNIA

# F. CITY OF KING

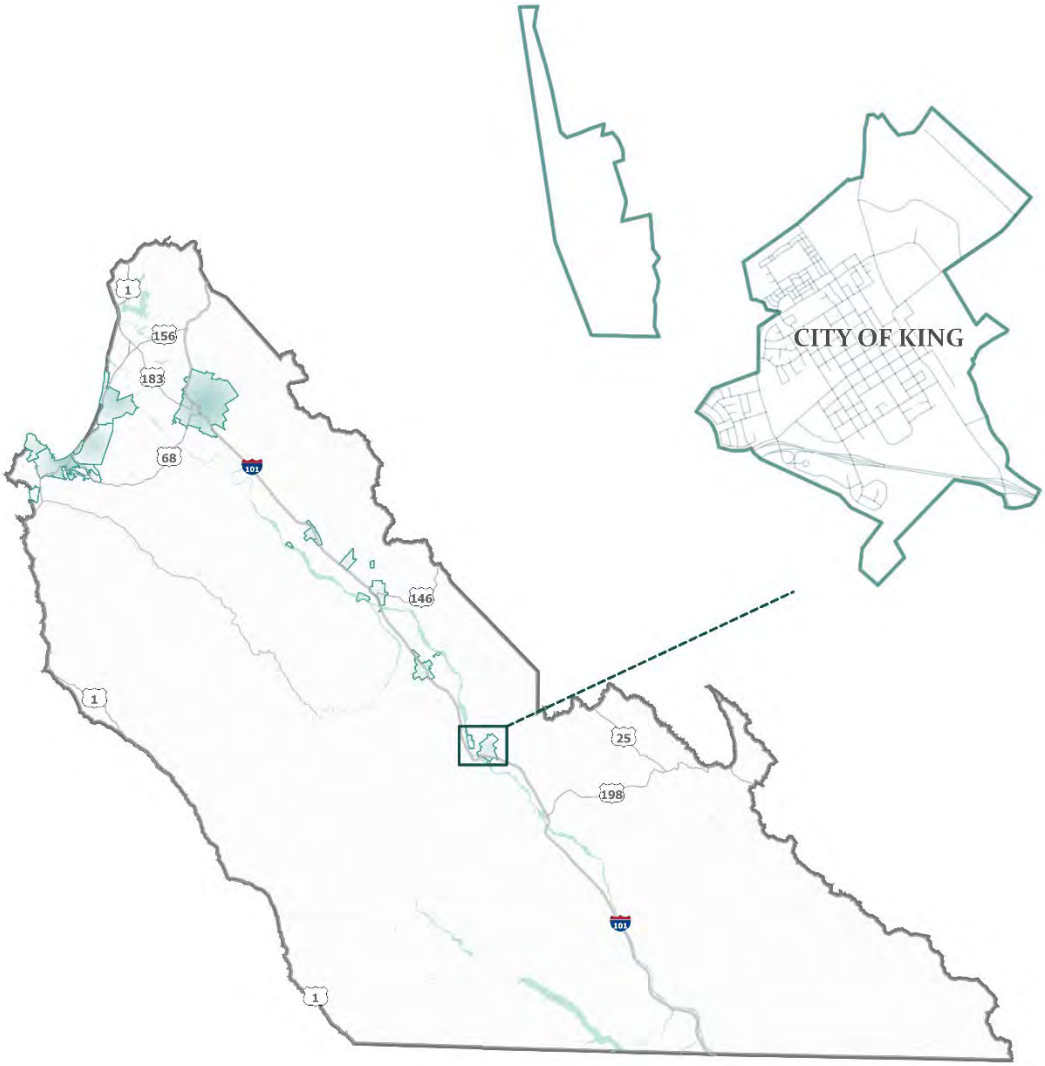
## F.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Steve Adams
City Manager
212 South Vanderhurst Avenue
King City, CA 93930
(831) 386-5917
sadams@kingcity.com

**Alternate Point of Contact**
Geoff English
Public Works Special Projects Coordinator
212 South Vanderhurst Avenue
King City, CA 93930
805-610-0191
genglish@kingcity.com

## F.2 COMMUNITY PROFILE

### F.2.1 LOCATION



## F.2.2 GEOGRAPHY AND CLIMATE

King City is the southernmost city in Monterey County, located along the Salinas River and US Highway 101, and just south of Greenfield in the heart of the Salinas Valley. King City is 3.8 square miles and located in the center of one of the most productive agricultural valleys in the world. The City is also the primary access portal to the Pinnacles National Park, located a short drive to the east of the City. The Climate is semi-arid, although bordering on a Mediterranean climate, with very warm, mostly dry summers and cool, wet winters.

## F.2.3 HISTORY

The location of King City on the banks of the Salinas River was a part of the vast San Lorenzo Rancho, a huge Spanish land grant that at one time extended from the Salinas River to the San Benito River, from the San Lorenzo on the south to San Juan on the north. Original grantees were Feliciana Soberanes, who received five leagues in 1841, and Francisco Rico, who was granted five leagues in 1842. When Charles King, King City founder, first saw the Salinas Valley it was a dry, windswept expanse of sand. The Salinas River ran bank to bank in wet years, a raging torrent in the winter. But in the summer the river went underground, leaving only a skeletal course of rock and sand the length of the Valley.

In 1884, King purchased 13,000 acres of the San Lorenzo grant in order to grow wheat. He set up ranch headquarters at what is now the Spreckels ranch north of the city. His first project was to plant 6,000 acres of wheat. King's neighbors told him that wheat would never grow and the only transportation in was by mule to Monterey to transfer to sailing ships. But King has a plan. His wheat crops were bountiful and there were farmers who wanted to lease land from King to grow wheat. Railroad interests took note. Southern Pacific had extended its line to Soledad and Collis P. Runtington, the renowned railroad magnet, became interested in pushing the tracks further south in quest of King's wheat. In 1886 the tracks of the Southern Pacific Railroad reached King's ranch buildings and the Southern Pacific Milling Company put up a warehouse. Shortly after a flour mill was erected adjacent to the warehouse and "King's Station" began to function as a commercial entity.

In 1887, the first subdivision was built. This laid out a town bounded by San Lorenzo Avenue on the west, by the railroad on the east, by Ellis Street by the north and Pearl Street on the south. In 1895 the area north, west, and south of King's Station was subdivided and new streets added. In 1897, King sold his large holdings to Spreckels Sugar Co. Irrigation brought life to the Salinas Valley and transformed the area into lush green acres of row crops and King City was incorporated in 1911.

## F.2.4 POPULATION

The population of King City is 13,332 people (2020 Census), a 3.6% increase in population since 2010. The Association of Monterey Bay Area Governments projects that the City's population will grow to 19,295 by 2025 and 24,726 by 2035. If this projection is accurate, the City of King will experience a faster growth rate in coming decades than any other Salinas Valley city except for Gonzales.

## F.2.5 GOVERNING BODY FORMAT

King City has a Council-Manager form of government. The City Council is composed of five Council Members who are elected at large for four- year terms. One Council Member is appointed Mayor for a two-year term by the Council.

### F.2.6 ECONOMY AND TAX BASE

The City's economic base is largely dependent upon agriculture with food processing and packing the primary sources of employment. Mee Memorial Hospital and Casey Printing typify other sectors of the business community, and nearby Fort Hunter Liggett also plays a role in the local economy (located 26 miles southeast of the city). The City is development friendly, and through an ambitious economic development strategy that includes expedited permit approvals, continues to attract new businesses and residential housing projects that improve the quality of life in the community.

## F.3 PLANNING PROCESS

The City of King followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of King held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on June 22, 2021. Key stakeholders present at the meeting included:

- Steve Adams, City Manager
- Geoff English, Public Works Special Project Coordinator
- Mark McClain, Building Official
- Rory Lakind, Acting Police Captain
- Doreen Liberto, Community Development Director
- Maricruz Aguilar, Assistant Planner
- Keith Boyd, Chief of Police
- Octavio Hurtado, City Engineer
- Ed Lenger, Interim Supervisor, Public Works

## F.4 LAND USE AND DEVELOPMENT

The King City General Plan was adopted in 1998. Around 20% of the land is dedicated to residential uses, another 20% is dedicated to agricultural uses, and approximately 25% of the land is dedicated to open space and public-quasi public uses. About 10% of the land is dedicated to industrial use and 6% of the land is dedicated to commercial use.

Due to the City's strategic location along Highway 101, King City has historically served as a retailing and service center for all of Southern Monterey County. Similar to other communities in the Salinas Valley, the City of King is surrounded by some of the best farmland in the nation. In an attempt to protect this land, 6 agricultural conservation easements have been secured to the north and south of the City. It is estimated that over 1,500 acres of farmland that are contiguous to the City limits are restricted by such easements. These easements remove the development potential of these parcels and therefore limit future development to the east and west. The 1998 General Plan generally follows an east- west development pattern.

The City is currently updating their General Plan and has recently adopted master plans and specific plans for key areas of the City, including the Downtown Addition Specific Plan, the West Broadway

Master Plan, the First Street Corridor Master Plan, Historic Corridor Revitalization Plan, Airport Master Plan, San Lorenzo Creek Plan and the East Ranch Business Park Specific Plan. These plans will guide the future of the City and seek to pursue a diverse employment base, expand the tourism industry, and retain the unique identity and historic elements of the City.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The King City Safe Growth Survey was completed by Doreen Liberto, Community Development Director for the City of King Community Development Department. The results are summarized in *Table F-1*.

**Table F-1**
**City of King Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 4.75 | 4.00 |
| Transportation | 4.00 | 3.00 |
| Environmental Management | 4.67 | 3.33 |
| Public Safety | 4.67 | 3.33 |
| Zoning Ordinance | 4.25 | 2.50 |
| Subdivision Regulations | 4.33 | 3.67 |
| Capital Improvement Program & Infrastructure Policies | 4.33 | 3.00 |
| Building Code | 5.00 | 5.00 |
| Economic Development | 4.00 | 3.00 |
| **Average Survey Ratings** | **4.44** | **3.43** |

## F.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of King's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of King is included in this Annex.

The City of King's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table F-2* displays the results of the hazard risk ranking exercise that was performed by the King City Planning Team.

**Table F-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of King**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 3.1 | 2.7 | 3.0 | 3.1 | 11.9 | Substantial |
| Coastal Erosion | - | - | - | - | - | - |
| Coastal Flooding | - | - | - | - | - | - |
| Cyber-Attack | 2.7 | 2.6 | 2.6 | 2.7 | 10.5 | Substantial |
| Dam Failure | 1.9 | 1.3 | 2.1 | 2.1 | 7.4 | Possible |
| Drought & Water Shortage | 3.4 | 3.5 | 3.5 | 3.5 | 13.6 | High |
| Earthquake | 3.0 | 3.0 | 3.0 | 3.0 | 12 | Substantial |
| Epidemic | 2.8 | 2.7 | 2.7 | 2.8 | 10.9 | Substantial |
| Extreme Cold & Freeze | 2.3 | 2.2 | 2.3 | 2.4 | 9.3 | Moderate |
| Extreme Heat | 3.0 | 2.9 | 2.7 | 2.7 | 11.2 | Substantial |
| Flash Flood | 2.4 | 2.4 | 2.6 | 2.7 | 10.1 | Substantial |
| Hazardous Materials Incident | 2.3 | 2.0 | 2.3 | 2.6 | 9.2 | Moderate |
| Invasive Species | 2.0 | 2.1 | 2.0 | 2.1 | 8.2 | Moderate |
| Levee Failure | 1.4 | 1.6 | 1.6 | 1.4 | 6.0 | Slight |
| Localized Stormwater Flooding | 2.6 | 2.4 | 2.9 | 2.9 | 10.8 | Substantial |
| Mass Migration | 1.4 | 1.6 | 1.6 | 1.6 | 6.1 | Possible |
| Pandemic | 3.0 | 3.1 | 3.0 | 3.1 | 12.2 | High |
| Riverine Flooding | 2.2 | 2.1 | 2.1 | 2.3 | 8.8 | Moderate |
| Sea Level Rise | - | - | - | - | - | - |
| Severe Winter Storms | 2.0 | 2.0 | 2.2 | 2.2 | 8.4 | Moderate |
| Slope Failure | 1.8 | 1.7 | 1.9 | 1.8 | 7.1 | Possible |
| Targeted Violence | 2.3 | 2.0 | 2.2 | 2.3 | 8.9 | Moderate |
| Terrorism | 1.3 | 1.3 | 1.3 | 1.7 | 5.7 | Slight |
| Tsunami | - | - | - | - | - | - |
| Utility Interruption/ PSPS | 2.7 | 2.4 | 2.4 | 2.7 | 10.2 | Substantial |
| Water Contamination | 2.1 | 1.8 | 2.1 | 2.4 | 8.4 | Moderate |
| Wildfire | 2.3 | 2.3 | 2.2 | 2.4 | 9.3 | Moderate |
| Windstorms | 1.9 | 2.0 | 2.0 | 2.1 | 8.0 | Possible |

### F.5.1 AGRICULTURAL EMERGENCIES

The agricultural industry is a major economic driver in the City. Agricultural disasters pose a serious threat to the local economy and populations directly employed by the agriculture industry.

### F.5.2 COASTAL EROSION

The City is not located on the coast, and therefore coastal erosion is not a major threat. Coastal erosion does threaten agricultural land in the Salinas Valley, which if impacted could have indirect economic effects on the local economy. The City could also be impacted by other types of erosion not profiled in this Plan.

### F.5.3 DAM AND LEVEE FAILURE

*Dam Failure*

There is no population or property in the City located in the dam inundation zones of the Los Padres and Forest Lake dams. *Table F-3* summarizes population and property in the City exposed to spillway and dam failure of the Nacimiento and San Antonio dams.

**Table F-3**
**Population and Property Exposed to Dam Failure Risk by Dam and Failure Type in King City**

| Dam Failure Scenario | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Nacimiento Spillway Failure | 2,846 | 312 | $105,249,593 | 51 | $10,297,446 |
| Nacimiento Dam Failure | 4,683 | 537 | $164,841,810 | 198 | $68,499,071 |
| San Antonio Spillway Failure | 154 | 0 | $0 | 6 | $255,399 |
| San Antonio Dam Failure | 4,683 | 533 | $164,003,073 | 194 | $68,100,945 |

*Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

### F.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Drought also is often accompanied by extreme heat, exposing people to the risk of sunstroke, heat cramps and heat exhaustion. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic

effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### F.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 2,772 residential and non-residential buildings in the City, with a total value of $836,661,694. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table F-4* summarizes population and property in the City exposed to liquefaction risk.

**Table F-4**
**Population and Property Exposed Liquefaction Risk in King City**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 2,609 | 219 | $70,240,535 | 81 | $7,626,927 |
| Moderate Liquefaction Susceptibility | 10,970 | 1754 | $517,181,864 | 846 | $268,108,291 |

### F.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. The floodplain of the San Lorenzo Creek and the Salinas River are the areas subject to the most significant hazard. *Table F-5* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table F-5**
**Population and Property Exposed to Flooding Risk in King City**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 2,124 | 53 | $21,558,264 | 55 | $8,515,990 |
| 500-Year Flood Zone | 9,168 | 1206 | $344,066,446 | 743 | $167,246,111 |

### F.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances

will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table F-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table F-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in King City**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 10,439 | 1,545 | $458,379,586 | 726 | $157,007,523 |
| Fixed Source | 8,245 | 1,356 | $395,797,337 | 806 | $261,571,752 |

## F.5.8 HUMAN-CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## F.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

## F.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip

code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts. FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table F-7.*

**Table F-7**
**Annualized Frequency and Exposure to Severe Weather Events in King City**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.38 | Frequency (*Distinct Events)* | 0.13 |
| Exposed Population | 5,813 | Exposed Population | 5,813 |
| Exposed Building Values | $350,459,000 | Exposed Building Values | $350,459,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $513 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 1.24 | Frequency (*Distinct Events)* | 1.28 |
| Exposed Population | 5,813 | Exposed Population | 5,813 |
| Exposed Building Values | $350,459,000 | Exposed Building Values | $350,459,000 |
| Expected Annual Loss of Building Value | $2 | Expected Annual Loss of Building Value | $8,959,910 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.06 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 5,813 | Exposed Population | 0 |
| Exposed Building Values | $350,459,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $8 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

Though the data above indicates that there is no population in the City that is exposed to winter weather, the City's homeless population is exposed and at risk to winter weather hazards. This population is more vulnerable to the impacts of winter weather.

### F.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 0 people and $0 in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible to earthquake induced to landslides.

### F.5.12 TSUNAMI

The City is not located in a mapped tsunami inundation zone.

### F.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City are exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that are operated by electricity are exposed and vulnerable to utility interruption.

### F.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table F-8* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table F-8**
**Population and Property Exposed to Wildfire Risk in King City**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 1,421 | 4 | $3,352,658 | 11 | $7,807,507 |
| Moderate Fire Threat | 4,030 | 83 | $47,454,042 | 105 | $30,672,215 |

The most significant fire risk to the City involves dry vegetation that exists in the riverbed along the Salinas River and San Lorenzo Creek areas, which are adjacent to residential neighborhoods. A number of fires have occurred in that area due to increased heat conditions and human activity in the vegetated areas, which have threatened nearby structures.

### F.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures will have direct impacts on public health and infrastructure. Drought, flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the local economy, along with changes to agriculture and crops, which are a critical backbone of the City's economy.

## F.6 CAPABILITY ASSESSMENT

The City of King performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table F-9*
- An assessment of administrative and technical capabilities is presented in *Table F-10*
- An assessment of fiscal capabilities is presented in *Table F-11*
- An assessment of education and outreach capabilities is presented in *Table F-12*
- Classifications under various community mitigation programs are presented in *Table F-13*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section F.6.1 in *Table F-14*
- An overall self-assessment of capability is presented in Section F.6.2 in *Table F-15*

**Table F-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Development | Conservation, Open Space and Safety Elements, 3.2 – COS-12 addresses hazard prevention |
| Capital Improvement Plan | ☒ | • Public Works | Annual CIP Adopted by City Council |
| Floodplain Management Plan | ☒ | • Public Works | General Plan 3.1 - COS- 11 addresses floodplain management |
| Open Space Management Plan | ☒ | • Community Development<br>• Recreation Department | Conservation, Open Space and Safety Elements address Open Space Goals and Policies |
| Stormwater Management Plan | ☒ | • Public Works | Adopted January 2010, with periodic revisions and annual State reporting |
| Coastal Management Plan | ☐ | | Not Applicable |
| Local Coastal Program | ☐ | | Not Applicable |
| Climate Action/ Adaptation Plan | ☐ | • Community Development | Climate Change policies in the Land Use Element of the General Plan |
| Emergency Operations Plan | ☒ | • City Manager's Office | Adopted 2016 |
| Continuity of Operations Plan | ☒ | • City Manager's Office | Section #1- Page #47 of Emergency Operations Plan |
| Community Wildfire Protection Plan | ☐ | • City Manager's Office | Fire Hazard risk assessment is very limited. Assessment described on page #44 of the Emergency Operations Plan |
| Evacuation Plan | ☐ | • City Manager's Office | |
| Disaster Recovery Plan | ☐ | • City Manager's Office | |
| Economic Development Plan | ☒ | • City Manager's Office<br>• Community Development | The Economic Development Element of the General Plan provides goals and policies. The City also has an Economic Development Strategy which is being updated. |
| Historic Preservation Plan | ☐ | | |
| Transportation Plan | ☒ | • Community Development | Circulation Element of General Plan |
| **Code, Ordinance, & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works | MC Chapter 12.16 – Flood Damage Prevention |
| Zoning Ordinance | ☒ | • Community Development | MC Chapter 17.36 – Primary Flood Plain District<br>MC Chapter 17.38 – Secondary Flood Plain District |

**Table F-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| Subdivision Ordinance | ☒ | • Community Development | MC Section 16.12.340 – Findings for approval of subdivision maps located in fire hazard areas |
| Site Plan Review Requirements | ☒ | • Community Development | |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | • City Manager's Office | MC Chapter 2.28 – Emergency Services |
| Building Code | ☒ | • Building and Safety | Adopted 2019 California State Uniform Building Code |
| Fire Prevention Code | ☒ | • Building and Safety | Adopted 2019 California State Fire Code |
| Other Hazard-Specific Ordinances | • MC Chapter 17.56 – Env. Protection – Pollution Standards<br>• MC Chapter 8.34 – Hazardous Materials Storage & Registration<br>• MC Chapter 7.51 – Nuisances | | |

**Table F-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Development<br>• Public Works | Doreen Liberto, Com. Dev. Dir.<br>Octavio Hurtado, City Engineer |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Public Works<br>• Building and Safety | Octavio Hurtado, City Engineer Mark McClain, Building Official |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Community Development<br>• Public Works | Doreen Liberto, Com. Dev. Dir.<br>Octavio Hurtado, City Engineer |
| Building Inspector | ☒ | • Building and Safety | Mark McClain, Building Official (S.A.P. Post-Earthquake Assessment Certification) |
| Emergency Manager | ☒ | • City Manager's Office | Steve Adams, City Manager |
| Floodplain Manager | ☒ | • Public Works | Octavio Hurtado, City Engineer |
| Land Surveyors | ☐ | • Public Works | The City utilizes outside Land Surveyors for all survey work. |
| Resource development staff or grant writers | ☒ | • Community Development | Maricruz Aguilar, Assistant Planner |

**Table F-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Public Information Officer | ☒ | • Recreation Department | Andrea Wasson, Recreation Coordinator |
| Scientist(s) familiar with the hazards of the community | ☐ | | The City utilizes outside Consultants and Firms when scientific expertise is required. |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Community Development<br>• Public Works<br>• Building and Safety | Doreen Liberto, Com. Dev. Dir.<br>Octavio Hurtado, City Engineer<br>Mark McClain, Building Official |
| Personnel skilled in Geographic Information Systems (GIS) | ☐ | | The City of King has budgeted funds in Fiscal Year 2021/22 for the purchase of GIS Software |
| Maintenance programs to reduce risk | ☒ | • Public Works | Annual Street Tree Trimming awarded to local tree trimming services. ¼ of City street trees trimmed annually. All storm drain catch basins cleaned annually in advance of winter storms. |
| Warning systems/services | ☒ | • Monterey County<br>• Police Department | The City utilizes NIXLE, the Monterey County Sheriff Dispatch Reverse 911 services. Residents can also receive alerts for severe weather, traffic, and criminal activity |
| Mutual Aid Agreements | ☒ | • Police Department<br>• Fire Department<br>• Public Works | Cal WARN. Monterey County Public Safety Allied Agencies Mutual Aid Agreement. |

**Table F-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance Department | Mike Howard, Finance Director |
| Capital Improvements Project Funding | ☒ | • Public Works<br>• Finance Department | Mike Howard, Finance Director<br>Octavio Hurtado, City Engineer |
| Special Purpose Taxes | ☒ | • Finance Department | Mike Howard, Finance Director |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☒ | • City Manager's Office<br>• Finance Department | Steve Adams, City Manager Mike Howard, Finance Director |
| Water / Sewer Fees | ☒ | • City Manager's Office<br>• Finance Department | Steve Adams, City Manager Mike Howard, Finance Director |
| Development Impact Fees | ☒ | • City Manager's Office<br>• Finance Department | Steve Adams, City Manager Mike Howard, Finance Director |

**Table F-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Obligation Bonds | ☐ | • | |
| Special Tax and Revenue Bonds | ☐ | • | |
| Community Development Block Grants (CDBG) | ☒ | • City Manager's Office<br>• Finance Department | Steve Adams, City Manager Mike Howard, Finance Director |

**Table F-12**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☐ | | Coordinate and utilize the services of the American Red Cross. |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • City Manager's Office | Periodic Flyers to residents regarding potential hazards, primarily flood related. The City inserts public education articles into the quarterly City newsletter. Additionally, the City uses social media to inform and educate the public. |
| Natural disaster or safety related school programs | ☐ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table F-13**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | 4 | - | - |
| *StormReady* Certification | No | - | - |
| *TsunamiReady* Certification | N/A | - | - |
| *Firewise Communities* Certification | No | - | - |

### *Political Capability*

The City Council for the City of King has a high degree of general willingness to provide political leadership by enacting programs and policies to reduce hazards in the community. As a Council, they have all participated in a training session in their role in the City's Emergency Operations Plan. They

have supported all staff's recommendations involving investment in infrastructure designed to address hazards. They have supported annual funding for the development of an annual long-term sediment removal program in the San Lorenzo Creek, which has been instrumental in reducing flooding hazards.

Probably the most significant commitment is approval of the master plan and wastewater rate increases to fund a new $45 million wastewater treatment plant project. This will be the largest capital project in the City's history and will substantially improve safety of the plant.

A few other related examples include the adoption and funding of the Comprehensive Plan to End Youth Violence. A second example is the purchase and installation of a citywide camera system to assist with crime prevention. Although not necessarily focused on Hazard Mitigation planning, the above examples provide evidence of the City Council's willingness to enact programs and policies to reduce risks in the community.

## F.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table F-14**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Octavio Hurtado, City Engineer, Public Works Department |
| **NFIP Community Number:** | 060199 |
| **Flood Insurance Policies in Force:** | 17 |
| Insurance Coverage in Force: | $4,318,600 |
| Written Premium in Force: | $28,721 |
| **Total Loss Claims:** | 12 |
| Total Payments for Losses: | $715,517 |

**Adopted Regulations that meet NFIP Requirements:**

- Ordinance No. 2010-688- Municipal Code Chapter 12.16 Flood Damage Prevention
- Ordinance No. 1973- 354 § 4.34.- Municipal Code Chapter 17.36 P-F-Primary Flood Plain District
- Ordinance No. 1973- 354 § 4.35.- Municipal Code Chapter 17.36 P-F-Secondary Flood Plain District
- Ordinance No. 1973-780 § 1.- Municipal Code Chapter 12.04 Construction Codes Adopted- California Building Standards Title 24
- Ordinance No. 1973-355 § 14.00.- Municipal Code Chapter Title 16 Subdivisions

**Date of last NFIP Community Assistance Visit (CAV):**
Prior to the adoption of Ordinance No. 2010-688 on August 10, 2010.

**Higher standards that exceed minimum NFIP requirement:**
No higher standards have been adopted.

**Additional floodplain management provisions:**
No additional floodplain management provisions have been adopted by the City of King.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**
The City of King annually conducts a comprehensive cleaning of the City's storm drain system prior to storm season.

**Existing impediments to running an effective NFIP program:**
None identified.

**Table F-14**
**National Flood Insurance Program (NFIP) Compliance**

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

- The City of King requires Storm Drainage calculations on all new development with the requirement to keep the 100-year storm event within the designed storm drain system.
- All building pad elevations are required to be installed a minimum of 1 ft. above the elevation of the top of curb. Top of curb elevations are designed to retain the 100-year storm event.
- The City of King requires "pad certifications" for all new construction.
- Large development projects adjacent to rivers/ creeks require a Hydrological and Environmental review process component.

## F.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table F-15**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Limited |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## F.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

The major hurdles for the City of King in the hazard mitigation planning are severely limited staff and financial resources. Efforts beyond the confines of current staffing and financial resources would require grant funding and/or external agency cooperation. Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## F.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other

relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments

- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## F.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the King City Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of King are identified below:

- The City's biggest concern is major flooding, based on past experience, and this includes not only the Salinas River but also San Lorenzo Creek (large watershed that rapidly changes conditions during the winter months). Overall flood risk has only increased due to all the debris and vegetation in the Salinas River.
- Past flood damages have occurred to the mobile home park on Division Street and the neighborhood on Villa Drive, despite protective dikes being in place. Recovery and clean-up costs to the city's nearby golf course adjacent to San Lorenzo Creek have also been very high.
- The Highway 101 bridge connection traversing the Salinas River is a critical ingress/egress to the city and is considered the most vulnerable critical infrastructure element.
- The City's wastewater treatment plant is considered at risk to major flood events along the Salinas River. Floodwaters during past events have reached to the top of protective berm which should be raised and strengthened to increase protection against future flood damages and service disruptions. Access to the wastewater treatment plant is also at risk during a storm, which could prevent staff from reaching the plant to implement necessary mitigation measures. An alternative access route is needed.
- San Lorenzo Park is located within the known special flood hazard area, and although maintained mostly as open space there are a number of cultural/museum structures that could be damaged during a major flood event.
- There is potential for serious wildland fire problems along the Salinas River bottom, East of the City near the airport, and west of the City near Pine Canyon. Wildfire is of particular concern if combined with high winds as often experienced through the valley, which could send embers flying into the city and cause major fire hazards, particularly for those structures with shake roofs.

- Five Unreinforced Masonry structures remain in the city along Broadway Street, all of which are privately-owned and have been posted with warning placards.
- A mass casualty event on Highway 101, and the subsequent impact on the flow of traffic on surface streets across the city, is a major concern. Additionally, an incident on an at-grade railroad crossing in the city could sever access between both sides of the city and could cause a major disruption.

## F.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The King City Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table F-17* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table F-16* includes the status of actions completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table F-16**
**City of King Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **1** | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary. | **Completed/ Ongoing** | Completed and ongoing on an as needed basis as part of Environmental Review of discretionary permits |
| **5** | Examine and mitigate critical infrastructure that has been identified as currently being too thin to ensure the safe transportation of truck loads within Monterey County. | **Completed** | The City successfully removed the last remaining thin bridge |

| | | | |
|---|---|---|---|
| **7** | Develop windstorm building requirements (e.g., fasteners for roof sheathing and singles) in high wind hazard areas. | **Completed** | The City complies with building code standards to meet wind hazard structural requirements |
| **8** | Include provisions for dust erosion control methods in building, grading, and land clearing permits. | **Completed** | Completed and ongoing as part of Environmental Review process |

**Table F-17**
**City of King Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | In Progress/ Short-term | All | As part of the General Plan Update, develop a public outreach program to inform the public about hazard risks in the City. This will include sharing hazard maps included in the Land Use Element with the public. | Priority / High | Community Development | General Funds, Grants |
| **2** | Ongoing/ Continuous | Wildfire | Continue to conduct current fuel management programs and investigate and apply new and emerging fuel management techniques. | Priority / High | Fire | General Funds and PDM Grant |
| **3** | Ongoing/ Continuous | Flooding | Continue ongoing sediment management and invasive removal in the Salinas River and San Lorenzo Creek to reduce flood risk. | Priority/ High | Public Works | Wastewater/ Stormwater Funds |
| **4** | In Progress/ 2-Years | Flooding | Develop an alternative access point to the City's wastewater treatment plant in order to ensure access during large flood events. | Priority/ High | Public Works | Wastewater Funds |
| **5** | In Progress/ 3-5 Years | Flooding, Dam Failure | Consider flood and dam inundation hazards when designing and constructing the new wastewater treatment plant. | Priority/ High | Public Works | Wastewater Funds |
| **6** | New/ Mid-term | Wildfire | Coordinate with Monterey County in order to reduce fire fuels along the Salinas River bottom. | Priority/ Medium | Public Works, Monterey County | Hazard Mitigation Grants |
| **7** | Ongoing/ Continuous | Severe Weather, Windstorms | Continue and expand the City's Tree Trimming program in order to reduce wind hazard risks. | Priority/ High | Public Works | General Funds |
| **8** | New/ Long-term | Hazardous Materials Incident, Human-Caused | Upgrade at-grade railroad crossings. | Priority/ Medium | Public Works | Transportation Grants |

**Table F-17**
**City of King Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **9** | New/ Mid-term | All | Install emergency generators and/or emergency battery power systems. | Priority/ High | Public Works | King City Community Power |
| **10** | Ongoing/ Continuous | All, Utility Interruptions | When building or renovating facilities, consider identifying opportunities for installing solar panels in order to provide a backup energy source to critical facilities during power outages. | Priority/ Low | Community Development, Public Works | King City Community Power |
| **11** | New/ Long-term | Flooding | Develop recommendations for a permanently installed drainage lift station on Villa Drive in order to reduce flood risk in the area. | Priority/ Medium | Public Works | Hazard Mitigation Grants |
| **12** | New/ Mid-term | All | Purchase supplies and equipment, such as electronic traffic signage and airport closure signage in order to inform the public of closures due to various hazards. | Priority / Medium | Public Works | General Funds |
| **13** | New/ 2-Years | All | Acquire a Fire Engine with a ladder. | Priority/ High | Fire | CDBG Grant |
| **14** | New/ Mid-term | All | Upgrade the EOC video board in order to provide increased capacity for real time monitoring and greater interface with the citywide camera system. | Priority/ Medium | Police | General Funds |
| **15** | Ongoing/ Continuous | All | Train staff on the use of Nixle and Everbridge for emergency alerts. Continue to provide ICS training and disaster exercises for staff. | Priority/ Medium | Police | General Funds |
| **16** | Ongoing/ Continuous | All | Expand disaster preparedness and emergency response training for residents. In the long-term, look into the possibility of creating a CERT Program. | Priority/ Medium | Fire, Police, American Red Cross | General Funds, Grants |
| **17** | Ongoing | Drought, Extreme Heat | Provide public information on water conservation and extreme heat. | Priority / Low | Community Development | General Funds, Grants |

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# ANNEX G: CITY OF MARINA

2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

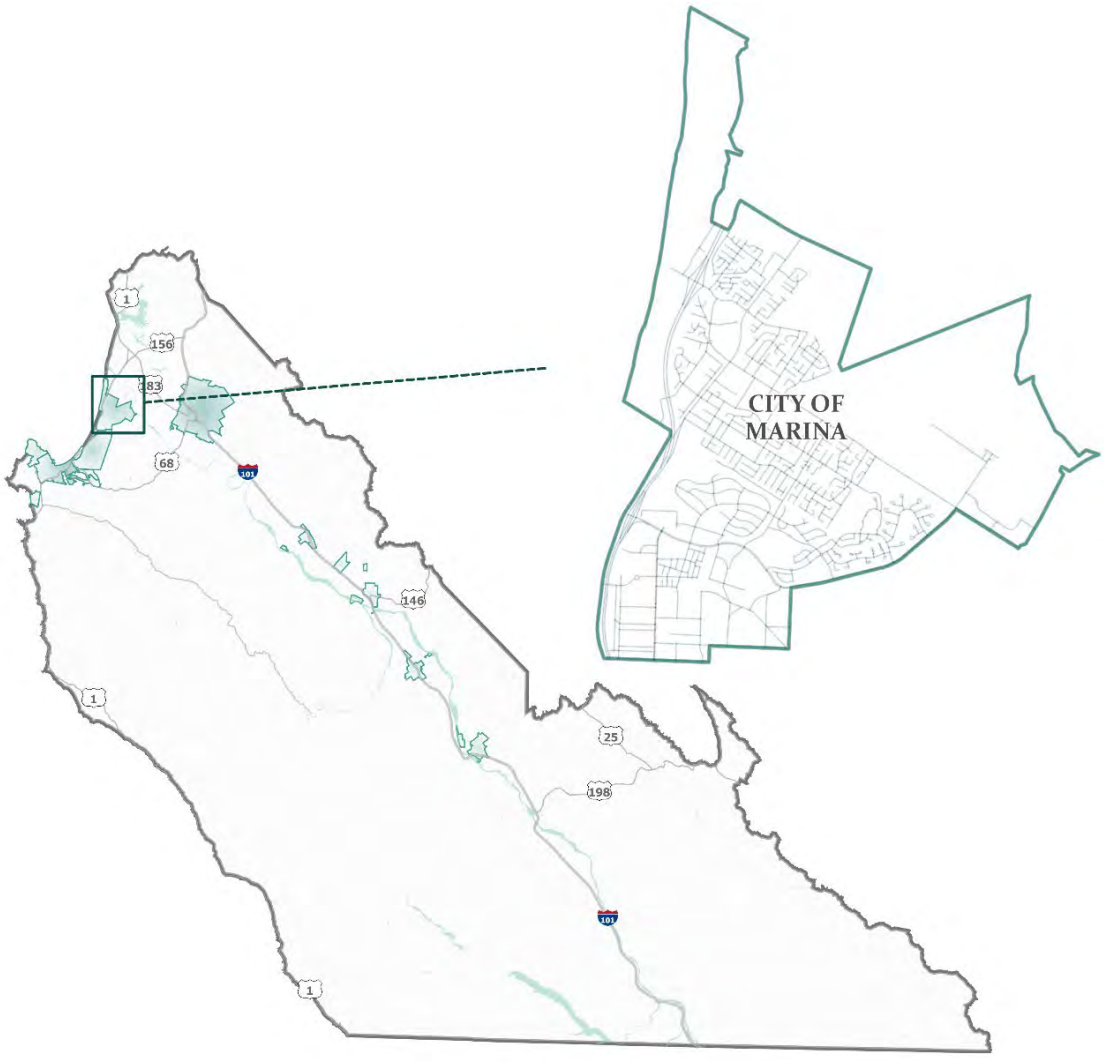
# G. CITY OF MARINA

## G.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Chief Doug McCoun
Fire Chief, Marina Fire
211 Hilcrest Avenue
Marina, CA 93933
(831) 275-1700
dmccoun@cityofmarina.org

## G.2 COMMUNITY PROFILE

### G.2.1 LOCATION



## G.2.2 GEOGRAPHY AND CLIMATE

The City of Marina is a small coastal city located along the Monterey Bay. Marina occupies nearly 10 square miles in total area just north of Seaside and west of Salinas. Marina is on California State Route 1 between Monterey and Santa Cruz.

## G.2.3 HISTORY

Dating back to (circa) 1868, about 9,000 acres of land stretching north along the Pacific Ocean, and east along the Salinas River, was owned by the late David Jacks and James Bardin. The land block breakup began in 1885, when the Bardin heirs sold 1,372 ½ acres to John Armstrong for farmland and grazing. About a year later, 1,450 acres was sold, then named the Sand Hill Ranch, and then 400 hundred acres near the ocean was sold to the San Francisco Sand Company, which subsequently constructed a sand plant in 1906.

In 1915, real estate salesman William Locke-Paddon from San Francisco was looking for land to sub-divide and found the breakup of the large Bardin and Jacks estate as an opportunity. On May 29, 1915, Locke-Paddon purchased 1500 acres south of Sand Hill Ranch designated as the "Pueblo Tract No. 1, City Lands of Monterey." The Marina Post Office was established in 1919 and by 1926 the town had grown to their first 70 families. The City's history is intertwined with that of Fort Ord Military Base. Major growth during the 1940s, made some impact on the community of Marina, as it became a "rest and relaxation" area for troops stationed at Fort Ord. Throughout the 50s,60s, and 70s, the City continued to grow with new residential, commercial, industrial, and visitor-serving development being built. Marina voters approved incorporation on November 5, 1975, making Marina the newest City along the Monterey Coast. Since incorporation, the City has continued to grow and flourish.

## G.2.4 POPULATION

The City of Marina has a population of 22,359 people (2020 Census), an increase of 13.4% since 2010. The Association of Monterey Bay Area Governments (AMBAG) estimates Marina's current population to increase to approximately 30,130 in 2025 (a 54.9% increase), and approximately 32,940 in 2035 (a 59.4% increases). These dramatic increases are primarily associated with the planned development of housing on the former Fort Ord.

## G.2.5 GOVERNING BODY FORMAT

The City of Marina's form of government is a council-manager form of government with a Home-Rule City Charter. The five Council members are elected at large with one being Mayor. The Mayor is elected every two years in a general election held in November of even-numbered years. Serving with the Mayor are four members of the City Council who have overlapping terms; every two years, two members of the City Council are also selected by the voters through a general election. The City Manager is appointed by the City Council to manage the daily operations and is responsible for making policy recommendations to the City Council and implementing City Council policy directives.

## G.2.6 ECONOMY AND TAX BASE

The economy of this community is based on tourism and local services. The city includes several miles of shoreline along Monterey Bay, though most of the beach is preserved as public park space and

nearly all development is landward of the coastal dunes and US Highway 1. The city is contiguous with the former Fort Ord military installation, an area experiencing and targeted for future infill growth and redevelopment including more than 1,000 new homes, a number of large mixed-use projects, and a new business center at the former military airport which the City now owns. Through these and other recent commercial and industrial developments, Marina is undergoing transition from a small, primarily bedroom community to a more diversified, vibrant, and self-sufficient community.

## G.3 PLANNING PROCESS

The City of Marina followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process. The City of Marina held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on August 31, 2021. Key stakeholders present at the meeting included:

- Layne Long, City Manager
- Doug McCoun, Fire Chief
- Brian McMinn, Public Works Director
- Fred Aegerter, Community Development Director
- Matt Mogensen, Assistant City Manager
- Marisol Gomez, Acting Finance Director
- Tino Nieto, Police Chief

## G.4 LAND USE AND DEVELOPMENT

The City of Marina General Plan was adopted in 2000. The City has about three miles of shoreline fronted by restored coastal dune habitat. The coastal zone inland of Highway 1 is limited to roughly 60 acres that includes commercial development, visitor-serving overnight accommodations, coastal dunes, and three significant coastal wetlands. The City received a grant from the Coastal Commission in 2017 and is currently in the process of a comprehensive update to their Local Coastal Program to address sustainable development, increased opportunities for coastal access and recreation, and vulnerability to climate change and sea level rise. The City is also including provisions that embrace the concept of managed retreat.

The City gained land as part of the Fort Ord reuse, which includes several miles of shoreline along Monterey Bay, though most of the beach is preserved as public park space and nearly all development is landward of the coastal dunes and US Highway 1. The former Fort Ord land is an area experiencing and targeted for future infill growth and redevelopment including more than 1,000 new homes, a number of large mixed-use projects, and a new business center at the former military airport which the City now owns. Through these and other recent commercial and industrial developments, Marina is undergoing transition from a small, primarily bedroom community to a more diversified, vibrant, and self-sufficient community.

Marina's Urban Growth Boundary protects the City of Marina from development in current open space areas north of the City limits and along its coast, and to encourage efficient development in central

Marina and within Marina's portion of former Fort Ord, On June 16, 2020, the City Council of the City of Marina adopted Resolution 2020-75, submitting to the voters at the November 3, 2020 General Municipal Election a Measure approving a General Plan Amendment and Local Coastal Program Amendment extending the expiration date of the operative provisions of the 2000 Marina Urban Growth Boundary Initiative to December 31, 2040.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**. The City of Marina Safe Growth Survey was completed by Christy Hopper, Planning Services Manager for the City of Marina Community Development Department. The results are summarized in Table *G-1.*

**Table G-1**
**City of Marina Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 3.50 | 3.50 |
| Transportation | 4.33 | 3.00 |
| Environmental Management | 4.67 | 3.33 |
| Public Safety | 4.00 | 4.00 |
| Zoning Ordinance | 4.75 | 2.50 |
| Subdivision Regulations | 2.33 | 2.67 |
| Capital Improvement Program & Infrastructure Policies | 3.33 | 3.00 |
| Building Code | 5.00 | 4.00 |
| Economic Development | 5.00 | 3.00 |
| **Average Survey Ratings** | **4.10** | **3.22** |

## G.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Marina's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Marina is included in this Annex.

The City of Marina's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table G-2* displays the results of the hazard risk ranking exercise that was performed by the City of Marina's Planning Team.

**Table G-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Marina**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 1.6 | 1.4 | 1.4 | 1.4 | 5.8 | Slight |
| Coastal Erosion | 2.8 | 2.7 | 2.5 | 2.5 | 10.5 | Substantial |
| Coastal Flooding | 2.0 | 1.8 | 1.8 | 2.2 | 7.8 | Possible |
| Cyber-Attack | 2.4 | 2.2 | 2.2 | 2.4 | 9.2 | Moderate |
| Dam Failure | - | - | - | - | - | - |
| Drought & Water Shortage | 2.7 | 2.7 | 2.5 | 2.7 | 10.5 | Substantial |
| Earthquake | 3.0 | 2.8 | 2.8 | 3.0 | 11.7 | Substantial |
| Epidemic | 2.3 | 2.3 | 2.3 | 2.3 | 9.3 | Moderate |
| Extreme Cold & Freeze | 1.2 | 1.3 | 1.3 | 1.2 | 5.0 | Slight |
| Extreme Heat | 1.8 | 1.7 | 1.8 | 1.5 | 6.8 | Possible |
| Flash Flood | 1.5 | 1.3 | 1.2 | 1.3 | 5.3 | Slight |
| Hazardous Materials Incident | 2.2 | 2.0 | 2.0 | 2.0 | 8.2 | Moderate |
| Invasive Species | 2.2 | 2.0 | 1.8 | 1.7 | 7.7 | Possible |
| Levee Failure | - | - | - | - | - | - |
| Localized Stormwater Flooding | 2.0 | 2.0 | 1.8 | 1.7 | 7.5 | Possible |
| Mass Migration | 1.8 | 1.8 | 2.0 | 2.0 | 7.7 | Possible |
| Pandemic | 2.7 | 2.7 | 2.5 | 2.5 | 10.3 | Substantial |
| Riverine Flooding | 1.7 | 1.3 | 1.7 | 1.3 | 6.0 | Slight |
| Sea Level Rise | 2.7 | 3.2 | 2.5 | 2.7 | 11.0 | Substantial |
| Severe Winter Storms | 2.0 | 1.7 | 2.0 | 2.2 | 7.8 | Slight |
| Slope Failure | 1.5 | 1.5 | 1.7 | 1.7 | 6.3 | Possible |
| Targeted Violence | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Terrorism | 1.5 | 1.5 | 1.5 | 1.5 | 6.0 | Possible |
| Tsunami | 2.0 | 2.2 | 2.3 | 2.3 | 8.8 | Moderate |
| Utility Interruption/ PSPS | 2.7 | 2.5 | 2.2 | 2.2 | 9.5 | Moderate |
| Water Contamination | 2.5 | 2.0 | 2.2 | 2.0 | 8.7 | Moderate |
| Wildfire | 2.8 | 2.5 | 2.5 | 2.7 | 10.5 | Substantial |
| Windstorms | 2.2 | 2.2 | 2.2 | 2.5 | 9.0 | Moderate |

### G.5.1 AGRICULTURAL EMERGENCIES

There is no agricultural land located within the City, so therefore an agricultural emergency does not pose a direct threat. Since agriculture is a major economic driver in the County, an agricultural emergency could have indirect economic impacts on the City.

### G.5.2 COASTAL EROSION

Natural dune erosion from large storm waves is the primary hazard challenging the Marina shoreline. To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center Coastal Storm Modeling System (CoSMos) shoreline change, and cliff retreat projection data was used. For cliff retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on Ocean Protection Council (OPC) High Risk Aversion Guidance. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion.

Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

*Table G-3* summarizes population and property exposure to coastal erosion risk.

**Table G-3**
**Population and Property Exposed to Coastal Erosion Risk in Marina**

| Sea Level Rise Scenario/ Erosion Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| **Cliff Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 0 | $0 |
| **Shoreline Erosion** | | | | | |
| Sea Level Rise (25 cm) | 34 | 0 | $0 | 20 | $45,275,418 |
| Sea Level Rise (75 cm) | 34 | 0 | $0 | 20 | $45,275,418 |
| Sea Level Rise (200 cm) | 34 | 0 | $0 | 20 | $45,275,418 |

Coastal dune erosion hazards are the biggest threat to the City of Marina, with potentially up to five feet of sea level rise. The primary impact from this erosion will be to open space, recreation, and dune habitats along Marina State Beach. Infrastructure and facilities projected to be eroded and damaged include Marina Coast Water District facilities, some portions of the wastewater conveyance system including a sewer pump station and an (aging/ phasing out) water treatment facility, the Sanctuary Beach Resort, one groundwater supply well, and the coastal access and associated parking lot at Marina State Park.

Reduction of erosion rates from the recent cessation of sand mining is expected to reduce the risk of sea level rise and erosion impacts to the City.

## G.5.3 DAM AND LEVEE FAILURE

*Dam Failure*

There is no population or property in the City located in the dam inundation zones of the Los Padres and Forest Lake dams.

*Table G-4* summarizes population and property in the City exposed to spillway and dam failure of the Nacimiento and San Antonio dams.

**Table G-4**
**Population and Property Exposed to Dam Failure Risk by Dam and Failure Type in Marina**

| Dam Failure Scenario | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Nacimiento Spillway Failure | 5 | 1 | $199,341 | 2 | $87,938 |
| Nacimiento Dam Failure | 39 | 1 | $199,341 | 16 | $45,275,418 |
| San Antonio Spillway Failure | 5 | 1 | $199,341 | 1 | $0 |
| San Antonio Dam Failure | 5 | 1 | $199,341 | 2 | $87,938 |

*Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

## G.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

## G.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 4,991 residential and non-residential buildings in the City, with a total value of $2,745,331,711. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table G-5* summarizes population and property in the City exposed to liquefaction risk.

**Table G-5**
**Population and Property Exposed to Liquefaction Risk in Marina**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 39 | 1 | $199,341 | 21 | $45,275,418 |
| Moderate Liquefaction Susceptibility | 516 | 16 | $9,411,509 | 29 | $57,441,079 |

## G.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table G-6* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table G-6**
**Population and Property Exposed to Flooding Risk in Marina**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 9,496 | 96 | $55,762,807 | 98 | $89,907,734 |
| 500-Year Flood Zone | 436 | 0 | $0 | 5 | $0 |

## G.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table G-7* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table G-7**
**Population and Property Exposed to Hazardous Materials Incident Risk in Marina**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 16,292 | 2,413 | $1,483,891,351 | 1,018 | $515,933,364 |
| Fixed Source | 443 | 0 | $0 | 4 | $28,649,394 |

## G.5.8 HUMAN-CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## G.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

## G.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage.

All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts.

FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table G-8.*

**Table G-8**
**Annualized Frequency and Exposure to Severe Weather Events in Marina**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.34 | Frequency (*Distinct Events)* | 0.09 |
| Exposed Population | 15,069 | Exposed Population | 15,069 |
| Exposed Building Values | $1,244,655,000 | Exposed Building Values | $1,244,655,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $219 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.08 | Frequency (*Distinct Events)* | 1.31 |
| Exposed Population | 15,069 | Exposed Population | 10,187 |
| Exposed Building Values | $1,244,655,000 | Exposed Building Values | $749,974,394 |
| Expected Annual Loss of Building Value | $1 | Expected Annual Loss of Building Value | $19,235,838 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.42 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 15,069 | Exposed Population | 0 |
| Exposed Building Values | $1,244,655,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $179 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

## G.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 1,634 people and $192,621,122in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible earthquake induced to landslides.

## G.5.12 TSUNAMI

Population and property in the City located in a mapped tsunami inundation zone is summarized in *Table G-9.*

**Table G-9**
**Population and Property in Tsunami Inundation Zone in Marina**

| Inundation Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Tsunami Inundation Zone | 34 | 0 | $0 | 20 | $45,275,418 |

## G.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

## G.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table G-10* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table G-10**
**Population and Property Exposed to Wildfire Risk in Marina**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 3,256 | 6 | $3,505,063 | 13 | $37,060,120 |
| Moderate Fire Threat | 13,699 | 574 | $458,626,555 | 492 | $379,314,058 |

## G.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the rural economies, along with changes to agriculture and crops, which are a critical backbone of Monterey County's economic success. There will also be negative impacts to ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

Sea level rise risk exposure in the City was calculated based on the NOAA Office for Coastal Management sea level rise viewer projections. Three sea level rise levels (25 cm, 75 cm, and 200 cm) were chosen to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

Population and property exposed to sea level rise risk is summarized in *Table G-11*.

**Table G-11**
**Population and Property Exposed to Sea Level Rise in Marina**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 34 | 0 | 0 | 20 | $45,275,418 |
| 3 ft Sea Level Rise (2060) | 34 | 0 | 0 | 20 | $45,275,418 |
| 7 ft Sea Level Rise (2100) | 34 | 1 | $199,341 | 21 | $45,275,418 |

## G.6 CAPABILITY ASSESSMENT

The City of Marina performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table G-12*
- An assessment of administrative and technical capabilities is presented in *Table G-13*
- An assessment of fiscal capabilities is presented in *Table G-14*
- An assessment of education and outreach capabilities is presented in *Table G-15*
- Classifications under various community mitigation programs are presented in *Table G-16*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section G.6.1 in *Table G-17*
- An overall self-assessment of capability is presented in Section G.6.2 in *Table G-18*

**Table G-12**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Development | |
| Capital Improvement Plan | ☒ | • Public Works | |
| Floodplain Management Plan | ☒ | • Public Works | |
| Open Space Management Plan | ☒ | • Public Works | Under Development and will be addressed with the General Plan update. |
| Stormwater Management Plan | ☒ | • Public Works | |
| Coastal or Shoreline Management Plan | ☒ | • Community Development | Being updated to address Sea Level rise and Coastal Hazards, 2019 Existing Conditions and Sea Level Rise Adaptation Report |
| Local Coastal Program | ☒ | • Community Development | Certified in 1982, Currently being updated to address Sea Level rise and Coastal Hazards |
| Climate Action/ Adaptation Plan | ☒ | • Community Development | Under development, working with AMBAG for final adoption with the General Plan update |
| Emergency Operations Plan | ☒ | • Fire Department | Regional EOC |
| Continuity of Operations Plan | ☒ | • Fire Department | |
| Community Wildfire Protection Plan | ☒ | • Fire Department | County Wide Plan |
| Evacuation Plan | ☒ | • Fire Department | County Wide, Local Tsunami |
| Disaster Recovery Plan | ☐ | • | |
| Economic Development Plan | ☒ | • City Administration | In General Plan |

**Table G-12**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| Historic Preservation Plan | ☒ | • Community Development | In General Plan |
| Transportation Plan | ☒ | • Public Works | Part of the General Plan and part of TAMC |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works | Ordinance 15.48 – Flood Damage Prevention |
| Zoning Ordinance | ☒ | • Community Development | |
| Subdivision Ordinance | ☒ | • Community Development | |
| Site Plan Review Requirements | ☒ | • Community Development | |
| Unified Development Ordinance | ☐ | | N/A |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | N/A |
| Building Code | ☒ | • Community Development | |
| Fire Prevention Code | ☒ | • Fire Department | |
| Other Hazard-Specific Ordinances | | • Ordinance 8.46 – Urban Storm Water Quality Management and Discharge Control | |

**Table G-13**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Development<br>• Public Works | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Community Development<br>• Public Works | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Community Development<br>• Public Works | |
| Building Inspector | ☒ | • Community Development | |
| Emergency Manager | ☒ | • City Manager | |
| Floodplain Manager | ☒ | • Public Works | Public Works Director |
| Land Surveyors | ☒ | • Public Works | Public Works Director |
| Resource development staff or grant writers | ☐ | | |
| Public Information Officer | ☒ | • Police Department | Police Chief |
| Scientist(s) familiar with the hazards of the community | ☐ | | |

**Table G-13**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • All Departments | |
| Personnel skilled in Geographic Information Systems (GIS) | ☐ | | |
| Maintenance programs to reduce risk | ☒ | • Public Works | |
| Warning systems/services | ☒ | • Monterey County | |
| Mutual Aid Agreements | ☒ | • Fire Department<br>• Public Works | |

**Table G-14**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Public Works | |
| Special Purpose Taxes | ☒ | • Finance | |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | |
| Development Impact Fees | ☒ | • Community Development | |
| General Obligation Bonds | ☒ | • City Manager<br>• Finance | |
| Special Tax and Revenue Bonds | ☒ | • City Manager<br>• Finance | |
| Community Development Block Grants (CDBG) | ☐ | | |

**Table G-15**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☒ | • Mayor's Office | |
| Ongoing public education or information program (e.g., | ☒ | • Police Department<br>• Fire Department | All Departments |

**Table G-15**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| responsible water use, fire safety, household preparedness, environmental education) | | • Public Works<br>• Community Development | |
| Natural disaster or safety related school programs | ☒ | • Parks and Recreation | |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table G-16**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | Yes | 3/3Y | October 1, 2014 |
| *StormReady* Certification | Yes | - | |
| *TsunamiReady* Certification | Yes | - | |
| *Firewise Communities* Certification | No | - | - |

## G.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table G-17**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Brian McMinn, Public Works Director |
| **NFIP Community Number:** | 060727 |
| **Flood Insurance Policies in Force:** | 45 |
| Insurance Coverage in Force: | $13,664,400 |
| Written Premium in Force: | $61,833 |
| **Total Loss Claims:** | 0 |
| Total Payments for Losses: | 0 |

**Adopted Regulations that meet NFIP Requirements:**

- Ordinance 15.48 – Flood Damage Prevention
- Ordinance 8.46 – Urban Storm Water Quality Management and Discharge Control

**Date of last NFIP Community Assistance Visit (CAV):**
Research indicates the last contact with the CAC was in 2010. There is no evidence of compliance issues from that time.

**Higher standards that exceed minimum NFIP requirement:**
N/A

**Additional floodplain management provisions:**
The soils in the City of Marina are mostly sand which lends itself towards flood prevention. On top of the naturally good infiltration rates, the City's storm water standards exceed those of the State with a

design retention for all new development and redevelopment with 100% retention of the 100-year storm event.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**
The City follows the State requirements for on-site mitigation of storm events. City requirements exceed those of the State with a retention requirement of 100% of all on-site runoff for the 100-year storm event. The Design Engineer of every major project in the City must sign off on a self-certification that they meet the City's requirements for on-site retention. The City's website is updated on an annual basis for training opportunities in post-construction Best Management Practices (BMPs) for stormwater collection and retention. The City also conducts an annual audit of its Municipal Code to confirm the information provided is up to the latest State mandates.

**Existing impediments to running an effective NFIP program:**
None

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

- Maintain digital FEMA elevation certificates for all construction in the floodplain.
- Encourage or require certain local staff positions to obtain and maintain Certified Floodplain Manager (CFM) certification.
- Hold informative work sessions for newly elected officials and new appointees to planning commissions and appeals/variance boards, to provide an overview of floodplain management, the importance of participating in the NFIP, and the implications of failing to enforce the requirements of the program or failing to properly handle variance requests.
- Obtain FEMA's Substantial Damage Estimator and attend training to be prepared to use it when damage occurs; develop mutual aid agreements with other jurisdictions to augment local inspection personnel after major disasters.
- Maintain supplies of FEMA/NFIP materials to help property owners evaluate measures to reduce potential hazard damage. Make available in public buildings, local library, website, etc. and inform people who they can call to learn more information.

## G.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table G-18**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | High |
| Education and Outreach Capability | Moderate |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## G.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Staffing is the largest limitation to capability. Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## G.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.
- **2019 Existing Conditions and Sea Level Rise Adaptation Report**: Includes the principles of hazard mitigation to address sea level rise risk.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and

expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## G.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Marina Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Marina are identified below:

- The City continues to grow, with many new development projects underway or scheduled for the former site of Fort Ord but continues to be very concerned with maintaining a sustainable water supply – concerns that have only been exacerbated by the anticipated effects of climate change, including saltwater intrusion. It continues to coordinate and share these concerns the Monterey County Water Resources Agency and the Marina Coast Water District.

- The City experiences coastal storm events in March/April, with extreme winds that have caused significant tree damages and heavy rains that have caused isolated/localized nuisance flooding due to inadequate drainage systems.
- The Sanctuary Beach Resort is one of the only developed parcels in the city located seaward of Highway 1. There is local concern that coastal erosion and sea level rise could have a detrimental impact on the continued use of the property.
- Coastal erosion (potentially up to 5 to 7 feet a year) is a concern for areas such as Marina Coast Water District at 100 Reservation Road and potentially the former Cemex Sandplant site on Lapis Road toward the north of central Marina.
- The City is concerned about the high threat of wildland fire due to existing fuels in combination with large areas of urban/wildland interface and intermix. Areas of concern include former Fort Ord lands, areas on the east end of the City around the airport and near Imjin Road, undeveloped land within the City, and areas near Reservation Road. The City is working to address some of these areas through fuel management practices.
- The City is concerned with limited ingress/egress to the community following major disaster events. Current traffic levels, highway capacity, gridlock, and lack of mass transit options would make a large evacuation difficult and also limit emergency response capabilities.

## G.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Marina Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table G-20* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table G-19* includes the status of actions completed or removed from the previous plan. In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table G-19**
**City of Marina Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **1** | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary. | **Completed** | Completed and ongoing as needed. Annual hazardous materials inspections are conducted by Monterey County Environmental Health in conjunction with the Public Works Supervisor at the City Corporation Yard (5th Avenue), the Lake Drive Corporation Yard (3040 Lake Court) and the fuel farm at the Marina Municipal Airport. |

**Table G-20**
**City of Marina Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | Ongoing/ Continuous | All | Continue emergency preparedness and hazard mitigation public outreach, including the Annual Safety Night Out, school outreach programs, meeting with community groups, and providing information related to disaster preparedness, Alert Monterey County, and tsunamis, earthquake, fire, and flood safety on the City's website. | Priority / High | Public Safety | General Funds, HMGP and PDM Grants |
| **2** | Ongoing/ Continuous | Flooding | Explore mitigation opportunities for repetitively flooded properties, and if necessary, carry-out acquisition, relocation, elevation, and flood-proofing measures to protect these properties. | Priority / High | Public Works | HMGP and PDM Grants |
| **3** | Ongoing/ Continuous | Flooding | Identify and carry-out minor flood and stormwater management projects that would reduce damage to infrastructure and damage due to local flooding/ inadequate drainage. These include the modification of existing culverts and bridges, upgrading capacity of storm drains, upgrading aging storm drain infrastructure, upgrading corrugated metal pipes, and creation of stormwater retention basins in small watersheds. | Priority / High | Public Works | HMGP and PDM Grants |
| **4** | Ongoing | Wildfire, Utility Interruption | Adopt more prescriptive rules relative to the construction and maintenance of overhead lines. | Priority / High | Community Development, Planning Services | General Funds |
| **5** | In Progress | All | During the next General Plan Update, within the Safety Element, collect background data specific to Marina and consider appropriate goals, policies, and objectives to address hazards identified within the Multi-Jurisdictional Hazard Mitigation Plan. | Priority / Medium | Community Development, Planning Services | General Plan |

**Table G-20**
**City of Marina Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **6** | In Progress | All | Continue to collaborate with CSUMB and the City of Seaside to provide resources for the organization, staffing, training, activation, and operation of the joint Regional Emergency Operations Center (EOC). | Priority / High | Fire Department, Administration | Cost share as identified in the MOA & grant opportunities |
| **7** | In Progress | Flooding, Coastal Erosion, Sea Level Rise | Complete Local Coastal Program Update, which address sea level rise and coastal hazards. | Priority / Medium | Community Development, Planning Services | General Plan |
| **8** | In Progress | Wildfire | Continue defensible space projects on high hazard areas on the east side of the City and on University of Santa Cruz owned property. | Priority / High | Fire Department, Public Works | General Fund |
| **9** | Ongoing/ Continuous | Wildfire | Continue coordination with Monterey County Regional Fire and CAL FIRE BEU on both wildfire mitigation and suppression efforts. | Priority / Medium | Fire Department | General Fund |
| **10** | In Progress | Hazardous Materials Incidents | Complete study on the Monterey Peninsula Landfill to identify and address odor and the impacts of the industrial facilities on the North end of the City of Marina. | Priority / High | Public Works | General Fund |

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# ANNEX H:
# CITY OF MONTEREY

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

# H. CITY OF MONTEREY

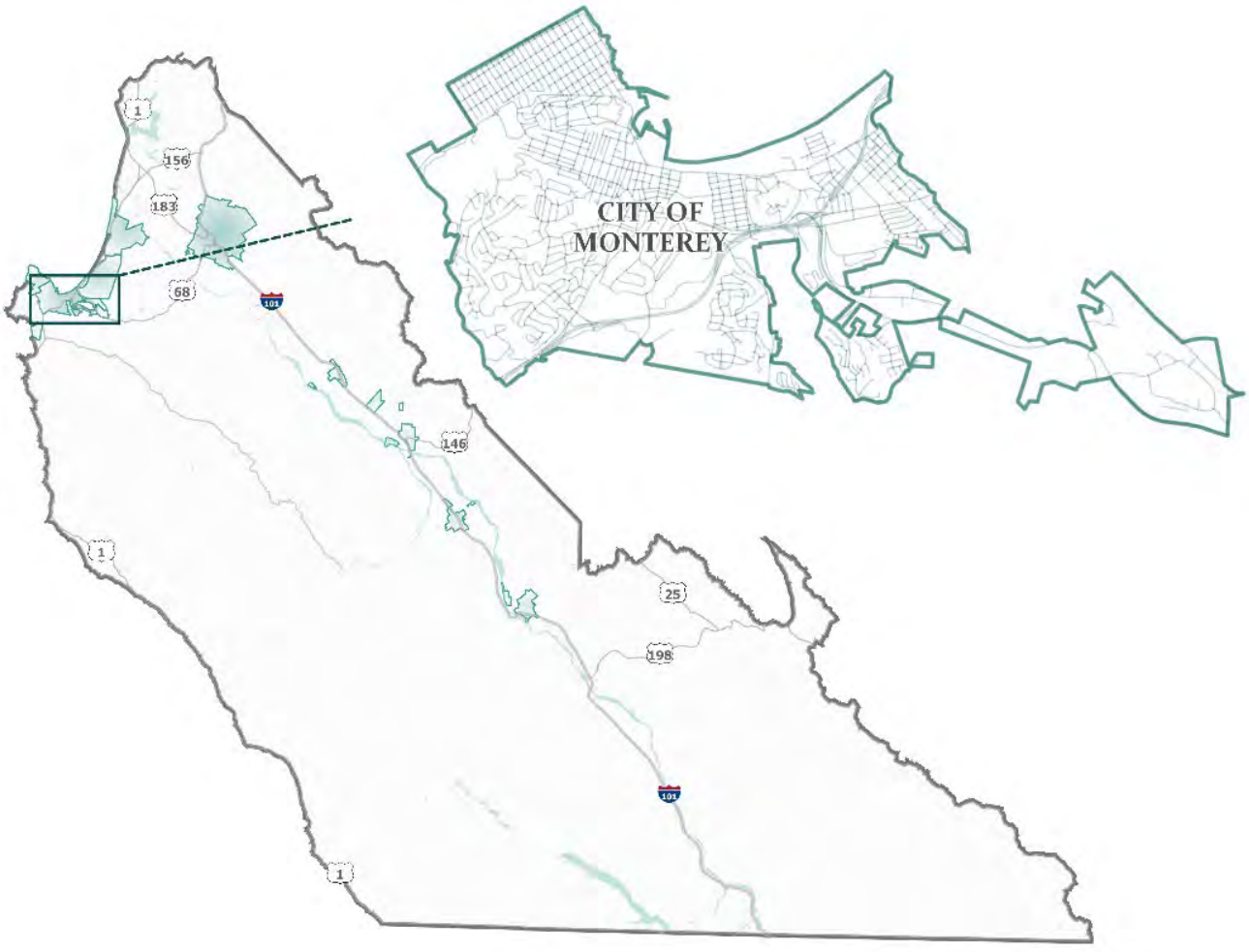
## H.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Gaudenz Panholzer
Fire Chief
Monterey Fire Department
610 Pacific Street
Monterey, CA 93940
(831) 646-3900
panholzer@monterey.org

**Alternate Point of Contact**
Nat Rojanasathira
Assistant City Manager
Monterey City Manager's Office
580 Pacific Street
Monterey, CA 93940
(831) 646-3760
rojanasathira@monterey.org

## H.2 COMMUNITY PROFILE

### H.2.1 LOCATION



### H.2.2 GEOGRAPHY AND CLIMATE

Monterey is a popular waterfront city located on the southern edge of Monterey Bay, occupying nearly nine square miles between the cities of Seaside and Pacific Grove. It has a rich history, serving as California's first capital city and later the center of a thriving fishing industry. Its renowned scenic environment stems from its Peninsula coastline and central ridge of wooded hills, coupled with a broad range of historic buildings, antique adobes, and other culturally significant sites.

### H.2.3 HISTORY

The area that is today the City of Monterey, was originally inhabited by Costanoan Indians, and in 1542 it was first seen by the Spanish explorer Juan Rodríguez Cabrillo. In 1602 Sebastián Vizcaíno named the area in honor of the count de Monte Rey, viceroy of New Spain (Mexico). The Royal Presidio de San Carlos de Monterey was established on June 3, 1770, and Monterey functioned as the capital of Alta California under both Spain (1774 to 1822) and Mexico (1822 to 1846). Under Mexico, Monterey remained the capital of a vast area that included all of present-day California and the American Southwest. In 1846, Commodore John Drake Sloat claimed the area for the United States and raised the American flag over the town's presidio during the Mexican War. The first constitutional convention in California met at Colton Hall in 1849. The City of Monterey was first incorporated in 1850. Monterey served as county seat of Monterey County until 1873, when the seat was moved to nearby Salinas.

### H.2.4 POPULATION

The City of Monterey has a population of 30,218 people (2020 Census), an increase of 8.7% since 2010.

### H.2.5 GOVERNING BODY FORMAT

The City of Monterey is a Charter City that operates with a Council/City Manager form of Government. The Council consists of five members: The Mayor, elected to a two-year term, and four council members, elected to four-year terms. The Mayor and Council Members are elected at-large. The City Council appoints the City Manager and City Attorney. The City Manager serves as the professional administrator of the City and is responsible for coordinating all day-to-day operations and administration. The City Manager appoints a professional staff to manage the organization.

### H.2.6 ECONOMY AND TAX BASE

The City Monterey was once a leading fishing and whaling port, but its economic mainstay is now tourism. The City of Monterey is widely known for its numerous tourist attractions including the Monterey Bay Aquarium, Cannery Row, and Fisherman's Wharf. It is also home to major military installations including the Naval Postgraduate School and the Defense Language Institute, located on the Presidio of Monterey.

## H.3 PLANNING PROCESS

The City of Monterey followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Monterey held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on July 19, 2021. Key stakeholders present at the meeting included:

- Nat Rojanasathira, Assistant City Manager
- Gaudenz Panholzer, Fire Chief
- Christy Sabdo, Associate Planner
- Lori Lynn Williamson, Chief Building Official
- Karen Larson, Parks & Recreation Director
- Sara South, Capital Programs Coordinator
- Ursula Glick-Kelley, GIS Coordinator
- Tricia Wotan, Environmental Regulations Manager
- Andrea Renny, City Traffic Engineer
- Justin Prouty, Urban Forester
- Louis Marcuzzo, Parks Operations Manager
- Angie Blake, Assistant Director of Information Resources

## H.4 LAND USE AND DEVELOPMENT

The City of Monterey covers 8.4 square miles of land area. Approximately 3.5 square miles of water area in Monterey Bay is also within the incorporated City. Monterey's growth and development stems from these physical features, including a downtown commercial district on the flatter old marsh area, lighter commercial, and medium-density residential on the sloping mesas, a mixed-use waterfront with numerous retail and recreational activities, neighborhoods separated by wooded canyons, and low density residential in the steep wooded foothills.

The General Plan was adopted in 2005. The largest land use category is residential and single-family homes occupy the vast majority of residential land. The main commercial areas are the downtown area, focused around three-block-long Alvarado Street; Del Monte regional shopping center; commercial development along Lighthouse Avenue, Del Monte Avenue, and North Fremont Street; visitor-serving commercial in downtown, Cannery Row, Fisherman's Wharf, and along Munras Avenue; and medical offices 10 concentrated around the Pacific-El Dorado-Cass Street Area. Since 1994, the City's zoning standards have encouraged mixed-use commercial and residential in commercial zones. Industrial land in the City is concentrated in the area adjacent to and east of the Monterey Peninsula Airport. Military and other public facilities, including streets, highways, and schools, cover 46% of the City's land area. The City has been consistent in its efforts to protect and maintain a wide range of aesthetic physical features, including forested hillsides, greenbelts, creek corridors, parks, beaches, and shoreline.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The Monterey Safe Growth Survey was completed by Christy Sabado, Associate Planner in the City of Monterey Community Development Department. The results are summarized in *Table H-1.*

**Table H-1**
**City of Monterey Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 3.25 | 3.75 |
| Transportation | 2.67 | 4.67 |
| Environmental Management | 3.33 | 3.67 |
| Public Safety | 1.67 | 4.00 |
| Zoning Ordinance | 2.25 | 4.75 |
| Subdivision Regulations | 1.67 | 3.00 |
| Capital Improvement Program & Infrastructure Policies | 2.00 | 3.33 |
| Building Code | 5.00 | 5.00 |
| Economic Development | 2.00 | 5.00 |
| **Average Survey Ratings** | 2.65 | 4.13 |

## H.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Monterey's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Monterey is included in this Annex.

The City of Monterey's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**.

*Table H-2* displays the results of the hazard risk ranking exercise that was performed by the City of Monterey's Planning Team.

**Table H-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Monterey**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | - | - | - | - | - | - |
| Coastal Erosion | 2.7 | 2.9 | 2.9 | 2.9 | 11.4 | Substantial |
| Coastal Flooding | 2.9 | 3.0 | 3.1 | 3.1 | 12.1 | High |
| Cyber-Attack | 2.8 | 2.8 | 2.9 | 3.2 | 11.7 | Substantial |
| Dam Failure | - | - | - | - | - | - |
| Drought & Water Shortage | 3.3 | 3.1 | 3.0 | 3.2 | 12.6 | High |
| Earthquake | 2.9 | 2.6 | 3.0 | 3.4 | 11.9 | Substantial |
| Epidemic | 3.1 | 2.8 | 3.0 | 2.9 | 11.8 | Substantial |
| Extreme Cold & Freeze | 1.4 | 1.3 | 1.3 | 1.5 | 5.5 | Slight |
| Extreme Heat | 2.0 | 2.0 | 2.0 | 1.9 | 7.9 | Possible |
| Flash Flood | 2.0 | 2.0 | 2.0 | 2.3 | 8.3 | Moderate |
| Hazardous Materials Incident | 2.2 | 2.1 | 2.0 | 3.0 | 9.3 | Moderate |
| Invasive Species | 2.7 | 2.4 | 2.2 | 2.3 | 9.6 | Moderate |
| Levee Failure | - | - | - | - | - | - |
| Localized Stormwater Flooding | 2.4 | 2.7 | 2.4 | 2.4 | 9.9 | Moderate |
| Mass Migration | 1.2 | 1.2 | 1.2 | 1.2 | 4.8 | Slight |
| Pandemic | 3.1 | 2.9 | 3.0 | 3.1 | 12.1 | High |
| Riverine Flooding | 1.7 | 1.9 | 1.8 | 1.5 | 6.9 | Possible |
| Sea Level Rise | 2.7 | 2.9 | 3.1 | 3.4 | 12.1 | High |
| Severe Winter Storms | 2.9 | 2.8 | 2.4 | 2.6 | 10.7 | Substantial |
| Slope Failure | 2.6 | 2.6 | 2.6 | 2.6 | 10.4 | Substantial |
| Targeted Violence | 2.0 | 2.0 | 2.9 | 3.2 | 10.1 | Substantial |
| Terrorism | 2.2 | 1.9 | 3.0 | 3.3 | 10.4 | Substantial |
| Tsunami | 2.3 | 2.3 | 3.1 | 3.1 | 10.8 | Substantial |
| Utility Interruption/ PSPS | 3.1 | 2.7 | 2.7 | 2.7 | 11.2 | Substantial |
| Water Contamination | 3.0 | 2.3 | 3.3 | 3.3 | 11.9 | Substantial |
| Wildfire | 3.1 | 2.0 | 3.7 | 3.8 | 12.6 | High |
| Windstorms | 2.8 | 2.8 | 2.6 | 2.6 | 10.8 | Substantial |

### H.5.1 AGRICULTURAL EMERGENCIES

There is no agricultural land located within the City, so therefore an agricultural emergency does not pose a direct threat. Since agriculture is a major economic driver in the County, an agricultural emergency could have indirect economic impacts on the City.

### H.5.2 COASTAL EROSION

To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center Coastal Storm Modeling System (CoSMos) shoreline change, and cliff retreat projection data was used. For cliff

retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on Ocean Protection Council (OPC) High Risk Aversion Guidance. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion. Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

*Table H-3* summarizes population and property exposure to coastal erosion risk.

**Table H-3**
**Population and Property Exposed to Coastal Erosion Risk in Monterey**

| Sea Level Rise Scenario/ Erosion Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| **Cliff Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 0 | $0 |
| **Shoreline Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 0 | $0 |

Sea level rise and erosion modeling is inherently uncertain, and therefore future modeling could identify people and property at risk to coastal erosion. The City could also be impacted by other types of erosion not profiled in this Plan.

## H.5.3 DAM AND LEVEE FAILURE

### *Dam Failure*

There is no population or property in the City located in a mapped dam inundation zone of any of the dams (Nacimiento, San Antonio, Los Padres, and Forest Lake) analyzed in this Plan.

### *Levee Failure*

Based on the Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

## H.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution. A prolonged drought

could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Tourism, a major economic driver in the City, will likely be impacted by drought conditions and thereby impact the local economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### H.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 12,204 residential and non-residential buildings in the City, with a total value of $6,677,984,992. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Earthquake-induced liquefaction risk was also assessed. *Table H-4* summarizes population and property in the City exposed to liquefaction risk. Additionally, approximately 38 miles of roadway in the City is located in an area of high liquefaction risk.

**Table H-4**
**Population and Property Exposed to Liquefaction Risk in Monterey**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 8,647 | 435 | $317,615,274 | 925 | $461,245,115 |
| Moderate Liquefaction Susceptibility | 588 | 288 | $233,293,803 | 88 | $50,222,070 |

### H.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table H-5* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table H-5**
**Population and Property Exposed to Flooding Risk in Monterey**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 1,357 | 7 | $7,036,275 | 296 | $261,933,091 |
| 500-Year Flood Zone | 1,551 | 64 | $45,801,646 | 340 | $186,215,085 |

### H.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook

that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Department of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table H-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table H-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in Monterey**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 16,773 | 3,950 | $2,515,586,019 | 3,924 | $1,892,199,199 |
| Fixed Source | 0 | 0 | $0 | 0 | $0 |

## H.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## H.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

## H.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe

weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts. FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table H-7.*

**Table H-7**
**Annualized Frequency and Exposure to Severe Weather Events in Monterey**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.19 | Frequency (*Distinct Events)* | 0.03 |
| Exposed Population | 26,380 | Exposed Population | 26,380 |
| Exposed Building Values | $4,533,377,000 | Exposed Building Values | $4,533,377,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $583 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.08 | Frequency (*Distinct Events)* | 0.88 |
| Exposed Population | 26,380 | Exposed Population | 17,941 |
| Exposed Building Values | $4,533,106,201 | Exposed Building Values | $3,080,433,353 |
| Expected Annual Loss of Building Value | $2 | Expected Annual Loss of Building Value | $52,899,104 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.45 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 26,380 | Exposed Population | 0 |
| Exposed Building Values | $4,533,377,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $715 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

## H.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 4,150 people and $579,224,935 in building value in the City is exposed to landslide risk. Exposure of population and property in the City to earthquake induced landslides is summarized in *Table H-8.*

**Table H-8**
**Population and Property Susceptible to Earthquake Induced to Landslides in Monterey**

| Landslide Susceptibility | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High | 417 | 21 | $20,221,418 | 7 | $0 |
| Moderate | 5,532 | 679 | $498,743,525 | 576 | $431,060,199 |

Additionally, approximately 24 miles of road are located in an area of moderate susceptibility to earthquake-induced landslides and about 2 miles of roadway is located in an area of high susceptibility.

### H.5.12 TSUNAMI

Population and property in the City located in a mapped tsunami inundation zone is summarized in *Table H-9.* Additionally, 1 communication facility is located in the tsunami inundation zone.

**Table H-9**
**Population and Property in Tsunami Inundation Zone in Monterey**

| Inundation Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Tsunami Inundation Zone | 1,716 | 268 | $179,727,264 | 1,372 | $656,228,802 |

### H.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

### H.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate. *Table H-10* summarizes population and property in the City in very high, high, and moderate fire threat areas. No portion of the City was determined to be in an area of extreme fire threat. Additionally, areas of moderate wildfire threat include 4 medical facilities, 19 communication facilities, and 68 miles of roadway. Areas of high fire threat include 1 medical facility, 2 communication facilities and about 7 miles of roadway.

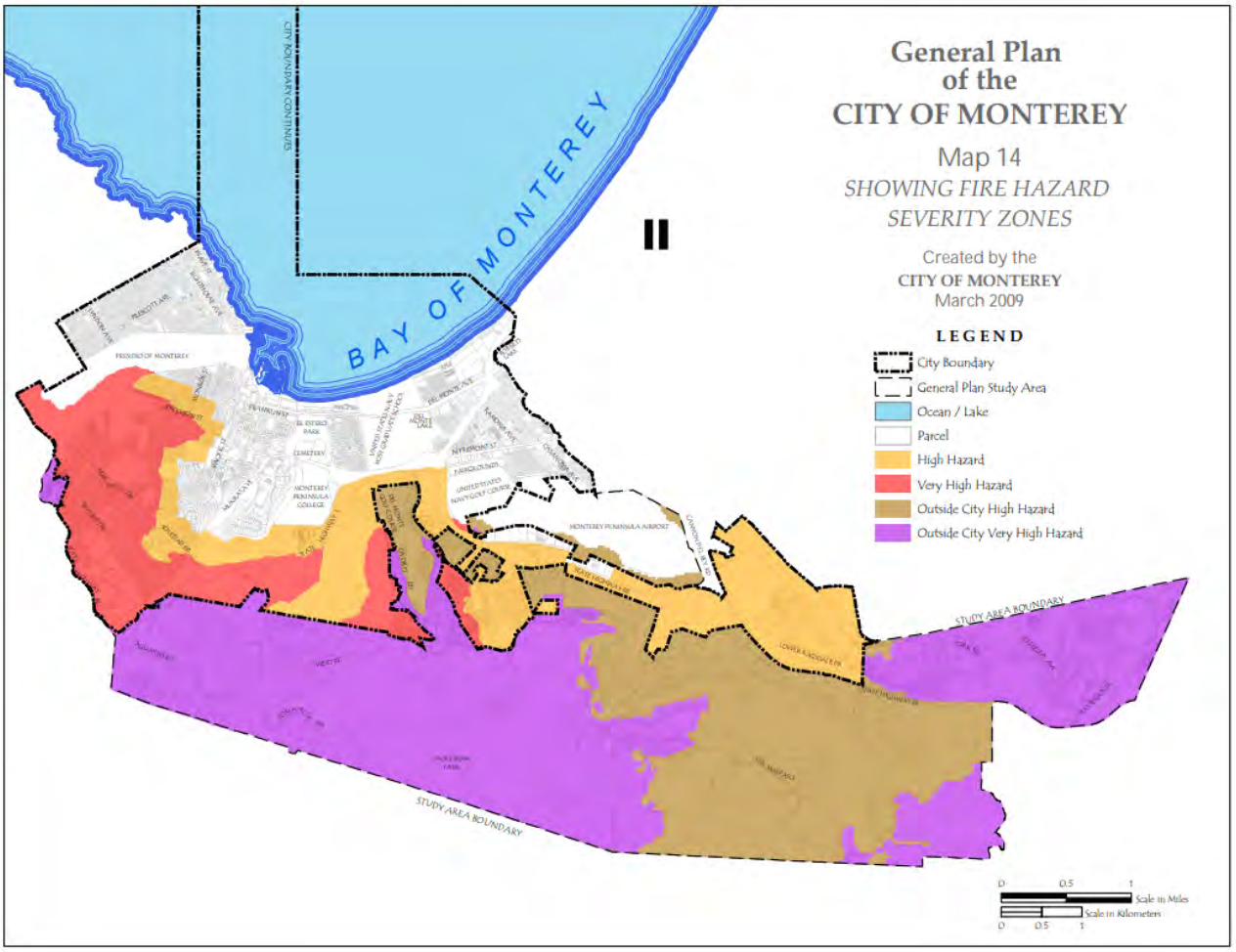
**Table H-10**
**Population and Property Exposed to Wildfire Risk in Monterey**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 3,354 | 97 | $166,594,741 | 608 | $243,020,149 |
| Moderate Fire Threat | 14,427 | 1,593 | $1,230,019,857 | 1438 | $955,872,431 |

Areas in the City have also been mapped as located in Fire Hazard Severity Zones (FHSZ) by CAL FIRE. These zones are designated Very High or High Fire Hazard Severity based on factors such as fuel, slope, and fire weather. Areas designated as Fire Hazard Severity Zones in the City are mapped in *Figure H-1*. Any future revisions or updates to the FHSZ maps will supersede current mapping. In Monterey, high fire hazard areas can be correlated with areas considered to be wildlands or areas with wildland type vegetation that are generally not intensely developed. High fire hazard areas generally contain forest and chaparral vegetation that is highly flammable, are of moderate to steep slope, and become extremely dry during the summer months. Forested areas are predominant, comprising nearly the entire high fire hazard area. Areas of special concern for wildfire risk include: the area behind the Del

Monte Shopping Center, and the City's greenbelts (Skyline Forest, Veterans Park, Monte Vista, Carmelo Street, Don Dahvee/Iris Canyon, Josselyn Canyon, Fisherman Flats, and the Old Capitol Site).

**Figure H-1**
**Wildfire Severity Zones in Monterey**




Source: City of Monterey General Plan

## H.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the rural economies, along with changes to agriculture and crops, which are a critical backbone of Monterey County's economic success. There will also be negative impacts to ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

Sea level rise risk exposure in the City was calculated based on the NOAA Office for Coastal Management sea level rise viewer projections. Three sea level rise levels (25 cm, 75 cm, and 200 cm) were chosen to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk. Population and property exposed to sea level rise risk is summarized in *Table H-11.*

**Table H-11**
**Population and Property Exposed to Sea Level Rise in Monterey**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 360 | 1 | 231 | 180 | $171,982,465 |
| 3 ft Sea Level Rise (2060) | 360 | 1 | 231 | 190 | $239,444,154 |
| 7 ft Sea Level Rise (2100) | 935 | 15 | $13,417,594 | 447 | $370,731,019 |

The City recently conducted a study of sea level rise impacts: City of Monterey: Adapting A Threatened Transportation Network to Sea Level Rise. *Figure H-2* shows the regions determined to be at risk to sea level rise. The report also found that several critical transportation arterials are at risk to sea level rise. Within a decade portions of Del Monte Avenue may be inundated by floodwaters during a 50-year event. By mid-century, regular tides will flood the Lighthouse Tunnel and reach Pearl Street where it crosses Lake El Estero; and large storm waves could reach as high as Cannery Row at the Monterey Bay Aquarium. By end of century, Fremont Street at Lake El Estero will be underwater.

**Figure H-2**
**Coastal Flood-Prone Regions in Monterey**

Source: City of Monterey: Adapting A Threatened Transportation Network to Sea Level Rise

## H.6 CAPABILITY ASSESSMENT

The City of Monterey performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table H-12*
- An assessment of administrative and technical capabilities is presented in *Table H-13*
- An assessment of fiscal capabilities is presented in *Table H-14*
- An assessment of education and outreach capabilities is presented *in Table H-15*
- Classifications under various community mitigation programs are presented *in Table H-16*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section H.6.1 *in Table H-17*
- An overall self-assessment of capability is presented in Section H.6.2 *in Table H-18*

**Table H-12**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Development | |
| Capital Improvement Plan | ☒ | • Public Works | |
| Floodplain Management Plan | ☐ | • Community Development | |
| Open Space Management Plan | ☒ | • Parks and Recreation | Fuel reduction and forest management greatly reduce the likelihood of fire and would lessen intensity in the event of a fire. |
| Stormwater Management Plan | ☒ | • Public Works | Storm Water 'Guidance Document' (Phase II Small MS4 SW Permit Coverage Document) |
| Coastal or Shoreline Management Plan | ☒ | • Community Development | The City has developed an analysis of sea level rise vulnerability and is currently working on drafting of the LCP update. |
| Local Coastal Program | ☐ | • Community Development | In the near future, the City is looking to update the City's Local Coastal Program and receive certification from CCC. |
| Climate Action/ Adaptation Plan | ☒ | • Community Development<br>• Sustainability | The City has a Climate Action Plan (CAP) that identifies existing activities that contribute to local climate adaptation and priority steps for adaptation planning. We are looking to update the CAP in the near future. |

**Table H-12**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| Emergency Operations Plan | ☒ | • Fire Department | |
| Continuity of Operations Plan | ☒ | • Various Departments | |
| Community Wildfire Protection Plan | ☐ | • Fire Department | CWPP is planned dependent on funding. |
| Evacuation Plan | ☒ | • Fire Department<br>• Police Department<br>• City Manager's Office | Monterey is participating in development of countywide Evacuation Plan. |
| Disaster Recovery Plan | ☒ | • Various Departments | |
| Economic Development Plan | ☐ | • City Manager's Office | Economic Development efforts continue to be refined. |
| Historic Preservation Plan | ☒ | | The City has a Historic Master Plan. The City also has multiple neighborhood-focused historic context statements and reconnaissance surveys. |
| Transportation Plan | ☒ | • Public Works<br>• Community Development | Update in progress. Move Monterey Plan, Multimodal plan, provides policies for enhanced mobility options |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works<br>• Community Development | City Code, Chapter 9 Building Regulations, Article 7 Flood Damage Prevention |
| Zoning Ordinance | ☒ | • Community Development | City of Monterey Code, Chapter 38 |
| Subdivision Ordinance | ☒ | • Community Development | City of Monterey Code, Chapter 33 |
| Site Plan Review Requirements | ☒ | • Community Development | The City has checklists for applications that require site plan completeness. |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | |
| California Building Code | ☒ | • Community Development | Monterey adopts and enforces the most recent version of California Building Codes and maintains a fully staffed Building Division. |
| Fire Prevention Code | ☒ | • Fire Department | Monterey adopts and enforces most recent version of California Fire Code and maintains a fully staffed Fire Department |

**Table H-13**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Development<br>• Public Works- Engineering | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Community Development<br>• Public Works- Engineering | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Community Development<br>• Public Works- Engineering | |
| Building Inspector | ☒ | • Community Development | |
| Emergency Manager | ☒ | • Fire Department<br>• City Manager's Office | Role is shared collateral duty for Fire Chief and Assistant City Manager. |
| Floodplain Manager | ☒ | • Public Works<br>• Community Development | Per City Code, Chapter 9 Article 7, Public Works Director is the designated Floodplain Administrator |
| Land Surveyors | ☒ | • Public Works-Engineering | |
| Resource development staff or grant writers | ☒ | • Community Development<br>• Public Works- Engineering | Planning and transportation related grants |
| Public Information Officer | ☒ | • City Manager's Office | |
| Scientist(s) familiar with the hazards of the community | ☒ | • Public Works-Engineering | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Community Development | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Information Resources | Monterey uses ESRI software and works with all City departments |
| Maintenance programs to reduce risk | ☒ | • Public Works<br>• Parks and Recreation | Monterey has programs in place to maintain all city-owned infrastructure. |
| Warning systems/services | ☒ | • Fire Department<br>• Police Department<br>• City Manager's Office | Monterey uses the County Everbridge notification system as well as Nixle. |
| Mutual Aid Agreements | ☒ | • Fire Department | Monterey participates in the Monterey County Fire Mutual Aid Plan as well as the California Fire Assistance Agreement. |

**Table H-14**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Public Works-Engineering | |
| Special Purpose Taxes | ☒ | • Public Works-Engineering<br>• Finance | Measure X Transportation Tax Measure (TAMC), Measure S for Roads, Storm Drains, Sewer (Public Works) |
| Stormwater Utility Fees | ☒ | • Public Works-Engineering | Monterey Code, Chapter 31.5 Article 1 |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | |
| Development Impact Fees | ☐ | | |
| General Obligation Bonds | ☐ | | |
| Special Tax and Revenue Bonds | ☒ | • Finance | Measure G Sales Tax (2020), Measure Y 2% Transient Occupancy Tax (TOT) increase (2020) increase to 12% |
| Community Development Block Grants (CDBG) | ☒ | • Community Development | The City of Monterey is a direct recipient of CDBG funding |

**Table H-15**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☒ | • Public Works-Engineering | Monterey Regional Storm Water Management Program (Environ. Protection)- Regularly coordinate with the California Marine Sanctuary Foundation, Save The Whales, Ecology Action, and others. |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • Public Works-Engineering<br>• City Manager's Office | Monterey Regional Storm Water Management Program (Environ. Education)- Monthly public meetings, robust regional public education/ outreach program. City website, Mornings with the Manager, Local Update Community Emails, City Focus, News Releases, etc. |

**Table H-15**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Natural disaster or safety related school programs | ☐ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table H-16**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | Yes | 2 | 6/17/2015 |
| *StormReady* Certification | Yes | - | |
| *TsunamiReady* Certification | Yes | - | |
| *Firewise Communities* Certification | No | - | - |

*Political Capability*

The Monterey City Council is supportive of hazard mitigation and long-term risk reduction projects. The City Council's mission is: "In partnership with our entire community, the Monterey City Council provides visionary leadership ensuring a safe, healthy, historic, economically vibrant, and sustainable environment." Hazard mitigation efforts support a safe and healthy environment in the City of Monterey.

## H.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table H-17**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Lori L Williamson, Chief Building Official |
| **NFIP Community Number:** | 060200 |
| **Flood Insurance Policies in Force:** | 58 |
| Insurance Coverage in Force: | $19,847,400 |
| Written Premium in Force: | $49,129 |
| **Total Loss Claims:** | 37 |
| Total Payments for Losses: | $2,654,717 |

**Adopted Regulations that meet NFIP Requirements:**

- City Code, Chapter 9 Building Regulations, Article 7 Flood Damage Prevention (Ordinance 3293; 06/2001)

**Date of last NFIP Community Assistance Visit (CAV):**

The City has a fairly new team that has been there for approximately 2 years. There has not been a CAV or CAC during that time.

**Higher standards that exceed minimum NFIP requirement:**

**Table H-17**
**National Flood Insurance Program (NFIP) Compliance**

City of Monterey standards meet NFIP minimum requirements.

**Additional floodplain management provisions:**
City of Monterey General Plan, Safety Element, includes the goals and policies under the topics of Flood Hazards and Emergency Preparedness related to flooding. Furthermore, Figure 13 of the General Plan shows Flood Zones. Some of the newer plans include flooding: Waterfront Master Plan (Goal C and Project C.4.d are related to flooding); See other Commercial, Neighborhood Plans, and Coastal Plans here. Additionally, the City of Monterey adopted a study titled, Adapting a Threatened Transportation Network to Sea Level Rise. See report and other details here.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**
None identified.

**Existing impediments to running an effective NFIP program:**
The City has not encountered any impediments to running an effective NFIP program.

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

- Maintain digital FEMA elevation certificates for all construction in the floodplain.
- Evaluate current floodplain management activities and coordinate with Insurance Services Office, Inc. to apply for participation in FEMA's Community Rating System (CRS).
- Establish a goal to have each plan reviewer and building inspector attend a related training periodically.
- Encourage or require certain local staff positions to obtain and maintain Certified Floodplain Manager (CFM) certification.
- Maintain supplies of FEMA/NFIP materials to help property owners evaluate measures to reduce potential hazard damage. Make information available in public buildings, local library, website, etc. and inform people who they can call to learn more information.

## H.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table H-18**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | High |
| Administrative and Technical Capability | High |
| Fiscal Capability | High |
| Education and Outreach Capability | High |
| Political Capability | High |
| **Overall Capability** | **High** |

## H.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions

- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## H.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.
- **Adapting A Threatened Transportation Network to Sea Level Rise**: Includes the principles of hazard mitigation to address sea level rise risk.
- **Climate Action Plan**: Highlights potential programs that could be implemented to reduce greenhouse gas emissions and discusses possible impacts of climate change.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and

expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## H.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Monterey Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Monterey are identified below:

- The Monterey Tides Resort, the Del Monte Beach Condos, the La Playa Townhomes, and the Monterey Harbor are located in an area threatened by wave attack, coastal erosion, and coastal flooding. In particular the existing dock structures in the Harbor are highly vulnerable to future damages. Additionally, all waterfront businesses along Cannery Row are vulnerable to high wave action.

- The Lighthouse Avenue tunnel has the potential to flood during heavy rainfall events despite having an extensive pumping, diversion, and collection system for stormwater drainage. Project funding is required to make the necessary upgrades and alleviate the need for sandbagging, etc.
- The Monterey Interceptor pipeline, which transports all of the untreated sewage from the City of Monterey and Pacific Grove to Monterey One Water's Regional Treatment Plant in Marina, is a critical facility deemed at risk to the long-term effects of coastal erosion and sea level rise, particularly between the Seaside Pump Station and Monterey Tides Resort.
- In Monterey, several critical arteries are at risk to coastal flooding and sea level rise. Within a decade portions of Del Monte Avenue may be inundated by floodwaters during a 50-year event, requiring more adequate storm drainage capacity through future capital improvements/upgrades to existing systems. permanently. By mid-century, regular tides will flood the Lighthouse Tunnel and reach Pearl Street where it crosses Lake El Estero; and large storm waves could reach as high as Cannery Row at the Monterey Bay Aquarium. By the end of the century, Fremont Avenue at Lake El Estero will be underwater.
- Despite ongoing hazard mitigation projects, policies, and activities, the City remains very concerned about the high threat of wildland fire due to existing terrain, fuels, etc. in combination with large areas of urban/wildland interface and intermix. Areas of special concern include: the area behind the Del Monte Shopping Center, and the City's greenbelts (Skyline Forest, Veterans Park, Monte Vista, Carmelo Street, Don Dahvee/ Iris Canyon, Josselyn Canyon, Fisherman Flats, and the Old Capitol Site). The City continues to address these areas through fuel management practices to the extent that available funds allow.
- The World Economic Forum's Global Risks Report 2021 has ranked cyber threats among the leading global risks. Cyber-attacks, primarily social engineering and ransomware are the fastest-growing cybercrime. The blurring line between digital and physical domains indicates the City will only be secure if we incorporate cybersecurity features, principles, training, and frameworks that span across all systems to protect against attackers that are silent, distributed, varied, and technically savvy.
- The City is vulnerable to significant tsunami run-up and strong currents following earthquake events.
- Several military facilities, which are important national defense assets, are located in the City of Monterey, including the US Army Garrison Presidio of Monterey (home to the Defense Language Institute), US Coast Guard Station Monterey, Naval Support Activity Monterey [(home to the Naval Postgraduate School (NPS), Navy Research Lab (NRL), and the Fleet Numerical Meteorology and Oceanography Center (FNMOC). NPS is the largest producer of advanced graduate degrees for the Department of Defense and has thousands of annual graduates from all services and over 50 countries. These key military installations are all vulnerable to terrorist attacks.

## H.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Monterey Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table H-20* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table H-19* includes the status of actions completed or removed from the previous plan. In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table H-19**
**City of Monterey Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **1** | Develop community Citizen Corps programs that also include a mitigation component. (New radio system, improvement in neighborhood CERT supplies, continued training) | **Completed** | The City implemented a new radio system, improved neighborhood CERT supplies, and has continued training. |
| **5** | Complete TsunamiReady program | **Completed** | The City has been certified TsunamiReady. |
| **6** | Study and research possible Tsunami warning/alerting system (giant voice, sirens) | **Completed** | The City considered options for alerting as part of its TsunamiReady certification. |
| **7** | Participate in Fire Safe Council Monterey County. | **Complete/ Continuous** | The City participates in the Fire Safe Council Monterey County and will continue to do so. |

**Table H-20**
**City of Monterey Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | Ongoing/ Continuous | Wildfire | Continue to conduct current fuel management programs and investigate and apply new and emerging fuel management techniques. (Fuel reduction programs for green belt and park areas) | Priority / High | Parks & Recreation | General Fund, Grant Funding |
| **2** | Ongoing/ Continuous | Wildfire | Provide information to neighborhoods about the need for defensible space and enforcement of defensible space regulations through prevention division on identified parcels. | Moderate | Fire | USFA, PDM and HGMP grants |
| **3** | Ongoing/ Continuous | Tsunami | Maintain TsunamiReady program certification. | Moderate | Public Works, Fire | General Fund |
| **4** | New/ 2-5 years | Wildfire | Develop a Community Wildfire Protection Plan in coordination with neighboring Jurisdictions. | Moderate | Fire | General Fund |
| **5** | In Progress/ 2-5 years | Earthquake, Tsunami, Flooding, Sea Level Rise | Develop an inventory of public, commercial, and private buildings, as well as maritime facilities and infrastructure, which may be vulnerable or at risk to earthquake damage, tsunami inundation and currents, stormwater flooding, and sea level rise. Additionally, collect, create, or update maps and /or data that depict historic and potential damage from the hazards listed above. | Moderate | Public Works | General Fund |
| **6** | In Progress/ 5 years | Climate Change | Prepare a climate adaptation plan. | Low | Community Development | General Fund |
| **7** | Ongoing/ Continuous | Human-Caused | Cyber Response Strategy Update - Use a comprehensive and layered cybersecurity strategy to reduce the risk associated with the growing remote workforce and cloud-hosted solutions. | Priority / High | Information Resources | General Fund |
| **8** | New/ 2-5 years | Human-Caused | Identify potential likely targets for terrorism threats and work with allied agencies to develop a coordinated response plan. | Moderate | Police Department | General Fund |
| **9** | New | Drought | Provide public information on water conservation and champion regional and local efforts to secure adequate, affordable, and sustainable water sources for the city, now and into the future. | Moderate | City Management | General Fund |

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# ANNEX I: PACIFIC GROVE

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

# I. CITY OF PACIFIC GROVE

## I.1 HAZARD MITIGATION PLAN POINT OF CONTACT

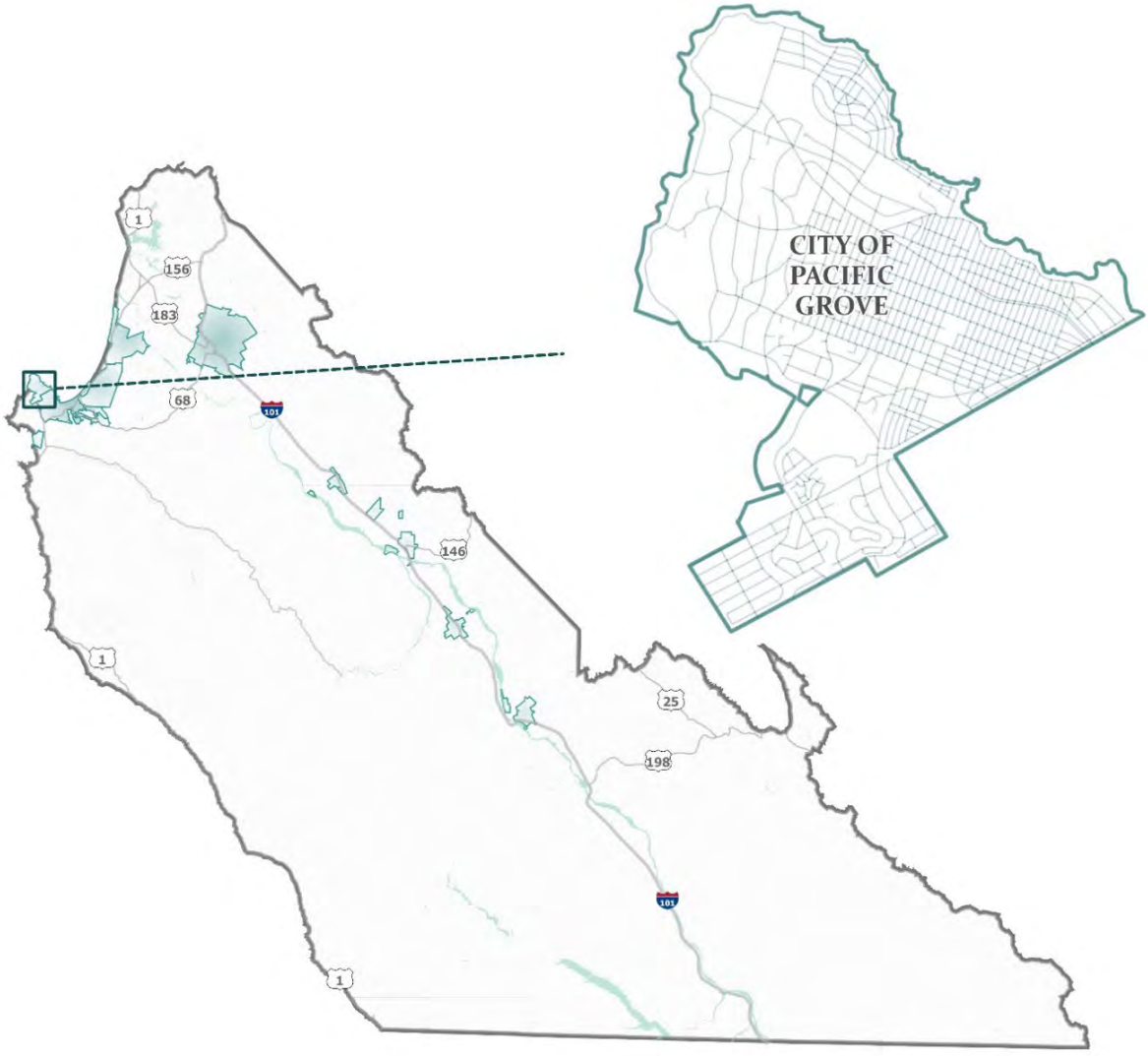
**Primary Point of Contact**
Alyson Hunter, ACIP
Community Development Dept. Director
300 Forest Ave., 2nd Floor
Pacific Grove, CA 93950
(831) 648-3127
ahunter@cityofpacificgrove.org

**Alternate Point of Contact**

Daniel Gho
Public Works Director
2100 Sunset Drive
Pacific Grove, CA 93950
(831) 648-5722 x4203

## I.2 COMMUNITY PROFILE

### I.2.1 LOCATION



### I.2.2 GEOGRAPHY AND CLIMATE

Pacific Grove is a small coastal city at the tip of the Monterey Peninsula, northwest of the City of Monterey, known for its beautiful scenery and unique architecture including many Victorian-style homes. The City borders the Monterey Bay, the City of Monterey, the Pacific Ocean, the Del Monte Forest, Pebble Beach, and the Army Presidio of Monterey. Pacific Grove enjoys a Mediterranean-like climate that is characterized by a winter rainy season and cool dry summers. Annual precipitation is approximately 20 inches per year.

### I.2.3 HISTORY

Pacific Grove was founded in 1875 when David Jacks donated 100 acres of land to the Methodist Episcopal Church to establish a "Christian Seaside Resort." Through dubious means, Jacks, had acquired title to over 7,000 acres of land in this area--virtually the entire Peninsula. He loaned $30,000 to the Pacific Grove Retreat Association, which had formed during that first year, to lay out streets and make other improvements. In the early 1880s Jacks sold the Pacific Grove property and some adjoining land, to The Pacific Improvement Company, manned by the "Big Four," Crocker, Hopkins, Stanford, and Huntington, (the parent company of Del Monte Properties Company, now The Pebble Beach Company). The Retreat officials were concerned that they might lose strict moral control of the new community, but Jacks had protected them in the terms of the sale. They could still ban cards, dice, billiards, dancing, liquor, and on Sundays, swimming, and the sale of anything except medicine. The Retreat surrounded itself with a fence on three sides and kept its gate padlocked, separating itself from "disdainful" Monterey. For 10 years Pacific Grove maintained its character as a camp meeting ground occupied in summer.

When the Pacific Improvement Company opened the lavish Hotel Del Monte in 1880, floods of tourists arrived. When the hotel burned in 1887, the company started to rebuild immediately, but in the meanwhile constructed the El Carmelo Hotel in Pacific Grove on Lighthouse between Grand and Fountain Avenues. Many visitors returned to the town and built homes on the tiny lots, intended for tents, many of which still stand shoulder to shoulder. Two-story Victorian mansions began to appear. Today over 500 homes have been approved by the Pacific Grove Heritage Society to wear green plaques showing the year they were built and their original owner.

The Pacific Improvement Company contributed $10,000 toward the construction of a new $25,000 church and allowed the community to share its water supply from the Carmel River. In 1889, the Southern Pacific Railroad extended service to the town. In the 1880s, Benjamin Langford, a state senator who had property in the town, became fed up with coming in the pedestrian gate and walking a mile to the retreat office for the gate key in order for a carriage to pass and opened the gate with an axe. Soon afterward the entire town fence came down. Among the organizations to choose the Pacific Grove Retreat for meetings were the Chautauqua movement, the YWCA, a Farmer's Institute, and a School of Music among others. The Asilomar Conference Grounds, now owned by the State, was originally a YWCA retreat. In 1889, with 1300 permanent residents and an area of one square mile, Pacific Grove was incorporated as a City. By 1910, three separate additions were made to the City.

### I.2.4 POPULATION

The City of Pacific Grove has a population of 15,090 people, a marginal increase (0.3%) since 2010.

### I.2.5 GOVERNING BODY FORMAT

Pacific Grove is a Charter city. The City Council consists of an elected Mayor holding a two-year term and six Council Members elected at large for four-year staggered terms. The City Council appoints the City Manager who is the administrative head of the municipal government.

### I.2.6 ECONOMY AND TAX BASE

The economy of this primarily residential community is based on tourism and local services, many of which are available in its historic downtown. The City is home to Asilomar State Beach, a narrow 1-mile stretch of sandy beach and rocky coves which provides public access to the shoreline and includes Asilomar Conference Grounds, a National Historic Landmark.

## I.3 PLANNING PROCESS

The City of Pacific Grove followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process. The City of Pacific Grove held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on May 5, 2021. Key stakeholders present at the meeting included:

- Alyson Hunter, Senior Planner
- Anastazia Aziz, Director Community Development
- Commander Dave Santos, Pacific Grove Police Department
- Mohammed Khasimi, IT Director
- Daniel Gho, Public Works Director

## I.4 LAND USE AND DEVELOPMENT

The Pacific Grove General Plan was adopted in 1994. The City of Pacific Grove's land use pattern is well established. The City's total area is approximately 1,830 acres, excluding that portion of the City that extends into Monterey Bay and Pacific Ocean. The predominant land use in the City of Pacific Grove is residential (46%), and most of the residences are single-family dwellings. Commercial/Professional land uses account for approximately 5% of the land in the City. A small portion of the City along its south border is planned and zoned for industrial use. The City limits include a significant amount of land devoted to parks and natural areas (19%), including Pacific Grove Golf Course, Asilomar State Beach, and George Washington Park. 99% of the City's coastline allows for public access. No significant agricultural areas exist in, or adjacent to, the City.

Pacific Grove is almost fully built out, with very little buildable vacant land remaining in the city. The land use issues in Pacific Grove, therefore, focus primarily on managing existing uses and infill, and potential intensification. The City prohibits new housing development on the seaward side of oceanfront streets, protecting unobstructed access and views for the public at large. The City's coastal zone is 458 acres. The coastal zone includes numerous land use types, including residential and commercial development near its downtown core, as well as restored dune habitat located within Asilomar State Beach and to the north within the City's limits. Pacific Grove's Local Coastal Program

Land Use Plan was first certified by the Coastal Commission in 1988. At the time, the second component of the LCP, the Implementation Plan, was never certified. In 2014, with grant funding from the Coastal Commission, Pacific Grove began an update of their LCP. The updated LCP was adopted by City Council on January 15, 2020 and certified by the Commission on March 11, 2020.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**. The Pacific Grove Safe Growth Survey was completed by Alyson Hunter, Senior Planner at the time of completion, and current Community Development Department Director for the City of Pacific Grove. The results are summarized in *Table I-1.*

**Table I-1**
**City of Pacific Grove Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 2.50 | 2.50 |
| Transportation | 1.67 | 2.33 |
| Environmental Management | 3.00 | 4.00 |
| Public Safety | 2.33 | 3.33 |
| Zoning Ordinance | 4.00 | 2.50 |
| Subdivision Regulations | 2.67 | 2.33 |
| Capital Improvement Program & Infrastructure Policies | 2.00 | 2.67 |
| Building Code | 4.00 | 5.00 |
| Economic Development | 2.00 | 2.00 |
| **Average Survey Ratings** | **2.69** | **2.96** |

## I.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Pacific Grove's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Pacific Grove is included in this Annex.

The City of Pacific Grove's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table I-2* displays the results of the hazard risk ranking exercise that was performed by the City of Pacific Grove's Planning Team.

**Table I-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Pacific Grove**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | - | - | - | - | - | - |
| Coastal Erosion | 3.3 | 3.7 | 3.0 | 4.0 | 14.0 | High |
| Coastal Flooding | 3.0 | 3.0 | 3.0 | 3.7 | 12.7 | High |
| Cyber-Attack | 3.3 | 3.7 | 3.0 | 3.5 | 13.5 | High |
| Dam Failure | - | - | - | - | - | - |
| Drought & Water Shortage | 4.0 | 4.0 | 3.5 | 4.0 | 15.5 | Very High |
| Earthquake | 2.7 | 3.7 | 2.7 | 3.0 | 12.0 | Substantial |
| Epidemic | 4.0 | 4.0 | 3.0 | 4.0 | 15.0 | Very High |
| Extreme Cold & Freeze | 2.0 | 2.0 | 2.0 | 2.5 | 8.5 | Moderate |
| Extreme Heat | 2.0 | 1.0 | 2.0 | 2.0 | 7.0 | Possible |
| Flash Flood | 1.0 | 2.0 | 2.0 | 2.0 | 7.0 | Possible |
| Hazardous Materials Incident | 2.5 | 2.0 | 2.5 | 3.3 | 10.3 | Substantial |
| Invasive Species | 2.5 | 2.5 | 3.0 | 3.0 | 11.0 | Substantial |
| Levee Failure | - | - | - | - | - | - |
| Localized Stormwater Flooding | 2.3 | 2.7 | 2.3 | 3.0 | 10.3 | Substantial |
| Mass Migration | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Pandemic | 4.0 | 4.0 | 3.5 | 4.0 | 15.5 | Very High |
| Riverine Flooding | 2.0 | 2.0 | 2.0 | 2.5 | 8.5 | Moderate |
| Sea Level Rise | 3.0 | 3.5 | 3.0 | 4.0 | 13.5 | High |
| Severe Winter Storms | 3.3 | 3.3 | 3.0 | 3.7 | 13.3 | High |
| Slope Failure | 2.0 | 3.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Targeted Violence | 2.0 | 2.5 | 2.5 | 2.7 | 9.7 | Moderate |
| Terrorism | 2.5 | 1.5 | 3.5 | 3.3 | 10.8 | Substantial |
| Tsunami | 3.5 | 2.0 | 3.5 | 3.3 | 12.3 | High |
| Utility Interruption/ PSPS | 3.5 | 3.5 | 3.0 | 3.3 | 13.3 | High |
| Water Contamination | 3.0 | 3.3 | 3.3 | 4.0 | 13.7 | High |
| Wildfire | 3.5 | 1.5 | 4.0 | 3.3 | 12.3 | High |
| Windstorms | 3.0 | 3.0 | 2.5 | 3.3 | 11.8 | Substantial |

### I.5.1 AGRICULTURAL EMERGENCIES

There is no agricultural land located within the City, so therefore an agricultural emergency does not pose a direct threat. Since agriculture is a major economic driver in the County, an agricultural emergency could have indirect economic impacts on the City.

### I.5.2 COASTAL EROSION

To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center (Coastal Storm Modeling System) CoSMos shoreline change, and cliff retreat projection data was used. For cliff retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on Ocean Protection Council (OPC) High Risk Aversion Guidance. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion. Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

*Table I-3* summarizes population and property exposure to coastal erosion risk.

**Table I-3**
**Population and Property Exposed to Coastal Erosion Risk in Pacific Grove**

| Sea Level Rise Scenario/ Erosion Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| **Cliff Erosion** | | | | | |
| Sea Level Rise (25 cm) | 84 | 3 | $17,342,399 | 42 | $9,083,758 |
| Sea Level Rise (75 cm) | 138 | 3 | $17,342,399 | 44 | $10,632,164 |
| Sea Level Rise (200 cm) | 252 | 16 | $33,183,479 | 58 | $26,607,577 |
| **Shoreline Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 0 | $0 |

Pacific Grove's shoreline is mostly dominated by exposed granitic rock that forms a relatively stable and durable barrier to protect shoreline development from the constant barrage of ocean waves. Although wave activity can become intense during winter storms, the Pacific Grove shore has historically not retreated significantly. Sea level rise is expected to increase the susceptibility of Pacific Grove's coastline to erosion, as higher sea levels will expose larger areas of the coast to more persistent erosional forces.

The City's 2015 Climate Change Vulnerability Assessment, 2018 Shoreline Vulnerability Assessment, and 2020 Shoreline Management Plan identified a number of areas subject to erosion risk. Areas at risk to coastal erosion combined with sea level rise within Pacific Grove are shown in *Figure I-1*. The greatest increase in coastal erosion is expected to occur along the coastline along the Monterey Bay side of the Peninsula (Areas I through IV-B, in the map below). The main land use affected by coastal erosion in these areas will be residential. Other land uses expected to be affected include public parks

and trails (including Lovers Point), Hopkins Marine Station, Pacific Grove Golf Course, and commercial businesses along Ocean View Boulevard. In addition, the Monterey Interceptor pipeline, which transports all of the untreated sewage from the City to the Monterey One Water Regional Treatment Plant in Marina, is a critical facility deemed at risk to the long-term effects of coastal erosion and sea level rise.

**Figure I-1**
**Coastal Erosion Hazard in Pacific Grove**

Source: City of Pacific Grove Climate Change Vulnerability Assessment (2015)

## I.5.3 DAM AND LEVEE FAILURE

### *Dam Failure*

There is no population or property in the City located in a mapped dam inundation zone of any of the dams (Nacimiento, San Antonio, Los Padres, and Forest Lake) analyzed in this Plan.

### *Levee Failure*

Based on the Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

### I.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, and relatively affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution. Water is already very expensive in the City, and therefore even small increases in prices could have a large effect on the population. Additionally, drought is likely to increase wildfire risk.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### I.5.5 EARTHQUAKE

Although there are no mapped faults within the City, there are areas of liquefaction and erosion hazards. The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 6,561 residential and non-residential buildings in the City, with a total value of $3,986,813,668. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table I-4* summarizes population and property in the City exposed to liquefaction risk.

**Table I-4**
**Population and Property Exposed to Liquefaction Risk in Pacific Grove**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 2,622 | 180 | $195,836,698 | 154 | $46,356,506 |
| Moderate Liquefaction Susceptibility | 0 | 0 | $0 | 0 | $0 |

### I.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table I-5* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table I-5**
**Population and Property Exposed to Flooding Risk in Pacific Grove**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 0 | 2 | $10,524,893 | 36 | $8,899,047 |
| 500-Year Flood Zone | 0 | 0 | $0 | 0 | $0 |

The Hopkins Marine Station is located within an area that is prone to coastal flooding. Transportation routes in the City could be impacted by flooding. Much of Ocean View Boulevard/Sunset Drive between Esplanade Street and Asilomar Avenue is subject to coastal flooding. Although located outside of Pacific Grove, one especially critical transportation link that could be prone to flooding is the Del Monte Boulevard tunnel in Monterey, which provides one of two major access routes into the City.

## I.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

There is no population or property in the City, based on the buffer distances that is exposed to a mobile or fixed hazardous materials incident.

## I.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## I.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most

vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

### I.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to occur anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, and people with life-threatening illnesses, Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City will likely be exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts.

FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table I-6.*

**Table I-6**
**Annualized Frequency and Exposure to Severe Weather Events in Pacific Grove**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.19 | Frequency (*Distinct Events)* | 0.03 |
| Exposed Population | 15,050 | Exposed Population | 15,050 |
| Exposed Building Values | $2,193,292,000 | Exposed Building Values | $2,193,292,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $708 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.08 | Frequency (*Distinct Events)* | 0.88 |
| Exposed Population | 15,050 | Exposed Population | 13,648 |
| Exposed Building Values | $2,193,291,997 | Exposed Building Values | $1,985,240,194 |
| Expected Annual Loss of Building Value | $1 | Expected Annual Loss of Building Value | $34,301,461 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.50 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 15,050 | Exposed Population | 0 |
| Exposed Building Values | $2,193,292,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $482 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

The main risk associated with severe weather in Pacific Grove is coastal storm flooding and wave run-up. Increases in the occurrence and intensity of severe storm events is a direct impact of climate change that has the potential to expose development and infrastructure to severe damage. This is of significant concern in Pacific Grove because, combined with sea level rise, intense storms pose one of the most significant climate change threats to the City.

### I.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 2,370 people and $385,194,695 in property value in the City is exposed to landslide risk. The City is not susceptible earthquake induced to landslides.

### I.5.12 TSUNAMI

Population and property in the City located in a mapped tsunami inundation zone is summarized in *Table I-7.*

**Table I-7**
**Population and Property in Tsunami Inundation Zone in Pacific Grove**

| Inundation Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Tsunami Inundation Zone | 421 | 84 | $168,639,771 | 69 | $43,593,616 |

In Pacific Grove, a major concern is the impact a tsunami could have on utilities. A tsunami could impact the water lines along Ocean View Boulevard and wastewater infrastructure. Seven of the City's wastewater pump stations could be inundated by coastal flooding. If flooding causes the pumps to fail, the wastewater system would backup behind the pump station, with potentially serious health consequences, e.g., possible illicit discharges caused by overflows. In an extreme situation, a tsunami could damage a pump station and result in spillage of wastewater, which would have citywide impacts.

### I.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City are exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that are operated by electricity are exposed and vulnerable to utility interruption. Widespread power outages are a concern for the City following major winter storms, mostly caused by downed trees.

### I.5.14 WILDFIRE

For the purpose of this analysis, CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create four threat classes, extreme, very high, high, and moderate. No portion of the City was determined to be in an area of extreme fire threat.

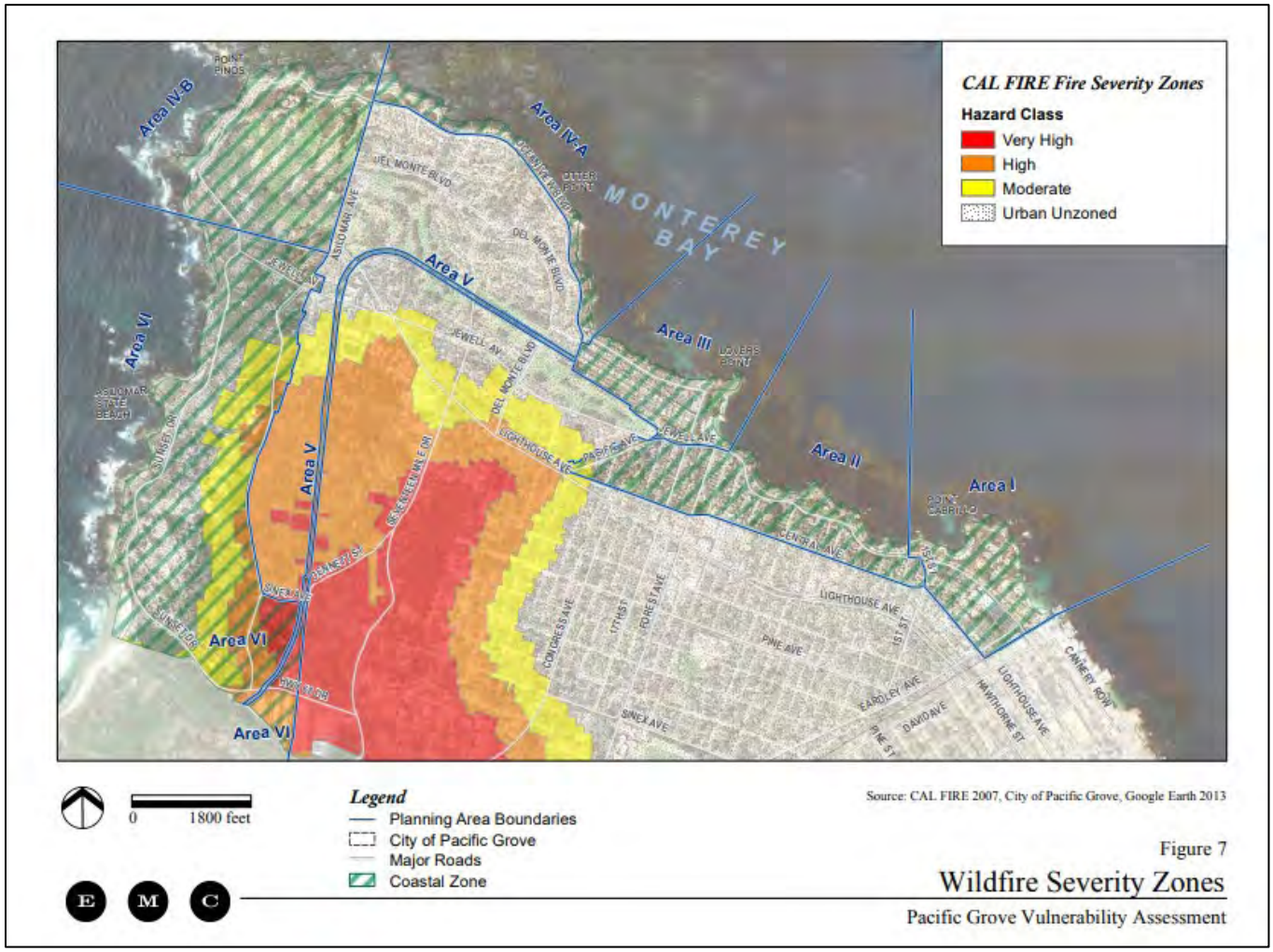
*Table I-8* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table I-8**
**Population and Property Exposed to Wildfire Risk in Pacific Grove**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 84 | 21 | $48,540,893 | 12 | $15,975,413 |
| Moderate Fire Threat | 7,145 | 1,026 | $799,624,068 | 350 | $110,840,221 |

Some areas in the City are also designated as Very High Fire Hazard Severity Zones (VHFHSZ) by CAL FIRE, as mapped in *Figure I-2*. In Pacific Grove, areas with the highest risk of wildfire are located in the inland central portion of the City where neighborhoods are more forested and contain a higher density of mature trees. Risk of wildfire decreases as distance from the more forested central area of the City increases.

**Figure I-2**
**Wildfire Severity Zones in Pacific Grove**




Source: City of Pacific Grove Climate Change Vulnerability Assessment (2015)

## I.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure.

Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the rural economies, along with changes to agriculture and crops, which are a critical backbone of Monterey County's economic success. There will also be negative impacts to ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

Sea level rise risk exposure in the City was calculated based on the NOAA Office for Coastal Management sea level rise viewer projections. Three sea level rise levels (25 cm, 75 cm, and 200 cm) were chosen to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

Population and property exposed to sea level rise risk is summarized in *Table I-9*.

**Table I-9**
**Population and Property Exposed to Sea Level Rise in Pacific Grove**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 0 | 1 | $9,505,821 | 32 | $8,899,047 |
| 3 ft Sea Level Rise (2060) | 0 | 1 | $9,505,821 | 35 | $38,894,623 |
| 7 ft Sea Level Rise (2100) | 0 | 2 | $10,524,893 | 37 | $38,894,623 |

The City's 2015 Climate Change Vulnerability Assessment, 2018 Shoreline Vulnerability Assessment, and 2020 Shoreline Management Plan identified areas vulnerable to sea level rise risk. *Figure I-3* identifies the potential extent of flooding due to sea level rise combined with a 100-year flood event.

The greatest increase in coastal flooding is expected to occur near Point Pinos and Otter Point, with notable increases at Lovers Point. No structures located within the mapped hazard areas that would experience inundation from sea level rise alone. Two factors account for this: first, the base elevation of developed areas in Pacific Grove is sufficiently high, due to the bluffs along the shoreline; secondly, relatively few structures are located immediately adjacent to the shoreline. However, when the effects of sea level rise and coastal flooding from storms are combined, about 75 houses in the Otter Point area would be subject to flooding. In the Lovers Point area, land uses affected would be mostly Lovers Point Park and nearby commercial businesses. Near Asilomar State Beach, development density is low and coastal flooding would have minimal effect on development.

Infrastructure including roads and water infrastructure could be impacted by sea level rise. Of major concern is the City's significant wastewater infrastructure potentially at risk under combined sea level

rise and coastal storm flooding. Seven of the City's wastewater pump stations could be inundated by coastal flooding. If flooding causes the pumps to fail, the wastewater system would backup behind the pump station, with potentially serious health consequences. In an extreme situation, storm surges could damage a pump station and result in spillage of wastewater.

**Figure I-3**
**Potential Sea Level Rise and Flooding in Pacific Grove**

Source: City of Pacific Grove Climate Change Vulnerability Assessment (2015)

## I.6 CAPABILITY ASSESSMENT

The City of Pacific Grove performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table I-10*
- An assessment of administrative and technical capabilities is presented in *Table I-11*
- An assessment of fiscal capabilities is presented in *Table I-12*

- An assessment of education and outreach capabilities is presented in *Table 1-13*
- Classifications under various community mitigation programs are presented in *Table 1-14*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section I.6.1 in *Table I-15*
- An overall self-assessment of capability is presented in Section I.6.2 in *Table I-16*

**Table I-10**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Development | Includes Safety Element |
| Capital Improvement Plan | ☒ | • Public Works | Approved Annually through the budget process |
| Floodplain Management Plan | ☒ | • Public Works<br>• Community Development | |
| Open Space Management Plan | ☒ | • Public Works | Parks & Rec and Natural Resources Elements in the General Plan |
| Stormwater Management Plan | ☒ | • Public Works | Storm Water Permit and Regional Effort |
| Shoreline Management Plan | ☒ | • Public Works | |
| Local Coastal Program | ☒ | • Community Development | Certified March 11, 2020 |
| Climate Action/ Adaptation Plan | ☒ | • Community Development<br>• Public Works | Shoreline Management Plan and LCP |
| Emergency Operations Plan | ☒ | • City Manager<br>• Fire Department<br>• Police Department | |
| Continuity of Operations Plan | ☐ | • Police Department | There is interest in preparing one |
| Community Wildfire Protection Plan (CWPP) | ☐ | • Fire Department | Effort underway to get this plan developed, no timeline as of yet |
| Evacuation Plan | ☐ | • Fire Department<br>• Police Department | County OES working on this plan and PG is included |
| Disaster Recovery Plan | ☐ | • IT | The City is working on a disaster recovery policy for continuation of tech infrastructure systems following a disaster |
| Economic Development Plan | ☒ | • City Manager<br>• Administrative Services | |
| Historic Preservation Plan | ☒ | • Community Development | HRI Update underway |
| Transportation Plan | ☒ | • Public Works<br>• Community Development | Chapter 4 of the General Plan |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works | Pacific Grove Municipal Code 11.97 |

**Table I-10**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| Zoning Ordinance | ☒ | • Community Development | Pacific Grove Municipal Code Title 23 |
| Subdivision Ordinance | ☒ | • Community Development | Pacific Grove Municipal Code Title 24 |
| Site Plan Review Requirements | ☒ | • Community Development | Ad-Hoc Committee review required for certain development projects |
| Unified Development Ordinance | ☒ | • City Manager | Pacific Grove Municipal Code 1.19 |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☒ | • Community Development | Pacific Grove Municipal Code Title 23- addresses destroyed buildings |
| Building Code | ☒ | • Community Development | Pacific Grove Municipal Code 18.04 |
| Fire Prevention Code | ☒ | • Fire Department | Pacific Grove Municipal Code 18.32 |

**Table I-11**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Development<br>• Public Works | Planners on staff with this knowledge, City contracts with a civil engineer for general engineering assistance |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Community Development | City contracts with 4Leaf for building inspection, plan check, and additional engineering services |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Community Development | Planners on staff with this knowledge, City contracts with a civil engineer for general engineering assistance |
| Building Inspector | ☒ | • Community Development | City contracts with 4Leaf for building inspection, plan check, and additional engineering services |
| Emergency Manager | ☒ | • Police Department | |
| Floodplain Manager | ☒ | • Community Development | |
| Land Surveyors | ☐ | | Contract as needed |
| Resource development staff or grant writers | ☒ | • Admin Services<br>• Public Works<br>• Police Department | |
| Public Information Officer | ☒ | • Police Department | Media Contacts, Website, City & Police Social Media platforms. |

**Table I-11**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Scientist(s) familiar with the hazards of the community | ☐ | | Contract as needed |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Community Development<br>• Public Works<br>• Fire Department<br>• Police Department | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • IT/ Contract | Council is considering an IT Master Plan, which includes training of staff. Currently using contract services. |
| Maintenance programs to reduce risk | ☒ | • Public Works | Contract Arborist |
| Warning systems/services | ☒ | • Monterey County<br>• Police Department | AlertMonterey, Social Media Alerts |
| Mutual Aid Agreements | ☒ | • Police Department<br>• Fire Department | Mutual Aid Agreements with Fire & Law Enforcement Agencies |

**Table I-12**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | City has a reserve policy, which includes funds for emergencies |
| Capital Improvements Project Funding | ☒ | • Public Works<br>• Finance | |
| Special Purpose Taxes | ☒ | • City Council<br>• Finance | The City could place an initiative on the ballot for a special purpose tax |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☒ | • Public Works<br>• Finance | The sewer fund balance could be used to mitigate any damage to the City's sewer infrastructure |
| Development Impact Fees | ☒ | | TAMC |
| General Obligation Bonds | ☒ | • Finance | The City is eligible to issue General Obligation Bonds. |
| Special Tax and Revenue Bonds | ☒ | • City Council<br>• Finance | The City could place an initiative on the ballot for a special tax. The City's current local tax is a general tax and could be used for hazard mitigation |
| Community Development Block Grants (CDBG) | ☒ | • Community Development | CDD manages existing CDBG program funds |

**Table I-13**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☒ | • Human Resources<br>• Police Department<br>• Fire Department | City Volunteer Programs, CERT, PGPD Citizens Academy Alumni |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • Police Department<br>• Fire Department | Utilize Social Media outlets and community events to share emergency preparedness information |
| Natural disaster or safety related school programs | ☐ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☒ | • Public Works | |

**Table I-14**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Building Code Effectiveness Grading Schedule | Yes | 3 | |
| ISO Public Protection Classification | Yes | 2 | |
| *StormReady* Certification | Yes | - | - |
| *TsunamiReady* Certification | Yes | - | - |
| *Firewise Communities* Certification | No | - | - |

## I.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table I-15**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Alyson Hunter, Director, Community Development |
| **NFIP Community Number:** | 060201 |
| **Flood Insurance Policies in Force:** | 35 |
| Insurance Coverage in Force: | $11,144,000 |
| Written Premium in Force: | $14,846 |
| **Total Loss Claims:** | 1 |
| Total Payments for Losses: | $6,784 |
| **Adopted Regulations that meet NFIP Requirements:** | |
| • Pacific Grove Community Floodplain Management Municipal Code Chapter 11.97 [Ord. 09-006 § 2, 2009] | |

**Table I-15**
**National Flood Insurance Program (NFIP) Compliance**

**Date of last NFIP Community Assistance Visit (CAV):**
The City was visited by DWR staff on May 3, 2018. The result of the visit was the identification of new development within the SFHA (886 Cannery Row, aka, the Monterey Bay Aquarium). The DWR advised that a Substantial Improvement (SI) document be prepared to address this issue. This was resolved in June 2018. The second issue identified by the DWR during the CAV pertains to updating the City's Community Floodplain Management Ordinance (PGMC 11.97) to be in compliance with Title 44, CFR, Sec. 60.3 and reflect the current CA Model Floodplain Ordinance dated December 2006. The City adopted Ordinance 09-006 in 2009 to bring this chapter up to date.

**Higher standards that exceed minimum NFIP requirement:**
Although these may occur on a case-by-case basis, the City has not adopted "higher standards" that exceed NFIP minimum requirements. The City adopted a Substantial Improvement (SI) in a Special Hazard Flood Area (SHFA) procedure in 2018 to identify whether a property is within a designated SHFA and what sections need to be followed to be in compliance with FEMA regulations. The SI was prepared for the one area of the City's shoreline located in Flood Zone VE (FIRM Map Panel 06053C0307H (Revised June 21, 2017). There are no other developments within the VE zone.

**Additional floodplain management provisions:**
The City's Local Coastal Program (LCP) certified in March 2020 has coastal hazards policies to help ensure that new development and redevelopment is sited and designed to be safe from coastal hazards. The City's Shoreline Management Plan (SMP) will be used to guide the management and maintenance of public infrastructure in the coastal zone.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**
The City conducted a robust public outreach effort as part of the preparation of the SMP. These efforts included an online survey, an open house, and public workshops that highlighted the flood-related hazards along the coastline.

**Existing impediments to running an effective NFIP program:**
The City lacks operational capacity which results in impediments to running an effective NFIP program.

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

- The City evaluates permit application forms to determine possible modifications focused on flood hazard prevention on an ongoing basis.
- The City maintains a map of areas that flood frequently and are subject to coastal hazards (Shoreline Management Plan). The City's Local Coastal Program (LCP) certified in March 2020 has coastal hazards policies to help ensure that new development and redevelopment is sited and designed to be safe from coastal hazards.
- The City will participate in local training efforts on floodplain management, the importance of participating in the NFIP, and the implications of failing to enforce the requirements of the program or failing to properly handle variance requests.
- The City's Building Official is trained on FEMA's Substantial Damage Estimator and is interested in pursuing additional training.
- The City provides free sandbag supplies to the public during winter months.

## I.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table I-16**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | High |
| Administrative and Technical Capability | High |
| Fiscal Capability | Moderate |
| Education and Outreach Capability | High |
| Political Capability | Moderate |
| **Overall Capability** | **High** |

## I.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## I.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new

possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.
- **Local Coastal Program**: The City's updated Local Coastal Program was certified by the California Coastal Commission on March 11, 2020. It includes polices to reduce the risk of sea level rise, coastal flooding, and coastal erosion.
- **2015 Climate Change Vulnerability Assessment:** Identifies hazard vulnerability related to climate change.
- **2018 Shoreline Vulnerability Assessment**: Assess the risk and vulnerability of the Pacific Grove shoreline to a variety of hazards.
- **2020 Shoreline Management Plan:** Identifies Strategies to reduce the risk posed by a variety of hazards to the Pacific Grove shoreline.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans

- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## I.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Pacific Grove Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Pacific Grove are identified below:

- The City is concerned with limited ingress/egress to the community following major disaster events and continues to review and update designated evacuation routes through its emergency operations plan (currently being updated). A related concern is the narrow design of many city streets, which will make mobility and evacuation difficult during major events.
- The Monterey Interceptor pipeline, which transports all of the untreated sewage from the City of Monterey and Pacific Grove to the MRWPCA Regional Treatment Plant in Marina, is a critical facility deemed at risk to the long-term effects of coastal erosion and sea level rise, particularly between the Seaside Pump Station and Monterey Beach Resort.
- The public water supply is deemed a critical local issue for the city (and entire peninsula), particularly with regard to the supply available during future major fires. The City has seen hydrant pressure drops during past events.
- City staff asserts that the wildland fire hazard area for their jurisdiction is more expansive than previously mapped through FRAS and shown in the current plan. There are significant numbers of dead or dying trees in the heavily forested “Retreat” and park areas, which leads to higher risks, especially when combined with the fact that most surrounding residential construction is wood frame with Class C roofs (more combustible/ flammable).
- Widespread power outages are a concern for the City following major winter storms.
- The City relies solely on commercial internet service providers such as Comcast, AT&T, or Verizon for its communication network infrastructure. Connections from these providers is unreliable. The City should have access to a more reliable municipal broadband connection.
- The City is concerned about public health outbreaks, particularly with the recent events of COVID-19, for our significant at-risk population groups of both seniors and children. In addition, the City heavily relies on revenue sources related to tourism and additional closures could have detrimental impacts on local economic recovery, our small business community, and funding for basic City services.

## I.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Pacific Grove Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table I-18* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table I-17* includes the status of actions completed or removed from the previous plan. In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table I-17**
**City of Pacific Grove Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **8** | Adopt a Local Coastal Plan with the implementation of dune protection, stabilization, and nourishment to provide floodplain protection in the coastal areas. Additionally, wildlife safety should be linked with other environmental strategies throughout the Local Coastal Plan. | **Completed** | The City's updated Local Coastal Program was certified by the California Coastal Commission on March 11, 2020. |

**Table I-18**
**City of Pacific Grove Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | Ongoing/ Continuous | All | Develop a sustained public outreach program that encourages consistent hazard mitigation content and improves public awareness and knowledge regarding all types of hazards, preparedness, and mitigation measures. Additionally, develop audience-specific hazard mitigation outreach efforts. Audiences include the elderly, children, tourists, non-English speaking residents, and home and business owners. | Priority / High | Disaster Planning, Community Development, Fire, CERT | General Funds, HMGP, and PDM Grants |
| **2** | Ongoing/ Continuous | Earthquakes | Develop an unreinforced masonry grant program that helps correct earthquake-risk nonmasonry building problems, including chimney bracing and anchoring water heaters. Additionally, ensure proper training on seismic codes for all buildings inspectors and encourage measures to reduce earthquake damage risk. | Moderate | Community Development, Building Division | General Funds |
| **3** | Ongoing/ Continuous | Tsunami, Winter Storms | Participate in the NOAA National Weather Service TsunamiReady and StormReady Programs. | Priority / High | Disaster Planning | General Funds |
| **4** | Ongoing/ Continuous | Tsunami | Maintain emergency vehicles with tsunami warning sirens and inform the public about the tsunami warning siren. | Moderate | Disaster Planning, Police Department | General Funds |
| **5** | In Progress/ 2-Years | Wildfire | Develop a Community Wildfire Protection Plan and implement recommended strategies. | Priority / High | Fire Prevention | General Funds, Grant Funds |
| **6** | In Progress/ 5-Years | Coastal Erosion, Flooding, Sea Level Rise | Implement Local Coastal Plan policies related to hazard mitigation. | Moderate | Community Development | General Funds, Grant Funds |

**Table I-18**
**City of Pacific Grove Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **7** | In Progress/ 2-Years | Coastal Erosion, Flooding | Complete the Point Pinos Trail Project, which will remove the trail and beach parking out of the 30-year flood zone. | High | Public Works | General Funds, Grant Funds |
| **8** | Ongoing/ Continuous | Flooding, Sea Level Rise, Drought | Establish watershed-based planning to address flood hazards, sea level rise potentials and stormwater runoff problems and encourage techniques to reduces rainwater runoff, which can prevent flooding and erosion. Specifically, encourage major land alteration projects to include the use of pervious surfaces and rainwater collection technology. | High | Community Development | General Funds, Grant Funds, |
| **9** | In Progress/ 5-Years | Flooding, Sea Level Rise, Tsunami, Coastal Erosion, Wildfire, Dam Failure | Obtain and implement a GIS Master Plan. Use GIS to regularly calculate and document vulnerable areas such as: flood-prone areas, sea level rise, tsunami inundation zones, coastal erosion zones, wildland fire areas, and areas affected by dam failure. This information shall be used to create an inventory of especially vulnerable zones, buildings, properties, and infrastructure. Additionally, use GIS as a tool to inform the public on hazard risk. | Moderate | Public Works, Community Development, IT | General Funds |
| **10** | New/ 5-Years | All | Increase the resiliency of the communication system by creating redundancy so disruption to the system is minimized during and following disasters and to ensure continuity of government functions. | High | IT | General Funds, Grant Funds |
| **11** | New/ In Progress | All | Continue to coordinate with the Navy, the City of Monterey, the Presidio of Monterey, and Naval Support Activity Monterey on the Compatible Use Study, which looks at ways the military can better communicate and respond to hazardous situations in concert with neighboring municipalities. | Moderate | Community Development | General Funds |

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# ANNEX J: CITY OF SALINAS

2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

SALINAS

# J. CITY OF SALINAS

## J.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Skylar Thornton
Battalion Chief/Fire Marshal
Salinas Fire Department
65 W Alisal Street., Ste 210
Salinas, CA 93901
(831) 758-7422
skylart@ci.salinas.ca.us

## J.2 COMMUNITY PROFILE

### J.2.1 LOCATION

### J.2.2 GEOGRAPHY AND CLIMATE

The City of Salinas is the County seat and largest city in Monterey County and on California's Central Coast. Located at the northern opening of the Salinas Valley, it is situated ten miles west of Monterey Bay and the Pacific Ocean, approximately mid-way between Santa Cruz and the Monterey Peninsula.

The City encompasses an area of 37.9 square miles at an elevation of approximately 52 feet above sea level. Salinas' weather is influenced by its proximity to Monterey Bay. The morning fog is generally cleared by afternoon breezes. Salinas enjoys a mild climate with an average high of 68°F and low of 46°F and annual rainfall of 15.47 inches.

### J.2.3 HISTORY

Salinas' earliest inhabitants were small tribes of Native Americans who were largely undisturbed during the Spanish era. It was not until Mexico gained independence from Spain in 1822 that outside settlers began to arrive in Salinas. Named for a nearby salt marsh, Salinas became the seat of Monterey County in 1872 and incorporated in 1874.

In the mid-1800s, Salinas' agricultural industry began to grow. In 1867, several local businessmen laid-out a town plan and enticed the Southern Pacific Railroad to build its tracks through Salinas City. Agriculture continued as the area's major industry and by the end of World War I, the "green gold" growing in the fields helped make Salinas one of the wealthiest cities (per capita) in the United States. During the growing seasons of the Great Depression, the volume of telephone and telegraph transmissions originating in Salinas was greater than that of San Francisco. This activity was reflected in a burst of building construction, many employing the streamlined shapes and organic patterns of Art Deco or Art Moderne.

### J.2.4 POPULATION

The population of the City of Salinas is 163,542 people (2020 Census), an 8.7% increase since 2010. Salinas is the largest city in Monterey County. More than one in three County residents lives in Salinas.

### J.2.5 GOVERNING BODY FORMAT

The City of Salinas is organized under the Council-Manager form of government. The City Council is composed of six Council Members who are elected by district for four-year terms, and a Mayor elected at large for a two-year term. The City Manager, who is appointed by City Council, is responsible for all City departments except the appointed City Attorney. The City Council legislates policies, enacts ordinances, approves the budget, and appoints advisory boards and commissions.

### J.2.6 ECONOMY AND TAX BASE

The City of Salinas is the County's center for agricultural activity and the headquarters to many large growing and shipping companies. Although agriculture forms the primary economic base, more than 100 manufacturing firms are also located in the city. Some of the largest employers in the area include Taylor Farms, Ramco, the County of Monterey, and Salinas Valley Memorial Hospital. The City has a large suburban community, which consists mostly of late 20th century single family residences, ranging from modest bungalows to spacious homes. The city's historic Main Street has undergone recent revitalization and boasts an emerging arts scene

## J.3 PLANNING PROCESS

The City of Salinas followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Salinas held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on July 13, 2021. Key stakeholders present at the meeting included:

- Steve Carrigan, City Manager
- Samuel Klemek, Deputy Fire Chief
- Skylar Thornton, Battalion Chief/ Fire Marshal
- David Jacobs, Public Works Director
- Jim Pia, Assistant City Manager
- Marina Horta-Gallegos, HR Director
- Adriana Robles, City Engineer
- Michele Vaughn, Fire Chief
- Courtney Grossman Planning Manager
- Andrew Myrick, Senior Economic Development Manager
- John C. Murray, Police Commander
- Chris Callihan, City Attorney
- Roberto Filice, Acting Police Chief

## J.4 LAND USE AND DEVELOPMENT

Over the past 50 years, the community of Salinas has grown significantly. In 1950, Salinas was a small agricultural community of 14,000 persons, but has expanded to become the largest city in the County. The current Salinas General Plan was adopted in 2002 and the City is currently in the process of a General Plan update. At the time of the 2002 General Plan, about 33% of the City's area was devoted to residential uses. Commercial retail uses were approximately 9% and industrial uses 6%. While Salinas is surrounded by lands considered as "prime farmland," the lands to the south and west of the City are the most productive. In April 2008, the City Council adopted an Agricultural Land Preservation Program, which contains measures to preserve agricultural lands to the south and west.

Since 2015, the City of Salinas has completed over 12 major planning efforts, many of which focus on infill opportunities that direct development away from hazard areas. Two examples include the Downtown Vibrancy Plan (2015) and Alisal Vibrancy Plan (2019). Salinas has very little housing in its downtown core compared to other cities and the Downtown Vibrancy Plan calls for over 650 units, mostly on existing surface parking lots, to address this "housing desert." Removing parking from a downtown is often a politically difficult proposition, but Council's approval showed a willingness to enact policies supporting denser development in the urban core, away from potential hazards. The Alisal is a disadvantaged neighborhood in Salinas with a significant need for affordable housing. The Alisal Vibrancy Plan also calls for infill development to help meet its built environment needs, in particular better utilization of land along the Market Street and East Alisal Street commercial corridors,

and on vacant lots. The Alisal Vibrancy Plan also calls for more integration of Low Impact Design and green infrastructure in new development and public areas, which help manage stormwater and reducing flood risks. Implementation of the Downtown Vibrancy Plan and Alisal Vibrancy Plan is underway, and the City is in the process of rezoning multiple surface parking lots and other opportunity sites for mixed use development.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is in a position to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the 2016 Plan. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**. The Salinas Safe Growth Survey was completed by Adriana Robles, City Engineer for the City of Salinas Public Works Department. The results are summarized in *Table J-1*.

**Table J-1**
**City of Salinas Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 4.00 | 4.50 |
| Transportation | 3.00 | 3.33 |
| Environmental Management | 4.33 | 3.00 |
| Public Safety | 3.00 | 4.00 |
| Zoning Ordinance | 3.25 | 4.25 |
| Subdivision Regulations | 2.67 | 3.00 |
| Capital Improvement Program & Infrastructure Policies | 2.33 | 3.00 |
| Building Code | 4.00 | 5.00 |
| Economic Development | 1.00 | 3.00 |
| **Average Survey Ratings** | **3.06** | **3.68** |

## J.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Salinas's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Salinas is included in this Annex.

The City of Salinas's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table J-2* displays the results of the hazard risk ranking exercise that was performed by the City of Salinas's Planning Team.

**Table J-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Salinas**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 3.0 | 2.8 | 2.9 | 2.8 | 11.5 | Substantial |
| Coastal Erosion | 1.1 | 1.2 | 1.3 | 1.3 | 4.9 | Slight |
| Coastal Flooding | 1.5 | 1.4 | 1.8 | 1.6 | 6.3 | Possible |
| Cyber-Attack | 3.0 | 3.2 | 3.1 | 3.4 | 12.7 | High |
| Dam Failure | 1.9 | 1.7 | 2.2 | 2.3 | 8.1 | Moderate |
| Drought & Water Shortage | 3.7 | 3.3 | 3.2 | 3.4 | 13.6 | High |
| Earthquake | 3.4 | 3.2 | 3.4 | 3.3 | 13.3 | High |
| Epidemic | 3.0 | 2.8 | 3.0 | 2.9 | 11.7 | Substantial |
| Extreme Cold & Freeze | 2.0 | 2.0 | 1.9 | 1.9 | 7.8 | Possible |
| Extreme Heat | 1.9 | 2.2 | 1.7 | 1.9 | 7.7 | Possible |
| Flash Flood | 1.9 | 2.0 | 2.3 | 2.3 | 8.5 | Moderate |
| Hazardous Materials Incident | 2.7 | 2.7 | 2.7 | 2.8 | 10.9 | Substantial |
| Invasive Species | 1.6 | 1.5 | 1.7 | 2.0 | 6.8 | Possible |
| Levee Failure | 1.4 | 1.3 | 1.3 | 1.3 | 5.3 | Slight |
| Localized Stormwater Flooding | 2.6 | 2.9 | 2.3 | 2.3 | 10.1 | Substantial |
| Mass Migration | 1.9 | 1.9 | 1.8 | 1.8 | 7.4 | Possible |
| Pandemic | 2.8 | 2.3 | 3.4 | 3.2 | 11.7 | Substantial |
| Riverine Flooding | 1.8 | 1.9 | 2.0 | 1.9 | 7.6 | Possible |
| Sea Level Rise | 1.3 | 1.4 | 1.6 | 1.6 | 5.9 | Possible |
| Severe Winter Storms | 2.3 | 2.4 | 2.5 | 2.5 | 9.7 | Moderate |
| Slope Failure | 1.4 | 1.5 | 1.4 | 1.4 | 5.7 | Slight |
| Targeted Violence | 2.5 | 2.6 | 2.5 | 2.7 | 10.3 | Substantial |
| Terrorism | 1.8 | 1.6 | 2.5 | 2.5 | 8.4 | Moderate |
| Tsunami | - | - | - | - | - | - |
| Utility Interruption/ PSPS | 2.8 | 2.9 | 2.5 | 2.4 | 10.6 | Substantial |
| Water Contamination | 2.5 | 2.3 | 3.2 | 3.1 | 11.1 | Substantial |
| Wildfire | 2.3 | 2.4 | 2.5 | 2.6 | 9.8 | Moderate |
| Windstorms | 2.3 | 2.2 | 2.3 | 2.3 | 9.1 | Moderate |

### J.5.1 AGRICULTURAL EMERGENCIES

The agricultural industry is a major economic driver in the City. Agricultural disasters pose a serious threat to the local economy and populations directly employed by the agriculture industry.

### J.5.2 COASTAL EROSION

The City is not located on the coast, and therefore coastal erosion is not a major threat. Coastal erosion does threaten agricultural land in the Salinas Valley. Salinas is the hub for agriculture processing, therefore, if coastal erosion affects agriculture land outside the City, such affects could have indirect economic effects on the local economy. The City could also be impacted by other types of erosion not profiled in this Plan.

### J.5.3 DAM AND LEVEE FAILURE

*Dam Failure*

There are no population, property, or infrastructure in the City located in the dam inundation zones of the Los Padres and Forest Lake dams.

Salinas also has the potential for inundation due to the failure of the Nacimiento and San Antonio Dams. *Table J-3* summarizes population and property in the City exposed to spillway and dam failure of the Nacimiento and San Antonio dams.

**Table J-3**
**Population and Property Exposed to Dam Failure Risk by Dam and Failure Type in Salinas**

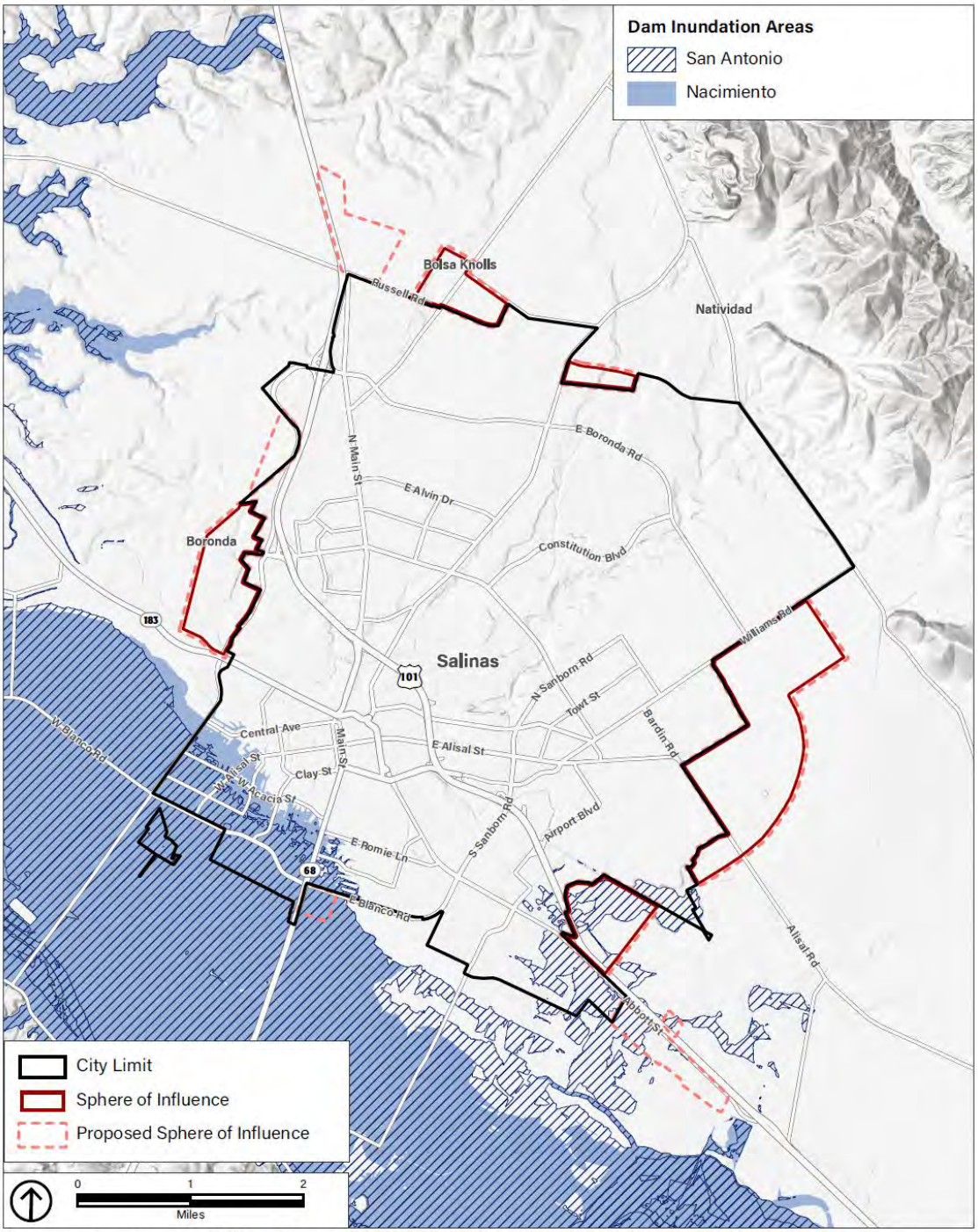
| Dam Failure Scenario | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Nacimiento Spillway Failure | 1,018 | 5 | $2,329,906 | 8 | $154,697 |
| Nacimiento Dam Failure | 10,545 | 2,425 | $1,077,104,095 | 804 | $245,485,534 |
| San Antonio Spillway Failure | 0 | 0 | $0 | 0 | $0 |
| San Antonio Dam Failure | 8,825 | 1,805 | $812,166,160 | 701 | $316,793,892 |

A failure of the Nacimiento dam would expose 3 medical facilities, 6 government facilities, 7 communication facilities, and approximately 33 miles of roads to inundation risk. Major roads and possible evacuation routes exposed includes Blanco Road, Davis Road, Harkins Road, and Highway 68 on south end of the City, as well as Highway 183 northwest of City limits.

A failure of the San Antonio dam would expose 3 medical facilities, 2 educational facilities, 6 government facilities, 6 communication facilities, and approximately 31 miles of major to inundation risk. Major roads and possible evacuation routes exposed includes Abbot Street and Highway 101 on southeast end of the City, Blanco Road, Davis Road, Harkins Road, and Highway 68 on south end of the City, as well as Highway 183 northwest of City limits.

Dam inundation areas for the Nacimiento and San Antonio dams located in the City of Salinas is mapped in *Figure J-1*.

**Figure J-1**
**Dam Inundation Areas in the City of Salinas**




Source: Department of Water Resources (DWR), 2021.

### *Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

### J.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Drought also is often accompanied by extreme heat, exposing people to the risk of sunstroke, heat cramps and heat exhaustion. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution. A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### J.5.5 EARTHQUAKE

No known active faults are located in the City and no Alquist-Priolo Earthquake Fault Zoning has been established by the State for the City. Consequently, the potential for ground rupture is low. Although the potentially active King City and Gabilan Creek Faults (active within the last three million years, though not the last 11,000 years) are located within the City, they are not expected to generate seismic activity. The greatest seismic threat is related to the San Andreas and Calaveras Faults.

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk. According to Monterey County Assessor records, there are 32,057 residential and non-residential buildings in the City, with a total value of $12,421,420,074. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

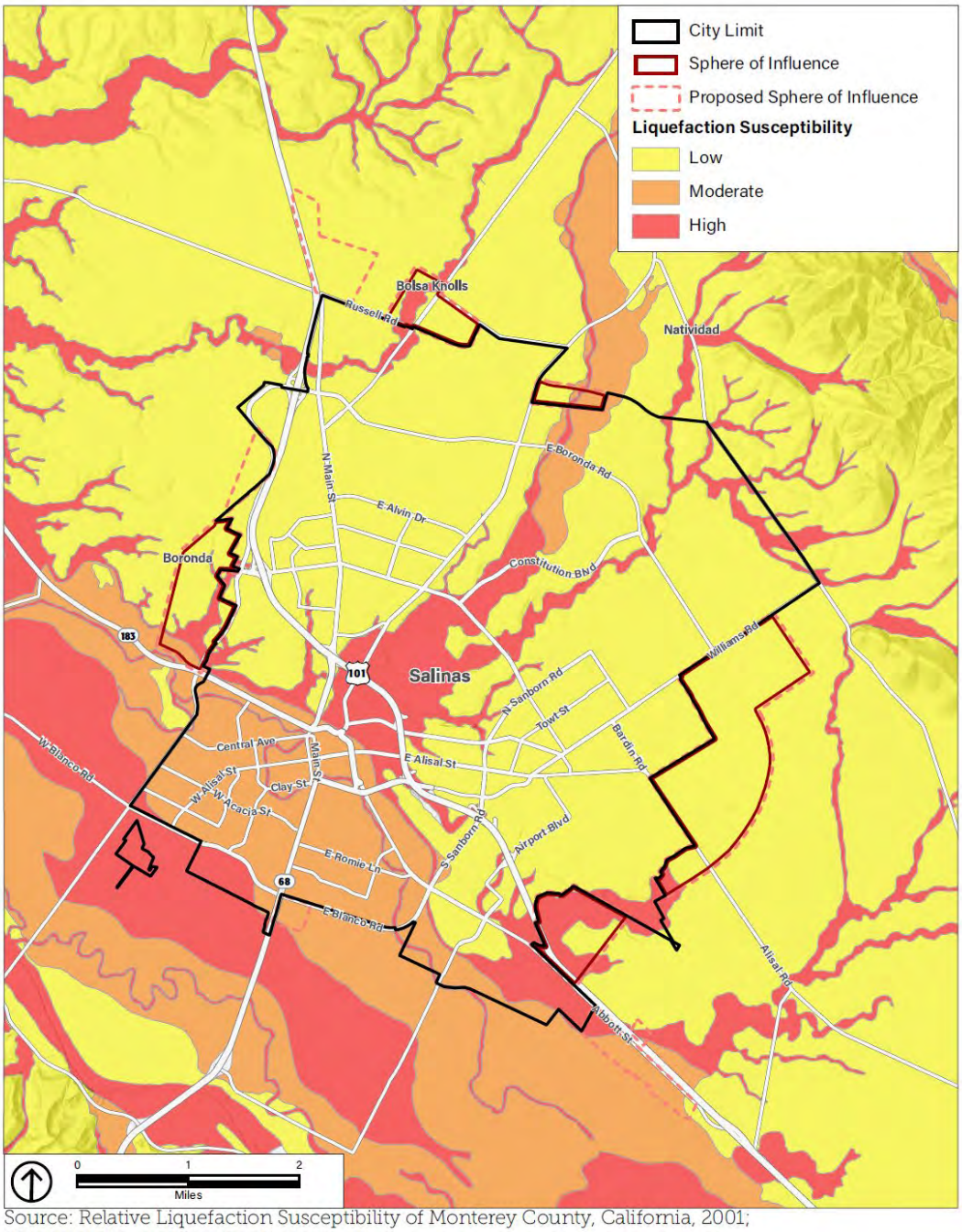
Damage from earthquakes is often the result of liquefaction. Liquefaction occurs primarily in areas of recently deposited sands and silts and in areas of high groundwater levels. Especially susceptible areas include sloughs and marshes that have been filled in and covered with development. Salinas has several former wetland areas that have been "reclaimed" (drained and filled) and developed. In addition, Salinas rests on almost 1,800 feet of alluvium. *Table J-4* summarizes population and property in the City exposed to liquefaction risk.

**Table J-4**
**Population and Property Exposed Liquefaction Risk in Salinas**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 40,954 | 2,233 | $1,140,950,365 | 2,424 | $1,255,332,144 |
| Moderate Liquefaction Susceptibility | 24,168 | 4,947 | $2,249,148,956 | 3,114 | $1,075,645,532 |

Additionally, 2 emergency response facilities, 5 medical facilities, 24 government facilities, 67 communication facilities, some facilities containing hazardous materials, 5 miles of railroad, and about 80 miles of road are in a high liquefaction zone. Major roads and possible evacuation routes exposed includes portions of Highway 101, Abbot Street, Blanco Road, Highway 68, Davis Road, San Juan Grade Road, E Laurel Drive, and Old Stage Road, as well as Highway 183 northwest of City limits. *Figure J-2* shows areas of liquefaction susceptibility within the City.

**Figure J-2**
**Liquefaction Susceptibility in the City of Salinas**




Source: Relative Liquefaction Susceptibility of Monterey County, California, 2001; Monterey County Planning Department.

### J.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table J-5* summarizes population and property in the City in the 1% annual chance and 0.2% annual chance floodplain.

**Table J-5**
**Population and Property Exposed to Flooding Risk in Salinas**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1% Annual Chance | 15,415 | 502 | $343,901,823 | 704 | $379,194,821 |
| 0.2% Annual Chance | 130,440 | 22,355 | $8,837,316,183 | 8,542 | $2,803,988,821 |

Portions of the Salinas Municipal Airport, 3 educational facilities, 5 government facilities, 5 communication facilities, and approximately 21 miles of road is located in the 1% annual chance floodplain. Major roads and possible evacuation routes located in the floodplain include portions of Highway 101, Abbot Street, and E Laurel Drive, as well as Blanco Road west of City limits and Highway 183 northwest of City limits. *Figure J-3* shows the extent of the 1% annual chance and 0.2% annual chance floodplain in the City.

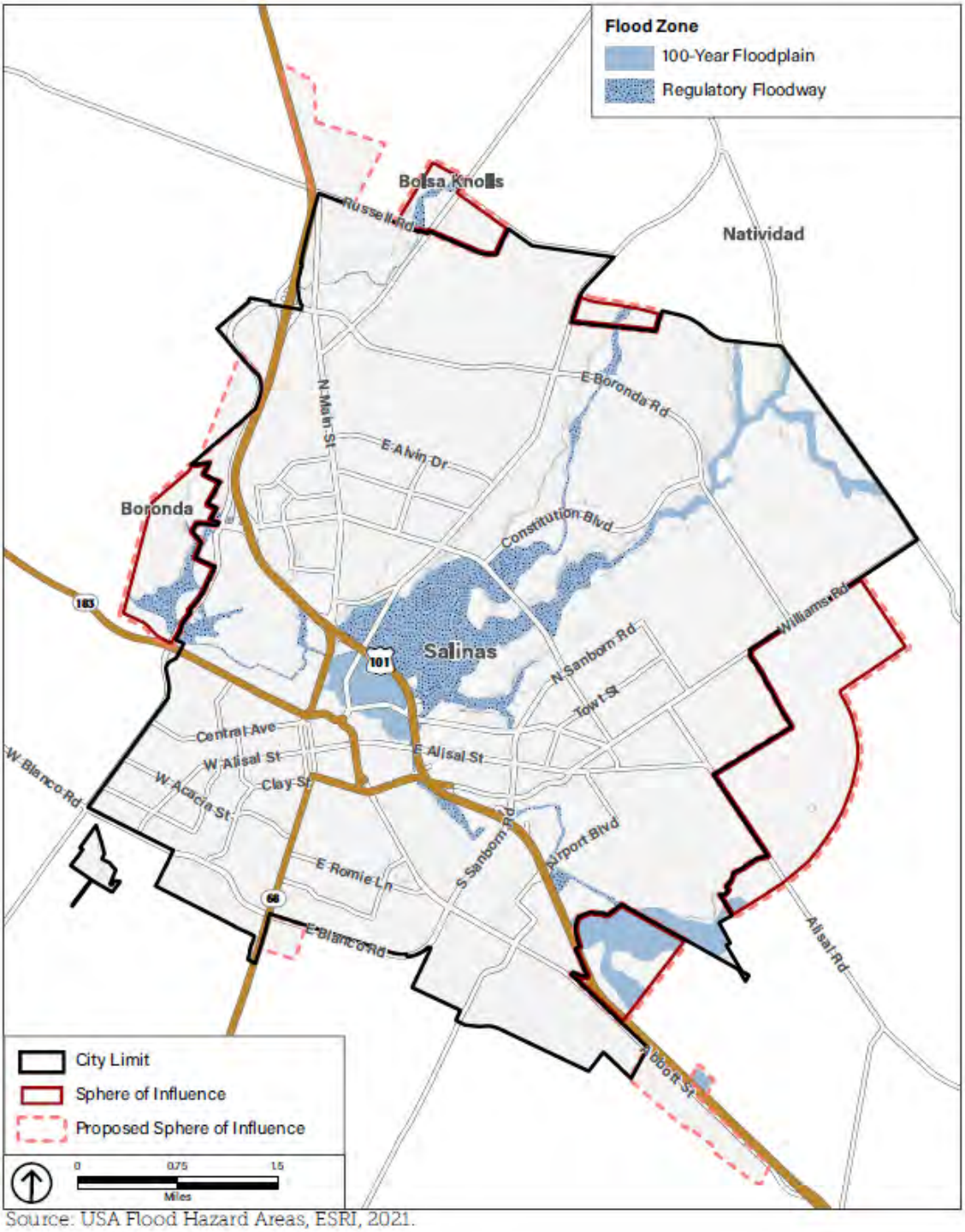
The Salinas area topography includes creeks and lakebeds that are dry during most of the year and figure prominently as open space within the City. Except for the Salinas River creeks, streams, and lakes are seasonal. Four natural channels flow from the Gabilan Mountains into the Salinas area. These include Alisal, Natividad, Gabilan, and Santa Rita Creeks. The Gabilan Creek channel has experienced siltation problems between Boronda Road and Laurel Drive, and within Carr Lake reducing the capacity of the creek. All of these creeks are tributary to the Monterey County Water Resources Agency (MCWRA) Reclamation Ditch 1665, although the Santa Rita Creek intersects the Reclamation Ditch 3.5 miles west of the city limits. This channel serves as the primary drainageway for the City.

Flood-prone areas in the City generally fall into a wide band on either side of the creeks, in the vicinity of the airport, and a narrow strip along the Reclamation Ditch running northwest-southwest through the City. The following areas in the City of Salinas have a known potential for flooding:

- Carr Lake
- Cesar Chavez Park
- Gabilan Creek
- Kern Street
- Market Street
- Merced Street
- Natividad Creek
- Reclamation Ditch
- Salinas River
- Williams Road

This is not a complete list of areas that are within flood zones, but rather a list of areas with documented flooding problems.

**Figure J-3**
**FEMA 1% Annual Chance and 0.2% Annual Chance Floodplain**



Source: USA Flood Hazard Areas, ESRI, 2021.

## J.5.7 HAZARDOUS MATERIALS INCIDENT

Hazardous materials are used in Salinas for a variety of purposes including manufacturing, agriculture, medical clinics, service industries, small businesses, schools, and households. The use

of pesticides in agricultural operations is a large source of hazardous materials within the planning area since the City is surrounded by agricultural operations, and there are agricultural activities in Carr Lake. Hazardous materials also pass through the City in route to other destinations via the freeway, rail, and surface street system. The major transportation routes through the City are Highway 101 and the Union Pacific railroad.

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table J-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table J-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in Salinas**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 82,575 | 12,974 | $5,030,795,622 | 7,624 | $2,888,369,090 |
| Fixed Source | 74,602 | 10,239 | $3,740,878,882 | 5,872 | $2,019,200,894 |

## J.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident. Of particular concern to the City of Salinas is the risk of both cyber-attacks and targeted violence.

The entire population of the City is exposed to cyber-attacks personally or at places of employment. All populations who use a computer or receive services from automated systems are exposed to cyber-terrorism. Because it is difficult to predict the particular target of cyber-terrorism, assessing vulnerability to the hazard is difficult. All critical facilities and infrastructure that are operated by a computer system are exposed to cyber-attacks.

A targeted violence event could range from an individual attack to a coordinated attack by multiple agents upon multiple targets. Large-scale incidents have the potential to kill or injure many people in the immediate vicinity and may also affect people a relative distance from the initial event.

All structures in the City are physically vulnerable to a targeted violence event. The emphasis on accessibility, the opportunity for roof access, driveways underneath some structures, unmonitored areas, the proximity of many structures to transportation corridors and underground pipelines, and the potential for an active shooter to strike any structure randomly all have an impact on the vulnerability of structures. Schools, churches, large event venues, and workplaces are known locations of previous targeted violence incidents and are likely more vulnerable to attack.

All critical facilities and infrastructure could be impacted by targeted violence. The economic impact price tag of potential losses from targeted violence could be huge if lives are lost, jobs are lost, and assets are damaged. Violence can cause fear in residents and visitors to go into public spaces in the City, which could affect the economy.

### J.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

### J.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage.

All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts.

FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table J-7.*

**Table J-7**
**Annualized Frequency and Exposure to Severe Weather Events in Salinas**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.34 | Frequency (*Distinct Events)* | 0.09 |
| Exposed Population | 143,754 | Exposed Population | 143,754 |
| Exposed Building Values | $10,738,627,000 | Exposed Building Values | $10,738,627,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $342 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.37 | Frequency (*Distinct Events)* | 1.31 |
| Exposed Population | 142,690 | Exposed Population | 132,092 |
| Exposed Building Values | $10,655,330,097 | Exposed Building Values | $8,861,762,209 |
| Expected Annual Loss of Building Value | $18 | Expected Annual Loss of Building Value | $230,288,984 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.50 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 143,754 | Exposed Population | 0 |
| Exposed Building Values | $10,738,627,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $1,086 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

### J.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 5,295 people and $211,035,578 in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible to earthquake induced to landslides.

Most of the City has slopes of 1 to 10%, although a few areas have slopes from 10 to 30%. To the east of the City, slopes increase toward the Gabilan Mountains; northeast of the City, slopes from 10 to 30% become more common. The risk of slope failure is associated with the hillsides surrounding the City. As development extends out closer to these areas, the risk of slope failure will increase. The fact that many homes are built on view property atop or below bluffs and on steep slopes subject to failure, further increases the risk. Slope failure events can block egress and ingress on roads and significantly impact bridges, causing isolation for neighborhoods, traffic problems, transportation delays.

### J.5.12 TSUNAMI

The City is not located in a mapped tsunami inundation zone.

### J.5.13 UTILITY INTERRUPTION

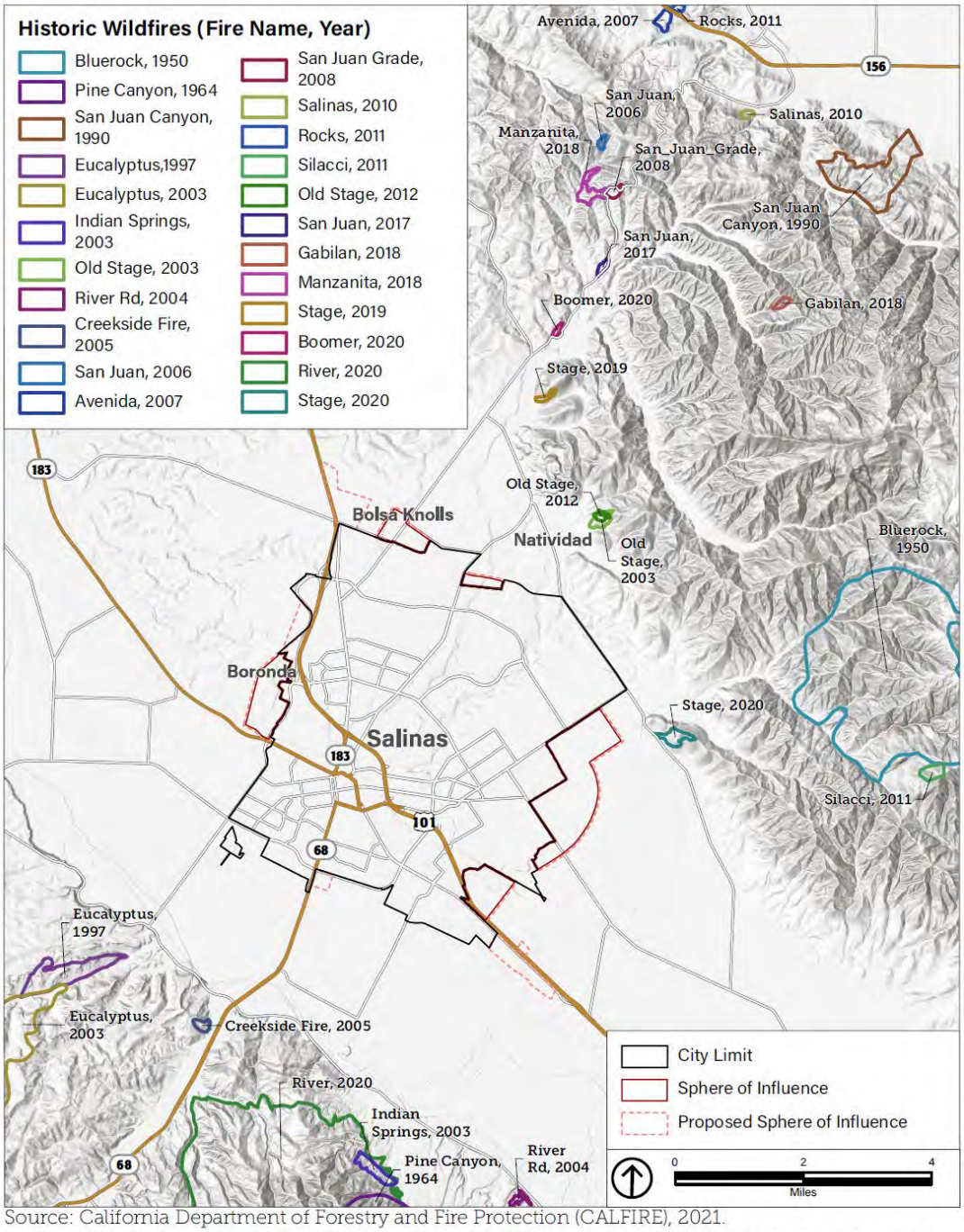
All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption. Additional emergencies occurring during power disruptions can compound the effects of utility interruption and influence the timeline of restoration. Depending on the

circumstances surrounding the incident, utility disruption can impact transportation/fuel, communications, housing, critical infrastructure, first response, and the economy.

## J.5.14 WILDFIRE

The location of historical fires surrounding the City of Salinas is mapped in *Figure J-4.*

**Figure J-4**
**Historic Wildfires**




Source: California Department of Forestry and Fire Protection (CALFIRE), 2021.
Note: Data obtained from CALFIRE for the Creekside (2005) Fire shows slightly different areas as recorded by the Bureau of Land Management and CALFIRE. This map defaults to the CALFIRE data.

To assess wildfire risk, CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table J-8* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table J-8**
**Population and Property Exposed to Wildfire Risk in Salinas**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 3,812 | 27 | $14,947,547 | 435 | $49,467,844 |
| Moderate Fire Threat | 30,029 | 548 | $414,954,233 | 1,403 | $788,528,084 |

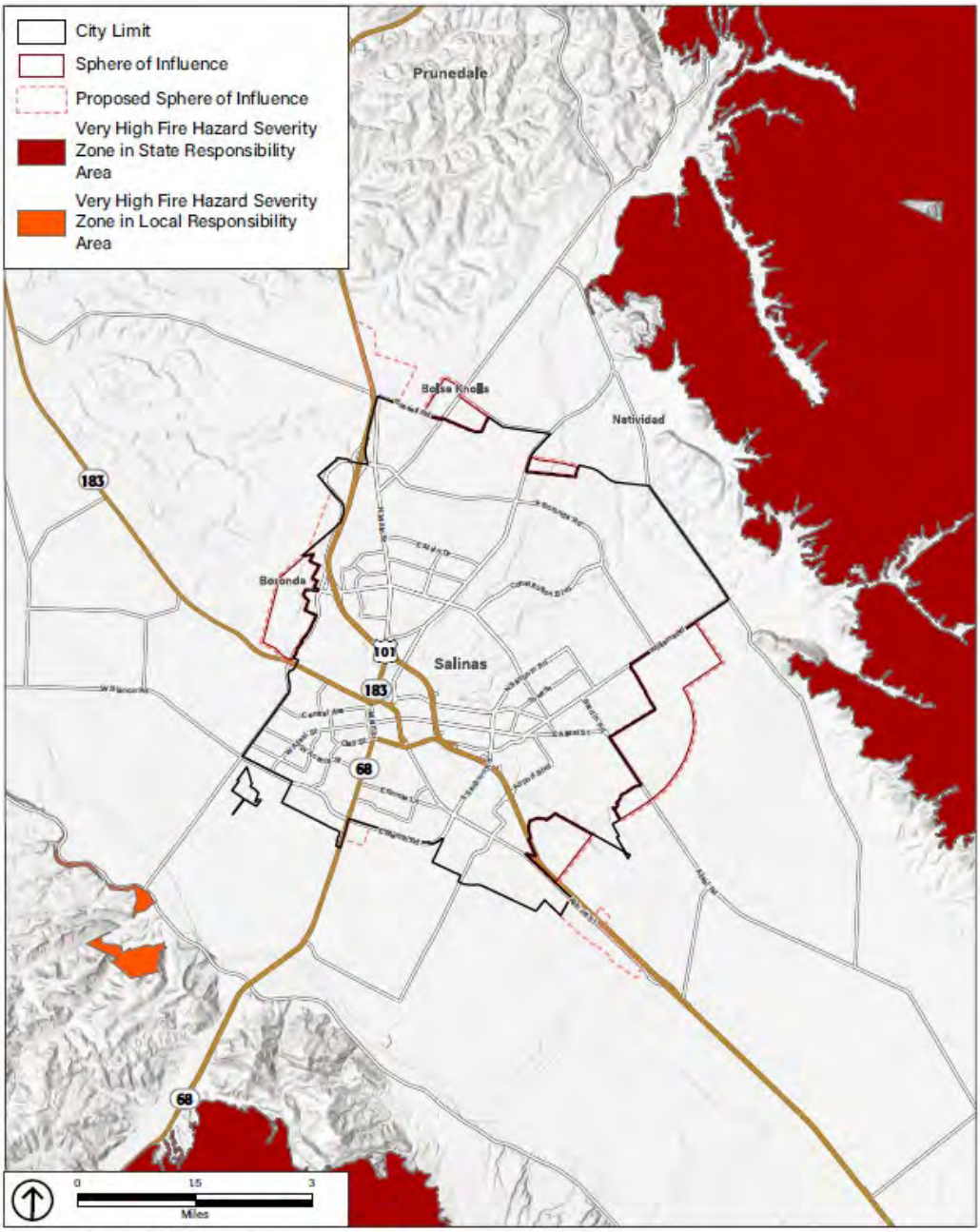
Though no critical facilities are located in very high or high fire threat zones, 1 fire station, 7 government facilities, and 11 communication facilities, and approximately 50 miles of road is located in a moderate fire threat area

Since Salinas is an urbanized community surrounded by agricultural lands, the greatest fire risk in Salinas is urban fires. Though no area within the City have been mapped as located in a Fire Hazard Severity Zones (FHSZ) by CAL FIRE, some surrounding areas have been designated as Very High Fire Hazard Severity Zones, as seen in *Figure J-5.* A risk of wildland fires is associated with these rangelands on the hillsides surrounding the City. As development extends out closer to these areas, the risk of wildland fires will increase.

Additionally, smoke and air pollution from wildfires can be a health hazard, especially for sensitive populations including children, the elderly, and those with respiratory and cardiovascular diseases. Smoke generated by wildfire contains visible and invisible emissions comprising particulate matter such as soot and tar; gases such as carbon monoxide, carbon dioxide, and nitrogen oxides; and toxics such as formaldehyde and benzene. Emissions from wildfires depend on the type of fuel, the moisture content of the fuel, the efficiency or temperature of combustion, and the weather. Wildfires occurring in areas surrounding the City could lead to secondary public health risks.

Agriculture, a key economic driver for the City, is also vulnerable to wildfire risk. Structures, irrigation systems, and equipment, crops, livestock, and stored commodities can be lost to wildfire. Fires can also affect soil quality and smoke can have many negative impacts on crops. Fires also create a high-risk environment for agricultural workers. In addition to the dangers of an active fire, wildfire smoke, ash, and chemicals used to treat fires negatively affect air and water quality.

**Figure J-5**
**Very High Fire Hazard Severity Zones Surrounding the City of Salinas**




Source: State of California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, 2007; City of Salinas, 2021.

## J.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures will have direct impacts on public health and infrastructure. Drought,

flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the local economy, along with changes to agriculture and crops, which are a critical backbone of the City's economy.

## J.6 CAPABILITY ASSESSMENT

The City of Salinas performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table J-9*
- An assessment of administrative and technical capabilities is presented in *Table J-10*
- An assessment of fiscal capabilities is presented in *Table J-11*
- An assessment of education and outreach capabilities is presented in *Table J-12*
- Classifications under various community mitigation programs are presented in *Table J-13*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section J.6.1 in *Table J-14*
- An overall self-assessment of capability is presented in Section J.6.2 in *Table J-15*

**Table J-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • City Admin | |
| Capital Improvement Plan | ☐ | | Unknown |
| Floodplain Management Plan | ☒ | • Public Works | City Engineer |
| Open Space Management Plan | ☒ | • Planning | |
| Stormwater Management Plan | ☒ | • Public Works | NPDES Permit Manager |
| Coastal Management Plan | ☐ | • | Not applicable |
| Local Coastal Program | ☐ | | Not applicable |
| Climate Action/ Adaptation Plan | ☒ | • Public Works<br>• Community Development | Needs update |
| Emergency Operations Plan | ☒ | • Fire Department | Needs update |
| Continuity of Operations Plan | ☒ | • Fire Department<br>• Police Department<br>• City Hall | |
| Community Wildfire Protection Plan | ☐ | | Not applicable |
| Evacuation Plan | ☒ | • Public Works<br>• Fire | In the Dam Failure Plan |
| Disaster Recovery Plan | ☐ | • | Unknown |
| Economic Development Plan | ☒ | • City Hall | Economic Development Manager |
| Historic Preservation Plan | ☒ | • Community Development | |

**Table J-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| | | • City Hall | |
| Transportation Plan | ☒ | • Public Works | Traffic Engineer |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Public Works | |
| Zoning Ordinance | ☒ | • Community Development | |
| Subdivision Ordinance | ☒ | • Community Development<br>• Public Works | |
| Site Plan Review Requirements | ☒ | • Community Development<br>• Public Works | |
| Unified Development Ordinance | ☐ | | Unknown |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | Unknown |
| Building Code | ☒ | • Community Development | |
| Fire Prevention Code | ☒ | • Fire Department | |

**Table J-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Public Works | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Public Works | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Public Works | |
| Building Inspector | ☒ | • Community Development | |
| Emergency Manager | ☒ | • Fire Department | Fire Chief |
| Floodplain Manager | ☒ | • Public Works | City Engineer |
| Land Surveyors | ☐ | | |
| Resource development staff or grant writers | ☒ | | Each department handles its own grants. |
| Public Information Officer | ☒ | • Fire Department | |
| Scientist(s) familiar with the hazards of the community | ☐ | | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Public Works<br>• Fire Department<br>• Police Department | |

**Table J-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Public Works | GIS Division |
| Maintenance programs to reduce risk | ☒ | • Public Works | |
| Warning systems/services | ☒ | | Everbridge |
| Mutual Aid Agreements | ☒ | • Fire Department | |

**Table J-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Finance | |
| Special Purpose Taxes | ☒ | • Finance | |
| Stormwater Utility Fees | ☒ | • Finance | |
| Gas / Electric Utility Fees | ☒ | • Public Works<br>• Finance | |
| Water / Sewer Fees | ☒ | • Finance | |
| Development Impact Fees | ☒ | • Public Works | |
| General Obligation Bonds | ☐ | | |
| Special Tax and Revenue Bonds | ☒ | • Finance | |
| Community Development Block Grants | ☒ | • Community Development | |

**Table J-12**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☒ | • Community Development | |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • Public Works<br>• Fire Department | Social Media |
| Natural disaster or safety related school programs | ☒ | • Fire Department | Social Media |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table J-13**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | Yes | 7 | 10/1/2013 |
| ISO Public Protection Classification | | | |
| *StormReady* Certification | | | |
| *TsunamiReady* Certification | No | - | - |
| *Firewise Communities* Certification | No | - | - |

*Political Capability*

Salinas has a General Plan in place, including a robust Economic Development Element. Additionally, the City has a variety of plans including:

- Public Art Master Plan (2020)
- Alisal Vibrancy Plan (2019)
- Parks, Recreation, and Libraries Master Plan (2019)
- Downtown Vibrancy Plan (2015)
- Salinas Ag-Industrial Center Specific Plan (2009)
- Central Area Specific Plan (2020)
- Chinatown Revitalization Plan (2019)
- West Area Specific Plan (2019)
- Gateway Center Specific Plan (2011)

All of these plans detail the outline of where City resources will be allocated to either improve quality of life, improve safety, or improve hazard mitigation.

## J.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table J-14**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Adriana Robles, City Engineer |
| **NFIP Community Number:** | 060202 |
| **Flood Insurance Policies in Force:** | 317 |
| Insurance Coverage in Force: | $95,459,500 |
| Written Premium in Force: | $320,007 |
| **Total Loss Claims:** | 31 |
| Total Payments for Losses: | $160,884 |

**Adopted Regulations that meet NFIP Requirements:**

- Flood Damage Prevention, Chapter 9, Article VI of the Municipal Code, adopted October 19, 2010
- Flood Overlay District, Zoning Code, Chapter 37, Article IV of the Municipal Code, adopted July 23, 2013
- Flood Insurance, Subdivision Ordinance, Section 31-705 of the Municipal Code, adopted December 13, 2016

**Date of last NFIP Community Assistance Visit (CAV):**

September 2016. Provided building information on six (6) structures built in the floodplain.

**Higher standards that exceed minimum NFIP requirement:**

- Freeboard requirement is two (2) feet above the Base Flood Elevation.
- General Plan includes requirement for a 100-foot setback to top of creeks near riparian areas.

**Table J-14**
**National Flood Insurance Program (NFIP) Compliance**

**Additional floodplain management provisions:**
Floodplain regulations are included in area plans such as the Central Area Specific Plan and West Area Specific Plan. The 2002 General Plan includes provisions for protections of wetland and riparian areas, along with floodplains and floodways.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**
The City of Salinas maintains a monthly log of all the maintenance required of drainage systems and the yardage of any trash removal for all waterways, outfalls, inlet filters, ditches, and basins.
The City's public education and outreach includes brochures for illicit discharges, annual flood insurance promotion to all residences within the floodplains and flood risk awareness and flood insurance social media posts and posters in our permit center.

**Existing impediments to running an effective NFIP program:**
The biggest challenges are funding and lack of staff to run a more effective program.

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

- Maintain digital FEMA elevation certificates for all construction in the floodplain.
- Evaluate permit applications to determine possible modifications focused on flood prevention.
- Develop a checklist for review of building/development permit plans and for inspection of development in floodplains.
- Establish a goal to have each plan reviewer and building inspector attend a training periodically.
- Encourage or require certain local staff positions to obtain and maintain Certified Floodplain Manager (CFM) certification.
- Maintain a map of areas that flood frequently and prioritize those areas for inspection immediately after the next flood. If outside FEMA special flood hazard areas, consider requiring existing NFIP regulatory standards through overlay zoning, etc.
- Hold informative work sessions for newly elected officials and new appointees to planning commissions and appeals/variance boards, to provide an overview of floodplain management, the importance of participating in the NFIP, and the implications of failing to enforce the requirements of the program or failing to properly handle variance requests.
- Obtain FEMA's Substantial Damage Estimator and attend training; develop mutual aid agreements with other jurisdictions to augment local personnel after disasters.
- Conduct a review of other regulatory programs and planning tools, and report on opportunities to improve consistency with the objectives of floodplain management.
- Develop handouts for permit applications on specific issues such as installation of manufactured homes in flood hazard areas according to HUD's installation standards, or guidance on improving/repairing existing buildings to better withstand potential hazards.

## J.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table J-15**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | High |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Moderate |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## J.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

City of Salinas can improve its capability at hazard mitigation by sharing the capabilities between departments. The City can place department specific capabilities in a shared folder that gets updated every 3-5 years. City personnel could drill on the occurrence of various hazards in the city and what the trigger points are for involvement of different departments; based on hazard type.

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## J.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

*Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.

*Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## J.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Salinas Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Salinas are identified below:

- The City is vulnerable to major flooding events that can cause moderate damages. While a major concern, the Salinas River is not the only source of potential flooding, various tributaries including Natividad Creek, Santa Rita Creek, and Alisal Creek are not adequately conveyed through the City to the Salinas River due to backflow issues and inadequate drainage systems. One area of particular concern for future flood damages is the Sherwood Park Mobile Home Park and surrounding areas downstream of Carr Lake (and reclamation ditch maintained by Monterey County) in the center of the City.
- The City faces unique vulnerabilities to major hazard events due to its relatively high population and development density (the highest in Monterey County), particularly with regard to earthquake ground-shaking events that could have community-wide impacts.
- The City is vulnerable to large wind and storm events which can cause significant infrastructure damage and power outages. Severe storms can overwhelm emergency response resources. The City's Public Works Yard is also located in an area vulnerable to flooding, which could affect response capabilities.
- The City has extensive vulnerabilities related to homelessness issues in waterways and flood risk. Stormwater is tightly regulated by the state. The volume of people living in the City's waterways is increasing. Tied to the increase in the volume of people is the associated debris and waste generated. The trash and associated living components create waste that can clog culverts and grates, leading to backing up the system and impacting residents, roads, and businesses. Additionally, there is a human waste component leading to additional contamination of runoff.
- The City of Salinas has steps in place to mitigate Cyber-attacks. Through external vulnerability tests and user "clicker" education, the City does provide mitigation to avoid attacks. The City has IDS/IPS protection on the edge of the network and implements 2FA. Cyber-attacks are challenging to avoid. The City uses a scalable VDI environment for most every user, so a compromised system can be immediately isolated and wiped if needed. The City uses a zero-day attack vector protection on each virtual machine to help notify and mitigate attacks. The City also implements an email forwarding notification system and implements a Personal Identifiable Information (PII) mitigation blocking system to help keep any PII attacks/breaches to a minimum, or if PII is sent out of the

network. Additional education is needed to further improve recognizing various threats from all sources.

- The City of Salinas has a wide variety of hazardous materials in its jurisdiction. The City of Salinas has Southern Pacific Railroad and Highway 101 running through its jurisdiction. With that, there is a high volume of Hazmat moving through City limits daily. Most of the City's fixed hazmat sources are related to agriculture, in the form of refrigerants and pesticides. The volumes and types of hazardous materials are regulated by Monterey County. The City of Salinas as a whole is vulnerable to attacks on our hazmat sources. The Salinas Fire Department in cooperation with Seaside Fire Department has a OES Type 1 Hazmat team that covers Monterey and San Benito Counties. This team is also on the statewide matrix for response to greater emergencies. The team is a defensive resource.
- The City of Salinas is vulnerable to targeted acts of violence given its proximity to several military institutions (Defense Language Institute, Naval Post Graduate School), and being a hub for local gangs (Nortenos in primis). Gangs, specifically, are targeting our youths with a radicalization campaign aimed at shaping the future of the gangs while inciting our youth to violence and encouraging them to strike in the heart of our vibrant city.
- As a result of this consistent overdraft of groundwater levels in the Salinas Valley Groundwater Basin, basin levels have dropped below sea level, allowing seawater to intrude from the Monterey Bay into aquifers located 180 and 400 feet below ground surface. Drought conditions can lead to deeper and deeper groundwater pumping and this loss of groundwater increases sea water intrusion. Seawater intrusion of the 180 ft aquifer could lead to contaminated water and effect the water supply for the City of Salinas.
- Because of factors such as age, disability, income, and housing status, the population of the City of Salinas includes many residents that are vulnerable to risks associated with climate change. These risks amplify other hazards, such as severe storms, drought, and wildfire. Most of the housing stock in the City was designed for a mild climate, not for mitigating extreme heat days and other events.

## J.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Salinas Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table J-17* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

*Status of Previous Plan Actions*

All actions from the 2016 Hazard Mitigation Plan were reviewed and updated by the City during the planning process. *Table J-16* includes the status of actions completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table J-16**
**City of Salinas Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **1** | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary. | **Completed** | All buildings meet current earthquake standards. The City has adopted the new FEMA standards. Ongoing on an as needed basis. |
| **4** | Develop an unreinforced masonry grant program that helps correct earthquake-risk nonmasonry building problems, including chimney bracing and anchoring water heaters. | **Deleted** | Most buildings meet current earthquake standards, and the City does not currently have the resources to implement private property grant program. |
| **6** | The police department is looking to enlarge their office space. The city is planning to build a new headquarters building on city owned property. | **Completed** | The City has completed the new police headquarters. |
| **7** | Work with USACE to make the wastewater treatment plant in Salinas more flood resistant. | **Deleted** | A more detailed and effective strategy to reduce flood risk at the industrial wastewater treatment plant is included updated 2021 actions**.** |

**Table J-17**
**City of Salinas Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | **Ongoing/ Continuous** | All | Develop a sustained public outreach program that encourages consistent hazard mitigation content and develop audience-specific hazard mitigation outreach efforts. Audiences include the elderly, children, tourists, non-English speaking residents, and home and business owners. | Priority / High | Administration, Community Services, Various | HMGP and PDM Grants, General Funds |
| **2** | **In Progress** | Flooding | Identify and carry-out minor flood and stormwater management projects that would reduce damage to infrastructure and damage due to local flooding/inadequate drainage. These include the modification of existing culverts and bridges, upgrading capacity of storm drains, stabilization of streambanks, and creation of debris or flood/stormwater retention basins in small watersheds. | Priority / High | Maintenance | HMGP and PDM Grants |
| **3** | **In Progress/ 3 years** | All | Complete a written All Hazard Evacuation Plan especially for the risk of flood, dam failure, and earthquake. | Moderate | Law Enforcement/ Deputy Police Chief | General Fund |
| **4** | **In Progress/ 5 years** | All | Complete a written Continuity of Government Plan. | Low | Law/Fire | General Fund |
| **5** | **In Progress/ 5 years** | Flooding | Reinforce the Industrial Wastewater Treatment Plant against the threat of flood in the 100-year floodplain. | High | Public Works | Federal Grant Assistance |
| **6** | **Ongoing** | Earthquake | Continue to adopt and implement current earthquake building standards and upgrade, remove, or replace unreinforced masonry buildings, as feasible. | Medium | Community Development | Grants and General Fund |
| **7** | **New** | All | Update the Emergency Operations Plan and increase training for staff in ICS. | High | Law/Fire | General Fund |

**Table J-17**
**City of Salinas Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **8** | **New** | Human-Caused | Work with neighboring jurisdictions to increase the redundancy of IT infrastructure. | | Law | General Fund |
| **9** | **New** | Extreme Heat | Develop strategies to prepare the community to adapt to more extreme heat days. This could include creating community cooling centers, more outdoor water features (splash pads, etc.), consideration for cooling without electricity as brown outs may accompany extreme heat, and extra precautions/resources for elderly and other vulnerable residents. | Moderate | Various | Grants and General Fund |
| **10** | **New (ongoing)** | Drought | Coordinate with the Salinas Valley Groundwater Sustainability Agency and other water partners on reducing seawater intrusion and over drafting in local aquifers, as well as on projects which will increase groundwater recharge or increase sustainable water availability. | High | Public Works, Community Development | Grant assistance |
| **11** | **New (ongoing)** | Flooding | Build green infrastructure throughout the city which can protect against stormwater flooding, increase groundwater recharge, and provide other benefits through greening hardscape environments. | High | Public Works | Grants and General Fund |
| **12** | **New** | Climate Change | Support local community implementation of climate resiliency efforts outlined in the Monterey County Climate Resilience Plan. | Moderate | Various | Grants and General Fund |
| | **New** | Drought | Work with agriculture stakeholders on drought resiliency, water sustainability, and protecting farmworkers and crops from extreme heat. | High | Administration (Economic Development), Community Development | Grants and General Fund |

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# ANNEX K:
# CITY OF SAND CITY

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

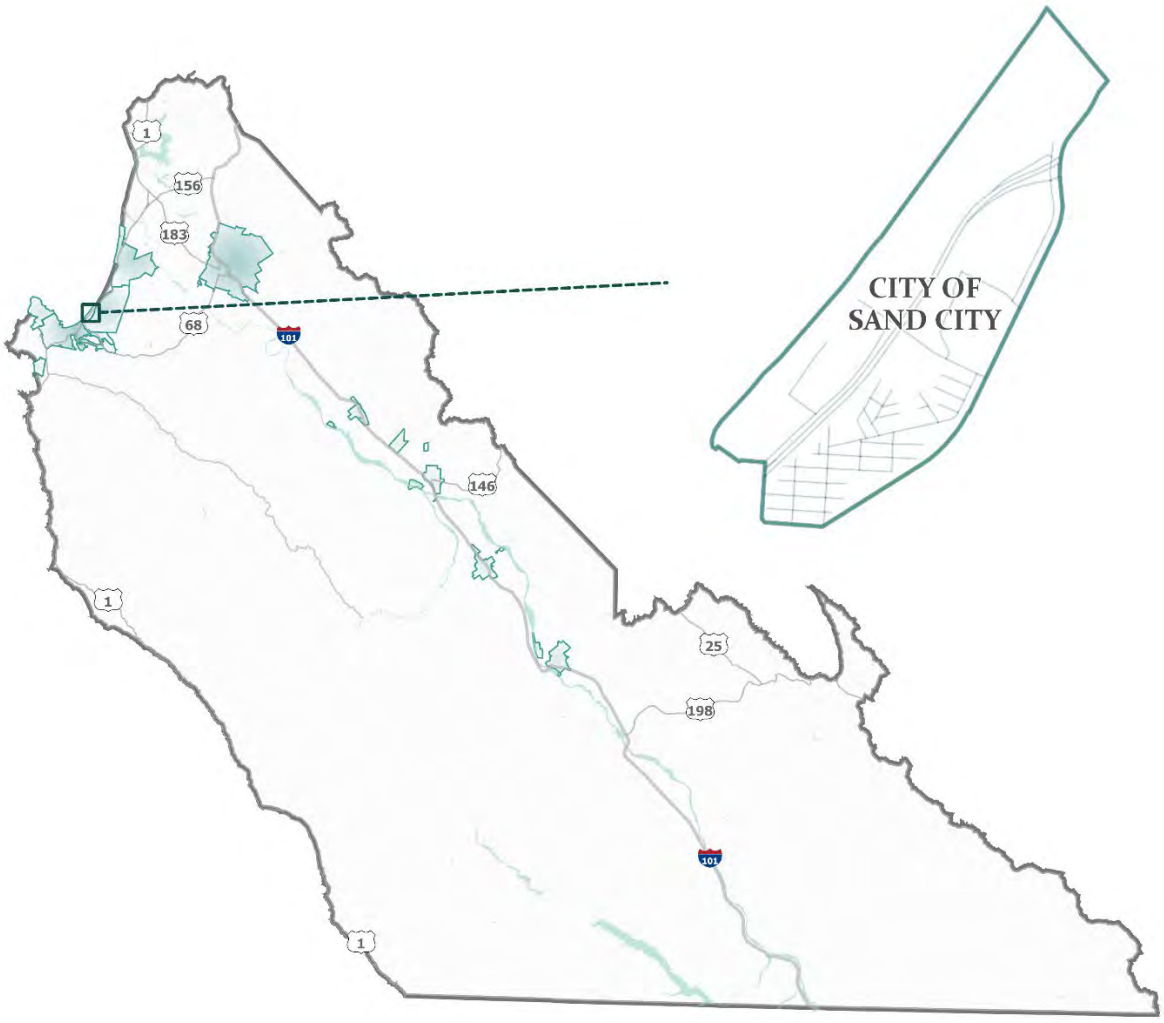
# K. CITY OF SAND CITY

## K.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Chief Brian Ferrante
Chief of Police, Public Works Supervisor,
Emergency Response Coordinator
1 Pendergrass Way
Sand City, CA 93955
(831) 394-1451 ext. 218
bferrante@sandcitypd.org

## K.2 COMMUNITY PROFILE

### K.2.1 LOCATION



### K.2.2 GEOGRAPHY AND CLIMATE

The City of Sand City is a small City located on the Monterey Bay, and surrounded on most sides by the City of Seaside and a short distance northeast of the City of Monterey. The city has a total area of 2.9 square miles.

### K.2.3 HISTORY

The City of Sand City is historically known for its industrial areas, notably coastal sand mining. Local business owners paved the way for the City's incorporation on May 31, 1960, which created the public arena for local control over the City's economic destiny and urban design. Recent history shows a steady progress toward redevelopment of the town, starting with the development of two shopping centers where there was once significant urban blight. Also, in 1996, the City reached an agreement to retain between 70 to 80% of its coastline for parks and open space, while maintaining two development areas primarily dedicated to coastal resort development which is allowed in the City's certified local coastal plan. This blending of fiscal responsibility and coastal stewardship is also reinforced by the City's ability to garner a larger percentage of property tax revenues within the redevelopment project plan area adopted in 1987. Redevelopment has given this small city the opportunity to redefine itself in a progressive, sustainable way.

### K.2.4 POPULATION

The City of Sand City has a population of 334 people. The City of Sand City is the least populous city in Monterey County. While the residential population of the City is small, commercial, and industrial land uses draw an estimated daytime population of employees and shoppers that approaches 10,000.

### K.2.5 GOVERNING BODY FORMAT

Sand City has a Council-Manager form of government. The Council is composed of five members elected at large to staggered terms. Councilmember terms last for four years, though the Mayoral term is only for two years. The Council appoints the City Administrator, City Attorney, and members of advisory committees. The Council chooses one of its members as Vice-Mayor, who presides at the Council meetings in the absence of the Mayor.

### K.2.6 ECONOMY AND TAX BASE

Sand City has a number of industrial businesses and has served the Monterey Peninsula as a commercial base and has a number of larger retail stores. The City currently provides jobs for approximately 3,000 and attracting 40,000 to 50,000 shoppers daily to the city's businesses.

The West End area of Sand City, once an industrial area, hosts a growing artists' colony. The City of Sand City is continuously working to install public art around the City to celebrate the community, with the expressed goal to allow local and visiting artists to fully express themselves and build the foundation of an accessible public gallery. Every August, the artists of Sand City and neighboring areas hold a street fair called the "West End Celebration."

## K.3 PLANNING PROCESS

The City of Sand City followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Sand City held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on August 24, 2021. Key stakeholders present at the meeting included:

- Aaron Blair, City Manager
- Brian Ferrante, Chief of Police
- Mark Parker, Public Works Supervisor

## K.4 LAND USE AND DEVELOPMENT

Overtime the City of Sand City has phased-out some of the initial heavy industrial uses for regional amenities such as shopping center. The Sand City General Plan: 2002-2017 divides the City into six geographical districts. The Destination Commercial Planning District on the northeastern corner of the City, east of Highway 1, contains the largest destination commercial development on the Monterey Peninsula. Three planning districts that are east of Highway 1 and south of 7 the Destination Commercial Planning Area contain a mix of industrial and commercial uses with scattered single-family dwellings, duplexes, and small apartment units. The East Dunes Planning District includes City Hall and vacant parcels that provide an opportunity for family-oriented residential development.

In 2005, the City received unanimous coastal commission approval for a small desalination facility. This small facility allows the City to continue its redevelopment efforts without depending upon a sustainable regional water supply that has proven difficult to achieve. The City's plant uses brackish water near the coast for purifying. Following a reverse osmosis process, the byproduct water that is not potable is injected into beach wells.

Two districts along the Monterey Bay, west of Highway 1, are primarily undeveloped and planned for development as State/regional parkland or visitor serving commercial development. The Sand City coastal zone extends from the southern boundary of Fort Ord Dunes State Park to the City of Seaside on the south. Sand City has about 1.5 miles of shoreline, comprised primarily of sand dunes. In 1996, the City entered a "Memorandum of Understanding" with California State Parks and the Monterey Peninsula Regional Parks District to allow visitor-serving uses within a few remaining "development envelopes" on the coast. California State Parks and the Monterey Peninsula Regional Parks District are acquiring the remaining land for sensitive habitat reconstruction, public parks, and general open space.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The Sand City Safe Growth Survey was completed by Charles Pooler, City Planner in the City of Sand City Planning Department. The results are summarized in *Table K-1*.

**Table K-1**
**City of Sand City Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 3.75 | 3.00 |
| Transportation | 3.67 | 3.67 |
| Environmental Management | 4.67 | 3.67 |
| Public Safety | 3.67 | 4.33 |
| Zoning Ordinance | 3.75 | 3.25 |
| Subdivision Regulations | 2.00 | 2.00 |
| Capital Improvement Program & Infrastructure Policies | 3.00 | 2.00 |
| Building Code | 4.00 | 5.00 |
| Economic Development | 3.00 | 3.00 |
| **Average Survey Ratings** | **3.50** | **3.32** |

## K.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Sand City's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Sand City is included in this Annex.

The City of Sand City's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**.

*Table K-2* displays the results of the hazard risk ranking exercise that was performed by the City of Sand City's Planning Team.

**Table K-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Sand City**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | - | - | - | - | - | - |
| Coastal Erosion | 2.0 | 3.0 | 2.0 | 2.0 | 9.0 | Moderate |
| Coastal Flooding | 1.0 | 2.0 | 2.0 | 2.0 | 7.0 | Possible |
| Cyber-Attack | 2.0 | 3.0 | 2.0 | 2.0 | 9.0 | Moderate |
| Dam Failure | - | - | - | - | - | - |
| Drought & Water Shortage | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Earthquake | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Epidemic | 3.0 | 3.0 | 2.0 | 2.0 | 10.0 | Moderate |
| Extreme Cold & Freeze | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Extreme Heat | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Flash Flood | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Hazardous Materials Incident | 1.0 | 2.0 | 2.0 | 2.0 | 7.0 | Possible |
| Invasive Species | - | - | - | - | - | - |
| Levee Failure | - | - | - | - | - | - |
| Localized Stormwater Flooding | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Mass Migration | - | - | - | - | - | - |
| Pandemic | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Riverine Flooding | - | - | - | - | - | - |
| Sea Level Rise | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Severe Winter Storms | 2.0 | 2.0 | 1.0 | 1.0 | 6.0 | Slight |
| Slope Failure | 2.0 | 1.0 | 1.0 | 1.0 | 5.0 | Slight |
| Targeted Violence | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Terrorism | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Tsunami | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Utility Interruption/ PSPS | 3.0 | 2.0 | 2.0 | 2.0 | 9.0 | Moderate |
| Water Contamination | 3.0 | 1.0 | 2.0 | 2.0 | 8.0 | Possible |
| Wildfire | - | - | - | - | - | - |
| Windstorms | 3.0 | 2.0 | 2.0 | 1.0 | 8.0 | Possible |

### K.5.1 AGRICULTURAL EMERGENCIES

There is no agricultural land located within the City, so therefore an agricultural emergency does not pose a direct threat. Since agriculture is a major economic driver in the County, an agricultural emergency could have indirect economic impacts on the City.

### K.5.2 COASTAL EROSION

To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center Coastal Storm Modeling System (CoSMos) shoreline change, and cliff retreat projection data was used. For cliff

retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on Ocean Protection Council (OPC) High Risk Aversion Guidance. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion. Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

*Table K-3* summarizes population and property exposure to coastal erosion risk.

**Table K-3**
**Population and Property Exposed to Coastal Erosion Risk in Sand City**

| Sea Level Rise Scenario/ Erosion Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| **Cliff Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 0 | $0 |
| **Shoreline Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 7 | $76,930,836 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 6 | $76,930,836 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 1 | $70,358,090 |

## K.5.3 DAM AND LEVEE FAILURE

### *Dam Failure*

There is no population or property in the City located in a mapped dam inundation zone of any of the dams (Nacimiento, San Antonio, Los Padres, and Forest Lake) analyzed in this Plan.

### *Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

## K.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic

effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### K.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 801 residential and non-residential buildings in the City, with a total value of $352,877,451. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table K-4* summarizes population and property in the City exposed to liquefaction risk.

**Table K-4**
**Population and Property Exposed to Liquefaction Risk in Sand City**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 0 | 0 | $0 | 11 | $76,931,932 |
| Moderate Liquefaction Susceptibility | 187 | 115 | $24,334,617 | 356 | $200,626,765 |

### K.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table K-5* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table K-5**
**Population and Property Exposed to Flooding Risk in Sand City**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 0 | 0 | $0 | 22 | $76,933,577 |
| 500-Year Flood Zone | 75 | 1 | $173,008 | 3 | $77,589,019 |

### K.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances

will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table K-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table K-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in Sand City**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 324 | 157 | $32,386,952 | 644 | $320,490,499 |
| Fixed Source | 0 | 0 | $0 | 0 | $0 |

## K.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## K.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

## K.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip

code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts.

FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table K-7.*

**Table K-7**
**Annualized Frequency and Exposure to Severe Weather Events in Sand City**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.19 | Frequency (*Distinct Events)* | 0.03 |
| Exposed Population | 2,637 | Exposed Population | 2,637 |
| Exposed Building Values | $449,794,000 | Exposed Building Values | $449,794,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $5,030 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.07 | Frequency (*Distinct Events)* | 0.84 |
| Exposed Population | 2,637 | Exposed Population | 1,750 |
| Exposed Building Values | $449,794,000 | Exposed Building Values | $298,534,461 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $5,026,212 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.38 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 2,637 | Exposed Population | 0 |
| Exposed Building Values | $449,794,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $79 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

## K.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 201 people and $69,740,156 in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible earthquake induced to landslides.

## K.5.12 TSUNAMI

Population and property in the City located in a mapped tsunami inundation zone is summarized in *Table K-8.*

**Table K-8**
**Population and Property in Tsunami Inundation Zone in Sand City**

| Inundation Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Tsunami Inundation Zone | 0 | 1 | $152,206 | 88 | $76,933,577 |

## K.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

## K.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table K-9* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table K-9**
**Population and Property Exposed to Wildfire Risk in Sand City**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| Moderate Fire Threat | 228 | 86 | $5,508,183 | 176 | $181,098,970 |

## K.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure.

Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the rural economies, along with changes to agriculture and crops, which are a critical backbone of Monterey County's economic success. There will also be negative impacts to ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

Sea level rise risk exposure in the City was calculated based on the NOAA Office for Coastal Management sea level rise viewer projections. Three sea level rise levels (25 cm, 75 cm, and 200 cm) were chosen to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

Population and property exposed to sea level rise risk is summarized in *Table K-10.*

**Table K-10**
**Population and Property Exposed to Sea Level Rise in Sand City**

| Sea Level Rise Amount | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 1 ft Sea Level Rise (2030) | 0 | 0 | 0 | 10 | $76,931,932 |
| 3 ft Sea Level Rise (2060) | 0 | 0 | 0 | 13 | $76,931,932 |
| 7 ft Sea Level Rise (2100) | 0 | 0 | 0 | 17 | $76,933,577 |

## K.6 CAPABILITY ASSESSMENT

The City of Sand City performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table K-11*
- An assessment of administrative and technical capabilities is presented in *Table K-12*
- An assessment of fiscal capabilities is presented in *Table K-13*
- An assessment of education and outreach capabilities is presented in *Table K-14*
- Classifications under various community mitigation programs are presented in *Table K-15*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section K.6.1 in *Table K-16*
- An overall self-assessment of capability is presented in Section K.6.2 in *Table K-17*

**Table K-11**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Development | |
| Capital Improvement Plan | ☒ | • Administration Department | Under continuous modification as situations/ priorities arise |
| Floodplain Management Plan | ☒ | • FEMA | |
| Open Space Management Plan | ☐ | • | |
| Stormwater Management Plan | ☒ | • Community Development | |
| Coastal or Shoreline Management Plan | ☒ | • Community Development | The City has a certified Local Coastal Program |
| Local Coastal Program | ☒ | • Community Development | Certified 1984 |
| Climate Action/ Adaptation Plan | ☐ | | |
| Emergency Operations Plan | ☒ | • Police Department | |
| Continuity of Operations Plan | ☐ | | |
| Community Wildfire Protection Plan | ☐ | | |
| Evacuation Plan | ☐ | | |
| Disaster Recovery Plan | ☐ | | |

**Table K-11**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| Economic Development Plan | ☐ | | |
| Historic Preservation Plan | ☐ | | |
| Transportation Plan | ☐ | | |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Community Development | Sand City Municipal Code 18.88 |
| Zoning Ordinance | ☒ | • Community Development | |
| Subdivision Ordinance | ☒ | • Community Development | |
| Site Plan Review Requirements | ☒ | • Community Development | |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | |
| Building Code | ☒ | • Community Development | |
| Fire Prevention Code | ☒ | • Community Development | |

**Table K-12**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Development | Planner- City Employee<br>Engineer- Contract with Harris & Associates |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Community Development | Engineer- Contract with Harris & Associates |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Community Development | Planner- City Employee<br>Engineer- Contract with Harris & Associates |
| Building Inspector | ☒ | • Community Development | Plan check and inspection service via contract with City of Monterey and 4-leaf |
| Emergency Manager | ☒ | • Administration Department | |
| Floodplain Manager | ☒ | • Community Development | Community Development Director assigned Floodplain Administrator per municipal code 18.88 |
| Land Surveyors | ☒ | • Community Development | City Surveyor- Contract with Polaris Consulting |

**Table K-12**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Resource development staff or grant writers | ☐ | | |
| Public Information Officer | ☒ | • Administration Department | City Mayor in conjunction with City Manager |
| Scientist(s) familiar with the hazards of the community | ☐ | | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☐ | | |
| Personnel skilled in Geographic Information Systems (GIS) | ☐ | | |
| Maintenance programs to reduce risk | ☒ | • Public Works | City Public Works crew consists of 3 employees |
| Warning systems/services | ☐ | | |
| Mutual Aid Agreements | ☒ | • Police Department | Agreement with Monterey County Sheriff |

**Table K-13**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Administration Department | If funds are available and not committed, can be used for hazard mitigation |
| Capital Improvements Project Funding | ☒ | • Administration Department | Funded through General Fund |
| Special Purpose Taxes | ☒ | | Eligible, but subject to voter approval |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | Connection fees collected by regional agencies, not City |
| Development Impact Fees | ☒ | | City has a "Building Development Fee" for street work only |
| General Obligation Bonds | ☒ | | |
| Special Tax and Revenue Bonds | ☒ | | |
| Community Development Block Grants (CDBG) | ☒ | | |

**Table K-14**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☐ | | |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☐ | | |
| Natural disaster or safety related school programs | ☐ | | No schools are located in the City. |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table K-15**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | Yes | 2 | 6/17/2015 |
| *StormReady* Certification | No | - | - |
| *TsunamiReady* Certification | No | - | - |
| *Firewise Communities* Certification | No | - | - |

## K.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table K-17**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Aaron Blair, Community Development Director/ City Manager |
| **NFIP Community Number:** | 060435 |
| **Flood Insurance Policies in Force:** | 3 |
| Insurance Coverage in Force: | $1,400,000 |
| Written Premium in Force: | $3,109 |
| **Total Loss Claims:** | 0 |
| Total Payments for Losses: | 0 |

**Adopted Regulations that meet NFIP Requirements:**

- Sand City Municipal Code (SCMC) Chapter 18.88 "Flood Protection." Adopted by Ordinance 96-01 (June 4, 1996) and last updated by Ordinance 00-03 (December 5, 2000)

**Date of last NFIP Community Assistance Visit (CAV):**

**Table K-17**
**National Flood Insurance Program (NFIP) Compliance**

| |
|---|
| Date of last visit unknown. Unaware of past compliance issues. |
| **Higher standards that exceed minimum NFIP requirement:**<br>None. |
| **Additional floodplain management provisions:**<br>None. |
| **Floodplain management activities performed that go beyond FEMA minimum requirements:**<br>None |
| **Existing impediments to running an effective NFIP program:**<br>None identified. |
| **Specific actions that are ongoing or considered related to continued compliance with the NFIP:**<br>• Maintain updates to City Municipal Code for continued compliance.<br>• Maintain and update map of areas of potential frequent flooding during severe storm events.<br>• Translate hard copy of flood maps to digital and post on City website (public outreach and education).<br>• Encourage Certified Floodplain Manager (CFM) Certification.<br>• Continue to maintain supply of FEMA Floodplain maps at City Hall for staff and public reference. |

## K.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table K-18**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Limited |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Limited |
| Political Capability | Moderate |
| **Overall Capability** | **Limited** |

## K.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Overall capabilities can be improved through mutual aid and cooperation with neighboring cities that have a wider range of resources and staff capabilities. Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## K.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans

- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## K.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Sand City Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Sand City are identified below:

- The City's existing drainage system is deemed inadequate for conveying stormwater during heavy rainfall events with several known problem areas. Of primary concern is the vicinity of Redwood Avenue at John Street, one of the lowest points in the city (approximately 4 feet below sea level) which has experienced past flood events that have inundated streets and nearby commercial properties. Other areas of concern include John Street at Ortiz Avenue and near the intersection of Ortiz Avenue at Contra Costa Street.
- The City of Seaside's 90" outfall at the end of Bay Avenue continues to get plugged by shifting sands, preventing drainage of stormwater runoff from Seaside and Sand City, and contributing regularly (multiple times per year) to stormwater flooding at John Street and Ortiz Avenue. The City of Seaside maintains the channel during storm events to prevent flooding, and as long as this maintenance program continues this area is not a major hazard risk.
- Heavy drought conditions increase salinity factor of water extracted from aquifer for the City's desalination plant; resulting in a shutdown of the desalination plant due to the resulting higher salinity brine that cannot be put back into the aquifer. Drilling new wells further inland are anticipated to resolve this issue during times of severe drought as well as provide operational redundancy.

- Several elevated storage tanks used for acid baths at Granite Rock (Dias Street) currently store an estimated 2,000+ gallons that may potentially be damaged or cause overflow/flood issues following an earthquake and local ground-shaking event.
- While the city's population is low, it becomes one of the most densely populated areas in Monterey County during the daytime due to its two regional commercial shopping centers (Sand Dollar and Edgewater), creating a major warning and evacuation concern for the City.
- The Monterey Regional Water Pollution Control Agency (MRWPCA) operates a sewer pump station at West Bay Street in Sand City. This facility is located close to the shoreline and is potentially susceptible to tsunami. Furthermore, there is a 36-inch force main that extends from this pump station north along the west side of Highway 1 to the treatment plant in the City of Marina. Both the pump station and this 36-inch force main are susceptible to earthquakes. Damage to one or both of these facilities would have far reaching impacts to the sewer service of the Monterey Peninsula community, in addition to potential spills and contamination. The pump station and pipelines are the property and jurisdiction of the MRWPCA, and thus maintenance and repair are that Agency's responsibility. However, during an emergency whereby the plant and/or infrastructure is damaged, the City of Sand City would be the immediate emergency responder for that infrastructure within Sand City's boundaries.

## K.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Sand City Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table K-20* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table K-19* includes the status of action previous plan completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table K-19**
**City of Sand City Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **1** | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary | **Completed** | Completed |
| **5** | Maintain records and data to accurately reflect existing utilities and critical facilities. | **Completed** | Completed |
| **7** | Continue to implement the most recent versions of the California State-adopted construction and building codes. | **Completed / Ongoing** | Completed and ongoing as when building code updates are released. |
| **8** | Improve and expand the City's website to include the disbursement of hazard related information to the general public, inclusive of mitigation measures. | **Completed** | The City recently completed a full update of their website. |
| **9** | Promote information sharing among neighboring cities, utilities, Monterey County, and State and Federal agencies. | **Completed / Ongoing** | Completed and ongoing as needed. |
| **11** | Explore mitigation opportunities for repetitively flooded properties and, if necessary, encourage property owners to carry-out acquisition, relocation, elevation, and flood-proofing measures to protect these properties. | **Completed** | Capital project in progress that will address major flooding issues. |
| **12** | Ensure that new developments are designed to reduce or eliminate flood by requiring properties and rights-of-way to be designed for the approved sewer and drainage facilities, providing onsite detention facilities whenever possible. | **Completed /Ongoing** | Completed and ongoing as needed in development review process. |
| **13** | Continue to conduct current fuel management programs (weed abatement programs) and investigate and apply new and emerging fuel management techniques. | **Complete/ Ongoing** | Completed and ongoing as needed. |
| **16** | MRWPCA sewer pump station and force main are vulnerable to tsunami and earthquake damage. This infrastructure, though located within Sand City, is the jurisdiction of another government agency. The City can contact the MRWPCA to see if they have emergency plans in place for such disasters. | **Completed** | The City of Seaside removed the pump station and installed a larger sewer main. |

**Table K-20**
**City of Sand City Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | In Progress/ Ongoing | Severe Weather, Utility Interruption, Earthquake | Replace above-ground utility lines with underground utility lines. Ensure that utility lines are installed underground for new construction. This includes completing the undergrounding of utilities on California Avenue between Tioga Avenue and East Avenue and on Tioga Ava. between California Avenue and Metz Road. | Priority / High | Building and Engineering | General Funds |
| **2** | In Progress/ 1-2 years | Drought | Drill two new groundwater wells further inland in order to draw in more brackish water to the desalination plant. This will mitigate the salinity of water extracted from aquifer for the City's desalination plant that can result in a shutdown of the desalination plant due to the resulting higher salinity brine that cannot be put back into the aquifer. | Priority / High | Engineering and Planning | Partnership with Cal-Am Water |
| **3** | In Progress | Flooding | Complete Contra Costa and Catalina Stormwater Improvement Projects to mitigate flood risk. | Priority / High | Building and Engineering | Grants and General Funds |
| **4** | Ongoing/ Continuous | All | Continue to use the City's website and social media to share relevant hazard preparedness and mitigation information. | Moderate | Administration | General Funds |
| **5** | New/ 0-5 years | All | Update the General Plan and include relevant hazard information. | Moderate | Planning | General Funds |

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# ANNEX L: CITY OF SEASIDE

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

# L. CITY OF SEASIDE

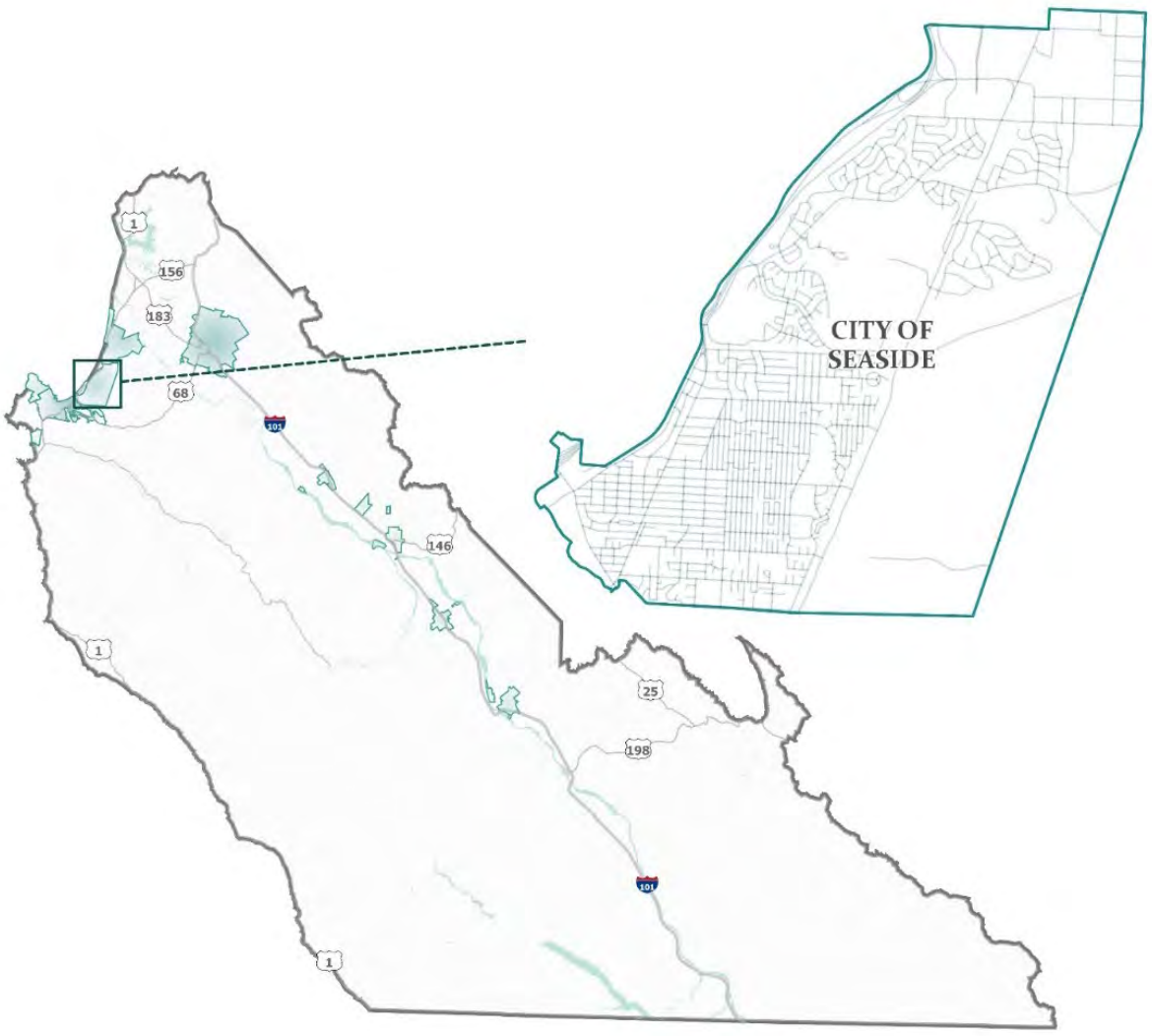
## L.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Division Chief David Nava
Seaside Fire Department
1635 Broadway Ave.
Seaside, CA 93955
(831) 899-6790
DNava@ci.seaside.ca.us

**Alternate Point of Contact**
Fire Chief Mary Gutierrez
Seaside Fire Department
1635 Broadway Ave.
Seaside, CA 93955
(831) 899-6790
MGutierrez@ci.seaside.ca.us

## L.2 COMMUNITY PROFILE

### L.2.1 LOCATION



### L.2.2 GEOGRAPHY AND CLIMATE

The City of Seaside is the largest city on the Monterey Peninsula, and second largest in Monterey County. Seaside is a family-oriented community with a full range of housing, business, cultural, and recreational opportunities in a safe and attractive environment for residents and visitors. Seaside is home to California State University at Monterey Bay and the Monterey College of Law, both located on the former site of Fort Ord. The climate is a cool Mediterranean type, strongly influenced by the prevailing winds from the west, which blow over the Pacific Coast's cool ocean currents from Alaska.

### L.2.3 HISTORY

Seaside began as the Hotel Del Monte began, as a part of the City of Monterey. Because the subdivision of Seaside was located just a mile to the northwest of the hotel, the subdivision of Seaside was initially conceived as an outgrowth of the resort community and identified as a tourist destination. Like many other ambitious pioneers in the late nineteenth century, Seaside's founder, Dr. John Roberts left New York in 1887 for California and settled near relatives in Pacific Grove. He and his uncle bought 160 acres from the David Jacks Corporation, which he divided into 1,000 lots for sale as vacation property. He also made his home in the new residential area that bordered Monterey and the Hotel.

In 1910, a Monterey County Supervisor successfully lobbied to locate the US Army Base Fort Ord in Seaside. This base housed over 20,000 infantry members and civilian workers. Fort Ord was considered one of the most attractive locations of any US Army post, because of its proximity to the beach and California weather. Due to Base Realignment and Allocation Closures, Fort Ord was closed in 1994. Since that time, the land has been conveyed to different government and nonprofit organizations for development and preservation of open space. Seaside thrived as a center of diversity derived from its multicultural character as a military town throughout the decades of the twentieth century and became known as a forward-thinking model of political inclusion during the civil rights era.

### L.2.4 POPULATION

The City of Seaside has a population of 32,366 people (2020 Census), a small decrease (2%) since 2010. The population is projected to continue to grow modestly.

### L.2.5 GOVERNING BODY FORMAT

The City of Seaside is a General Law City with a Council/Manager form of government. The five-member City Council is a legislative and policy-making body. The Mayor is elected every two years in a general election. Serving with the Mayor are four members of the City Council who have overlapping terms; every two years, two members of the City Council are elected in a general election. Members of the City Council, including the Mayor, are not subject to term limits. The City Manager is appointed by the City Council to manage the daily operations of the City and is responsible for making policy recommendations to the City Council and implementing City Council policy directives.

### L.2.6 ECONOMY AND TAX BASE

While the foundation of the Seaside business community is made up of small family-owned establishments, the area hosts national retailers and restaurant groups as well as the Seaside Auto Center, one of the first auto malls in the country.

## L.3 PLANNING PROCESS

The City of Seaside followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Seaside held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on June 28, 2021. Key stakeholders present at the meeting included:

- Craig Malin, City Manager
- Chief Mary Gutierrez, Fire Chief
- Chief Dave Nava, Division Chief, EOC Planning
- Sheri Damon, City Attorney
- Chief Abdul D. Pridgen, Chief of Police
- David Little, Chief Building Official
- Nisha Patel, Public Works Director and City Engineer
- Dave Fortune, Maintenance and Utilities Superintendent
- Roberta Greathouse, HR Director / Risk Manager
- Trevin Barber, Assistant City Manager, Economic Development and Community Planning Director
- Dan Meewis, Recreation Director
- Gary Bartlett, IT Manager
- Haroon Noori, Admin. Analyst
- Victor Damiani, Finance Director

## L.4 LAND USE AND DEVELOPMENT

Traditionally a military town linked to Fort Ord, which closed in 1994, the city has experienced significant redevelopment and gentrification in recent years with projects ranging from golf courses, five-star resorts, conference facilities, new residential and commercial development, and plans for a mixed-use, transit-oriented, urban village that would transform the downtown.

The City of Seaside is in the processes of updating its General Plan and a full draft has been completed. Approximately one-third of the total City land area is occupied by residential uses, the majority of which is single family or duplex housing. The former Fort Ord land for conservation at just under one-quarter of the total land area in the City. The former Fort Ord lands that are planned for growth are about 16% of the total (about 830 developable acres of land). Public lands account for about one-quarter of the total and commercial and industrial uses account for just 4% of the total land area of the City. Seaside has a unique urban form that includes established single-family residential areas and commercial corridors in the historic part of the City and vacant land and buildings in the former Fort Ord that will be converted to urban uses over time. The City's core residential neighborhoods have a high building density, with minimal setbacks, while newer subdivisions have a more suburban building layout, with larger yards and less regular building placement. Most of the City's commercial districts are developed in a strip commercial development style

The Seaside coastal zone includes about 90 acres of land and 500 feet of shoreline. A former estuarine complex comprised of Robert's Lake and Laguna Grande makes up the vast inland portion of the coastal zone. Land uses within the coastal zone include residential, commercial, and park/open space. The Local Coastal Program was certified in 2013.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The Seaside Safe Growth Survey was completed by Gloria Stearns, Community Development Director for the City of Seaside Community Development Department. The results are summarized in *Table L-1*.

**Table L-1**
**City of Seaside Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 4.25 | 4.25 |
| Transportation | 4.67 | 4.33 |
| Environmental Management | 3.67 | 3.67 |
| Public Safety | 4.33 | 3.67 |
| Zoning Ordinance | 3.75 | 4.75 |
| Subdivision Regulations | 2.00 | 3.00 |
| Capital Improvement Program & Infrastructure Policies | 3.00 | 2.33 |
| Building Code | 4.00 | 5.00 |
| Economic Development | 4.00 | 4.00 |
| **Average Survey Ratings** | 3.74 | 3.89 |

## L.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Seaside's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Seaside is included in this Annex.

The City of Seaside's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table L-2* displays the results of the hazard risk ranking exercise that was performed by the City of Seaside's Planning Team.

**Table L-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Seaside**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 1.2 | 1.2 | 1.3 | 1.2 | 4.9 | Slight |
| Coastal Erosion | 2.4 | 2.4 | 2.3 | 2.3 | 9.4 | Moderate |
| Coastal Flooding | 2.6 | 2.6 | 2.6 | 2.9 | 10.7 | Substantial |
| Cyber-Attack | 3.5 | 3.2 | 3.3 | 3.5 | 13.5 | High |
| Dam Failure | 1.1 | 1.1 | 1.1 | 1.1 | 4.4 | Slight |
| Drought & Water Shortage | 3.4 | 3.3 | 3.4 | 3.5 | 13.6 | High |
| Earthquake | 2.8 | 3.1 | 3.0 | 2.9 | 11.8 | Substantial |
| Epidemic | 3.2 | 3.0 | 3.1 | 3.1 | 12.4 | High |
| Extreme Cold & Freeze | 1.8 | 1.8 | 1.8 | 1.8 | 7.2 | Possible |
| Extreme Heat | 2.0 | 2.0 | 2.0 | 1.9 | 7.9 | Possible |
| Flash Flood | 2.1 | 2.3 | 2.3 | 2.5 | 9.2 | Moderate |
| Hazardous Materials Incident | 2.2 | 2.4 | 2.4 | 2.4 | 9.4 | Moderate |
| Invasive Species | 2.3 | 2.2 | 2.2 | 2.1 | 8.8 | Moderate |
| Levee Failure | 1.2 | 1.3 | 1.2 | 1.3 | 5.0 | Slight |
| Localized Stormwater Flooding | 2.7 | 2.8 | 2.4 | 2.8 | 10.7 | Substantial |
| Mass Migration | 1.3 | 1.3 | 1.1 | 1.1 | 4.9 | Slight |
| Pandemic | 3.0 | 2.8 | 2.5 | 2.9 | 11.1 | Substantial |
| Riverine Flooding | 1.3 | 1.4 | 1.5 | 1.4 | 5.7 | Slight |
| Sea Level Rise | 2.5 | 2.8 | 2.7 | 2.6 | 10.6 | Substantial |
| Severe Winter Storms | 2.2 | 2.4 | 2.2 | 2.2 | 9.1 | Moderate |
| Slope Failure | 1.9 | 2.1 | 1.9 | 2.1 | 8.0 | Possible |
| Targeted Violence | 2.7 | 2.6 | 2.7 | 2.8 | 10.7 | Substantial |
| Terrorism | 2.1 | 2.4 | 2.3 | 2.8 | 9.5 | Moderate |
| Tsunami | 2.4 | 2.4 | 2.6 | 2.6 | 10.0 | Moderate |
| Utility Interruption/ PSPS | 2.8 | 2.9 | 2.4 | 2.6 | 10.7 | Substantial |
| Water Contamination | 2.3 | 2.0 | 2.6 | 2.6 | 9.4 | Moderate |
| Wildfire | 2.8 | 3.1 | 3.3 | 3.3 | 12.4 | High |
| Windstorms | 2.8 | 2.8 | 2.7 | 2.7 | 10.9 | Substantial |

### L.5.1 AGRICULTURAL EMERGENCIES

There is no agricultural land located within the City, so therefore an agricultural emergency does not pose a direct threat. Since agriculture is a major economic driver in the County, an agricultural emergency could have indirect economic impacts on the City.

### L.5.2 COASTAL EROSION

To determine coastal erosion risk, USGS Pacific Coastal and Marine Science Center Coastal Storm Modeling (CoSMos) shoreline change, and cliff retreat projection data was used. For cliff retreat modeling an end of century (2100) forced sea level rise amount of 200 cm was used based on the Ocean Protection Council (OPC) High Risk Aversion Guidance. For shoreline change, winter erosion uncertainty modeling was used to capture the degree of uncertainty associated with future shoreline erosion. Hold the Line scenario modeling was chosen for both types of erosion. Three sea level rise levels (25 cm, 75 cm, and 200 cm) to represent planning horizons based on OPC Sea Level Rise Projections for the Monterey Tide Gauge. 25 cm of sea level rise represents near term (2030) risk, 75 cm represent mid-term (2060) risk, and 200 cm represent long-term (2100) risk.

*Table L-3* summarizes population and property exposure to coastal erosion risk.

**Table L-3**
**Population and Property Exposed to Coastal Erosion Risk in Seaside**

| Sea Level Rise Scenario/ Erosion Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| **Cliff Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 0 | $0 |
| **Shoreline Erosion** | | | | | |
| Sea Level Rise (25 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (75 cm) | 0 | 0 | $0 | 0 | $0 |
| Sea Level Rise (200 cm) | 0 | 0 | $0 | 0 | $0 |

Much of the City lies approximately 2,000 feet inland from the coastline, which provides sufficient distance and protection from coastal erosion risk. Sea level rise and erosion modeling is inherently uncertain, and therefore future modeling could identify people and property at risk to coastal erosion. Sea level rise could worsen flooding in existing flood hazard areas and could also impact the area north of Broadway Avenue along Del Monte Boulevard. Miles of transportation infrastructure, beaches, recreation areas, and homes and businesses may be at risk to damage from sea level rise and coastal flooding. The City could also be impacted by other types of erosion not profiled in this Plan.

### L.5.3 DAM AND LEVEE FAILURE

#### *Dam Failure*

The is no population or property in the City located in a mapped dam inundation zone of any of the dams (Nacimiento, San Antonio, Los Padres, and Forest Lake) analyzed in this Plan.

*Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic impact.

## L.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution. A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

## L.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk. Major highways and bridges would be major critical facility of concern if an earthquake were to occur. Seaside lies in one of three areas that have the highest susceptibility to ground shaking in the County. Approximately 93% of the City's resident households and a number of critical facilities, highways, and bridges are located in a high shaking hazard area. Strong ground shaking due to earthquakes can cause soils to compact, resulting in local or regional settlement of the ground surface. This settlement can cause moderate to heavy damage to structures and underground utility lines in Seaside.

According to Monterey County Assessor records, there are 7,620 residential and non-residential buildings in the City, with a total value of $2,826,808,392. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events. Additionally, liquefaction risk was assessed. *Table L-4* summarizes population and property in the City exposed to liquefaction risk.

**Table L-4**
**Population and Property Exposed to Liquefaction Risk in Seaside**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 115 | 0 | $0 | 47 | $56,085,622 |
| Moderate Liquefaction Susceptibility | 49 | 0 | $0 | 20 | $18,994,571 |

The majority of Seaside has low relative liquefaction susceptibility, with the beach area of the City having moderate susceptibility. The southern portion of Seaside, near Roberts Lake and Laguna Grande Lake, has moderate, high, and/or variable liquefaction risk.

### L.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. The City is susceptible to flooding, particularly in a small coastal area west of Highway 1, and additional areas adjacent to Roberts Lake, Laguna Grande, and associated drainage areas. These areas are subject to a one-percent-annual-chance-flood, also referred to as a 100-year flood zone. The rest of the City is in a 500-year flood zone and is subject to a zero point two-percent (0.2 percent) chance-flood event. *Table L-5* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table L-5**
**Population and Property Exposed to Flooding Risk in Seaside**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 0 | 0 | $0 | 25 | $47,811,746 |
| 500-Year Flood Zone | 25,549 | 5,461 | $2,345,735,210 | 2,106 | $460,720,029 |

### L.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the "protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility. *Table L-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table L-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in Seaside**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 22,109 | 3,485 | $1,543,482,883 | 1,745 | $452,468,201 |
| Fixed Source | 0 | 0 | $0 | 0 | $0 |

As cities age, land uses associated with hazardous materials are often abandoned. These uses include former industrial properties, gasoline stations, and military sites. Uses such as this may have soils and groundwater that are contaminated and are often referred to as "brownfields." Seaside has a number of hazardous waste sites located largely in the southwestern part of the City, as well as underground storage tanks located in the northeastern part of the City. Of the hazardous waste sites in Seaside, there is one Federal Superfund site, located on former Fort Ord lands, and two state response sites that have land use restrictions. Throughout the City, there are seven open or active cleanup sites (including leaking underground storage tank (LUST) sites), in addition to 28 closed LUST cases.

The Fort Ord Superfund Site was added to the Superfund National Priorities List of Hazardous Waste Sites on February 21, 1990. While most of the former Fort Ord is now part of the Fort Ord National Monument, much of the area located in Seaside has been or will be converted from military to civilian land uses. While many old military buildings and infrastructure remain abandoned, others have been demolished. Hazardous materials and toxic waste sites at the former Fort Ord consist of a wide variety of materials including industrial chemicals, petrochemicals, domestic and industrial wastes (as seen in landfills), asbestos and lead-based paint in buildings, above- and underground storage tanks, artillery and explosives.

The identification, remediation, and disposal of hazardous waste associated with the Superfund cleanup process of Fort Ord takes place under the Federal Facilities Agreement (FFA). The US Army is responsible for conducting the Superfund cleanup process, and the US EPA is the lead agency for regulatory enforcement and oversight of Superfund activities. Remnant safety hazard issues are also present on the former Fort Ord resulting from previous U.S. Army munitions training operations. In 2007, a remediation program was created to provide coordinated access for bikers, hikers, runners, and equestrians to the new Fort Ord National Monument

### L.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

### L.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the COVID-19 virus have impacted the whole population of the City, specifically vulnerable populations.

### L.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in

poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts. FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table L-7.*

**Table L-7**
**Annualized Frequency and Exposure to Severe Weather Events in Seaside**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.27 | Frequency (*Distinct Events)* | 0.06 |
| Exposed Population | 22,668 | Exposed Population | 22,668 |
| Exposed Building Values | $1,665,961,000 | Exposed Building Values | $1,665,961,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $70 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 0.08 | Frequency (*Distinct Events)* | 1.09 |
| Exposed Population | 22,668 | Exposed Population | 22,668 |
| Exposed Building Values | $1,665,961,000 | Exposed Building Values | $1,665,961,000 |
| Expected Annual Loss of Building Value | $1 | Expected Annual Loss of Building Value | $31,131,774 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.41 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 22,668 | Exposed Population | 0 |
| Exposed Building Values | $1,665,961,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $305 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

## L.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 3,296 people and $305,007,976 in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible earthquake induced to landslides.

Seaside has low susceptibility to landslides, as it lacks hills and steep bluffs. However, landslides and surficial slope failure are most likely to occur in areas with a slope greater than 25% and along steep bluffs. Extensive areas in the southeastern portion of the City have slopes in excess of 30%. Certain areas have slopes approaching vertical. Development is limited in these areas because of the severe erosion and landslide hazard that exists.

### L.5.12 TSUNAMI

Population and property located in a mapped tsunami inundation zone is summarized in *Table L-8*.

**Table L-8**
**Population and Property in Tsunami Inundation Zone in Seaside**

| Inundation Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Tsunami Inundation Zone | 49 | 0 | $0 | 36 | $51,541,447 |

Much of the City of Seaside lies approximately 2,000 feet inland from the coastline, which should provide sufficient distance and protection from tsunamis.

### L.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

### L.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table L-9* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table L-9**
**Population and Property Exposed to Wildfire Risk in Seaside**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 0 | $0 |
| High Fire Threat | 3,764 | 14 | $14,211,519 | 36 | $742,995 |
| Moderate Fire Threat | 10,121 | 183 | $141,599,152 | 180 | $56,893,553 |

The undeveloped areas in the northern and eastern portions of the City are highly prone to wildland fires. These areas contain grassland with many steeper areas with brushland and wooded slopes. The State of California Department of Forestry rates these areas as extreme wildfires hazard areas based on slope characteristics, climate, fuel loading, and water availability. These areas could create safety hazards for residents within the community.

### L.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards.

Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the rural economies, along with changes to agriculture and crops, which are a critical backbone of Monterey County's economic success. There will also be negative impacts to ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges.

## L.6 CAPABILITY ASSESSMENT

The City of Seaside performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table L-10*
- An assessment of administrative and technical capabilities is presented in *Table L-11*
- An assessment of fiscal capabilities is presented in *Table L-12*
- An assessment of education and outreach capabilities is presented in *Table L-13*
- Classifications under various community mitigation programs are presented in *Table L-14*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section L.6.1 in *Table L-15*
- An overall self-assessment of capability is presented in Section L.6.2 in *Table L-16*

**Table L-10**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Development | Update to General Plan estimated for adoption in 2022. |
| Capital Improvement Plan | ☒ | • Engineering | |
| Floodplain Management Plan | ☐ | • Engineering | |
| Open Space Management Plan | ☒ | • Public Works | |
| Stormwater Management Plan | ☐ | • Engineering | |
| Coastal Management Plan | ☒ | • Community Development | |
| Local Coastal Program | ☒ | • Community Development | The LCP was certified in 2013 |
| Climate Action/ Adaptation Plan | ☐ | • Community Development | The City will hire a consultant in 2022 to complete this work. |
| Emergency Operations Plan | ☒ | • Fire Department | |
| Continuity of Operations Plan | ☒ | • Fire Department | |
| Community Wildfire Protection Plan | ☐ | | |
| Evacuation Plan | ☒ | • Fire Department<br>• Police Department | Currently merging plan with County's plan |
| Disaster Recovery Plan | ☒ | • Fire Department | Part of EOP |

**Table L-10**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| Economic Development Plan | ☒ | • Community Development<br>• Economic Development | Economic Opportunity Plan (General Plan also has related strategies and policies) |
| Historic Preservation Plan | ☐ | | The City has no historic buildings or designations. |
| Transportation Plan | ☒ | • TAMC | |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Engineering | Seaside Municipal Code - Chapter 15.28 Flood Control |
| Zoning Ordinance | ☒ | • Community Development | SMC 17. As part of General Plan update, zoning code is being updated. |
| Subdivision Ordinance | ☒ | • Community Development | SMC 16 |
| Site Plan Review Requirements | ☒ | • Community Development<br>• Public Works<br>• Building Department | |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | |
| Building Code | ☒ | • Building Department | |
| Fire Prevention Code | ☒ | • Fire Department | |

**Table L-11**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Development<br>• Public Works<br>• Engineering | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Engineering<br>• Public Works<br>• Building Department | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Community Development<br>• Engineering<br>• Public Works | |
| Building Inspector | ☒ | • Building Department | |
| Emergency Manager | ☒ | • Fire Department | |
| Floodplain Manager | ☒ | • Engineering | |

**Table L-11**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Land Surveyors | ☐ | | |
| Resource development staff or grant writers | ☒ | • Community Development<br>• Public Works<br>• Engineering | |
| Public Information Officer | ☒ | • City Manager Department | |
| Scientist(s) familiar with the hazards of the community | ☐ | | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Community Development<br>• Engineering<br>• Fire Department<br>• Building Department | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Community Development<br>• Engineering | |
| Maintenance programs to reduce risk | ☒ | • Public Works | |
| Warning systems/services | ☒ | • Monterey County | |
| Mutual Aid Agreements | ☒ | • Police Department<br>• Fire Department | PD, Fire has agreement with County for Mutual Aid |
| Other | Environmental Services Cooperative Agreement (ESCA): this is a long-term implementation grant agreement from the Army. Under this grant, the City is responsible for the long term implementation and monitoring of land use controls that have been put in place, across more than 3300 acres of the former Fort Ord, to address residual safety issues that remain now that the cleanup of munitions has been completed. Land that has been cleared of munitions for their designated reuse has been transferred to the City of Seaside, the City of Del Rey Oaks, the City of Monterey, California State University, Monterey Bay (Marina), and the County of Monterey. | | |

**Table L-12**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Engineering<br>• Public Works | |
| Capital Improvements Project Funding | ☒ | • Engineering<br>• Public Works | |
| Special Purpose Taxes | ☒ | | If measure is introduced and passes |
| Stormwater Utility Fees | ☐ | | Under consideration |

**Table L-12**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| Gas / Electric Utility Fees | ☒ | • Finance | Directed to general fund |
| Water / Sewer Fees | ☒ | • Finance | Special District |
| Development Impact Fees | ☐ | | |
| General Obligation Bonds | ☒ | • Finance | For special specific projects |
| Special Tax and Revenue Bonds | ☒ | • Finance | For special specific projects |
| Community Development Block Grants (CDBG) | ☐ | • Community Development | City of Seaside gets CDBG, CDBG-CV3 funds, but not CDBG-MIT currently |

**Table L-13**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☒ | • Community Development<br>• Fire Department | Community Development has contacts for various nonprofits that may be of assistance. Fire Department provides emergency preparedness |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • Police Department<br>• Fire Department<br>• Community Development<br>• Engineering | Participation in community events. Fire Department Open House, Sustainable Seaside non-profit Earth Day event, National Night Out. |
| Natural disaster or safety related school programs | ☐ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table L-14**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | Yes | 2 | |
| *StormReady* Certification | Yes | | |
| *TsunamiReady* Certification | No | - | - |
| *Firewise Communities* Certification | No | - | - |

## L.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table L-15**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Nisha Patel, Public Works Director/City Engineer |
| **NFIP Community Number:** | 060203 |
| **Flood Insurance Policies in Force:** | 10 |
| Insurance Coverage in Force: | $2,789,000 |
| Written Premium in Force: | $3,748 |
| **Total Loss Claims:** | 2 |
| Total Payments for Losses: | $125,032 |

**Adopted Regulations that meet NFIP Requirements:**

- Seaside Municipal Code - Chapter 15.28 Flood Control last revised by Ordinance 744 adopted July 21, 1988.]

**Date of last NFIP Community Assistance Visit (CAV):**

Unknown.

**Higher standards that exceed minimum NFIP requirement:**

- California Building Codes
- Regulations that require no use of fill for structural support of buildings
- Within Zone E on the Flood Insurance Rate Map, a setback is required for all new development from the ocean, lake, bay, riverfront or other body of water to create a safety buffer consisting of a natural vegetative or contour strip. This buffer shall be designated according to the flood-related erosion hazard and erosion rate, in relation to the anticipated "useful life" of structures, and depending upon the geologic, hydrologic, topographic, and climatic characteristics of the land. The buffer may be used for suitable open space purposes, such as for agricultural, forestry, outdoor recreation, and wildlife habitat areas, and for other activities using temporary and portable structures only.

**Additional floodplain management provisions:**

- Seaside Municipal Code Chapter 8.46, Urban Storm Water Quality Management and Discharge Control
- Seaside Municipal Code Chapter 15.32, Standards to Control Excavation, Grading and Erosion

**Floodplain management activities performed that go beyond FEMA minimum requirements:**

The City routinely maintains storm drain catch basins; with the goal of cleaning each catch basin at least once annually.

**Existing impediments to running an effective NFIP program:**

None identified.

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

None identified.

## L.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table L-16**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | High |
| Administrative and Technical Capability | High |
| Fiscal Capability | Limited |
| Education and Outreach Capability | High |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## L.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## L.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new

possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.
- **2022 General Plan Update**: The General Plan incorporates information on natural hazard risk and polices to reduce risk in its safety element.
- **Sewer System Master Plan**: Considers relevant risk and hazard information from the Hazard Mitigation Plan relevant to the Sewer System.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## L.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Seaside Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Seaside are identified below:

- A critical flooding concern for the city exists in areas along Roberts Lake and Laguna Grande Lake, particularly during heavy rains during winter storms combined with high tides. City Hall and the Police Station are considered vulnerable to flooding due to their low-lying location and proximity to Laguna Grande Lake.
- The City continues to coordinate on potential alternative solutions to problems caused by the 90" outfall in Sand City, which continues to get plugged by shifting sands, preventing drainage of stormwater runoff from Seaside (and Sand City).
- City Hall and the Police Station are susceptible to liquefaction during a major earthquake event.
- The City is concerned with the long-term effects of sea level rise, particularly in terms of exacerbating the effects of saltwater intrusion already being seen in Seaside's aquifer to the north.
- Ingress/egress to the city is limited to only several main transportation corridors (Highway 1 and Route 68) which creates evacuation concerns for the city in response to a major hazard event.
- Climate change is likely to increase the magnitude and impact of storm events, which will exacerbate the impact and lead to more frequent flood events
- The City is concerned about the high threat of wildland fire due to existing fuels in combination with large areas of urban/wildland interface and intermix. Areas of concern include former Fort Ord lands, which include areas where the City is developing. Future climate change and drought conditions is likely to increase wildfire risk.
- The City is concerned about exposure to hazardous materials leaks. This risk is likely to increase due to changing industries within Seaside.

## L.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The City of Seaside Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table*

*L-18* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table L-17* includes the status of action previous plan completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table L-17**
**City of Seaside Status of Previous Plan Actions**

| 2016 Action # | Description | Status |
|---|---|---|
| **1.07** | Assure that evacuation is safe and efficient. | Completed/ To Be Continued |
| **1.08** | Assure that shelters have adequate capacity. | Completed/ To Be Continued |
| **1.09** | Assure that the City is prepared to shelter populations that the Red Cross will not (for example, those who are sick). | Completed/ To Be Continued |
| **1.1** | Consider fire safety, evacuation, and emergency vehicle access when reviewing proposals to add secondary units or additional residential units in areas exposed to high fire threat. | Completed/ To Be Continued |
| **1.12** | Ensure the safety of pets in an emergency. | Completed/ To Be Continued |
| **2.01** | Maintain the Seaside Local Hazard Mitigation Plan (LHMP) and update it on a regular basis. This is to be accomplished by: making the LHMP a part of the City's General Plan; conducting quarterly meetings of the LHMP Working Group; reviewing the plan 2 years after final approval and conducting a major update of the plan within 4 years of approval. | Completed/ To Be Continued |
| **3.18** | Identify areas susceptible to tsunami. | Completed |
| **3.19** | Identify mitigation measures for tsunami. | Completed |
| **3.2** | Identify areas susceptible to wildfire. | Completed |
| **3.21** | Identify mitigation measures for wildfire. | Completed |
| **3.22** | Ensure that all new construction in areas susceptible to fire is completed using fire resistant design techniques that will limit damage caused by fires. For example, require Class A roofing materials for all homes in areas susceptible to fires. | Completed/ To Be Continued |
| **3.24** | Develop a defensible space vegetation program that includes the clearing or thinning of non-fire resistive vegetation, or all non-native species, within 30 feet of access and evacuation roads/routes to critical facilities.<br>**Note**: *The roads that border the Army's Historic Impact Area were transferred with requirements related to the upkeep and maintenance* | Completed/ To Be Continued |

**Table L-17**
**City of Seaside Status of Previous Plan Actions**

| 2016 Action # | Description | Status |
|---|---|---|
| | *of fuel breaks. This area has specific planning/design considerations. The Army has a few areas that still require munitions cleanup. Other locations inside the area are proposed for future prescribed burns.* | |
| **3.25** | Require that development in high fire hazard areas provide adequate access roads (with width and vertical clearance that meet minimum standards of the Fire Code), onsite fire protection system, evacuation signage, and fuel breaks.<br>**Note**: *The roads that border the Army's Historic Impact Area were transferred with requirements related to the upkeep and maintenance of fuel breaks. This area has specific planning/design considerations. The Army has a few areas that still require munitions cleanup. Other locations inside the area are proposed for future prescribed burns.* | Completed/ To Be Continued |
| **3.29** | Maintain geographic information system and data to accurately reflect existing utilities and critical facilities. | Completed/ To Be Continued |
| **3.32** | Improve the utilization of existing information in the forecasting of natural hazards. The City will continue to use NOAA information and to coordinate with Monterey County, along with other available data. | Completed/ To Be Continued |
| **4.01** | Provide public information on locations for obtaining sandbags and deliver sandbags to locations throughout the City prior to and during the rainy season. | Completed/ To Be Continued |
| **4.04** | Work with local schools (Monterey Peninsula Unified School District and private schools) on disaster preparedness for school children. | Completed/ To Be Continued |
| **4.07** | Explore the feasibility of using "Reverse 911" technology to notify the public about impending disasters, Amber Alerts, etc. | Completed |
| **4.09** | Use disaster anniversaries, such as October (Loma Prieta earthquake), to remind the public of safety and security mitigation activities. | Completed/ To Be Continued |
| **4.17** | Provide information to the public related to family and personal planning for delays due to traffic or road closures. | Completed/ To Be Continued |
| **4.2** | Provide information to residents on the availability of hazard maps on the City's website. | Completed/ To Be Continued |
| **6.02** | Assure that the Emergency Operations Center is adequately equipped to handle a disaster. | Completed |
| **6.03** | Maintain the Emergency Operations Center in fully functional state of readiness. | Completed |
| **6.04** | Conduct an Emergency Operations Center full activation exercise at least annually. | Completed/ To Be Continued |
| **6.05** | Ensure the protection of communications. | Completed/ To Be Continued |
| **6.07** | Improve communications among all City departments. | Completed |

**Table L-17**
**City of Seaside Status of Previous Plan Actions**

| 2016 Action # | Description | Status |
|---|---|---|
| **6.08** | Ensure that Fire and Police personnel have adequate radios, breathing apparatus, protective gear, and other equipment needed to respond to a major disaster. | Completed |
| **6.13** | Assure temporary and/or mobile office space on high ground is available to the Police Department in the event of a flood or tsunami. | Completed |
| **6.15** | Develop procedures for the emergency evacuation of areas identified on tsunami evacuation maps. | Completed |
| **6.2** | Promote information sharing among neighboring cities, the county, the state and federal agencies. | Completed/ To Be Continued |
| **7.01** | Assure that backup systems exist for critical utilities to the greatest extent possible. | Completed/ To Be Continued |
| **7.02** | Talk with local utility companies about their hazard mitigation plans. | Completed/ To Be Continued |
| **7.05** | Retrofit or replace critical lifeline facilities and/or backup facilities that are shown to be vulnerable to damage in natural disasters. | Completed/ To Be Continued |
| **7.09** | Coordinate with PG&E and others to investigate ways of minimizing the likelihood that power interruptions will adversely impact vulnerable populations, such as the elderly and disabled. | Completed |
| **7.07** | Pre-position emergency power generation capacity (or have rental/lease agreements for these generators) in critical buildings to maintain continuity of government and services. | Completed/ To Be Continued |
| **7.11** | Assure that utility lines are installed underground for new development. | Completed |
| **7.23** | Update Sewer System Master Plan. | Completed |

**Table L-18**
**City of Seaside Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazards(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | Ongoing/ Continuous | Flooding | Provide sandbags and plastic sheeting to residents in anticipation of rainstorms and deliver these materials to disabled and elderly residents on request. | High | Public Works | General Fund |
| **2** | Ongoing/ Continuous | All | Ascertain historical incidence and frequency of occurrence of hazards through the development and maintenance of the City of Seaside LHMP. | High | All | General Fund and Grant |
| **3** | Ongoing/ Continuous | All | Develop a matrix containing each mitigation goal and actions, relevant hazards, along with project status, funding, and responsible department. This matrix is to be reviewed 2 years after completion of the LHMP and updated within 4 years. | High | All | General Fund and Grant |
| **4** | Ongoing/ Continuous | All | Pursue grant opportunities to obtain funding for mitigation activities that protect the City's most vulnerable populations and structures. | High | Finance | Grants, General Fund |
| **5** | Ongoing/ Continuous | Earthquake | Continue to actively implement existing State law that requires the City to maintain lists of addresses of unreinforced masonry buildings and inform property owners that they own this type of hazardous structure. | High | Building | General Fund |
| **6** | Ongoing/ Continuous | Flooding | Continue to repair and make structural improvements to storm drains, pipelines, and channels to enable them to perform their design capacity in handling water flows. | High | Public Works | General Fund |
| **7** | Ongoing/ Continuous | Flooding | Continue maintenance efforts to keep storm drains and channels free of obstructions to allow for the free flow of water. | High | Public Works | General Fund |
| **8** | Ongoing/ Continuous | Flooding | Ensure that new development pays its fair share of improvements to the storm drainage system necessary to accommodate increased flows from the development. | High | Planning, Public Works, Building | General Fund |
| **9** | Ongoing/ Continuous | Flooding | Encourage homeowners in flood-prone areas to participate in home elevation programs. | High | Building | General Fund |

**Table L-18**
**City of Seaside Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazards(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **10** | Ongoing/ Continuous | Flooding | Ensure that new developments are designed to reduce or eliminate flood damage by requiring lots and rights-of-way are laid out for the provision of approved sewer and drainage facilities, providing on-site detention facilities whenever practical. | High | Planning, Building | General Fund |
| **11** | Continuous | Wildfire, Drought | Develop a coordinated approach between fire jurisdictions and water supply agencies to identify improvements to the water distribution system, focusing on areas of highest wildfire hazard. Ensure a reliable source of water for fire suppression (meeting acceptable standards for minimum volume and duration of flow) for existing and new development. Continue the recently formed Fire Flow Task Force with Cal Am Water and other stakeholders. | High | Fire, Public Works | General Fund and Grant |
| **12** | Ongoing/ Continuous | All, Wildfire | Maintain fire roads and public right-of-way roads and keep them passable at all times so that access to areas is assured. | High | Fire, Public Works | General Fund |
| **13** | In progress/ 1-4 years | Earthquakes | Adopt a City ordinance that requires the following measures to reduce fire ignitions due to earthquakes: bracing of gas-fired appliances and equipment; flexible couplings on gas appliances; and the bolting of homes to their foundations and strengthening of cripple walls. | High | Building | General Fund |
| **14** | Ongoing/ 1-2 years | All | Build and maintain geographic information system and data to improve permitting and building construction. | Moderate | Public Works, Building | General Fund |
| **15** | In progress/ 1-2 years | Earthquake, Tsunami, Flooding, Wildfire | Investigate HAZUS to estimate earthquake, tsunami, flood, and wildfire damage in the City. | Moderate | Finance, Public Works | General Fund |

**Table L-18**
**City of Seaside Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazards(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **16** | In progress/ 1-2 years | All | Explore training opportunities for City personnel in the use of the HAZUS program. Provide this training for key employees and obtain assistance in date entry for the HAZUS program. | Moderate | Finance, Public Works | General Fund |
| **17** | Ongoing/ as Needed | All | Aid homeowners whose homes were damaged by disasters by providing a streamlined permitting process for the rebuilding. | Moderate | Building, City Manager | General Fund and Grants |
| **18** | Ongoing Continuous | Earthquakes | Encourage the retrofitting of unreinforced masonry structures. | Moderate | Building | General Fund |
| **19** | Ongoing/ Continuous | All | Update Geographical Information System (GIS) database to integrate hazard risk areas with existing data. Continue to coordinate with the County to integrate their database. | Low | Public Works | General Fund |
| **20** | Ongoing/ Continuous | All | Review census data to locate vulnerable populations. | Low | Finance, Public Works | General Fund |
| **21** | 1-4 years | All | Pass a City ordinance that will limit building in high-risk areas. | Low | Building | General Fund |
| **22** | Ongoing/ Continuous | All | Work with critical health care facilities (long-term care, primary care, or specialty clinics such as home health agencies, or group homes) to ensure that critical facilities are structurally sound and have nonstructural system designed to remain functional following disasters. | Low | Public Works, Building | General Fund |
| **23** | Ongoing/ Continuous | Earthquake | Research funding options for the retrofit of seismically deficient City-owned bridges and road structures. | Low | Public Works | General Fund and Grants |
| **24** | Ongoing / Continuous | Flooding | Identify buildings at risk from 100-and 500-year floods. | Low | Public Works | General Fund |
| **25** | Ongoing / Continuous | Wildfire | Develop a list of programs and resources that provide low-interest loans for residents and businesses to retrofit with fire resistant materials. | Low | Fire | General Fund and Grants |
| **26** | Ongoing/ Continuous | All | Increase the level of knowledge and awareness for Seaside City residents on the hazards that routinely threaten the area through appropriate City public education outlets. | Moderate | All | General Fund |

**Table L-18**
**City of Seaside Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazards(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **27** | Ongoing/ Continuous | All | Obtain adequate funding for public outreach programs. | Moderate | Finance | General Fund |
| **28** | Ongoing/ Continuous | All | Encourage citizens to participate in the Community Emergency Response Team (CERT) program through City public education outlets. | Moderate | Fire | General Fund |
| **29** | In Progress | All | Develop materials related to disaster mitigation and preparedness in other languages. | Moderate | All | General Fund |
| **30** | Ongoing/ Continuous | All | Disseminate information on what to do during and after a hazard event through appropriate City public education outlets, in cooperation with the County and State Offices of Emergency Services and the American Red Cross. | Moderate | All | General Fund |
| **31** | Ongoing/ Continuous | All | Continue to identify Seaside's most vulnerable critical facilities and evaluate the potential mitigation techniques for protecting each facility to the maximum extent possible. | High | All | General Fund |
| **32** | Ongoing/ Continuous/ 1-4 years | All | Conduct comprehensive programs to identify and mitigate problems with facility contents, architectural components, and equipment that will prevent critical building from being functional after major natural disasters. | High | Public Works | General Fund |
| **33** | Ongoing/ Continuous/ 1-4 years | Earthquake | Ensure that all critical facilities are seismically upgraded to the greatest extent possible, in accordance with the most recent building codes. | High | Building | General Fund |
| **34** | Ongoing/ Continuous/ 1-4 years | Flooding | Ensure that all critical facilities located in the floodplain are adequately protected from flooding to the greatest extent possible, in accordance with the most recent building codes. | High | Building | General Fund |
| **35** | Ongoing / Continuous | All | Provide necessary repairs to maintain critical facilities in top physical condition. | High | Public Works | General Fund |
| **36** | In Progress/ 1 year | All | Develop a "Continuity of Government Plan" following FEMA guidelines. | High | Fire | General Fund |

**Table L-18**
**City of Seaside Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazards(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **37** | In Progress/ 1-4 years | All | Upgrade the City's communications plan. | High | Fire, Police | General Fund |
| **38** | In Progress/ 1-4 years | All | Have back-up emergency power available for critical intersection traffic signals. | High | Public Works, Fire, Police) | General Fund |
| **39** | Ongoing/ Continuous/ 1-4 years | Earthquake | Participate in the Office of Emergency Services Safety Assessment Program which formalizes arrangements with engineers, building officials and other qualified people to report to the City, assess damage, and determine if buildings can be reoccupied after a disaster. | High | Building, Public Works | General Fund |
| **40** | In Progress/ 1 year | All | Prepare a recovery plan that outlines the major issues and tasks that are likely to be the key elements of community recovery, as well as integrate this planning into response planning. | High | All | General Fund |
| **41** | In Progress/ 1 year | All | Ensure that emergency services include more than the coordination of Police and Fire responses, but also planning activities with providers of water, food, energy, transportation, financial, information, and public health services. | High | All | General Fund |
| **42** | Ongoing/ Continuous/ | All | Provide a new, expanded Public Works Corporation Yard on City-owned former Fort Ord lands. | High | Public Works | General Fund or Measure |
| **43** | Ongoing/ Continuous/ | All | Ensure the safety of data by adequately backing up essential records and financial information. | Moderate | City Manager | General Fund |
| **44** | In Progress/ 1-2 years | All | Develop and maintain a system of interoperable communications for first responders from cities, the county, the state and federal agencies. | Moderate | Fire, Police | Grant |

**Table L-18**
**City of Seaside Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazards(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **45** | In Progress/ 1-4 years | All | Improve emergency response communications, including building redundant capacity into public safety alerting, replacing or hardening microwave and simulcast systems, adding digital encryption for programmable radios, and ensuring a plug-and-play capability for amateur radio. | High | Police, Fire | General Fund and Grants |
| **46** | Ongoing/ Continuous/ 1-4 years | All | Plan for speeding the repair and functional restoration of lifeline systems through stockpiling of shoring materials, temporary pumps, surface pipelines, portable hydrants, and other supplies. | High | Public Works, Fire, Police | Seaside Sanitation and Water District Funds |
| **47** | Ongoing/ Continuous/ 1-4 years | All | Identify critical areas that would need portable facilities (such as hoses, pumps, generators, or other equipment) to allow pipelines to bypass failure zones such as fault rupture areas, areas of liquefactions, and other ground failure areas. | High | Public Works | Seaside Sanitation District Funds |
| **48** | In the CIP/ 1-10 years | All, Earthquake | As funding becomes available, install portable facilities to allow pipelines to bypass critical failure zones such as fault rupture areas, liquefaction areas, and ground failure areas. | High | Public Works | Seaside Sanitation District Funds |
| **49** | In the CIP/ 1-4 years | Earthquake | Replace or retrofit water-retention structures that are determined to be structurally deficient. | High | Public Works | Seaside Water District Funds |
| **50** | In the CIP | Flooding, Earthquake | Repair 90" Storm Drain Outlet. | High | Public Works | Seaside Sanitation District Funds |
| **51** | Ongoing/ Continuous/ 1-2 years | All | Survey Seaside County Sanitation District facilities by remote TV. | High | Public Works | Seaside Sanitation District Funds |
| **52** | In the CIP/ 1-4 years | All | Provide new emergency generator set for Seaside City Hall. | High | Public Works | General Fund |

**Table L-18**
**City of Seaside Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazards(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **53** | Ongoing/ 1-4 years | All | Replace mainline sanitary sewer lines. | High | Public Works | Seaside Sanitation District Funds |
| **54** | Ongoing/ Continuous/ 1-4 years | All | Rehabilitate Sanitation District pump stations as needed. | High | Public Works | Seaside Sanitation District Funds |
| **55** | Ongoing/ Continuous | Flooding | Ensure that utility systems in new development are constructed in ways that reduce or eliminate flood damage. | Moderate | Building, Public Works | General Fund |
| **56** | 1-4 years | Severe Weather, Wildfire, Utility Interruption | Establish underground utility district for Highland Avenue. | Moderate | Public Works | General Fund |
| **57** | Ongoing/ Continuous/ 1-4 years | Earthquake | Encourage owners of buildings leased by special districts or utility companies to participate in a program similar to San Francisco's Building Occupancy Resumption Program. This program permits owners of buildings to hire qualified structural engineers to create facility-specific post-disaster inspection plans and allows these engineers to become automatically deputized as City inspectors for these buildings in the event of a disaster. This program allows rapid re-occupancy. | Moderate | Public Works, Building | General Fund |
| **58** | Ongoing/ Continuous/ 1-4 years | Earthquake | Encourage business owners to participate in a program similar to San Francisco's Building Occupancy Resumption Program. This program permits owners of buildings to hire qualified structural engineers to become automatically deputized as City inspectors for these buildings in the event of a disaster. This program allows rapid re-occupancy of the building. | High | Economic Development, Building, Public Works | General Fund |

**Table L-18**
**City of Seaside Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazards(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **59** | Ongoing | All | Assist businesses in obtaining grant funding following a disaster. | High | Finance | General Fund |
| **60** | New/ 1-4 years | Flooding | Continue to repair and make structural improvements to storm drains, pipelines, and channels to enable them to perform their design capacity in handling water flows. | High | Public Works | General Fund |
| **61** | New/ 1 year | All | Continue to identify Seaside's most vulnerable critical facilities and evaluate the potential mitigation techniques for protecting each facility to the maximum extent possible. | High | All | General Fund |
| **62** | New | All | Upgrade the City's communications plan. | High | Fire, Police | General Fund |
| **63** | New/ 1-2 years | All | Provide new emergency generator set for Seaside City Hall. | High | Public Works | General Fund |
| **64** | New/ 1-4 years | All | Rehabilitate Sanitation District pump stations as needed. Replace mainline sanitary sewer lines. | High | Public Works | Seaside Sanitation District Funds |

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# ANNEX M: CITY OF SOLEDAD

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

# M. CITY OF SOLEDAD

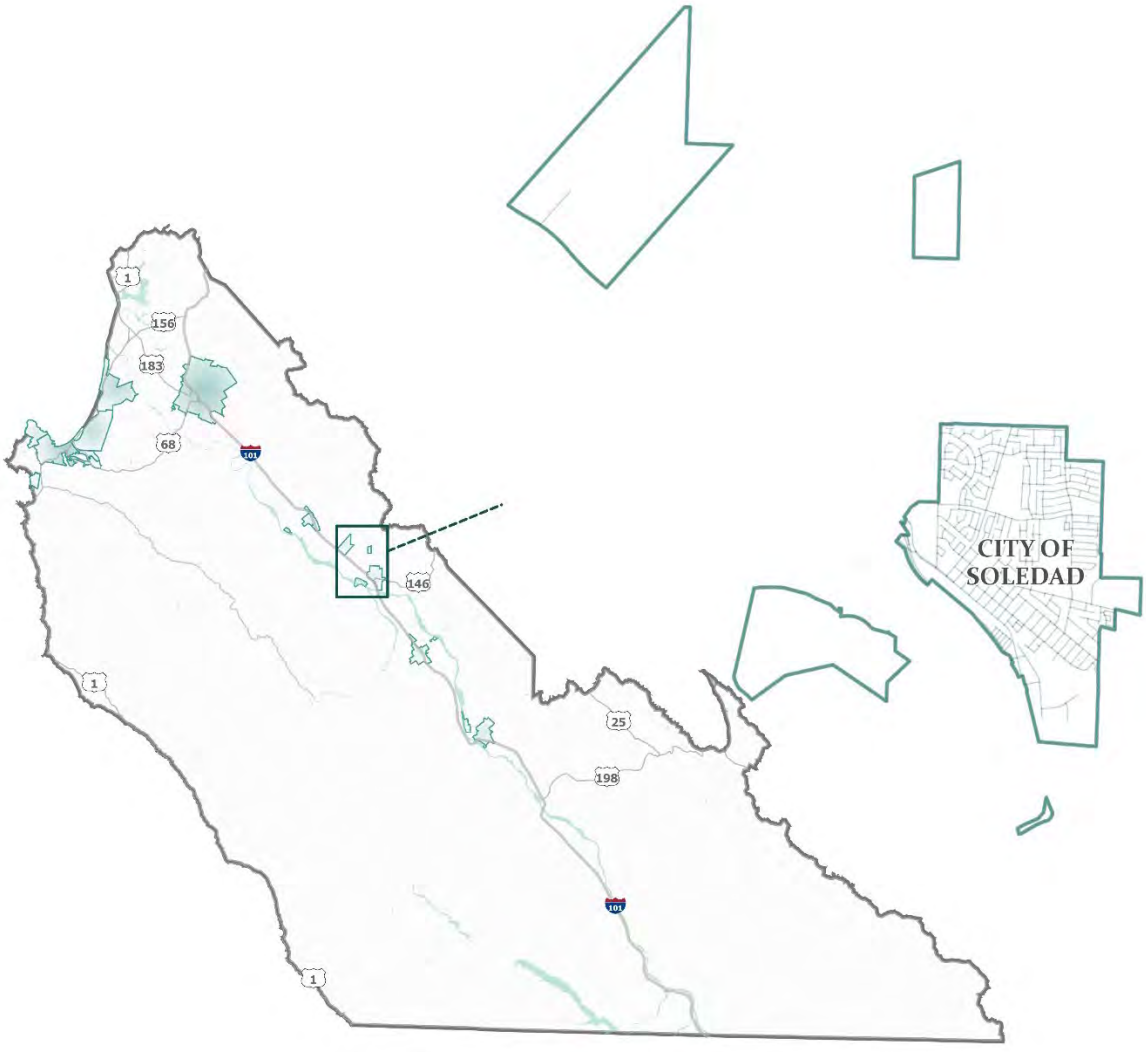
## M.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Brent Slama
City Manager
248 Main Street
Soledad, CA 93960
831-223-5043
BSlama@cityofsoledad.com

**Alternate Point of Contact**
Chief George Nunez
Soledad Fire Department
525 Monterey Street
Soledad, CA 93960
(831) 223-5100
george.nunez@fire.ca.gov

## M.2 COMMUNITY PROFILE

### M.2.1 LOCATION



## M.2.2 GEOGRAPHY AND CLIMATE

The City of Soledad is located approximately 25 miles south of Salinas on Highway 101 and along the Salinas River and in the heart of the famed Salinas Valley, known for its natural beauty and agricultural products. Soledad is located in a prime area for growing wine grapes and within a short distance to many vineyards and famous wineries. Soledad has a has a warm-summer Mediterranean climate, with very warm, mostly dry summers and cool, wet winters.

## M.2.3 HISTORY

The first settlements at Soledad took place when small tribes of Native Americans settled in the Salinas Valley. These people were most likely members of the Costanoan tribe. Life for the Natives around the Soledad area changed dramatically in 1791 when Father Fermin Lasuen founded the thirteenth California Mission, the Mission Nuestra Señora de la Soledad at the site of an Indian village recorded by Pedro Font as Chuttusgelis. In spite of many difficulties, the mission did prosper for a brief period. Eventually, the padres performed more than 2,000 baptisms and 700 marriages. The crops were bountiful and large herds of horses, cattle and sheep grazed the plains. The friars even managed to plant and cultivate the first crops of wine grapes the Salinas Valley ever seen near the Soledad Mission.

One of the major events in Soledad history of took place in Salinas. Eugene Sherwood, a cattle rancher understood the importance of the railroad in getting the agricultural products to market. Sherwood offered Southern Pacific Railroad free acreage for a right-of-way and a depot, which opened in 1872. Soledad's original agricultural base prospered on cattle, wheat, and barley until the 1890's when an influx of Swiss and Swedish immigrants established dairy operations in the area. The community's agricultural base changed in the 1920's to the development of row crops.

The City of Soledad was incorporated on March 9, 1921. The City's official name, Soledad meaning "solitude", was derived from the Mission Nuestra Señora de la Soledad. The City's economic base diversified again in the 1940's, with the establishment of the California Department of Corrections' Soledad Training Facility located 3 miles north of the City. The facility was annexed into the City in 1992 and expanded in 1996 with the addition of the Salinas Valley State Prison.

## M.2.4 POPULATION

The City of Soledad has a population of 24,925 people, a slight decrease (3.1%) since 2010.

## M.2.5 GOVERNING BODY FORMAT

Soledad has a City Council/City Manager form of government. The City Council consists of an elected Mayor holding a two-year term and four Council Members elected at large for four-year overlapping terms. The City Manager, who is appointed by City Council, is responsible for all City departments. The City Council legislates policies, enacts ordinances, approves the budget, and appoints advisory boards and commissions.

## M.2.6 ECONOMY AND TAX BASE

The City of Soledad is highly motivated to provide economic development for the community by delivering prompt and efficient access to resources to businesses. The city maintains some of the lowest development fees in the region and provides a competitive business license fee schedule.

Soledad's strategic location on US Highway 101 provides significant economic opportunities, offering a scenic north-south corridor for regional motor and rail travel and tourism. The City continues to invest in the Soledad Business Center at a prime downtown storefront location where existing and prospective business owners and entrepreneurs receive free or low-cost business counseling, financial planning services, and classroom learning opportunities. The Soledad Industrial Park offers light and heavy industrial manufacturers with a convenient location to build adjacent to the busiest highway and rail shipping lanes on the west coast.

## M.3 PLANNING PROCESS

The City of Soledad followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the City formulated their own internal planning team to support the broader planning process.

The City of Soledad held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on August 18, 2021. Key stakeholders present at the meeting included:

- Brent Slama, City Manager
- Damon Wasson, Police Chief
- Oscar Espinoza, City Engineer
- George Nunez, Fire Chief
- Lynnelle Sanchez, Community Engagement Manager
- Rebecca J. Hall, Recreation Manager
- Bryan T. Swanson, Community and Economic Development Director

## M.4 LAND USE AND DEVELOPMENT

The Soledad General Plan was adopted in 2005. The City's population experienced steady growth throughout the 1990s and the pace accelerated between 1997 and 2001. In 2003, Soledad ranked eight among the fastest growing cities in the State and residential development occurred at an accelerated pace between 1997 and 2003. The growth in population has stabilized since 2010 with no population growth between 2010 and 2019.

Excluding vacant land, 58% of Soledad is currently used for residential uses. Commercial and industrial uses consist of 6% and 11% of the available land. The City is surrounded by productive agricultural land, primarily categorized as "prime farmland" by the State Department of Conservation. A significant portion of neighboring lands is protected by Williamson Act restrictions. The existing City limits contain approximately 3,000 acres. The 2005 General Plan anticipates the development of five expansion areas on 3,254 acres that would more than double the City's area.

Since the early 2000's, the City of Soledad has played a major role in fostering and increasing much-needed units of affordable housing to support the diverse needs of Monterey County's growing workforce. Since 2015, the City has been working closely with developers to add single family and multi-family housing to areas approved for development before 2008. This housing development boom is increasing economic development opportunities for small businesses, franchise businesses,

service providers, medical facilities, entertainment venues, and large retailers who seek to expand to an untapped market.

### *Safe Growth*

The purpose of the Safe Growth Survey was to evaluate the extent to which each jurisdiction is positioned to grow safely relative to its natural hazards. The survey covered 9 distinct topic areas and was also completed as part of the previous plan update process. This allowed survey results to be compared to help measure progress over time and to continue identifying possible mitigation actions as it relates to future growth and community development practices.

This survey was a subjective exercise used to provide some quantitative measures of how adequately existing planning mechanisms were being used to address the notion of safe growth. Each topic area included a number of statements, which were answered on a scale from 1 to 5 based on the degree to which the respondent agreed or disagreed with the statement as it relates to the City's current plans, policies, and programs for guiding future community growth and development. Scores for each topic area statement were averaged to provide a topic area result and the topic area totals were averaged to provide an overall survey score. More information on the survey is provided in *Capability Assessment* in **Volume 1**.

The City of Soledad Safe Growth Survey was completed by Bryan Swanson, Community and Economic Development Director for the City of Soledad. The results are summarized in *Table M-1*.

**Table M-1**
**City of Soledad Safe Growth Survey Results**

| Topic Area | 2021 | 2016 |
|---|---|---|
| Land Use | 3.75 | 3.75 |
| Transportation | 3.67 | 3.33 |
| Environmental Management | 3.00 | 3.67 |
| Public Safety | 3.00 | 2.67 |
| Zoning Ordinance | 3.75 | 4.00 |
| Subdivision Regulations | 4.00 | 3.00 |
| Capital Improvement Program & Infrastructure Policies | 3.00 | 3.00 |
| Building Code | 5.00 | 4.00 |
| Economic Development | 4.00 | 3.00 |
| **Average Survey Ratings** | **3.69** | **3.38** |

## M.5 JURISDICTION SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the City of Soledad's hazards and assess the City's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the City of Soledad is included in this Annex.

The City of Soledad's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The City's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey

to compare the impact of various hazards that could affect the City. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**.

*Table M-2* displays the results of the hazard risk ranking exercise that was performed by the City of Soledad's Planning Team.

**Table M-2**
**Threat Hazard Identification Risk Assessment (THIRA): City of Soledad**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 3.7 | 3.3 | 3.3 | 3.5 | 13.8 | High |
| Coastal Erosion | - | - | - | - | - | - |
| Coastal Flooding | - | - | - | - | - | - |
| Cyber-Attack | 3.0 | 2.8 | 3.3 | 3.5 | 12.7 | High |
| Dam Failure | 1.8 | 1.8 | 2.0 | 2.0 | 7.7 | Possible |
| Drought & Water Shortage | 3.5 | 3.5 | 3.3 | 3.5 | 13.8 | High |
| Earthquake | 3.7 | 3.5 | 3.8 | 4.0 | 15.0 | Very High |
| Epidemic | 3.5 | 2.8 | 3.5 | 3.5 | 13.3 | High |
| Extreme Cold & Freeze | 2.2 | 1.8 | 2.0 | 2.3 | 8.3 | Moderate |
| Extreme Heat | 2.5 | 2.5 | 2.5 | 2.7 | 10.2 | Substantial |
| Flash Flood | 2.2 | 2.0 | 2.3 | 2.5 | 9.0 | Moderate |
| Hazardous Materials Incident | 2.8 | 2.8 | 3.2 | 3.2 | 12.0 | Substantial |
| Invasive Species | 2.5 | 2.2 | 2.7 | 2.7 | 10.0 | Moderate |
| Levee Failure | 2.5 | 2.5 | 2.8 | 2.8 | 10.7 | Substantial |
| Localized Stormwater Flooding | 2.3 | 2.7 | 2.7 | 2.7 | 10.3 | Substantial |
| Mass Migration | 1.8 | 1.7 | 1.8 | 2.0 | 7.3 | Possible |
| Pandemic | 3.2 | 3.0 | 3.3 | 3.5 | 13.0 | High |
| Riverine Flooding | 2.2 | 2.2 | 2.2 | 2.3 | 8.8 | Moderate |
| Sea Level Rise | - | - | - | - | - | - |
| Severe Winter Storms | 2.0 | 2.0 | 2.3 | 2.3 | 8.7 | Moderate |
| Slope Failure | 2.3 | 2.3 | 2.5 | 2.5 | 9.7 | Moderate |
| Targeted Violence | 2.0 | 2.0 | 2.5 | 2.5 | 9.0 | Moderate |
| Terrorism | 2.0 | 2.0 | 2.0 | 2.2 | 8.2 | Moderate |
| Tsunami | - | - | - | - | - | - |
| Utility Interruption/ PSPS | 3.2 | 3.2 | 3.3 | 3.3 | 13.0 | High |
| Water Contamination | 2.2 | 2.2 | 2.8 | 2.8 | 10.0 | Moderate |
| Wildfire | 3.2 | 3.0 | 3.2 | 3.3 | 12.7 | High |
| Windstorms | 2.5 | 2.7 | 2.5 | 2.7 | 10.3 | Substantial |

### M.5.1 AGRICULTURAL EMERGENCIES

The agricultural industry is a major economic driver in the City. Agricultural disasters pose a serious threat to the local economy and populations directly employed by the agriculture industry.

### M.5.2 COASTAL EROSION

The City is not located on the coast, and therefore coastal erosion is not a major threat. Coastal erosion does threaten agricultural land in the Salinas Valley, which if impacted could have indirect economic effects on the local economy. The City could also be impacted by other types of erosion not profiled in this Plan.

### M.5.3 DAM AND LEVEE FAILURE

*Dam Failure*

The is no population or property in the City located in the dam inundation zones of the Los Padres and Forest Lake dams. *Table M-3* summarizes population and property in the City exposed to spillway and dam failure of the Nacimiento and San Antonio dams.

**Table M-3**
**Population and Property Exposed to Dam Failure Risk by Dam and Failure Type in Soledad**

| Dam Failure Scenario | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Nacimiento Spillway Failure | 33 | 0 | $0 | 6 | $3,559,237 |
| Nacimiento Dam Failure | 33 | 1 | $372,410 | 6 | $3,559,237 |
| San Antonio Spillway Failure | 33 | 0 | $0 | 4 | $3,557,985 |
| San Antonio Dam Failure | 33 | 1 | $372,410 | 6 | $3,559,237 |

*Levee Failure*

Based on Leveed Area from the US Army Corps of Engineers, National Levee Database, there is no population or property in the City exposed to levee failure risk. A levee protects the City's Sewer Plant, that if it were to fail could impact City services. Many levees in the County protect important agricultural lands and a significant levee failure could have an indirect economic effect on the City.

### M.5.4 DROUGHT AND WATER SHORTAGE

The entire population of the City is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Drought also is often accompanied by extreme heat, exposing people to the risk of sunstroke, heat cramps and heat exhaustion. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease. Water shortages can affect access to safe, affordable water, with substantial impacts on low-income families and communities burdened with environmental pollution.

A prolonged drought could also cause economic impacts. Increased demand for water and electricity may result in shortages and higher costs of these resources. While economic impacts will be most

significant on industries that use water or depend on water for their business, cascading economic effects can hurt many sectors of the economy. Agriculture, which will likely be impacted by drought conditions, is a major economic driver in the County, and the City could be impacted economically.

### M.5.5 EARTHQUAKE

The entire population of the City is potentially exposed to direct and indirect impacts from earthquakes. Whether directly impacted or indirectly impacted, the entire population will have to deal with the consequences of earthquakes to some degree. Business interruption could keep people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event itself. Similarly, all property and critical infrastructure in the City is potentially exposed to earthquake risk.

According to Monterey County Assessor records, there are 3,472 residential and non-residential buildings in the City, with a total value of $1,196,653,437. Since all structures in the City are susceptible to earthquake impacts to varying degrees, this represents the property exposure to seismic events.

Additionally, liquefaction risk was assessed. *Table M-4* summarizes population and property in the City exposed to liquefaction risk.

**Table M-4**
**Population and Property Exposed to Liquefaction Risk in Soledad**

| Liquefaction Risk | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| High Liquefaction Susceptibility | 3,874 | 627 | $240,528,528 | 80 | $9,211,229 |
| Moderate Liquefaction Susceptibility | 4,359 | 344 | $108,021,717 | 429 | $111,083,587 |

### M.5.6 FLOODING

FEMA flood zones were used to assess flooding risk. *Table M-5* summarizes population and property in the City in the 100-year and 500-year floodplain.

**Table M-5**
**Population and Property Exposed to Flooding Risk in Soledad**

| FEMA Flood Zone | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| 100-Year Flood Zone | 33 | 1 | $372,410 | 8 | $7,973,126 |
| 500-Year Flood Zone | 0 | 0 | $0 | 0 | $0 |

Areas of flood concern for the City include Stonewall Canyon and Bryant Canyon, areas that experienced serious flooding in the 90s and include more residential development today.

### M.5.7 HAZARDOUS MATERIALS INCIDENT

To assess hazardous materials incident risk, buffer distances were used. The chosen buffer distance was based on guidelines in the US Department of Transportation's Emergency Response Guidebook that suggest distances useful to protect people from vapors resulting from spills involving dangerous goods considered toxic if inhaled. The recommended buffer distance referred to in the guide as the

"protective action distance" is the area surrounding the incident in which people are at risk of harmful exposure. For purposes of this plan, a buffer distance of one mile was used, but actual buffer distances will vary depending on the nature and quantity of the release, whether the release occurred during the night or daytime, and prevailing weather conditions.

To analyze the risk to a transportation-related hazardous materials release, a one-mile buffer was applied to highways in the US Dept of Transportation, National Transportation Atlas Database. The result is a two-mile buffer zone around each transportation corridor that is used for this analysis. Risk from a fixed facility hazardous materials release, was analyzed using a one-mile buffer was applied facilities identified in the Monterey County 2019 Hazardous Materials Plan. The result was a one-mile buffer zone around each facility.

*Table M-6* summarizes population and property that could be exposed to both mobile and fixed hazardous materials incidents.

**Table M-6**
**Population and Property Exposed to Hazardous Materials Incident Risk in Soledad**

| Hazardous Materials Incident Type | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Mobile Source | 21,361 | 2,124 | $749,768,786 | 652 | $147,118,221 |
| Fixed Source | 139 | 18 | $527,629.00 | 33 | $4,381,502 |

## M.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, loss from a human-caused hazard often inflicts an even greater toll on a community, both economically and emotionally. The impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

## M.5.9 PUBLIC HEALTH HAZARDS

All citizens in the City could be susceptible to the human health hazards. A large outbreak or epidemic, a pandemic or a use of biological agents as a weapon of mass destruction could have devastating effects on the population. While all of the population is at risk to the human health hazards, the young and the elderly, those with compromised immune systems, and those with special needs are most vulnerable. The introduction of a disease such as influenza or the Covid-19 virus have impacted the whole population of the City, specifically vulnerable populations.

## M.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to happen anywhere in the City. Vulnerable populations are the elderly, low income or linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads. Properties in poor condition or in high-risk locations may be susceptible to the most damage. All critical facilities in the City likely exposed to severe weather hazards. The most common problems associated with severe weather are loss of utilities and compromised access to roadways. Prolonged periods of extreme heat could result in power outages caused by increased demand for power for cooling.

The FEMA National Risk Index calculates annualized frequency, exposure and annual expected loss of building value and population to some severe weather hazards identified in this Plan. Based on zip code and census tract Countywide data was used to identify annualized frequency, exposure, and annual expected loss in the City from severe weather hazards. Though the entire City is considered vulnerable to these hazards, the FEMA data was used in this risk assessment to provide scale for the potential risk and impacts. FEMA National Risk Index data from frequency and exposure to severe weather hazards is summarized in *Table M-7.*

**Table M-7**
**Annualized Frequency and Exposure to Severe Weather Events in Soledad**

| Hail | | Strong Wind | |
|---|---|---|---|
| Frequency (*Distinct Events)* | 0.36 | Frequency (*Distinct Events)* | 0.11 |
| Exposed Population | 21,563 | Exposed Population | 21,563 |
| Exposed Building Values | $976,282,000 | Exposed Building Values | $976,282,000 |
| Expected Annual Loss of Building Value | $0 | Expected Annual Loss of Building Value | $328 |
| **Heat Wave** | | **Tornado** | |
| Frequency (*Event-Days)* | 1.05 | Frequency (*Distinct Events)* | 1.28 |
| Exposed Population | 21,563 | Exposed Population | 5,715 |
| Exposed Building Values | $976,282,000 | Exposed Building Values | $138,975,676 |
| Expected Annual Loss of Building Value | $2 | Expected Annual Loss of Building Value | $3,553,082 |
| **Lightning** | | **Winter Weather** | |
| Frequency (*Distinct Events)* | 0.58 | Frequency (*Event-Days)* | 0.00 |
| Exposed Population | 21,563 | Exposed Population | 0 |
| Exposed Building Values | $976,282,000 | Exposed Building Values | $0 |
| Expected Annual Loss of Building Value | $177 | Expected Annual Loss of Building Value | $0 |

Source: FEMA National Risk Index

## M.5.11 SLOPE FAILURE

Based on the FEMA National Risk Index, 662 people and $50,247,148in building value in the City is exposed to landslide risk. Additionally, the City is not susceptible earthquake induced to landslides.

## M.5.12 TSUNAMI

The City is not located in a mapped tsunami inundation zone.

## M.5.13 UTILITY INTERRUPTION

All residents, visitors, and property in the City is exposed and vulnerable to utility interruptions. All critical facilities and infrastructure in the City that is operated by electricity is exposed and vulnerable to utility interruption.

### M.5.14 WILDFIRE

For purposes of this analysis CAL FIRE Fire Threat data was used. Fire Threat combines expected fire frequency with potential fire behavior to create 4 threat classes, extreme, very high, high, and moderate.

*Table M-8* summarizes population and property in the City in very high, high, and moderate fire threat areas.

**Table M-8**
**Population and Property Exposed to Wildfire Risk in Soledad**

| CAL FIRE Wildfire Threat | Population | Residential Property | | Non-Residential Property | |
|---|---|---|---|---|---|
| | | # | Value | # | Value |
| Very High Fire Threat | 0 | 0 | $0 | 3 | $5,672 |
| High Fire Threat | 141 | 18 | $527,629 | 39 | $6,522,413 |
| Moderate Fire Threat | 12,485 | 167 | $30,168,583 | 132 | $44,060,253 |

### M.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will affect the people, property, economy, and ecosystems in the City and will exacerbate the risk posed by many of the hazards previously profiled in this Plan. Climate change will have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures will have direct impacts on public health and infrastructure. Drought, flooding, and wildfire will likely affect people's livelihoods and the local economy. Changing weather patterns and more extreme conditions are likely to impact tourism and the local economy, along with changes to agriculture and crops, which are a critical backbone of the City's economy.

## M.6 CAPABILITY ASSESSMENT

The City of Soledad performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table M-9*
- An assessment of administrative and technical capabilities is presented in *Table M-10*
- An assessment of fiscal capabilities is presented in *Table M-11*
- An assessment of education and outreach capabilities is presented in *Table M-12*
- Classifications under various community mitigation programs are presented in *Table L-13*
- A summary of participation in and compliance with the National Flood Insurance Program (NFIP) is provided in Section M.6.1 in *Table M-14*
- An overall self-assessment of capability is presented in Section M.6.2 in *Table M-15*

**Table M-9**
**Planning and Regulatory Capability**

| Document | | Department | Comments |
|---|---|---|---|
| **Planning Documents** | | | |
| General Plan | ☒ | • Community Development | Will be updating the current General Plan in 2022. |
| Capital Improvement Plan | ☒ | • Public Works | |
| Floodplain Management Plan | ☐ | | |
| Open Space Management Plan | ☒ | • Planning Department | Will need to updated with the process of updating the current General Plan in 2022. |
| Stormwater Management Plan | ☒ | • Public Works | |
| Coastal Management Plan | ☐ | | N/A |
| Local Coastal Program | ☐ | | N/A |
| Climate Action/ Adaptation Plan | ☒ | • Community Development | Will need to updated with the process of updating the current General Plan in 2022. |
| Emergency Operations Plan | ☒ | • Police Department | |
| Continuity of Operations Plan | ☐ | | |
| Community Wildfire Protection Plan | ☐ | | |
| Evacuation Plan | ☐ | | |
| Disaster Recovery Plan | ☐ | | |
| Economic Development Plan | ☐ | | |
| Historic Preservation Plan | ☒ | • Community Development | City registry of historic resources. |
| Transportation Plan | ☒ | • TAMC | |
| **Codes, Ordinances & Requirements** | | | |
| Floodplain Ordinance | ☒ | • Community Development | |
| Zoning Ordinance | ☒ | • Community Development | Portions of the Zoning Ordinance will be updated via a SB 2 Grant. |
| Subdivision Ordinance | ☒ | • Community Development | |
| Site Plan Review Requirements | ☒ | • Community Development | |
| Unified Development Ordinance | ☐ | | |
| Post-Disaster Redevelopment/ Reconstruction Ordinance | ☐ | | |
| Building Code | ☒ | • Building Department | Adoption of New CA Codes every 3 years. |
| Fire Prevention Code | ☒ | • Building Department | CA Fire Code adopted every 3 years. |

**Table M-10**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Community Development<br>• Public Works | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Community Development<br>• Public Works | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Community Development<br>• Public Works | |
| Building Inspector | ☒ | • Community Development<br>• Public Works | |
| Emergency Manager | ☐ | | |
| Floodplain Manager | ☒ | • Community Development | |
| Land Surveyors | ☐ | | |
| Resource development staff or grant writers | ☒ | • Community Development | |
| Public Information Officer | ☒ | • Community Engagement | |
| Scientist(s) familiar with the hazards of the community | ☐ | | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☐ | | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Public Works | |
| Maintenance programs to reduce risk | ☐ | | |
| Warning systems/services | ☐ | | |
| Mutual Aid Agreements | ☒ | | Have mutual aid agreements with neighboring cities. |

**Table M-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Finance | |
| Special Purpose Taxes | ☒ | • Finance | |
| Stormwater Utility Fees | ☐ | | |

**Table M-11**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | |
| Development Impact Fees | ☒ | | |
| General Obligation Bonds | ☒ | • Finance | |
| Special Tax and Revenue Bonds | ☒ | • Finance | |
| Community Development Block Grants (CDBG) | ☐ | | |

**Table M-12**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | ☐ | | |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | ☒ | • Community Engagement | |
| Natural disaster or safety related school programs | ☐ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

**Table M-13**
**Community Classifications**

| | Participating? | Classification | Effective Date |
|---|---|---|---|
| Community Rating System (CRS) | No | - | - |
| ISO Public Protection Classification | | | |
| *StormReady* Certification | No | - | - |
| *TsunamiReady* Certification | N/A | - | - |
| *Firewise Communities* Certification | No | - | - |

## M.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMPLIANCE

**Table LM14**
**National Flood Insurance Program (NFIP) Compliance**

| | |
|---|---|
| **Designated Floodplain Administrator:** | Bryan Swanson, Community/Economic Development Department Director |
| **NFIP Community Number:** | 060204 |
| **Flood Insurance Policies in Force:** | 1 |
| Insurance Coverage in Force: | $350,000 |
| Written Premium in Force: | $467 |
| **Total Loss Claims:** | 0 |
| Total Payments for Losses: | 0 |

**Adopted Regulations that meet NFIP Requirements:**

- Ordinance 596 Adopted 2002 – Floodplain Management
- Resolution Adopted 2016 - Monterey County Multi-Hazard Mitigation Plan 2015

**Date of last NFIP Community Assistance Visit (CAV):**

Unknown.

**Higher standards that exceed minimum NFIP requirement:**

The City of Soledad follows minimum NFIP requirements, no additional requirements have been implemented.

**Additional floodplain management provisions:**

Some floodplain management provisions that are integrated into other plans or processes that the community uses to guide development within the City of Soledad would be our 2005 General Plan, within the Hazards Safety section. A new update on our 2005 General Plan will become available in 2025 where this topic will be updated to accommodate City's future growth. The City of Soledad will also be updating its zoning ordinance code which the floodplain management could be a factor to consider as staff reviews new changes.

**Floodplain management activities performed that go beyond FEMA minimum requirements:**

The City of Soledad performs the minimum FEMA requirements for floodplain management.

**Existing impediments to running an effective NFIP program:**

An existing impediment to running an effective NFIP program in the community would be having adequate staffing resources and funding. With the proper staffing and funding, outreach within the community will help educate our residents but also help the City of Soledad understand other issues members of the community may have regarding other hazard activities.

**Specific actions that are ongoing or considered related to continued compliance with the NFIP:**

A specific action that the City of Soledad can take related to continued compliance with the NFIP would be to gather data in a digital format for easier recording and for easier data access. Other possible new actions considered include:

- Maintain digital FEMA elevation certificates for all construction in the floodplain.
- Develop a checklist for review of building/development permit plans and for inspection of development in floodplains.
- Establish a goal to have each plan reviewer and building inspector attend a related training periodically.

**Table LM14**
**National Flood Insurance Program (NFIP) Compliance**

- Maintain a map of areas that flood frequently (e.g., areas where repetitive loss properties are located) and prioritize those areas for inspection immediately after the next flood. If outside FEMA special flood hazard areas, consider requiring existing NFIP regulatory standards (compliance with existing ordinance) through overlay zoning, etc.
- Obtain FEMA's Substantial Damage Estimator and attend training to be prepared to use it when damage occurs; develop mutual aid agreements with other jurisdictions to augment local inspection personnel after major disasters.
- Develop handouts for permit applications on specific issues such as installation of manufactured homes in flood hazard areas according to HUD's installation standards, or guidance on improving/repairing existing buildings to better withstand potential hazards.

## M.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table M-15**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Moderate |
| Political Capability | High |
| **Overall Capability** | **Moderate** |

## M.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

More financial and service support from Federal, State and County jurisdictions. With the creation of the new General Plan, critical elements such as: Climate Action Plan, Hazard Mitigation Plan, Land Use Element and Circulation can serve as tools to gain more funding to offset any hazards that may come to Soledad. Being a small community in south Monterey County, Soledad could be on an "island" if an earthquake or other disaster would occur. With the establishment of these new elements will hopefully provide mitigation measures for Soledad as to when/if a disaster strike.

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## M.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the City made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The City will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Building Code**: The City's adoption of the 2016 California Building Code incorporated local modifications addressing seismic and fire hazards.
- **Regulatory Codes:** A number of the City's existing codes and ordinances include provisions to reduce hazard risk including the zoning code, storm water management code and flood damage prevention ordinance.

### *Opportunities for Future Integration*

The General Plan and the hazard mitigation plan are complementary documents that work together to achieve the goal of reducing risk exposure. The General Plan is considered to be an integral part of this plan. An update to the General Plan may trigger an update to the hazard mitigation plan. The City, through adoption of a General Plan and zoning ordinance, has planned for the impact of natural hazards. The process of updating this hazard mitigation plan provided the opportunity to review and expand on policies in these planning mechanisms. The City will create a linkage between the hazard mitigation plan and the General Plan by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs that may be coordinated with the recommendations of the hazard mitigation plan include the following:

- General Plan, including the Safety Element
- Emergency Operations Plans
- Climate Action and Adaptation Plans
- Debris management plans
- Recovery plans

- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant-Disaster Recovery action plans
- Public information/education plans

Some action items do not need to be implemented through regulation. Instead, these items can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be integrated via the update process.

## M.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the City of Soledad Planning Committee identified key vulnerabilities and hazards of concern applicable to their jurisdiction. The Hazard Problem Statements were based on the risk assessment, the vulnerability analysis, and local knowledge.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the City of Soledad are identified below:

- The City's wastewater treatment plant along the Salinas River is the critical facility deemed most at risk to flooding damage and service interruption. As a result of past floods, the river channel has moved closer to the plant and right up against the protective levee, which due to increased threat, should be raised and strengthened despite being designed for the 100-year flood event. Further, the plant's electrical and mechanical equipment is not elevated so the levee is the only protective measure currently in place.
- Areas surrounding the Highway 101 overpasses, especially near shopping centers, are deemed vulnerable to flooding. The source of past flooding events wasn't limited to the Salinas River, but also runoff from mountains as conveyed through the Bryant Canyon Channel managed by MCWRA.
- The City frequently must respond to fires in the Salinas River bottom, mainly due to uncontrolled vegetation growth. The greatest threat to structures caused by wildland fire is to eastern portions of the city, although risk is managed through weed abatement and fuels reduction program, combined with local development regulations for any new construction along wildland/urban interface (sprinkler and roof type requirements, etc.). The most significant effect caused by the wildland fire hazard is deemed to be the public health threat created by smoke and reduction in air quality across the entire city during large events.

- The City still has a number of old URM buildings located in its downtown area. While each has been posted with a warning placard the city's inventory should be used to identify and prioritize structures for seismic retrofitting.
- Highway 101 is the only lifeline/ ingress egress route in the event of a major evacuation. No backup route exists or routes in the East/West direction. A closure of the freeway would severely limit movement. A mass casualty event, hazmat event, or failure of infrastructure on Highway 101 is a major concern.
- Cumulative and constant hazards, particularly as hazards are exacerbated by climate change, can quickly overwhelm the City's limited response capability and resources.
- Civil unrest is a genuine concern for the City of Soledad. Because of the ingress/egress issues leading to the City, activists and those with violent agendas could potentially isolate the City by blocking or limiting the entrance and exits. For a City with a small law enforcement presence blocking assistance coming to the City from outside aid could seriously damage City infrastructure and be potentially life-threatening to citizens.

## M.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success. The City of Soledad Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the City's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table M-17* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the City during the planning process. *Table M-16* includes the status of action previous plan completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the City added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table M-16**
**City of Soledad Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **3** | Develop audience-specific hazard mitigation outreach efforts. Audiences include the elderly, children, tourists, non-English speaking residents, and home and business owners. | **Completed/ Ongoing** | Completed and done on a project-by-project basis |

**Table M-17**
**City of Soledad Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | **If Funding Allows** | All, Wildfire, Earthquake | Create incentives (e.g., rebates) to promote homeowner/ business owner disaster-resistant development (e.g., Class A roofing material). | Moderate | Fire | USFA, PDM, and HGMP Grants |
| **2** | **If Funding Allows** | All | Identify hazard-prone critical facilities and infrastructure and carry out acquisition, relocation, and structural and nonstructural retrofitting measures as necessary. | Priority / High | Public Works | PDM and HGMP Grants |
| **3** | **If Funding Allows** | Earthquake | Develop an unreinforced masonry grant program that helps correct earthquake-risk nonmasonry building problems, including chimney bracing and anchoring water heaters. | Low | Community Development | PDM and HGMP Grants |
| **4** | **If Funding Allows** | Flooding | Identify and carry-out minor flood and stormwater management projects that would reduce damage to infrastructure and damage due to local flooding/inadequate drainage. These include the modification of existing culverts and bridges, upgrading capacity of storm drains, stabilization of streambanks, and creation of debris or flood/stormwater retention basins in small watersheds. | Priority / High | Public Works | PDM and HGMP Grants |
| **5** | **If Funding Allows** | Wildfire | Create defensible space guidelines for both new and existing buildings that are in areas of very high and extreme fire hazard areas. | Moderate | Fire | USFA, PDM, and HGMP Grants |
| **6** | **New** | All | Work with County, State, and Federal Partners to determine ingress/egress improvements and to create back-up route options. | Priority / High | Fire, Police, Public Works | Grants |
| **7** | **New** | All | Create and refine the City's Evacuation Plan. | Priority / High | Fire, Police | General Funds |
| **8** | **New** | All | Explore possibility of creating a CERT Team. | Priority / High | Recreation, Admin | Grants, General Funds |
| **9** | **New** | All | Update the City's General Plan and include refence to the Multi-Jurisdictional Hazard Mitigation Plan. | Priority / High | Community Development | Grants, General Funds |

**Table M-17**
**City of Soledad Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **10** | **New** | All | Work with local schools on fire and disaster preparedness for school children and use social media to spread awareness of public engagement programs. | Priority / High | Fire, Admin | Grants, General Funds |
| **11** | **New** | Drought | Provide public information on water conservation. | Moderate | Admin | Grants, General Funds |

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# ANNEX N: CARMEL AREA WASTEWATER DISTRICT

2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

CARMEL AREA WASTEWATER DISTRICT • SINCE 1908 •

# N. CARMEL AREA WASTEWATER DISTRICT (CAWD)

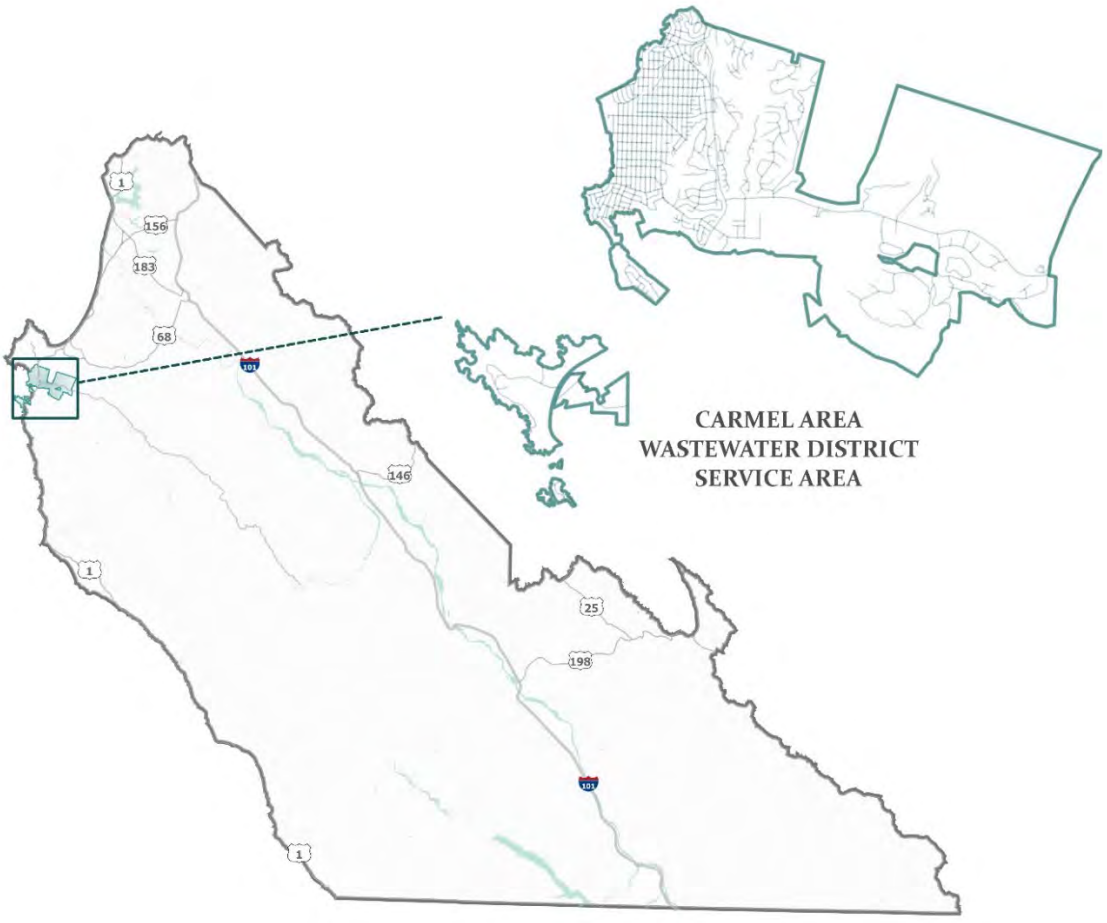
## N.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Barbara Buikema
General Manager
3945 Rio Road
Carmel, CA 93922
(831) 624-1248
Buikema@cawd.org

**Alternate Point of Contact**
Patrick Treanor
Plant Engineer
3945 Rio Road
Carmel, CA 93922
(831) 624-1248
treanor@cawd.org

## N.2 DISTRICT PROFILE

### N.2.1 LOCATION



## N.2.2 SERVICE AREA

The Carmel Area Wastewater District (CAWD) provides sewer collections and wastewater treatment in the greater Carmel area. Sewer collections system infrastructure is located in the City of Carmel-by-the-Sea, unincorporated areas of Carmel, and extends east to serve lower portions of Carmel Valley, and south as far as Carmel Highlands. The existing CAWD treatment plant is on the south bank of the Carmel River approximately one-third of a mile west of the State Route 1 Bridge. The administration office is located at 3945 Rio Road, Carmel.

The District maintains eighty-one miles of sewers within the existing service area. The total service area consists of approximately 9.75 square miles with a permanent population of approximately 11,000 and a vibrant tourist industry. CAWD also provides treatment service by contract agreement with Pebble Beach Community Services District for an additional 4,500 people and businesses in Del Monte Forest. Furthermore, CAWD provides recycled water to seven world famous golf courses in Del Monte Forest including Pebble Beach, Poppy Hills, and Spanish Bay. About 90% of the wastewater received at the treatment plant is treated to California recycled water standards and sent to the golf courses.

In 2021 CAWD anticipates completion of an annexation which will increase the size of the District to 11.3 square miles and will include additional area in the unincorporated communities of Carmel Valley and Carmel Highlands. After the annexation an additional 1,800 residents would be included within the District service area.

CAWD is also a partner in a project that supplies recycled water to the world-famous golf courses in Del Monte Forest including Pebble Beach Golf Links. The recycled water infrastructure project (known as the CAWD/PBCSD Reclamation Project) is co-owned by CAWD and Pebble Beach Community Services District (PBCSD). The CAWD/PBCSD Reclamation Project is a cooperative effort of three public agencies: PBCSD, the Carmel Area Wastewater District (CAWD), and Monterey Peninsula Water Management District (MPWMD); and two private entities who manage the golf courses in Pebble Beach/Del Monte Forest: The Pebble Beach Company, and the Independent Reclaimed Water Users Group (IRWUG).

## N.2.3 HISTORY

The Carmel Area Wastewater District was formed as the Carmel Sanitary District in 1908. At that time, the District provided septage facilities for the village of Carmel-by-the-Sea. The Carmel Area Wastewater District is one of the oldest sanitary districts in the state.

## N.2.4 GOVERNING BODY FORMAT

The Carmel Area Wastewater District (CAWD) is an independent special district organized under the Sanitary District Act of 1923. CAWD is owned, operated, and managed by the community via an elected Board of Directors.

Like the majority of public wastewater treatment facilities in California, CAWD is a Publicly Owned Treatment Works or POTW. The Elected Board sets policy, determines budget, plans for expansion or upgrade, authorizes large purchases, and in general controls the overall direction of the operation. Any resident of the District has the right to run for and be elected to serve office on the Board.

## N.3 PLANNING PROCESS

The Carmel Area Wastewater District followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the District formulated their own internal planning team to support the broader planning process. The Carmel Area Wastewater District held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies on August 2, 2021. Key stakeholders at the meeting included:

- Patrick Treanor, Plant Engineer
- Chris Foley, Maintenance Superintendent
- Ed Waggoner, Operations Superintendent
- Daryl Lauer, Collections Superintendent
- Rachél Lather, Principal Engineer

## N.4 FACILITIES

The CAWD facilities include a network of hazard vulnerable critical infrastructure and assets included in three major infrastructure divisions within the District:

- Collection System
- Wastewater Treatment Plant
- Recycled Water Treatment Facilities

The purpose of the CAWD infrastructure is to protect public health and the environment by the control of sewage generated by the constituents. As such the CAWD facilities are regulated primarily by the Regional Water Quality Control Board (RWQCB) and Environmental Protection Agency (EPA) pursuant to the Clean Water Act.

### N.4.1 COLLECTION SYSTEM

The collection system has been built up incrementally over the last 100+ years to support development of the community. The collection system provides the conveyance of wastewater from a business or residence to the wastewater treatment plant using underground pipes and lift stations. The CAWD collection system consists of approximately 81 miles of gravity sewers ranging in size from 6 inches to 27 inches in diameter, nearly 4 miles of force mains, 7 pump stations, and over 1,500 manholes.

The collection system is distributed over a range of geographic areas within the CAWD service area and thus can be subject to a wide range of local hazards depending on the specific location. For instance, collections pipelines can be located in inland areas on steep slopes which are subject to local erosion that undermines pipelines. Whereas some pump stations and pipelines within the collection system are located on or near the coastline and those may be subject to effects of coastal erosion, tsunami, and/or sea level rise.

The CAWD collection system infrastructure is important to protect the public health and the environment from the effects of sewage contamination. Hazard mitigation for the collection system should focus on: Coastal Erosion, Coastal Flooding, Cyber-Attack, Drought & Water Shortage,

Earthquake, Epidemic, Extreme Cold & Freeze, Extreme Heat, Flash Flood, Levee Failure, Localized Stormwater Flooding, Pandemic, Riverine Flooding, Sea Level Rise, Severe Winter Storms, Slope Failure, Tsunami, Utility Interruption/ PSPS, Water Contamination, Wildfire, Windstorms.

### N.4.2 WASTEWATER TREATMENT PLANT (WWTP)

The CAWD Wastewater Treatment Plant (WWTP) includes a wide range of facilities and specialized equipment that cleans the wastewater for either disposal to the Pacific Ocean, or preparation prior to additional advanced recycled water treatment. The treatment plant utilizes clarifiers, aeration basins, chemical disinfection systems, pumping stations, digesters, solids dewatering equipment, and other processes. The WWTP operates under a National Pollution Discharge Elimination System (NPDES) permit which stipulates water quality requirements for the treated water. The permitted capacity of the WWTP is 3 million gallons per day (MGD) of dry weather flow.

Current average dry weather flow (ADWF) is approximately 1.1 MGD. Approximately two-thirds of the flow into the WWTP is from CAWD customers and the remaining one-third is from Pebble Beach Community Service District customers. During large storm events the inflows can increase up to eight times the dry-weather rates. This requires the plant equipment and processes be designed to handle large peak hydraulic loads during the winter months.

The WWTP is located south of the Carmel River in a historic coastal floodplain and can be subject to short duration flood events during winter. The original design incorporated elevated structures to allow the WWTP to function uninterrupted during onsite flooding. The flooding onsite has been historically very rare, and structures are designed to operate at flood levels beyond the 100-year FEMA flood stage. However, onsite flooding may become more frequent as the effects of climate change unfold, and this is a major concern for the future of the WWTP in its current location.

The CAWD WWTP infrastructure is important to transform sewage into clean water to protect the public health and the environment from the effects of sewage contamination. Hazard mitigation for the WWTP should focus on: Coastal Flooding, Cyber-Attack, Dam Failure, Drought & Water Shortage, Earthquake, Epidemic, Extreme Cold & Freeze, Extreme Heat, Flash Flood, Pandemic, Riverine Flooding, Sea Level Rise, Severe Winter Storms, Terrorist Attack, Tsunami, Utility Interruption/ PSPS, Water Contamination, Wildfire, Windstorms.

### N.4.3 RECLAMATION PLANT (RECYCLED WATER FACILITIES)

The Reclamation Plant provides the advanced treatment for the water used on the golf courses. It is located on the same site as the WWTP, and therefore shares in all the same hazards related to coastal flooding. The facilities at the site include tertiary treatment plant facilities, a microfiltration and reverse osmosis facility, a laboratory building, and a pump station and pipeline to convey the treated water north to Pebble Beach Community Services District.

Given the shrinking water supplies the golf courses are dependent upon the reclaimed water supplies. Protection of CAWD's ability to continue providing reclaimed water is of great importance to the community. Hazard mitigation for the Reclamation Plant should focus on: Coastal Flooding, Cyber-Attack, Dam Failure, Drought & Water Shortage, Earthquake, Epidemic, Extreme Cold & Freeze,

Extreme Heat, Flash Flood, Pandemic, Riverine Flooding, Sea Level Rise, Severe Winter Storms, Terrorist Attack, Tsunami, Utility Interruption/ PSPS, Water Contamination, Wildfire, Windstorms.

## N.5 DISTRICT SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the CAWD's hazards and assess the District's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the CAWD is included in this Annex.

The CAWD's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The District's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the District. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**.

*Table N-1* displays the results of the hazard risk ranking exercise that was performed by the CAWD'S Planning Team.

**Table N-1**
**Threat Hazard Identification Risk Assessment (THIRA): CAWD**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | - | - | - | - | - | - |
| Coastal Erosion | 2.5 | 2 | 2 | 2 | 8.5 | Moderate |
| Coastal Flooding | 2.5 | 3 | 2 | 3 | 10.5 | Substantial |
| Cyber-Attack | 2 | 2.5 | 2 | 2 | 8.5 | Moderate |
| Dam Failure | 2.5 | 2 | 2 | 3 | 9.5 | Moderate |
| Drought & Water Shortage | 1.5 | 1 | 2 | 1 | 5.5 | Slight |
| Earthquake | 2.5 | 2 | 2 | 2.5 | 9 | Moderate |
| Epidemic | 1.5 | 1 | 2 | 1 | 5.5 | Slight |
| Extreme Cold & Freeze | 1.5 | 1 | 2 | 1 | 5.5 | Slight |
| Extreme Heat | 1.5 | 1 | 2 | 2 | 6.5 | Possible |
| Flash Flood | 2.5 | 3 | 2 | 3 | 10.5 | Substantial |
| Hazardous Materials Incident | 1 | 3 | 1 | 1 | 6 | Slight |
| Invasive Species | - | - | - | - | - | - |
| Levee Failure | 1.5 | 1 | 2 | 2 | 6.5 | Possible |
| Localized Stormwater Flooding | 2 | 2 | 2 | 2 | 8 | Possible |
| Mass Migration | - | - | - | - | - | - |

**Table N-1**
**Threat Hazard Identification Risk Assessment (THIRA): CAWD**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Pandemic | 1.5 | 1 | 2 | 1 | 5.5 | Slight |
| Riverine Flooding | 2.5 | 3 | 2 | 3 | 10.5 | Substantial |
| Sea Level Rise | 3 | 3 | 3.5 | 3 | 12.5 | High |
| Severe Winter Storms | 2 | 3.5 | 2 | 2 | 9.5 | Moderate |
| Slope Failure | 2.5 | 3 | 2 | 2 | 9.5 | Moderate |
| Targeted Violence | - | - | - | - | - | - |
| Terrorism | 2 | 2.5 | 2 | 2 | 8.5 | Moderate |
| Tsunami | 2.5 | 2 | 2 | 2 | 8.5 | Moderate |
| Utility Interruption/ PSPS | 2.5 | 2 | 2 | 2 | 8.5 | Moderate |
| Water Contamination | 1.5 | 1 | 2 | 1 | 5.5 | Slight |
| Wildfire | 2 | 2 | 2 | 2 | 8 | Possible |
| Windstorms | 2 | 2 | 2 | 2 | 8 | Possible |

## N.5.1 AGRICULTURAL EMERGENCIES

The CAWD infrastructure is unlikely to experience any impacts associated with agricultural emergencies.

## N.5.2 COASTAL EROSION

As part of providing wastewater collection and treatment service to a coastal community, CAWD maintains assets that are located near the coastline that are susceptible to coastal erosion.

Notable facilities susceptible to coastal erosion are:

- 8th & Scenic Pump Station - Carmel
- Bay & Scenic Pump Station - Carmel
- Conveyance Pipelines located by the coastline
- Ocean Outfall

## N.5.3 DAM AND LEVEE FAILURE

### *Dam Failure*

The San Clemente Dam was removed in 2015 thereby greatly reducing risk of dam failure for the District. However, the Los Padres Dam is another dam located upstream of the old San Clemente Dam site. The Los Padres Dam is about 25 miles upstream from CAWD facilities in the Carmel River watershed and holds up to about 3,000 acre-ft.

During development of this Hazard Mitigation Plan, CAWD did not find any reports that identify the extent of downstream impact that could occur from a failure of Los Padres Dam. It is possible that hydraulic modeling would reveal the extent of downstream impacts of a Los Padres Dam failure on

CAWD facilities. For the purposes of this report, CAWD is assuming that impacts would be similar to other flooding impacts associated with the Carmel River.

*Levee Failure*

There are several levees (many of which are uncertified) in the vicinity of the Carmel River Lagoon which provide little if any flood control to the CAWD treatment plant facilities located south of the Carmel River. The treatment facility site relies on the design of the process structures and site topography as flood mitigations. However, the residential and commercial developments on the north side of the river are more reliant on levees for flood protection. Therefore, the corresponding sewer collection systems associated with these developments are reliant on levee protection. The levee system along the north side of the Carmel River has been known to be vulnerable to flood impacts, and flooding in these areas north of the river could lead to inundation of flood waters into sewers, overwhelming the system and causing sanitary sewer overflows.

## N.5.4 DROUGHT AND WATER SHORTAGE

Drought and water shortage can affect CAWD facilities in different ways. One way is that collections sewers can get solids build up due to lack of water flow to carry solids down the line. Another way that CAWD and the community would be affected is that CAWD provides irrigation water to all the golf courses in Pebble Beach. If inflow into the CAWD treatment plant declines due to potable water conservation, then CAWD will not have as much water to treat and send to the golf courses for irrigation. Currently the golf courses barely get by with the current water supply that CAWD provides and sometimes must purchase potable water. There could be other water resources that CAWD could take on developing to mitigate impacts of water supply shortages on the economy (such as aquifer storage and recovery, and desalination) if the regulatory environment allows it and funding is available.

## N.5.5 EARTHQUAKE

CAWD facilities are designed to latest building codes to handle seismic events that are in effect at the time of construction. However, damage to multiple CAWD facilities could still occur in a large earthquake. Many facilities were originally built in the 1950s through 1970s when seismic standards were less intensive than they are today. To mitigate hazard risk more detailed review of existing facilities structures would determine how well they will withstand an earthquake so targeted improvements could be implemented. Some seismic review work has already been done on a select few structures recently, but the entire system has not been reviewed to confirm current seismic vulnerabilities.

## N.5.6 FLOODING

A significant number of CAWD facilities are located in and around the Carmel River Lagoon Floodplain (a coastal floodplain). Flooding of the Carmel River Lagoon Floodplain during extreme river flow events can cause elevated water levels adjacent to the treatment plant and eventually floodwaters can enter onto the treatment plant site. This has occurred at the treatment facility in the past and has been a known hazard since before the current treatment facilities were built, thus the critical facilities were elevated and designed to operate continually during floods. Multiple less critical facilities are not as

protected from flooding including the Reclamation Plant Microfiltration and Reverse Osmosis Facility which does not have a significant freeboard over the 100-year flood elevation.

Low lying sewers in the collections system that serve the communities adjacent to the Carmel River Lagoon Floodplain are susceptible to flood impacts including damage to pump stations and infiltration of flood waters into the sewer that can cause sanitary sewer overflows (SSO).

The impacts associated with flash flooding and with riverine flooding are similar to that of coastal flooding. Sewer collection systems located throughout the CAWD service area can be impacted by localized stormwater flooding. If stormwater is not managed by the City or County, then stormwater can collect in streets and eventually find its way into the sewer system which can exceed the pipes capacity and lead to sewer overflows.

### N.5.7 HAZARDOUS MATERIALS INCIDENT

CAWD utilizes numerous hazardous chemicals at the treatment plant site for wastewater and recycled water treatment processes. The hazardous materials are managed by means of regulatory and safety standards to avoid any release. The hazardous materials are protected from hazards onsite such as flooding. However, just having these materials onsite at the treatment plant comes with some level of risk and further hazard mitigation could be implemented.

Additionally, water contamination can be an issue for the wastewater treatment plant as the collection system is prone to people or businesses dumping hazardous materials or contaminants into the sewer system. CAWD is required to conduct source control of the system to identify misuse of the sewer system. However, it requires significant investment to eliminate the possibility of illicit discharges into the sewer system.

### N.5.8 HUMAN CAUSED HAZARDS

CAWD is heavily reliant on information technology (IT) and computerized process automation for the operation of the collection system pump stations and the wastewater treatment plant facilities. A cyber-attack could hamper the functioning of the critical service that CAWD provides, leading to sewer backups and discharge of untreated sewage. Given the prevalence of cyber-attacks in the US, CAWD takes cyber security very seriously and hires an outside network security company to provide system security updates, surveillance, geofencing, phishing training, off site backups, and setting up software password protocols. Furthermore, in house staff is working on eliminating legacy windows computers from use on the network and has created a task force of internal staff to build a cyber security culture.

However, given the dynamic nature of IT and cyber security, and the extensive use of IT and automation by CAWD, ongoing efforts are needed to keep up with the latest security measures, and this is anticipated to become even more difficult into the future as cyber security threats become more sophisticated. Implementing ongoing technology improvements and hiring experienced cyber security experts is needed.

As critical infrastructure with a high replacement cost, CAWD facilities could be a target for terrorism. A terrorist attack could seriously jeopardize the continuous operations of sewer collections, treatment, and recycled water production. The CAWD infrastructure is unlikely to experience any impacts associated with mass migration and targeted violence.

### N.5.9 PUBLIC HEALTH HAZARDS

Based on the experience of the COVID-19 pandemic, there are improvements that CAWD could make to protect employees and maintain continuous wastewater collection and treatment through a pandemic or epidemic. CAWD facilities cannot be abandoned by staff for more than a few days before the system will begin to experience failures and ultimately catastrophic failure would occur if there were no staff to operate and maintain the systems.

Social distancing, creating segregated work environments, ventilation improvements, and stockpiling Personal Protective Equipment (PPE) are all potential mitigations in the event of another pandemic/epidemic.

### N.5.10 SEVERE WEATHER

Severe winter storms have the potential to create flooding issues as described in the flooding section. Furthermore, severe storms in the area often involve high winds. Being located along the coast in California, the CAWD facilities are not designed for any extended duration freeze events. If weather patterns change as a result of climate change, CAWD facilities could be stressed and fail as a result of freezing pipes and failure of electrical systems without adequate heating and insulation.

A major hazard associated with windstorms is subsequent to the hazards of trees falling over. Falling trees can result in roots pulling out of the ground, pulling sewer pipes up along with the roots. Trees surrounding the wastewater treatment facility could fall on critical infrastructure in the facility because they are located in close proximity to buildings onsite. Furthermore, windstorms can cause prolonged and serious power outages, such as could happen if a tree damages the main PG&E aerial power feed to the treatment plant which traverses through a highly wooded area.

Being located along the coast in California where the weather is typically mild, the CAWD facilities are not designed for extreme heat. Because of the typical mild weather, most temperature sensitive facilities owned and operated by CAWD do not have air conditioning systems installed. If weather patterns change as a result of climate change, CAWD facilities could be stressed and fail as a result of overheating of electrical systems without adequate cooling systems.

### N.5.11 SLOPE FAILURE

Slope failure is an issue in many different locations in the CAWD collection system because the Carmel area contains hilly and steep topography. Many residential developments are located on hillsides which provide great views but locating buildings in these locations comes with infrastructure challenges. Many CAWD sewer lines were built on slopes to serve developments located in hilly areas. Pipelines on a slope can easily fail as a result of a slope failure, and as time goes on the risk of erosion and slope stability issues slowly increases.

### N.5.12 TSUNAMI

According to the Tsunami Inundation Map for Emergency Planning – Monterey Quadrangle prepared July 1, 2009 by California Emergency Management Agency the following infrastructure is within, or at the edge of, the mapped tsunami hazard zone:

- West side of the CAWD Treatment Plant – mouth of Carmel River
- 8th & Scenic Pump Station - Carmel
- Monte Verde & 16th Pump Station - Carmel
- Bay & Scenic Pump Station - Carmel
- Calle la Cruz Pump Station - Carmel

One concern is preventing infrastructure from becoming inundated by a tsunami event. Furthermore, structural damage from intense wave loading could be a concern for structures within the tsunami zone.

### N.5.13 UTILITY INTERRUPTION

Much of the CAWD treatment and conveyance systems are reliant on electricity to function. Critical facilities must be maintained and operational 24/7 and therefore the most critical facilities have onsite backup power. However, there are improvements that could be implemented to further fortify and maintain function of critical systems with backup power sources, and to mitigate utility interruption. For instance, the reclamation plant does not have any standby power and will not function in a power outage. Another potential hazard issue identified is that the main PG&E power line coming into the treatment facility goes through a forested area via aerial power lines. It would provide more resiliency to have the plant PG&E power come into the plant via an underground feeder.

### N.5.14 WILDFIRE

The CAWD service area includes many rural areas that are susceptible to wildfire hazards. California continues to experience an increase in wildfire hazards due to climate change and an increase in excess fuel. The California Public Utilities Commission has developed a Fire Threat Map. The map identifies two tiers for fire hazards. Tier 2 is elevated fire hazard and tier 3 is extreme fire hazard.

The CAWD facilities that are the closest in proximity to tier 2 areas are listed below. Highlands pump station is in the tier 2 zone (elevated fire hazard).

- CAWD Treatment Plant – mouth of Carmel River
- Calle la Cruz Pump Station – Carmel
- Ribera Pump Station – Carmel
- Hacienda Pump Station- Carmel
- Highlands Pump Station – Carmel Highlands

### N.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The CAWD wastewater treatment plant was originally designed to continue to operate during and after flood events which were known to occur at the time of the design of the existing facilities. The CAWD plant has operated through multiple flood events in the past and has been continually treating sewage on site for over 100-years.

According to a study performed by Environmental Science Associates (ESA) in December 2018 increased storm intensity as well as sea level rise will not detrimentally affect the CAWD facility before the year 2062 under the "Extreme Risk Aversion" scenario. This allows for over 40-years of continued operation in the existing location. The next 40 years will provide time for CAWD to evaluate future improvements of increasing flood resiliency at higher levels vs. potentially relocating the facility. In the near term, the sea level rise projections do not identify new hazards to the facility of greater concern than the 100-year flood risks that CAWD has planned for. However, in the long-term increased storm intensities as well as higher sea levels may increase the base flood elevations.

## N.6 CAPABILITY ASSESSMENT

The District performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table N-2*
- An assessment of administrative and technical capabilities is presented in *Table N-3*
- An assessment of fiscal capabilities is presented in *Table N-4*
- An assessment of education and outreach capabilities is presented in *Table N-5*
- An overall self-assessment of capability is presented in Section N.6.1 in *Table N-6*

**Table N-2**
**Planning and Regulatory Capability**

| Document, Program, Requirement | | Department | Comments |
|---|---|---|---|
| General Management Plan | ☒ | • Engineering | Sanitary Sewer System Management Plan |
| Capital Improvement Plan | ☒ | • All | Included in annual budget – 15-year Long Term Capital Plan. Reviewed and modified annually to anticipate necessary capital projects in advance to allow time to secure funding |
| Stormwater Management Plan | ☒ | • Engineering | Stormwater Pollution Prevention Plan |
| Coastal Management Plan | ☒ | • Engineering | Coastal Hazards Monitoring Plan- establishes data collection tools to evaluate progression of local hazards related to sea level rise |
| Climate Action/ Adaptation Plan | ☒ | • Engineering | Completed Sea Level rise study in 2018. Currently reporting to Coastal Commission on changes in sea level rise at WWTP location |
| Emergency Operations Plan | ☒ | • All | Business Response Plan/Emergency Action Plan. CAWD staff are Disaster Service Workers and are trained to safely operate and maintain the critical sewer infrastructure 24/7 and during emergencies |
| Specific Emergency Response Plans | ☒ | • Safety | Business Response Plans, FAST Plan |
| Continuity of Operations Plan | ☒ | • All | Maintain 24/7 service of sewer system |

**Table N-2**
**Planning and Regulatory Capability**

| Document, Program, Requirement | | Department | Comments |
|---|---|---|---|
| Evacuation Plan | ☒ | • All | |
| Illness and Injury Prevention Plan | ☒ | • Safety | Employee Safety Programs (PPE/Trainings)<br>Confined Space Program |
| Business Response Plan | ☒ | • Safety | |
| Hazardous Materials Plan | ☒ | • Safety | Spill Prevention, Control and Countermeasure Plan<br>Hazardous Material Plans and Training |
| Site Plan Review Requirements | ☒ | • Engineering | Performed by Plant Engineer when applicable |
| Other: | • Hazard Communication Program (HAZCOM)<br>• Sanitary District Act of 1923<br>• CAWD Uniform Plumbing Ordinance<br>• Lateral Permits/Building Permit Review | | |

**Table N-3**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Engineering | Plant Engineer, Principal Engineer |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Engineering | Plant Engineer, Principal Engineer |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Engineering | Plant Engineer, Principal Engineer |
| Building Inspector | ☒ | • Engineering<br>• Source Control | Plant Engineer, Principal Engineer |
| Emergency Manager | ☒ | • Safety | General Manager, Safety & Compliance Officer |
| Resource development staff or grant writers | ☐ | | |
| Public Information Officer | ☒ | • Admin | Duty performed by General Manager |
| Scientist(s) familiar with the hazards of the community | ☐ | | |
| Staff with education or expertise to assess the | ☒ | • Engineering<br>• Safety | Plant Engineer, Principal Engineer, Safety & Compliance Officer |

**Table N-3**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| community's vulnerability to hazards | | | |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Engineering | Plant Engineer, Principal Engineer, also maintains a contract with Turf Image for GIS services |
| Maintenance programs to reduce risk | ☒ | • Engineering<br>• Maintenance<br>• Collections | Plant Engineer, Principal Engineer, Collection Superintendent |
| Warning systems/services | ☒ | • Engineering<br>• Maintenance<br>• Collections | CAWD SCADA System/CAWD Website |
| Mutual Aid Agreements | ☐ | | No written agreements currently in place; however, several Informal connections with other nearby water and wastewater utility providers |
| Other: | • Safety Committee- Safety Regulatory Compliance Administrator / Operations / Maintenance / Engineering | | |

**Table N-4**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | Principal Accountant, General Manager |
| Capital Improvements Project Funding | ☒ | • Finance | Principal Accountant, General Manager, Funding associated with a CIP would also have a Project Manager. $3.3 million per year in capital improvement projects to ensure the continued safe, hazard-resilient wastewater and water recycling services to CAWD's service area. |
| Special Purpose Taxes | ☐ | | |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☒ | • Finance | All sewer utility fees collected are used in the operation and maintenance of CAWD's infrastructure. This includes CIP projects and maintenance functions which extend useful life. |
| Development Impact Fees | ☐ | | |
| General Obligation Bonds | ☐ | | |
| Special Tax and Revenue Bonds | ☐ | | |

**Table N-5**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, etc. | ☒ | • Manager<br>• Safety | CAWD participates in peninsula wide Fats, Oils, and Grease Program |
| Ongoing public education or information program | ☒ | • Manager<br>• Safety<br>• Collections | Educating the public about the valuable services provided by CAWD and how these relate to public health, environmental protection, and drought resiliency in the District's service area. Multiple platforms for customer and constituent interaction with CAWD, which increases the ease of reporting concerns resulting in quicker incident response times and in some cases, incident prevention. |
| Natural disaster or safety related school programs | ☒ | • Safety | Provides annual tours to local schools. Via cawd.org, educators can access educational resources for their students and interested citizens can learn more about topics like best management practices for household hazardous waste and sewer maintenance, both of which reduce the occurrences of accidental exposure and/or sanitary sewer overflows. |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |
| Other: | Ongoing training for employees and contractors performing work for CAWD on prevention and mitigation of occupational hazard incidents and control of hazardous materials and other environmental pollutants | | |

*Political Capability*

The CAWD Board is very willing to engage on issues related to sanitary sewer systems and treatment facilities. They have begun working on Sea Level Rise and the impact on their facilities.

## N.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The Carmel Area Wastewater District is a Special District and is therefore not eligible for flood insurance under the National Flood Insurance Program (NFIP).

## N.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table N-6**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | High |
| Fiscal Capability | High |
| Education and Outreach Capability | High |
| Political Capability | High |
| **Overall Capability** | **High** |

## N.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

CAWD does an excellent job as a Special District, but their jurisdiction is limited to sanitary sewer issues. Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## N.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the District made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The District will strive to ensure consistency between the hazard

mitigation plan and the current and future capital improvement plan. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Sanitary Sewer System Management Plan:** State regulatory requirement to ensure efforts are made to reduce risks to public health, property and the environment
- **Coastal Hazards Monitoring Plan:** This plan establishes data collection tools to evaluate progression of local hazards related to sea level rise
- **Sea Level Rise Study:** Analysis of the possible effects of sea level rise changes at WWTP location.
- **Business Response Plan/Emergency Action Plan:** CAWD staff are Disaster Service Workers and are trained to safely operate and maintain the critical sewer infrastructure 24/7 and during emergencies.

*Opportunities for Future Integration*

As this hazard mitigation plan is implemented, the Carmel Area Wastewater District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in **Volume 1**. New opportunities for integration also will be identified as part of the annual progress report. The plans and programs listed in the Capability Assessment cover the majority of District operations where the hazard mitigation goals are addressed. However, the capability assessment identified the opportunity for future integration of recommendations of the hazard mitigation plan for all the plans and programs listed as they are updated periodically

## N.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the Districts' Planning Committee identified key vulnerabilities and hazards of concern. The Hazard Problem Statements were primarily derived from CAWD's Hazard Mitigation Planning Committee and informed by review of existing literature about CAWD's assets and analysis using best available data relating to the vulnerability analysis for each piece of CAWD's critical infrastructure. They were developed to assist in the identification and analysis of potential hazard mitigation actions for CAWD.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the District are identified below:

### N.7.1 COLLECTIONS SYSTEM

- Infrastructure requires capital investment to ensure safe, reliable sewer collections services.
- Collection's systems must operate continuously (24/7) as wastewater doesn't stop flowing.
- Infrastructure is coastally located and thus vulnerable to sea-level rise, tsunami, coastal erosion, coastal flooding, and intense storm events.

- The CAWD collection system is located in areas with a high level of environmental scrutiny and regulation. This makes completing projects more difficult due to the many regulatory requirements for doing projects even though they are necessary to maintain the sewers in good condition and improve resiliency of the system from hazards.
- Conservation in CAWD's service area is reducing the amount of flow in sewers to move solids down gravity pipelines.
- Extending sewer collection service to remote areas of District which were originally developed by means of septic tanks.

### N.7.2 WASTEWATER TREATMENT PLANT

- Infrastructure requires capital investment to ensure safe, reliable wastewater and water recycling services.
- Treatment systems must operate continuously (24/7) as wastewater doesn't stop flowing.
- Infrastructure is coastally located and thus vulnerable to sea-level rise, tsunami, coastal erosion, coastal flooding, and intense storm events.
- Conservation in CAWD's service area is changing the characteristics of wastewater.
- New regulations in the future could require changes in treatment process.

### N.7.3 RECLAMATION PLANT (RECYCLED WATER FACILITIES)

- Infrastructure requires capital investment to ensure safe, reliable water recycling services.
- Recycled water supply is largely dependent on resources that fluctuate with rainfall and are heavily influenced by conservation trends.
- Infrastructure is coastally located and thus vulnerable to sea-level rise, tsunami, coastal erosion, coastal flooding, and intense storm events.

## N.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The Carmel area is vulnerable to a wide range of hazards, both natural and manmade, which threaten the life and safety of residents and visitors. While complete elimination of the hazards facing CAWD's infrastructure is not likely, adequate, proactive planning and preparation for such occurrences can greatly reduce the impact on the communities, environments, and economies it serves.

The District's Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the District's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Plan Action Plan Matrices lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

*Table N-8* contains the Hazard Mitigation Plan Action Plan for the CAWD Collection System and *Table N-9* contains the Hazard Mitigation Plan Action Plan for the CAWD WWTP and Reclamation Plant.

### *Status of Previous Plan Actions*

CAWD has experienced infrastructure damage from natural disasters in the recent past. The "Hatton Canyon Pipeline Replacement Project" was completed recently, and the work was funded through Cal OES hazard mitigation grant funding. CAWD is proven capable of successfully implementing hazard mitigation grant funds.

**Table N-8**
**CAWD Collection System Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **1** | 3 – 5 years | Gravity Sewer - Carmel Meadows | Slope Failure, Earthquake, Water Contamination | • Relocate the pipeline off the slope.<br>• Improve stability of slope via shoring or retaining walls.<br>• Install seamless pipe so joints don't fail.<br>• Install anchorage to keep pipe from sliding. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **2** | 3 – 5 years | Gravity Sewer - Pescadero Creek | Slope Failure, Earthquake, Water Contamination | • Relocate the pipeline off the slope.<br>• Improve stability of slope via shoring or retaining walls.<br>• Install seamless pipe so joints don't fail.<br>• Install anchorage to keep pipe from sliding. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **3** | 3- 5 years | Scenic Rd Sewer Lines | Coastal Erosion, Sea Level Rise, Earthquake | • Relocate pipes farther inland.<br>• Replace pipe with seamless pipe so it is less susceptible to failure at pipe joints. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **4** | As Needed | Pump Station – Calle La Cruz | Flooding, Riverine Flooding, Sea Level Rise, Flash Flood, Slope Failure | • Relocate the Pump Station to higher ground or retrofit the pump station to handle higher flood levels and slope erosion. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-8**
**CAWD Collection System Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **5** | As Needed | Pump Station - Monte Verde and 16th | Coastal Flooding, Sea Level Rise, Flash Flood, Levee Failure, Storm Water Flooding, Dam Failure | • Waterproof the station structure and wet well.<br>• Install flood walls.<br>• Increase Pump Station size to handle flood inflows.<br>• Relocate electrical panels away from flood impacts. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **6** | 3 – 5 years | Pump Station - Bay and Scenic | Coastal Erosion, Sea Level Rise, Tsunami | • Pump Station Retrofit to handle new conditions caused by Sea Level Rise.<br>• Relocate Pump Station Inland or eliminate Pump Station by requiring homes to install residential sewer pumps stations.<br>• Move electrical panels to higher ground. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **7** | As Needed | Pump Station – 8th and Scenic | Coastal Erosion, Sea Level Rise, Tsunami | • Pump Station Retrofit to handle new conditions caused by Sea Level Rise.<br>• Relocate Pump Station Inland or eliminate Pump Station by requiring homes to install residential sewer pump stations.<br>• Move electrical panels to higher ground. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **8** | As Needed | All Pump Stations | Utility Interruption/ Public Safety Power Shutoff, Windstorms | • Pre-position emergency power generation capacity (or have rental/lease agreements for generators) in critical locations for continuity services.<br>• Install 480V battery backup systems.<br>• Purchase a new engine driven bypass pump for Highlands Pump Station. | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-8**
**CAWD Collection System Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **9** | As Needed | All Pump Stations | Cyber-Attack | • Upgrade network hardware and software.<br>• Build a standby / backup server.<br>• Encrypting internal control system network.<br>• Hire network security firm to implement security improvements.<br>• Hire network security firm to monitor network and manage security. | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **10** | As Needed | All Pump Stations | Earthquake | • Commission a structural analysis of the most critical pump stations.<br>• Complete structural modifications for earthquake safety as necessary. | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **11** | In Progress | Low lying sewers in Carmel Point and Mission Fields | Flooding, Flash Flood, Levee Failure, Sea Level Rise, Localized Stormwater Flooding, Tsunami | • Install watertight manhole lids to mitigate inflow.<br>• Install seamless piping to mitigate infiltration.<br>• Repairing manholes structures and/or lining them to mitigate infiltration. | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-8**
**CAWD Collection System Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **12** | 3 – 5 years | Low lying sewers around Rio Rd East of Hwy 1) | Riverine Flooding, Coastal Flooding, Flash Flood, Levee Failure, Sea Level Rise, Localized Stormwater Flooding, Dam Failure | • Install watertight manhole lids to mitigate inflow.<br>• Install seamless piping to mitigate infiltration.<br>• Repairing manholes structures and/or lining them to mitigate infiltration. | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **13** | As Needed | Sewer Lines on Slopes Greater than 2:1 | Slope Failure | • Conduct detailed geological investigations of facilities to determine the risk of damage from slope instability.<br>• Improve stability of existing slope via shoring or retaining walls.<br>• Install seamless pipe so joints don't fail.<br>• Install anchorage to keep pipe from sliding. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-8**
**CAWD Collection System Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **14** | Ongoing | All Sewer Lines | Severe Winter Storms, Localized Stormwater Flooding | • Continue to repair/replace and make structural improvements to pipelines to enable them to perform to their design capacity.<br>• Televise gravity interceptors to identify structural and joint problems and verify the condition<br>• Continue maintenance efforts to keep pipelines free of obstructions. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **15** | As Needed | All Sewer Lines | Drought & Water Shortage | • Expand in-situ sewer cleaning capabilities to increase frequency of cleaning to avoid backups due to poor solids conveyance.<br>• Purchase a cleaning truck that recycles cleaning water in the truck to use less water during cleaning.<br>• Expand sewer system to collect septic tank water. | Low | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **16** | Ongoing | Sewer Manholes | Severe Winter Storms, Localized Stormwater Flooding | • Replace or repair deficient manholes to reduce infiltration.<br>• Ongoing inspections.<br>• Install watertight lids | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **17** | As Needed | All Pump Stations | Extreme Cold & Freeze | • Review electrical control systems for major stations to determine if enough independent operations exist between each control system to ensure single system failure cannot disable the station. | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-8**
**CAWD Collection System Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **18** | As Needed | All Pump Stations | Extreme Heat | • Review electrical control systems for major stations to determine if enough independent operations exist between each control system to ensure single system failure cannot disable the station.<br>• Install odor control / hazardous sulfide gas control.<br>• Add Air Conditioning to cool electrical panels.<br>• Purchase an engine driven bypass pump for Highlands Pump Station. | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **19** | 3 – 5 years | Highlands Pump Station | Wildfire | • Purchase an engine driven bypass pump for Highlands Pump Station. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **20** | Ongoing | Personnel | Pandemic, Epidemic | • Establish formal mutual aid agreements.<br>• Install provisions for social distancing employees. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **21** | Ongoing | Critical Supplies | Pandemic, Epidemic | • Construct or otherwise obtain additional storage facilities to stockpile necessary supplies that may be disrupted during a global pandemic. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-8**
**CAWD Collection System Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **22** | As Needed | All Sewer Lines not under streets | Windstorms | • Remove trees with roots that may intrude under sewer lines. Trees fall over in the wind and can pull sewers out of the ground with the roots ball. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **23** | Ongoing | Sewer lines near waterbodies or storm drains | Water Contamination (i.e., protection of natural waters) | • Seal manholes and sewer lines to limit exfiltration.<br>• Replace pipes and manholes<br>• Map all storm drains in the District to plan containment strategies near storm inlets in event of sewer overflow. | High | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |
| **24** | As Needed | Collections Office and Vehicle Storage Building | Coastal Flooding, Riverine Flooding, Sea Level Rise, Flash Flood | • Relocate collections offices and vehicle storage to a new location away from the flood plain. | Medium | Collections | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-9**
**CAWD Wastewater Treatment Plant and Reclamation Plant Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **1** | As Needed | Ocean Outfall Pipeline | Coastal Erosion | • Install a new Outfall deeper underground | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **2** | Ongoing / As Needed | Wastewater Treatment and Reclamation Plant | Riverine Flooding, Coastal Flooding, Flash Flood, Dam Failure | • All new construction within the 100-year flood zone to be completed with design that will limit damage from floods.<br>• Adapt existing structures to handle higher/more frequent floods onsite.<br>• Relocate treatment plant.<br>• Install area groundwater dewatering pumps.<br>• Pump floodwaters to a new aquifer storage well system offsite. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **3** | Ongoing / As Needed | Treatment Plant Access Road | Riverine Flooding, Coastal Flooding, Flash Flood, Dam Failure | • Provide secondary access into the treatment plant by replacing or renovating existing CAWD pedestrian bridge over Carmel River.<br>• Relocate treatment plant. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-9**
**CAWD Wastewater Treatment Plant and Reclamation Plant Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **4** | Ongoing | Wastewater Treatment and Reclamation Plant | Cyber-Attack | • Upgrade network hardware.<br>• Build a standby / backup server.<br>• Upgrade network software.<br>• Encrypting internal control system network.<br>• Hire network security firm to implement security improvements.<br>• Hire network security firm to monitor network and manage security. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **5** | As Needed | Wastewater Treatment and Reclamation Plant | Drought & Water Shortage | • Install a smaller blower/aerator. | Low | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **6** | As Needed | Reclamation Plant | Drought & Water Shortage | • Implement an Aquifer Storage and Recovery project to maximize water recycling during wet weather flows.<br>• Add ocean desalination capabilities for water resources.<br>• Expand dry weather stormwater diversions into sewer system. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **7** | As Needed | Wastewater Treatment and Reclamation Plant | Earthquake | • Commission a structural analysis of critical structures ability to withstand earthquakes.<br>• Retrofit existing structures as necessary. | Medium | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-9**
**CAWD Wastewater Treatment Plant and Reclamation Plant Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **8** | Ongoing / As Needed | Wastewater Treatment and Reclamation Plant | Pandemic, Epidemic | • Install new separate workspaces to replace communal workspaces to allow social distancing.<br>• Upgrade Process Automation.<br>• Add onsite housing for staff to maintain facility without contact to outside.<br>• Add ventilation improvements to treat airborne vectors (HEPA, UV light, Ozone, etc.). | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **9** | As Needed | Wastewater Treatment and Reclamation Plant | Extreme Cold & Freeze | • Insulate exposed piping.<br>• Enclose the MF/RO Reclamation Facility. | Medium | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **10** | As Needed | Wastewater Treatment and Reclamation Plant | Extreme Heat | • Add Air Conditioning to cool electrical panels and PLC panels. | Medium | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **11** | Ongoing | Wastewater Treatment and Reclamation Plant | Hazardous Materials Incident | • Provide training to employees in the handling, storage, and control of hazardous materials. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-9**
**CAWD Wastewater Treatment Plant and Reclamation Plant Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **12** | Ongoing / As Needed | Wastewater Treatment and Reclamation Plant | Sea Level Rise | • Adapt existing structures to handle higher and more frequent floods onsite.<br>• Relocate treatment plant. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **13** | Ongoing | Wastewater Treatment Plant | Severe Winter Storms | • Maintain treatment plant conveyance capacity to handle large wet weather flows.<br>• Invest in collections system improvements to reduce infiltration and inflow during wet weather.<br>• Invest in additional flow equalization facilities (i.e., storage) onsite and/or offsite. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **14** | Ongoing / As Needed | Wastewater Treatment and Reclamation Plant | Terrorist Attack | • Install more security cameras.<br>• Install a secure fence around the site.<br>• Hire a specialist to do a threat vulnerability risk assessment for infrastructure.<br>• Hire a security firm to monitor site outside normal business hours.<br>• Underground the main PG&E overhead power line from Rio Rd to the Treatment Plant site. | Medium | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-9**
**CAWD Wastewater Treatment Plant and Reclamation Plant Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **15** | As Needed | Wastewater Treatment and Reclamation Plant | Tsunami | • Commission a structural analysis of critical structures ability to withstand tsunami and retrofit existing structures as necessary. | Low | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **16** | As Needed | Ocean Outfall Pipeline | Tsunami | • Install a new Outfall deeper underground. | Low | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **17** | As Needed | Wastewater Treatment and Reclamation Plant | Utility Interruption/ Public Safety Power Shutoff | • Underground the main PG&E overhead power line from Rio Rd to the Treatment Plant site.<br>• Install standby power system (backup generators) for Reclamation Plant.<br>• Install battery backup system.<br>• Increase diesel fuel storage capabilities.<br>• Provide for standby power generation capacity using natural gas.<br>• Add a redundant Internet Service Provider (ISP). | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **18** | As Needed | Wastewater Treatment and Reclamation Plant | Water Contamination | • Hire a dedicated Source Control employee to investigate pollutants entering sewer system.<br>• Implement more upstream sampling equipment and analysis to enable better Source Control.<br>• Create a Source Control GIS database. | Medium | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |

**Table N-9**
**CAWD Wastewater Treatment Plant and Reclamation Plant Hazard Mitigation Action Plan Matrix**

| Action # | Timeframe | Asset / Location | Hazard Mitigated | Potential Mitigation | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|---|
| **19** | As Needed | Wastewater Treatment and Reclamation Plant | Wildfire | • Underground the main PG&E overhead power line from Rio Rd to the Treatment Plant site.<br>• Provide greater setback between treatment plant structures and tall eucalyptus trees used to hide treatment plant from public view. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |
| **20** | As Needed | Wastewater Treatment and Reclamation Plant | Windstorms | • Underground the main PG&E overhead power line from Rio Rd to the Treatment Plant site.<br>• Provide greater setback between treatment plant structures and tall eucalyptus trees used to hide treatment plant from public view. | High | Treatment | General Fund, Grants, HMGP, CIP, Utility Fees |

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# ANNEX O: MONTEREY ONE WATER

2021 Monterey County
Multi-Jurisdictional
Hazard Mitigation Plan

Monterey One Water

# O. MONTEREY ONE WATER

## O.1 HAZARD MITIGATION PLAN POINT OF CONTACT

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## O.2 AGENCY PROFILE

### O.2.1 LOCATION AND SERVICE AREA

Monterey One Water (M1W), formerly Monterey Regional Water Pollution Control Agency is a Joint Powers Authority (JPA) that provides wastewater and water recycling services to 11 member entities situated in the Monterey Bay Area. The Agency receives wastewater from the following areas:

- Boronda County Sanitation District
- Castroville Community Services District
- Del Rey Oaks
- Salinas
- Seaside
- Marina Coast Water District
- Unincorporated Areas of Monterey County
- Monterey
- Pacific Grove
- Sand City

M1W's service area encompasses 90.5 square miles and includes the operation and maintenance of a vast network of infrastructure and assets, most principally: the Regional Treatment Plant (RTP); pump stations; gravity and force mains; land/ocean outfall; the Salinas Valley Reclamation Project (SVRP); Castroville Seawater Intrusion Project (CSIP); Salinas River Diversion Facility (SRDF); and Pure Water Monterey (PWM) Advanced Water Purification Facility (AWPF) and Injection Well Facilities (IWF).

### O.2.2 HISTORY

Before M1W's establishment, every community in the Monterey Bay area had its own wastewater treatment plant. Most of the communities were discharging their sewage into the Monterey Bay with limited treatment and, in some cases, as little as 300 feet offshore. In 1972, the United States enacted the Federal Clean Water Act which protects against water pollution and regulates discharging of pollutants into waters of the US. This set of policies required communities to collaborate to increase treatment standards and bring regional efficiency to sewer system management.

A JPA formed the "Monterey Peninsula Water Pollution Control Agency" in 1972 by the Cities of Monterey, Pacific Grove, and the Seaside County Sanitation District. Its purpose was to seek joint solutions to water pollution. The membership has grown to include the cities of Seaside, Del Rey Oaks, Sand City, Salinas, Castroville County Sanitation District, Boronda County Sanitation District, County of

Monterey, Marina Coast Water District, and Fort Ord (ex-officio member). To reflect the larger service area, the name was changed to Monterey Regional Water Pollution Control Agency 1979. Construction of the RTP, owned and operated by the Agency, was completed in 1990 with an average dry weather design capacity of 29.6 million gallons per day (MGD).

In addition to Federal Clean Water Act requirements, it became evident during the early 1970s that the quality of northern Monterey County's groundwater supply was deteriorating due to extensive withdrawal for agricultural purposes. This overdraft increased seawater intrusion, which threatened the multibillion-dollar agricultural industry and the drinking water supply for the City of Salinas. It also presented an opportunity for water recycling to introduce new water supplies for the community. Under a 1996 agreement with the Monterey County Water Resources Agency (MCWRA), the Agency constructed the 29.6 MGD SVRP to provide recycled water to growers in the Salinas Valley and to slow seawater intrusion. The distribution portion of the system, known as the CISP, delivers water through 45 miles of pipeline to 12,000 acres of farmland in the northern Salinas Valley nearly year-round.

Recently, to address state-ordered cutbacks in utilization of existing surface water supplies on the Monterey Peninsula, M1W, in partnership with the Monterey Peninsula Water Management District (MPWMD), developed the Pure Water Monterey Groundwater Replenishment Project (PWM/GWR) to inject 3,500 acre-feet per year (AFY) of purified recycled water to replenish the Seaside Groundwater Basin. The PWM/GWR Project will also provide recycled water for landscape irrigation in partnership with Marina Coast Water District (MCWD). The project includes an Advanced Water Purification Facility with a design capacity of 5 MGD, located adjacent to the RTP. The AWPF consists of ozone pre-treatment, low pressure membrane filtration, Reverse Osmosis (RO), advanced oxidation, and product water stabilization. Purified recycled water from the AWPF is conveyed by pipeline to the Seaside Groundwater Basin for recharge using both deep injection and vadose zone wells. The injected purified recycled water subsequently mixes with native groundwater and is stored for future urban use, including use as a potable water source.

### O.2.3 GOVERNING BODY FORMAT

M1W is a public utility serving jurisdictions in northern Monterey County. The Agency is governed through a JPA. Each of the 11 member entities appoint a representative to the M1W Board of Directors to represent their jurisdictions. Current membership on the M1W Board includes elected officials from eight jurisdictions, a representative from the Monterey County Board of Supervisors, one member who is appointed by the Monterey County Board of Supervisors to represent the Boronda County Sanitation District, and an ex-officio representative from the US Army.

## O.3 PLANNING PROCESS

M1W followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the Agency formulated their own internal planning team to support the broader planning process.

M1W held a Hazard Mitigation Plan Stakeholder meeting on July 28, 2021 to discuss vulnerabilities, mitigation activities that had occurred since the last plan update, key problem statements, and mitigation strategies.

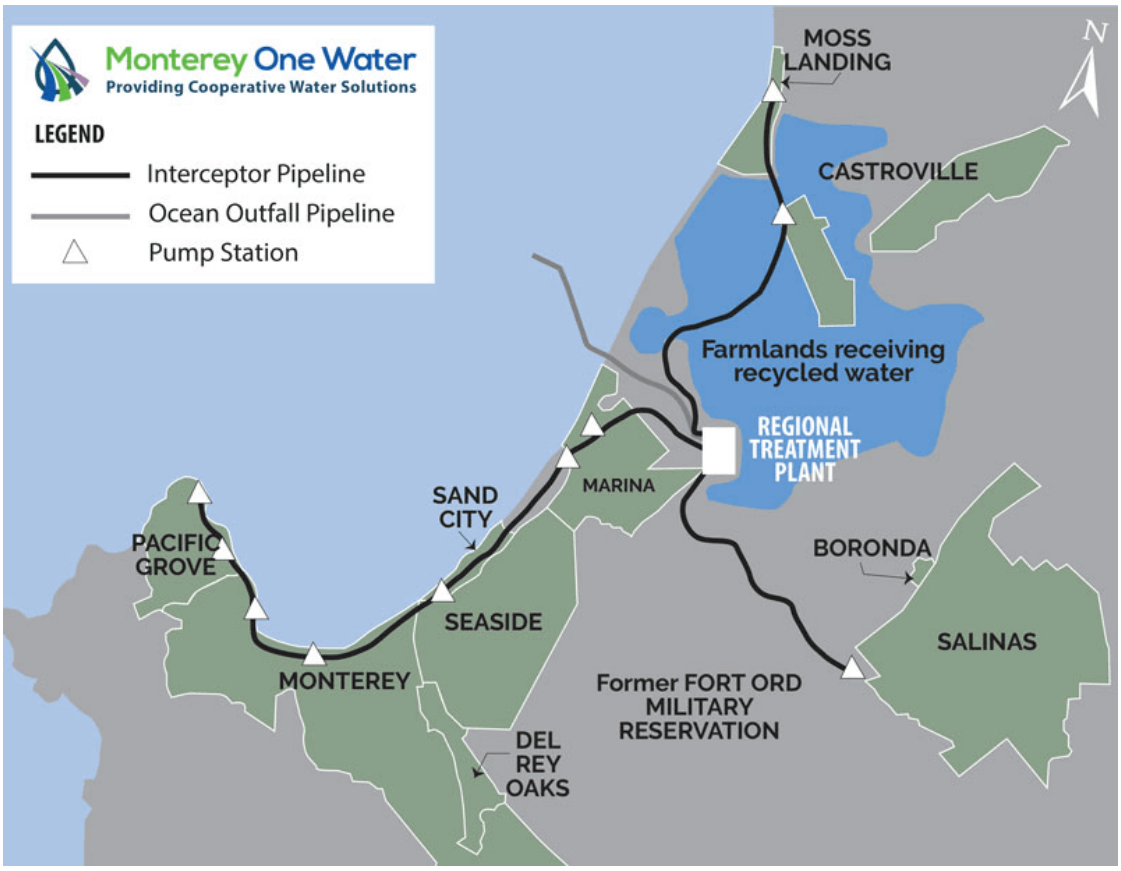
Key stakeholders present at the meeting included:

- Tamsen McNarie, Assistant General Manager
- Jennifer Gonzalez, P.E., Engineering Manager
- Jose O. Guzman, Chief Plant Operator
- Jonathan Mungcal, Utilities and Maintenance Services Manager
- Joanne Le, Laboratory and Environmental Services Manager
- Darrele Harris, Utilities Supervisor
- David Bradley, Operations Supervisor
- Nathan Clark, Operations Supervisor
- Sarah Stevens, Compliance Analyst

## O.4 FACILITIES

As mentioned previously, M1W's facilities and infrastructure include: The RTP; pump stations; gravity and force mains; land/ocean outfall; the SVRP; CSIP; Salinas River Diversion Facility (SRDF); and PWM AWPF and IWF. Monterey One Water's facilities are mapped in *Figure O-1*.

**Figure O-1**
**Monterey One Water Facilities Map**




M1W owns, operates, and maintains the RTP, located two miles north of the City of Marina and provides 'trunk line' wastewater conveyance services via a system of 14 M1W-owned pump stations

and 34.2 miles of force main and gravity pipeline (referred to collectively as the wastewater collection system, WCS). Additionally, M1W operates, under contract, 18 pump stations owned by its member entities. Wastewater within M1W's service area is collected through City owned, operated, and maintained sewer systems and conveyed to regional pump stations for subsequent conveyance to the RTP. This network allows M1W to treat and recycle on average 18.5 MGD from 268,000 constituents (2010 census). Secondary treated effluent not utilized for recycling is discharged to the Bay through M1W's outfall (land/ocean outfall), which consists of 2.5 miles of land and 2.1 miles of ocean pipeline.

The M1W-owned WCS includes three 'trunk line' interceptor systems and two river crossings. Each trunk line consists of a single pipeline, ranging in size from 6 to 60 inches in diameter that were constructed in several stages about 35 years ago. Line composition includes ductile iron; polyvinyl chloride pipe (PVC); high density polyethylene pipe (HDPE); vitrified clay pipe (VCP); reinforced concrete pipe (RCP); both lined and unlined concrete pipe. There are also 39 intermittent air/vacuum relief valves. Operating pressures vary from several hundred feet of head on the discharge side of large pump stations to un-pressurized gravity flows depending on system hydraulics. M1W's WCS joins member entity sewer systems at influent manholes of the corresponding pump stations.

In 2018 M1W completed a comprehensive study (Conveyance System Condition Optimization Analysis) to assess the condition of its pump stations and WCS infrastructure, identify near-term risks and mitigation strategies, and support a long-term asset management program that identifies sustainable funding needs for a 22-year planning horizon (2019-2040). Results of the study have been incorporated into M1W's Capital Improvement Plan (CIP) Master Plan as necessary. A similar study is planned to assess the condition of the RTP.

As part of the Agency's strategic goal to develop the use of recycled water within its service area, M1W has embraced the 'one water' approach which views all waters, drinking water, wastewater, stormwater, greywater, and others, as a resource that must be sustainably managed. Subsequently, in 2018 the Agency changed its name to Monterey One Water to reflect this principal. To that end, M1W jointly owns and operates two water recycling projects: one producing recycled water to supplement agricultural reliance on groundwater in the Salinas Valley, and one purifying water to drinking water standards for indirect potable reuse via groundwater replenishment on the Monterey Peninsula.

### *Agricultural Reuse*

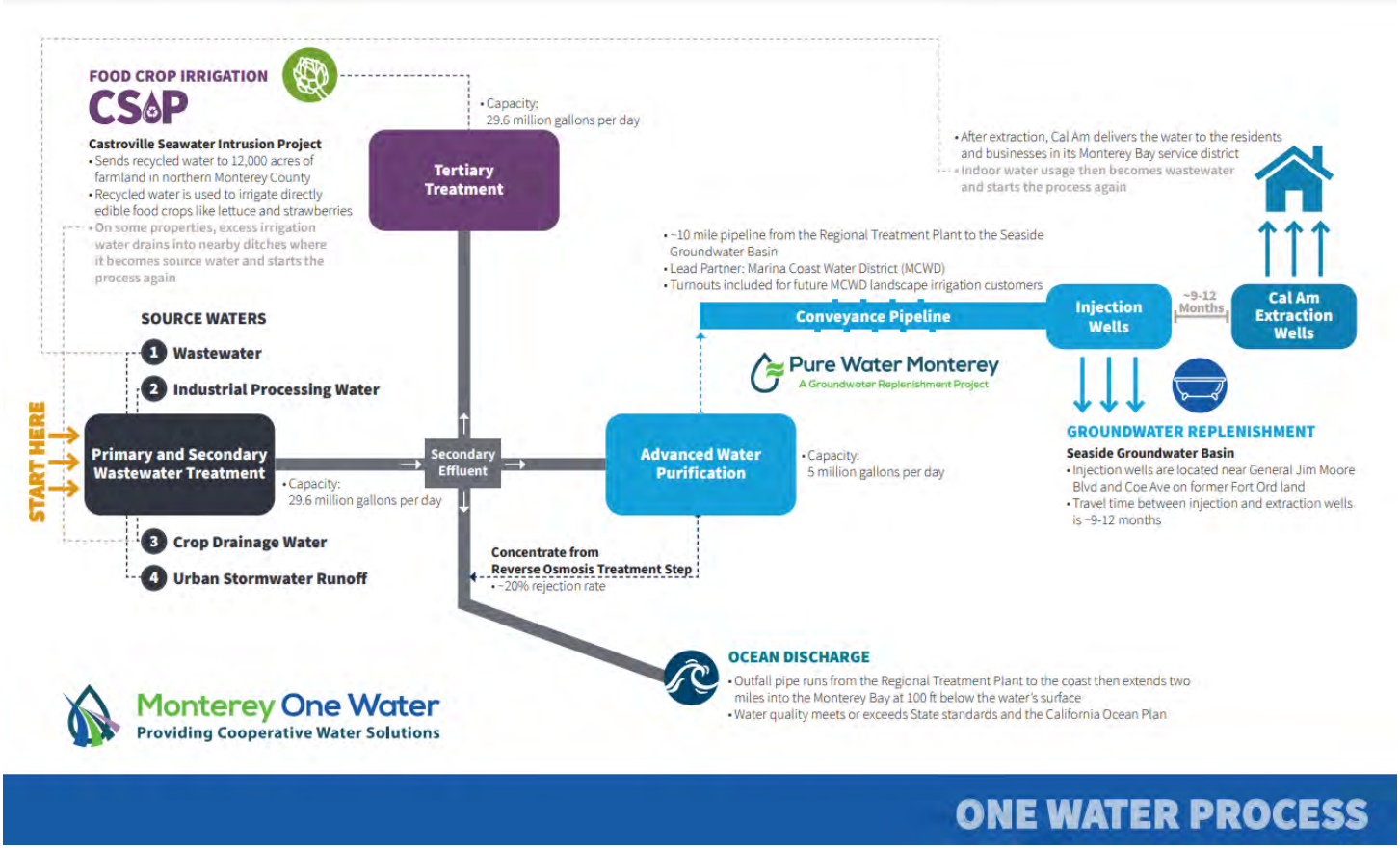
In 1992, M1W and the MCWRA formed a partnership to build the Monterey County Reclamation Projects (MCWRP): the SVRP recycled water plant and the CISP distribution system. Some years later in 2010, M1W and MCWRA again partnered to expand the MCWRP to include the SRDF to provide treated (filtered and chlorinated) river water for blending with SVRP recycled water when adequate releases from upstream reservoirs are available. These three facilities, paid for by Salinas Valley agricultural growers and property owners, provide irrigation water to 12,000 acres of Castroville farmland to assist in slowing seawater intrusion into local groundwater aquifers. Seawater intrusion threatens both agricultural water supply as well as urban/municipal drinking water supplies.

### *Indirect Potable Reuse and Groundwater Replenishment*

Monterey County is isolated from state and federal water projects requiring the region to rely solely on its limited, local water resources. For Monterey Peninsula residents and businesses, water historically came from two sources: 1) the Carmel River and 2) the Seaside Groundwater Basin. Overuse

threatened water quality and habitats, leading to state and court-ordered reductions in reliance upon these resources. To help address this challenge, M1W and its partners collaborated to develop a drought-resistant and independent water supply: Pure Water Monterey. Using a proven, multi-stage treatment process, the PWM AWPF treats wastewater into a safe, reliable, and sustainable water supply that complies with or exceeds strict state and federal drinking water standards. After production, the purified water is conveyed to the Seaside Groundwater Basin for injection, groundwater replenishment, and eventual potable reuse.

**Figure O-2**
**Monterey One Water Process**




## O.5 AGENCY SPECIFIC RISK ASSESSMENT

The intent of this section is to profile M1W's hazards and assess the Agency's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the M1W is included in this Annex.

The M1W Planning Team used the same risk assessment process as the Monterey County Steering Committee. The Agency's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the Agency. Each variable was scored by

hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**. *Table O-1* displays the results of the hazard risk ranking exercise that was performed by the M1W Planning Team.

**Table O-1**
**Threat Hazard Identification Risk Assessment (THIRA): Monterey One Water**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 3.0 | 3.0 | 2.0 | 3.0 | 11.0 | High |
| Coastal Erosion | 4.0 | 3.0 | 2.0 | 4.0 | 13.0 | High |
| Coastal Flooding | 2.0 | 2.0 | 2.0 | 3.0 | 9.0 | Moderate |
| Cyber-Attack | 4.0 | 3.0 | 3.0 | 4.0 | 14.0 | High |
| Dam Failure | 2.0 | 1.0 | 3.0 | 3.0 | 9.0 | Moderate |
| Drought & Water Shortage | 4.0 | 4.0 | 2.0 | 3.0 | 13.0 | High |
| Earthquake | 4.0 | 2.0 | 2.0 | 3.0 | 14.0 | High |
| Epidemic | 4.0 | 2.0 | 1.0 | 2.0 | 9.0 | Moderate |
| Extreme Cold & Freeze | 1.0 | 1.0 | 1.0 | 1.0 | 4.0 | Low |
| Extreme Heat | 3.0 | 2.0 | 2.0 | 2.0 | 9.0 | Moderate |
| Flash Flood | 2.0 | 1.0 | 3.0 | 3.0 | 9.0 | Moderate |
| Hazardous Materials Incident | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Low |
| Invasive Species | 1.0 | 1.0 | 1.0 | 1.0 | 4.0 | Negligible |
| Levee Failure | - | - | - | - | - | - |
| Localized Stormwater Flooding | 2.0 | 2.0 | 2.0 | 3.0 | 9.0 | Moderate |
| Mass Migration | - | - | - | - | - | - |
| Pandemic | 4.0 | 2.0 | 1.0 | 2.0 | 9.0 | Moderate |
| Riverine Flooding | 2.0 | 1.0 | 3.0 | 3.0 | 9.0 | Moderate |
| Sea Level Rise | 4.0 | 3.0 | 2.0 | 4.0 | 13.0 | High |
| Severe Winter Storms | 4.0 | 3.0 | 3.0 | 4.0 | 14.0 | High |
| Slope Failure | 1.0 | 3.0 | 2.0 | 3.0 | 9.0 | Moderate |
| Targeted Violence | 1.0 | 1.0 | 4.0 | 3.0 | 9.0 | Moderate |
| Terrorism | 4.0 | 3.0 | 3.0 | 4.0 | 14.0 | High |
| Tsunami | 4.0 | 3.0 | 2.0 | 4.0 | 13.0 | High |
| Utility Interruption/ PSPS | 4.0 | 3.0 | 1.0 | 3.0 | 11.0 | Moderate |
| Water Contamination | 4.0 | 2.0 | 4.0 | 4.0 | 14.0 | High |
| Wildfire | 1.0 | 1.0 | 1.0 | 1.0 | 4.0 | Low |
| Windstorms | 4.0 | 3.0 | 3.0 | 4.0 | 14.0 | High |

***Note**: Asterisks (*) indicate infrastructure jointly owned or operated by M1W with partner entities.*

### O.5.1 AGRICULTURAL EMERGENCIES

The following M1W infrastructure has the potential to impact agricultural emergencies or be impacted by an instance of agricultural emergency, including drought and bio-contamination.

- SVRP- Del Monte Boulevard, Marina
- CSIP- Castroville*
- SRDF- Salinas River, Marina*
- Castroville Pump Station- Highway 1 North, Castroville
- Salinas Pump Station- Hitchcock Road, Salinas
- Farmworker Housing Pump Station #1 – Hitchcock Road, Salinas
- Pond 3 Pump Station – South Davis Road, Salinas *
- Pipeline- 13.08 miles

Conjunctively the SVRP, the CSIP, and the SRDF provide recycled water to irrigate 12,000 acres of agricultural land in the Castroville area to supplement groundwater pumping with the intent to slow rates of seawater intrusion. As M1W and partner agency, MCWRA, recently observed, prolonged drought conditions adversely the impact the ability of these projects to perform their intended function. Principally, the SRDF remained non-operational during the drought from 2013 to 2016 due to limited in-stream flows for biological species downstream of the dam. This resulted in increases in groundwater pumping from supplemental wells in the area of seawater intrusion impact. However, since 1998 the projects have recycled more than 90 billion gallons of water for beneficial reuse. Should these services be interrupted again for an extended period, the 12,000 acres of crops would require an alternative water source, likely groundwater. This could result in worsened seawater intrusion into coastal aquifers which would potentially render agricultural land unfarmable.

M1W customers achieved remarkably high-water conservation benchmarks during this most recent drought period, resulting in less influent to the RTP for reclamation. In addition to reducing the volume of influent to the RTP, conservation has also changed the characteristics of the wastewater, possibly due to longer in-pipe retention times and higher concentrations. M1W is performing analyses and pursuing system-wide optimization to better understand and, where possible, adapt to the changing nature of wastewater.

The Castroville Pump Station, the Salinas Pump Station, and the Farmworker Housing Pump Station #1 are located directly adjacent to agricultural operations. If a sanitary sewer overflow (SSO) were to occur at one of these stations, wastewater could contaminate land, requiring bioremediation. M1W's preventative maintenance program (PMP) and CIP jointly work to reduce this risk by performing routine maintenance and system upgrades/replacements. Concurrently, M1W's Supervisory Control and Data Acquisition (SCADA) system monitors pump stations and sends critical feedback to the Control Room at the RTP, which is manned 24 hours a day, 365 days a year. SCADA alarms alert M1W employees of conditions which might lead to an SSO prompting dispatch of any number of on-call employees to the site.

### O.5.2 COASTAL EROSION

Several of M1W's assets are located near the coastline, thus making them susceptible to coastal storms and erosion. Specifically, assets vulnerable to coastal erosion include:

- Station 15- Coral Street, Pacific Grove
- Station 7- Reeside, Monterey
- Station 13- Fountain Avenue, Pacific Grove
- Monterey Pump Station- Del Monte Boulevard, Monterey
- Seaside Pump Station- Bay Street, Seaside
- Conveyance Pipelines- 13.28 miles (includes 2.1 miles of Ocean Outfall)

During March 2016 extreme wave action was observed. This coupled with the high rate of coastal erosion documented in Southern Monterey Bay, the highest in the State of California, resulted in M1W's Land/Ocean Outfall junction structure being exposed. The exposure required emergency protection work which included installation of sheet piling on both sides of the outfall pipe to prevent the sand from further eroding and undermining the pipeline. Emergency work was successful, and the site is closely monitored for changes. M1W is in the process of assessing the feasibility and appropriateness of various courses of action to ensure the long-term operability of the outfall. The technical memorandum recommendations have been included as mitigation measures in *Table O-10*.

Stations 15, 7, 13 and the Monterey and Seaside Pump Stations are all located directly adjacent to the Monterey Bay coastline near sea level. Mitigating potential SSO events, especially those in Pacific Grove adjacent to the Federally designated Area of Special Biological Significance (ASBS), is among the highest of M1W's priorities. M1W's preventative maintenance program, CIP, and SCADA system work together to identify vulnerabilities and mitigate them based on risk.

Conceptual projects addressing climate-related challenges at these locations, including but not limited to coastal erosion, are further described in **Section O.5.15**, *Climate Change & Sea Level Rise*.

## O.5.3 DAM AND LEVEE FAILURE

### *Dam Failure*

The following M1W infrastructure is vulnerable in the event of an upstream dam failure:

- Regional Treatment Plant- Del Monte Boulevard, Marina
- SRDF- Salinas River, Marina*
- SVRP- Del Monte Boulevard, Marina*
- Moss Landing Pump Station- Moss Landing Road, Moss Landing
- Marina Pump Station- Reservation Road, Marina
- Fort Ord Pump Station- Marina Drive, Marina
- Salinas Pump Station- Hitchcock Road, Salinas
- Farmworker Housing Pump Station #1 – Hitchcock Road, Salinas
- Pond 3 Pump Station – South Davis Road, Salinas *
- Castroville Pump Station- Highway 1 North, Castroville
- Conveyance Pipelines - 18.37 miles

Releases from both the Nacimiento and San Antonio reservoirs flow northward towards the Monterey Bay through the channel of the Salinas River, adjacent to the location of the structures listed above. Combined, both reservoirs have a storage capacity of approximately 712,900 acre-feet. Should one or both reservoirs fail, water released could place the aforementioned structures at risk of inundation or

other structural damage. New structures located in areas susceptible to flooding are built using the most current techniques guided by California Building Code to ensure operability through inundation events, while existing structures are retrofitted to withstand events to the highest extent possible.

#### *Levee Failure*

Levee failure does not currently pose a major risk to the Agency's infrastructure or facilities.

### O.5.4 DROUGHT AND WATER SHORTAGE

Monterey County is isolated from state and federal water supplies and must rely solely on its local water resources, groundwater, and surface water from watersheds with negligible influence from snowpack. As extreme heat and extended drought become more frequent, the region must ensure access to sustainable water supplies. To that end, in addition to providing wastewater treatment services to the community, M1W recycles its wastewater to diversify local water supplies for the agricultural and urban sectors.

Both water recycling projects, the SVRP, and PWM/GWR Project, provide sustainable supplemental water sources to traditional supplies. However, both projects rely upon availability of source water and therefore could be affected adversely in the event of drought.

Drought and water shortage could affect the Agency's operations in the following ways:

Conservation resulting in:

- Reductions in influent, resulting in less source water availability to meet recycled water obligations.
- Changing wastewater characteristics, possibly due to longer in-pipe retention times and higher concentrations (see **Section O.5.1,** *Agricultural Emergency*).
- Collection's system backups and possible SSOs due to lack of water flow to carry solids.

Reduced precipitation:

- Impacting reservoir storage and therefore limiting or precluding operation of the SRDF for agricultural use.
- Limiting seasonal surface water flows resulting in the inability to utilize the Blanco Drain and Reclamation Ditch surface water rights.
- Limiting the amount of stormwater diverted and stored in the Salinas Industrial Wastewater Treatment Facility (IWTF) ponds for later conveyance to the RTP for recycling.

### O.5.5 EARTHQUAKE

A 1998 report by Dames and Moore detailed local geology, seismic setting, and historic seismicity of M1W facilities including pump station buildings, equipment, piping, and tanks. The study determined that there was a very low life-safety risk due to earthquake; however, that there could be economic and environmental impacts if an earthquake were to occur.

Per that report, the following infrastructure would be vulnerable to earthquake-induced liquefaction of the following calibers:

*Moderate*:

- Monterey Pump Station- Del Monte Boulevard, Monterey
- Seaside Pump Station- Bay Avenue, Seaside
- Fort Ord Pump Station- Marina Drive, Marina
- Marina Pump Station- Reservation Road, Marina
- Conveyance Pipelines- 15.47 miles

*Moderate-to-High:*

- Salinas Pump Station- Hitchcock Road, Salinas
- Moss Landing Pump Station- Moss Landing Road, Moss Landing
- Castroville Pump Station- Highway 1 North, Castroville
- Conveyance Pipelines- 9.62 miles

Another study prepared for M1W in 1991 concluded that seismic events are more likely to impact large stations than small stations because of the potential for a high-volume spill. High flows also preclude pump-arounds because flow rates exceed the capacity of portable pumps. Conversely, small pump stations like the Moss Landing Pump Station are likely to have a lower flow rates and a smaller mass of equipment.

More recently, seismic studies of the RTP have identified specific project needs for existing facilities within the plant and an effort has been made to complete those projects through the CIP. Seismic assessments are also conducted every 5 years for the chlorine system as required by the system's Risk Management Plan.

### O.5.6 FLOODING

In any one year, the probability of the occurrence of a 100- or 500-year flood affecting M1W facilities is low. However, there is a high probability that localized flooding will occur in areas that could affect pump stations. A 1991 C2MHill report explored the risk of damage to M1W facilities due to flooding.

According to that document and the most current floodplain maps, the following facilities are located in areas at risk of flooding:

- Salinas Pump Station- Hitchcock Road, Salinas
- SRDF- Salinas River, Marina*
- Pond 3 Pump Station- Hitchcock Road, Salinas
- Farmworker Housing Pump Station #1- Hitchcock Road, Salinas
- Pond 3 Pump Station – South Davis Road, Salinas
- Castroville Pump Station- Highway 1 North, Castroville
- Moss Landing Pump Station- Moss Landing Road, Moss Landing
- Station 15- Coral Street, Pacific Grove
- Conveyance Pipelines - 19.9 miles

Both the Salinas and Castroville Pump Stations are designed to prevent inundation in the event of a 100-year flood event. They have both been equipped with flood protection enhancements to manage flood levels three feet above the surrounding terrain in order to increase resiliency during a major

storm event. This project has resulted in a 500-year flood safety factor. Additionally, emergency generators, portable pumps, and on-call staff are prepared for deployment to flood-prone areas during large storm events, while SCADA systems continuously report real-time data and information on station status allowing quick detection and response dispatch.

Localized flooding not correlated to floodplain, such as coastal flooding, storm surge, and wave run-up is also a concern for M1W. Particularly Station 15 (located on Coral Street in the City of Pacific Grove) has previously been inundated by wave run-up during storms from the adjacent Monterey Bay. Due to its low-lying position on the coast, it is possible the station with could be flooded with seawater; however, on average, the set of circumstances that must precipitate to enable such inundation occurs only about every 3-5 years.

As part of M1W's wintertime readiness planning, sandbags and other protective equipment are stockpiled and made readily available to sites like Station 15, if necessary. Additionally, during storm events on-call staffing is increased to provide maximum resources for efficient incident response.

### O.5.7 HAZARDOUS MATERIALS INCIDENT

Hazardous materials utilized for the wastewater treatment and water recycling processes are managed in compliance with regulatory requirements and safety standards in order to avoid any accidental release. M1W maintains an up-to-date Hazardous Materials Business Plan (HMBP), including hazardous materials inventory and site plans in the Certified Environmental Reporting System (CERS). This information is readily available to first responders as well as the Monterey County Hazardous Materials Management Service (HMMS), which serves as the Certified Unified Program Agency (CUPA) for Monterey County. In addition, staff is routinely trained on the safe hazardous materials handling procedures and has ready access to Safety Data Sheets with important chemical safety information for all chemicals stored onsite.

Each M1W-owned pump station has a site-specific Emergency Response and Contingency Plan, and for those M1W facilities meeting the federal Spill Prevention, Control, and Countermeasure Rule and the state Aboveground Petroleum Storage Act thresholds, M1W maintains Spill Prevention, Control, and Countermeasure Plans which are designed to eliminate or minimize the potential environmental risk of oil spills.

Additionally, per Clean Air Act Section 112(r) and California's Accidental Release Program (CalARP) requirements, M1W maintains a Risk Management Plan for the chlorine system located at the RTP. The Risk Management Plan is designed to prevent accidental releases of regulated substances, minimize the damage if releases do occur, and satisfy community right-to-know laws by performing a detailed engineering analysis of potential accident factors and the mitigation measures to reduce accident potential. The Risk Management Plan contains safety information, hazard review, operating procedures, training and maintenance requirements, compliance audits, and incident investigation procedures.

The following M1W infrastructure is located within the 3-mile buffer zone around hazardous materials facilities and major transportation routes throughout Monterey County, including:

- Regional Treatment Plant- Del Monte Boulevard, Marina (Fixed Site Facility)
- Salinas Pump Station- Hitchcock Road, Salinas (Fixed Site Facility)

- Pond 3 Pump Station- South Davis Road, Salinas
- Farmworker Housing Pump Station #1- Hitchcock Road, Salinas
- Fort Ord Pump Station- Marina Drive, Marina (Fixed Site Facility)
- Moss Landing Pump Station- Moss Landing Road, Moss Landing (Fixed Site Facility)
- Castroville Pump Station- Highway 1 North, Castroville (Fixed Site Facility)
- Monterey Pump Station- Del Monte Boulevard, Monterey (Fixed Site Facility)
- Seaside Pump Station- Bay Avenue, Seaside (Fixed Site Facility)
- Station 7- Reeside, Monterey (Fixed Site Facility)
- Station 13- Fountain Avenue, Pacific Grove (Fixed Site Facility)
- Station 15- Coral Street, Pacific Grove (Fixed Site Facility)
- Marina Pump Station- Reservation Road, Marina (Fixed Site Facility)
- Conveyance Pipelines - 29.55 miles

The following M1W infrastructure is located within the 1-mile buffer zone:

- Regional Treatment Plant- Del Monte Boulevard, Marina (Fixed Site Facility)
- Salinas Pump Station- Hitchcock Road, Salinas (Fixed Site Facility)
- Pond 3 Pump Station- Hitchcock Road, Salinas (Fixed Site Facility)
- Farmworker Housing Pump Station #1- Davis Road, Salinas (Fixed site Facility)
- Moss Landing Pump Station- Moss Landing Road, Moss Landing (Fixed Site Facility)
- Conveyance Pipelines- 9.81 miles

### O.5.8 HUMAN CAUSED HAZARDS

M1W is heavily reliant on information technology (IT) and computerized process automation for the operation of the collection system, pump stations, and the wastewater treatment and water recycling facilities. A cyber-attack could hamper the function of the critical services that M1W provides, leading to sewer backups and discharge of untreated sewage.

As critical infrastructure with a high replacement cost, M1W's facilities could be a target for terrorism. A terrorist attack could seriously jeopardize the continuous operations of sewer collections, treatment, and recycled water production. M1W's infrastructure is unlikely to experience any impacts associated with mass migration and targeted violence.

### O.5.9 PUBLIC HEALTH HAZARDS

Wastewater collection, conveyance, treatment, and recycling services provided by M1W are critical through all public health crises. To maintain safe and compliant operations, the RTP is manned 24 hours a day, 365 days a year. Without adequate staff available, the system may begin to experience failures that could result in SSOs and other adverse impacts to public health. However, as demonstrated during the recent COVID-19 pandemic, M1W is capable of adapting to and maintaining consistent levels of service throughout modified operations resulting from public health crises.

M1W developed the COVID-19 Exposure Control and Disease Preparedness Response Plan Meeting State and Federal regulatory requirements. The plan reduces the impact of COVID-19 on M1W, its workers, and the public, by addressing exposure risks, sources of exposure, routes of transmission, and other unique COVID-19 characteristics to allow workers to safely perform jobs required to maintain

continuity of operations. The plan implements engineering, administrative, work practice controls, and personal protective equipment (PPE) to meet the provisions in Title 8, CCR §3205.

### O.5.10 SEVERE WEATHER

All severe weather hazards profiled in this Plan have the potential to impact M1W's facilities and infrastructure.

### O.5.11 SLOPE FAILURE

Slope failure could affect some locations in the M1W collection system due to hilly and steep topography. Each M1W facility has undergone geotechnical survey to document site characteristics and identify risks of slope failure, erosion, and stability.

### O.5.12 TSUNAMI

According to the most recent Tsunami Hazard Maps, the following coastally located M1W facilities and infrastructure are located within the tsunami hazard zone:

- Station 15- Coral Street, Pacific Grove
- Station 7- Reeside, Monterey
- Station 13- Fountain Avenue, Pacific Grove
- Monterey Pump Station- Del Monte Boulevard, Monterey
- Seaside Pump Station- Bay Street, Seaside
- Moss Landing Pump Station- Moss Landing Road, Moss Landing
- Castroville Pump Station- Highway 1 North, Castroville
- Pipeline- 21.33 miles (includes 2.1 miles of Ocean Outfall)

Aside from the life-safety risk to residents and visitors to Monterey County, M1W's greatest concern is preventing pump stations and coastally located infrastructure from becoming inundated by a heavy storm or tsunami event. To mitigate these risks to the highest degree feasible, M1W has implemented site-specific Emergency Response Plans (ERPs) and continues to make upgrades to coastal infrastructure to enhance resilience to inundation events.

### O.5.13 UTILITY INTERRUPTION

M1W's treatment and conveyance system is reliant on electricity to function. M1W's facilities are all equipped with backup generator power that automatically transfers in the event of utility power outage. Each site is also equipped with above ground or underground stores of diesel fuel to provide a minimum of 21.9 hours of generator power during power outages. In addition, M1W maintains a fleet of portable, diesel-fueled emergency response equipment including generators and pumps.

*Table O-2* summarizes the M1W Stationary Generators and Portable Fleet.

**Table O-2**
**M1W Stationary Generators and Portable Fleet**

| Stationary Generators | | | | | |
|---|---|---|---|---|---|
| **Location** | **Rating (KW)** | **Fuel Tank Capacity (gal)** | **Fuel Consumption Rate @ 100% Load (gal/hr)** | **Runtime at 100% Load (Hours)** | **Runtime on Typical Station Load (50%) (Hours)** |
| Moss Landing | 102 | 550 | 8.2 | 60.4 | 105.3 |
| Castroville | 350 | 1,000 | 28.6 | 31.5 | 51.4 |
| Salinas[1] | 2000 | 6,000 | 137 | 39.4[2] | 76.0[2] |
| Marina | 350 | 2,000 | 24.4 | 73.7 | 134.0 |
| Fort Ord[1] | 1200 | 6,000 | 102 | 52.9[2] | 83.0[2] |
| Seaside[1] | 1160 | 6,000 | 102 | 52.9[2] | 83.0[2] |
| Monterey | 1000 | 6,000 | 69.3 | 77.9 | 153.0 |
| Station 7 | 135 | 250 | 10 | 22.5 | 45.9 |
| Station 13 | 350 | 520 | 21.4 | 21.9 | 41.0 |
| Station 15 | 217 | 428 | 15.2 | 25.3 | 50.7 |
| Farmworker Housing | 28 | 180 | 2.2 | 73.6 | 125.6 |
| RTP – Main | 1,500 | 1,100 | 103.6 | 9.5 | 12.4[3] |
| RTP – Chlorine System | 300 | 100 | 23 | 3.9 | 7.1 |
| RTP – Headworks | 40 | 110 | 3.4 | 29.1 | 55 |

| Portable Fleet | | |
|---|---|---|
| **Description** | **Rating (KW)** | **Fuel Consumption Rate @ 100% Load (gal/hr)** |
| 750 kW Portable Emergency Generator Set (1440) | 750 | 54.5 |
| 150 kW Portable Emergency Generator Set (1471) | 150 | 11 |
| 70 kW Portable Emergency Generator Set (1485) | 70 | 4.4 |
| 56 kW Portable Emergency Generator (1521) | 56 | 4.4 |
| 10-inch Portable Emergency Pump Set (1410) | -- | 19.7 |
| 6-inch High Pressure Portable Pump Set (1429) | -- | 11.7 |
| 6-inch Low Pressure Portable Pump- FM (1509) | -- | 3.7 |
| 6-inch Low Pressure Portable Sewage Pump (1503 | -- | 4.52 |
| 10-inch Portable Emergency Pump Set (1410) | -- | 19.7 |
| 6-inch High Pressure Portable Pump Set (1429) | -- | 11.7 |
| 6-inch Low Pressure Portable Pump (1509) | -- | 3.7 |
| 6-inch Low Pressure Portable Sewage Pump (1533) | -- | 4.2 |

[1] Two identical generators at station
[2] Runtime with one generator online
[3] 70-80% load (80 gal/hr)

M1W operates an onsite cogeneration facility at the RTP consisting of three, 580 KW, dual-fueled engines (natural gas/onsite-generated biogas) which are capable of generating enough power for the primary and secondary treatment processes to meet ocean discharge standards. Coupled with stationary backup generator power, M1W is equipped to maintain continuous wastewater treatment

in the event of an extended utility power outage. Due to severe winter storms interrupting utility power in February 2017, M1W did just that for 5 days with the only challenge being diesel fuel supply for the auxiliary stationary backup generators.

M1W and the Monterey Regional Waste Management District (MRWMD) have begun exploring co-energy management opportunities (e.g., developing a microgrid) to serve the dual purposes of assisting MRWMD in meeting state-mandated organics diversion targets (SB 1383, Short Lived Climate Pollutants), as well as further insulating M1W operations from utility power outage. M1W will continue to identify improvements that could be implemented to further fortify its operations for increased resiliency in the event of utility power outages.

### O.5.14 WILDFIRE

Wildfire does not pose a major threat to M1W's facilities but remains a possible risk. California continues to experience an increase in wildfire hazards due to climate change and this could lead wildfire risk to become higher in the near term.

### O.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

In 2021, M1W initiated the process of developing a Climate Action and Adaptation Plan (CAAP). Part of the effort will include a climate vulnerability assessment and greenhouse gas (GHG) inventory that will provide a baseline for the plan. The plan will serve as a comprehensive policy and strategy document for addressing the impacts of climate change on M1W's infrastructure by identifying targeted policies, programs, and projects that will both mitigate M1W's contribution to GHG emissions and increase its adaptive capacity.

The Climate Action and Adaptation Plan will:

- Build upon existing M1W climate adaptation and mitigation efforts
- Identify long-term management and adaptation projects to increase the reliability of the WCS and reduce economic and environmental risks
- Prioritize GHG reduction activities using a thorough analysis of existing energy use, opportunities and constraints, and thorough exploration of conservation and renewable energy technologies for the water industry

M1W is already a regional leader in the conservation of electricity and the reduction of GHG emissions exemplified by its use of solar energy to produce recycled water and utilization of biogas from decomposition of organic matter to power wastewater treatment processes. As climate change adaptation and mitigation requirements increase in California to meet state goals, M1W is poised to further reduce its carbon footprint, and is seeking additional sources of renewable energy to further reduce its reliance on fossil fuels to power facilities and reduce GHG emissions.

Spurred on by recent legislation requiring significant diversions of organics from landfills (SB 1383, Short Lived Climate Pollutants), M1W and neighboring MRWMD have renewed planning efforts for co-management of organics for cogeneration and potential microgrid development. Benefits include increased local resiliency to PG&E power supply reliability challenges and power utility cost savings.

In addition, Monterey County is isolated from State and Federal water supplies and must rely solely on its local water resources – historically, groundwater and surface water from watersheds with negligible influence from snowpack. As extreme heat and extended drought become more frequent due to climate change, the region must also ensure access to sustainable water supplies. M1W supports climate resiliency of its service area by recycling wastewater to diversify local water supply for the agricultural, urban, and hospitality/tourism sectors.

As discussed in *Section O.5.2* (Coastal Erosion), *O.5.6* (Flooding), and *O.5.12* (Tsunami), a significant portion of M1W's infrastructure is located in the coastal zone in the region of the Monterey Bay coastline with the highest rates of coastal erosion in the State of California. M1W is required to comply with the California Coastal Act for its facilities in the designated Coastal Zone. Coastal Act compliance, along with the intense scrutiny of regional marine protection and research entities, will require M1W to fully explore and, if feasible, implement projects using a full suite of possible climate change adaptation measures, including managed retreat of infrastructure rather than simply armoring facilities.

Based on sea level rise projections, the following coastally located M1W infrastructure is within the sea level rise hazard zone for Monterey County:

- Station 15- Coral Street, Pacific Grove
- Station 7- Reeside, Monterey
- Station 13- Fountain Avenue, Pacific Grove
- Monterey Pump Station- Del Monte Boulevard, Monterey
- Seaside Pump Station- Bay Street, Seaside
- Moss Landing Pump Station- Moss Landing Road, Moss Landing
- Castroville Pump Station- Highway 1 North, Castroville
- Pipeline- 21.33 miles (includes 2.1 miles of Ocean Outfall)

Projects have been identified and conceptually described in the context of M1W's active participation in short and long-range planning processes (e.g., Integrated Regional Water Management Plans, City of Pacific Grove Shoreline Management Plan, etc.) and the pursuit of grant funding opportunities. Examples of these conceptual projects which aim to enhance M1W's climate resiliency include:

### *Coral Street Pump Station Climate Resiliency Project*

Coral Street Pump Station is a subsurface wastewater pump station located on the ocean side of Ocean View Boulevard. As a result of its location, the station is subject to the effects of climate change including sea level rise, coastal erosion, and storm surges that can result in inundation of the wet well, and thus, electrical reliability challenges. The Coral Street Pump Station Climate Resiliency Project would involve engineering design, environmental review, permitting, and construction to waterproof the facilities by relocating key electrical components to a new location at nearby Esplanade Park.

### *Seaside Pump Station Climate Change and Erosion Adaptation Study*

Seaside Pump Station is situated within coastal dune habitat approximately 26 feet above mean sea level (MSL), 200 feet inland from the ocean on a property with a shallow grade sloping northwest towards the Monterey Bay. As is the case with Coral Street Pump Station, its location makes Seaside Pump Station increasingly vulnerable to climate-change impacts including coastal erosion and sea level

rise. Separately, the station suffers operational challenges and excess energy use related to available pump capacity versus actual flow resulting in costly and labor-intensive maintenance, repair, and replacement caused by vibration and cavitation.

These operational challenges have been exacerbated by California's prolonged droughts, the most recent of which caused Monterey Peninsula water users to achieve significant indoor water conservation and thus lower wastewater flows. The Seaside Pump Station Climate Change and Erosion Adaptation Study would include conducting a feasibility and alternatives analysis for solutions for protecting the M1W collection system in this area.

Options that could be evaluated include:

- **Sand Replenishment/Beach Nourishment***:* Southern Monterey Bay has the highest rate of coastal erosion in the State. Various coastal communities, including nearby City of Monterey considered sand nourishment as a tactic for protecting coastally located assets from the effects of beach erosion. Although the site may be an ideal location for this application, the potential positive beach accretion resulting from the agreement reached between the Coastal Commission and CEMEX to sunset sand mining activities at their Marina location should be considered. This mine has been implicated as one of the major factors in the high rate of coastal erosion in southern Monterey Bay. Should it be determined that the station should remain in its current location, M1W would initiate design and engineering to upgrade and/or reconfigure the station to optimize the reception and conveyance of current and future potential wastewater and stormwater flows.
- **Inland Station Retreat/Land Swap Agreement***:* During construction of Seaside Pump Station, California State Parks and M1W entered into an agreement for future land swap. Dated March 1991, that agreement states that in the event that M1W and State Parks agree that coastal erosion necessitates the relocation of the existing station, pipelines, and appurtenant facilities, State Parks will exchange the existing station site for one approximately equal in size within the confines of the parcel. State Parks would restore the site to native coastal dune habitat and enhance public beach access.
- **Station Removal and Flow Reroute***:* In addition to long-term climate change vulnerability, Seaside Pump Station has historically had challenges with station design and pump capacities relative to actual flows. For this reason, maintenance of existing pumps and reliability of operations have led staff to consider the feasibility of rerouting the wastewater flow to an alternate existing pump station to allow for the removal of Seaside Pump Station altogether. This project alternative would include in-depth hydraulic modelling and analysis.

The project will be designed to accommodate additional flows, including storm water from the City of Seaside's nearby 90-inch stormwater outfall and other urban dry weather and storm flows that may be diverted to M1W's infrastructure from the cities of Pacific Grove and Monterey. Any additional flows would then become influent to the RTP for beneficial reuse.

### *Ocean Outfall Beach Junction Structure Managed Retreat Project*

M1W's land/ocean outfall pipeline was constructed and put into service in 1984 to convey secondary treated effluent from its Treatment Plant 2.1 miles out into the Monterey Bay. The land outfall consists of a 60-inch reinforced concrete pipe and transitions to the ocean outfall at the junction structure (a

drop manhole structure) located on the beach adjacent to the CEMEX sand mining operation. Due in part to the El Nino-driven wave action during the 2015/2016 winter season, a portion of the land outfall pipeline at the junction structure was exposed on the beach adjacent to the CEMEX sand mining operation in Marina. The aforementioned high rate of coastal erosion in the Southern Monterey Bay region is believed to have contributed to the pipeline exposure. M1W staff acted quickly to install emergency protection measures (sheet piling and filter fabric on both sides of the land outfall pipeline upstream of the junction structure) to minimize risk of a potential pipeline failure. These temporary protection measures are planned to remain in place until M1W implements a permanent solution, most likely involving a managed retreat strategy to relocate this critical junction structure further inland.

M1W has performed a feasibility and alternatives analysis of options for protecting the junction structure and outfall pipeline through the year 2100. However, considering current and potential future conditions and changes to site activities per the June 2017 CEMEX/Coastal Commission sunset agreement, not the least of which is how cessation of sand mining activities will affect beach accretion local to the outfall junction structure, M1W is still in process of determining optimal design, retreat method, and location for replacement facilities for this project.

## O.6 CAPABILITY ASSESSMENT

M1W performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table O-2*
- An assessment of administrative and technical capabilities is presented in *Table O-3*
- An assessment of fiscal capabilities is presented in *Table O-4*
- An assessment of education and outreach capabilities is presented in *Table O-5*
- An overall self-assessment of capability is presented in Section O.6.1 in *Table O-6*

**Table O-2**
**Planning and Regulatory Capability**

| Document, Program, Requirement | | Department | Comments |
|---|---|---|---|
| General Management Plan | ☒ | • Maintenance | Sanitary Sewer System Management Plan |
| Capital Improvement Plan | ☒ | • Engineering | The Agency's CIP is the Master Plan for future Projects. |
| Stormwater Management Plan | ☒ | • Monterey SEA<br>• Source Control | M1W is the administrative agent for Monterey Stormwater Education Alliance (SEA), a regional program to assist the County of Monterey and Cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside in meeting Clean Water Act requirements for urban runoff to protect and enhance environmental quality of watersheds and beaches. The Stormwater |

**Table O-2**
**Planning and Regulatory Capability**

| Document, Program, Requirement | | Department | Comments |
|---|---|---|---|
| | | | Management Plan identifies the regulations each entity must implement and enforce locally to protect the water quality of waterways like the Monterey Bay National Marine Sanctuary. M1W Source Control staff also provides contract stormwater inspection services to several of its member entities. |
| Coastal Management Plan | ☐ | | |
| Climate Action/ Adaptation Plan | ☒ | • Community Relations | Development of a M1W Climate Action Plan has been initiated and is anticipated to be completed by the end of 2021. |
| Emergency Operations Plan | ☒ | • Multiple | M1W is in the process of developing a Business Plan including continuity of operations in the event of emergency. |
| Specific Emergency Response Plans | ☒ | • Maintenance | M1W is in process of developing site-specific Emergency Response Plans (ERPs) that may be called upon in the event of an emergency resulting in a Sanitary Sewer Overflow (SSO). The ERPs include station-specific bypass pump around operations, traffic control plans, and other important information for first responders to manage and reduce impacts to public health and the environment caused by an SSO. |
| Continuity of Operations Plan | ☒ | • Administration | M1W is in the process of developing a Business Plan including continuity of operations in the event of emergency. |
| Evacuation Plan | ☒ | • Safety | See M1W Business Response Plan (RTP and Administration Offices), Chlorine Risk Management Plan, and Hazardous Materials Business Response Plans for the RTP and Pump Stations. |
| Illness and Injury Prevention Plan | ☒ | • Safety | M1W's safety program maintains an up-to-date Illness and Injury Prevention Plan (IIPP). |
| Business Response Plan | ☒ | • Multiple | M1W is in the process of developing a Business Plan including continuity of operations in the event of emergency. |
| Hazardous Materials Plan | ☒ | • Safety | M1W's Chlorine Risk Management Plan and Hazardous Materials Business Response Plans for the RTP and Pump Stations. |

**Table O-2**
**Planning and Regulatory Capability**

| Document, Program, Requirement | | Department | Comments |
|---|---|---|---|
| Site Plan Review Requirements | ☒ | • Source Control | M1W Source Control reviews new development in each Member Jurisdiction for conformance to Member-Entity Programs and sewer system requirements |

**Table O-3**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Engineering | M1W's Engineering Department includes an P.E. who also holds an American Institute of Certified Planners (AICP) certification. |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Engineering | All of M1W's Engineers are licensed Civil Engineers in the State of California. The Engineering Department also employs a Construction Inspector on staff and supplements staff with consultant expertise when needed. |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Engineering | M1W's Engineering Department includes one P.E. with a B.S. in Environmental Engineering and one employee with an M.S. in Environmental Engineering. |
| Building Inspector | ☒ | • Engineering | M1W's Engineering Department includes an Engineering Tech who provides construction inspection services. |
| Emergency Manager | ☒ | • Safety | M1W's Safety Officer is the Designated Emergency Manager; additionally, M1W has a trained Emergency Response Team (ERT) that can be deployed during any number of emergency-situations. |
| Resource development staff or grant writers | ☒ | • Engineering<br>• Government Affairs | M1W has the in-house resources to regularly pursue grant funding, including a diverse team dedicated to researching and applying for local, state, and federal opportunities. |
| Public Information Officer | ☒ | • Community Relations | M1W's Director of External Affairs and Communication Services Manager jointly provide this function for the Agency |
| Scientist(s) familiar with the hazards of the community | ☒ | • Laboratory | M1W's Laboratory Department includes several professionals who understand the |

**Table O-3**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| | | | hazards of the community, specializing in water quality and water resource issues. |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Engineering | M1W has 4 registered Profession Engineers who are skilled in this area. |
| Personnel skilled in Geographic Information Systems (GIS) | ☐ | • Engineering | |
| Maintenance programs to reduce risk | ☒ | • Maintenance | M1W employs a Computerized Maintenance Management System to track asset lifecycle, in addition to Preventative and Reliability-Centered Maintenance Programs to ensure that assets are properly maintained in good working order to reduce likelihood of failure in the event of a natural disaster. |
| Warning systems/services | ☒ | • Safety<br>• Maintenance | Examples include audible/visible alarms of various types, SCADA and radio telemetry communications for reporting conditions at remote M1W infrastructure locations, and radio communications systems. |
| Mutual Aid Agreements | ☒ | • Maintenance | M1W is a member of the CalWARN network, a mutual assistance organization for water and wastewater agencies. |

**Table O-4**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Engineering | |
| Special Purpose Taxes | ☐ | | |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☒ | • Finance | |
| Development Impact Fees | ☒ | • Finance | |
| General Obligation Bonds | ☒ | • Finance | |
| Special Tax and Revenue Bonds | ☒ | • Finance | |

**Table O-5**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, etc. | ☐ | | |
| Ongoing public education or information program | ☒ | • Community Relations | |
| Natural disaster or safety related school programs | ☐ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |
| Other: | M1W is a public utility. Customers are billed bi-monthly for wastewater services. Customer notifications, billings, and communications are available to disseminate important information. | | |

*Political Capability*

M1W's governing Board of Directors sets policies and guides staff in program development, but political capability is complicated due to the regional governance of M1W and the varied priorities and needs of each city or district. Fortunately, as a public and environmental health agency, the Board regularly identifies and supports regional efforts to protect and prepare the community for a sustainable future.

Examples include:

- Pure Water Monterey Groundwater Replenishment Project (Hazard Addressed: drought/ climate change)
- IRWM Implementation Grant Award Salinas Storm Water Management: Increasing Capture, Improving Treatment, Reducing Energy Use (Hazard Addressed: drought/climate change/flood vulnerability)
- M1W Compliance with State Directives to increase the use of recycled water. M1W operations include two water recycling and reclamation projects, the Salinas Valley Reclamation Project and Pure Water Monterey, which uphold this mission and strongly support local agricultural and tourist economies by providing sustainable water supplies. (Hazard Addressed: drought/climate change, agricultural emergency)

## O.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

Monterey One Water is a Joint Powers Authority and is therefore not eligible for flood insurance under the National Flood Insurance Program (NFIP).

## O.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table O-6**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | High |
| Administrative and Technical Capability | High |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Moderate |
| Political Capability | Limited |
| **Overall Capability** | **Moderate** |

## O.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## O.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

In the performance period since adoption of the previous hazard mitigation plan, the Agency made progress on integrating hazard mitigation goals, objectives, and actions into other planning initiatives. The following plans and programs currently integrate components of the hazard mitigation strategy:

- **Capital Improvement Plan**: The capital improvement plan includes projects that can help mitigate potential hazards. The Agency will strive to ensure consistency between the hazard mitigation plan and the current and future capital improvement plan. The hazard mitigation

plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Sanitary Sewer System Management Plan:** State regulatory requirement to ensure efforts are made to reduce risks to public health, property and the environment.
- **Monterey Stormwater Education Alliance (SEA):** M1W is the administrative agent for Monterey Stormwater Education Alliance (SEA), a regional program to assist the County of Monterey and Cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside in meeting Clean Water Act requirements for urban runoff to protect and enhance environmental quality of watersheds and beaches. The Stormwater Management Plan identifies the regulations each entity must implement and enforce locally to protect the water quality of waterways like the Monterey Bay National Marine Sanctuary. M1W Source Control staff also provides contract stormwater inspection services to several of its member entities.
- **Climate Action Plan:** Highlights potential programs that could be implemented to reduce greenhouse gas emissions and discusses possible impacts of climate change. The development of a M1W Climate Action Plan has been initiated and is anticipated to be completed shortly.
- **Business Response Plan/Emergency Action Plan:** M1W staff are Disaster Service Workers and are trained to safely operate and maintain the critical sewer infrastructure 24/7 and during emergencies.
- **Illness and Injury Prevention Plan (IIPP):** M1W's safety program maintains an up-to-date Illness and Injury Prevention Plan (IIPP). The General Manager has authority and responsibility for plan implementation. The program includes facility and safety plans for sanitary facilities.
- **Chlorine Risk Management Plan and Hazardous Materials Business Response Plans:** Reduce the risk of hazardous materials incidents.
- M1W Source Control reviews new development in each Member Jurisdiction for conformance to Member-Entity Programs and sewer system requirements

### *Opportunities for Future Integration*

As this hazard mitigation plan is implemented, Monterey One Water will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in **Volume 1**. New opportunities for integration also will be identified as part of the annual progress report. The plans and programs listed in the Capability Assessment cover the majority of Agency operations where the hazard mitigation goals are addressed. However, the capability assessment identified the opportunity for future integration of recommendations of the hazard mitigation plan for all the plans and programs listed as they are updated periodically

## O.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the Agency's Planning Committee identified key vulnerabilities and hazards of concern. The Hazard

Problem Statements were primarily derived from M1W's Hazard Mitigation Planning Committee and informed by review of existing literature and best available data relating to the vulnerability of M1W's assets. These Problem Statements were developed to assist in the identification and analysis of potential hazard mitigation actions for M1W and helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the Agency are identified below:

- Infrastructure is aging and requires capital investment to ensure safe, reliable wastewater and water recycling services.
- Water supply is largely dependent on resources that fluctuate with rainfall and are heavily influenced by drought conditions (i.e., surface water and groundwater).
- Infrastructure is coastally located and thus vulnerable to sea-level rise, tsunami, coastal erosion, and intense storm events.
- Conservation in M1W's service area is reducing the amount of influent for recycling services and changing the characteristics of wastewater.
- The Ocean Outfall Beach Junction Structure is susceptible to coastal erosion and storm events.

## O.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

M1W's Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the Agency's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table O-8* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

All actions from the 2016 Plan were reviewed and updated by the Agency during the planning process. *Table O-7* includes the status of action previous plan completed or removed from the previous plan.

In order to improve the mitigation action plan for this Plan update and align with the countywide Mitigation Action Plan, the Agency added more specificity and detail to previous plan actions in addition to the new actions added to the Hazard Mitigation Action Plan Matrix.

**Table O-7**
**Monterey One Water Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| **33** | Commission a structural analysis of the most critical pump stations. | **Completed** | Pump Station & Conveyance System Condition |

**Table O-7**
**Monterey One Water Completed Mitigation Actions from 2016 MJHMP**

| 2016 Action # | Description | Status | Narrative Update |
|---|---|---|---|
| | | | Optimization Study completed. |
| **38** | Televise gravity interceptors to identify structural and joint problems and verify the condition of the protective linings. | **Completed** | Project completed. |
| **42** | Update long-range plans for replacement/ upgrade of key equipment and systems including future demand, expected life, and equipment performance, possibility of technical obsolescence, and availability of parts. | **Completed** | Pump Station & Conveyance System Condition Optimization Study completed. |
| **43** | Identify mitigation measures for impacts to the Land/Ocean Outfall junction structure due to coastal erosion and coastal storms. | **Completed** | Study completed; additional analysis may be conducted commensurate with CIP scheduled in 2024/25 - 2027/28 FY. |
| **45** | Implement new Computerized Maintenance Management Software | **Completed/ Ongoing** | Implementation complete. Continue to utilize CMMS for tracking asset O&M. |

**Table O-8**
**Monterey One Water Hazard Mitigation Plan Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | Ongoing | All | All M1W Personnel to be familiar with the written Illness and Injury Prevention Plan. | High | Safety | Internal |
| **2** | Ongoing | All | All M1W personnel to be familiar with the Business Response Plan (BRP). | High | Safety | Internal |
| **3** | Ongoing | All | Emergency Response Team members to have adequate training to respond to emergency. | High | Safety | Internal |
| **4** | Ongoing | All | Ensure that evacuations are safe and efficient. | High | Safety/ Emergency Response Team | Internal |
| **5** | Ongoing | All | Ensure communications (two-way radios, interior and exterior paging system) are maintained and in good working order. | High | Utilities | Internal |
| **6** | Ongoing | All | Ensure that warning devices (alarm bells, horns) are in working order. | High | Utilities | Internal |
| **7** | Ongoing | All | Locations of primary/ alternate evacuation routes, emergency exits, primary/alternate staging areas are prominently posted throughout facilities in locations that are visible to employees and visitors. | High | Safety | Internal |
| **8** | Ongoing | Hazardous Materials Incidents | Provide training to employees in the handling, storage, and control of hazardous materials. | High | Safety | Internal |
| **9** | Ongoing | Hazardous Materials Incidents | Provide training to employees in the handling of chlorine (Cl2), use of breathing apparatus, and what to do in case of emergency. | High | Safety/ Operations | Internal |
| **10** | Ongoing | Hazardous Materials Incidents | All personnel who could be exposed to hazardous materials must be trained in proper use of PPE. | High | Safety | Internal |

**Table O-8**
**Monterey One Water Hazard Mitigation Plan Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **11** | Ongoing | All | Identify hazards and assess risk for service area through maintenance of and participation in the MJHMP. | High | All | Internal |
| **12** | Ongoing | All | Determine increased risk from specific hazards due to location for those hazards profiled in *Table O-1*. | High | All | Internal |
| **13** | Ongoing | Earthquake | All new construction is completed using latest earthquake-resistant design techniques to limit damage caused by earthquakes. | High | Engineering | Internal/ CIP |
| **14** | Ongoing | Flooding | All new construction within the 100-year flood zone to be completed with design that will limit damage from floods. | High | Engineering | Internal/ CIP/ HMGP |
| **15** | Ongoing | Earthquake | Continue to repair and make structural improvements to pipelines to enable them to perform to their design capacity. | High | Field Maintenance | Internal/ CIP |
| **16** | Ongoing | All | Continue maintenance efforts to keep pipelines free of obstructions. | High | Field Maintenance | Internal |
| **17** | Ongoing | All | Develop and implement risk-based hazard mitigation strategy through participation in MJHMP updates. | High | All | Internal/ Grants |
| **18** | Ongoing | All | Enhance M1W's capability to conduct hazard risk assessments through the continued participation in the MJHMP. | High | All | Internal |
| **19** | Ongoing | All | Pursue available grant opportunities to obtain funding for mitigation activities. | High | Community Relations | Grants |
| **20** | Ongoing | Severe Weather, Coastal Erosion, Flooding | Identify mitigation measures for facilities susceptible to coastal storms and erosion. | High | Engineering | Internal |
| **21** | Ongoing | Earthquake | Identify mitigation measures for earthquake events. | High | Engineering | Internal |
| **22** | Ongoing | Earthquake | Conduct more detailed geological investigations of facilities to determine the risk of damage from expansive soils. | Moderate | Engineering | Internal |

**Table O-8**
**Monterey One Water Hazard Mitigation Plan Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **23** | Ongoing | Earthquake | If evidence of expansive soils is found, identify mitigation measures for them. | Moderate | Engineering | Internal |
| **24** | Ongoing | Flooding | Identify mitigation measures for facilities susceptible to flood. | High | Engineering | Internal/ Grants |
| **25** | Ongoing | Tsunami | Identify mitigation measures for facilities susceptible to tsunami. | High | Engineering | Internal/ Grants |
| **26** | Ongoing | Tsunami | Work with Tsunami Incident Response Plan Group and OES, to identify mitigation for facilities susceptible to tsunami. | High | Safety | Internal |
| **27** | Ongoing | Drought | Continue to pursue drought protection projects for M1W's service area. | High | Administration/ Engineering | Internal/ Grants |
| **28** | Ongoing | All | Coordinate with member entities to increase level of public knowledge and awareness of hazards that routinely threaten the area and how they affect M1W facilities. | High | Community Relations | Internal |
| **29** | Ongoing | All, Utility Interruption | Coordinate with member entities to provide info to the public on coping with disrupted sewage lines and wastewater service. | High | Emergency Response Team/ Engineering/ Public Outreach | Internal |
| **30** | Ongoing | All | Ensure backup systems exist for critical facilities to the greatest extent possible. | High | Maintenance | Internal/ CIP |
| **31** | Ongoing | All | Plan for emergency response by stockpiling relevant materials. | High | Safety/ Emergency Response Team/ Operations/ Maintenance | Internal |
| **32** | Ongoing | All | Pre-position emergency power generation capacity (or have rental/lease agreements for generators) in critical locations for continuity services. | High | Maintenance/ Utilities | Internal |

**Table O-8**
**Monterey One Water Hazard Mitigation Plan Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **33** | Ongoing/ As Needed | All | Commission new Geotech investigations for new facilities as applicable. | Moderate | Engineering | Internal/ CIP |
| **34** | Not yet scheduled | Earthquake | Conduct seismic vulnerability assessment of all pump stations to identify areas of possible liquefaction. | Moderate | Engineering | Internal/ CIP |
| **35** | FY 2022/23 - 2025/26 | All | Assess condition of external corrosion on transport system and develop long-term program for maintenance of corrosion protection system. | High | Engineering | Internal/ CIP |
| **36** | FY 2022/23 - 2025/26 | All | Explore measures to extend useful life of wastewater transport system force mains beyond 100 years by implementing corrosion protection measures. | High | Engineering | Internal/ CIP |
| **37** | FY 2022/23- 2027/28 | All | Provide flexibility for the discharge force main at all pump stations. | Moderate | Engineering | Internal/ CIP |
| **38** | Ongoing | All | Review electrical control systems for major stations to determine if enough independent operations exist between each control system to ensure single system failure cannot disable the station. | High | Utilities | Internal/ CIP |
| **39** | FY 2022/23- 2027/28 | All | Perform feasibility study to determine secondary containment is warranted, especially at stations where there are short detention times, environmental resources nearby, and where land is available. | Moderate | Engineering | Internal |
| **40** | FY 2024/25 - 2027/28 | Severe Weather, Coastal Erosion, Flooding | Relocate the existing Land/Ocean Outfall Beach Junction Structure at least 650 ft. inland and install 650 ft. of new outfall pipeline at lower elevation to protect the Outfall from future erosion. | High | Engineering | CIP/Grant Funding |
| **41** | Ongoing | All | Continue to utilize Computerized Maintenance Management Software (CMMS) for tracking asset O&M. | High | Engineering/ Maintenance | CIP |

**Table O-8**
**Monterey One Water Hazard Mitigation Plan Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **42** | New/ FY 2021/22 | Climate Change | Develop Climate Action Plan (CAP) in order to outline strategies to reduce greenhouse gas emissions. | High | Community Relations | Internal |
| **43** | Ongoing | All | All M1W Personnel to be familiar with the Sewer System Management Plan (SSMP) and Sanitary Sewer Overflow Response Plan (SSORP) to ensure staff have adequate familiarity with emergency response and reporting measures for Sanitary Sewer Overflows (SSOs) within M1W's collection system to minimize the potential for SSOs and mitigate severity of impacts to the environment. | High | Maintenance | Internal |
| **44** | Ongoing | All | All Field O&M Staff to be trained on the SSMP and SSORP to ensure staff have adequate familiarity with emergency response and reporting measures for SSOs within M1W's collection system to minimize the potential for SSOs and mitigate severity of impacts to the environment. | High | Maintenance | Internal |
| **45** | Ongoing | All | Conduct bypass pump-around testing at M1W and member-entity pump stations to ensure staff are adequately trained in bypass pump-around mobilization, set up, and takedown in preparation for potential emergency response or maintenance activities requiring bypass pumping to minimize the potential for SSOs. | High | Maintenance | Internal |

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# ANNEX P: MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

## 2021 Monterey County Multi-Jurisdictional Hazard Mitigation Plan

# P. MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

## P.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
David Ramirez
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14201 Del Monte Blvd.
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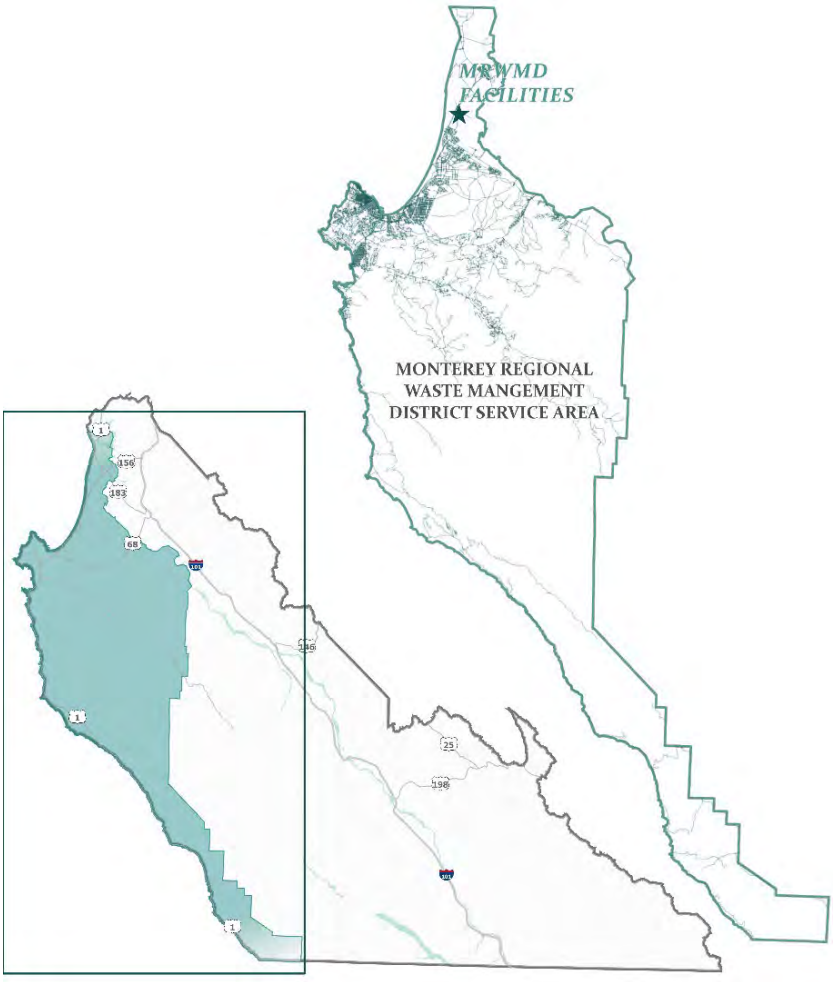
## P.2 DISTRICT PROFILE

### P.2.1 LOCATION



## P.2.2 SERVICE AREA

The Monterey Regional Waste Management District (MRWMD) covers a total of 853 square miles, including the cities of Carmel-by-the-Sea, Del Rey Oaks, Marina, Monterey, Pacific Grove, Sand City, Seaside, and the unincorporated areas of Big Sur, Carmel Highlands, Carmel Valley, Castroville, Corral De Tierra, Laguna Seca, Moss Landing, Pebble Beach, San Benancio, and Toro Park. The population currently served is approximately 170,000.

The District provides comprehensive, state-of-the-art waste management services. Their facility is located two miles northeast of Marina, in the Monterey Regional Environmental Park. In addition to a large landfill, their facilities include several important waste-reduction and waste diversion facilities that implement the District's stated vision of "Turning Waste into Resources." These include an indoor materials recovery facility to divert recyclable and reusable materials from the waste stream; systems that use landfill gas to generate electricity, and an innovative, anaerobic digestion food scrap composting project. The District also provides green waste processing and composting, household hazardous waste collection, reusable materials resale, and public outreach programs in support of its mission.

## P.2.3 HISTORY

The Monterey Regional Waste Management District formed as the Monterey Peninsula Garbage and Refuse Disposal District in 1951. It formed after City leaders from Pacific Grove, Monterey, and Carmel united to petition the Monterey County Board of Supervisors to find a solution to the routine dumping and burning of waste on nearby coastal sand dunes. The District initially served a 75-square-mile area. In 1966, the First Board pf the Monterey Peninsula Garbage and Refuse Disposal District purchased the property the District still occupies today. The large piece of land consists of 570 acres north of Marina and was the site for the new Monterey Peninsula Landfill.

The Monterey Peninsula Landfill opened in 1965 and over the years the District has added programs to reduce, reuse and recycle. From their early cardboard recycling in 1953, the first production of electricity from landfill gas in 1983, the establishment of the Last Chance Mercantile in 1991, to the Materials Recovery Facility that came on-line in 1996." The District changed its name to the Monterey Regional Waste Management District in 1987. Over the years, the District has won numerous awards including being recognized in 1998 as the Best Solid Waste System in North America and in 2016 the California Resource Recovery Association recognized the District with a Zero Waste Achievement Award.

## P.2.4 GOVERNING BODY FORMAT

The District is an independent special district and governed by a nine-member Board of Directors. The Board consists of a representative from each of the seven cities within the District boundaries, plus one to represent unincorporated areas of the District, and a director-at-large. Board members are appointed to four-year terms. The Board maintains standing Finance and Personnel Committees, plus a Technical Advisory Committee that meets on an as-needed basis. The MRWMD Board meets monthly, and meetings are open to the public

## P.3 PLANNING PROCESS

The Monterey Regional Waste Management District followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the District formulated their own internal planning team to support the broader planning process. The Monterey Regional Waste Management District held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, key problem statements, and mitigation strategies on September 23, 2021. Key stakeholders present at the meeting included:

- Guy Petraborg, Principal Engineer
- Tim Brownell, Director of Operations
- David Ramirez, Senior Engineer

## P.4 FACILITIES

The District's facilities are located on its 475-acre property, 2 miles north of Marina, at the Monterey Regional Environmental Park, 14201 Del Monte Blvd. The property consists of a 315-acre permitted sanitary landfill site, a 126-acre buffer area (mostly Salinas River floodplain), 20 acres for the resource recovery facilities, a 12-acre Community Franchise Collection Facility, administrative offices, and maintenance buildings.

### *Monterey Peninsula Landfill*

The 461-acre site began operating as a sanitary landfill two miles to the north of Marina in 1965. The District estimates the landfill to have a projected remaining lifespan of approximately 100-150 years of waste at current disposal rates. Currently, portions of the Landfill have been filled to an elevation of 130 feet, however the site is permitted to reach a final elevation of 264 feet. The entire Monterey Peninsula Landfill has been engineered with controls in place to separate waste safely from the environment. The landfill is composed of modules or cells that are filled in one at a time. The 23-acre module currently in use was completed in June 2013. The construction of a new module begins with an engineered composite liner made from a 2-foot-thick layer of clay, covered with a heavy plastic liner. Leachate collection pipes and sand are placed above the liner to catch any liquids draining from the waste – these are recirculated through the landfill. Finally, a 2-foot-thick layer of compost is placed over the sand drainage layer to protect the plastic liner from being damaged by heavy machinery.

### *Materials Recovery Facility (MRF)*

The Materials Recovery Facility (MRF) is the centerpiece of the District's publicly owned infrastructure for recycling and reuse. Over the last 20 years, the District's first MRF diverted more than 1.6 million tons of recyclable and re-usable materials from landfill disposal. The new MRF 2.0 opened February 2018. The new facility dramatically expanded the District's capacity to divert materials from disposal. The MRF processes recyclables collected from the residential and commercial sectors of the Monterey Peninsula region, construction and demolition debris, and commercial mixed waste. The MRF also receives clean loads of source separated green and wood waste, mattresses, tires, and appliances. The MRF 2.0 supports local communities in compliance with State recycling requirements and helps achieve the 75% recycling goal by 2020. The construction and demolition material processing helps

ensure compliance with the CalGreen 65% diversion requirement for new construction and demolition projects.

### *"Landfill Gas to Energy" Facility*

In 1983, the District developed and began operating one of the nation's first landfill gas-to-electric energy plants at its facility. The process of capturing methane gas begins after organic waste deposited into the landfill is digested by anaerobic bacteria. The bacteria produce methane gas, which is recovered via a series of wells placed into the landfill. The wells are connected by a pipe system that creates a vacuum and induces the gas into a compression facility. After further refining, the gas is pumped into internal combustion engines, powering four engine/ generators to make electricity. Presently, the District's four generators provide approximately 5 megawatts of clean alternative power, meeting all of the District's own power needs and electrical power equivalent to the needs of 3,000 residences. The carbon savings realized from using this amount of landfill gas for power, rather than fossil fuel-generated power, is equivalent to removing emissions from an estimated 33,760 vehicles. The District sells excess power generated from this project to Pacific Gas and Electric (PG&E) and other power purchasers. Revenues from this project have generally exceeded expenses.

### *Anaerobic Digestion (Energy & Composting) Facility*

The MRWMD dry anaerobic digestion (AD) pilot project, commissioned in 2013, was the first of its kind in the US This pilot project was a public-private partnership between MRWMD and Zero Waste Energy that ended in fall 2019. The four shop fabricated steel digesters accepted 5,500 tons per year of a blend of 70% of food scraps and 30% of yard trimmings, mixed and loaded into an air-tight chamber where naturally occurring microorganisms are introduced via a liquid "percolate." Over a 21-day process, these organisms broke down the biodegradable materials to produce methane gas with a minor amount of carbon dioxide. These biogases were then filtered and cleaned to power a combined heat and power engine that produces electricity. Waste heat was captured and reused to maintain a constant 130-degree percolate temperature. Energy from the project supplied 10% of the electricity need for the neighboring Monterey One Water facilities. The "digestate" that came out of the digesters then underwent a complete windrow composting process by Keith Day Company to complete the decomposition process. The success of the Organics to Energy compost program was attributable to the program participants: the commercial businesses that diligently separated food scraps, the haulers that collected it, and the public-private partnership with Zero Waste Energy, Keith Day Company, and the Districts' neighboring public agency Monterey One Water, who received the electricity produced through anaerobic digestion.

## P.5 DISTRICT SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the MRWMD'S hazards and assess the District's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the MRWMD is included in this Annex.

The MRWMD's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The District's Planning Team used the Threat Hazard Risk Assessment (THIRA)

Survey to compare the impact of various hazards that could affect the District. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**.

*Table P-1* displays the results of the hazard risk ranking exercise that was performed by the MRWMD's Planning Team.

**Table P-1**
**Threat Hazard Identification Risk Assessment (THIRA): MRWMD**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | - | - | - | - | - | - |
| Coastal Erosion | - | - | - | - | - | - |
| Coastal Flooding | - | - | - | - | - | - |
| Cyber-Attack | 1.0 | 2.0 | 2.0 | 2.0 | 7.0 | Possible |
| Dam Failure | 3.0 | 1.0 | 3.0 | 2.0 | 9.0 | Moderate |
| Drought & Water Shortage | 2.0 | 3.0 | 3.0 | 2.0 | 10.0 | Moderate |
| Earthquake | 3.0 | 3.0 | 2.0 | 2.0 | 10.0 | Moderate |
| Epidemic | 1.0 | 2.0 | 3.0 | 3.0 | 9.0 | Moderate |
| Extreme Cold & Freeze | - | - | - | - | - | - |
| Extreme Heat | - | - | - | - | - | - |
| Flash Flood | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Hazardous Materials Incident | 3.0 | 3.0 | 4.0 | 3.0 | 13.0 | High |
| Invasive Species | - | - | - | - | - | - |
| Levee Failure | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Localized Stormwater Flooding | 1.0 | 2.0 | 3.0 | 3.0 | 9.0 | Moderate |
| Mass Migration | - | - | - | - | - | - |
| Pandemic | 1.0 | 1.0 | 3.0 | 3.0 | 8.0 | Possible |
| Riverine Flooding | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Sea Level Rise | - | - | - | - | - | - |
| Severe Winter Storms | - | - | - | - | - | - |
| Slope Failure | - | - | - | - | - | - |
| Targeted Violence | 3.0 | 1.0 | 2.0 | 2.0 | 8.0 | Possible |
| Terrorism | 3.0 | 2.0 | 2.0 | 2.0 | 9.0 | Moderate |
| Tsunami | - | - | - | - | - | - |
| Utility Interruption/ PSPS | 3.0 | 2.0 | 2.0 | 3.0 | 10.0 | Moderate |
| Water Contamination | 3.0 | 2.0 | 2.0 | 2.0 | 9.0 | Moderate |
| Wildfire | 3.0 | 1.0 | 1.0 | 1.0 | 6.0 | Slight |
| Windstorms | 3.0 | 3.0 | 1.0 | 1.0 | 8.0 | Possible |

### P.5.1 AGRICULTURAL EMERGENCIES

The MRWMD facilities are unlikely to experience any impacts associated with agricultural emergencies.

### P.5.2 COASTAL EROSION

The District's facilities are not located on the coast, and therefore are not likely to be impacted by coastal erosion. The District could be impacted by other types of erosion not profiled in this Plan. The main impact of erosion impact to the District is flooding, so erosion impacts are disused further in **Section P.5.6**, *Flooding*.

### P.5.3 DAM AND LEVEE FAILURE

*Dam Failure*

Releases from both the Nacimiento and San Antonio reservoirs flow northward towards the Monterey Bay through the channel of the Salinas River, adjacent to the MRWMD facilities. A dam or spillway failure of the Nacimiento or San Antonio dam could expose the MRWMD's facilities to dam failure inundation risk.

*Levee Failure*

A levee along the Salinas River protects the Landfill from flood risk. A failure of this levee could have catastrophic impacts on the functioning of the landfill.

### P.5.4 DROUGHT AND WATER SHORTAGE

Drought and water shortage is unlikely to have a major impact on the District's facilities or operations.

### P.5.5 EARTHQUAKE

MRWMD facilities are designed to latest building codes to handle seismic events that are in effect at the time of construction. However, damage to multiple MRWMD facilities could still occur if a large enough earthquake were to occur. If an earthquake compromised the landfill, the impacts could be catastrophic. The District's facilities are also located in an area that is suspectable to liquefaction risk and this could be a major risk if an earthquake were to occur.

### P.5.6 FLOODING

Portions of the District's landfill is located in the 100-year floodplain. This area is currently protected by a levee, but erosion on the north slope of the levee could cause levee failure, which could lead to flooding of the landfill. This risk is a serious concern to the District.

### P.5.7 HAZARDOUS MATERIALS INCIDENT

Hazardous materials incidents could be can concern for the District. Since the District collects waste, hazardous materials could be incorrectly disposed of in the landfill. Hazardous materials can also spark fires caused by hot ashes or other items received in solid waste delivery loads, and other occasional eventualities.

### P.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, the impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident.

MRWMD is heavily reliant on information technology (IT). A cyber-attack could hamper the functioning of the critical service particularly if it caused a power outage, which impacted the District's ability to provide services.

### P.5.9 PUBLIC HEALTH HAZARDS

Based on the experience of the COVID-19 pandemic, it is noted that it is important to maintain continuous solid waste collection services through a pandemic or epidemic.

### P.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to affect the district's facilities, though are unlikely to have a major impact. Severe winter storms have the potential to create flooding issues as described in **Section P.5.6**, *Flooding*. Furthermore, severe storms in the area often involve high winds, which could make the District's operations more difficult. Furthermore, windstorms can cause prolonged and serious power outages, which could cause a catastrophic impact to the District's service.

### P.5.11 SLOPE FAILURE

Based on the topography of the surrounding area, slope failure does not pose a serious threat to the District's facilities.

### P.5.12 TSUNAMI

The District's facilities are not located in a mapped tsunami inundation zone.

### P.5.13 UTILITY INTERRUPTION

Much of MRWMD'S facilities are reliant on electricity to function. Critical facilities must be maintained and operational. Environmental control systems, which need power to function, are required to remain operational. Fueling of garbage trucks could also be limited be a utility interruption. Utility interruption is a major concern for the District, however, there are improvements that could be implemented to further fortify and maintain function of critical systems with backup power sources, and to mitigate utility interruption.

### P.5.14 WILDFIRE

Wildfire does not pose a major threat to the District's facilities but is a possible risk. hazards. California continues to experience an increase in wildfire hazards due to climate change and this could lead wildfire risk to become higher in the near term.

### P.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will exacerbate the risk posed by many of the hazards previously profiled in this Plan and have a measurable impact on the occurrence and severity of natural hazards. Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will likely affect people's livelihoods and the local economy.

## P.6 CAPABILITY ASSESSMENT

The MRWMD performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table P-2*
- An assessment of administrative and technical capabilities is presented in *Table P-3*
- An assessment of fiscal capabilities is presented in *Table P-4*
- An assessment of education and outreach capabilities is presented in *Table P-5*
- An overall self-assessment of capability is presented in Section P.6.1 in *Table P-6*

**Table P-2**
**Planning and Regulatory Capability**

| Document, Program, Requirement | | Department | Comments |
|---|---|---|---|
| General Management Plan | ☒ | | Joint Technical Document, Operational Plan |
| Capital Improvement Plan | ☒ | | Investment Policy, Capital projects list in Joint Technical Document |
| Stormwater Management Plan | ☐ | | |
| Coastal Management Plan | ☐ | | N/A |
| Climate Action/ Adaptation Plan | ☐ | | |
| Emergency Operations Plan | ☒ | | Emergency Response Plan |
| Specific Emergency Response Plans | ☒ | | Emergency Response Plan |
| Continuity of Operations Plan | ☐ | | |
| Evacuation Plan | ☒ | | Site Evacuation Plan, Muster Locations |
| Illness and Injury Prevention Plan | ☒ | | |
| Business Response Plan | ☐ | | |
| Hazardous Materials Plan | ☒ | | |
| Other: | • | Solid Waste Facility Permit | |

**Table P-3**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Engineering | |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Engineering | |
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Engineering | |
| Emergency Manager | ☒ | | Incident Commander designation hierarchy identified in Emergency Response Plan |
| Resource development staff or grant writers | ☒ | • All Departments | All departments can write grants as needed. |
| Public Information Officer | ☒ | • Communications<br>• Public Education | |
| Scientist(s) familiar with the hazards of the community | ☒ | • Engineering | |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Engineering | |
| Personnel skilled in Geographic Information Systems (GIS) | ☐ | | The District does not use GIS |
| Maintenance programs to reduce risk | ☒ | | Equipment Maintenance Program |
| Warning systems/services | ☒ | | Radio communication |
| Mutual Aid Agreements | ☐ | | |

**Table P-4**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Finance | |
| Capital Improvements Project Funding | ☒ | • Finance | |
| Special Purpose Taxes | ☐ | | |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | |
| Development Impact Fees | ☐ | | |
| General Obligation Bonds | ☐ | | |

**Table P-4**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| Special Tax and Revenue Bonds | ☐ | | |
| Other: | | • Disposal Fees at Landfill<br>• Recycling Sales<br>• Power Sales<br>• Tenant rents/ lease agreements | |

**Table P-5**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, etc. | ☒ | | Veterans Transition Services operate the Last Chance Mercantile |
| Ongoing public education or information program | ☒ | | MRWMD offers an array of free workshops and events and communicates through the newspaper and social media. They also provide information on proper waste disposal and have an app called "What Goes Where." |
| Natural disaster or safety related school programs | ☒ | | Tours are offered of MRMWD's Resource Facilities and Landfill to students. The District also has Waste Free School Support and donations program. The District can assist with student volunteer education and training for waste reduction, recycling, and compost projects. |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

*Political Capability*

The nine-member board of the MRWMD is supportive of hazard mitigation.

## P.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The Monterey Regional Waste Management District is a Special District and is therefore not eligible for flood insurance under the National Flood Insurance Program (NFIP).

## P.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table P-6**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | Moderate |
| Education and Outreach Capability | Moderate |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## P.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects
- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

## P.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

### *Existing Integration*

MRWMD was not previously a part of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan.

### *Opportunities for Future Integration*

As this hazard mitigation plan is implemented, Monterey County Regional Waste Management District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide

opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in **Volume 1**. New opportunities for integration also will be identified as part of the annual progress report. The plans and programs listed in the Capability Assessment cover the majority of District operations where the hazard mitigation goals are addressed. However, the capability assessment identified the opportunity for future integration of recommendations of the hazard mitigation plan for all the plans and programs listed as they are updated periodically.

## P.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the Districts' Planning Committee identified key vulnerabilities and hazards of concern. The Hazard Problem Statements were primarily derived from MRWMD's Hazard Mitigation Planning Committee and informed by review of existing literature about MRWMD's assets and analysis using best available data relating to the vulnerability analysis for each piece of critical infrastructure. They were developed to assist in the identification and analysis of potential hazard mitigation actions for MRWMD.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the District are identified below:

- Erosion of the north slope of the levee which protects the landfill, could cause the levee to failing causing a major flood hazard.
- Environmental Control Systems and critical services offered by the District require power to remain operational. A utility interruption could have large regulatory ramifications and cause catastrophic impact to services. Additionally, the District's facilities are located at the end of the transmission lines, which in the event of a major outage, could cause the power to be out for an extended period of time.
- Improperly disposed of hazardous waste is a major concern of the District and could have serious impacts on both operations and staff.
- A large earthquake, which affected the whole region could severely limit the District's ability to provide services. Additionally, if an earthquake compromised the landfill, the impacts could be catastrophic.

## P.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The District's Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation

alternatives. Based upon the risk assessment results and the District's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table P-7* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

MRWMD was not previously a part of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan.

**Table P-7**
**MRWMD Hazard Mitigation Plan Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | **In Progress** | Flooding, Levee Failure | Complete needed levee upgrade to the levee which protects the landfill. | High | Engineering | HMGP Grants |
| **2** | **New** | All | Install backup generators to ensure the continued function of critical services. | High | Engineering | HMGP Grants, General Funds |
| **3** | **Ongoing/ Continuous** | All, Human-Caused | Consider opportunities for integrating more redundancy and/or isolation into IT infrastructure. | Moderate | Engineering | Grants, General Funds |
| **4** | **New** | Hazardous Materials Incident | Investigate the feasibility of a radiation detection system and response plan. | Low | Safety, Engineering | Grants, General Funds |
| **5** | **Ongoing/ Continuous** | All | Continue to maintain appropriate deign of base liner/ cover liner system for the landfill. | High | Engineering, Maintenance | Grants, General Funds |
| **6** | **New** | Earthquake | Contingent on capital funding for seismic upgrades, complete a structural assessment of buildings. | Moderate | Engineering | Grants, General Funds |
| **7** | **New** | All, Utility Interruption | Investigate the use a microgrid in order to mitigate the impacts to power supply. Consider a joint microgrid project with Monterey One Water who operates the Wastewater Treatment Plant adjacent to the District's facilities. | Moderate | Engineering | Grants, General Funds |
| **8** | **Ongoing/ Continuous** | All | Continue to make investments in resilient infrastructure in order to ensure the sustainability of public services. | High | Engineering | Grants, General Funds |
| **9** | **Ongoing/ Continuous** | Wildfire | Collaborate with jurisdictions with fire protection and suppression responsibility on response and recovery efforts. | Low | Operations | Grants, General Funds |

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# ANNEX Q: MOSS LANDING HARBOR DISTRICT

2021 Monterey County
Multi-Jurisdictional
Hazard Mitigation Plan

MOSS LANDING
HARBOR DISTRICT

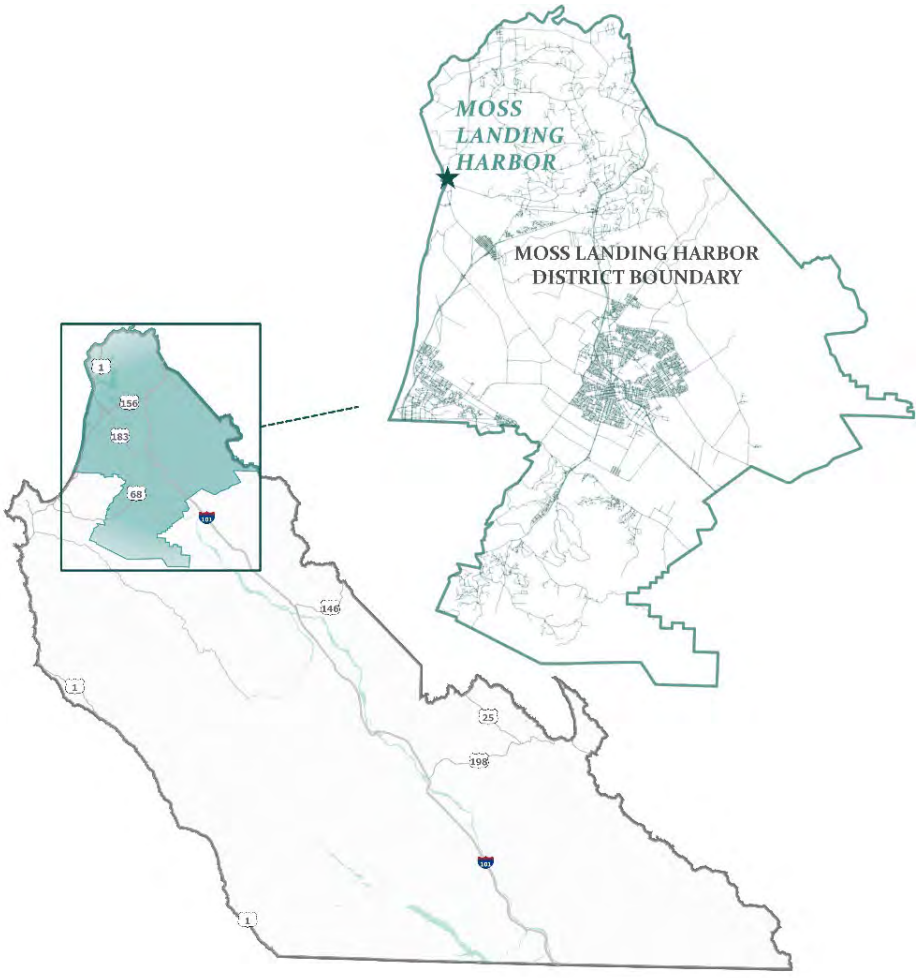
# Q. MOSS LANDING HARBOR DISTRICT

## Q.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Tommy Razzeca
General Manager/Harbor Master
7881 Sandholdt Road
Moss Landing, CA 95039
(831) 633-5417
razzeca@mosslandingharbor.dst.ca.us

## Q.2 DISTRICT PROFILE

### Q.2.1 LOCATION



## Q.2.2 SERVICE AREA

The Moss Landing Harbor is the number one commercial fishing harbor in the Monterey Bay with 600+ slips for recreational boaters and commercial vessels. Partnering with marine research and education institutions, the Moss Landing Harbor District provides full public access to the marine environment. Designated as a year-round port of safe refuge, Moss Landing Harbor provides safe, reliable marine refuge and services to members of the boating public. The District covers 364 square miles and extends from the bay east to the San Benito County line, and from the Santa Cruz County line as far south as the Corral de Tierra area.

Moss Landing Harbor supports the research and educational endeavors of the Monterey Bay Aquarium Research Institute and Moss Landing Marine Laboratories. More than 100 active fishing vessels can be berthed in Moss Landing at any time along with 7 research and government vessels. Two eco-tour pontoon boats are docked as well as charter fishing boats, whale watching vessels, kayak rentals and ecotourism businesses.

The Harbor supports commercial fishing and recreational boating as well as restaurants. The Jetty Road sand spit is located along the northeast side of the harbor. The Harbor provides parking and other harbor and beach access facilities which are located within both the north and south harbor areas (north and south of the main harbor entrance). Moss Landing Harbor properties are surrounded by the ocean, Elkhorn Slough, Moro Cojo Slough, and the nearby Salinas River. The proximity to the Monterey Bay National Marine Sanctuary and the ocean makes the Harbor a valuable maritime resource.

The Harbor District was designated a California Certified Clean Marina in 2007 and recertified in 2012. Marinas meeting the criteria for this certification are verified as providing environmentally clean facilities and protecting the state's coastal and inland waters from pollution through compliance with established best management practices.

## Q.2.3 HISTORY

The land, submerged lands and tidelands comprising the Moss Landing Harbor were originally acquired by the State of California upon its admission to the US in 1850. In 1866, a wealthy Texan and retired ship captain named Charles Moss brought his family from Texas to the California shore where they built their new homestead. Realizing the potential of this location, Captain Moss, along with Portuguese whaler Cato Vierra, constructed a 200-foot wharf to establish shipping facilities and a pier for commercial water traffic. The locals thought enough of the captain to eventually call the place Moss Landing. Captain Moss later sold his holdings to the Pacific Coast Steamship Company.

The Moss Landing Harbor District was formed on June 22, 1943 for the purpose of developing a harbor at Moss Landing pursuant to the Federal Harbors and Navigation Code. The Harbor District Board executed an Easement and Franchise Agreement with landowner Wilbur C. Sandholdt granting the District easements and rights-of-way over approximately 13 acres of land through which the harbor channel would be cut.

In 1945, the United States Congress authorized construction of a harbor at Moss Landing by the United States Army Corps of Engineers. In 1947, dredging was completed, piers and wharves were built, and the harbor officially opened. The harbor's early activity level varied over the years with local agricultural production, railroad connections, and commercial fishing and whaling.

The State of California granted the Moss Landing Harbor District the Submerged and Tide lands of the Old Salinas River channel below the Potrero and Moss Landing tide gates and includes the main channel of Elkhorn and Bennet sloughs and the coastal tide lands to the north and south of the Moss Landing Harbor entrance.

### Q.2.4 GOVERNING BODY FORMAT

The Moss Landing Harbor District (MLHD) is governed by the Board of Harbor Commissioners and they exercise the powers set forth in Sections 6070-6086 of the California Harbors and Navigation Code. The Board of Harbor Commissioners consists of five members, each of whom is a registered voter residing within the District. Members are elected by the registered voters of the District in a general election pursuant to California Elections Codes Section 32100 and are elected to four-year terms.

In addition to more typical special district legal rights and obligations, harbor districts—because they administer harbors, wharves, and channels—are authorized to pass ordinances and enforce regulations within their boundaries. The District's personnel are authorized to enforce the California Harbors and Navigation Code. Violations of harbor-related ordinances are typically infractions.

## Q.3 PLANNING PROCESS

The Moss Landing Harbor District followed the planning process explained in **Volume 1** of the plan. In addition to providing representation on the Monterey County Hazard Mitigation Planning Steering Committee, the District formulated their own internal planning team to support the broader planning process. The Moss Landing Harbor District held a Hazard Mitigation Plan Stakeholder meeting to discuss vulnerabilities, key problem statements, and mitigation strategies on September 28, 2021. Key stakeholders present at the meeting included:

- Tommy Razzeca, General Manager/Harbor Master
- Jeff Pritchard, Executive Assistant

## Q.4 FACILITIES

A large amount of harbor related infrastructure was built within the footprint of the historical Old Salinas River. The Harbor entrance is maintained by two large rock jetties that reach more than 1,500 feet out from the main harbor channel into the open Monterey Bay. The jetties and channel are under the jurisdiction of the Army Corp of Engineers. The harbor mouth and main harbor channel are dredged periodically to maintain operational depth. Most of the 2.5 km of the south harbor waterfront is man-made and or hardened with riprap or concrete. Only one quarter (0.5km) of the north harbor waterfront is protected or hardened.

Moss Landing Harbor District jurisdiction extends to the Elkhorn Slough at the "mean high water mark." The District-owned harbor property is approximately 85 acres, not including submerged lands. It berths over 600 boats, including 350 fishing boats, 200 pleasure craft, 12 research vessels, many transient vessels, and about six tour and charter boats. The District estimates that roughly half of these boats are owned by District residents. The District limits live-aboard boats to approximately 60. The harbor's commercial boats land Dungeness crab, halibut, king salmon, albacore, rockfish, squid, and a variety of other fish.

Facilities include the Main Harbor, located south of the main channel to the Monterey Bay, where larger vessels are berthed. The Main Harbor houses the Harbor Master's office, the Santa Cruz Cannery Building, parking, shower and laundry facilities for slip holders, and a small community park. Adjacent to this area, on District-owned land, is a recreational vehicle park that is open to the public, dry dock storage facilities, a maintenance dock, a maintenance shop building, and a bilge and oil pump-out facility that is available free of charge on a 24-hour basis. There are also new storage unit buildings, which are currently under ground lease. The Harbor has four boat launch ramps, five if the one in Kirby Park is included. The South Harbor includes the following docks: A Dock, B Dock, C Dock, G Dock, H Dock, I Dock, J Dock, E Dock, F Dock, K Dock

The North Harbor lies on the other side of the main channel and primarily serves recreational craft. The north side of the harbor includes a 900-foot public wharf, a 110-foot dock, paved parking, and a four-lane boat launch ramp. There is also a new 9,500 square foot waterfront building in the north harbor.

The District also owns and operates Kirby Park at the east end of Elkhorn Slough, about nine miles inland (via roads) from Moss Landing. This park provides parking and launch ramp for kayaks and other small vessels that can navigate the slough. A wheelchair-accessible nature viewing trail extends from the paved parking area. Other District-owned buildings at the harbor property include a 2,800-square-foot commercial building that is leased to a pottery shop and Monterey Bay Kayaks, a 33,600-square-foot cannery building leased to several marine-related and commercial fishing businesses, and a newly constructed seafood restaurant.

## Q.5 DISTRICT SPECIFIC RISK ASSESSMENT

The intent of this section is to profile the Moss Landing Harbor District's hazards and assess the District's vulnerability distinct from that of the countywide planning area, which has already been assessed in **Volume 1** of the plan. The hazard profiles in **Volume 1** discuss overall impacts to the County and describes the hazards, as well as their extent, magnitude/severity, previous occurrences, and the likelihood of future occurrences. Hazard vulnerability specific to the Moss Landing Harbor District is included in this Annex.

The Moss Landing Harbor District's Planning Team used the same risk assessment process as the Monterey County Steering Committee. The District's Planning Team used the Threat Hazard Risk Assessment (THIRA) Survey to compare the impact of various hazards that could affect the District. Each variable was scored by hazard by the Planning Team on a scale from 1 to 4, or negligible/unlikely to extensive/highly likely/ catastrophic. The score for each variable was calculated using a weighted average of all survey responses. Scores were then added together to determine an overall hazard score between 1 and 16. Each score was associated with a qualitative degree of risk ranking from Negligible (between 1 and 4) to Very High (between 14.1 and 16). The Survey is described in more detail in *Risk Assessment Methods* in **Volume 1**.

*Table Q-1* displays the results of the hazard risk ranking exercise that was performed by the Moss Landing Harbor District's Planning Team.

**Table Q-1**
**Threat Hazard Identification Risk Assessment (THIRA): Moss Landing Harbor District**

| Hazard | Geographic Extent | Likelihood of Occurrence | Magnitude/ Severity | Impact | Total *Out of 16* | Degree of Risk |
|---|---|---|---|---|---|---|
| Agricultural Emergencies | 3.0 | 2.0 | 3.0 | 3.5 | 11.5 | Substantial |
| Coastal Erosion | 4.0 | 4.0 | 3.0 | 3.0 | 14.0 | High |
| Coastal Flooding | 4.0 | 2.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Cyber-Attack | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Dam Failure | - | - | - | - | - | - |
| Drought & Water Shortage | - | - | - | - | - | - |
| Earthquake | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Epidemic | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Extreme Cold & Freeze | - | - | - | - | - | - |
| Extreme Heat | - | - | - | - | - | - |
| Flash Flood | - | - | - | - | - | - |
| Hazardous Materials Incident | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 | Substantial |
| Invasive Species | - | - | - | - | - | - |
| Levee Failure | - | - | - | - | - | - |
| Localized Stormwater Flooding | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Mass Migration | - | - | - | - | - | - |
| Pandemic | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Riverine Flooding | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 | Possible |
| Sea Level Rise | 4.0 | 3.0 | 4.0 | 4.0 | 15.0 | Very High |
| Severe Winter Storms | 4.0 | 4.0 | 4.0 | 4.0 | 16.0 | Very High |
| Slope Failure | 3.0 | 2.0 | 3.0 | 3.0 | 11.0 | Substantial |
| Targeted Violence | - | - | - | - | - | - |
| Terrorism | - | - | - | - | - | - |
| Tsunami | 3.0 | 3.0 | 3.0 | 3.5 | 12.5 | High |
| Utility Interruption/ PSPS | 2.0 | 2.0 | 3.0 | 3.0 | 10.0 | Moderate |
| Water Contamination | - | - | - | - | - | - |
| Wildfire | - | - | - | - | - | - |
| Windstorms | 2.5 | 2.5 | 2.5 | 2.5 | 10.0 | Moderate |

## Q.5.1 AGRICULTURAL EMERGENCIES

Though the Harbor District's facilities are unlikely to experience any impacts associated with agricultural emergencies, an agricultural emergency caused by a chemical spill along the Salinas River could have serious impacts on the waterways. Contaminated sediment is very difficult to dispose so an agricultural emergency could have critical impacts on dredging operations.

## Q.5.2 COASTAL EROSION

All Harbor facilities are at risk due to coastal erosion. Determination of assets at risk was based on analysis completed for the AB 691 Sea-Level Rise Assessment for Moss Landing Harbor (CCWG, June 2019). By 2030, coastal erosion of the sand spit that protects Moss Landing Harbor from ocean waves is predicted to be significant unless protective/adaptive actions are taken. Wave impacts along the beach are predicted to compromise dunes and coastal structures and reduce the long-term protection to the harbor.

By 2060, coastal erosion of the sand spit that protects Moss Landing Harbor from ocean waves is predicted to be significant and possibly jeopardize the harbor unless protective/adaptive actions are taken. Erosion of the dune barrier will likely lead to wave overtopping of the remaining dunes, allowing waves to enter the harbor, leading to vessel and dock damage and significant sedimentation. Failure of dunes are predicted along the entire stretch that parallels the harbor. Dunes adjacent to north harbor and dunes south of Sandholdt road have no structures or coastal armoring to reduce erosion, but also retain some natural dune building and migration capacity lost to development along Sandholdt Road. If dunes are allowed to migrate inland, these areas may retain their protective service. The impacts of sea level rise may also lead to significant erosion to Kirby Park launch ramp and parking area. By 2100, Winter storm waves and coastal erosion will likely bisect the sand spit above and below the Sandholdt Bridge, leading to limited use of the granted lands as a safe harbor marina.

## Q.5.3 DAM AND LEVEE FAILURE

### *Dam Failure*

Releases from both the Nacimiento and San Antonio reservoirs flow northward towards the Monterey Bay through the channel of the Salinas River, which outlets to the ocean near the Harbor. A dam or spillway failure of the Nacimiento or San Antonio dam could expose the Harbor's facilities to dam failure inundation risk, but this risk is likely to be minor.

### *Levee Failure*

Multiple levees protect agricultural land along Elkhorn, Moro Cojo, and Bennett Sloughs. A failure of any of these levees is unlikely to have a significant impact on the Harbor, but it could change the flood management regime in the area, which could cause long-term residual impacts that could not be predicted at this time. Additionally, a levee failure could lead to increases in sedimentation in the Harbor that could affect dredging operations.

## Q.5.4 DROUGHT AND WATER SHORTAGE

Drought is unlikely to have a major impact on the Harbor District's facilities or operations.

## Q.5.5 EARTHQUAKE

Most of the Harbor's facilities are designed to the latest building codes to handle seismic events. However, damage to Harbor facilities could still occur if a large enough earthquake were to occur. Additionally, the Harbor District Office Building was built before a number of seismic codes were in place and is likely vulnerable to seismic risks. An earthquake would also likely impact bridges surrounding the Harbor which could make it impossible to access the Harbor.

The Harbor is also located in an area that is suspectable to liquefaction risk and this could be a major risk if an earthquake were to occur. In Moss Landing, following the Loma Prieta Earthquake, liquefaction destroyed the causeway that carried the Moss Beach access road across a tidewater basin, damaged the bridge linking Moss Landing spit to the mainland and cracked the paved road on Paul's Island. Another large earthquake occurrence is likely to cause liquefaction in this area.

### Q.5.6 FLOODING

All Harbor facilities are at risk due to flooding as the Harbor is surrounded by water- the ocean, Elkhorn Slough, Moro Cojo Slough, and the nearby Salinas River. This risk is likely to increase with sea level rise.

### Q.5.7 HAZARDOUS MATERIALS INCIDENT

Highway 1 and a number of industrial and commercial facilities are in close proximity to the Harbor. Oil spills in the Harbor is another large concern. The largest impact of a hazardous materials incident would be the effect on water quality, as well as people and residents in the Harbor. A hazardous materials incident could contaminate sediment, which would complicate dredging operations since contaminated sediment is very difficult to dispose of.

### Q.5.8 HUMAN CAUSED HAZARDS

It is often quite difficult to quantify the potential losses from human-caused hazards. While facilities themselves have a tangible dollar value, the impact to identified values will vary from event to event and depend on the type, location, and nature of a specific incident. The Harbor is unlikely to be a major target for terrorism or targeted violence, but it is a possibility.

### Q.5.9 PUBLIC HEALTH HAZARDS

Based on the experience of the COVID-19 pandemic, it is noted that pandemic or epidemic could impact parking and tourism revenue, as well as effect businesses which operate out of the Harbor.

### Q.5.10 SEVERE WEATHER

All severe weather events profiled in this Plan have the potential to affect the District’s facilities and infrastructure, but severe winter storms are the weather hazard of highest concern. Severe winter storms have the potential to create numerous flooding issues. Winter storms can cause riverbanks to fail and erode coastal dunes, which leads to more sedimentation in the Harbor. This then requires more frequent dredging of the Harbor and the need for bank stabilization projects. Flooding risks during winter storm events is predicted to increase significantly due to climate change and sea level rise. Data from the Sea-Level Rise Assessment for Moss Landing Harbor (CCWG, June 2019) indicates that by 2030, winter storms could lead to flooding of the parking areas of South and North Harbor and limit access to the Moss Landing island during storms.

### Q.5.11 SLOPE FAILURE

The main impact to Harbor facilities and infrastructure from slope failure would be flood risk. The failure of coastal dunes and nearby riverbanks is likely to exacerbate flood risk in the Harbor.

## Q.5.12 TSUNAMI

All Harbor facilities are located in a mapped tsunami inundation zone. The largest impact of a tsunami would be the destruction of dock structures, but a large enough tsunami could have catastrophic impacts on the Harbor.

## Q.5.13 UTILITY INTERRUPTION

All critical facilities and infrastructure that is operated by electricity is exposed and vulnerable to utility interruption. Much of Harbor's facilities are reliant on electricity to function. The main concern of an extended utility interruption would be the impact to the Harbor's pumps. If boats were to loose battery power, the pumps would be inoperable, and this could cause boats to sink.

## Q.5.14 WILDFIRE

Wildfire does not pose a major threat to the Harbor District.

## Q.5.15 CLIMATE CHANGE AND SEA LEVEL RISE

The effects of climate change are varied and include warmer and more varied weather patterns and temperature changes. Climate change will exacerbate the risk posed by many of the hazards previously profiled in this Plan and have a measurable impact on the occurrence and severity of natural hazards. Sea level rise is likely to impact all Harbor facilities and infrastructure. Determination of assets at risk was based on analysis completed for the AB 691 Sea-Level Rise Assessment for Moss Landing Harbor.[3]

By 2030, flooding is projected to effect portions of the main parking lot, Docks A and B, the small boat launch ramp, and the parking area of North Harbor. If the Moss Landing tide gates fail to restrict high tides, access to some of the harbor infrastructure will be compromised. The greatest tidal flooding impacts will occur during high tides (king tides) during storms that increase wave energy, local ocean levels, and increased river discharge. River discharge during winter storms is predicted to increase. These increases in river flows are predicted to cause localized flooding as stormwater from the watershed meets higher winter ocean elevations in the harbor. Greater velocity discharge from the Old Salinas River into the Harbor is likely and may impact infrastructure in its path. Greater sedimentation of the Harbor due to greater erosion in the watershed is likely.

By 2060, flooding will occur monthly or daily in low-lying areas throughout the Harbor and storm and tidal flooding are predicted to compromise large portions of Harbor infrastructure. Flooding is projected to be extensive within parking areas, dock access ways, launch ramps, and access roads. Flooding of portions of Moss Landing and Sandholdt roads are predicted and will limit access to the Harbor. This would significantly reduce the use of the Harbor and could pose a serious public safety challenge by restricting emergency service vehicles and staff. The Harbor mouth jetty is likely to be overtopped by winter waves, compromising the navigability of the Harbor. Over half of the land in the North Harbor is predicted to be flooded and access to much of the Harbor District's State granted lands will be restricted during high tides. Wave overtopping of the dunes is possible, which would lead to ocean waves and sand draining into Moss Landing Harbor. Combined with loss of the tidal marshes of

[3] AB 691 Sea-Level Rise Assessment for Moss Landing Harbor, Central Coast Wetlands Group (June 2019)

Elkhorn Slough, sedimentation within the Harbor will greatly increase. River discharge during winter storms is also predicted to increase. Increases in river flows are predicted to cause localized stormwater flooding as from the watershed meets higher winter ocean elevations. Sedimentation of the harbor is also likely to increase due to increased erosion within the watershed during high flow events. Increased discharge velocity under Sandholdt Bridge may impact vessels and Harbor infrastructure in south harbor.

By 2100, access to all Harbor infrastructure will be restricted/flooded during daily high tides. Winter storm waves and coastal erosion will likely bisect the sand spit above and below the Sandholdt Bridge, leading to limited use of the granted lands as a safe harbor marina. *Table Q-2* summarizes the Harbor facilities and infrastructure identified by the Sea-Level Rise Assessment for Moss Landing Harbor [4] as vulnerable to various sea level hazards during future time horizons.

**Table Q-2**
**Moss Landing Harbor District Facilities and Infrastructure Vulnerable to Sea Level Rise Hazards**

| Structure | Coastal Erosion | | | Storm Flooding | | | Tidal Flooding | | | Fluvial Flooding | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *2030* | *2060* | *2100* | *2030* | *2060* | *2100* | *2030* | *2060* | *2100* | *2030* | *2060* | *2100* |
| Harbor Office | | | | | | 1 | | | 1 | | | 1 |
| Restroom & Laundry Facilities | | | | | | 3 | | | 3 | | | 2 |
| Maintenance Shop | | | | | | 1 | | | 1 | | | 1 |
| Cannery Building | | | | | 1 | 1 | | | 1 | | 1 | 1 |
| ML Storage Buildings | | | | | | 2 | | | 2 | | | 2 |
| Sea Harvest Building | | | | | 1 | 1 | | | 1 | | | |
| North Harbor Building | | | | | | 1 | | | 1 | | | |
| Old Pot Stop Building | | | | | | 1 | | | 1 | | | |
| MB Kayak Building | | | | | 1 | 1 | | | 1 | | | |
| Used Oil Containment Facility | | | | | 1 | 1 | | | 1 | | 1 | 1 |
| Trash Enclosures | | | | 1 | 2 | 2 | | 1 | 2 | 1 | 1 | 2 |
| Launch Ramps | | | | 2 | 2 | 2 | 2 | 2 | 2 | | | |
| Sewer Lift Stations | | | | | | 2 | | | 1 | | | 1 |
| Dry Storage | | | | | 1 | 1 | | 1 | 1 | | 1 | 1 |
| Maintenance Yard | | | | | | 1 | | | 1 | | | 1 |
| Unimproved Lots | | | | 1 | 1 | 2 | | 1 | 2 | | 1 | 1 |
| Moss Landing Community Park | | | | | | 1 | | | 1 | | | 1 |
| Pier | | | | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| Storm Drains | 0 | 0 | 0 | 7 | 12 | 16 | 2 | 7 | 15 | 2 | 8 | 8 |
| Docks | 0 | 0 | 1 | 12 | 13 | 13 | 12 | 13 | 13 | 10 | 10 | 11 |
| Electric Meters | 0 | 0 | 2 | 3 | 6 | 7 | 1 | 5 | 7 | 2 | 5 | 6 |

[4] AB 691 Sea-Level Rise Assessment for Moss Landing Harbor, Central Coast Wetlands Group (June 2019)

## Q.6 CAPABILITY ASSESSMENT

The Moss Landing Harbor District performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment:

- An assessment of planning and regulatory capabilities is presented in *Table Q-3*
- An assessment of administrative and technical capabilities is presented in *Table Q-4*
- An assessment of fiscal capabilities is presented in *Table Q-5*
- An assessment of education and outreach capabilities is presented in *Table Q-6*
- An overall self-assessment of capability is presented in Section Q.6.1 in *Table Q-7*

**Table Q-3**
**Planning and Regulatory Capability**

| Document, Program, Requirement | | Department | Comments |
|---|---|---|---|
| General Management Plan | ☒ | • Admin | Ordinance Code is basis of operations |
| Capital Improvement Plan | ☒ | • Admin | Capital projects included in the budget and new long range planning efforts are underway |
| Stormwater Management Plan | ☒ | • Admin | |
| Coastal Management Plan | ☒ | • Admin | |
| Climate Action/ Adaptation Plan | ☒ | | AB 691 Sea-Level Rise Assessment for Moss Landing Harbor (CCWG, 2019) |
| Emergency Operations Plan | ☒ | • Admin | Business Response Plan |
| Specific Emergency Response Plans | ☒ | • Admin | Tsunami Harbor Maritime Playbook, Coastal Incident Response Plan, Business Response Plan |
| Continuity of Operations Plan | ☒ | • Admin | In Business Response Plan |
| Evacuation Plan | ☒ | • Admin | In Business Response Plan |
| Illness and Injury Prevention Plan | ☒ | • Admin | In Business Response Plan |
| Business Response Plan | ☒ | • Admin | |
| Hazardous Materials Plan | ☒ | • Admin | Spill Prevention Plan |
| Other: | • Dredge Materials Management Plan | | |

**Table Q-4**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with knowledge of land development and land management practices | ☒ | • Admin | Use consultants as needed |
| Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | ☒ | • Admin | Use consultants as needed |

**Table Q-4**
**Administrative and Technical Capability**

| Staff/Personnel Resources | | Department | Comments |
|---|---|---|---|
| Planner(s) or engineer(s) with an understanding of manmade or natural hazards | ☒ | • Admin | Use consultants as needed |
| Building Inspector | ☒ | • Admin | Use consultants as needed |
| Emergency Manager | ☒ | • Admin | General Manager/ Harbormaster |
| Resource development staff or grant writers | ☒ | • Admin<br>• Operations | |
| Public Information Officer | ☒ | • Admin | General Manager/ Harbormaster |
| Scientist(s) familiar with the hazards of the community | ☒ | • Admin | Use consultants as needed |
| Staff with education or expertise to assess the community's vulnerability to hazards | ☒ | • Admin | Use consultants as needed |
| Personnel skilled in Geographic Information Systems (GIS) | ☒ | • Admin | Use consultants as needed |
| Maintenance programs to reduce risk | ☒ | • Admin<br>• Operations | Dredge Materials Management Plan, In-house maintenance Program |
| Warning systems/services | ☒ | • Admin<br>• MoCo OES | PA System, OES Reverse 911 |

**Table Q-5**
**Fiscal Capability**

| Fiscal Resources | | Department | Comments |
|---|---|---|---|
| General Funds | ☒ | • Admin | |
| Capital Improvements Project Funding | ☒ | • Admin | General and trust lands accounts |
| Special Purpose Taxes | ☐ | | |
| Stormwater Utility Fees | ☐ | | |
| Gas / Electric Utility Fees | ☐ | | |
| Water / Sewer Fees | ☐ | | |
| Development Impact Fees | ☐ | | |
| General Obligation Bonds | ☐ | | |
| Special Tax and Revenue Bonds | ☐ | | |
| Other: | • Berth Rental and Parking Fees<br>• Permit Fees<br>• Services and Equipment Fees<br>• Lease Agreements | | |

**Table Q-6**
**Education and Outreach Capability**

| Educational and Outreach Resources | | Department | Comments |
|---|---|---|---|
| Local citizen or non-profit groups focused on environmental protection, emergency preparedness, etc. | ☐ | | |
| Ongoing public education or information program | ☒ | • Admin | The District shares public information on their website |
| Natural disaster or safety related school programs | ☐ | | |
| Public-private partnership initiatives addressing disaster-related issues | ☐ | | |

*Political Capability*

The Moss Landing Harbor District Board is non-partisan and supports reducing risk to Harbor facilities and infrastructure.

## Q.6.1 NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The Moss Landing Harbor District is a Special District and is therefore not eligible for flood insurance under the National Flood Insurance Program (NFIP).

## Q.6.2 SELF-ASSESSMENT OF CAPABILITY

**Table Q-7**
**Self-Assessment of Capability**

| Capability | Degree of Capability |
|---|---|
| Planning and Regulatory Capability | Moderate |
| Administrative and Technical Capability | Moderate |
| Fiscal Capability | Limited |
| Education and Outreach Capability | Limited |
| Political Capability | Moderate |
| **Overall Capability** | **Moderate** |

## Q.6.3 OPPORTUNITIES TO EXPAND/ IMPROVE MITIGATION CAPABILITIES

Planning, regulatory, fiscal, administrative, technical, education, and outreach capabilities can all be expanded or improved using a combination of the following strategies:

- Increase capacity through staffing
- Training, and enhanced coordination among all department and jurisdictions
- Emergency management/hazard specific program enhancements, training, and exercising
- Increased funding opportunities and capacity
- Implementation of mitigation actions and projects

- Continuous research on grant opportunities for emergency management, hazard mitigation, and infrastructure and community development.

Capabilities and abilities to expand or improve existing policies and programs will be re-evaluated during the next Hazard Mitigation Plan update and annual plan review meetings.

### Q.6.4 INTEGRATION WITH OTHER PLANNING INITIATIVES

The information on hazards, risk, vulnerability and mitigation contained in this hazard mitigation plan is based on the best available data. Plan integration is the incorporation of this information into other relevant planning mechanisms, such as general planning and capital improvement planning. It includes the integration of natural hazard information and mitigation policies, principles and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved though the involvement of key staff and community officials in collaboratively planning for hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future.

#### *Existing Integration*

Moss Landing Harbor District was not previously a part of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan.

#### *Opportunities for Future Integration*

As this hazard mitigation plan is implemented, Moss Landing Harbor District will use information from the plan as the best available science and data on natural hazards. The capability assessment presented in this annex identifies codes, plans and programs that provide opportunities for integration. The area-wide and local action plans developed for this hazard mitigation plan include actions related to plan integration, and progress on these actions will be reported through the progress reporting process described in **Volume 1**. New opportunities for integration also will be identified as part of the annual progress report. The plans and programs listed in the Capability Assessment cover the majority of District operations where the hazard mitigation goals are addressed. However, the capability assessment identified the opportunity for future integration of recommendations of the hazard mitigation plan for all the plans and programs listed as they are updated periodically.

## Q.7 PROBLEM STATEMENTS

Problem Statements are statements of particular interest regarding primary hazards of concern, geographic areas of concern, or vulnerable community assets. As part of the planning process, the Districts' Planning Committee identified key vulnerabilities and hazards of concern. The Hazard Problem Statements were primarily derived from Moss Landing Harbor District's Hazard Mitigation Planning Committee and informed by review of existing literature about Moss Landing Harbor District's assets and analysis using best available data relating to the vulnerability analysis for each piece of Moss Landing Harbor District's critical infrastructure. They were developed to assist in the identification and analysis of potential hazard mitigation actions for Moss Landing Harbor District.

Hazard Problem Statements helped the Planning Committee identify common issues and weaknesses, determine appropriate mitigation strategies, and understand the realm of resources needed for mitigation. Hazard Problem Statements for the District are identified below:

- Sea level rise has the potential to have catastrophic effects on the Moss Landing Harbor District and is likely to reduce access to many Harbor facilities during large storm events.
- Coastal erosion combined with winter storm events and sea level rise is likely to have major impacts on the Harbor. By 2060, coastal erosion of the sandspit that protects Moss Landing Harbor from ocean waves is predicted to be significant and this could jeopardize the Harbor unless protective actions are taken. By 2100, Winter storm waves and coastal erosion will likely bisect the sand spit above and below the Sandholdt Bridge, leading to limited use of the granted lands as a safe harbor marina.
- A number of hazards in this Plan have the potential to significantly complicate dredging operation. Winter storms can cause riverbanks to fail and erode coastal dunes, which leads to more sedimentation in the Harbor. This then requires more frequent dredging of the Harbor. Hazardous materials incidents can contaminate sediment, which can complicate dredging operations since contaminated sediment is very difficult to dispose of.
- Tsunami, flooding, and severe storms can create strong and unpredictable currents, sudden water-level fluctuations, amplified waves, along with a range of other secondary hazards all of which can severely impact docks, dock structures (piles, pile guides, moorings, cleats), and vessels.
- Various County, State, and Federal agencies have jurisdiction over lands surrounding the Harbor District. This complicates mitigation activities to address many of the hazards discussed in this Plan since the effectiveness of the Harbor's actions depends on the actions of other agencies.

## Q.8 MITIGATION GOALS, STRATEGIES, AND ACTIONS

The mitigation strategy is the guidebook to future hazard mitigation administration, capturing the key outcomes of the MJHMP planning process. The mitigation strategy is intended to reduce vulnerabilities outlined in the previous section with a prescription of policies and physical projects. These mitigation actions should be compatible with existing planning mechanisms and should outline specific roles and resources for implementation success.

The District's Planning Team used the same mitigation action prioritization method as described in *Mitigation Strategy* in **Volume 1**, which included a benefit-cost analysis and consideration of mitigation alternatives. Based upon the risk assessment results and the District's planning committee priorities, a list of mitigation actions was developed. The Hazard Mitigation Action Plan Matrix, in *Table Q-8* lists each priority mitigation action, identifies time frame, the responsible party, potential funding sources, and prioritization, which meet the requirements of FEMA and DMA 2000.

### *Status of Previous Plan Actions*

Moss Landing Harbor District was not previously a part of the Monterey County Multi-Jurisdictional Hazard Mitigation Plan.

**Table Q-8**
**Moss Landing Harbor District Hazard Mitigation Action Plan Matrix**

| Action # | Status/ Timeframe | Applicable Hazard(s) | Description | Ranking / Prioritization | Administering Department | Potential Funding |
|---|---|---|---|---|---|---|
| **1** | **Ongoing** | Flooding, Tsunami, Severe Winter Storms, Coastal Erosion, Earthquake | Update dock structures and old dock infrastructure in order to reduce flood risks. Continue to improve dock infrastructure by moving away from wooden piles and docks and use more concrete. | High | Admin | General and Trust Lands Funds, Grants, Emergency Funding |
| **2** | **Ongoing** | Flooding, Coastal Erosion, Severe Winter Storms, Sea Level Rise | Armor parking lots, riverbanks, other vulnerable infrastructure in order to reduce flood and sea level rise risk and continue to implement erosion control measures. | High | Admin | General and Trust Lands Funds, Grants, Emergency Funding |
| **3** | **Long-term** | Sea Level Rise | Consider opportunities to raise infrastructure to address long-term sea level rise risks. | Moderate | Admin | General and Trust Lands Funds, Grants, Emergency Funding |
| **4** | **Ongoing/ As Needed** | Flooding, Severe Winter Storms | Continue dredging operations as needed and as storms continue to get worse due to climate change continue to monitor the frequency of dredging. | High | Admin | General and Trust Lands Funds, Grants, Emergency Funding |

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# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**ORDERS OF BUSINESS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Brandon Swanson, Community Planning & Building Director |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Provide feedback on the Design Traditions 1.5 Strategy Paper |

## RECOMMENDATION:

Provide feedback on the Design Traditions 1.5 Strategy Paper.

## BACKGROUND/SUMMARY:

Combining input from two community workshops, an online survey, messages from the public, Steering Committee guidance, and early feedback from the Planning Commission and City Council, the Design Traditions 1.5 (DT-1.5) Strategy Paper is meant summarize the direction for updates to the City's Design Guidelines. The purpose of laying out this direction before beginning any drafting is to ensure that the project team has accurately captured the expectations of the community and other stakeholders for the DT-1.5 Project. On October 3rd, the City and hosted another community workshop with two main goals: 1) complete a handful of exercises meant to further explore topics addressed at the June workshops, and; 2) Get feedback on the Strategy Paper to make sure the project is on the right track and in line with what had been learned at the first workshops. In general, the feedback received from those in attendance about the Strategy Paper was positive and supportive of the proposed direction.

Following on from the October 3rd workshop, the DT-1.5 team is in the process of asking the Planning Commission and City Council for feedback on the strategy paper before beginning draft updates to the Design Guidelines. On October 12th, the Planning Commission reviewed and provided comments on the strategy paper. Overall, the Commission felt the document was in line with their initial input, and feedback they have heard from the community. The Commission also offered additional feedback including things like considering how design could impact privacy/views and ensuring that the updated Design Guidelines accounted for needing more 2-story buildings in the downtown area to help with the City's RHNA numbers. With that in mind, here are the questions that staff would like the Council to answer:

1. Does this strategy paper accurately represent the direction that you have provided about where the Design Guidelines need to go?
2. Does this strategy paper accurately represent feedback you have heard directly from the public about the Design Guidelines?
3. Are there any glaring omissions or inconsistencies from a strategy perspective?

*Next Steps*

After receiving feedback from both the Planning Commission and City Council, the DT-1.5 team, which includes staff and Nore Winter, will begin drafting updates to the Design Guidelines. Once the edits are drafted, another community meeting will be held to share the drafts and get early input. Following the community meeting the drafts will also come before the Planning Commission and City Council for feedback. Necessary revisions to the drafts will take place following this round of public input, and ultimately final drafts will be brought to the Planning Commission and City Council to consider adoption in the spring of 2023.

## FISCAL IMPACT:

The funding associated with staff time and for Winter & Co. ($140K) for this project is included as part of the adopted FY2022-2023 budget.

## PRIOR CITY COUNCIL ACTION:

None specific to review of the Strategy Paper.

## ATTACHMENTS:

Attachment 1) Strategy Paper

# Carmel Design Traditions Project 1.5

# Strategy Paper

September 20, 2022

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## INTRODUCTION TO THE STRATEGY PAPER

Carmel is engaged in updating its Design Guidelines for its residential areas and the downtown. The guidelines are key tools in shaping the character of the community and are used in the Design Review process that is part of project permitting. This project also includes potential revisions to some zoning code standards that influence design. The existing Design Guidelines were produced as part of the city's "Design Traditions Project" in 1997 through 2001 and therefore this update is named "Design Traditions 1.5" to indicate that it builds on those materials. This working paper describes the scope of the edits that are proposed to be made to the existing design guidelines and zoning code standards.

### Steps in the project

The Design Guidelines project is being conducted in two phases: The first phase is designed to confirm the scope of the amendments to be executed. It includes a review of existing conditions, startup meetings with staff and decision-makers as well as community engagement. It culminates with this Strategy Paper, which sets the direction for the second phase. In the second phase, formal revisions to the documents will be drafted and submitted for public review and then will be considered for adoption by the Planning Commission and City Council.

### Structure of the Strategy Paper

This Strategy Paper describes revisions to the Design Guidelines and zoning code that are recommended. It outlines the general approach to the revisions and provides some examples of specific changes to be made. The material is presented in these sections:

I. Design in Carmel: Its Design Traditions
II. Respecting Carmel's Design Traditions
III. Current Issues
IV. Summary of key recommendations
V. Strategy for the Downtown Design Guidelines
VI. Strategy for the Residential Design Guidelines
VII. Strategy for zoning code amendments
VIII. Strategy for review process and administration amendments
IX. Next steps

### How the Strategy Paper was developed

A working team of city planning staff and consultants developed the Strategy Paper, with advice from a project Steering Committee appointed by City Council. The recommendations reflect information collected from many sources. This includes initial study sessions with the City Council and the Planning Commission as well as important information gathered from community outreach and meetings and from other city departments.

In June 2022, members of the community engaged in two workshops in which they conveyed their ideas about community character and the various design variables that influence compatibility. Many participants met at the Sunset Center while others joined online. The first workshop, held on June 21, focused on residential areas. The second workshop occurred the following day and focused on the downtown.

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Previously in 2018 and 2019, a working committee of the Planning Commission developed suggestions for amendments to guidelines and zoning and these also were reviewed. Comments received from individual citizens in letters, emails and phone calls also informed the recommendations. Finally, the city posted an on-line survey in mid-July 2022. More than 350 respondents participated in the survey and that information was analyzed.

**How the Strategy Paper will be used**

The intent of this paper is to outline potential revisions to the Design Guidelines and zoning code standards. The community will have an opportunity to comment on the recommendations in a forthcoming workshop tentatively scheduled for early October, 2022. The Planning Commission and City Council will then provide direction to the project team about how to proceed with drafting the proposed revisions.

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## I. DESIGN IN CARMEL: ITS DESIGN TRADITIONS

The Design Guidelines and standards in Carmel focus on maintaining the community's unique character which is so highly cherished. Some features are listed below which people have described as part of Carmel's design traditions and which inform the approach to the revisions. This list will be edited to be included in the introductions to the residential and downtown design guidelines in order to inform the guidelines that then follow.

### Some defining characteristics of Carmel

Carmel is a Village in the Forest which is:

NEIGHBORHOOD

Subdued: No one thing is attention-grabbing; a building fits within the context of its block, its neighborhood and the city at large.

Exploratory: There is a sense of discovery along each street. One must experience a block in space and time, by moving along or through it.

Historic: A rich mix of historic and other traditional buildings, representing a range of styles is found throughout the community.

ARCHITECTURE

Genuine: A sense of authenticity is conveyed in natural building materials and design.

In scale: Buildings are human-scaled in their forms, materials and details.

Crafted: Buildings are of high quality and durable. This also is expressed in design details of buildings.

Diverse: There is variety in the range of building styles that fit in with the character of being a Village in the Forest.

Nestled: Buildings fit in with and are subordinate to the forest setting.

LANDSCAPES

Informal: Landscapes contribute to the forest character.

Walkable: Landscapes are pedestrian-scaled and enhance the public realm.

Connected: Properties connect to the public right-of-way with landscape details that extend the forest character. They are not walled off.

DOWNTOWN

Pedestrian-friendly: Buildings are human-scaled with details at the street level that invite exploration.

Open and welcoming: Storefronts, courtyards and landscapes enhance the interplay of indoor and outdoor spaces.

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**Factors that may distinguish one neighborhood from another:**
While many characteristics of Carmel are "universal" in that they appear throughout the entire village, differences exist among neighborhoods. For example, most residential streets are similar in their forested character but some streets near the Mission are more open. Another example is along Scenic which has its own distinguishing features. Some of the variables that may define different neighborhoods, or "contexts" are listed below. These factors will be edited to be included in an introduction to the Design Guidelines discussing how to consider the context of a project:

1. The amount of light available: This relates to the character of the tree canopy and street widths.

2. The extent of the tree canopy: Most streets are intended to have a sense of enclosure with a healthy tree canopy, but a few were planned to be more open, such as in the Mission area.

3. Street widths: This influences where on-street parking occurs and street edges are treated. Most are of similar widths, but narrower ones exist and others are wider, such as near the Mission.

4. Variations in topography: This may be in the slope of a street itself or of lots, which may occur as "uphill" and "downhill" conditions. This influences the location of garages, how building forms may be stepped on a site and the way in which view opportunities exist.

5. Street layout: Most street are laid out in a grid with informal street edges. A few actually are laid out with curves such as Ridgewood Rd. and a portion of 14th Avenue.

6. The different phases in which the City has developed: Carmel City began in 1888 as a community of approximately 40 blocks. It more than doubled with annexation in 1900 of the Pescadero Canyon area and the Original Carmel-by-the-Sea in 1902. Other lands were added during the 1920s and 1930s until more than 200 blocks were included. The last annexation occurred in 1967. To some extent, differences in the periods of construction appear in the architectural styles found in these areas.

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## II. RESPECTING CARMEL'S DESIGN TRADITIONS

While there are many aspects of the character of Carmel that are to be addressed in the Design Guidelines, there are some high level design principles that apply citywide and that set the stage for the Design Guidelines. They are Guiding Principles for respecting Carmel's Design Traditions which each improvement project should meet. Those principles are listed below. This list will be edited to be included in introductory material to the design guidelines.

1. Maintain a healthy forest character: Plan landscapes in both the public and private realms to sustain the Village in a Forest and restore areas that are in need. The compatibility of many buildings also is improved with more forest-like front yards.

2. Enhance the forest: Provide layers of landscaping (varying plant and tree heights) between the street and each home and use drought-tolerant plants and fire-resistant materials while continuing to convey the forest character.

3. Keep it modest: Design buildings and landscapes to be human-scaled and fit in with their surroundings rather than stick out.

4. Respect historic precedents: Retain traditional buildings that convey the history of the community.

5. Fit with the context: "Remember your neighbors" is an important principle. This varies by neighborhood. Key design factors include:
   - Building size (height and width)
   - Building form and proportion
   - Percentage of solid-to-void (ratio of windows to wall)
   - Building materials
   - Roof form
   - Color
   - Fit with the topography

6. Pay attention to detail: Convey excellence and authenticity in materials and design. Add value with well-crafted work that is visible to the community and promote the use of natural materials.

7. Encourage a "compatible diversity" in design: Avoid repetition in building designs and site features. Express individuality in subtle ways while respecting surroundings.

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**III. CURRENT ISSUES**

These are some issues that have been identified and which are addressed in the recommended revisions. They are grouped into three categories: (1) **Design**, in terms of the character of the built environment, (2) The **Content** of the Design Guidelines and standards that regulate design, and (3) **Administration**, which is the way in which reviewers apply the standards and guidelines in the permitting process.

DESIGN ISSUES

In General:

1. Some recent projects don't fit in. They don't respect some of the key design variables that relate to fitting in.

2. How to address diversity in design while maintaining character. Diversity is a part of Carmel's design traditions, but within limits for fitting in. How can one define the range of diversity that is appropriate?

In Residential areas:

3. There is a question about architectural style: Some feel "modern," or "contemporary" buildings don't fit in. Others point to recent projects that do fit. Is style the issue, or is it the deviation from too many key design variables that define Carmel that is the problem (e.g.: Is a new building too visible from the street with a lack of appropriate landscaping)? Or is it a lack of understanding of the key design variables and how to apply them?

4. Erosion of forest character is a concern at the upper and lower canopy levels. This occurs in various places:

- In the Right-of-Way (ROW)
- In front yard landscaping, between the ROW and a house
- In landscaping on a site in general

5. Some front yard fences and walls cut off views into yards and weaken the sense of connection with the street.

In the Downtown:

6. Inappropriate mass and scale of some new buildings and additions in the downtown makes them appear too large. Can new buildings that occupy more than one lot fit in while avoiding a sense of false facades? What are the key variables that they must respect to do so?

ISSUES WITH THE DESIGN GUIDELINES DOCUMENTS

In General:

7. More specific "yes and no" examples are needed in the illustrations. This would help users better understand the intent of the guidelines.

8. The documents need to be easier to navigate.

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9. The Design Guidelines documents need better cross-referencing to relevant zoning standards and other regulations.

10. More guidance is needed about design in the Right-of-Way. A limited amount of design guidance is provided in the Design Guidelines documents. Other, more detailed, standards exist in a separate document which is used by Public Works. How are these best coordinated?

The Residential Design Guidelines:

11. Many topics are already addressed in the Design Guidelines and yet seem to be overlooked when designs are developed. Is it the lack of clarity or direction in some of the guidelines? Or is it in their application by owners and those reviewing their designs?

12. Some guidelines lack clarity which complicates their interpretation. They sometimes are vague or the language is too passive.

The Downtown Design Guidelines:

13. The commercial guidelines lack sufficient detail to provide clear guidance in decision-making. They were developed separately from the residential guidelines, have a different format and provide only high-level principles.

14. The current guidelines focus on commercial buildings, but other types are permitted in various zone districts. Multifamily buildings and hotels are examples. How can the guidelines address these?

ISSUES WITH ADMINISTRATION OF DESIGN REVIEW

15. Some people believe that at times the guidelines aren't followed closely enough during design review. How can predictability in the review process be improved and how can confidence in the system be enhanced?

16. Some changes to projects are made during construction without approval. This is primarily an enforcement issue, but improving clarity in the guidelines could help in determining violations or in making revisions to approved documents.

17. Some people also have suggested that re-establishing a Design Review Board would improve the process.

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## IV. SUMMARY OF KEY RECOMMENDATIONS

This section lists at a high-level some key recommendations for improvement which apply across the board in both the residential and commercial zoning areas. To some extent they relate to the issues listed in the preceding section, but not necessarily in a direct one-to-one correlation. More specific recommendations appear in later sections of this Strategy Paper.

**Improve the organizational structure of the Design Guidelines to facilitate their use.**
Currently there are two books of guidelines for residential areas and a third one for the downtown. These are recommended actions:

1. Combine the two residential Design Guidelines documents into one book. Edit the text as needed and improve illustrations. (See more detailed recommendations that follow.)

2. Develop a separate book for the downtown. This would be a substantial re-write of the existing document. It should address the different building types found in the four zoning districts that exist in the downtown.

3. Add more cross references to other codes and regulations. Some cross references exist and should be updated. Other cross references are needed for newer documents. Referencing the City's new Climate Action documents is an example.

4. Improve "wayfinding" in the documents. Include a chart in the introductions to help users determine which sections to use and add a more detailed Table of Contents.

5. Add more visual examples of appropriate and inappropriate designs. Use "grids" of images with examples of appropriate and inappropriate design alternatives. Use sketches or computer models, rather than photos, where they would be more effective, such as for illustrating massing of new buildings.

6. Include more narrative text describing how to evaluate "context."

7. Address Design Guidelines for the ROW. Some brief guidelines addressing the Right-of-Way are in the existing documents. Other guidelines exist in a separate document that is used by Public Works. Include some material in the Design Guidelines that speaks at a "qualitative" level and also reference the existing standards used by Public Works where more prescriptive standards appear. (The Public Works standards also should be updated as a separate project.)

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**Improve administration of the Design Guidelines and standards.**
The objectives for improving administration of the Design Guidelines and standards are: (1) To build confidence in the review process, and (2) To assure informed, consistent decision-making. These are recommended actions:

1. Consider moving some guidelines that address key design variables to the zoning code as standards that clearly require compliance.

2. Re-establish a Design Review Board. In the recent community survey, respondents rated their preference for three alternatives for review and decision making:

- Continue to have the Planning Commission conduct design studies. However, enhance the role of the Planning Commission in design review by providing improved guidelines and standards. Also use a "checklist" in decision-making to assure that the guidelines are well-met. Many respondents indicate support for this approach.

- Alternatively, re-establish a separate Design Review Board that can focus specifically on application of the design guidelines, but have it serve as an advisor to the Planning Commission, which would continue to make the final decisions. Many respondents also indicate support for this approach. (Note that the Historic Resources Board serves in this advisory role for projects in the Downtown Conservation District.)

- A third alternative is to re-establish a Design Review Board and have it make the design review decisions. A smaller number of survey respondents support this alternative.

When survey responses to the two variations on the type of Design Review Board are considered in combination, a significant percentage favor some form of Design Review Board. This alternative, along with the first option of continuing with the Planning Commission only, merits further discussion.

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## V. STRATEGY FOR THE DOWNTOWN DESIGN GUIDELINES

This section summarizes the approach recommended to update the Design Guidelines for Downtown Carmel. The Downtown actually includes four zone districts: (1) CC - Central Commercial, (2) SC - Service Commercial, (3) RC – Residential and limited commercial, and (4) R-4 Multi-family residential. While the Central Commercial zone district forms the core along Ocean Avenue, the area considered Downtown actually is larger (approximately 20 blocks), with the SC, RC and R-4 zone districts acting as transitions to the single family neighborhoods. The Design Guidelines must consider all of those districts and the related building types that can occur in them.

**Re-write the Downtown guidelines, following the format of the residential guidelines.**

The focus of the existing Downtown guidelines is on the commercial buildings along Ocean Avenue as a design context. They are brief and don't address several important topics. For example, they don't address building types other than traditional commercial structures. Limited Commercial or Multifamily building types that are permitted in some Downtown zone districts are not addressed.

Language in the existing Downtown guidelines should be brought forward as guiding policies on which new, more detailed guidelines will be based. This will assure continuity in policy while providing more clarity and predictability. Also add more graphics, including sketches and photographs, to illustrate the guidelines. These should show positive and negative examples.

**Focus the guidelines on respecting the valued features of Downtown.**

The expanded Downtown guidelines should emphasize these principles:

1. Successfully meeting all key design variables, including: building size, ratio of solid to void, materials, roof form, color and proportions
2. Promoting variation in massing and articulation of building form to reduce perceived scale in a manner that is authentic (not a fake series of false fronts)
3. Using high quality materials
4. Incorporating well-crafted, durable details
5. Assuring street level appeal (landscaping, screening mechanical equipment, etc.) and pedestrian scale
6. Enriching the interplay between indoor and outdoor spaces
7. Providing a welcoming sense of discovery along the street

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**Outline for the Downtown Guidelines**

With the focus of the guidelines in mind, a recommended outline for the Downtown Design Guidelines follows. This will be refined at the outset of Phase 2, in which a draft of the guidelines will be produced.

1. Introductory material
    a. How to use the guidelines
    b. How they are organized, etc.
    c. Relationship to other regulations and permitting processes
2. Design character of downtown
    a. A description of styles found traditionally in the downtown
    b. A description of key features which are valued and should be respected in all work in the downtown
3. Key principles that all projects should follow, including…
    a. Maintain street level interest
    b. Maintain the perceived low scale of buildings
    c. Encourage use of natural materials
    d. Accommodate a diversity of design within a range that is compatible
    e. Respect the topography
4. Guidelines for all building types
    a. Materials
    b. Street level interest
    c. Awning and canopies
    d. Lighting
    e. Service areas
    f. Utilities and rooftop equipment
5. Guidelines for specific building types
    a. Commercial
    b. Mixed-use
    c. Multifamily
    d. Hotel/Motel
    e. Limited commercial
    f. Single family houses (where permitted in existing zone districts)
6. Landscaping (on both public and private lands)
    a. Plant beds
    b. Planters
    c. Paving (changes in)
    d. Trees
7. Outdoor spaces (courtyards and intra-block walkways)
    a. Design features
    b. Relationship to building size
    c. Proportions
8. Signs
    a. The standards are in the code.
    b. The guidelines should focus on character and location of signs.
    c. The illustrations should appear to comply with the code.

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**Specific edits that are recommended for the Downtown design guidelines**
Within the framework of the outline presented above, these are some specific edits, which are in three categories:

**Clarify** existing guideline text.
In these cases, the general principles exist and remain valid, but need more explanation. Examples include:

1. Enhancing street level interest and a pedestrian orientation
2. Using appropriate high quality building materials, including man-made materials
3. Maintaining traditional scale in new buildings
4. Window design

**Illustrate** an existing guideline more effectively.
In these cases, better graphics (photographs and sketches) would help in interpreting the guidance. For example:

1. Show the range of ways to enhance street level interest, including storefronts, display cases, planters and outdoor use areas.
2. Illustrate how a simple variation in building heights of one and two stories for portions of a new building can help maintain the traditional scale of the street.
3. Provide examples of well-crafted, high-quality building details.

**Add** new Design Guidelines topics.
In this case, new language and illustrations address topics that presently are overlooked. For example, provide guidelines for:

1. Mixed-use buildings with limited commercial buildings
2. Multifamily buildings
3. Single family buildings in downtown districts
4. Landscaping in the public Right-of-Way and in private outdoor spaces

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## VI. STRATEGY FOR THE RESIDENTIAL DESIGN GUIDELINES

This section summarizes the approach to updating the Design Guidelines for the R-1 residential zones in Carmel.

**Refine the existing guidelines as a base for the update.**
The existing text remains valid in many ways. Retain most of this language in the update, editing and expanding it as needed to improve clarity and interpretation.

**Add new topics that are now important.**
For example, a note is needed about how the guidelines apply to potential Accessory Dwelling Units and how State law sets some limits on review. Other topics need further clarification and explanation. For example, guidelines exist about maintaining a "forest" image in front yards, but more detail is needed to explain this topic. Guidance for minimizing fire hazards also should be addressed.

**Add a discussion of "context" and how the guidelines should take it into consideration.**
The guidelines frequently refer to "context" but there is little explanation of what that means especially with respect to the Village-in-a-Forest concept. There is some recognition that context varies in different parts of the city, but again there is little description of these differences.

**Focus the Design Guidelines on key principles.**
The refined residential guidelines should emphasize these principles:

1. Maintaining forest character
This is a universal principle, but there are differences in how to apply it based on context. For example, Scenic Road and some areas near the Carmel Mission are very different from other neighborhoods and specific guidance is needed for such conditions. Also include a definition of the term "forest character" to facilitate interpretation of related guidelines.

2. Respecting diversity in design
People note that diversity in architecture is a part of Carmel's design traditions (albeit within a range that fits within the forest character.) This needs careful explanation such that blatantly inappropriate designs do not occur. The guidelines should explain how to respect the design variables that relate to fitting in.

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**Specific edits (organized by the type of edit)**

**Clarify** existing guideline text.
General principles are embedded in the Concept Phase guidelines, but they need to be more clearly stated. Update the general principles, to include more recent input from the community.

Several guidelines related to specific topics also need clarification. For example:

1. Being subordinate and fitting in
    - Explain the concept and include a definition of the term "subordinate."
2. Views and solar access
    - Clarify how view opportunities are to be shared among neighbors.
3. Landscaping in the front yard
    - Emphasize how the concept of "layered" planting schemes should apply.
    - Update specifications related to tree protection.
4. Driveway paving
    - Strengthen language related to the use of pervious materials, including interlocking pavers with spacers and driveway strips.
5. Color
    - Emphasize the use of muted, earth tones.
    - Clarify how white and black color schemes may and may not be appropriate.
6. Building form
    - Discuss how simple variations in massing should be applied in ways that appear to be authentic, rather than creating overly-busy forms with superficial wall off-sets.
    - Step the building with the topography.
7. Synthetic materials
    - The guidelines currently say "avoid" synthetic materials. Some new materials, however, can appear to be authentic and are fire-resistant. Expand the discussion of how and when to use them.
8. Use of stone
    - Clarify how to use stone as a "base" material with lighter materials above such that it appears to be authentic, rather than a fake veneer.

**Illustrate** existing guidelines more effectively.

1. Add new photos to address new topics. Examples are:
    - Provide examples of windows with good detailing, of various styles.
    - Also provide examples of alternative driveway paving designs.
    - Add photos of more recent compatible infill, with an explanation of why they fit in.
2. Add sketches where this is a better tool than a photo. For example:
    - Illustrate the concept of "layered" landscaping with additional sketches.
    - Also illustrate the concept of "balancing" key design variables, especially in building design.

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**Add** new Design Guidelines topics that are now important. Examples needed for new material are:

1. Converting a garage in front to an ADU (and in code)
    - Discuss how to determine “compatibility” of an ADU with the main building as provided in state law.
    - Also discuss how an existing driveway may be repurposed if a garage is converted into an ADU.
2. Using Carmel stone (or similar) for retaining walls, including those for driveways
3. Designing cool roofs (those intended to reduce heat gain, sometimes of lighter colors)
4. Installing heat pumps
5. Planning rain gardens (planted areas designed to retain rain water runoff)
6. Installing solar panels

**Change** existing guidance if needed. Some examples:

1. Roof material

The current guidelines encourage the use of wood or composition shingles. Today, these are not recommended for fire resistance. To consider:

- Permit low-profile, painted metal roofs, with the color to be muted.
- Permit metal roofs with an aged patina that eliminates glare (but prohibit copper roofs for environmental concerns).
- Permit cool roofs (with considerations of visual impacts).

2. Roof form

The current guidelines state that flat roofs should be used only on smaller, one-story portions of a building. Revisit this guidance. (Note that zoning standards contradict this policy.)

3. Retaining walls

- Strengthen language to promote, or even require, stone as the exposed surface material on retaining walls in the front setback.
- Strongly discourage, or even prevent retaining walls in the ROW, except in extreme unstable slope conditions.
- Strengthen language limiting retaining walls in the front setback that lead to below-grade garages.

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## VII. STRATEGY FOR ZONING CODE AMENDMENTS

Some edits to the zoning code are recommended as part of the Design Traditions Project whereas other revisions to the zoning code are to be addressed in the work program of the planning staff later. Zoning code edits to address in the Design Traditions Project include:

**Clarify how the design review process applies to ADUs.**
The state law provides for limited and objective review to assure compatibility with the main house on the property. One issue to address is how review may apply when converting a garage that is in front. (Note that a garage that encroaches into the front setback is a special condition approved by the Planning Commission and if a conversion to one of these can occur needs further clarification.)

**Clarify how paving materials apply to calculating site coverage.**
Some paving is needed for functional requirements. Review the standards to assure that the materials are permeable.

**Expand standards for fences.**
Review the standards for fences to clarify some basic questions: (1) Can a non-conforming fence be replaced in kind, or must a replacement comply with current standards? Also clarify the range of appropriate fence types: Unpainted wood is preferred. Are other materials appropriate? Does this vary by context? For example, where might a white picket fence appropriate? May fire-resistant materials be used?

**Re-evaluate Volumetric standards.**
An important standard is the regulation of the exterior volume of buildings on a property. The intent is to keep building size subordinate in relation to the forest and neighborhood context. Some people have noted that the current formula encourages only a small number of roof pitches, especially on larger buildings and ones that differ from traditions in other key variables, such as materials and windows designs. Others find the calculations too complicated. Consider these alternatives:

1. Continue to use the volumetric system but simplify how it is calculated.
Also adjust the system to encourage various degrees of pitched roofs. The advantage of this approach is that using volumetrics is long-established and an update would be easier to understand and predict the potential outcomes.

2. Change to a bulk plane (building envelope) system.
This system defines a three-dimensional area within which a building may occur. It can have any pitched form, to encourage varied sloped roofs (while potentially permitting appropriately scaled flat roofs). This would require some study to assure that the desired volumes would be permitted. Applying it to the various sloped site conditions in Carmel also is a challenge to evaluate.

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**Strengthen standards for garage encroachment in the front setback.**
Criteria for documenting the need for an encroachment exist but are listed as a “high level” in the code, but without detail that would help assure that the required conditions are met. Among the criteria to clarify:

1. Site features that limit other alternatives
2. Topographic constraints
3. Saving a tree, or maintaining other important open space
4. Maintaining variation in building setbacks in a block

**Strengthen standards for cut & fill.**
Not all cut-and-fill work requires Planning Commission approval at present. The current threshold for requiring a PC hearing is removal of 25 cubic yards. Consider reducing the threshold and providing more specific conditions for approval, including how the changes affect front yard character.

**Strengthen standards for exterior lighting.**
Address how light levels are measured. (New light sources are rated in lumens and Kelvin scales.)
Also strengthen requirements for shielding light sources. Also consider incorporating concepts from the International Dark Skies Association

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## VIII. STRATEGY FOR REVIEW PROCESS AND ADMINISTRATION AMENDMENTS

An objective is to assure that a skilled and well-informed design review body applies the standards and guidelines consistently.

**Refine the decision-makers' role.**

Further study these alternatives:

1. Enhance the process for the Planning Commission to **continue** conducting design review. The advantage is that design is considered in the context of other planning commission issues. Improved guidelines and standards would help assure that decisions follow adopted policies.

2. Re-establish a Design Review Board as an **advisory** body. This provides a focused review but it adds a step in the process. It still retains the PC as the decision-making body.

3. Establish a Design Review Board as the **decision-making** body. While there would be two steps in permitting, the topics would be separated between the Design Guidelines and the zoning standards. The DRB would determine compliance with the design guidelines and could advise the PC about the appropriateness of any requests for exceptions to zoning standards. Complications may arise when projects needing design approval also require other entitlements that must be granted by the Planning Commission (e.g. Variances).

**Provide a review structure which assures all guidelines are adequately met.**

Regardless of who reviews and determines compliance, some structural improvements could enhance predictability. These are some recommendations:

1. Identify key guidelines related to compatibility as "priorities" to assure that they are fully met.

2. Use a checklist for review that highlights the priority guidelines. This also would help assure that those guidelines are met.

**Provide opportunities for community comment.**

In addition to having public comment at a commission hearing, provide for a regular review by the community of the **process**. Holding a bi-annual review of the system is recommended. This would be a community meeting and also would include an on-line survey.

**Assure that the reviewers are skilled in applying design guidelines.**

While some board or commission members may be experienced designers themselves, reviewing designs is a skill to be learned. Training in design review should be a regular requirement. Conducting an annual design review training for the board or commission is recommended. Also include annual training for staff.

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## IX. NEXT STEPS

Many of the recommendations put forth in this Strategy Paper can be executed directly after public comment and guidance from decision-makers. Others will require further study and discussion.

The Strategy Paper will be reviewed by the community, and some of the recommendations will be discussed in an upcoming public workshop. They also will be discussed in work sessions with the Planning Commission and City Council.

Based on information gained from those meetings, the approach will be adjusted as needed. Drafting of the updates will then begin. When public review drafts of the updates are prepared, they will be presented for discussion in a subsequent public workshop. Revisions to the drafts, based on community input, will follow. The final drafts will then be introduced for adoption by the Planning Commission and City Council.

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## Sample edits to illustrations:

The following pages (pg 20-26) provide examples of potential changes to how illustrations could appear in the updated Guidelines. The intent of these changes would be to make the illustrations easier to see and more useful to readers.

**1. Using multiple images**

Below is an example of a "grid" of images could be added that illustrate appropriate design solutions for a specific topic. In this case, residential gates are shown. Note that the preceding text is as it exists today, with only a few edits to strengthen language.

# THE FOLLOWING IS ONLY AN EXAMPLE

*Gates and Arbors*

When a fence or low wall is used at the street frontage, the entry is often marked by a gate or arbor. These features should be small and intimate in their proportions and should be an integral part of the overall landscape design. Fences, gates and arbors provide an opportunity to include unique details that reflect a hand-crafted design. Creative design approaches are encouraged when they are subtle and well-integrated with the site. Gates and arbors that appear to be mass produced or machined are inappropriate.

**11.6 A gate shall help create a sense of entry and therefore should be distinguishable from the adjoining fence or wall.**

- Use distinctive design details to express individuality and craftsmanship.
- Gates shall have open or transparent qualities that allow filtered views into the property.

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## Appropriate gates (EXAMPLE ONLY)

## Inappropriate gates (EXAMPLE ONLY)

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**2. Adding color to existing guidelines**
In many cases, existing residential guidelines may have some minor edits, both graphically and in text. An example is included in the following pages. Some potential text edits are shown here. Updates to illustrations include substituting older black-and-white photographs with new color examples and adding color to original sketches. Potential edits could also include "X's" and "Checks" to clearly indicate appropriate designs.

## THE FOLLOWING IS ONLY AN EXAMPLE

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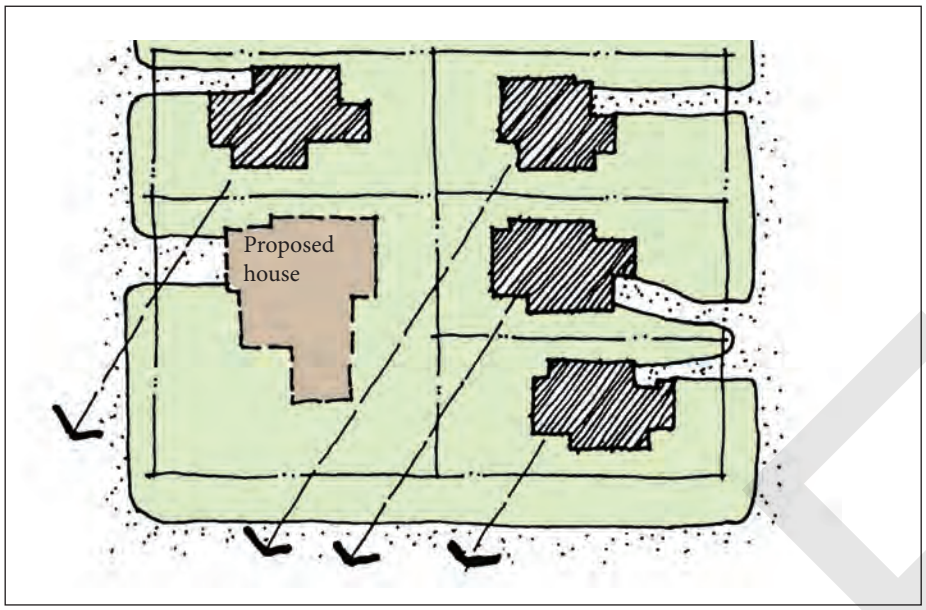
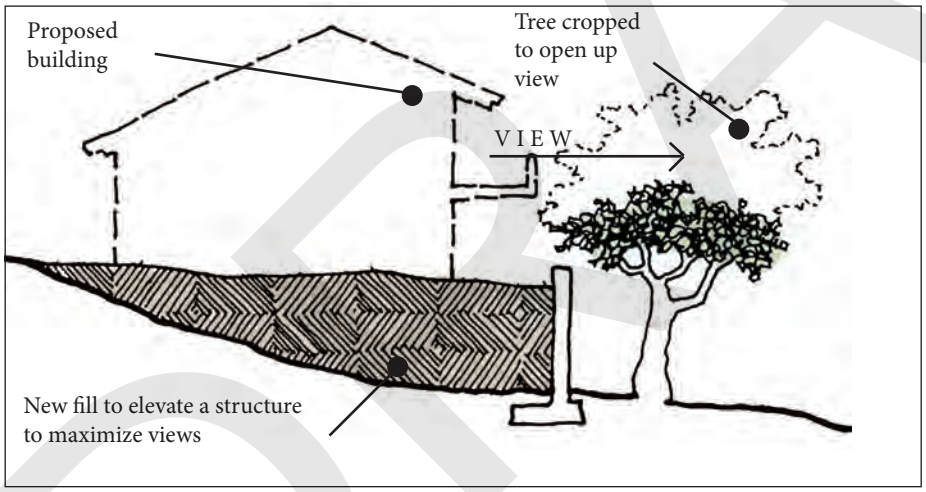



*Appropriate: A new building is sited to maintain views from existing houses.*




*Inappropriate: Elevating a site to maximize views.*

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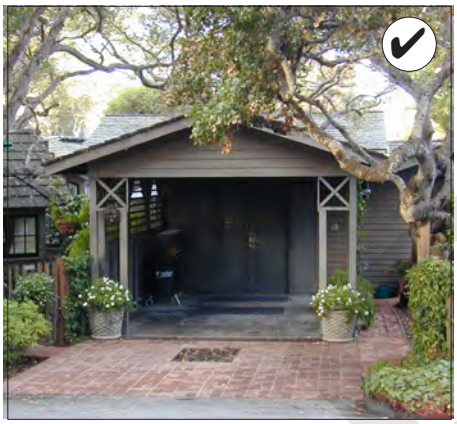
*In limited circumstances a garage may be located under a structure when the visual impacts will be minimized. This garage is clearly subordinate to the main building mass.*



*Consider using a carport for variety along a block.*

Add reference to code here

# 6.0 Parking and Access

Traditionally, parking was a subordinate element in Carmel's residential neighborhoods, both on an individual parcel and along the street in general. Today, providing access for an automobile on a site is often a necessity, and doing so is encouraged, as a means of reducing on-street parking pressures. Nonetheless, it should remain subordinate to the overall character of the site.

Usually a garage was a subordinate element in a site plan and often was detached from the house. The wide variety of garage positions contributed to the diversity of the street scene: Many were located at the front property line, while others were sited in the rear. In later years, the garage was often attached, but remained subordinate to the main mass of the house. These traditions of diversity and subordinate character should be continued.

In some cases, it appears that owners positioned their garages away from prominent views. In particular, they located them uphill, away from downhill views to the ocean. When locating a garage, consider view impacts, the relationship to open space on the lot, and the relationship to that of neighboring properties.

***Objectives for this section:***

- To minimize the visual impacts of cars on a site
- To minimize the extent of hard, impervious surfaces
- To avoid garage structures that dominate the site and building design

**6.1 Facilities for parking shall not dominate the design of the house or site.**

- The mass of a garage shall be subordinate to that of the house.
- Garages that are subordinate design elements are appropriate.
- Garages that are not visible from the street are appropriate.
- Garages integrated into the building design are encouraged.

- On smaller lots, with a garage visible from the street, provide a single, one-car garage door.
- Avoid moving established driveways if trees or significant vegetation would be harmed.

**6.2 Parking facilities that maintain or enhance variety along the street edge are encouraged.**

- Consider using a detached garage or carport.
- In some cases, parking facilities may be located in the front setbacks (as a conditional use)

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*Driveway paving*

**6.3 Minimize the amount of paved surface area of a driveway.**

- In general, the width of a driveway should not exceed 9 feet.
- Also consider using paving strips, or "tire tracks," for a driveway. This is especially appropriate for a long drive that runs to the rear of a property.
- Except for corner sites with a "through driveway," only one curb cut and one driveway should be provided for a site. Sharing a driveway with an adjacent property is an alternative that also may be considered.
- Avoid large expanses of paving for vehicles visible from the street.

*Consider using a shared driveway to minimize the amount of paving area.*

**6.4 Separate a driveway from a front walkway to reduce the visual impacts of paved surfaces.**

- Install plant materials to separate a walk from a driveway.

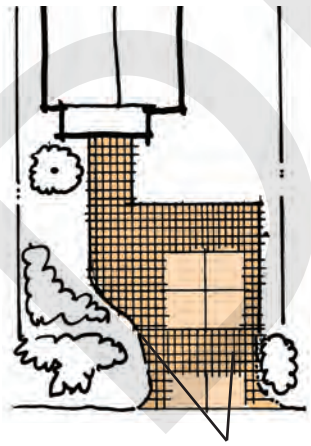
*Position a garage (or carport) to maximize opportunities for open space, views and privacy.*

*Garage location*

**6.5 Position a garage to maximize opportunities for open space, views and privacy.**

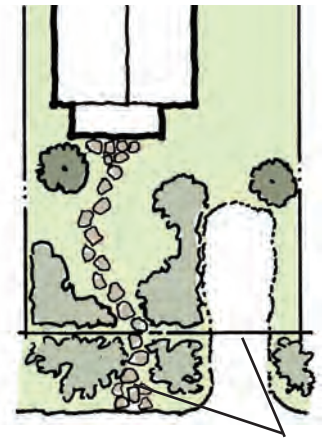
- Locate a garage to maintain larger contiguous areas of open space on a site.
- Locate a garage to screen activity areas on adjacent properties to enhance privacy.
- Locate a garage to maintain views through the property.

*Inappropriate*



*A walkway and drive are combined, increasing the apparent size of paved area.*

*Appropriate*



*The walkway and drive are separated, reducing the apparent amount of paved area.*

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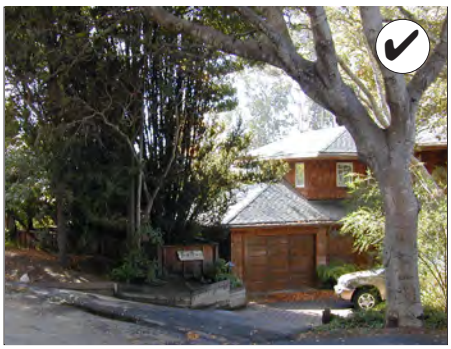
*Preferred: Locating a detached garage at the rear of the lot*



*Preferred: Orienting the garage door away from the street.*

Placeholder

*Inappropriate "ramp" driveway*

**6.6 Locate a garage to minimize its visual impacts.**

Three options should be considered:

1. Detached, at the rear of the lot.
2. Detached, in front, along the property line is acceptable, when other design traditions objectives are met. This option should not be repeated to excess within a block.
3. Under the house, when other design tradition objectives are met. (See below.)

**6.7 In limited circumstances a garage may be located under a structure when the visual impacts will be minimized.**

- The garage door should not dominate the front of the house. It shall not contrast highly with the color or materials of the house. A door perpendicular to the street is best in this condition, and...
- The driveway shall not dominate the front yard and may not create a "ramp" effect or introduce tall or massive retaining walls. A sense of a front yard must be maintained.

*When a garage is located under the house, the driveway should not create a ramp effect. The garage door also should not dominate the front.*

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# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**ORDERS OF BUSINESS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Brian Pierik, City Attorney |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Resolution 2022-097 Authorizing the Mayor to Execute a Sixth Amendment to the City Administrator At-Will Employment Agreement Effective October 1, 2022 |

## RECOMMENDATION:

Adopt Resolution 2022-097 authorizing the Mayor to execute a sixth amendment to the City Administrator At-Will Employment Agreement effective October 1, 2022.

## BACKGROUND/SUMMARY:

On February 2, 2016, the City entered into an Employment Agreement with Chip Rerig, to serve as the City Administrator with a base salary of $190,000. Since that time, the City Council has approved salary increases for the City Administrator and the current base salary of Mr. Rerig is $216,650.

The attached Resolution authorizes the Mayor to execute a sixth amendment to the City Administrator At-Will Employment Agreement effective October 1, 2022. Exhibit A (attached) to the Resolution is a proposed sixth amendment to City Administrator At-Will Employment Agreement which includes a proposed salary increase of 7% of the current salary of $216,650 which is $15,165. The total base salary proposed in the Sixth Amendment is $231,815.

## FISCAL IMPACT:

The proposed salary increase in the sixth amendment to the City Administrator At-Will Employment Agreement is $15,165.

## PRIOR CITY COUNCIL ACTION:

Resolution No. 2016-012: Resolution authorizing the Mayor to execute an Employment Agreement between the City and Chip Rerig on February 2, 2016

Resolution No. 2017-088: Resolution approving a First Amendment to the City Administrator Employment Agreement on August 8, 2017

Resolution No. 2018-110: Resolution authorizing the Mayor to execute a Second Amendment to the City Administrator Employment Agreement Effective March 1, 2018

Resolution No. 2020-034: Resolution authorizing the Mayor to Execute a Third Amendment to the City Administrator At-Will Employment Agreement Effective June 1, 2020

Resolution No. 2020-077: Authorizing the Mayor to Execute a Fourth Amendment to the City Administrator At-Will Employment Agreement Effective November 1, 2020

Resolution No. 2022-015 Authorizing the Mayor to Execute a Fifth Amendment to the City Administrator At-Will Employment Agreement Effective October 1, 2021

## ATTACHMENTS:

Attachment 1) Resolution 2022-097
Attachment 2) Exhibit A - Sixth Amendment to Employment Agreement

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**RESOLUTION NO. 2022-097**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA AUTHORIZING THE MAYOR TO EXECUTE A FIFTH AMENDMENT TO THE CITY ADMINISTRATOR AT-WILL EMPLOYMENT AGREEMENT EFFECTIVE OCTOBER 1, 2021**

WHEREAS, pursuant to Resolution No. 2016-012, the City of Carmel-by-the-Sea ("City") and Chip Rerig executed an Employment Agreement ("Employment Agreement") effective February 2, 2016 to provide City Administrator services to the City; and

WHEREAS, pursuant to Resolution No. 2017-088, City and Chip Rerig executed a First Amendment to the Employment Agreement to continue to provide City Administrator services to the City; and

WHEREAS, pursuant to Resolution No. 2018-110, City and Chip Rerig executed a Second Amendment to the Employment Agreement to continue to provide City Administrator services to the City; and

WHEREAS, pursuant to Resolution No. 2020-034, City and Chip Rerig executed a Third Amendment to the Employment Agreement to continue to provide City Administrator services to the City; and

WHEREAS, pursuant to Resolution No. 2020-077 City and Chip Rerig executed a Fourth Amendment to the Employment Agreement to continue to provide City Administrator services to the City; and

WHEREAS, pursuant to Resolution No. 2022-015 City and Chip Rerig executed a Fifth Amendment to the Employment Agreement to continue to provide City Administrator services to the City; and

WHEREAS, the functions, duties and prerogatives of the City Administrator are specified in the Carmel-by-the-Sea Municipal Code and the provisions of the City Municipal Code shall control should any conflict exist pertaining to either this Resolution or the Sixth Amendment that it authorizes; and

WHEREAS, the City Administrator shall continue to serve at the pleasure of the City Council; and

WHEREAS, this action does not constitute a "project" as defined by California Environmental Quality Act (CEQA) because it is an organizational or administrative activity that will not result in direct or indirect physical changes in the environment; and

WHEREAS, the attached proposed Sixth Amendment to the Employment Agreement is presented to the City Council for approval.

**NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA DOES HEREBY:**

Authorize a Sixth Amendment to the Employment Agreement as follows:

1. Effective October 1, 2022, increase the City Administrator's annual base salary 7% of the current salary of $216,650 which is $15,165 and shall be increased to $231,815.

2 The Mayor is authorized and directed to execute a Sixth Amendment to the City Administrator At-Will Employment Agreement (Exhibit A) to this Resolution.

2. This Resolution shall take effect immediately following passage and adoption by the Carmel-by-the-Sea City Council.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL-BYTHE-SEA this 1st day of November, 2022, by the following roll call vote:**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED: ATTEST:

Dave Potter, Mayor Nova Romero, MMC, City Clerk

# SIXTH AMENDMENT TO CITY ADMINISTRATOR

# AT-WILL EMPLOYMENT AGREEMENT

This Sixth Amendment to City Administrator At-Will Employment Agreement ("Fifth Amendment") is made and entered into between the City of Carmel-by-the-Sea, California, a municipal corporation ("City") and Richard ("Chip") Lyons Rerig, an individual ("City Administrator"). The City and the City Administrator are sometimes individually referred to as a "Party" and collectively as "Parties." This Sixth Amendment shall be effective on October 1, 2022.

WHEREAS, the Parties entered into an Employment Agreement ("Employment Agreement") on February 2, 2016.

WHEREAS, pursuant to Section 7A of the Employment Agreement, City Administrator received a base salary that, at the time of the Employment Agreement, was $190,000.00.

WHEREAS, the current base salary of the City Administrator based upon Resolution No. 2022-115 and the Fifth Amendment to the Employment Agreement is $216,650.

WHEREAS, pursuant to the Employment Agreement, the City Council of the City of Carmel-by-the-Sea ("City Council") grants salary increases to City Administrator in its discretion.

WHEREAS, the Parties now desire to amend the Employment Agreement as follows:

NOW, THEREFORE, in consideration of the promises herein, the Parties agree as follows:

1. Term: Pursuant to Section 4 of the Employment Agreement, City Administrator's Term shall continue until March 1, 2029 or the date of earlier termination in accordance with the provisions in the Employment Agreement.

2. Salary Increase: The City Council hereby approves a salary increase for the City Administrator to $231,815 effective October 1, 2022.

3. Government Code Provisions

   a. Pursuant to Government Code section 53260, in the event City provides City Administrator with a cash settlement related to termination of the Employment Agreement, the cash settlement shall not exceed the lesser of (1) an amount equal to the monthly salary of Employee multiplied by 18 or (2) an amount equal to the monthly salary of City Administrator multiplied by the number of months left on the unexpired term of the Employment Agreement.

   b. Pursuant to Government Code sections 53243 and 53243.3, in the event City provides paid leave salary to City Administrator pending an investigation into City Administrator, the City Administrator shall fully reimburse City for any paid leave salary if City Administrator is convicted of a crime involving an abuse of his office or position.

   c. Pursuant to Government Code sections 53243.1 and 53243.3, in the event the City provides funds for City Administrator's legal criminal defense, the City Administrator shall

fully reimburse City for any such funds if City Administrator is convicted of a crime involving an abuse of his office or position.

d. Pursuant to Government Code sections 53243.2 and 53243.3, in the event LAFCO provides City Administrator with a cash settlement related to City Administrator's termination, City Administrator shall fully reimburse City for any such cash settlement if City Administrator is convicted of a crime involving an abuse of his office or position.

e. Pursuant to Government Code section 53243.4, an "abuse of office or position" means (a) an abuse of public authority, including, but not limited to, waste, fraud, and violation of the law under color of authority, or (b) a crime against public justice, including, but not limited to, a crime described in Title 5 ( commencing with Section 67), Title 6 ( commencing with Section 85), or Title 7 (commencing with Section 92) of Part 1 of the Penal Code.

4. Except as specifically modified and amended in this Sixth Amendment, the Employment Agreement and its prior amendments remain in full force and effect and binding upon the Parties.

**IN WITNESS WHEREOF**, the Parties have executed this Sixth Amendment.

**CITY OF CARMEL-BY THE SEA**

A Municipal Corporation

By:_____
Dave Potter, Mayor
Date: _____

By:_____
Chip L. Rerig, City Administrator
Date: _____

ATTEST:

By:_____
Nova Romero, MMC, City Clerk
Date: _____

APPROVED AS TO FORM:

By:_____
Brian Pierik, City Attorney
Date: _____

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**PUBLIC HEARINGS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Brandon Swanson, Community Planning & Building Director |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Consider Resolution No. 2022-098 amending CDP 18-231 to extend the current Beach Fire Management Pilot Program by six months, with an end date of May 15, 2023 |

## RECOMMENDATION:

Adopt Resolution No. 2022-098 amending CDP 18-231 to extend the current Beach Fire Management Pilot Program by six months, with an end date of May 15, 2023.

## BACKGROUND/SUMMARY:

### EXECUTIVE SUMMARY

The current Beach Fire Management Pilot Program Coastal Development Permit (CDP) will expire on November 30th, 2022. Upon expiration, the City's beach fire regulations will revert to Section 17.20.200 of the Carmel Municipal Code. Among other things, this reversion would allow for an unlimited number of fires to be built in the sand, all year long. To allow time for an amendment to the City's Local Coastal Program (LCP) per Council's September 13th direction to allow propane-only devices, an extension to the existing CDP must be approved prior to expiration.

### BACKGROUND / SUMMARY

The Beach Fire Management Pilot Program ('Pilot Program') was first adopted on June 30, 2016, through the approval of a Coastal Development Permit (CDP 18-231), in response to issues associated with unrestricted fires on Carmel Beach. The Pilot Program, was intended to provide the City with an opportunity to explore various beach-fire options, with the ultimate goal of making permanent changes to the beach-fire rules through a Local Coastal Program amendment.

For the 2016 to 2019 seasons, the Pilot Program took several different shapes with various numbers of devices allowed on the beach. In 2020, as part of an effort to slow the spread of COVID-19. In 2021 the Pilot Program resumed, although with a reduced number of visitors due to travel restrictions related to COVID-19. The 2022 season however, took place with no travel restrictions in place, and therefore was

the first full season managed under the strict five (5) device rules of the current Pilot Program.

On September 13th, 2022, City Council received a report and provided direction to staff to draft new regulations regarding fires on Carmel Beach. The Council's direction was to allow only user-supplied, propane fueled fire devices on the beach, with the burning of wood strictly prohibited. In order to codify these new regulations, both the City's Municipal Code and Local Coastal Program will need to be amended. Ultimately, this will require approval/certification by the Coastal Commission. Currently, the Pilot Program will fully expire on November 30, 2022, and will automatically revert back to the City's codified Municipal Code regulations.

To prevent reverting back to section 17.20.200 of the City's Municipal Code, which allows wood fires to be built in the sand year-round, Council is being asked to amend CDP 18-231 which authorizes the Pilot Program. This amendment would extend the "life" of the Pilot Program until May 15th, 2023, providing staff with approximately six months to draft and process the necessary regulatory documents through the Planning Commission, City Council, and ultimately the Coastal Commission. It is worth noting that May 15th was chosen for the extension date for the Pilot Program so that it would expire before wood burning devices would be allowed on the beach for the 2023 season (the date previously approved by the City Council as the beginning of beach fire season).

## ENVIRONMENTAL REVIEW

The Pilot Program is categorically exempt from CEQA requirements pursuant to Section 15306 (Class 6) of the State CEQA Guidelines. Class 6 exemptions include data collection, research, and experimental management activities which do not result in a major disturbance to an environmental resource. These activities may be part of a study leading to an action which a public agency has not yet approved, adopted or funded.

## FISCAL IMPACT:

Staff time associated with drafting and processing amendments to the Beach Fire Management Pilot Program is included in the adopted FY 2022-2023 departmental operating budgets.

## PRIOR CITY COUNCIL ACTION:

The City Council's most recent action regarding this matter was on September 13, 2022 where they provided direction to modify the City's ordinance for beach fires.

## ATTACHMENTS:

Attachment 1) Resolution 2022-098

**CITY OF CARMEL-BY-THE-SEA CITY COUNCIL**

**RESOLUTION NO. 2022-098**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA AMENDING COASTAL DEVELOPMENT PERMIT 18-231 TO EXTEND THE CURRENT BEACH FIRE MANAGEMENT PILOT PROGRAM BY APPROXIMATLEY SIX MONTHS, WITH AN END DATE OF MAY 15, 2023**

WHEREAS, on June 30, 2016, the City Council approved Coastal Development Permit ('CDP') No. 18-231 establishing a Beach Fire Management Pilot Program ('Pilot Program') in response to issues associated with unrestricted fires on Carmel Beach; and

WHEREAS, CDP 18-231 is set to expire on November 30, 2022; and

WHEREAS, upon expiration of CDP 18-231, regulations pertaining to fires on Carmel Beach will revert to Carmel Municipal Code (CMC) Section 17.20.200 which allows for an unlimited number of fires to be built in the sand, all year long; and

WHEREAS, on September 13th, 2022, the City Council provided direction to staff to draft new regulations regarding fires on Carmel Beach allowing only user-supplied, propane fueled fire devices on the beach, with the burning of wood strictly prohibited; and

WHEREAS, on September 13th, the City Council further directed staff to return with a mechanism to prevent the City's beach fire regulations from reverting to CMC Section 17.20.200; and

WHEREAS, amending CDP 18-231 to extend the Pilot Program will keep in place the prohibition on wood fires on Carmel Beach between September 15th, 2022 and May 15th, 2023.

**NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF CARMELBY-THE-SEA DOES HEREBY:**

Adopt a resolution amending CDP 18-231 to extend the current Beach Fire Management Pilot Program by approximately six months, with an end date of May 15, 2023.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA this 1st day of November 2022, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED:

Dave Potter
Mayor

ATTEST:

Nova Romero, MMC
City Clerk

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**PUBLIC HEARINGS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Marnie R. Waffle, AICP, Principal Planner |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Resolution 2022-099, Agreement between the County of Monterey and the City of Carmel-by-the-Sea for joint participation in the Permanent Local Housing Allocation (PLHA) funding program for fiscal years 2019-2023 |

## RECOMMENDATION:

Adopt Resolution 2022-099 (Attachment 1) authorizing the County of Monterey to submit an application on behalf of the City of Carmel-by-the-Sea for the Permanent Local Housing Allocation (PLHA) Program, adopting the County of Monterey's 5-Year Plan, authorizing the execution of an agreement with the County of Monterey for joint participation in the PLHA funding program for fiscal years 2019-2023 and delegating to the County of Monterey administration of the PLHA program on behalf of the City of Carmel-by-the-Sea.

## BACKGROUND/SUMMARY:

The State of California Department of Housing and Community Development ("HCD") is authorized to provide up to $ 335 million to Cities and Counties for assistance under the SB 2 Permanent Local Housing Allocation Program ("PLHA Program") Formula Component from the Building Homes and Jobs Trust Fund, which establishes permanent and ongoing funding dedicated to promoting and facilitating affordable housing development (as described in Health and Safety Code section 50470 et seq. (Chapter 364, Statutes of 2017 (SB2)).

The State issued Permanent Local Housing Allocation Final Guidelines ("PLHA Program Guidelines") in October 2019 and issued a Notice of Funding Availability ("NOFA") dated August 17, 2022 (Attachment 2) under the Permanent Local Housing Allocation ("PLHA") Formula Component.

The City of Carmel-by-the-Sea is eligible to receive up to $491,704 in funds disbursed over a five-year period from 2019 to 2023. The staggering lack of affordable housing in the City necessitates the pursuit of all available resources; PLHA funds offer a prime opportunity to preserve the City's limited existing affordable housing units and advance the effort to create new affordable housing.

As described in the PLHA Final Guidelines (Attachment 3), eligible activities are limited to one or more of the following:

1. The predevelopment, development, acquisition, rehabilitation, and preservation of multifamily, residential live-work, or rental housing that is Affordable to Extremely Low-, Very-low-, Low-, or

Moderate-income households (up to 120 percent of Area Median Income (AMI), or 150 percent of AMI in High-cost areas, including necessary operating subsidies).

2. The predevelopment, development, acquisition, rehabilitation, and preservation of Affordable rental and ownership housing, including Accessory Dwelling Units (ADUs), that meets the needs of a growing workforce earning up to 120 percent of AMI, or 150 percent of AMI in High-cost areas. ADUs shall be available for occupancy for a term of no less than 30 days.

3. Matching portions of funds placed into Local or Regional Housing Trust Funds.

4. Matching portions of funds available through the Low- and Moderate-Income Housing Asset Fund pursuant to subdivision (d) of HSC Section 34176.

5. Capitalized Reserves for Services connected to the preservation and creation of new Permanent supportive housing up to 30 percent of AMI).

6. Assisting persons who are experiencing or at risk of homelessness, including, but not limited to, providing rapid rehousing, rental assistance with a term of at least six months, supportive/case management services that allow people to obtain and retain housing, operating and capital costs for navigation centers and emergency shelters, and the new construction, rehabilitation, and preservation of permanent and transitional housing.

   a) This Activity may include subawards to Administrative Entities as defined in HSC Section 50480(a)(1-3) that were awarded California Emergency Solutions and Housing (CESH) program or Homeless Emergency Aid Program (HEAP) funds for rental assistance to continue assistance to these households.

   b) Applicants must provide rapid rehousing, rental assistance, navigation centers, emergency shelter, and transitional housing activities in a manner consistent with the Housing First practices described in 25 CCR, Section 8409, subdivision (b)(1)-(6) and in compliance with WIC Section 8255(b)(8). An Applicant allocated funds for the new construction, rehabilitation, and preservation of Permanent supportive housing shall incorporate the core components of Housing First, as provided in WIC Section 8255, subdivision (b).

7. Accessibility modifications in Lower-income Owner-occupied housing (up to 80 percent of AMI).

8. Efforts to acquire and rehabilitate foreclosed or vacant homes and apartments (up to 120 percent of AMI or 150 percent of AMI in High-cost areas).

9. Homeownership opportunities, including, but not limited to, down payment assistance to those earning up to 120 percent of AMI or 150 percent of AMI in High-cost areas.

10. Fiscal incentives made by a county to a city within the county to incentivize approval of one or more Affordable housing Projects, or matching funds invested by a county in an Affordable housing development Project in a city within the county, provided that the city has made an equal or greater investment in the Project. The county fiscal incentives shall be in the form of a grant of low-interest loan to an Affordable housing Project. Matching funds investments by both the county and the city also shall be a grant or low-interest deferred loan to the Affordable housing Project up to 120 percent of AMI or 150 percent of AMI in High-cost areas.

Twenty percent of the monies in the Fund are required by statute to be expended for Affordable Owner Occupied Workforce Housing (AOWH).

Section 300(c) of the PLHA Program Guidelines allows a local government to delegate another local government to submit an application and administer on its behalf its formula allocation of Program funds, provided that the local governments enter into a legally binding agreement and the funds are expended for eligible activities consistent with Program requirements. Due to the resources required to apply, manage, and administer the Program funds, the City of Carmel-by-the-Sea has opted to partner with the County of Monterey to ensure submission of a successful application; receipt of Program funds; and targeted administration of funds towards eligible, impactful activities. The County's Housing and Community Development Department has the necessary staff capacity to navigate the application process and manage

grant implementation.

The proposed County partnership guarantees that State PHLA funds will be allocated to the Monterey region and directed to Carmel-by-the-Sea. Presently, the City does not have a project that would meet the eligible activity criteria. An individual application - independent from the County - could jeopardize receipt of PLHA funds. This is the last year for applicants to apply for 2019 calendar year allocations; the deadline is October 31st, 2022. Any 2019 calendar year funds remaining after the close of the NOFA application period will revert to the State's Housing Rehabilitation Loan Fund and may not directly benefit our region. The County has shovel-ready projects that qualify as eligible activities.

As such, staff is requesting City Council approval to authorize the County of Monterey to submit an application on behalf of Carmel-by-the-Sea. A draft agreement between the County of Monterey and the City of Carmel-by-the-Sea for joint participation in the Permanent Local Housing Allocation funding program for fiscal years 2019-2023 is included as Attachment 4. Staff is also requesting Council approval to delegate administration of the program to the County of Monterey. The County has agreed to act as the Applicant to the State has agreed to administer the receipt of formula allocation program funds on behalf of the City and County, using the County of Monterey 5-Year PHLA Plan (Attachment 5). Carmel-by-the-Sea will meet with the County on a quarterly basis to identify, develop, and fund potential projects within the City limits.

**ENVIRONMENTAL REVIEW**:
In accordance with the California Environmental Quality Act (California Public Resources Code §§ 21000, et seq., "CEQA"), together with State Guidelines (14 California Code Regulations §§ 15000, et seq., the "CEQA Guidelines") and City Environmental Regulations (CMC 17.60), authorizing the County of Monterey to submit an application on behalf of the City of Carmel-by-the-Sea for the Permanent Local Housing Allocation (PLHA) Program, adopting the County of Monterey's 5-Year Plan, authorizing the execution of an agreement with the County of Monterey for joint participation in the PLHA funding program for fiscal years 2019-2023 and delegating to the County of Monterey administration of the PLHA program on behalf of the City of Carmel-by-the-Sea is not considered a project requiring compliance with the California Environmental Quality Act (Section 21065 of the California Public Resources Code).

## FISCAL IMPACT:

The City of Carmel-by-the-Sea is eligible to receive up to $491,704 in funds over the five-year period 2019 to 2023. The collaboration with the County of Monterey, and neighboring jurisdictions (City of Monterey, Pacific Grove, Salinas, Soledad, and others) demonstrates a concerted effort to address the housing crisis regionally.

## PRIOR CITY COUNCIL ACTION:

The Council has no prior action on this matter.

## ATTACHMENTS:

Attachment 1) Resolution 2022-099

Attachment 2) 2022 Permanent Local Housing Allocation Program Entitlement and Non-Entitlement Local Government Formula Component - Notice of Funding Availability

Attachment 3) Permanent Local Housing Allocation Final Guidelines

Attachment 4) Draft Agreement between the City of Carmel-by-the-Sea and the County of Monterey for Joint Participation in the PLHA Program for Fiscal Years 2019-2023

Attachment 5) Monterey County 5-Year PLHA Plan

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**RESOLUTION NO. 2022-099**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA AUTHORIZING THE COUNTY OF MONTEREY TO SUBMIT AN APPLICATION ON BEHALF OF THE CITY OF CARMEL-BY-THE-SEA FOR THE PERMANENT LOCAL HOUSING ALLOCATION (PLHA) PROGRAM, ADOPTING THE COUNTY OF MONTEREY'S 5-YEAR PLAN, AUTHORIZING THE EXECUTION OF AN AGREEMENT WITH THE COUNTY OF MONTEREY FOR JOINT PARTICIPATION IN THE PLHA FUNDING PROGRAM FOR FISCAL YEARS 2019-2023 AND DELEGATING TO THE COUNTY OF MONTEREY ADMINISTRATION OF THE PLHA PROGRAM ON BEHALF OF THE CITY OF CARMEL-BY-THE-SEA**

A necessary quorum and majority of the City Council of the City of Carmel-by-the-Sea hereby consents to, adopts, and ratifies the following resolution:

A. WHEREAS the State of California (the "State"), Department of Housing and Community Development ("Department") is authorized to provide up to $335 million under the SB 2 Permanent Local Housing Allocation Program Formula Component from the Building Homes and Jobs Trust Fund for assistance to Cities and Counties (as described in Health and Safety Code section 50470 et seq. (Chapter 364, Statutes of 2017 (SB 2)).

B. WHEREAS the Department issued a Notice of Funding Availability ("NOFA") dated August 17, 2022, under the Permanent Local Housing Allocation (PLHA) Program.

C. WHEREAS the City of Carmel-by-the-Sea is an eligible Local government that authorizes the County of Monterey to submit an application for program funds and administer one or more eligible activities on behalf of the City.

D. WHEREAS the Department may approve funding allocations for PLHA Program, subject to the terms and conditions of the Guidelines, NOFA, Program requirements, the Standard Agreement, and other contracts between the Department and PLHA grant recipients.

**NOW, THEREFORE, BE IT HEREBY RESOLVED by the City Council of the City of Carmelby-the-Sea that:**

1. Pursuant to Section 302(c)(4) of the Guidelines, the County of Monterey's 5-year PLHA Plan for funding allocations is incorporated by reference and attached to this resolution, and the City of Carmel-by-the-Sea hereby adopts this PLHA Plan and certifies compliance with all public notice, public comment, and public hearing requirements in accordance with the Guidelines.

2. The City of Carmel-by-the-Sea certifies that it has delegated authority to the County of Monterey to apply on its behalf and administer the PLHA grant award for the formula allocation of PLHA funds, pursuant to Guidelines Section 300(c) and 300(d), and the legally binding agreement between the City of Carmel-by-the-Sea and the County of Monterey is submitted with the PLHA application.

3. The City of Carmel-By-The-Sea certifies that its decision to delegate its authority to the County of Monterey to apply for its PLHA allocation was or will be accessible to the public and avoided or shall avoid any conflicts of interest.

PASSED AND ADOPTED by the City Council of the City of Carmel-by-the-Sea this 1st day of November, 2022, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED:

_____
Dave Potter
Mayor

CERTIFICATE OF THE ATTESTING OFFICER

The undersigned City Clerk does hereby attest and certify that the forgoing Resolution is a true, full and correct copy of a resolution duly adopted at a meeting of the Carmel-by-the-Sea City Council which was duly convened and held on the date stated thereon, and that said document has not been amended, modified, repealed or rescinded since its date of adoption and in full force and effect as of the date hereof.

ATTEST:

_____
Nova Romero, MMC
City Clerk

**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT**
**DIVISION OF STATE FINANCIAL ASSISTANCE**
2020 W. El Camino Avenue, Suite 670
Sacramento, CA 95833
(916) 263-2771
www.hcd.ca.gov

August 17, 2022

**MEMORANDUM FOR:** All Potential Applicants

**FROM:** Jennifer Seeger, Deputy Director
Division of State Financial Assistance

**SUBJECT:** 2022 Permanent Local Housing Allocation Program Entitlement and Non-Entitlement Local Government Formula Component – Notice of Funding Availability

The California Department of Housing and Community Development (Department) is pleased to announce the release of the 2022 Entitlement and Non-Entitlement Local government formula component Notice of Funding Availability (NOFA) for approximately **$335 million** in calendar year 2021 funds in addition to the **$131 million** in remaining calendar year 2019 and calendar year 2020 funds for the Permanent Local Housing Allocation (PLHA) formula allocation program. Appendix A details the total funds available to each eligible locality under this NOFA for housing-related projects and programs that assist in addressing unmet housing needs of their local communities.

First Time Applicants: This will be the last year for Applicants to apply for their 2019 calendar year allocation. Jurisdictions that have not previously applied must meet all threshold requirements as outlined in Part II, Section F, of the attached NOFA.

Second- or Third-Year Applicants: Jurisdictions that have previously applied and received an award of 2019 and/or 2020 funds are not required to resubmit all threshold documents but must demonstrate all threshold requirements continue to be met as noted in Part II, Section G, of this NOFA.

***** PLEASE NOTE *****

**Any 2019 calendar year funds remaining after the close of the NOFA application period will revert to the Housing Rehabilitation Loan Fund established to be used for the Multifamily Housing Program (Chapter 6.7 commencing with Section 50675) pursuant to Health and Safety Code Section 50470 (b)((2)(B)(ii)(VI) to be made available through a future Multifamily Housing Program Notice of Funding Availability.**

The application submittal portal will be available and open for applications beginning August 17, 2022.

Personal deliveries will not be accepted. No facsimiles, incomplete applications, application revisions, or walk-in application packages will be accepted. **Applications will be accepted through October 31, 2022 and must be submitted electronically through the Department's website.** Requirements for uploading the Application Workbook and required supporting documentation, including naming conventions, are described in the application instructions available at http://www.hcd.ca.gov/grants-funding/active-funding/plha.shtml.

The PLHA application forms, workshop details, and Guidelines are posted on the Department's website. To receive information on workshops and other updates, please subscribe to the PLHA listserv by clicking on "Email Sign-Up" on the Department's website. If you have any further questions, please contact PLHA@hcd.ca.gov.

Attachment

# Permanent Local Housing Allocation Program

# Entitlement and Non-Entitlement Local Government Formula Component

# 2022 Notice of Funding Availability

**Gavin Newsom, Governor**
**State of California**

**Lourdes M. Castro Ramírez, Secretary**
**Business, Consumer Services and Housing Agency**

**Gustavo Velasquez, Director**
**California Department of Housing and Community Development**

2020 West El Camino Avenue, Suite 500, Sacramento, CA 95833
Telephone: (916) 263-2771
Website: http://www.hcd.ca.gov/grants-funding/active-funding/plha.shtml
Email: PLHA@hcd.ca.gov

**August 17, 2022**

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# I. Overview

## A. Notice of Funding Availability

The California Department of Housing and Community Development (Department or HCD) is announcing the release of the 2022 Permanent Local Housing Allocation (PLHA) Program's Formula Component Notice of Funding Availability (NOFA) for approximately **$335 million** in calendar year 2021 funds in addition to the **$131 million** in calendar year 2019 and calendar year 2020 funds for Entitlement and Non-Entitlement Local governments. This NOFA is funded from moneys deposited in the Building Homes and Jobs Trust Fund (Fund) in calendar year 2021 and includes any remaining unawarded funds not requested for calendar years 2019 and 2020.

Funding for this NOFA is provided pursuant to Senate Bill 2 (SB 2) (Chapter 364, Statutes of 2017). SB 2 established the Fund and authorizes the Department to allocate70 percent of moneys collected and deposited in the Fund, beginning in calendar year 2019, to Local governments for eligible housing and homelessness activities. The intentof the bill is to provide a permanent, on-going source of funding to Local governments for housing-related projects and programs that assist in addressing the unmet housing needs of their local communities.

In 2022, the Department will issue two separate NOFAs to award the PLHA funds:

- Formula Component NOFA for Entitlement and Non-Entitlement Local governments
- Non-Entitlement Local Government Competitive NOFA (anticipated in June 2022)

This NOFA outlines threshold and application requirements for Entitlement Local governments and Non-Entitlement Local governments as defined in Guidelines Section 101. Entitlement Local governments are metropolitan cities and urban counties that received a Community Development Block Grant (CDBG) for fiscal year 2017pursuant to the federal formula specified in 42 U.S. Code, Section 5306. Please note that this NOFA has two separate threshold requirements sections:

- Local governments that <u>received an award</u> under the 2020 or 2021 Formula Component NOFA are subject to the threshold requirements outlined in Part II, Section F
- Local governments that have <u>not previously applied for and received</u> a PLHA award must meet the threshold requirements outlined in Part II, Section G

***** PLEASE NOTE *****

**Any 2019 calendar year funds remaining after the close of the NOFA application period will revert to the Housing Rehabilitation Loan Fund established to be used for the Multifamily Housing Program (Chapter 6.7 commencing with Section 50675) pursuant to Health and Safety Code Section 50470 (b)((2)(B)(ii)(VI) to be made available through a future Multifamily Housing Program Notice of Funding Availability.**

### B. Timeline

| | |
|---|---|
| **NOFA Release Date** | August 17, 2022 |
| **Application Submittal** | August 17, 2022 – October 31, 2022 |
| **Award Announcement** | Ongoing through February 2023 |

### C. Authorizing Legislation and Regulations

Senate Bill 2 (Chapter 364, Statutes of 2017) established the PLHA Program. The program operates under the requirements of Health and Safety Code (HSC), Part 2 of Division 31,Chapter 2.5 (commencing with Section 50470).

Section 50470 (b)(2)(B)(i) of the HSC authorizes the Department to allocate 70 percent of the moneys collected and deposited in the Fund, beginning in calendar year 2019, to Local governments.

Section 50470 (b)(2)(B)(i)(I) of the HSC requires the Department to allocate 90 percent of PLHA funds available to Local governments based on the federal CDBG formula specified in 42 U.S. Code, Section 5306, except that the portion allocated to Non-Entitlement Local governments is required to be distributed through a competitive grant program for Non-Entitlement Local governments.

Section 50470 (b)(2)(B)(i)(II) of the HSC requires the Department to allocate the remaining 10 percent of PLHA funds available to Local governments equitably to Non-Entitlement Local governments.

Section 50470 (d) authorizes the Department to adopt Guidelines to implement the PLHA program, not subject to the rulemaking provisions of the California AdministrativeProcedure Act.

This NOFA governs the administration of funding from the Fund (created by Section 50470, subdivision (a)(1) and appropriated by item 2240-103-3317 in theBudget Act of 2019) and made available under the PLHA program.

Capitalized terms not otherwise defined in this NOFA shall have the meanings set forth in Guidelines Section 101.

## II. Program Requirements

The following is provided as a summary for the allocation of the PLHA funds to Entitlement Non-Entitlement Local governments and is not to be considered a complete representation of the eligibility, threshold, or other requirements, terms, and conditions.

This 2022 NOFA represents the third year of funding under the PLHA program for the Entitlement and Non-Entitlement Local Government Formula Component as detailed below:

| Revenue Collection period | NOFA Issuance |
|---|---|
| 2019 CY | 2020 |
| 2020 CY | 2021 |
| 2021 CY | 2022 |

## A. Eligible Applicants

An Applicant must be an Entitlement Local government, a Non-Entitlement Local government, or a Local or Regional Housing Trust Fund delegated by the Local government pursuant to Guidelines Section 300. Appendix A of the NOFA contains the list of eligible Applicants.

1. Delegation of Formula Allocation

   An eligible Applicant may delegate their entire formula allocation to either another Local government or to a Local or Regional Housing Trust Fund. A Local government that delegates their formula allocation to another Local government or to a Housing Trust Fund must enter into a legally binding agreementwith the other Local government or Housing Trust Fund. The delegate must submit the PLHA application on behalf of the recipient of the PLHA Formula Allocation and wholly administer the entire formula component of PLHA funds on behalf of the delegator for the full term of thePLHA Plan, as set forth in Guidelines Section 300(c). Both the delegating Local government and the Applicant must meet the housing element compliance threshold requirement as outlined in Section II, Part F of this NOFA.

   Upon delegating its entire formula allocation to another Local government or to a Local or Regional Housing Trust Fund, the Local government that delegated their allocation is no longer involved in the PLHA application or administration of the PLHA grant for the full term of the PLHA Plan, which extends through 2023. The delegated Local government or Trust Fund assumes full responsibility for compliance with statute and for meeting all the Department's requirements, including any penalties for non-compliance.

   A partial funding delegation is not permitted under the delegation authority. However, a Local government can subgrant a portion of its allocation to another entity, as permittedby Guidelines Section 302(c)(3). When a Local government subgrants a portion of its allocation to another entity, the Local government remains fully accountable and responsible for compliance with statute and for meeting all of the Department's requirements, including any penalties for non-compliance.

## B. Eligible Activities

Pursuant to Guidelines Section 301(a), the PLHA funds allocated to eligible

Applicantsmust be used to carry out one or more of the eligible activities listed below. All servicesmust be provided within the county containing the Local government recipient.

1. The predevelopment, development, acquisition, rehabilitation, and preservation of multifamily, residential live-work, or rental housing that is Affordable to extremely low-, very low-, low-, or Moderate-income households (up to 120 percent of Area Median Income (AMI), or 150 percent of AMI in High-cost areas, see appendix B fora list of High-cost areas, including necessary Operating subsidies). Note: Predevelopment and/or acquisition must result in the development, rehabilitation, or preservation of housing, as otherwise there is no actual housing outcome of the predevelopment or acquisition assistance.

2. The predevelopment, development, acquisition, rehabilitation, and preservation of Affordable rental and ownership housing, including Accessory Dwelling Units (ADUs), that meets the needs of a growing workforce earning up to 120 percent of Area Median Income (AMI), or 150 percent of AMI in High-cost areas. ADUs shall be available for occupancy for a term of no less than 30 days. See Appendix B for alist of High-cost areas in California.

   Note: Predevelopment and/or acquisition must result in the development, rehabilitation, or preservation of Affordable rental and ownership housing, as otherwise there is no actual housing outcome of the predevelopment or acquisitionassistance.

3. Matching portions of funds placed into Local or Regional Housing Trust Funds. Matching funds must be utilized as required by PLHA guidelines Section 301(a).

4. Matching portions of funds available through the Low- and Moderate-Income Housing Asset Fund pursuant to subdivision (d) of HSC Section 34176. Matching funds must be utilized as required by PLHA guidelines Section 301(a).

5. Capitalized Reserves for Services connected to the preservation and creation of newPermanent Supportive Housing (up to 30 percent of AMI).

6. Assisting persons who are experiencing or At risk of homelessness in conformancewith 24 Code of Federal Regulations (CFR Section 578.3), (up to 30 percent of AMI), including

   a. Rapid rehousing in conformance with federal rules contained in 24 CFR Section 576.104, except for legal services;
   b. Rental assistance with a term of at least six (6) months (rental arrears is not eligible);
   c. Street outreach, and other supportive/case management services in conformance with federal rules contained in 24 CFR Section 576.101 that allow people to obtain and retain housing;
   d. Operating and capital costs for navigation centers and emergency shelters, and the new construction, rehabilitation, and preservation of permanent and

transitional housing.

This Activity may include subawards to administrative entities as definedin HSC Section 50490(a) (1-3) that were awarded California Emergency Solutions and Housing (CESH) Program or Homeless Emergency Aid Program (HEAP) funds for rental assistance to continue assistance to these households.

Applicants must provide rapid rehousing, rental assistance, navigation centers, emergency shelter, and transitional housing activities in a manner consistent with the Housing First practices described in 25 CCR, Section 8409, subdivision (b)(1)-(6) and in compliance with Welfare Institutions Code (WIC) Section 8255(b)(8). An Applicant allocated fundsfor the new construction, rehabilitation, and preservation of Permanent supportive housing shall incorporate the core components of Housing First, as provided in WIC Section 8255(b).

7. Accessibility modifications in Lower-income Owner-occupied housing (up to 80 percent of AMI).

8. Efforts to acquire and rehabilitate foreclosed or vacant homes and apartments (up to 120 percent of Area Median Income (AMI), or 150 percent of AMI in High-cost areas).

9. Homeownership opportunities, including, but not limited to, down payment assistance to those earning up to 120 percent of Area Median Income (AMI), or 150 percent of AMI in High-cost areas.

10. Fiscal incentives made by a county to a city within the county to incentivize approvalof one or more Affordable housing projects, or matching funds invested by a county in an Affordable housing development project in a city within the county, provided that the city has made an equal or greater investment in the project. The county fiscal incentives shall be in the form of a grant or low-interest loan to an Affordable housing project. Matching funds investments by both the county and the city also shall be a grant or low-interest deferred loan to the Affordable housing project earning up to 120 percent of Area Median Income (AMI), or 150 percent of AMI in High-cost areas.

| |
|---|
| Twenty percent of the moneys in the Fund are required by statute to be expended for Affordable Owner Occupied Workforce Housing (AOWH). If funding proposed in Local government Plans for AOWH activities is lower than 20 percent of the moneys available in the Fund, the Department may require Local governments to use a specific percentage of their annual formula allocations in some future year for AOWH activities as part of the annual funding process. |

## C. Allocation of funding and award limits

Appendix A lists the dollar amount of the allocation of PLHA funds. There is a

column indicating allocations for calendar years 2021, 2020 and 2019. If a Local government applied for and received their 2010 or 2020 allocations, there is a blank in those columns. If a Local government **HAS NOT** applied before this NOFA, there will be an amount listed in each of the 2019, 2020, and 2021 columns.

The PLHA funds allocated to each Entitlement Local government is directly proportionate to each Entitlement Local Government's share of the total 2017 Community Development Block Grant Fund Allocation in California.

The PLHA funds allocated to each Non-Entitlement Local Government is based on the sum of:

1. Fifty percent of the funding available for the Non-Entitlement formula component divided by the number of Local governments eligible for the Non-Entitlement formula component; and

2. Fifty percent of the funding available for the Non-Entitlement formula component allocated in proportion to each Non-Entitlement Local government's share of the total most severe housing need in California's Non-Entitlement Local governments,based upon the most recent U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy (CHAS) data.

Two or more Local governments may expend PLHA funds on an eligible jointly funded project, provided the project is an eligible Activity pursuant to Guidelines Section 301(a),and will be located within the boundaries of one of the Local governments.

An Applicant eligible for an allocation of PLHA funds must comply with the Deadline andFunding Requirements set forth in Guidelines Section 304.

In order to avoid amending the Department Standard Agreement each year, and to expedite the disbursement of PLHA funds, the Department Standard Agreement and the Applicant's PLHA resolution shall include a five-year estimate of PLHA formula allocations, as stated in Appendix C, as the maximum funding amount. The actual amounts may be lower, and the disbursements will be based on the actual allocation amounts.

Please be advised that no funding from any subsequent year will be disbursed if the Local government is not in compliance with the housing element requirement and the Housing Element Annual Progress Report (APR) requirement stated in Guidelines Section 302(a) and (b), or in the event that the Local government has not submitted its annual PLHA report, as required by Guidelines Section 503. Please refer to Appendix D for more information on verifying housing element and APR status. In addition, the grantee must be in compliance with commitment requirements stated in Guidelines Sections 300(e) and must not incur penalties stated in Guidelines Section 502.

## D. Program Administrative, Activity Delivery Costs, and Reimbursement of Costs

A Local government that receives an award under this NOFA shall not use more than 5 percent (5%) of the award for administrative costs related to the execution of eligible activities.

Staff and overhead costs directly related to carrying out the eligible activities described in Guidelines Section 301(a) are “activity costs” and not subject to the cap on administrative costs. A Local government may share any funds available for administrative costs with entities to which it provides funding.

Predevelopment expenses for construction projects funded by PLHA funds and costs to develop and prepare the PLHA application and Plan may be paid from the PLHA funds regardless of when the costs were incurred. Reimbursement of expenses to prepare the PLHA application and Plan are subject to the cap on administrative costs. Other costs incurred more than one year prior to commitment by the Local government may not be paid from the PLHA funds.

## E. Application review

An Applicant must submit a complete application and other documents by the deadline stated in this NOFA. Applications submitted in response to this NOFA must meet the threshold requirements set forth in this section and in the Guidelines Section 302.

## F. Threshold requirements for <u>Previous Awardees</u>

Applicants that received awards from the 2021 Formula Allocation NOFA must meet all of the following threshold requirements:

1. Housing Element Compliance: The Applicant and delegating Local government, if applicable, must be a locality with an adopted housing element that has been found by the Department to be in substantial compliance with the requirements of Article 10.6 (commencing with section 65580) of Chapter 3 of Division 1 of Title 7 of the Government Code, pursuant to Government Code section 65585 at time of application. If the application is submitted within 120 days of the housing element due date, the Department may refer to the jurisdiction’s compliance from the prior cycle.

2. The Applicant must have submitted to the Department the Annual Progress Report on the Housing Element for the 2021 calendar year reporting period by the submittal date.

3. Applicant must have submitted to the Department the Annual PLHA Report if the application is submitted on or after July 31, 2022, which is the deadline for the Annual Report.

4. Applicant must have met the commitment requirements stated in PLHA Guidelines Section 300(e).

5. The application must request an allocation pursuant to Section 200 of the PLHA Guidelines. Previous awardees have already received Department approval for theirfive-year PLHA Plan, which lists the activities that the Local government plans to provide using the five years of funding contained in the Standard Agreement. The PLHA Plan continues in force and effect unless the Local government amends the Plan to provide different activities that are eligible under PLHA statute and Guidelines. If the Plan is amended so that more than 10 percent of funds are moved to a different activity, the Plan must be formally amended, including discussion and approval at a publicly noticed meeting of the Local government's governing board, and the Plan must be submitted to the Department for approval. Activities must be carried out in the jurisdiction of the Applicant's Local government. Jointly funded projects may be carried out as described in Section 301(c).

6. Submission of the application must be authorized by the governing board of the Applicant by Resolution, and this Resolution must be submitted as part of the application. The Resolution should use the five-year estimate of funding, as listed in Appendix C.

7. If the Local government proposes to allocate funds for any Activity to another entity, the Resolution must certify that the Local government's selection process shall avoid conflicts of interest and shall be accessible to the public. See PLHA Guidelines Section 302 (c)(3).

8. If the Local government proposes to use funds for the acquisition, construction, orrehabilitation of for-sale housing projects or units within for-sale housing projects, the Resolution must certify that the grantee shall record a deed restriction againstthe property that will ensure compliance with one of the requirements stated in Guidelines Section 302(c)(6)(A), (B) or (C).

9. The resolution shall certify that, if funds are used for the development of an Affordable Rental Housing Development, the Local government shall make the PLHA assistance in the form of a low-interest, deferred loan to the Sponsor of theProject. The loan shall be evidenced through a Promissory Note secured by a Deed of Trust, and a Regulatory Agreement shall restrict occupancy and rents in accordance with the Local government-approved underwriting of the Project for aterm of at least 55 years.

10. If any activity in the five-year Plan consists of loans being made to a homebuyer, homeowner, developer, or owner of a project, a Program income reuse plan describing how repaid loans will be used for eligible activities specified in Section 301 must be included in the application. This reuse plan must also describehow interest earned from PLHA funds deposited in a Local government interest-bearing account will be used for eligible PLHA activities.

## G. Threshold requirements for First-Time Applicants

First-time Applicants who have not previously received an award under a prior Formula Allocation NOFA must meet the following threshold requirements:

1. Housing Element Compliance: The Applicant and delegating Local government, if applicable, must have a housing element that has been adopted by the jurisdiction's governing body and subsequently determined to be in substantial compliance with state Housing Element Law pursuant to GC Section 65585 by the application date. If the application is submitted within 120 days of the housing element due date, the Department may refer to the jurisdiction's compliance from the prior cycle.

2. The Applicant must have submitted to the Department the Annual Progress Report on the housing element for the corresponding calendar year based on the allocations for which the Applicant is applying by the application submittal date as follows:

| Allocation Requested: | APR Reporting Period: |
|---|---|
| 2019 allocation | 2019 CY APR |
| 2020 allocation | 2020 CY APR |
| 2021 allocation | 2021 CY APR |

3. Application requests an allocation pursuant to Section 200 of the PLHA Guidelines and identifies the eligible activities to be undertaken. Activities must be carried out in the jurisdiction of the Applicant's Local government. Jointly funded projects may be carried out as described in Section 301(c).

4. Submission of the application must be authorized by the governing board of the Applicant by Resolution, and this Resolution must be submitted as part of the application. The Resolution should use the five-year estimate of funding, as listed in Appendix C.

5. If the Local government proposes to allocate funds for any Activity to another entity,the Resolution must certify that the Local government's selection process shall avoidconflicts of interest and shall be accessible to the public. See PLHA Guidelines Section 302 (c)(3).

6. If the Local government proposes to use funds for the acquisition, construction, orrehabilitation of for-sale housing projects, or units within for-sale housing projects,the Resolution must certify that the grantee shall record a deed restriction againstthe property that will ensure compliance with one of the requirements stated in Guidelines Section 302(c)(6)(A),(B) or (C).

7. The Resolution shall certify that, if funds are used for the development of an Affordable Rental Housing Development, the Local government shall make the

PLHA assistance in the form of a low-interest, deferred loan to the Sponsor of the Project. The loan shall be evidenced through a Promissory Note secured by a Deed of Trust, and a Regulatory Agreement shall restrict occupancy and rents in accordance with the Local government-approved underwriting of the Project for a term of at least 55 years.

8. The application must include a Plan which details:
    a. The manner in which the allocated funds will be used for eligible Activities.
    b. A detailed description of the way the Local government will prioritize investments that increase the supply of housing for household with incomes ator below 60 percent of the AMI.
    c. A detailed description of how the Plan is consistent with the programs set forth in the Local government's housing element.
    d. Evidence that the Plan was authorized and adopted by Resolution by the Local government and that the public had an adequate opportunity to review and comment on the Plan's contents prior to the Plan Resolution adoption. The plan must be provided to the public for a public comment period, culminating with a public hearing at which the governing board may approve it.The draft Plan should be published for public review on the Applicant's website.
    e. The Resolution adopting the Plan should specifically identify the activities the Local government plans to engage in. The Resolution is required to be submitted as part of the application. The Resolution must specifically state the eligible activities from the Plan application.
    f. The following information is required for each proposed Activity:
        i. A detailed description of each Activity, pursuant to Section 301 and the percentage of funding being allocated to it. The description must include the percentage, if any, directed to Affordable Owner-Occupied Workforce Housing (AOWH).
        ii. The projected number of households to be served at each income leveland a comparison to the unmet share of the Regional Housing Needs Allocation at each income level.
        iii. A description of major steps/actions and a proposed schedule required forthe implementation and completion of the Activity.
        iv. The period of affordability for each Activity. Rental Projects are requiredto have an affordability period of at least 55 years.

9. The Plan shall be for a term of five years, illustrating how the allocations from 2019, 2020, 2021, 2022, and 2023 will be used. Refer to instructions in the Plan tab of the PLHA Application form.

10. If funds are used for acquisition, construction, or rehabilitation of for-sale housingprojects or units within for-sale housing projects, then a deed restriction shall be recorded against the property as described in Section 302(c)(6)(A-C).

11. If funds are proposed to be used for development of an Affordable Rental HousingDevelopment, a certification is required that the Local government shall make the PLHA assistance in the form of a low-interest, deferred loan to the Sponsor of the Project. The loan must be evidenced through a Promissory Note secured by a Deed of Trust, and a Regulatory Agreement is required to restrict occupancy andrents in accordance with the Local government's approved underwriting of the Project for a term of at least 55 years.

12. If any activity in the five-year Plan consists of loans being made to a homebuyer, homeowner, developer or owner of a project, a Program income reuse plan describing how repaid PLHA loans will be used for eligible activities specified in Section 301 must be included in the application. This reuse plan must also describe how interest earned from PLHA funds deposited in a Local government interest-bearing account will be used for eligible PLHA activities.

### H. Administration and reporting requirements

A grantee of PLHA funds must meet the administration requirements set forth in Guidelines Sections 500 and 501 and reporting requirements in Section 503.

## III. Application submission and review procedures

Applications must be on the Department's forms and cannot be altered or modified by the Applicant. Excel forms must be in Excel format and 'saved as' .xls or .xlsx. Do not 'save as'.xlsm or .pdf format. Applications that do not meet the program requirements stated in thisNOFA will not be eligible for funding. Application forms are available for download on the PLHA webpage.

### A. Application submission process

Applications must be submitted electronically to the Department's website. Requirements for uploading the Application Workbook and required supporting documentation, including naming conventions, are described in the application instructions available at https://www.hcd.ca.gov/grants-funding/active-funding/plha.shtml. The submittal portal will be available beginning August 17, 2022.

Applicants must upload all application materials to the Department's website. The application portal is open beginning on **August 17, 2022** through **4:00 p.m. Pacific Standard Time on October 31, 2022.** Please note that the on-line support and technical assistance closes at 4:00 p.m. Pacific Standard Time on October 31, 2022.

Personal deliveries will not be accepted. No facsimiles, incomplete applications, application revisions, or walk-in application packages will be accepted. Applications thatdo not meet the filing deadline requirements will not be eligible for funding.

It is the Applicant's responsibility to ensure that the application is clear, complete, andaccurate. The Department may request additional clarifying information and/or

inquireas to where in the application specific information is located. However, missing or forgotten application information or documentation may cause the application not to pass threshold.

Those Applicants that are notified they did not pass threshold requirements will have theopportunity to submit the necessary documentation prior to the NOFA closing date.

### B. Application Workshops

Applicants are strongly encouraged to attend a PLHA webinar to gain information criticalfor preparing the application, which will be discussed at the webinar. PLHA webinar dates and times are located on the Department's PLHA webpage.

## IV. Appeals

### A. Basis of appeals

1. Upon receipt of the Department's notice that an application has been determined tobe incomplete, ineligible, or fail threshold review, Applicants may appeal such decision(s) to the Director of the Department or their designee pursuant to this section.

2. No Applicant shall have the right to appeal a decision of the Department relating to another Applicant's eligibility, point score, award, denial of award, or any other matter related thereto.

3. The appeal process provided herein applies solely to decisions of the Director of the Department or their designee made in this NOFA and does not apply to any decisions made with respect to any previously issued NOFAs or decisions to be made pursuant to future NOFAs.

### B. Appeal process and deadlines

1. **Process.** In order to file an appeal, an Applicant must submit to the Director of the Department or their designee a written appeal, which states all relevant facts, arguments, and evidence upon which the appeal is based. Furthermore, the Applicant must provide a detailed description of how the application is complete, eligible or meets threshold requirements, as applicable, or provide additional information to resolve the Department's determination. Appeals are to be submitted to the Department at PLHA@hcd.ca.govaccording to the deadline set forth in Department review letters.

2. **Filing deadline.** Appeals must be received by the Department no later than five (5) business days from the date of the Department's threshold review letter representing the Department's decision made in response to the application.

### C. Decisions

Any request to appeal the Department's decision regarding an application shall be reviewed for compliance with the Guidelines and this NOFA. All decisions rendered shall be final, binding, and conclusive, and shall constitute the final action of the Department.

### D. Award announcements and contracts

The Department will review applications as they are received and will make awards as follows:

1. **Previous Awardees:** For Local governments that have previously received an award and are applyingfor a new allocation of calendar year 2021 funds, awards will be made within 60 days of receipt.
2. **First Time Awardees:** For Local governments that have not previously received an award, those applications will be reviewed, and awards made at the end of each quarter beginning in July 2022 with subsequent awards made in October 2022 and January 2023. Award recommendations will be posted on the PLHA webpage.

## V. Other state requirements

### A. Pet Friendly Housing Act of 2017

Housing funded through this program is subject to the Pet Friendly Housing Act of 2017(HSC Section 50466). Each awardee will be required to submit a signed and dated certification that residents of the program-funded Housing development will be authorized to own or otherwise maintain one or more common household pets as required by HSC Section 50466. Pursuant to this statute, "common household pet" means a domesticated animal, such as a dog or cat, commonly kept in the home for pleasure rather than for commercial purposes.

### B. Accessibility and non-discrimination

All projects or programs shall adhere to the accessibility requirements set forth in California Building Code Chapter 11A and 11B and the Americans with Disabilities Act (ADA), Title II. In addition, projects or programs shall adhere to either the Uniform Federal Accessibility Standards, 24 CFR Part 8, or HUD's modified version of the 2010 ADA Standards for Accessible Design (Alternative 2010 ADAS), HUD-2014-0042-0001,79 F.R. 29671 (5/27/14) (commonly referred to as "the Alternative Standards" or "HUD Deeming Memo"). Accessible units shall, to the maximum extent feasible and subject to reasonable health and safety requirements, be distributed throughout the project and be available in a sufficient range of sizes and amenities consistent with 24 CFR Section 8.26.

Recipients shall adopt a written non-discrimination policy requiring that no person shall, on the grounds of race, color, religion, sex, gender, gender identity, gender

expression, sexual orientation, marital status, national origin, ancestry, familial status, source of income, disability, age, medical condition, genetic information, citizenship, primary language, immigration status (except where explicitly prohibited by federal law), arbitrary characteristics, and all other classes of individuals protected from discrimination under state or federal fair housing laws, individuals perceived to be a member of any of the preceding classes, or any individual or person associated with any of the preceding classes be excluded from participation in, be denied the benefits of, or be subjected to discrimination under, any program or activity funded in whole or inpart with program funds made available pursuant to this NOFA.

Recipients shall comply with the requirements contained in the ADA, the Fair Housing Amendments Act, the California Fair Employment and Housing Act, the Unruh Act, GC Section 11135, Section 504 of the Rehabilitation Act, and regulations promulgated pursuant to those statutes, including 24 CFR Part 100, 24 CFR Part 8, and 28 CFR Part 35, in all of the Sponsor's activities.

## IV. Other terms and conditions

### A. Right to modify or suspend

The Department reserves the right, at its sole discretion, to suspend, amend, or modify the provisions of this NOFA at any time, including, without limitation, the amount of funds available hereunder. If such an action occurs, the Department will notify all interested parties and will post the revisions to the Department’s website.

### B. Disclosure of application

Information provided in the application will become a public record and available for review by the public, pursuant to the California Public Records Act (GC Section 6250 et seq.). As such, any materials provided will be disclosed to any person making a request under this Act. The Department cautions Applicants to use discretion in providing information not specifically requested, including, but not limited to, bank account numbers, personal phone numbers, and home addresses. By providing this information to the Department, the Applicant is waiving any claim of confidentiality andconsents to the disclosure of submitted material upon request.

### C. Conflicts

In the event of any conflict between the terms of this NOFA and either applicable state or federal law or regulation, the terms of the applicable state or federal law or regulation shall control. Applicants are deemed to have fully read and understand all applicable state and federal laws, and regulations pertaining to PLHA, and understand and agree that the Department shall not be responsible for any errors or omissions in the preparation of this NOFA.

# APPENDICES

## Appendix A
## Entitlement and Non-Entitlement Local Government Formula Allocation for Calendar years 2019, 2020, and 2021.

Please refer to Section II.A. Eligible Applicants for a discussion of the definition of Entitlement and Non-Entitlement Local Governments.

| Entitlement Local Government | | | | Non-Entitlement Local Government | | | |
|---|---|---|---|---|---|---|---|
| **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** | **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** |
| Alameda | | $868,493 | $955,750 | Alpine County | $68,065 | $106,216 | $116,768 |
| Alameda County | | $1,451,516 | $1,597,349 | Alturas | $79,305 | $123,577 | $128,224 |
| Alhambra | | | $796,443 | Amador City | $65,861 | $100,869 | $112,445 |
| Aliso Viejo | $119,177 | $185,238 | $203,849 | Amador County | $134,185 | $203,299 | $275,316 |
| Anaheim | | | $3,686,550 | American Canyon | $117,435 | $178,785 | $199,555 |
| Antioch | | $612,764 | $674,328 | Anderson | $103,770 | $163,160 | $178,480 |
| Apple Valley | | $446,959 | $491,865 | Angels | $81,289 | $127,049 | $128,764 |
| Bakersfield | | | $2,960,656 | Arcata | $176,062 | $284,687 | $208,201 |
| Baldwin Park | | $758,781 | $835,015 | Artesia | $135,728 | $204,479 | $213,605 |
| Bellflower | | | $878,539 | Arvin | | $220,799 | $217,928 |
| Berkeley | | | $2,212,637 | Atwater | $158,209 | $247,535 | $269,804 |
| Buena Park | | $573,917 | $631,578 | Auburn | $119,859 | $185,382 | $203,337 |
| Burbank | | | $816,205 | Avenal | $104,652 | $168,021 | $177,939 |
| Camarillo | | | $231,519 | Benicia | $141,459 | $222,187 | $229,276 |
| Carlsbad | $272,582 | $423,678 | $466,244 | Biggs | $70,710 | $109,341 | $121,739 |
| Carson | | | $709,383 | Bishop | $83,713 | $132,952 | $146,057 |
| Cathedral City | | | $484,445 | Blue Lake | $68,285 | $105,521 | $117,957 |
| Cerritos | $109,213 | $169,751 | $186,806 | Brawley | $151,156 | $240,243 | $234,139 |
| Chico | $390,348 | $606,721 | $667,678 | Butte County | $333,428 | $494,061 | $610,245 |
| Chino | $249,365 | $387,590 | $426,531 | Calaveras County | | | $429,217 |
| Chino Hills | | | $303,241 | Calexico | $203,832 | $307,951 | $284,935 |
| Chula Vista | | $1,646,765 | $1,812,214 | Calimesa | $88,783 | $138,507 | $156,324 |
| Citrus Heights | | $486,125 | $534,966 | Calipatria | $77,101 | $120,452 | $122,280 |
| Clovis City | | | $625,364 | Calistoga | $85,256 | $133,646 | $134,709 |
| Compton | $769,720 | $1,196,383 | $1,316,582 | Capitola | $105,092 | $180,868 | $195,772 |
| Concord | | | $836,053 | Carmel-by-the-Sea | $81,950 | $130,174 | $140,653 |
| Contra Costa County | | | $3,712,024 | Chowchilla | | | $164,970 |

| Entitlement Local Government | | | | Non-Entitlement Local Government | | | |
|---|---|---|---|---|---|---|---|
| **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** | **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** |
| Corona | | | $995,498 | Clearlake | $145,867 | $208,993 | $232,518 |
| Costa Mesa | | | $904,122 | Coalinga | | $165,243 | $170,374 |
| Cupertino City | | | $283,100 | Colfax | $72,032 | $113,855 | $125,522 |
| Daly City | | | $875,455 | Colusa | $85,917 | $135,035 | $161,187 |
| Davis | | $470,837 | $518,142 | Colusa County | $83,493 | $136,077 | $152,541 |
| Delano City | | | $556,115 | Corcoran | $113,908 | $178,438 | $179,560 |
| Downey | | | $889,923 | Corning | $92,529 | $143,368 | $150,380 |
| El Cajon | $645,382 | $1,003,123 | $1,103,906 | Crescent City | $80,848 | $125,660 | $142,274 |
| El Centro (Colonia Only) | $245,998 | $382,358 | $420,773 | Del Norte County | $140,797 | $210,729 | $214,685 |
| El Monte | | | $1,449,267 | Dinuba | | | $230,897 |
| Elk Grove | $439,787 | $683,565 | $752,243 | Dixon | $115,451 | $189,896 | $194,691 |
| Encinitas | $156,044 | $242,541 | $266,909 | Dorris | $66,522 | $103,785 | $116,876 |
| Escondido | $842,911 | $1,310,146 | $1,441,775 | Dos Palos | $82,832 | $120,799 | $143,355 |
| Fairfield | | | $668,640 | Dunsmuir | $72,032 | $111,424 | $124,441 |
| Fontana | | | $1,678,180 | El Centro (Colonia Only) | $216,175 | $311,076 | $283,314 |
| Fountain Valley | | | $247,348 | El Dorado County | | | $973,923 |
| Fremont | | | $1,096,685 | Etna | $67,183 | $105,521 | $114,714 |
| Fresno | | | $5,828,601 | Eureka | | | $346,539 |
| Fresno County | | | $2,810,897 | Exeter | | | $164,970 |
| Fullerton | | | $1,177,577 | Farmersville | | | $176,858 |
| Garden Grove | | | $1,700,794 | Ferndale | $71,150 | $108,994 | $121,739 |
| Gardena | $329,877 | $512,732 | $564,246 | Firebaugh | $95,395 | $144,410 | $159,566 |
| Gilroy City | | | $417,798 | Fort Bragg | $106,856 | $163,507 | $142,814 |
| Glendale | $867,025 | $1,347,626 | $1,483,020 | Fort Jones | $69,167 | $106,910 | $115,795 |
| Glendora City | $130,258 | $202,461 | $222,802 | Fortuna | $108,619 | $171,840 | $171,995 |
| Goleta | | | $160,810 | Fowler | $81,069 | $126,355 | $139,032 |
| Hanford | | | $505,389 | Glenn County | | | $201,716 |
| Hawthorne | | | $1,048,208 | Grass Valley | | | $225,493 |
| Hayward | | $1,012,998 | $1,114,773 | Greenfield | $139,916 | $211,076 | $213,605 |
| Hemet | | | $688,525 | Gridley | $92,529 | $144,410 | $143,895 |
| Hesperia | $505,777 | $786,135 | $865,117 | Grover Beach | | | $181,182 |
| Huntington Beach | | | $938,184 | Guadalupe | $101,125 | $160,035 | $166,051 |

| Entitlement Local Government | | | | Non-Entitlement Local Government | | | |
|---|---|---|---|---|---|---|---|
| **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** | **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** |
| Huntington Park | $651,678 | $1,012,910 | $1,114,676 | Gustine | $73,575 | $118,021 | $150,920 |
| Indio City | | | $779,909 | Hidden Hills | $71,371 | $111,077 | $124,982 |
| Inglewood | $735,776 | $1,143,625 | $1,258,523 | Hollister | $180,249 | $280,173 | $290,339 |
| Irvine | | | $1,296,497 | Holtville | $82,611 | $131,563 | $121,739 |
| Kern County | | | $3,695,204 | Humboldt County | | | $595,871 |
| La Habra | | $604,420 | $665,145 | Huron | | $153,438 | $143,355 |
| La Mesa | | $293,468 | $322,953 | Imperial | $91,427 | $147,535 | $169,834 |
| Laguna Niguel | | | $262,411 | Imperial County | $173,858 | $260,034 | $311,954 |
| Lake Elsinore | | | $425,098 | Indian Wells | $88,783 | $135,730 | $163,889 |
| Lake Forest | $221,070 | $343,611 | $378,133 | Industry | $65,596 | $101,632 | $110,824 |
| Lakewood | $270,847 | $420,981 | $463,277 | Inyo County | $103,770 | $166,285 | $220,630 |
| Lancaster | | | $1,188,528 | Ione | $75,338 | $118,716 | $141,734 |
| Livermore | | | $356,702 | Jackson | $87,460 | $133,299 | $143,355 |
| Lodi | | | $575,172 | King City | | $205,868 | $173,616 |
| Lompoc | $227,027 | $352,871 | $388,324 | Kings County | $163,499 | $249,965 | $304,389 |
| Long Beach | | | $5,006,175 | Lake County | $241,741 | $360,728 | $401,658 |
| Los Angeles | | | $44,847,783 | Lakeport | $79,305 | $126,702 | $163,889 |
| Los Angeles County | | | $18,858,143 | Lassen County | $102,007 | $155,868 | $187,666 |
| Lynwood | | $981,371 | $1,079,969 | Lemoore | $145,205 | $217,326 | $237,381 |
| Madera | $422,319 | $656,414 | $722,364 | Lincoln | $203,171 | $314,201 | $344,377 |
| Marin County | | | $1,241,068 | Lindsay | | $189,201 | $197,393 |
| Menifee | | | $1,079,969 | Live Oak | $89,664 | $132,952 | $156,324 |
| Merced | | | $722,364 | Livingston | $108,839 | $172,882 | $179,560 |
| Milpitas City | $238,595 | $370,850 | $408,109 | Loomis | $81,730 | $123,577 | $147,678 |
| Mission Viejo | | | $353,526 | Los Banos | $188,184 | $292,326 | $289,258 |
| Modesto | | | $1,658,723 | Loyalton | $67,624 | $105,521 | $116,336 |
| Montebello | $316,758 | $492,340 | $541,805 | Madera County | | | $484,877 |
| Monterey | | $180,952 | $199,132 | Mammoth Lakes | $81,730 | $123,924 | $154,162 |
| Monterey County | | | $1,109,035 | Maricopa | $66,742 | $105,869 | $116,336 |
| Monterey Park | $318,871 | $495,625 | $545,420 | Marina | $157,548 | $235,382 | $234,139 |
| Moreno Valley | | | $1,761,457 | Mariposa County | | | $235,220 |
| Mountain View | $256,551 | $398,761 | $438,824 | Marysville | | $169,063 | $183,883 |
| Napa City | | | $544,289 | McFarland | $112,806 | $174,618 | $177,939 |

| Entitlement Local Government | | | | Non-Entitlement Local Government | | | |
|---|---|---|---|---|---|---|---|
| **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** | **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** |
| National City | | | $672,542 | Mendocino County | | | $578,903 |
| Newport Beach | | | $290,118 | Merced County | | | $625,917 |
| Norwalk | $592,762 | $921,336 | $1,013,902 | Modoc County | $76,440 | $120,105 | $146,597 |
| Oakland | | $5,757,902 | $6,336,392 | Mono County | $77,101 | $113,855 | $136,870 |
| Oceanside | | $1,008,982 | $1,110,353 | Montague | $68,726 | $105,174 | $116,876 |
| Ontario | | | $1,573,664 | Mount Shasta | $89,885 | $141,285 | $153,082 |
| Orange | | | $1,039,081 | Napa County | | $220,451 | $261,158 |
| Orange County | | | $2,175,998 | Nevada City | | | $136,870 |
| Oxnard | | | $1,981,457 | Nevada County | | | $566,474 |
| Palm Desert | | | $293,014 | Orange Cove | $101,345 | $156,563 | $149,299 |
| Palm Springs | | | $328,816 | Orland | | | $143,355 |
| Palmdale | | | $1,332,565 | Oroville | | | $224,412 |
| Palo Alto | $231,496 | $359,817 | $395,967 | Pacific Grove | | | $188,207 |
| Paradise | $93,596 | $145,477 | $160,093 | Palos Verdes Estates | $96,717 | $157,257 | $170,914 |
| Paramount City | $438,197 | $681,094 | $749,523 | Parlier | | $199,965 | $208,741 |
| Pasadena | | $1,454,952 | $1,601,129 | Pismo Beach | $99,582 | $157,604 | $184,964 |
| Perris City | | $725,136 | $797,990 | Placer County | | | $813,970 |
| Petaluma | | | $315,338 | Placerville | $110,823 | $173,924 | $181,182 |
| Pico Rivera | $338,973 | $526,870 | $579,804 | Plumas County | | $187,118 | $217,387 |
| Pittsburg | | | $543,387 | Plymouth | $67,404 | $104,757 | $116,876 |
| Placentia | | $333,825 | $367,364 | Point Arena | $67,404 | $103,785 | $114,174 |
| Pleasanton City | $151,089 | $234,839 | $258,433 | Portola | $75,338 | $119,757 | $120,659 |
| Pomona | | | $1,827,543 | Rancho Mirage | $172,094 | $282,257 | $335,191 |
| Porterville | | | $586,270 | Red Bluff | $124,047 | $189,201 | $200,095 |
| Rancho Cordova City | $285,366 | $443,548 | $488,110 | Rio Dell | $79,085 | $118,716 | $141,193 |
| Rancho Cucamonga | $450,476 | $700,179 | $770,526 | Rio Vista | $96,276 | $149,271 | $157,945 |
| Rancho Santa Margarita | | | $173,436 | Riverbank | | $193,021 | $206,039 |
| Redding | | | $576,110 | San Benito County | $121,182 | $175,313 | $213,064 |
| Redondo Beach | $130,830 | $203,351 | $223,781 | San Joaquin | $78,644 | $123,924 | $128,764 |

| Entitlement Local Government | | | | Non-Entitlement Local Government | | | |
|---|---|---|---|---|---|---|---|
| **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** | **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** |
| Redwood City | | | $594,763 | San Juan Bautista | $75,999 | $114,549 | $122,280 |
| Rialto | $597,786 | $929,145 | $1,022,495 | San Juan Capistrano | $236,452 | $359,687 | $335,191 |
| Riverside | | $2,521,285 | $2,774,596 | Sand City | $67,139 | $104,063 | $112,445 |
| Riverside County | | | $6,835,329 | Santa Cruz County | | $895,101 | $916,102 |
| Rocklin City | | | $230,295 | Scotts Valley | $103,770 | $166,979 | $171,995 |
| Rosemead | $343,238 | $533,498 | $587,099 | Shasta County | | | $578,903 |
| Roseville | | | $536,004 | Shasta Lake | | | $174,157 |
| Sacramento | | | $4,031,691 | Sierra County | | | $124,441 |
| Sacramento County | | $4,229,006 | $4,653,890 | Siskiyou County | | | $260,618 |
| Salinas | | | $1,722,182 | Solano County | | $201,701 | $240,083 |
| San Bernardino | | $2,521,132 | $2,774,428 | Soledad | $120,961 | $188,160 | $188,207 |
| San Bernardino County | | | $5,916,756 | Sonora | $91,427 | $138,507 | $143,895 |
| San Buenaventura | | $555,571 | $611,389 | South Lake Tahoe | | | $299,525 |
| San Clemente | | | $323,348 | St. Helena | $89,003 | $137,118 | $149,299 |
| San Diego | | | $9,903,933 | Suisun City | $154,683 | $222,187 | $257,916 |
| San Diego County | | $3,077,481 | $3,386,672 | Susanville | $93,191 | $141,632 | $146,597 |
| San Francisco | | $13,550,527 | $14,911,935 | Sutter County | | $181,910 | $211,983 |
| San Joaquin County | | | $2,241,046 | Sutter Creek | $78,644 | $121,841 | $128,764 |
| San Jose | | | $7,438,226 | Taft | $90,546 | $140,591 | $136,330 |
| San Leandro | | $543,946 | $598,596 | Tehama | $65,596 | $101,632 | $111,256 |
| San Luis Obispo County | | | $1,492,388 | Tehama County | $186,685 | $318,784 | $414,843 |
| San Marcos City | $319,178 | $496,102 | $545,945 | Trinidad | $66,081 | $101,702 | $111,256 |
| San Mateo | | | $584,800 | Trinity County | $121,622 | $186,424 | $219,008 |
| San Mateo County | | | $2,068,899 | Truckee | | | $181,722 |
| Santa Ana | | | $4,795,654 | Tulare County | | | $969,060 |
| Santa Barbara | | | $775,030 | Tulelake | $68,506 | $106,563 | $115,795 |

| Entitlement Local Government | | | | Non-Entitlement Local Government | | | |
|---|---|---|---|---|---|---|---|
| **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** | **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** |
| Santa Barbara County | | | $974,603 | Tuolumne County | $242,182 | $368,367 | $476,771 |
| Santa Clara | | | $820,156 | Ukiah | $129,777 | $199,618 | $187,666 |
| Santa Clara County | | | $1,260,160 | Vernon | $65,376 | $100,591 | $111,472 |
| Santa Clarita | $588,259 | $914,338 | $1,006,200 | Wasco | $135,508 | $205,174 | $244,947 |
| Santa Cruz | | | $452,837 | Weed | $76,661 | $120,105 | $131,466 |
| Santa Maria | | | $1,254,581 | Westmorland | $72,693 | $113,507 | $117,957 |
| Santa Monica | | | $936,510 | Wheatland | $72,032 | $110,035 | $123,361 |
| Santa Rosa | | | $1,187,622 | Williams | $80,848 | $126,355 | $135,249 |
| Santee | $134,374 | $208,859 | $229,843 | Willits | $92,309 | $137,813 | $141,734 |
| Seaside | $193,124 | $300,175 | $330,334 | Willows | | | $138,491 |
| Simi Valley | | $451,305 | $496,647 | Winters | | $136,077 | $177,399 |
| Sonoma County | | | $1,538,385 | Woodlake | | $136,424 | $150,380 |
| South Gate | | | $1,233,796 | Yolo County | | $222,882 | $234,679 |
| South San Francisco | | | $372,849 | Yountville | $81,069 | $127,049 | $133,087 |
| Stanislaus County | | | $1,975,561 | Yreka | $102,007 | $154,827 | $162,268 |
| Stockton | | $2,660,093 | $2,927,349 | Yuba County | | | $483,256 |
| Sunnyvale | $533,023 | $828,483 | $911,720 | | | | |
| Temecula | | | $467,631 | | | | |
| Thousand Oaks | | | $506,368 | | | | |
| Torrance | | | $760,089 | | | | |
| Tulare | | $494,944 | $544,671 | | | | |
| Turlock | $309,854 | $481,610 | $529,997 | | | | |
| Tustin | | | $659,464 | | | | |
| Union City | | $394,694 | $434,349 | | | | |
| Upland | | $431,845 | $475,232 | | | | |
| Vacaville | $240,500 | $373,812 | $411,368 | | | | |
| Vallejo | | | $864,418 | | | | |
| Ventura County | | | $1,470,575 | | | | |
| Victorville | | | $1,082,334 | | | | |
| Visalia | | | $1,078,990 | | | | |
| Vista | | $635,530 | $699,381 | | | | |
| Walnut Creek | | | $236,813 | | | | |
| Watsonville | $362,515 | $563,461 | $620,071 | | | | |
| West Covina | $388,763 | $604,258 | $664,967 | | | | |

| Entitlement Local Government | | | | Non-Entitlement Local Government | | | |
|---|---|---|---|---|---|---|---|
| **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** | **Local Gov** | **Funding Amount 2019** | **Funding Amount 2020** | **Funding Amount 2021** |
| West Sacramento | $236,679 | $367,872 | $404,832 | | | | |
| Westminster | | | $873,327 | | | | |
| Whittier | | $595,595 | $655,434 | | | | |
| Woodland | | $387,006 | $425,889 | | | | |
| Yorba Linda | | | $182,215 | | | | |
| Yuba City | | $483,607 | $532,195 | | | | |

## Appendix B
## List of High-cost Areas in California

| High-cost Area by County | High-cost Area pursuant to Federal Housing Finance Agency's Maximum Loan Limits for Mortgages Acquired in Calendar Year 2020 | High-cost Area pursuant to Department of Housing and Urban Development Very Low-Income Adjustments due to High-Housing Cost for Fiscal Year 2020-21 |
|---|---|---|
| Alameda | x | |
| Contra Costa | x | |
| El Dorado | x | |
| Imperial | | x |
| Los Angeles | x | |
| Madera | | x |
| Marin | x | |
| Merced | x | |
| Monterey | x | |
| Napa | x | |
| Orange | x | |
| Placer | x | |
| Sacramento | x | |
| San Benito | x | |
| San Diego | x | |
| San Francisco | x | |
| San Luis Obispo | x | |
| San Mateo | x | |
| Santa Barbara | x | |
| Santa Clara | x | |
| Santa Cruz | x | |
| Solano | x | |
| Sonoma | x | |
| Tulare | | x |
| Ventura | x | |
| Yolo | x | |

# Appendix C
## Estimate of Five-Year PLHA Allocation for Entitlement and Non-Entitlement Local government

| Entitlement Local government | | Non-Entitlement Local government | |
|---|---|---|---|
| **Local government** | **Estimate 5-Year Funding Amount** | **Local government** | **Estimate 5-Year Funding Amount** |
| Alameda | $3,352,590 | Alpine County | $408,390 |
| Alhambra | $2,793,768 | Alturas | $475,835 |
| Aliso Viejo | $715,062 | Amador City | $395,168 |
| Anaheim | $12,931,710 | Amador County | $805,115 |
| Antioch | $2,365,410 | American Canyon | $704,612 |
| Apple Valley | $1,725,366 | Anderson | $622,622 |
| Bakersfield | $10,385,412 | Angels | $487,737 |
| Baldwin Park | $2,929,068 | Arcata | $1,056,372 |
| Bellflower | $3,081,744 | Artesia | $814,372 |
| Berkeley | $7,761,504 | Arvin | $831,563 |
| Buena Park | $2,215,452 | Atwater | $949,257 |
| Burbank | $2,863,092 | Auburn | $719,158 |
| Camarillo | $812,124 | Avenal | $627,912 |
| Carlsbad | $1,635,492 | Benicia | $848,754 |
| Carson | $2,488,380 | Biggs | $424,261 |
| Cathedral City | $1,699,338 | Bishop | $502,283 |
| Cerritos | $655,278 | Blue Lake | $409,715 |
| Chico | $2,342,088 | Brawley | $906,940 |
| Chino | $1,496,190 | Butte County | $2,000,572 |
| Chino Hills | $1,063,710 | Calaveras County | $1,238,865 |
| Chula Vista | $6,356,898 | Calexico | $1,222,996 |
| Citrus Heights | $1,876,554 | Calimesa | $532,699 |
| Clovis City | $2,193,654 | Calipatria | $462,611 |
| Compton | $4,618,320 | Calistoga | $511,540 |
| Concord | $2,932,710 | Capitola | $630,557 |
| Corona | $3,492,018 | Carmel-by-the-Sea | $491,704 |
| Costa Mesa | $3,171,486 | Chowchilla | $662,295 |
| Cupertino City | $993,060 | Clearlake | $875,203 |
| Daly City | $3,070,926 | Coalinga | $618,655 |
| Davis | $1,817,544 | Colfax | $432,196 |
| Delano City | $1,950,744 | Colusa | $515,507 |
| Downey | $3,121,674 | Colusa County | $500,961 |
| El Cajon | $3,872,292 | Corcoran | $683,453 |
| El Centro | $1,475,988 | Corning | $555,180 |
| Elk Grove | $2,638,722 | Crescent City | $485,092 |
| El Monte | $5,083,752 | Del Norte County | $844,787 |

| Entitlement Local government | | Non-Entitlement Local government | |
|---|---|---|---|
| **Local government** | **Estimate 5-Year Funding Amount** | **Local government** | **Estimate 5-Year Funding Amount** |
| Encinitas | $936,264 | Dinuba | $889,749 |
| Escondido | $5,057,466 | Dixon | $692,710 |
| Fairfield | $2,345,460 | Dorris | $399,135 |
| Fontana | $5,886,732 | Dos Palos | $496,994 |
| Fountain Valley | $867,648 | Dunsmuir | $432,196 |
| Fremont | $3,846,960 | El Centro | $1,297,051 |
| Fresno | $20,445,618 | El Dorado County | $2,879,974 |
| Fullerton | $4,130,712 | Etna | $403,103 |
| Gardena | $1,979,262 | Eureka | $1,125,138 |
| Garden Grove | $5,966,058 | Exeter | $586,917 |
| Gilroy City | $1,465,554 | Farmersville | $589,562 |
| Glendale | $5,202,150 | Ferndale | $426,906 |
| Glendora City | $781,548 | Firebaugh | $572,371 |
| Goleta | $564,090 | Fort Bragg | $641,136 |
| Hanford | $1,772,808 | Fort Jones | $415,004 |
| Hawthorne | $3,676,914 | Fortuna | $651,715 |
| Hayward | $3,910,410 | Fowler | $486,414 |
| Hemet | $2,415,216 | Glenn County | $641,136 |
| Hesperia | $3,034,662 | Grass Valley | $813,049 |
| Huntington Beach | $3,290,970 | Greenfield | $839,497 |
| Huntington Park | $3,910,068 | Gridley | $555,180 |
| Indio City | $2,735,772 | Grover Beach | $727,093 |
| Inglewood | $4,414,656 | Guadalupe | $606,754 |
| Irvine | $4,547,862 | Gustine | $441,452 |
| Laguna Niguel | $920,484 | Hidden Hills | $428,228 |
| La Habra | $2,333,202 | Hollister | $1,081,498 |
| Lake Forest | $1,326,420 | Holtville | $495,671 |
| Lake Elsinore | $1,491,162 | Humboldt County | $2,066,693 |
| Lakewood | $1,625,082 | Huron | $597,497 |
| La Mesa | $1,132,854 | Imperial | $548,568 |
| Lancaster | $4,169,130 | Imperial County | $1,043,148 |
| Livermore | $1,251,240 | Indian Wells | $532,699 |
| Lodi | $2,017,590 | Industry | $393,581 |
| Lompoc | $1,362,162 | Inyo County | $622,622 |
| Long Beach | $17,560,704 | Ione | $452,032 |
| Los Angeles | $157,317,438 | Jackson | $524,764 |
| Lynwood | $3,788,322 | King City | $805,115 |
| Madera | $2,533,914 | Kings County | $980,995 |
| Menifee | $1,509,624 | Lake County | $1,450,450 |
| Merced | $3,112,314 | Lakeport | $475,835 |
| Milpitas City | $1,431,570 | Lassen County | $612,043 |
| Mission Viejo | $1,240,098 | Lemoore | $871,235 |

| Entitlement Local government | | Non-Entitlement Local government | |
|---|---|---|---|
| **Local government** | **Estimate 5-Year Funding Amount** | **Local government** | **Estimate 5-Year Funding Amount** |
| Modesto | $5,818,482 | Lincoln | $1,219,029 |
| Montebello | $1,900,548 | Lindsay | $703,289 |
| Monterey | $698,514 | Live Oak | $537,988 |
| Monterey Park | $1,913,226 | Livingston | $653,038 |
| Moreno Valley | $6,178,854 | Loomis | $490,382 |
| Mountain View | $1,539,306 | Los Banos | $1,129,105 |
| Napa City | $1,909,260 | Loyalton | $405,747 |
| National City | $2,359,146 | Madera County | $1,643,522 |
| Newport Beach | $1,017,678 | Mammoth Lakes | $490,382 |
| Norwalk | $3,556,572 | Maricopa | $400,458 |
| Oakland | $22,226,850 | Marina | $945,290 |
| Oceanside | $3,894,906 | Mariposa County | $770,732 |
| Ontario | $5,520,108 | Marysville | $662,295 |
| Orange | $3,644,898 | McFarland | $676,841 |
| Oxnard | $6,950,574 | Mendocino County | $2,099,753 |
| Palmdale | $4,674,384 | Merced County | $1,865,687 |
| Palm Desert | $1,027,836 | Modoc County | $458,644 |
| Palm Springs | $1,153,422 | Mono County | $462,611 |
| Palo Alto | $1,388,976 | Montague | $412,359 |
| Paradise | $561,576 | Mount Shasta | $539,311 |
| Paramount City | $2,629,182 | Napa County | $859,334 |
| Pasadena | $5,616,456 | Nevada City | $473,190 |
| Perris City | $2,799,192 | Nevada County | $1,837,916 |
| Petaluma | $1,106,142 | Orange Cove | $608,076 |
| Pico Rivera | $2,033,838 | Orland | $555,180 |
| Pittsburg | $1,906,098 | Oroville | $822,306 |
| Placentia | $1,288,644 | Pacific Grove | $712,546 |
| Pleasanton City | $906,534 | Palos Verdes Estates | $580,305 |
| Pomona | $6,410,670 | Parlier | $801,148 |
| Porterville | $2,056,524 | Pismo Beach | $597,497 |
| Rancho Cordova City | $1,712,196 | Placer County | $2,730,542 |
| Rancho Cucamonga | $2,702,856 | Placerville | $664,940 |
| Rancho Santa Margarita | $608,376 | Plumas County | $727,093 |
| Redding | $2,020,884 | Plymouth | $404,425 |
| Redondo Beach | $784,980 | Point Arena | $404,425 |
| Redwood City | $2,086,314 | Portola | $452,032 |
| Rialto | $3,586,716 | Rancho Mirage | $1,032,569 |
| Riverside | $9,732,750 | Red Bluff | $744,284 |
| Rocklin City | $807,828 | Rio Dell | $474,513 |
| Rosemead | $2,059,428 | Rio Vista | $577,661 |
| Roseville | $1,880,196 | Riverbank | $732,382 |
| Sacramento | $14,142,402 | San Benito County | $727,093 |

| Entitlement Local government | | Non-Entitlement Local government | |
|---|---|---|---|
| **Local government** | **Estimate 5-Year Funding Amount** | **Local government** | **Estimate 5-Year Funding Amount** |
| Salinas | $6,041,082 | San Joaquin | $471,868 |
| San Bernardino | $9,732,162 | San Juan Bautista | $455,999 |
| San Clemente | $1,134,240 | San Juan Capistrano | $1,418,712 |
| San Diego | $34,741,098 | Sand City | $402,838 |
| San Francisco | $52,308,210 | Santa Cruz County | $3,395,713 |
| San Jose | $26,091,876 | Scotts Valley | $622,622 |
| San Leandro | $2,099,760 | Shasta County | $1,721,544 |
| San Marcos City | $1,915,068 | Shasta Lake | $613,366 |
| San Mateo | $2,051,364 | Sierra County | $405,747 |
| Santa Ana | $16,822,236 | Siskiyou County | $852,722 |
| Santa Barbara | $2,718,654 | Solano County | $769,410 |
| Santa Clara | $2,876,946 | Soledad | $725,770 |
| Santa Clarita | $3,529,554 | Sonora | $548,568 |
| Santa Cruz | $1,588,464 | South Lake Tahoe | $994,219 |
| Santa Maria | $4,400,826 | St. Helena | $534,021 |
| Santa Monica | $3,285,096 | Suisun City | $928,099 |
| Santa Rosa | $4,165,950 | Susanville | $559,147 |
| Santee | $806,244 | Sutter County | $698,000 |
| Seaside | $1,158,744 | Sutter Creek | $471,868 |
| Simi Valley | $1,742,142 | Taft | $543,278 |
| South Gate | $4,327,920 | Tehama | $393,581 |
| South San Francisco | $1,307,880 | Tehama County | $1,120,113 |
| Stockton | $10,268,580 | Trinidad | $396,491 |
| Sunnyvale | $3,198,138 | Trinity County | $729,738 |
| Temecula | $1,640,358 | Truckee | $627,912 |
| Thousand Oaks | $1,776,240 | Tulare County | $3,501,506 |
| Torrance | $2,666,244 | Tulelake | $411,037 |
| Tulare | $1,910,598 | Tuolumne County | $1,453,095 |
| Turlock | $1,859,124 | Ukiah | $778,667 |
| Tustin | $2,313,270 | Vernon | $392,259 |
| Union City | $1,523,610 | Wasco | $813,049 |
| Upland | $1,667,022 | Weed | $459,966 |
| Vacaville | $1,443,000 | Westmorland | $436,163 |
| Vallejo | $3,032,214 | Wheatland | $432,196 |
| San Buenaventura | $2,144,634 | Williams | $485,092 |
| Victorville | $3,796,620 | Willits | $553,857 |
| Visalia | $3,784,890 | Willows | $561,792 |
| Vista | $2,453,292 | Winters | $532,699 |
| Walnut Creek | $830,694 | Woodlake | $539,311 |
| Watsonville | $2,175,090 | Yolo County | $819,661 |
| West Covina | $2,332,578 | Yountville | $486,414 |
| Westminster | $3,063,462 | Yreka | $612,043 |

| Entitlement Local government | | Non-Entitlement Local government | |
|---|---|---|---|
| **Local government** | **Estimate 5-Year Funding Amount** | **Local government** | **Estimate 5-Year Funding Amount** |
| West Sacramento | $1,420,074 | Yuba County | $1,634,265 |
| Whittier | $2,299,140 | | |
| Woodland | $1,493,934 | | |
| Yorba Linda | $639,174 | | |
| Yuba City | $1,866,840 | | |
| Alameda County | $5,603,190 | | |
| Contra Costa County | $13,021,068 | | |
| Fresno County | $9,860,088 | | |
| Kern County | $12,962,064 | | |
| Los Angeles County | $66,150,756 | | |
| Marin County | $4,353,426 | | |
| Monterey County | $3,890,280 | | |
| Orange County | $7,632,984 | | |
| Riverside County | $23,977,026 | | |
| Sacramento County | $16,324,956 | | |
| San Bernardino County | $20,754,846 | | |
| San Diego County | $11,879,796 | | |
| San Joaquin County | $7,861,158 | | |
| San Luis Obispo County | $5,235,012 | | |
| San Mateo County | $7,257,300 | | |
| Santa Barbara County | $3,418,722 | | |
| Santa Clara County | $4,420,398 | | |
| Sonoma County | $5,396,358 | | |
| Stanislaus County | $6,929,892 | | |
| Ventura County | $5,158,494 | | |

## Appendix D
## Housing Element and Annual Progress Report (APR) Submittal Status
## Requirement stated in Guidelines Section 302(a) and (b)

To be eligible to apply, jurisdictions are required to have a housing element that has been adopted by the jurisdiction's governing body and subsequently determined to be in substantial compliance with state Housing Element Law pursuant to GC Section 65585 by the application date. If the application is submitted within 120 days of the housing element due date, the Department may refer to the jurisdiction's compliance from the prior cycle.

To verify current status and eligibility for PLHA funds, please consult the following resources:

Housing Element Compliance: Housing Element Review and Compliance Report | California Department of Housing and Community Development

Annual Progress Report Submittal: Annual Progress Reports - Data Dashboard and Downloads | California Department of Housing and Community Development

Please note that PLHA is an over-the-counter program, allowing Applicants to apply at any point during the OTC application window of August 17 to October 31. If a jurisdiction is currently out of compliance, that jurisdiction, once it reaches compliance with the housing element and APR requirements, will be eligible for these funds.

For questions about Housing Element Compliance, please email housingelements@hcd.ca.gov. For inquiries on status of APR submittal, please email APR@hcd.ca.gov.

# Permanent Local Housing Allocation
# Final Guidelines

**Gavin Newsom, Governor**
**State of California**

**Alexis Podesta, Secretary**
**Business, Consumer Services and Housing Agency**

**Douglas R. McCauley, Acting Director**
**California Department of Housing and Community Development**

2020 West El Camino Avenue, Suite 150
Sacramento, CA 95833

**October 2019**

The matters set forth herein are regulatory mandates, and are adopted in accordance with the authorities set forth below:

Quasi-legislative regulations … have the dignity of statutes … [and]… delegation of legislative authority includes the power to elaborate the meaning of key statutory terms…

*Ramirez v. Yosemite Water Co.*, 20 Cal. 4th 785, 800 (1999)

In consultation with stakeholders, the California Department of Housing and Community Development (Department) may adopt Guidelines to implement this Section, including determining allocation methodologies. Any guideline, rule, policy, or standard of general application employed by the Department in implementing this chapter shall not be subject to the requirements of the Administrative Procedure Act (Chapter 3.5 (commencing with Section 11340) of Title 2 Government Code, Part 1 of Division 3).

NOTE: Authority Cited: Health and Safety Code Section 50470, subdivision (d).

The Department reserves the right, at its sole discretion, to suspend or amend the provisions of these Guidelines, including, but not limited to, grant award amounts.

## INTRODUCTION

Chapter 364, Statutes of 2017 (SB 2, Atkins) was part of a 15-bill housing package aimed at addressing the state's housing shortage and high housing costs. Specifically, it establishes a permanent source of funding intended to increase the affordable housing stock in California. The revenue from SB 2 will vary from year to year, as revenue is dependent on real estate transactions with fluctuating activity. The legislation directs the California Department of Housing and Community Development (Department) to use 70 percent of the revenue collected, beginning in calendar year 2019, to provide financial assistance to local governments for eligible housing-related projects and programs to assist in addressing the unmet housing needs of their local communities. This program is hereafter referred to as the Permanent Local Housing Allocation (PLHA) program.

Guidelines for the PLHA program are organized into five Articles as follows:

Article I. General provisions: This article includes information on the purpose of the Guidelines, program objectives, and definitions used throughout the document.

Article II. Program funding: This article describes allocation formulas and methodologies, and award amounts.

Article III. Formula allocation component: This article describes the requirements for Applicants to apply for funds under the formula allocation of the PLHA program.

Article IV. Competitive allocation component: This article describes requirements and uses for PLHA competitive allocation funds.

Article V. Administration: This article describes administrative functions such as terms, non-performance remedies, and reporting and monitoring requirements.

# Permanent Local Housing Allocation (PLHA) Program: 2019 Guidelines

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## ARTICLE I. GENERAL PROVISIONS

### Section 100. Purpose and Scope

(a) These Guidelines (hereinafter "Guidelines") implement, interpret, and make specific Chapter 364, Statutes of 2017 (SB 2, Atkins - hereinafter "SB 2") as authorized by Health and Safety Code (HSC) Section 50470, which created the Building Homes and Jobs Trust Fund and the PLHA program. The principal goal of this program is to make funding available to eligible local governments in California for housing-related projects and programs that assist in addressing the unmet housing needs of their local communities. Twenty percent of the funding in the Building Homes and Jobs Trust Fund is required to be expended for Affordable Owner-Occupied Workforce Housing, and the program prioritizes investments that increase the supply of housing to households that are at or below 60 percent of the Area Median Income (AMI), adjusted for household size.

(b) These Guidelines establish terms, conditions, and procedures for local governments to submit applications to the Department for funds from the PLHA program's three components, as listed below:

(1) Entitlement formula component per HSC 50470(b)(2)(B)(i)(I)

(2) Non-entitlement formula component per HSC 50470(b)(2)(B)(i)(II)

(3) Non-entitlement competitive grant program component per HSC 50470(b)(2)(B)(i)(I) (eligible Applicants are the same as for component 2 above)

(c) The non-entitlement competitive grant program component prioritizes assistance to persons experiencing or At risk of homelessness.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(A), subdivision (b)(2)(B)(i) and subdivision (b)(2)(B)(ii)(I-V).

### Section 101. Definitions

All terms not defined below shall, unless their context suggests otherwise, be interpreted in accordance with the meanings of terms described in HSC Section 50470.

(a) "Accessory dwelling unit" (ADU) means a dwelling unit which is attached, detached or located within the living area of the existing dwelling or residential dwelling unit and which provides complete independent living facilities for one or more persons pursuant to Government Code (GC) Section 65852.2 and 65852.22. It shall include permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel as the single-family dwelling. An Accessory dwelling unit also includes the following: an efficiency unit, as defined in Section 17958.1 of the HSC, or a manufactured home, as

defined in Section 18007 of the HSC.

(b) "Activity" means any single eligible undertaking carried out as part of an Applicant's allocation(s) under the Program.

(c) “Affordable” means a housing unit that satisfies at least one of the following criteria:

1. If the unit is being rented to low-income, Very low-income or Extremely low-income households, it complies with the Multifamily Housing Program guidelines Section 7312 and the Section 7301 definition of “Affordable Rent”; or

2. If the unit is being sold, it is offered at an “Affordable housing cost”, as published in the Fannie Mae Selling Guide, Part B, Debt to Income Ratios, as updated annually (https://www.fanniemae.com/content/guide/selling/b3/6/02.html#DTI.20Ratios), and it complies with the income limits stated in the definitions of Moderate-Income and Lower-Income in this section; or

3. If the unit is being rented to Moderate-Income households, it is available at a gross rent, including a utility allowance, that does not exceed 30 percent of the applicable income eligibility level, and complies with the definition of Moderate-Income in these guidelines

(d) "Affordable Owner-Occupied Workforce Housing" (AOWH) means owner-occupied housing per HSC Section 50092.1 that is affordable to persons and families of low or moderate income, as that term is defined in HSC Section 50093, except in High-cost areas where Moderate-income shall include households earning up to 150 percent of AMI.

(e) “Annual Progress Report” (APR) means the Housing Element APR required by GC Section 65400 on the prior year’s activities and due to the Department April 1 of each year.

(f) “Annual Report" means a form issued by the Department and completed by a Local government awarded PLHA funds on which the Local government documents the uses and expenditures of any allocated funds and outcomes achieved.

(g) "Applicant" means an eligible Local government applying for the program to administer one or more eligible activities. Applicant also means a Local or Regional Housing Trust Fund delegated by an eligible Local government to apply for the program and administer its allocation in accordance with all program rules.

(h) “Area Median Income” or “AMI” means the most recent applicable county median family income published by the Department, available at the following link: http://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml

(i) “At risk of homelessness” means the same as defined in Title 24 Section 578.3 of the Code of Federal Regulations and also includes any household receiving rental assistance funded by the California Emergency Solutions and Housing (CESH) program or the California Homeless Emergency Aid Program (HEAP).

(j) “Capitalized Reserve for Services” means the reserve funded by the Local government pursuant to Section 301(a)(5) to address project supportive service budget deficits attributable to shortfalls in service funding sources.

(k) “Comprehensive Housing Affordability Strategy” or “CHAS” means annual data compiled by the United States Census Bureau for the U.S. Department of Housing and Urban Development (HUD) to document the extent of housing problems and housing needs, particularly for low-income households.

(l) "Community Development Block Grant" or "CDBG" means the program created pursuant to Title I of the Housing and Community Development Act of 1974, 42 U.S.C. 5301 et seq., as amended.

(m) “Department” means the California Department of Housing and Community Development.

(n) “Extremely Low Income” has the meaning set forth in HSC Section 50106, which is a maximum of 30 percent of AMI. Grantees shall utilize income limits issued by the Department at the following link: http://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml.

(o) “Fund” means the Building Homes and Jobs Trust Fund pursuant to HSC Section 50470.

(p) “High-cost area” means those counties defined as high cost by the Federal Housing Finance Agency (at: https://www.fhfa.gov/DataTools/ and those counties for which HUD adjusted the Very low income and low-income rents due to high costs (at: https://www.huduser.gov/portal/pdrdatas_landing.html), as published by the Department in the annual PLHA Notice of Funding Availability.

(q) “Local government” means any city, including a charter city, any county, including a charter county, or a city and county, including a charter city and county.

(r) “Local Housing Trust Fund” or “Regional Housing Trust Fund” means a public, joint public and private fund or charitable nonprofit organization described in Section 501(c)(3) of the Internal Revenue Code, which was established by legislation, ordinance, resolution (including nonprofit articles of incorporation), or a public-private partnership organized to receive specific revenue to address local or regional housing needs.

(s) “Low or Lower Income” has the meaning set forth in HSC Section 50079.5, which is a maximum of 80 percent of AMI. Grantees shall utilize income limits issued by the Department at the following link: http://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml.

(t) “Moderate-Income” has the meaning set forth in HSC Section 50093, which is a maximum of 120 percent AMI, or in High-cost areas, 150 percent of AMI. Grantees shall utilize income limits issued by the Department at the following link: http://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml. This may be problematic if PLHA is actually used to fund "moderate" income units as definition is different from what is allowed by HE and RHNA.

(u) “Non-entitlement local government” means a Local government in an area which is not a metropolitan city or part of an urban county, a Local government that, as of September 1, 2017, was an incorporated city with a population of less than 50,000 or a county with an unincorporated area population of less than 200,000 persons which had not entered into a three-year Urban County Cooperation Agreement, or a Local government that was not otherwise entitled to receive CDBG funds directly from HUD.

(v) “Operating subsidies” means payments to owners of affordable housing developments that make the housing more affordable by covering a portion of the ongoing costs of operating the development. Such payments would have the same effect as rental assistance.

(w) “Owner-occupied” means a dwelling which is occupied by the owner and includes a single family dwelling or a dwelling unit in a stock cooperative, as defined by Business and Professions Code (BPC), Section 11003.2, a community apartment project, as defined by BPC Section 11004, or a condominium project, as defined by subdivision (c) of BPC Section 11004. 5.

(x) "Plan" means the document submitted by the Applicant to the Department as part of a complete application in which the Applicant proposes to use allocated funds for at least one eligible Activity. The Plan shall have a term of five years. In succeeding years, the Local government is required to obtain the approval of the Department for any amendments made to the Plan, as set forth in Section 302(c)(5).

(y) “Permanent Local Housing Allocation Program", “Program”, or "PLHA" means the program developed to annually allocate 70 percent of the moneys deposited into the Fund pursuant to HSC Section 50470(b)(2)(B)(i).

(z) “Permanent supportive housing” has the same meaning as in HSC Section 50675.14, that is, housing with no limit on the length of stay, that is occupied by the target population, and that is linked to onsite or offsite services that assist the supportive housing residents in retaining the housing, improving his or her health status, and maximizing his or her ability to live and, when possible, work in the community. Permanent supportive housing may include associated facilities if used to provide services to housing residents. Permanent supportive housing does not include “health facility” as defined by HSC Section 1250 or any “alcoholism or drug abuse recovery or treatment facility” as defined by HSC Section 11834.02 or “Community care facility” as defined in HSC Section 1502, “Mental health rehabilitation centers” as defined in Section 5675 of the Welfare and Institutions Code (WIC), or other residential treatment programs.

(aa) “Regional Housing Needs Allocation" or "RHNA" means the share of the regional housing need represented by persons at all income levels within the area significantly affected by the general plan of the city or county allocated to an Applicant Local government pursuant to GC Section 65584(b).

(bb) “Sponsor” means the legal entity or combination of legal entities with continuing control of a Rental Housing Development. Where the borrowing entity is or will be organized as a limited partnership, Sponsor includes the general partner or general partners who have effective control over the operation of the partnership, or, if the general partner is controlled by another entity, the controlling entity. Sponsor does not include the seller of the property to be developed as the rental housing Project, unless the seller will retain control of the Project for the period necessary to ensure Project feasibility as determined by the Department.

(cc) “Very Low Income” has the meaning set forth in HSC Section 50105, which is a maximum of 50 percent of AMI. Grantees shall utilize income limits issued by the Department at the following link: http://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470.5 and 50470, subdivision (b)(2).

## ARTICLE II. PROGRAM FUNDING

### Section 200. Allocations

(a) SB 2 created a dedicated revenue source for affordable housing and directed the Department to make available 70 percent of the moneys in the Building Homes and Jobs Trust Fund, collected on and after January 1, 2019, to Local governments through the following allocations:

(1) Ninety percent of the moneys available shall be allocated based on the formula used under Federal law to allocate CDBG funds within California. This is the formula specified in Title 42 United States Code (USC), Section 5306.

(A) The amount of funds awarded to each Local government eligible for the entitlement formula component shall be determined by the 90 percent of PLHA funds available pursuant to this paragraph (1) and the percentage of funds received by the entitlement Local government in the CDBG federal fiscal year 2017 allocation process performed by HUD.

(B) Through the formula specified in paragraph (1), the percentage of funds allocated to Non-entitlement local governments shall be distributed to Non-entitlement local governments through a competitive grant program.

(2) Ten percent of the moneys available shall be allocated equitably among Non-entitlement local governments. The equitable allocation awarded to each Local government eligible for the Non-entitlement formula component shall be based on the sum of: (1) 50 percent of the funding available for the Non-entitlement formula component divided by the number of local governments eligible for the Non-entitlement formula component and (2) 50 percent of the funding allocated in proportion to each Non-entitlement local government's share of the total most severe housing need in California's Non-entitlement local governments, based upon the most recent HUD Comprehensive Housing Affordability Strategy.

(b) After funds are appropriated by the Legislature as part of the budget act, the Department will issue one or more Notices of Funding Availability (NOFA). Local governments shall submit an application under the NOFA pertaining to the specific allocation for which the Local government is eligible.

(c) It is recommended that Local governments that were urban counties in accordance with the distribution of funds pursuant to the formula specified in 42 USC, Section 5306 for the federal fiscal year 2017 provide a proportional share of their allocations to Local governments within their county with which they had a three-year Urban County Cooperation Agreement as of September 1, 2017, provided that these Local governments meet the threshold requirements of the PLHA and expend sub-allocated funds for eligible activities within the deadlines of the Standard Agreement governing the sub-allocation.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B).

**Section 201. Award Amounts**

(a) The formula allocation amounts derived pursuant to the formulas in Section 200 will be announced in the NOFA.

(b) The maximum application amount and the minimum application amount for the competitive allocation will be stated in the NOFA.

(c) An Applicant may apply for its formula allocation from the current and two prior NOFAs for which it did not receive an award, provided that the award meets the requirements of Section 304(a).

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B).

## ARTICLE III. FORMULA ALLOCATION COMPONENT

### Section 300. Eligible Applicants

(a) Eligible Applicants for the entitlement formula component described in Section 100(b)(1) are limited to the metropolitan cities and urban counties allocated a grant for the federal fiscal year 2017 pursuant to the federal CDBG formula specified in 42 USC, Section 5306.

(b) Eligible Applicants for the non-entitlement formula component described in Section 100(b)(2) and the competitive grant program component described in Section 100(b)(3) are limited to the Non-entitlement local governments.

(c) A Local government may delegate another Local government to submit an application and administer on its behalf its formula allocation of Program funds, provided that the Local governments enter into a legally binding agreement and the funds are expended for eligible Activities and consistent with Program requirements. The delegating Local government shall be identified in the application. The administering Local government shall be responsible for all Program requirements.

(d) A Local government may delegate a Local or Regional Housing Trust Fund to submit an application and administer on its behalf its formula allocation of Program funds, provided that the Local government enters into a legally binding agreement with the Local or Regional Housing Trust Fund and the funds are expended for eligible Activities and consistent with Program requirements. The delegating Local government shall be identified in the application. The Local or Regional Housing Trust Fund shall be responsible for all Program requirements.

(e) An Applicant shall not be eligible to receive a new allocation of PLHA funds if it has an uncommitted amount of formula PLHA funds greater than the following:

(1) Four times the pending annual allocation if the pending annual allocation is $125,000 or less;

(2) $500,000 if the pending annual allocation is greater than $125,000 and less than $500,000;

(3) The amount of the pending annual allocation if the pending allocation is $500,000 or more.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B).

**Section 301. Eligible Activities**

(a) Eligible Activities are limited to one or more of the following:

(1) The predevelopment, development, acquisition, rehabilitation, and preservation of multifamily, residential live-work, rental housing that is Affordable to Extremely low-,Very low-, Low-, or Moderate-income households, including necessary Operating subsidies.

(2) The predevelopment, development, acquisition, rehabilitation, and preservation of Affordable rental and ownership housing, including Accessory dwelling units (ADUs), that meets the needs of a growing workforce earning up to 120 percent of AMI, or 150 percent of AMI in high-cost areas. ADUs shall be available for occupancy for a term of no less than 30 days.

(3) Matching portions of funds placed into Local or Regional Housing Trust Funds.

(4) Matching portions of funds available through the Low- and Moderate-Income Housing Asset Fund pursuant to subdivision (d) of HSC Section 34176.

(5) Capitalized Reserves for Services connected to the preservation and creation of new Permanent supportive housing.

(6) Assisting persons who are experiencing or At risk of homelessness, including, but not limited to, providing rapid rehousing, rental assistance, supportive/case management services that allow people to obtain and retain housing, operating and capital costs for navigation centers and emergency shelters, and the new construction, rehabilitation, and preservation of permanent and transitional housing.

(A) This Activity may include subawards to Administrative Entities as defined in HSC Section 50490(a)(1-3) that were awarded CESH program or HEAP funds for rental assistance to continue assistance to these households.

(B) Applicants must provide rapid rehousing, rental assistance, navigation centers, emergency shelter, and transitional housing activities in a manner consistent with the Housing First practices described in 25 CCR, Section 8409, subdivision (b)(1)-(6) and in compliance with WIC Section 8255(b)(8). An Applicant allocated funds for the new construction, rehabilitation, and preservation of Permanent supportive housing shall incorporate the core

components of Housing First, as provided in WIC Section 8255, subdivision (b).

(7) Accessibility modifications in Lower-income Owner-occupied housing.

(8) Efforts to acquire and rehabilitate foreclosed or vacant homes and apartments.

(9) Homeownership opportunities, including, but not limited to, down payment assistance.

(10) Fiscal incentives made by a county to a city within the county to incentivize approval of one or more Affordable housing Projects, or matching funds invested by a county in an Affordable housing development Project in a city within the county, provided that the city has made an equal or greater investment in the Project. The county fiscal incentives shall be in the form of a grant or low-interest loan to an Affordable housing Project. Matching funds investments by both the county and the city also shall be a grant or low-interest deferred loan to the Affordable housing Project.

(b) A Local government that receives an allocation shall use no more than 5 percent of the allocation for costs related to the administration of the Activity(ies) for which the allocation was made. Staff and overhead costs directly related to carrying out the eligible activities described in Section 301 are “activity costs” and not subject to the cap on “administrative costs.” A Local government may share any funds available for administrative costs with entities that are administering its allocation.

(c) Two or more Local governments that receive PLHA allocations may expend those moneys on an eligible jointly funded project as provided for in Section 50470 (b)(2)(B)(ii)(IV). An eligible jointly funded project must be an eligible Activity pursuant to Section 301(a) and be located within the boundaries of one of the Local governments.

(d) Entitlement Local governments may use the flow of PLHA funds to incentivize private lender loans and to guarantee payments for some or all public agency bond financings for activities consistent with the uses identified in Section 301 “Eligible Activities”. This loan guarantee Activity must be identified and fully explained in the Applicant’s “Plan”.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivisions (b)(2)(B)(ii)(IV), (b)(2)(D)(i-x), and (b)(3).

**Section 302. Threshold Requirements**

Applicants must meet all the following threshold requirements for participation in the formula allocation:

(a) **Housing Element compliance**: The Applicant and any delegating Local government, if applicable, must have a Housing Element that has been adopted by the Local

government's governing body by the application deadline and subsequently determined to be in substantial compliance with state Housing Element Law pursuant to GC Section 65585. A Local government's current Housing Element compliance status can be obtained by referencing the Department's website at http://www.hcd.ca.gov/community-development/housing-element.

(b) **APR on the Housing Element submitted to the Department**: The Applicant and any delegating Local government, if applicable, must submit to the Department the APR required by GC Section 65400 for the current or prior year by the application deadline date.

(1) Please be advised that the Department will not accept other reports in lieu of the APR. Housing Authority Financial Reports, Redevelopment Reports, and other similar reports will not be accepted as meeting this requirement. If uncertain of the status of the report submittal for a Local government, please contact the Department for more information.

(c) Submit, by the deadline specified in the NOFA, on a form made available by the Department, a complete application which shall meet the following minimum requirements:

(1) Application requests an allocation pursuant to Section 200 in order to carry out one or more of the eligible activities described in Section 301. Except for a jointly funded project as described in Section 301(c), any activities must be carried out within the jurisdiction of the Applicant Local government.

(2) Submission of the application is authorized by the governing boards of the Applicant.

(3) Certification in the resolution that, if the Local government proposes allocation of funds for any Activity to another entity, the Local government's selection process shall avoid conflicts of interest and shall be accessible to the public. For the purposes of this paragraph, "entity" means a housing developer or program operator; "entity" does not mean an administering Local government to whom a Local government delegates its PLHA formula allocation, pursuant to Section 300(d).

(4) A Plan detailing:

(A) The manner in which allocated funds will be used for eligible Activities.

(B) A description of the way the Local government will prioritize investments that increase the supply of housing for households with incomes at or below 60 percent of AMI. Programs targeted at households at or below 60 percent of AMI will be deemed to meet this requirement.

(C) A description of how the Plan is consistent with the programs set forth in the Local government's Housing Element.

(D) Evidence that the Plan was authorized and adopted by resolution by the Local government and that the public had an adequate opportunity to review and comment on its content.

(E) The following for each proposed Activity:

(i) A description of each proposed Activity, pursuant to Section 301, and the percentage of funding allocated to it. The description shall specifically include the percentage of funds, if any, directed to AOWH.

(ii) The projected number of households to be served at each income level and a comparison to the unmet share of the RHNA at each income level.

(iii) A description of major steps/actions and a proposed schedule required for the implementation and completion of the Activity.

(iv) The period of affordability and level of affordability for each Activity. Rental Projects are required to have affordability periods of at least 55 years.

(5) The Plan submitted in response to the NOFA shall be for a term of five years. Local governments shall obtain approval of the Department for amendments made to the Plan in each succeeding year of the term of the Plan. Reallocations of more than 10 percent of funds among Activities require amendment of the Plan, with approval granted by the governing body at a publicly noticed public meeting.

(6) A certification that, if funds are used for the acquisition, construction, or rehabilitation of for-sale housing projects or units within for-sale housing projects, the grantee shall record a deed restriction against the property that will ensure compliance with one of the following requirements if the property is no longer the primary residence of the homeowner due to sale, transfer or lease, unless it is in conflict with the requirements of another public funding source or law:

(A) The PLHA loan and any interest thereon shall be repaid to the Local government's PLHA account. The Local government shall reuse the repayments consistent with Section 301; or

(B) The initial owner and any subsequent owner shall sell the home at an Affordable housing cost to a qualified Lower-Income or Moderate-Income household; or

(C) The homeowner and the Local government shall share the equity in the unit pursuant to an equity-sharing agreement. The grantee shall reuse the proceeds

of the equity-sharing agreement consistent with this section.

(7) A certification that, if funds are used for the development of an Affordable Rental Housing Development, the Local government shall make the PLHA assistance in the form of a low-interest, deferred loan to the Sponsor of the Project. The loan shall be evidenced through a Promissory Note secured by a Deed of Trust, and a Regulatory Agreement shall restrict occupancy and rents in accordance with the Local government-approved underwriting of the Project for a term of at least 55 years.

(8) A Program income reuse plan describing how repaid loans will be reused for eligible activities specified in Section 301.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(ii).

**Section 303. Application Review**

(a) Applicants must submit a complete application by the deadline stated in the NOFA in order to be eligible for funding. Application forms provided by the Department will be available upon release of the NOFA and will require Applicants to submit the forms and other documents to demonstrate that the Local government has met threshold requirements.

(b) The Department may request additional information to complete its review.

(c) Applications recommended for funding are subject to conditions specified by the Department. Applicants will receive an official letter of award after the Department approves funding recommendations.

(d) The Department may issue an Over-the-Counter formula allocation NOFA after completing the NOFA process so that Local governments who were not able to submit formula allocation applications by the application deadline will have another opportunity to do so.

(e) If funding proposed in Local government Plans for AOWH activities is lower than 20 percent of the moneys available in the Fund, the Department may require Local governments to use a specific percentage of their annual formula allocations in some future year for AOWH activities as part of the annual funding process.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(A).

### Section 304. Deadlines and Funding Requirements

(a) The initial PLHA application, including the Plan, must be submitted within 48 months of the budget appropriation (for example, the budget appropriation for 2019 is July 1, 2019, so the application deadline is June 30, 2023).

(b) Funds allocated to Local governments that do not submit a complete application by the deadline stated in subsection (a) will revert to the Housing Rehabilitation Loan Fund for the Multifamily Housing Program or for Department-administered technical assistance to Local governments.

(c) A Local government may petition the Department to return any funds allocated to it to be used for the Multifamily Housing Program.

(d) Except for predevelopment expenses for construction projects funded by PLHA and costs to develop and prepare the Plan and the PLHA application, no costs incurred more than one year prior to commitment by the Local government may be paid from PLHA funds. Reimbursement of expenses to prepare the Plan and the PLHA application are subject to the cap on administrative fees.

(e) After the Standard Agreement and attachments have been finalized, the Local government will follow provided instructions for signing all required documents. The Local government must submit all supporting materials and a signed Standard Agreement within the timeline provided in the instruction.

(f) After the Standard Agreement has been executed by the state, the Local government may submit a request for 100 percent of the funds allocated to be used for eligible expenditures for the Activity(ies) that received the award, and subject to the terms and conditions of the Standard Agreement.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(i) and subdivision (b)(2)(B)(ii)(VI).

## ARTICLE IV. COMPETITIVE ALLOCATION COMPONENT

### Section 400. Eligible Applicants

(a) Eligible Applicants for the non-entitlement competitive allocation described in Section 100(b)(3) are limited to Non-entitlement local governments. For development of Rental Housing Projects, the Sponsor must be a co-Applicant.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(i)(I).

**Section 401. Eligible Activities**

(a) Eligible Activities are limited to the following and must take place within the jurisdiction of the Applicant Local government:

(1) Development of new multifamily rental housing that is Affordable to households at or below 60 percent of AMI or substantial rehabilitation of multifamily rental housing that will be Affordable to households at or below 60 percent of AMI, but which is not currently restricted as Affordable housing; or

(2) Assistance to persons who are experiencing or At risk of homelessness, including, but not limited to, through rapid rehousing, or rental assistance, supportive services and case management services that allow people to obtain and retain housing, operating and capital costs for navigation centers, or new construction, rehabilitation, or preservation of permanent or transitional rental housing.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(i)(I)(ia), (b)(2)(B)(i)(I)(ib) and subdivision (b)(2)(B)(ii)(V).

**Section 402. Threshold Requirements**

Applicants must meet all the following threshold requirements for participation in the competitive allocation:

(a) **Housing Element compliance**: The Applicant must have a Housing Element that has been adopted by the jurisdiction's governing body by the application deadline date and subsequently determined to be in substantial compliance with state Housing Element Law pursuant to GC Section 65585. A Local government's current Housing Element compliance status can be obtained by referencing the Department's website at http://www.hcd.ca.gov/community-development/housing-element.

(b) **APR on the Housing Element submitted to the Department**: The Applicant must submit to the Department the APR required by GC Section 65400 for the current or prior year by the application deadline date.

(1) Please be advised that the Department will not accept other reports in lieu of the APR. Housing Authority Financial Reports, Redevelopment Reports, and other similar reports will not be accepted as meeting this requirement. If uncertain of the status of the report submittal for a Local government, please contact the Department for more information.

(c) Submit by the deadline specified in the NOFA, on a form made available by the Department, a complete application which shall meet the following minimum requirements:

(1) Application requests a grant pursuant to Section 100(b)(3) in order to carry out one

or both of the eligible Activities set forth in Section 401.

(2) Submission of the application is authorized by the governing board of the Applicant and by the developer co-applicant, if any.

(3) Certification in the resolution that, if the Local government proposes allocation of funds for any Activity to another entity, the selection process shall avoid conflicts of interest, and shall be accessible to the public.

(4) Demonstration of readiness, including site control for development Projects, land use entitlements, environmental review and commitments of other funding and resources required, as further set forth in the NOFA;

(5) Underwriting requirements:

(A) Uniform Multifamily Regulations Subchapter 19 of Title 25, Division 1, Chapter 7 (commencing with Section 8300), as amended from time to time, and the Multifamily Housing Program Guidelines (commencing with Section 7300), as amended from time to time, are hereby incorporated by reference into this subchapter and shall apply to Rental Housing Developments receiving assistance under the PLHA competitive allocation. In the event of a conflict between the provisions of Subchapter 19 and these Guidelines, the provisions of these Guidelines shall prevail.

(i) Section 8312(c) of the Uniform Multifamily Regulations is hereby amended to read:
(c) For Projects utilizing 4 percent tax credits, Developer Fee payments shall not exceed the amount that may be included in Project costs pursuant to 4 CCR, Section 10327. In addition, the Developer Fee paid from development funding sources shall not exceed the following:
(1) For acquisition and/or rehabilitation Projects, or adaptive reuse Projects, the lesser of the amount of Developer Fee in Project costs or $2,000,000.
(2) For new construction Projects, the base limit shall be the lesser of the amount that may be included in Project costs or $2,200,000. To arrive at the final limit on Developer Fee paid from development funding sources, the base limit shall then be multiplied by a ratio that is the average of (i) the difference between 2 and the Project's high-cost ratio, as calculated pursuant to 4 CCR, Section 10317(i)(6) or successor language and (ii) 100 percent.

(ii) Section 8312(d) of the Uniform Multifamily Regulations shall not apply.

(iii) Section 8314(a)(1)(A) of the Uniform Multifamily Regulations is amended to read:
(A) Approved deferred Developer Fee, pursuant to Section 8312, provided that the aggregate of the Developer Fee paid from sources and paid as deferred shall not exceed $3,500,000.

(B) Period of affordability: All assisted rental units shall be restricted for not less than 55 years.

(C) All development Projects shall demonstrate fiscal integrity.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(ii).

**Section 403. Selection Criteria**

(a) Applications submitted within a competitive funding round shall be evaluated using the following criteria. Total available points shall equal 100.

1. Priority Points – 25 points

A. Population - 5 points

(i) If the Applicant is a county that has a population of 200,000 or less within the unincorporated areas of the county, the Applicant shall receive all points.

B. Prior Award – 5 points

(i) If the Applicant did not receive an award based on the formula specified in 42 USC, Section 5306 in 2016, the Applicant shall receive all points.

And either C (i) or C (ii) or C (iii) below:

C. Activity

(i) Assistance for Homeless Persons through Program Activities – 15 points

(a) Applications to assist persons experiencing or At risk of homelessness, including, but not limited to, through programs providing rapid rehousing, or rental assistance, or operating assistance to navigation centers shall receive all points.

Or

(ii) Assistance to Homeless Persons through Development of Navigation Centers– 15 points

(a) Applications for construction of navigation centers shall receive all points.

Or

(iii) Assistance for Homeless Persons through Rental Projects – 15 points

(a) Applications for the new construction, rehabilitation, or preservation of permanent or transitional rental housing in which all or at least 10 percent of the units are restricted to occupancy by tenants who are homeless or At risk of homelessness shall receive all points.

2. Evaluation Criteria – 75 points
Precise scoring for these factors will be set forth in the NOFA.

A. Community Need – 30 points
(i) Applicants will receive up to a maximum of 30 points based on the rate of households experiencing the most severe housing need according to the most recent HUD CHAS dataset in the Applicant Local government. Applicants will receive points in proportion to this percentage.

B. Applicant Administrative Experience – 15 points
(i) Applicants with prior experience administering local, state or federal affordable housing or community development programs or who have entered into a contract with an entity with prior experience in the implementation of local, state or federal affordable housing or community development programs will receive up to 15 points.

C. Demonstrated Capacity – 30 points
(i) Capacity points will be based on:

(a) Sponsor experience in Affordable Rental Housing Development and ownership (Up to 30 points) or

(b) Navigation center development experience (for development of these facilities) (Up to 30 points) or

(c) Program Operator experience (for non-development Activities) (Up to 30 points)

(b) Where applications requesting funds for more than one eligible Activity pursuant to Section 401 are permitted by the NOFA, each Activity will receive a separate score for each rating factor, and have an individual Activity total. It is possible that one Activity may score highly enough to receive an award, and the other Activity does not.

(c) In the event of tied point scores and insufficient funding for both applications, the Department shall rank the tied applications as follows:

(1) If one of the tied applications is for an Affordable Rental Housing Development and the other is for a program Activity or development of a navigation center, the

Affordable Rental Housing Development application will be selected for funding;
(2) If one of the tied applications is for a navigation center and the other is for a program Activity, the navigation center will be selected for funding;
(3) If both of the tied applications are for Affordable Rental Housing Developments, the Project with the lowest weighted average affordability of Restricted Units will be selected;
(4) If both of the tied applications are for navigation centers, the facility that provides overnight shelter to the greatest number of people will be selected;
(5) If both of the tied applications are for programs, the Local government with the highest rate of households experiencing the most severe housing need according to the most recent HUD CHAS dataset will be selected.

(d) In the event there are insufficient funds to fulfill the entire funding request for the next highest scored application (Application A), the Department will determine whether Application A is feasible without the full funding request. If Application A is not feasible without full funding, the Department may offer the remaining funds to the application whose score is immediately below Application A. If the remaining funds are insufficient to fulfill the funding request for that application (Application B), the Department will again determine whether this application is feasible without the full funding request. If Application B is not feasible without the full funding request, the Department will perform the same analysis for the application whose score is immediately below Application B.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(i)(I)(ia) and subdivision (b)(2)(B)(ii)(V).

**Section 404. Application Review**

(a) Applicants must submit a complete application by the deadline stated in the NOFA in order to be eligible for funding. Application forms provided by the Department will be available upon release of the NOFA and will require Applicants to submit the forms and other documents to demonstrate that the Local government has met threshold requirements. The application will require submission of documentation adequate to demonstrate that the application has earned the appropriate number of points.

(b) The Department may request additional information to complete its review, provided that the new information would not affect scoring.

(c) Applications recommended for funding are subject to conditions specified by the Department. Applicants will receive an official letter of award after the Department approves funding recommendations.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(ii).

### Section 405. Deadlines and Funding Requirements

(a) Applicants will be required to enter into a state Standard Agreement (Standard Agreement) that will set forth conditions for funding and milestones that are required to be met.

(b) After the Standard Agreement and attachments have been finalized, the Local government will follow provided instructions for signing all required documents. The Local government must submit all supporting materials and a signed Standard Agreement within the timeline provided in the instructions or risk forfeiting the grant award.

(c) Except for predevelopment expenses for construction projects funded by PLHA and the costs to develop and prepare the PLHA application, no costs incurred more than one year prior to commitment by the Local government may be paid from PLHA funds. Reimbursement of expenses to prepare the PLHA application is subject to the cap on administrative fees.

(d) Grant funds shall not be disbursed until:

(1) the Department authorizes loan closing, in the case of development projects; or

(2) all general and special conditions have been complied with, in the case of other Activities.

(e) If funds are used for the development of an Affordable Rental Housing Development, the Local government shall make the PLHA assistance in the form of a low-interest, deferred loan to the Sponsor of the project. The loan shall be evidenced through a Promissory Note secured by a Deed of Trust, and a Regulatory Agreement shall restrict occupancy and rents in accordance with the Department-approved underwriting of the project for at least 55 years.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(ii)(VI).

## ARTICLE V. ADMINISTRATION

### Section 500. Accounting Records

(a) The grantee shall establish a separate ledger account for receipts and expenditures of grant funds and maintain expenditure details in accordance with the approved work plan, budget, and schedule. Separate bank accounts are not required.

(b) The grantee shall maintain documentation of its financial records for expenditures incurred during the course of the PLHA Activity in accordance with generally accepted accounting principles. Such records shall be kept for at least five years after the close-out report is submitted to the Department.

(c) The Department or its designated representative shall have the right to review and copy any records and supporting documentation pertaining to the PLHA grant.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(ii)(III) and subdivision (b)(2)(B)(IV) and subdivision (b)(3).

**Section 501. Audits/Monitoring of Project Files**

(a) Grantee shall maintain PLHA files which, at a minimum, should include the following information and reports:

1) Project/Activity description
2) Land/site Information
3) Planning & zoning history (as appropriate)
4) Records of public hearings and public comments
5) Relocation needs (as appropriate)
6) Contracts, loan and grant agreements, Standard Agreement
7) Environmental records & reports/findings (as appropriate)
8) Design/engineering reports & plans (as appropriate)
9) Description of targeted beneficiaries, services to be provided, household incomes, special needs
10) PLHA Activity costs, invoices, purchase orders, sources and uses of funds for PLHA Activities, terms & conditions of financings, draws and all supporting documentation, change orders (as appropriate)
11) Activity schedule and amendments
12) History of Plan amendments
13) Procurement policy used for PLHA Activity(ies)

(b) The grantee shall maintain such records for possible audit for a minimum of three years after the close-out report is submitted, unless a longer period of records retention is stipulated in the Standard Agreement.

(c) The grantee shall be responsible for monitoring Rental Housing Developments that received PLHA funds for the term of the loan, including, but not limited to, the Projects' compliance with the occupancy and rent requirements set forth in the Regulatory Agreement, compliance with reserve requirements, and the compliance with habitability standards.

(d) The grantee shall be responsible for monitoring AOWH loans to assure that the homes remain Owner-occupied.

(e) If requested by the Department, the grantee shall obtain a report from a qualified,

licensed third party that certifies to the amounts of disbursement and identifies the specific Activities for which the disbursements were made. Such a report is permitted to be a component of the A-133 audit.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(ii)(IV) and subdivision (b)(3).

**Section 502. Cancellation and Termination**

(a) In the event that it is determined, at the sole discretion of the Department, that the grantee is not meeting the terms and conditions of the Standard Agreement, the Department shall issue a notice to stop work. Immediately upon receiving the written notice to stop work, the grantee shall cease all work under the Standard Agreement. The Department has the sole discretion to determine the grantee's compliance with the terms and conditions after issuance of a stop work order, and to deliver a written notice to the grantee to resume work under this Standard Agreement.

(b) The Department shall terminate the Standard Agreement if the grantee is not in compliance with the Guidelines or the terms and conditions of the Standard Agreement. At least 30 days prior to the effective date of the termination of the Standard Agreement, the Department shall provide written notice to the grantee of its intent to cancel the funding allocation. The notice shall specify the reason for early termination and may permit the grantee or the Department to cure any deficiency(ies) prior to the early termination date. The grantee will submit requested documents to the Department within 30 days of the early termination notice.

(c) Failure to meet reporting requirements will result in notice to the grantee that it must satisfactorily cure any deficiencies within three months of the notice or it will forfeit the following year's PLHA formula allocation and be ineligible for a competitive award. The Local government will forfeit subsequent PLHA formula allocations and be ineligible for a competitive award until the Department determines that the Local government has met reporting requirements.

(d) The Department may, as it deems appropriate or necessary, request the repayment of funds from a Local government or offset future years' funds, or pursue any other remedies available to it by law for failure to comply with the Guidelines and/or the terms and conditions of the Standard Agreement.

(e) Co-Applicants may be adversely impacted by a notice to stop work and/or termination if one grantee is deemed by the Department to not meet the terms and conditions of the Standard Agreement, or fails to meet the reporting requirements outlined in Section 503.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(ii)(IV) and subdivision (b)(3).

**Section 503. Reporting**

(a) The Department shall provide grantees with reporting formats and instructions.

(b) Annual Reports are required from all grantees pursuant to HSC Section 50470(b)(2)(B)(ii)(III) each year by July 31 for the term of the Standard Agreement. The Annual Report shall document the uses and expenditures of all awarded allocations and outcomes achieved. This report must be signed by both the Local government's PLHA administrator and the Local government's City Manager (or his/her designee), or Chief Executive Officer (or his/her designee) or Chief Financial Officer (or his/her designee). The Annual Report must describe any proposed amendment(s) to the approved Activity and schedule.

(c) Upon expenditure of all allocated funds and completion of the Activities funded by PLHA, the grantee shall submit a close-out report, which will be part of the Annual Report.

(d) The Department may request additional information as needed to meet other applicable reporting or audit requirements.

NOTE: Authority cited: HSC Section 50470, subdivision (d). Reference cited: HSC Section 50470, subdivision (b)(2)(B)(ii)(III) and subdivision (b)(2)(B)(ii)(IV).

# AN AGREEMENT BETWEEN THE COUNTY OF MONTEREY and THE CITY OF CARMEL-BY-THE-SEA, FOR JOINT PARTICIPATION IN THE PERMANENT LOCAL HOUSING ALLOCATION FUNDING PROGRAM FOR FISCAL YEARS 2019-2023, AND TO DELEGATE THE COUNTY OF MONTEREY AS THE ADMINISTERING LOCAL GOVERNMENT FOR THE PROGRAM

**THIS AGREEMENT** is made and entered into this 8th day of November, 2022, by and between the County of Monterey, a political subdivision of the State of California, hereinafter called "County"; and the City of Carmel-by-the-Sea, a municipal corporation of the State of California, located in the County of Monterey, hereinafter referred to as "City", jointly referred to as "Parties".

**WITNESSETH**

**WHEREAS**, the State of California Department of Housing and Community Development ("State") is authorized to provide up to $335 million to Cities and Counties for assistance under the SB 2 Permanent Local Housing Allocation Program ("PLHA Program") Formula Component from the Building Homes and Jobs Trust Fund (as described in Health and Safety Code section 50470 et seq. (Chapter 364, Statutes of 2017 (SB2)).

**WHEREAS**, the State issued Permanent Local Housing Allocation Final Guidelines ("PLHA Program Guidelines") in October 2019.

**WHEREAS**, the State issued a Notice of Funding Availability ("NOFA") dated May 3, 2021, under the Permanent Local Housing Allocation ("PLHA") Formula Component.

**WHEREAS**, each of the Parties is eligible to apply for and administer Permanent Local Housing Allocation Formula component funds.

**WHEREAS**, Section 300(c) of the PLHA Program Guidelines allows a local government to delegate another local government to apply and administer on its behalf its formula allocation of Program funds, provided that the local governments enter into a legally binding agreement and the funds are expended for eligible activities consistent with Program requirements.

**WHEREAS**, City of Carmel-by-the-Sea desires to participate jointly with the County of Monterey in said Program.

**WHEREAS**, the County of Monterey desires to participate jointly with the City of Carmel-by-the-Sea in said Program, and whereas the County agrees to administer the receipt of formula allocation Program funds on behalf of both Parties and act as the Applicant to the State for the funding.

**NOW THEREFORE**, in consideration of the mutual promises, recitals, and other

provisions hereof, the Parties agree as follows:

**SECTION I. GENERAL**

**A.** Responsible Officers. The Director of Housing and Community Development of the County of Monterey (hereinafter referred to as ("Director") is hereby authorized to act as the applicant on behalf of the City of Carmel-by-the-Sea for the PLHA Program and to administer funding and activities under the Program. The City Administrator of the City of Carmel-by-the-Sea is hereby authorized to act as the responsible officer for the City under the Program.

**B.** Full Cooperation. Parties agree to fully cooperate and to assist each other in undertaking eligible programs or projects as defined in Section 301 of PLHA Program Guidelines, including but not limited to the development of affordable rental housing.

**C.** Threshold Requirements for Participation. Parties understand and agree to comply with State's threshold requirements for participation in the formula allocation program as follows:

**a.** Housing Element compliance: The County as Applicant and the delegating City have a Housing Element that has been adopted by the local government's governing body and subsequently determined to be in substantial compliance with state Housing Element Law pursuant to GC Section 65585.

**b.** Housing Element Annual Progress Report (APR) compliance: The County as Applicant and the delegating City have submitted to the State the APR required by GC Section 65400 for the current or prior year.

**D.** Term of Agreement-Automatic Renewal Provision. The term of this Agreement shall be for a period encompassing five (5) years of formula allocations (2019-2023), made available in NOFAs issued by the State beginning in February 2020 and extending through 2024, and shall include the years stipulated in the State standard agreement. In addition, this Agreement provides for automatic renewal of participation in successive five-year periods, unless either of the Parties provides written notice of at least 60 days prior to the end of the term that it elects not to participate in a new five-year period. Before the end of the first five-year term, the County will notify the City of Carmel-by-the-Sea in writing of its right not to participate in the joint Program for a successive five-year term. This Agreement remains in effect until the PLHA Program funds received with respect to the five-year planning period are fully committed, expended, and all required reports have been submitted and the required reporting period has ended.

**E.** Scope of Agreement. This agreement covers the PLHA formula program funding administered by the State where each of the Parties is awarded and accepts funding from the State.

## SECTION II. PREPARATION AND SUBMITTAL OF PLHA FUNDING APPLICATION AND PLAN

**A.** PLHA Application and Plan. Pursuant to the requirements listed in Section 302(c) of the PLHA Program Guidelines, the County shall prepare its own application requesting the formula funds, and a Plan which details how the allocated funds will be used for eligible activities, how investments will be prioritized to increase the supply of housing for households with incomes at or below 60% of Area Median Income, and how the Plan is consistent with the programs set forth in its Housing Element. The County will also provide evidence that the Plan was authorized and adopted by resolution by the Board of Supervisors of the County of Monterey and that the public had an adequate opportunity to review and comment on its content. The County will also prepare an application on behalf of the City of Carmel-by-the-Sea requesting the formula funds, and a Plan which details how the allocated funds will be used for eligible activities, how investments will be prioritized to increase the supply of housing for households with incomes at or below 60% of Area Median Income, and how the Plan is consistent with the programs set forth in the City of Carmel-by-the-Sea's Housing Element. The County will also provide evidence that the Plan was authorized and adopted by resolution by the Board of Supervisors of the County of Monterey and that the public had an adequate opportunity to review and comment on its content.

**B.** Application Submittal. The County agrees to commit sufficient resources to completing and submitting the PLHA Applications and Plans to State in time for the Parties to be eligible to receive funding beginning in 2019, dependent upon State's execution of a Standard Agreement with County.

## SECTION III. PROGRAM ADMINISTRATION

**A.** Responsibilities of Parties. The Parties agree, in the delegation of the County as the administering local government for the PLHA Program, that the County shall be responsible for execution of the Standard Agreements with State and the proper performance of the PLHA Plans. County agrees to perform necessary administrative tasks such as, but not limited to, environmental clearance under CEQA or NEPA, establishment of loan underwriting policies and terms, execution and management of any loans made using PLHA funds, monitoring of programs and projects as needed to fulfill PLHA requirements, and submittal of annual reports to State on PLHA-funded activities. The City of Carmel-by-the-Sea agrees to fully cooperate with the County in all things required and appropriate to comply with the provisions of the Standard Agreement with State. During the first year of the five-year Plan term, the Parties agree to meet on a quarterly basis to discuss the plans for the use of PLHA funds and progress being made. Beginning in the second year of the five- year Plan term, through the end of the fifth year, Parties will agree to a meeting schedule which will provide adequate opportunity for communication and decision-making.

**B.** Program Administration Funding. In consideration of the County's agreement to

be the administering local government for the PLHA Program and its assumption of the responsibilities inherent in this role, the Parties agree that the allowable Program Administration for the funding, which is equal to a maximum of 5% of each year's allocation for each local government jurisdiction, shall be retained exclusively by the County of Monterey for these administrative purposes.

**C.** Maintenance of Records. The County shall maintain records of activities for any projects undertaken pursuant to the PLHA Program, and said records shall be available for inspection by staff and/or auditors representing the City of Carmel-by-the-Sea, on reasonable notice during the normal business hours of County.

**SECTION IV. USE OF PLHA FUNDS**

**A.** Joint Participation in Funding of Projects. The Parties agree it is in the best interest of the public that the allocations made available to each local government jurisdiction be combined into a pool of funds to be used throughout either jurisdiction, pursuant to the criteria described in Section IV. D. of this Agreement. The Parties agree this method will allow for more timely development of the housing units assisted by the funding, and therefore address the current shortage of affordable housing throughout both jurisdictions, which is of vital importance and a high priority to all Parties.

**B.** Use of Funding During the First Five-Year Term. Given the importance of the existence of critical public infrastructure (water, sewer, storm drainage) to the development of multi-family housing, and due to the general lack of such infrastructure in much of the unincorporated areas of the County, the Parties agree that funding received during the first five-year term will be focused on projects in the City of Carmel-by-the-Sea where such infrastructure is typically available. County agrees to the use of its funding allocations for projects and the City understands that units developed within the City would count towards the City RHNA numbers.

**C.** Projects Included in PLHA Plan. In order to develop the PLHA Plan, the Parties have agreed upon the need for multi-family, affordable housing units throughout the County. In accordance with this need, the Parties have shared the status of potential projects in the City of Carmel-by-the-Sea, which may be targeted for PLHA funding. These potential projects have been used to develop the unit count and affordability targeting required to be described in the PLHA Plan. Due to the preliminary nature of the potential projects, the Parties agree that these are subject to change.

**D.** Project Assistance Criteria. As the Parties have agreed to combine their allocations into a pool of funds to be used throughout the County, the following criteria shall be considered by the County as funding decisions are made for the use of the PLHA funds.

**a.** Meeting PLHA Commitment Requirements: Pursuant to Section 300(e) of the PLHA Program Guidelines, the County shall consider how individual project

readiness and project funding needs will impact the County's ability to remain in compliance with the commitment requirements of PLHA.

**b.** Project Readiness: Projects will be prioritized for funding within the following tiers of readiness:
   i. High Readiness: Project Sponsor has site control, has been awarded any needed planning entitlements, has completed environmental review/clearance, and has developed a neighborhood outreach strategy.
   ii. Medium Readiness: Project Sponsor has site control, planning entitlements and environmental clearance are under way, and is actively working on a neighborhood outreach strategy.
   iii. Low Readiness: Project Sponsor is in negotiations for site control and has inquired of each jurisdiction what will be needed for planning entitlements and environmental review, as well as neighborhood outreach.

**c.** Project Funding Needs: In addition to consideration of Project Readiness, projects with a demonstrated need for the PLHA funding to ensure or enhance project viability will be prioritized.

**d.** Targeting to the Lowest Income Households: PLHA funds can be used for households at a variety of income levels, but are especially intended to be used to meet the housing needs of households at or below 60% of Area Median Income. Projects which have units targeted for affordability for these households will be prioritized for funding.

**E.** Minimum Project Assistance by Jurisdiction. Notwithstanding the criteria described above, the Parties agree to make every reasonable effort to ensure that during the five-year term of the agreement, a minimum of one project is funded in the City.

**F.** Funding Assistance in the Form of Loans. The Parties agree that any funding provided to a housing developer for a project will be provided in the form of a low interest deferred loan, with the loan amount and loan terms (including conditions for the payment of accrued interest and principal from residual receipts), delineated at the time the loan commitment is approved by the County Board of Supervisors. The loan shall be evidenced through a Promissory Note secured by a Deed of Trust in favor of the County of Monterey. A recorded Regulatory Agreement shall restrict occupancy and rents for a term of at least 55 years.

**G.** Use of Program Income. The Parties agree that program income generated as a result of the receipt of PLHA funds will be retained by the County and utilized to fund future PLHA-eligible activities. Program income will include payments from residual receipts, accrued interest, and any monitoring fees the County chooses to charge.

**NOW THEREFORE**, the Parties hereto have caused this Agreement to be executed and attested by their proper officer thereunder duly authorized and their official seals to be hereunto affixed, all as of the day first above written.

County Counsel Certification

The Office of the County Counsel hereby certifies that the terms and provisions of this Agreement are fully authorized under State and local laws, and that this Agreement provides full legal authority for the County to undertake all responsibilities as the delegated local government to administer the PLHA funding.

COUNTY OF MONTEREY

By: _____
Erik Lundquist
Director of Housing and Community Development

APPROVED AS TO FORM:

By: _____
Sean Collins
Deputy County Counsel,
County of Monterey

CITY OF CARMEL-BY-THE-SEA:

By: _____
Chip Rerig
City Administrator

APPROVED AS TO FORM:

By: _____
Brian Pierik
City Attorney, City of Carmel-by-the-Sea

# PLHA Formula 5-year Plan - Amendment

Rev. 5/7/21

## Eligible Applicants §300

**§300(a)** and **(b)** Eligible Applicants for the Entitlement and Non-Entitlement formula component described in Section §100(b)(1) and (2) are limited to the metropolitan cities and

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Applicant: | County of Monterey | | | | | | | | | | |
| Address: | 1441 Schilling Place, 2nd Fl. South | | | | | | | | | | |
| City: | Salinas | State: | CA | Zip: | 93901 | County: | Monterey | | | | |
| Auth Rep Name: | Erik Lundquist | Title: | Director of Housing & Comm | Auth Rep. Email: | LundquistE@co.monterey.ca.us | | | Phone: | 831.755-5154 | | |
| Address: | 1441 Schilling Place, 2nd Fl. South | | | City: | Salinas | State: | CA | Zip Code: | 93901 | | |
| Contact Name: | Darby Marshall | Title: | Housing Program Manager | Contact Email: | MarshallD@co.monterey.ca.us | | | Contact Phone: | 831.755-5391 | | |
| Address: | 1441 Schilling Place, 2nd Fl. South | | | City: | Salinas | State: | CA | Zip Code: | 93901 | | |

| | |
|---|---|
| **§300(d)** Is Applicant delegated by another Local government to administer on its behalf its formula allocation of program funds? | No |
| **§300(d)** If Applicant answered "Yes" above, has the Applicant attached the legally binding agreement required by §300 (c) and (d)? | |

| | | | | |
|---|---|---|---|---|
| File Name: | **Application and Adopting the** | Pursuant to section 302(c)(4) of the Guidelines, Applicant's PLHA Plan for 2019-2023 | Uploaded to | |
| File Name: | **App1 Signature Block** | Signature Block - upload in Microsoft Word Document | Uploaded to HCD? | |
| File Name: | **App1 TIN** | Taxpayer Identification Number Document | Uploaded to HCD? | |
| File Name: | **Applicant Agreement** | Legally binding agreement between Delegating and Administering Local Governments | Uploaded to HCD? | |

## Eligible Activities, §301

| **§301(a) Eligible activities are limited to the following:** | **Included?** |
|---|---|
| **§301(a)(1)** The predevelopment, development, acquisition, rehabilitation, and preservation of multifamily, residential live-work, rental housing that is affordable to Extremely low-,Very low-, Low-, or Moderate-income households, including necessary operating subsidies. | ☐ **YES** |
| **§301(a)(2)** The predevelopment, development, acquisition, rehabilitation, and preservation of affordable rental and ownership housing, including Accessory Dwelling Units (ADUs), that meets the needs of a growing workforce earning up to 120 percent of AMI, or 150 percent of AMI in high-cost areas. ADUs shall be available for occupancy for a term of no less than 30 days. | ☐ **YES** |
| **§301(a)(3)** Matching portions of funds placed into Local or Regional Housing Trust Funds. | ☑ **YES** |
| **§301(a)(4)** Matching portions of funds available through the Low- and Moderate-Income Housing Asset Fund pursuant to subdivision (d) of HSC Section 34176. | ☐ **YES** |
| **§301(a)(5)** Capitalized Reserves for services connected to the preservation and creation of new permanent supportive housing. | ☑ **YES** |
| **§301(a)(6)** Assisting persons who are experiencing or At-risk of homelessness, including, but not limited to, providing rapid re-housing, rental assistance, supportive/case management services that allow people to obtain and retain housing, operating and capital costs for navigation centers and emergency shelters, and the new construction, rehabilitation, and preservation of permanent and transitional housing. | ☑ **YES** |
| **§301(a)(7)** Accessibility modifications in Lower-income Owner-occupied housing. | ☐ **YES** |
| **§301(a)(8)** Efforts to acquire and rehabilitate foreclosed or vacant homes and apartments. | ☐ **YES** |
| **§301(a)(9)** Homeownership opportunities, including, but not limited to, down payment assistance. | ☐ **YES** |
| **§301(a)(10)** Fiscal incentives made by a county to a city within the county to incentivize approval of one or more affordable housing Projects, or matching funds invested by a county in an affordable housing development Project in a city within the county, provided that the city has made an equal or greater investment in the Project. The county fiscal incentives shall be in the form of a grant or low-interest loan to an affordable housing Project. Matching funds investments by both the county and the city also shall be a grant or low-interest deferred loan to the affordable housing Project. | ☐ **YES** |

## §302(c)(4) Plan

Rev. 5/7/21

**§302(c)(4)(A)** Describe the manner in which allocated funds will be used for eligible activities.

The County is amending its Action Plan to streamline operations by eliminating funding for one activity and reallocating the funds to the remaining three activities. The remaining activities are: 1) capitalizing a local housing trust fund; 2) capitalized reserves for services connected with the preservation of and creation of new permanent supportive housing; and, 3) assisting persons who ware experiencing or at-risk of homelessness, including, but not limited to, providing rapid rehousing, rental assistance, supportive/case management services that allow people to obtain and retain housing, operating and capital costs for navigation centers and emergency shelters, and the construction of new and rehabilitation/preservation of permanent and transitional supportive housing. The County's PLHA homeless funding will support the implementation of the Continuum of Care's 10-Year Plan to Reduce Homelessness.

**§302(c)(4)(B)** Provide a description of the way the Local government will prioritize investments that increase the supply of housing for households with incomes at or below 60 percent of Area Median Income (AMI).

The County will allocate funding for the Local Housing Trust Fund to provide provide funding for the Monterey County Local Housing Trust Fund to provide gap financing, loans and/or grants to support affordable units within multi-family rental housing projects within the County and incorporated cities, targeted at households that are 60% AMI or below. There are multiple affordable housing projects in the five-year pipeline, including Sun Rose Apartments (permanent and transitional supportive housing), Greenfield Commons Phases 1 & 2 (permanent supportive housing and low- and moderate- family housing), Lightfigher Village (permanent supportive housing for veterans), and East Garrison inclusionary units. All units produced through these projects that receive PLHA funding will be occupied by households at or below 60% AMI. All new units will have an affordability restriction of 55-years. The County will prioritize affordable housing projects that target households at or below 60% AMI that are the most shovel ready.

**§302(c)(4)(C)** Provide a description of how the Plan is consistent with the programs set forth in the Local Government's Housing Element.

The Housing Element aims to expand the County's afffordable housing inventory by a minium of 900 units (374 very-, 244 low-, and 288 moderate-income units) by 2023. The County will provide gap financing for housing developers to subsidize the construction of affordable units. For this reason, the County will allocate an annual average of 42% of its available PLHA funding to the MCLHTF during the five-year planning period. Policy H-3.2 of the County's Housing Element prioritizes planning residential development within Community Areas near existing or planned infrastructure to ensure conservation of the County's agricultural and natural resources. Working with regional/multi-jurisdictional agreements and activities to facilitate housing development is part of implementing this policy.

**Activities Detail** (Activities Detail (Must Make a Selection on Formula Allocation Application worksheet under Eligible Activities, §301))

**§301(a)(1)** The predevelopment, development, acquisition, rehabilitation, and preservation of multifamily, residential live-work, rental housing that is affordable to extremely low-,very low-, low-, or moderate-income households, including necessary Operating subsidies.

**§301(a)(2)** The predevelopment, development, acquisition, rehabilitation, and preservation of Affordable rental and ownership housing, including Accessory Dwelling Units (ADUs), that meets the needs of a growing workforce earning up to 120 percent of AMI, or 150 percent of AMI in high-cost areas. ADUs shall be available for occupancy for a term of no less than 30 days.

**§301(a)(3)** Matching portions of funds placed into Local or Regional Housing Trust Funds.

**§302(c)(4)(E)(i)** Provide a detailed and complete description of how allocated funds will be used for the proposed Activity.

| Percentage of Funds Allocated for Affordable Owner-occupied Workforce Housing | **10%** |
|---|---|

The County will allocate funding to the MCLHTF to ensure funding is available to provide gap financing for the construction affordable units within multi-family developments, permanent supportive services and affordable rental housing projects that are targeted primarily at households at 60% AMI or below (90% of the allocation). These projects must be ready to apply for financing, such as through the California Tax Credit Allocation Committee (TCAC) for either 4% or 9% tax credits. Ten percent of the allocation will be made available to assist households earning up to 120% AMI with the purchase of inclusionary homes deed restricted by County Ordinance.

Complete the table below for each proposed Activity to be funded with 2019-2023 PLHA allocations. If a single Activity will be assisting households at more than one level of Area Median Income, please list the Activity as many times as needed to capture all of the AMI levels that will be assisted, but only show the percentage of annual funding allocated to the Activity one time (to avoid double counting).

| Funding Allocation Year | 2019 | 2020 | 2021 | 2022 | 2023 | 2019 | 2020 | 2021 | 2022 | 2023 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type of Affordable Housing Activity | Rental: Development | Rental: Development | Rental: Development | Rental: Development | Rental: Development | Ownership: Acquisition | Ownership: Acquisition | Ownership: Acquisition | Ownership: Acquisition | Ownership: Acquisition | | | | | |
| **§302(c)(4)(E)(i)** Percentage of Funds Allocated for the Proposed Activity | 25.00% | 30.00% | 45.00% | 30.00% | 30.00% | 10.00% | 10.00% | 10.00% | 10.00% | 10.00% | | | | | |
| **§302(c)(4)(E)(ii)** Area Median Income Level Served | 60% | 60% | 60% | 60% | 60% | 120% | 120% | 120% | 120% | 120% | | | | | **TOTAL** |
| **§302(c)(4)(E)(ii)** Unmet share of the RHNA at AMI Level **Note: complete for year 2019 & 2020 only** | 231 | 55 | | | | 247 | 247 | | | | | | | | 780 |
| **§302(c)(4)(E)(ii)** Projected Number of Households Served | 25 | 25 | 25 | 25 | 25 | 2 | 2 | 2 | 2 | 2 | | | | | 135 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **§302(c)(4)(E)(iv)** Period of Affordability for the Proposed Activity **(55 years required for rental housing projects)** | 55-years | 55-years | 55-years | 55-years | 55-years | 30-years | 30-years | 30-years | 30-years | 30-years | | | | | |

**§302(c)(4)(E)(iii)** A description of major steps/actions and a proposed schedule for the implementation and completion of the Activity.

In 2020 the County established an interest list for housing development through the No Place Like Home Program. Several developers responded to that request and the County used that list to support its application to HCD for the Local Housing Trust Fund matching funds program. On August 1st, the County was notified that HCD had accepted its LHTF application and deemed it complete. With all funding in place for the Monterey County Local Housing Trust Fund, the County is developing program policies and proceedures. The County anticipates having adopted policies and proceedures in place by February 2023 and issuing its first formal request for proposals no later than March 2023 with initial awards being funded before June 30, 2023.

**§301(a)(4)** Matching portions of funds available through the Low- and Moderate-Income Housing Asset Fund pursuant to subdivision (d) of HSC Section 34176.

**§301(a)(5)** Capitalized Reserves for Services connected to the preservation and creation of new permanent supportive housing.

**§302(c)(4)(E)(i)** Provide a detailed and complete description of how allocated funds will be used for the proposed Activity .

The County intends to use PLHA funds to meets it affordable housing development goals for permanent supportive housing by providing funding for the construction and preservation of permanent supportive housing units and the capitalized reserves for services necessary to operate permanent supportive housing developments.

Complete the table below for each proposed Activity to be funded with 2019-2023 PLHA allocations. If a single Activity will be assisting households at more than one level of Area Median Income, please list the Activity as many times as needed to capture all of the AMI levels that will be assisted, but only show the percentage of annual funding allocated to the Activity one time (to avoid double counting).

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Funding Allocation Year | 2021 | 2022 | 2023 | | | | | | | | | | | | |
| Type of Permanent Supportive Housing Project | New Construction | New Construction | New Construction | | | | | | | | | | | | |
| **§302(c)(4)(E)(i)** Percentage of Funds Allocated for the Proposed Activity | 10.00% | 20.00% | 20.00% | | | | | | | | | | | | |
| **§302(c)(4)(E)(ii)** Area Median Income Level Served | 30% | 30% | 30% | | | | | | | | | | | | **TOTAL** |
| **§302(c)(4)(E)(ii)** Unmet share of the RHNA at AMI Level **Note: complete for year 2019 & 2020 only** | | | | | | | | | | | | | | | 0 |
| **§302(c)(4)(E)(ii)** Projected Number of Households Served | 25 | 25 | 25 | | | | | | | | | | | | 75 |
| **§302(c)(4)(E)(iv)** Period of Affordability for the Proposed Activity **(55 years required for rental housing projects)** | 55-years | 55-years | 55-years | | | | | | | | | | | | |

**§302(c)(4)(E)(iii)** A description of major steps/actions and a proposed schedule for the implementation and completion of the Activity.

The County will work with the departments of Health and Social Services annually to identify projects that need financial support to provide supportive services associated with permanent supportive housing.

**§301(a)(6)** Assisting persons who are experiencing or At risk of homelessness, including, but not limited to, providing rapid rehousing, rental assistance, supportive/case management services that allow people to obtain and retain housing, operating and capital costs for navigation centers and emergency shelters, and the new construction, rehabilitation, and preservation of permanent and transitional housing.

§302(c)(4)(E)(i) Provide a detailed and complete description of how allocated funds will be used for the proposed Activity.

The County will use funds to provide rapid rehousing, rental assistance, supportive/case management services that will allow people to obtain and retain housing, including operating and capital costs for the County's Salinas SHARE Center and Sun Rose Gardens Permanent & Transitional Housing Development. The County is dedicated to increasing the supply of housing for the 0-30% AMI population within the County by providing permenant and transitional housing.

Complete the table below for each proposed Activity to be funded with 2019-2023 PLHA allocations. If a single Activity will be assisting households at more than one level of Area Median Income, please list the Activity as many times as needed to capture all of the AMI levels that will be assisted, but only show the percentage of annual funding allocated to the Activity one time (to avoid double counting).

| Funding Allocation Year | 2019 | 2019 | 2020 | 2020 | 2021 | 2022 | 2023 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type of Activity for Persons Experiencing or At Risk of Homelessness | Navigation Center Operating | Transitional Housing: New Construction | Navigation Center Operating | Transitional Housing: New Construction | Navigation Center Operating | Navigation Center Operating | Navigation Center Operating | | | | | | | | |
| **§302(c)(4)(E)(i)** Percentage of Funds Allocated for the Proposed Activity | 50.00% | 15.00% | 30.00% | 30.00% | 35.00% | 40.00% | 40.00% | | | | | | | | |
| **§302(c)(4)(E)(ii)** Area Median Income Level Served | 30% | 30% | 30% | 30% | 30% | 30% | 30% | | | | | | | | **TOTAL** |
| **§302(c)(4)(E)(ii)** Unmet share of the RHNA at AMI Level **Note: complete for year 2019 & 2020 only** | 155 | | 155 | | | | | | | | | | | | 310 |
| **§302(c)(4)(E)(ii)** Projected Number of Households Served | 25 | | 25 | 17 | 25 | 25 | 25 | | | | | | | | 142 |
| **§302(c)(4)(E)(iv)** Period of Affordability for the Proposed Activity **(55 years required for rental housing projects)** | | 55-years | | 55-years | | | | | | | | | | | |

**§302(c)(4)(E)(iii)** A description of major steps/actions and a proposed schedule for the implementation and completion of the Activity.

The Salinas SHARE Center is in operation and has shelter capacity for 100 unhoused persons per night, including "family rooms" that allow unhoused families to remain together.

Sun Rose Gardens broke ground in February 2022 and is currently under construction. The project should be complete within the next six months, at which time it will begin offering 9 units of permanent supportive housing and 8 units of shared transitional housing. All clients will be referred by the Monterey County Health Department's Behavioral Health Bureau and be homeless with a psychiatric disability diagnosis.

**§301(a)(7)** Accessibility modifications in Lower-income Owner-occupied housing.

**§301(a)(8)** Efforts to acquire and rehabilitate foreclosed or vacant homes and apartments.

**§301(a)(9)** Homeownership opportunities, including, but not limited to, down payment assistance.

**§301(a)(10)** Fiscal incentives made by a county to a city within the county to incentivize approval of one or more affordable housing Projects, or matching funds invested by a county in an affordable housing development Project in a city within the county, provided that the city has made an equal or greater investment in the Project. The county fiscal incentives shall be in the form of a grant or low-interest loan to an affordable housing Project. Matching funds investments by both the county and the city also shall be a grant or low-interest deferred loan to the affordable housing Project.

# Application Development Team (ADT) Support Form

*Rev. 5/7/21*

Please complete the "yellow" cells in the form below and email a copy to: AppSupport@hcd.ca.gov. and PLHA@hcd.ca.gov. A member of the Application Development Team will respond to your request within ASAP.

| Full Name: | | Date Requested: | | Application Version Date: | |
|---|---|---|---|---|---|
| Organization: | | Email: | | Contact Phone: | |

Justification:

| Issue # | Program Name & | Tab | Section | Cell# | Update/Comment | Urgency | ADT Status | Status Date |
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# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**PUBLIC HEARINGS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Jermel Laurie, Building Official |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | First Reading - Ordinance 2022-004 amending Carmel Municipal Code (CMC) Title 15 (Buildings and Construction) by adopting the 2022 editions of the California Building (CBC), Residential (CRC), Energy (CEnC), Fire (CFC), Mechanical (CMC), Plumbing (CPC), Electrical (CEC), Green Building Standards (CGBSC), Historic Building (HBC), and Existing Building Codes (EBC) with local amendments. |

## RECOMMENDATION:

1. Request the City Attorney to read the title of Ordinance 2022-004.
2. Motion to waive further reading and INTRODUCE Ordinance 2022-004 amending Chapter 15 of the Carmel Municipal Code (Buildings and Construction) adopting the 2022 editions of the California Building (CBC), Residential (CRC), Energy (CEnC), Fire (CFC), Mechanical (CMC), Plumbing (CPC), Electrical (CEC), Green Building Standards (CGBSC), Historic Building (HBC), and Existing Building Codes (EBC) with local amendments.

## BACKGROUND/SUMMARY:

The State of California Building Standards Commission (CBSC), under CCR Title 24 establishes the minimum standards for building construction, fire safety and prevention, and public health and safety in the built environment throughout the State. The CBSC updates the Title 24 codes on a triennial cycle, with periodic updates as deemed necessary by the CBSC between triennial updates. The CBSC has adopted the 2022 edition of the California Building, Residential, Fire, Electrical, Plumbing, Mechanical, Green Building, Energy, Historic Building and Existing Building Codes, and they will become effective January 1, 2023. Local jurisdictions are required to begin enforcing the updated codes on that same date.

On October 4, 2022, the City Council was given a presentation by the City's Building Official, Jermel Laurie, on the required California Building Standards Code (Title 24) adoption and two additional discretionary amendments to the Carmel Municipal Code recommended by staff.

On October 12, 2022, a public meeting was hosted by the Building Official at City Hall in person and virtually via Zoom. Two participants joined in person, and six joined virtually. The meeting presented the public with the required changes to the 2022 California Building Standards Codes and suggested additional

local amendments. There were no concerns raised by the community about any of the amendments to the codes.

Following the first reading, staff will return to Council on December 6th for a second reading and formal adoption. Upon adoption, the State Building Codes will become effective on January 1, 2023. The Municipal Building Codes will become effective on January 7, 2023.

This Ordinance adopts the codes enumerated in CCR Title 24 as required by the CBSC with local amendments addressing unique conditions and circumstances in the City of Carmel-by-the-Sea as described in the Ordinance in accordance with CBSC requirements.

## FISCAL IMPACT:

No new revenues are anticipated as a result of this update. Processing this ordinance and implementation of the new codes are included part of the Community Planning and Building FY2022-2023 adopted budget.

## PRIOR CITY COUNCIL ACTION:

The City Council approved updating Title 15 most recently in 2020 (Ord. 2020-001).

## ATTACHMENTS:

Attachment 1) REDLINE 2022 Draft Code Update (FINAL)
Attachment 2) CLEAN 2022 Draft Code Update - Ordinance No. 2022-004

**Exhibit "A" to City of Carmel-by-the-Sea Ordinance 2022-004**

*Chapter 15 of the Carmel Municipal Code is hereby amended as follows:*

1. Title 15 is amended as follows:

**15.08.010 Adoption.**

Except as otherwise amended by this chapter and Chapter 15.04 of this City Code, the following model codes are hereby adopted and are incorporated in this chapter by reference and made a part hereof as if fully set forth herein:

A. ~~2019~~ 2022 California Building Code and Appendices;

B. ~~2019~~ 2022 California Historic Building Code;

C. ~~2019~~ 2022 California Existing Building Code;

D. ~~2019~~ 2022 California Residential Code;

E. ~~2019~~ 2022 California Plumbing Code;

F. ~~2019~~ 2022 California Electric Code;

G. ~~2019~~ 2022 California Mechanical Code;

H. ~~2019~~ 2022 California Green Building Standards Code;

I. ~~2019~~ 2022 California Fire Code;

J. ~~2015~~ 2021 International Property Maintenance Code

K. ~~2019~~ 2022 California Energy Code

**15.08.135 Retrofit Requirements for Residential Fire Sprinkler Systems**

Existing structures to which additions, alterations, or repairs are made that involve alteration, addition, removal or replacement of 50 percent or greater of the linear length of the walls of the existing building (exterior plus interior, including but not limited to gypsum board, wall board, board and batten, siding, or stucco) within a five-year period shall be provided with an automatic residential fire sprinkler system in accordance with the California Building and Fire Codes. (Ord. 2018-03 § 1 (Exh. A § 4), 2018).

**15.08.260 Exemption for Pending Applications.**

The provisions of the ~~2019~~ 2022 Editions of the California Building Code, and Appendices, the ~~2019~~ 2022 California Historic Building Code, the ~~2019~~ 2022 California Mechanical Code, the ~~2019~~ 2022 California Plumbing Code, the ~~2019~~ 2022 California Electrical Code, the ~~2019~~ 2022 California Fire Code, the ~~2015~~ 2021 International Property Maintenance Code, the ~~2019~~ 2022 Existing Building Code, and the ~~2019~~ 2022 California Energy Code, as adopted and amended herein, shall not apply to any building or structure for which application for a building permit was made prior to January 1, ~~2020~~ 2023. Such buildings or structures shall be erected, constructed, enlarged, altered, or repaired in accordance with the provisions of this chapter in effect at the date of said application.

**15.10.010 Adoption.**

The ~~2019~~ 2022 California Residential Code, copies of which are on file with the City Clerk as required by law, is adopted by reference and incorporated into this title as the residential code for the City except as amended in this chapter and in Chapter 15.04 CMC. (Ord. 2018-03 § 1 (Exh. A § 4), 2018; Ord. 2017-04 § 1 (Exh. A), 2017; Ord. 2013-07 § 1 (Exh. A), 2013; Ord. 2010-05 § 1 (Exh. A), 2010; Ord. 2009-04, 2009; Ord. 2008-02 § 1, 2008; Ord. 2003-03 § 2, 2003; Ord. 99-04 (Exh. B), 1999; Ord. 96-1, 1996; Ord. 89-29 § 1, 1989; Code 1975 § 1121.0).

**15.10.030 Amendments to the ~~2019~~ 2022 California Residential Code.**

Section R403.1.3 of the ~~2019~~ 2022 California Residential Code is hereby amended to read as follows:1. Table R301.2(1) ~~is amended to read as follows:~~

| GROUND SNOW LOAD | Wind Design | | | | Seismic Design Category[f] | Subject To Damage From | | | Winter Design Temp[e] | Ice Barrier Underlayment Required[h] | Flood Hazards[g] | Air Freezing Index[i] | Mean Annual Temp.[j] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Speed[d] (mph) | Topographic Effects[k] | Special Wind Region[l] | Wind-borne Debris Zone[m] | | Weathering[a] | Frost Line Depth[b] | Termite[c] | | | | | |
| 0 | 110 | N/A | No | No | D | Negligible | 12 | Yes | 40 | No | 2009 | NA | 56.5 |

2. Section R403.1.3: ~~is amended to read as follows~~

Section R403.1.3 Footing and stem wall reinforcement in Seismic Design Categories D0, D1 and D2. Concrete footings located in Seismic Design Categories D0, D1, and D2, as established in Table R301.2(1), shall have minimum reinforcement of at least two continuous longitudinal reinforcing bars not smaller than No. 4 bars. Bottom reinforcement shall be located a minimum of 3 inches (76 mm) clear from the bottom of the footing.

**15.20.010 Adoption**

The ~~2019~~ 2022 California Mechanical Code, copies of which are on file with the City Clerk as required by law, is adopted by reference and incorporated into this title as the mechanical code

for the City, except as amended in this chapter and Chapter 15.04 CMC. (Amended during 4/17 update; Ord. 2014-02 § 1, 2014; Ord. 2013-07 § 1 (Exh. A), 2013; Ord. 2010-05 § 1 (Exh. A), 2010; Ord. 2008-02 § 1, 2008; Ord. 2003-03 § 2, 2003; Ord. 99-04 (Exh. B), 1999; Ord. 96-1 § 1, 1996; Ord. 92-24, 1992; Ord. 89-29 § 1, 1989; Code 1975 § 1131.0).

**15.24.010 Adoption**

The ~~2019~~ 2022 California Plumbing Code, copies of which are on file with the City Clerk as required by law, is adopted by reference and incorporated into this title as the plumbing code for the City, except as amended in this chapter and in Chapter 15.04 CMC. (Ord. 2017-04 § 1 (Exh. A), 2017; Ord. 2013-07 § 1 (Exh. A), 2013; Ord. 2010-05 § 1 (Exh. A), 2010; Ord. 2008-02 § 1, 2008; Ord. 2003-03 § 2, 2003; Ord. 99-04 (Exh. B), 1999; Ord. 92-24, 1992; Ord. 89-29 § 1, 1989; Code 1975 § 1141.0).

**Chapter 15.36 California Electrical Code**

Sections

**15.36.010 Adoption**

The ~~2019~~ 2022 California Electrical Code, based on the National Electric Code, as promulgated by the National Fire Protection Association, copies of which are on file with the City Clerk as required by law, is adopted by reference and incorporated into this title as the electrical code for the City, except as amended in this chapter and in Chapter 15.04 CMC. (Amended during 4/17 update; Ord. 2014-02 § 1, 2014; Ord. 2013-07 § 1 (Exh. A), 2013; Ord. 2010-05 § 1 (Exh. A), 2010; Ord. 2008-02 § 1, 2008; Ord. 2003-03 § 2, 2003; Ord. 99-04 (Exh. B), 1999; Ord. 96-1 § 1, 1996; Ord. 91-1 § 1, 1991; Code 1975 § 1161.0).

**Chapter 15.55 California Fire Code**

Sections

15.55.010 ~~2019~~ 2022 California Fire Code – Adopted
15.55.020 Fire Code – Effective Date – Copy on File
15.55.030 Definitions
15.55.040 Establishment of Limits in Which Storage of Flammable or Combustible Liquids in Outside Aboveground Tanks Is Prohibited.
15.55.050 Establishment of Limits in Which Storage of Liquefied Petroleum Gases is Prohibited.
15.55.060 Establishment of Limits in Which Storage of Explosives and Blasting Agents is Prohibited.
15.55.070 Establishment of Limits in Which Storage of Stationary Tanks or Flammable Cryogenic Fluids is Prohibited.
15.55.080 Establishment of Limits in Which Storage of Hazardous Materials is Prohibited.
15.55.090 Fireworks Prohibited.
15.55.100 Amendments to the California Fire Code
15.55.110 Repeal of Conflicting Ordinances
15.55.120 Validity

*Prior legislation: Code 1975§§720.0 – 725.0, 726.0, 726.1, 730.0 – 730.0 (o), Ords. 325 C.S., 77-2, 79-21, 82-11, 83-25, 85-21, 86-17, 87-11, 89-24, and 95-15.

**15.55.010 ~~2019~~ 2022 California Fire Code – Adopted**

For the purpose of prescribing regulations governing conditions hazardous to life and property from fire or explosion, that certain code known as the ~~2019~~ 2022 California Fire Code, published by the International Code Council, save and except those portions as are deleted, modified, or amended, of which code not less than one copy is now on file in the office of the City Clerk, is adopted and incorporated in the municipal code as if set out at length in this code, and the provisions thereof shall be controlling within the limits of this City. (Ord. 2018-03 § 1 (Exh. A § 4), 2018).

**15.55.020 Fire Code – Effective Date – Copy on File**

The effective date for the ~~2019~~ 2022 California Fire Code adopted by CMC 15.55.010 within the City shall be January 1, ~~2020~~ 2023. The City Clerk shall maintain on file in the official records the edition of the California Fire Code currently in effect at all times. (Ord. 2018-03 § 1 (Exh. A § 4), 2018).

**15.55.100 Amendments to the California Fire Code**

The ~~2019~~ 2022 California Fire Code is amended and changed as follows as described in subsections (1) through (3~~6~~7) of this section.

2. Section 101.2.1 is amended to read as follows:

> 101.2.1 Appendices. Provisions in Appendix Chapter 4 and Appendices B, BB, C, CC, D, H, ~~and AE~~ and I, are hereby adopted in their entirety and shall apply.

6. Section ~~105.6.1.5~~ 105.5.0 is added to read as follows:

> ~~105.6.1.5~~ 105.5.0 Agricultural Explosive Devices. An operational permit is required for storage or use of any agricultural explosive device including “bird bombs”.

7. Section ~~105.7.7~~ 105.6.6 is amended to read as follows:

> ~~105.7.7~~ 105.6.6 Fire alarm and detection systems and related equipment. A construction permit is required for installation of or modification to fire alarm and detection systems and related systems, including systems installed in Group R-3 occupancies (one- and two-family homes). Maintenance performed in accordance with this code is not considered a modification and may not require a permit as determined by the fire code official.

8. Section ~~110.4~~ 112.4 is amended to read as follows:

~~110.4~~ 112.4 Violation penalties. Persons who shall violate any provision of this code or shall fail to comply with any of the requirements thereof or shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of an infraction, punishable by a fine not more than five hundred dollars ($500.00). Each day that a violation continues after due notice has been served shall be deemed a separate offense.

10.4. Section 304.3.5 is added to read as follows:

~~Section 304 – Combustible Materials~~

~~Storage and Accumulation of Rubbish and Vegetation~~

~~304~~ 304.3.5 Rubbish within Dumpsters. In all rooms or aboveground outside areas, adjacent to a building or underneath roof overhangs or when located nearer than 10 feet to an adjacent property line, containers used for storage of combustible waste materials in other than Group R, Division 3 occupancies shall be protected by automatic sprinkler protection. Such sprinklers may be connected to the domestic water supply, provided sufficient coverage of the area is provided and an approved accessible shutoff valve is provided for each room or area.

Exception: Trash areas adjacent to solid brick or concrete walls with no openings or eaves and a minimum of ten feet (10') separation distance between the dumpster and adjacent property line are not required to be protected by automatic sprinkler system(s).

~~10.6. Section 503.2.1 is added as follows:~~

~~503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).~~

~~16.5 Section 506.1 is amended to read as follows:~~

~~506.1 Where required. Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the fire code official is authorized to require a key box or other approved emergency access device to be installed in an approved~~

~~location. The key box or other approved emergency access device shall be of an approved type and shall contain keys or other information to gain necessary access as required by the fire code official.~~

18. Section ~~603.6.6~~ 605.3.1 is added to read as follows:

~~603.6.6~~ 605.3.1 Spark arresters. An approved spark arrester shall be installed on all chimneys, incinerators, smokestacks, solid-fuel burning fire pits, or similar devices ~~for conveying smoke or hot gases to the outer air~~ where the burning of solid fuel conveys smoke, embers and hot gases to the outer air.

20. *Reserved.* ~~Section 901.4 is amended to read as follows:~~

~~901.4 Installation. Fire protection systems shall be maintained in accordance with the original installation standards for that system. All systems shall be extended, altered, or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. Alterations to the fire protection systems shall be done in accordance with applicable standards.~~

21. Section ~~901.4.5~~ 901.4.6 is amended to read as follows:

~~901.4.5~~ 901.4.6 Appearance of equipment. Any device that has the physical appearance of life safety or fire protection equipment but that does not perform that life safety or fire protection function shall be prohibited. Any non-required fire protection equipment that is no longer in service shall be removed.

22. *Reserved.* ~~Section 901.6.01 is added to read as follows:~~

~~901.6.01 Responsibility. The owner of the protected premises shall be responsible for all fire protection systems within the protected premises, whether existing or installed under this code.~~

23. Section ~~901.6.02~~ 901.6.4 is added to read as follows:

~~901.6.02~~ 901.6.4 Qualifications of Inspection, Testing and Maintenance Personnel. All personnel performing any inspection, testing or maintenance of any fire protection system shall be qualified. Where such inspection, testing and maintenance is performed by an outside service company, the company shall be appropriately licensed in accordance with the California Business & Professions Code or by the California State Fire Marshal.

~~23.5. Section 901.7 is added to read as follows:~~

~~901.7 Systems Out of Service. Where a required fire protection system is out of service, the fire department and the fire code official shall be notified immediately and, where required by the fire code official, the building shall either be evacuated or an approved fire watch shall be provided for all occupants left unprotected by the shutdown until the fire protection system has been returned to service.~~

~~26. Section 903.3.1.1.3 is added to read as follows:~~

~~903.3.1.1.3 Elevators. Automatic fire sprinklers shall not be installed at the top of passenger elevator hoistways or in the associated passenger elevator mechanical rooms.~~

~~903.3.1.1.3.1 Where automatic fire sprinklers are not installed at the top of passenger elevator hoistways, heat detectors for the shunt trip mechanism shall not be installed, nor shall smoke detectors for elevator recall be installed.~~

~~903.3.1.1.3.2 Where automatic fire sprinklers are not installed in associated elevator mechanical rooms, heat detectors for the shunt trip mechanism shall not be installed. A smoke detector shall be installed for elevator recall.~~

26. Section 903.3.1.2 is amended to read as follows:

903.3.1.2 NFPA 13R sprinkler systems. Automatic sprinkler systems in Group R occupancies up to and including four stories in height shall be permitted to be installed throughout in accordance with NFPA 13R as amended in Chapter 47 of this Code.

903.3.1.2.1 Balconies and decks. Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of dwelling units were the building is of Type V construction, provided there is a roof or deck above. Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are within 1 inch to 6 inches below the structural members and a maximum distance of fourteen (14) inches below the deck of the exterior balconies and decks that are constructed of open wood joist construction.

903.3.1.2.3 Attics. Where NFPA 13R sprinkler systems are installed, all attic areas shall be provided with sprinkler protection in accordance with NFPA 13.

903.3.1.2.4 Sprinkler control valves. Where NFPA 13R sprinkler systems are installed, sprinkler system control valves shall be installed in accordance with NFPA 13.

903.3.1.2.5 Bathrooms. Automatic sprinklers shall be installed in all bathrooms, regardless of square footage, where an electrical receptacle is installed.
903.3.1.2.6 Accessible storage areas. Automatic sprinklers shall be installed in all accessible storage areas.

903.3.1.2.7 Under-stair spaces. Automatic sprinklers shall be installed in all under-stair spaces including all under-stair closets.

27. Section 903.3.1.3 is amended to read as follows:

903.3.1.3 NFPA 13D sprinkler systems. Where allowed, automatic sprinkler systems installed in one- and two-family dwellings shall be installed throughout in accordance with NFPA 13D.

903.3.1.3.1 All fire sprinkler systems installed in one- and two-family dwellings shall be tested for leakage by undergoing a hydrostatic test made at 200 psi for a two-hour duration.

903.3.1.3.2 Each water system supplying both domestic and fire protection systems shall have a single indicating-type control valve, arranged to shut off both the domestic and sprinkler systems off of a single water meter. A separate shut-off valve for the domestic system only shall be permitted to be installed. The location of the control valve shall be approved by the fire code official.

903.3.1.3.3 Automatic sprinklers shall be installed in all bathrooms, regardless of square footage~~.~~, where an electrical receptacle is installed.

903.3.1.3.4 Automatic sprinklers shall be installed in all attached garages and structures.

903.3.1.3.5 Automatic sprinklers shall be installed in all accessible storage areas.

903.3.1.3.5.1 Automatic sprinklers shall be installed in all under-stair spaces including all closets.

903.3.1.3.6 Local water flow alarms shall be provided on all sprinkler systems. Local water flow alarms shall be powered from the main kitchen refrigerator circuit. The local water flow alarm shall be clearly audible from within the master bedroom at an audibility level of not less than 75 dBa. Where no kitchen exists in the building, the water flow alarm shall be powered from the bathroom lighting circuit.

903.3.1.3.7 Automatic fire sprinklers shall be installed to protect all furnaces and heating system appliances.

31.6. Section ~~904.12.6~~ 904.13.6 is added to existing section:

~~904.12.6~~ 904.13.6 Non-Conforming Restaurant Cooking Appliances and Fire Extinguishing Systems. All non-conforming restaurant cooking appliances, hood and duct systems, and fire extinguishing systems found to exist as of the effective date of this Ordinance shall be made to conform to the requirements of this Section within 90 days of notification. It shall thereafter be unlawful for any person to maintain or suffer to be maintained any non-conforming restaurant cooking appliance, hood and duct system or fire extinguishing system on any property owned or controlled by said person within the City of Carmel.

33. Section ~~907.6.6.4~~ 907.6.6.5 is added to read as follows:

~~907.6.6.4~~ 907.6.6.5 Zone transmittal. Where required by the fire code official, fire alarm signals shall be transmitted by zone to the supervising station and retransmitted by zone to the public fire service communications center.

34. Section ~~907.6.6.5~~ 907.6.6 is amended to read as follows:

~~907.6.6.5~~ 907.6.6 Monitoring. Fire alarm systems required by this chapter, by the California Building Code, or installed voluntarily shall be monitored by a UL-listed central station and shall be documented as UL-certificated central station service systems in accordance with NFPA 72-2010 and this section.

35.4. Section ~~907.8.5~~ 907.8.4 is amended to read as follows:

~~907.8.5~~ 907.8.4 Inspection, testing and maintenance. The building owner shall be responsible to maintain the fire and life safety systems in an operable condition at all times. Access shall be provided to each fire alarm system component for periodic inspection, maintenance and testing. Service personnel shall meet the qualification requirements of NFPA 72 for inspection, testing and maintenance of such systems. Records of inspection, testing and maintenance shall be maintained.

37. Section 4907.1.1 is added to read as follows:

4907.1.1 Standard Defensible Space Requirements: Remove combustible vegetation from within a minimum of 100 feet or to the property line from structures, whichever is closer. Vegetation shall be no taller than four inches (4") high. Limb trees 6 feet up from ground. Remove limbs within 10 feet of chimneys. Additional or alternate fire protection approved by the fire code official may be required to provide reasonable fire safety. Environmentally sensitive areas may require alternative fire protection, to be determined by the fire code official and other jurisdictional authorities.

**15.36.020 Placement of Service Laterals**

A. Within all land use zones, all electrical service laterals to any new building or structure, or to any building or structure being remodeled when such remodeling requires the relocation or replacement of the property owner's main service equipment, shall be placed underground on the premises upon which the building or structure is located, in accordance with applicable rules, regulations and tariffs on file with the California Public Utilities Commission.

Exceptions to undergrounding of utilities for remodeling:

1. Undergrounding of utilities will not be required when a valuation is less than $200,000. The permit applicant shall submit contractor bids and other documentation verifying that the valuation is under $200,000 upon request by the Building Official. The valuation of $200,000 shall apply to all construction over a cumulative five-year period prior to and/or after installation of a main electrical service panel.

2. Undergrounding of utilities will not be required when it is determined by the City Forester that the undergrounding operation will damage or destroy significant tree(s); provided, that the property owner posts a bond in an amount equal to the estimated cost of the undergrounding work. The bond shall be maintained until such time that the service lateral is placed underground.

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**ORDINANCE NO. 2022-004**

**AN ORDINANCE OF THE CITY COUNCIL OF CARMEL-BY-THE-SEA AMENDING CARMEL MUNICIPAL CODE (CMC) TITLE 15 (BUILDINGS AND CONSTRUCTION) BY ADOPTING THE 2022 EDITIONS OF THE CALIFORNIA BUILDING (CBC), RESIDENTIAL (CRC), ENERGY (CENC), FIRE (CFC), MECHANICAL (CMC), PLUMBING (CPC), ELECTRICAL (CEC), GREEN BUILDING STANDARDS (CGBSC), HISTORIC BUILDING (HBC), AND EXISTING BUILDING CODES (EBC) WITH LOCAL AMENDMENTS**

WHEREAS, to remain compliant with California Building Standards Commission (CBSC) Title 24, it necessary to amend Title 15 of the municipal code adopting the 2022 editions of the California Building (CBC), Residential (CRC), Energy (CEnC), Fire (CFC), Mechanical (CMC), Plumbing (CPC), Electrical (CEC), Green Building Standards (CGBSC), Historic Building (HBC), and Existing Building Codes (EBC) with local amendments.

**SECTION 1.** CEQA Review. Pursuant to CEQA section 15378(b)(5), adoption of the building code is an administrative activity of local government that will have no direct or reasonably foreseeable indirect physical change on the environment and therefore is not considered a project requiring compliance with the California Environmental Quality Act (Section 21065 of the California Public Resources Code)

**SECTION 2.** Amendment of Title 15. The following Sections of Title 15 of the Carmel-by-the-Sea Municipal Code are amended to read (all other sections remain unchanged):

**15.08.010 Adoption.**
Except as otherwise amended by this chapter and Chapter 15.04 of this City Code, the following model codes are hereby adopted and are incorporated in this chapter by reference and made a part hereof as if fully set forth herein:

A. 2022 California Building Code and Appendices;

B. 2022 California Historic Building Code;

C. 2022 California Existing Building Code;

D. 2022 California Residential Code;

E. 2022 California Plumbing Code;

F. 2022 California Electric Code;

G. 2022 California Mechanical Code;

H. 2022 California Green Building Standards Code;

I. 2022 California Fire Code;

J. 2021 International Property Maintenance Code

K. 2022 California Energy Code

**15.08.135 Retrofit Requirements for Residential Fire Sprinkler Systems**

Existing structures to which additions, alterations, or repairs are made that involve alteration, addition, removal or replacement of 50 percent or greater of the linear length of the walls of the existing building (exterior plus interior, including but not limited to gypsum board, wall board, board and batten, siding, or stucco) within a five-year period shall be provided with an automatic residential fire sprinkler system in accordance with the California Building and Fire Codes. (Ord. 2018-03 § 1 (Exh. A § 4), 2018).

**15.08.260 Exemption for Pending Applications.**

The provisions of the 2022 Editions of the California Building Code, and Appendices, the 2022 California Historic Building Code, the 2022 California Mechanical Code, the 2022 California Plumbing Code, the 2022 California Electrical Code, the 2022 California Fire Code, the 2021 International Property Maintenance Code, the 2022 Existing Building Code, and the 2022 California Energy Code, as adopted and amended herein, shall not apply to any building or structure for which application for a building permit was made prior to January 1, 2023. Such buildings or structures shall be erected, constructed, enlarged, altered, or repaired in accordance with the provisions of this chapter in effect at the date of said application.

**15.10.010 Adoption.**

The 2022 California Residential Code, copies of which are on file with the City Clerk as required by law, is adopted by reference and incorporated into this title as the residential code for the City except as amended in this chapter and in Chapter 15.04 CMC. (Ord. 2018-03 § 1 (Exh. A § 4), 2018; Ord. 2017-04 § 1 (Exh. A), 2017; Ord. 2013-07 § 1 (Exh. A), 2013; Ord. 2010-05 § 1 (Exh. A), 2010; Ord. 2009-04, 2009; Ord. 2008-02 § 1, 2008; Ord. 2003-03 § 2, 2003; Ord. 9904 (Exh. B), 1999; Ord. 96-1, 1996; Ord. 89-29 § 1, 1989; Code 1975 § 1121.0).

**15.10.030 Amendments to the 2022 California Residential Code.**

Section R403.1.3 of the 2022 California Residential Code is hereby amended to read as follows:
1. Table R301.2(1)

| GROUND SNOW LOAD | Wind Design | | | | Seismic Design Category[f] | Subject To Damage From | | | Winter Design Temp[e] | Ice Barrier Underlayment Required[h] | Flood Hazards[g] | Air Freezing Index[i] | Mean Annual Temp.[j] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Speed[d] (mph) | Topographic Effects[k] | Special Wind Region[l] | Wind-borne Debris Zone[m] | | Weathering[a] | Frost Line Depth[b] | Termite[c] | | | | | |
| 0 | 110 | N/A | No | No | D | Negligible | 12 | Yes | 40 | No | 2009 | NA | 56.5 |

2. Section R403.1.3:

Footing and stem wall reinforcement in Seismic Design Categories D0, D1 and D2. Concrete footings located in Seismic Design Categories D0, D1, and D2, as established in Table R301.2(1), shall have minimum reinforcement of at least two continuous longitudinal reinforcing bars not smaller than No. 4 bars. Bottom reinforcement shall be located a minimum of 3 inches (76 mm) clear from the bottom of the footing.

**15.20.010 Adoption**

The 2022 California Mechanical Code, copies of which are on file with the City Clerk as required by law, is adopted by reference and incorporated into this title as the mechanical code for the City, except as amended in this chapter and Chapter 15.04 CMC. (Amended during 4/17 update; Ord. 2014-02 § 1, 2014; Ord. 2013-07 § 1 (Exh. A), 2013; Ord. 2010-05 § 1 (Exh. A), 2010; Ord. 2008-02 § 1, 2008; Ord. 2003-03 § 2, 2003; Ord. 99-04 (Exh. B), 1999; Ord. 96-1 § 1, 1996; Ord. 92-24, 1992; Ord. 89-29 § 1, 1989; Code 1975 § 1131.0).

**15.24.010 Adoption**

The 2022 California Plumbing Code, copies of which are on file with the City Clerk as required by law, is adopted by reference and incorporated into this title as the plumbing code for the City, except as amended in this chapter and in Chapter 15.04 CMC. (Ord. 2017-04 § 1 (Exh. A), 2017; Ord. 2013-07 § 1 (Exh. A), 2013; Ord. 2010-05 § 1 (Exh. A), 2010; Ord. 2008-02 § 1, 2008; Ord. 2003-03 § 2, 2003; Ord. 99-04 (Exh. B), 1999; Ord. 92-24, 1992; Ord. 89-29 § 1, 1989; Code 1975 § 1141.0).

**15.36.010 Adoption**

The 2022 California Electrical Code, based on the National Electric Code, as promulgated by the National Fire Protection Association, copies of which are on file with the City Clerk as required by law, is adopted by reference and incorporated into this title as the electrical code for the City, except as amended in this chapter and in Chapter 15.04 CMC. (Amended during 4/17 update; Ord. 2014-02 § 1, 2014; Ord. 2013-07 § 1 (Exh. A), 2013; Ord. 2010-05 § 1 (Exh. A), 2010; Ord. 2008-02 § 1, 2008; Ord. 2003-03 § 2, 2003; Ord. 99-04 (Exh. B), 1999; Ord. 96-1 § 1, 1996; Ord. 91-1 § 1, 1991; Code 1975 § 1161.0).

**Chapter 15.55 California Fire Code**

Sections

15.55.010 2022 California Fire Code – Adopted
15.55.020 Fire Code – Effective Date – Copy on File
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15.55.070 Establishment of Limits in Which Storage of Stationary Tanks or Flammable Cryogenic Fluids is Prohibited.
15.55.080 Establishment of Limits in Which Storage of Hazardous Materials is Prohibited.
15.55.090 Fireworks Prohibited.
15.55.100 Amendments to the California Fire Code
15.55.110 Repeal of Conflicting Ordinances
15.55.120 Validity

*Prior legislation: Code 1975§§720.0 – 725.0, 726.0, 726.1, 730.0 – 730.0 (o), Ords. 325 C.S., 77-2, 79-21, 82-11, 83-25, 85-21, 86-17, 87-11, 89-24, and 95-15.

**15.55.010 2022 California Fire Code – Adopted**

For the purpose of prescribing regulations governing conditions hazardous to life and property from fire or explosion, that certain code known as the 2022 California Fire Code, published by the International Code Council, save and except those portions as are deleted, modified, or amended, of which code not less than one copy is now on file in the office of the City Clerk, is adopted and incorporated in the municipal code as if set out at length in this code, and the provisions thereof shall be controlling within the limits of this City. (Ord. 2018-03 § 1 (Exh. A § 4), 2018).

**15.55.020 Fire Code – Effective Date – Copy on File**

The effective date for the 2022 California Fire Code adopted by CMC 15.55.010 within the City shall be January 1, 2023. The City Clerk shall maintain on file in the official records the edition of the California Fire Code currently in effect at all times. (Ord. 2018-03 § 1 (Exh. A § 4), 2018).

**15.55.100 Amendments to the California Fire Code**

The 2022 California Fire Code is amended and changed as follows as described in subsections (1) through (37) of this section.

2. Section 101.2.1 is amended to read as follows:

> 101.2.1 Appendices. Provisions in Appendix Chapter 4 and Appendices B, BB, C, CC, D, H, and I, are hereby adopted in their entirety and shall apply.

6. Section 105.5.0 is added to read as follows:

> 105.5.0 Agricultural Explosive Devices. An operational permit is required for storage or use of any agricultural explosive device including “bird bombs”.

7. Section 105.6.6 is amended to read as follows:

105.6.6 Fire alarm and detection systems and related equipment. A construction permit is required for installation of or modification to fire alarm and detection systems and related systems, including systems installed in Group R-3 occupancies (one- and two-family homes). Maintenance performed in accordance with this code is not considered a modification and may not require a permit as determined by the fire code official.

8. Section 112.4 is amended to read as follows:

112.4 Violation penalties. Persons who shall violate any provision of this code or shall fail to comply with any of the requirements thereof or shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of an infraction, punishable by a fine not more than five hundred dollars ($500.00). Each day that a violation continues after due notice has been served shall be deemed a separate offense.

10.4. Section 304.3.5 is added to read as follows:

304.3.5 Rubbish within Dumpsters. In all rooms or aboveground outside areas, adjacent to a building or underneath roof overhangs or when located nearer than 10 feet to an adjacent property line, containers used for storage of combustible waste materials in other than Group R, Division 3 occupancies shall be protected by automatic sprinkler protection. Such sprinklers may be connected to the domestic water supply, provided sufficient coverage of the area is provided and an approved accessible shutoff valve is provided for each room or area.

Exception: Trash areas adjacent to solid brick or concrete walls with no openings or eaves and a minimum of ten feet (10') separation distance between the dumpster and adjacent property line are not required to be protected by automatic sprinkler system(s).

18. Section 605.3.1 is added to read as follows:

605.3.1 Spark arresters. An approved spark arrester shall be installed on all chimneys, incinerators, smokestacks, solid-fuel burning fire pits, or similar devices where the burning of solid fuel conveys smoke, embers and hot gases to the outer air.

20. *Reserved.*

21. Section 901.4.6 is amended to read as follows:

901.4.6 Appearance of equipment. Any device that has the physical appearance of life safety or fire protection equipment but that does not perform that life safety or fire protection function

shall be prohibited. Any non-required fire protection equipment that is no longer in service shall be removed.

22. *Reserved.*

23. Section 901.6.4 is added to read as follows:

901.6.4 Qualifications of Inspection, Testing and Maintenance Personnel. All personnel performing any inspection, testing or maintenance of any fire protection system shall be qualified. Where such inspection, testing and maintenance is performed by an outside service company, the company shall be appropriately licensed in accordance with the California Business & Professions Code or by the California State Fire Marshal.

26. Section 903.3.1.2 is amended to read as follows:

903.3.1.2 NFPA 13R sprinkler systems. Automatic sprinkler systems in Group R occupancies up to and including four stories in height shall be permitted to be installed throughout in accordance with NFPA 13R as amended in Chapter 47 of this Code.

903.3.1.2.1 Balconies and decks. Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of dwelling units were the building is of Type V construction, provided there is a roof or deck above. Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are within 1 inch to 6 inches below the structural members and a maximum distance of fourteen (14) inches below the deck of the exterior balconies and decks that are constructed of open wood joist construction.

903.3.1.2.3 Attics. Where NFPA 13R sprinkler systems are installed, all attic areas shall be provided with sprinkler protection in accordance with NFPA 13.

903.3.1.2.4 Sprinkler control valves. Where NFPA 13R sprinkler systems are installed, sprinkler system control valves shall be installed in accordance with NFPA 13. 903.3.1.2.5 Bathrooms. Automatic sprinklers shall be installed in all bathrooms, regardless of square footage, where an electrical receptacle is installed. 903.3.1.2.6 Accessible storage areas. Automatic sprinklers shall be installed in all accessible storage areas.

903.3.1.2.7 Under-stair spaces. Automatic sprinklers shall be installed in all under-stair spaces including all under-stair closets.

27. Section 903.3.1.3 is amended to read as follows:

903.3.1.3 NFPA 13D sprinkler systems. Where allowed, automatic sprinkler systems installed in one- and two-family dwellings shall be installed throughout in accordance with NFPA 13D.

903.3.1.3.1 All fire sprinkler systems installed in one- and two-family dwellings shall be tested for leakage by undergoing a hydrostatic test made at 200 psi for a twohour duration.

903.3.1.3.2 Each water system supplying both domestic and fire protection systems shall have a single indicating-type control valve, arranged to shut off both the domestic and sprinkler systems off of a single water meter. A separate shut-off valve for the domestic system only shall be permitted to be installed. The location of the control valve shall be approved by the fire code official.

903.3.1.3.3 Automatic sprinklers shall be installed in all bathrooms, regardless of square footage~~.~~, where an electrical receptacle is installed.

903.3.1.3.4 Automatic sprinklers shall be installed in all attached garages and structures.

903.3.1.3.5 Automatic sprinklers shall be installed in all accessible storage areas.

903.3.1.3.5.1 Automatic sprinklers shall be installed in all under-stair spaces including all closets.

903.3.1.3.6 Local water flow alarms shall be provided on all sprinkler systems. Local water flow alarms shall be powered from the main kitchen refrigerator circuit. The local water flow alarm shall be clearly audible from within the master bedroom at an audibility level of not less than 75 dBa. Where no kitchen exists in the building, the water flow alarm shall be powered from the bathroom lighting circuit.

903.3.1.3.7 Automatic fire sprinklers shall be installed to protect all furnaces and heating system appliances.

31.6. Section 904.13.6 is added to existing section:

904.13.6 Non-Conforming Restaurant Cooking Appliances and Fire Extinguishing Systems. All non-conforming restaurant cooking appliances, hood and duct systems, and fire extinguishing systems found to exist as of the effective date of this Ordinance shall be made to conform to the requirements of this Section within 90 days of notification. It shall thereafter be unlawful for any person to maintain or suffer to be maintained any non-conforming restaurant cooking appliance, hood and duct system or fire extinguishing system on any property owned or controlled by said person within the City of Carmel.

33. Section 907.6.6.5 is added to read as follows:

907.6.6.5 Zone transmittal. Where required by the fire code official, fire alarm signals shall be transmitted by zone to the supervising station and retransmitted by zone to the public fire service communications center.

34. Section 907.6.6 is amended to read as follows:

907.6.6 Monitoring. Fire alarm systems required by this chapter, by the California Building Code, or installed voluntarily shall be monitored by a UL-listed central station and shall be documented as UL-certificated central station service systems in accordance with NFPA 72-2010 and this section.

35.4. Section 907.8.4 is amended to read as follows:

907.8.4 Inspection, testing and maintenance. The building owner shall be responsible to maintain the fire and life safety systems in an operable condition at all times. Access shall be provided to each fire alarm system component for periodic inspection, maintenance and testing. Service personnel shall meet the qualification requirements of NFPA 72 for inspection, testing and maintenance of such systems. Records of inspection, testing and maintenance shall be maintained.

37. Section 4907.1.1 is added to read as follows:

4907.1.1 Standard Defensible Space Requirements: Remove combustible vegetation from within a minimum of 100 feet or to the property line from structures, whichever is closer. Vegetation shall be no taller than four inches (4") high. Limb trees 6 feet up from ground. Remove limbs within 10 feet of chimneys. Additional or alternate fire protection approved by the fire code official may be required to provide reasonable fire safety. Environmentally sensitive areas may require alternative fire protection, to be determined by the fire code official and other jurisdictional authorities.

**15.36.020 Placement of Service Laterals**

A. Within all land use zones, all electrical service laterals to any new building or structure, or to any building or structure being remodeled when such remodeling requires the relocation or replacement of the property owner's main service equipment, shall be placed underground on the premises upon which the building or structure is located, in accordance with applicable rules, regulations and tariffs on file with the California Public Utilities Commission.

Exceptions to undergrounding of utilities for remodeling:

1. Undergrounding of utilities will not be required when a valuation is less than $200,000. The permit applicant shall submit contractor bids and other documentation verifying that the

valuation is under $200,000 upon request by the Building Official. The valuation of $200,000 shall apply to all construction over a cumulative five-year period prior to and/or after installation of a main electrical service panel.

2. Undergrounding of utilities will not be required when it is determined by the City Forester that the undergrounding operation will damage or destroy significant tree(s); provided, that the property owner posts a bond in an amount equal to the estimated cost of the undergrounding work. The bond shall be maintained until such time that the service lateral is placed underground.

**SECTION 3**. Effective Date. This Ordinance shall take effect 30 days after its adoption by the City Council of the City of Carmel-by-the-Sea.

INTRODUCED at a Regular City Council Meeting on November 1, 2022.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA this 4th day of October, 2022, by the following vote:**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED: ATTEST:

_____ _____

Dave Potter
Mayor

Nova Romero, MMC
City Clerk

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**PUBLIC HEARINGS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Nova Romero, City Clerk |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | First Reading - Ordinance 2022-005 Amending Section 2.74.010(B) of the Carmel-by-the-Sea Municipal Code Related to Board Member Qualifications for the Historic Resources Board |

## RECOMMENDATION:

1. Request that the City Attorney read the title of Ordinance 2022-005.
2. Motion to waive reading in full, and INTRODUCE Ordinance 2022-005 Amending Section 2.74.010(B) of the Carmel-by-the-Sea Municipal Code Related to Board Member Qualifications for the Historic Resources Board.

## BACKGROUND/SUMMARY:

The Historic Resources Board consists of five members appointed by Council, with powers and duties to administer the City's historic preservation program. At the October 4, 2022, Regular Meeting, City Council discussed options to amend the qualifications for members of the Historic Resources Board (HRB) in order to expand the pool of applicants and fill vacancies. The HRB has one (1) unfilled vacancy that has been challenging to fill based on the current City Code's requirements for applicants.

Council has directed staff to draft an Ordinance to amend City Code Chapter 2.74.010(B), to state that in the event that no resident with the requisite expertise can be found, the City shall allow up to two members of the HRB to reside outside of Carmel-by-the-Sea City limits, so long as they reside within Monterey County, and meet all other qualifications for HRB as stated in the municipal code. All HRB applicants must follow the usual protocols for submitting an application, interviewing with the ad hoc committee, and must demonstrate relevant knowledge or experience in a field related to historic preservation such as: architectural history, architecture, archaeology, anthropology, paleontology, architecture, historic architecture, local history, construction, planning, geography, landscape architecture, urban design, ethnography, fine arts, or real estate. A majority of the board (3 or more members) must at all times be residents of Carmel-by-the-Sea, and up to two (2) members may reside outside of City Limits within Monterey County.

Staff recommends that Council waive full reading, read by title only, and introduce Ordinance 2022-005, Amending Section 2.74.010(B) of the Carmel-by-the-Sea Municipal Code Related to Board Member Qualifications for the Historic Resources Board.

## FISCAL IMPACT:

No direct fiscal impact for this item.

## PRIOR CITY COUNCIL ACTION:

On June 1, 2021, Council adopted Ordinance 2021-001, Amending Sections 2.28.030, 2.28.060, 2.32.030, 2.36.030, 2.72.030, and 2.74.010 of the Carmel-by-the-Sea Municipal Code related to timing of Board and Commission appointments and updating the Community Activities Commission mission statement.

## ATTACHMENTS:

Attachment 1) Redline Version - Draft Ordinance 2022-005
Attachment 2) Clean Version - Draft Ordinance 2022-005

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**ORDINANCE NO. 2022-005**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA AMENDING SECTION 2.74.010(B) OF THE CARMEL-BY-THE-SEA MUNICIPAL CODE RELATED TO BOARD MEMBER QUALIFICATIONS FOR THE HISTORIC RESOURCES BOARD**

WHEREAS, to expand the pool of qualified candidates for the Carmel-by-the-Sea Historic Resources Board, the City Council has determined it necessary to amend provisions of the municipal code regarding the qualifications for members, in order to fill vacancies that arise in a timely manner.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE SEA DOES ORDAIN AS FOLLOWS:**

SECTION 1. Amendment of Section 2.74.010(B) of Title 2, Chapter 2.74 of the Carmel-by-the-Sea Municipal Code is amended to read in its entirety as follows:

B. Board Member Qualifications.

1. Members of the Board shall have demonstrated interest in and knowledge of architectural history, architecture, archaeology, anthropology, paleontology, architecture, historic architecture, local history or fields related to historic preservation such as construction, planning, geography, landscape architecture, urban design, ethnography, fine arts, or real estate.

2. The Board shall be comprised of three professional members, consisting of one member each, from the following combined fields: (1) history, architectural history, or urban design, (2) architecture or historic architecture, and (3) archaeology, anthropology, or paleontology. The remaining two public members may represent any of the related historic preservation fields noted above**, or demonstrates an interest in historic preservation**

3. All members shall be residents and electors of the City, except in the event that no resident with the requisite expertise needed for a professional member can be found. In such case ~~one~~ **up to two (2)** professional member appointee**s** may reside outside the City limits but within **Monterey County, so long as the appointee meets all other requirements in sections 1 and 2, above.** In any event, **at least three (3)** Board **Members** shall at all times be composed of resident-electors of the City **and no more than 2 members may be residents of Monterey County.**

~~4. If professional members with the required expertise cannot be found, the City Council may substitute one or more additional public members with a demonstrated interest in historic preservation.~~

SECTION 2. Environmental Review. The City Council exercises its independent judgment and finds that the proposed ordinance is not subject to California Environmental Quality Act (CEQA), pursuant to Section 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect

physical change in the environment), and section 15060(c)(3) (the activity is not a project as defined in Section 15378) of the CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, because the subject regulations have no potential for resulting in any significant physical change to the environment, either directly or indirectly.

SECTION 3. Severability. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision will not affect the validity of the remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each and every section, subsection, sentence, clause, or phrase not declared invalid or unconstitutional without regard to whether any portion of the ordinance would be subsequently declared invalid or unconstitutional.

SECTION 4. Publication. The City Clerk is directed to certify this ordinance and cause it to be published in the manner required by law.

INTRODUCED, at a Regular City Council Meeting on November 1, 2022.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL BY-THE-SEA this ___ day of _____, 2022.**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED: ATTEST:

_____ _____

Dave Potter, Mayor Nova Romero, MMC, City Clerk

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**ORDINANCE NO. 2022-005**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA AMENDING SECTION 2.74.010(B) OF THE CARMEL-BY-THE-SEA MUNICIPAL CODE RELATED TO BOARD MEMBER QUALIFICATIONS FOR THE HISTORIC RESOURCES BOARD**

WHEREAS, to expand the pool of qualified candidates for the Carmel-by-the-Sea Historic Resources Board, the City Council has determined it necessary to amend provisions of the municipal code regarding the qualifications for members, in order to fill vacancies that arise in a timely manner.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE SEA DOES ORDAIN AS FOLLOWS:**

SECTION 1. Amendment of Section 2.74.010(B) of Title 2, Chapter 2.74 of the Carmel-by-the-Sea Municipal Code is amended to read in its entirety as follows:

B. Board Member Qualifications.

1. Members of the Board shall have demonstrated interest in and knowledge of architectural history, architecture, archaeology, anthropology, paleontology, architecture, historic architecture, local history or fields related to historic preservation such as construction, planning, geography, landscape architecture, urban design, ethnography, fine arts, or real estate.

2. The Board shall be comprised of three professional members, consisting of one member each, from the following combined fields: (1) history, architectural history, or urban design, (2) architecture or historic architecture, and (3) archaeology, anthropology, or paleontology. The remaining two public members may represent any of the related historic preservation fields noted above, or demonstrate an interest in historic preservation.

3. All members shall be residents and electors of the City, except in the event that no resident with the requisite expertise needed for a professional member can be found. In such case up to two (2) professional member appointees may reside outside the City limits but within Monterey County, so long as the appointee meets all other requirements in sections 1 and 2, above. In any event, at least three (3) Board Members shall at all times be composed of resident-electors of the City and no more than 2 members may be residents of Monterey County.

SECTION 2. Environmental Review. The City Council exercises its independent judgment and finds that the proposed ordinance is not subject to California Environmental Quality Act (CEQA), pursuant to Section 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment), and section 15060(c)(3) (the activity is not a project as defined in Section 15378) of the CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, because the subject regulations have no potential for resulting in any significant physical change to the environment, either directly or indirectly.

SECTION 3. Severability. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision will not affect the validity of the remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each and every section, subsection, sentence, clause, or phrase not declared invalid or unconstitutional without regard to whether any portion of the ordinance would be subsequently declared invalid or unconstitutional.

SECTION 4. Publication. The City Clerk is directed to certify this ordinance and cause it to be published in the manner required by law.

INTRODUCED, at a Regular City Council Meeting on November 1, 2022.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL BY-THE-SEA this 1st day of November, 2022.**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED: ATTEST:

_____ _____

Dave Potter, Mayor Nova Romero, MMC, City Clerk

# CITY OF CARMEL-BY-THE-SEA
# CITY COUNCIL
# Staff Report

**November 1, 2022**
**PUBLIC HEARINGS**

| | |
|---|---|
| **TO:** | Honorable Mayor and City Council Members |
| **SUBMITTED BY:** | Nova Romero, City Clerk |
| **APPROVED BY:** | Chip Rerig, City Administrator |
| **SUBJECT:** | Introduction and Adoption of Urgency Ordinance 2022-006 - Urgency Ordinance of the City Council of the City of Carmel-by-the-Sea Adopting Rules of Conduct for Attending Meetings of Legislative Bodies at City Facilities |

## RECOMMENDATION:

1. Request that the City Attorney read the the title of Urgency Ordinance.

2. Motion to waive further reading and ADOPT Urgency Ordinance 2022-006 Adopting Rules of Conduct for Attending Meetings of Legislative Bodies at City Facilities.

## BACKGROUND/SUMMARY:

The City of Carmel-by-the-Sea ("City") is authorized by Article XI, Section 7 of the California Constitution to make and enforce all regulations and ordinances using its police powers.

The California Emergency Services Act (California Government Code Section 8550, et. seq.) defines a local emergency as *"the existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a city, caused by conditions such as an epidemic, which are or are likely to be beyond the control of the services, personnel, equipment, and facilities of a city, and require the combined forces of other political subdivisions to combat"*.

Section 2.64.020 of the City Municipal Code defines "emergency" as the *"actual or threatened existence of conditions of disaster or of extreme peril to the safety of persons and property within this City caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, earthquake, or other conditions, including conditions resulting from war or imminent threat of war, but other than conditions resulting from a labor controversy, which conditions are or are likely to be beyond the control of the services, personnel, equipment, and facilities of this City, requiring the combined forces of other political subdivisions to combat".*

Government Code section 37359 allows cities to "limit the access or use [of city-owned property] in area or time or in any reasonable manner deemed necessary" and enforce such limitations through trespass law.

In December 2019, reports began spreading worldwide about a flu-like virus first found in China that was

significantly more deadly than the flu generally, with the virus becoming known as the Coronavirus ("COVID-19").

The federal Centers for Disease Control and Prevention ("CDC") has confirmed thousands of cases of individuals who have severe respiratory illness caused by COVID-19, as well as deaths caused by this illness.

On or about March 4, 2020, as part of the State of California's response to address the global COVID-19 outbreak, Governor Gavin Newsom declared a State of Emergency to make additional resources available, formalize emergency actions already underway across multiple state agencies and departments, and help the state prepare for broader spread of COVID-19.

On March 6, 2020, the County Administrative Officer of Monterey County proclaimed a Local Emergency due to the threat of COVID-19 in the County.

On March 11, 2020, the World Health Organization ("WHO") classified the spread of COVID-19 internationally as a global pandemic.

On March 12, 2020, the City Administrator of the City of Carmel-by-the-Sea, acting in his capacity as the Director of Emergency Services for the City, declared the existence of a local emergency within the City due to COVID-19.

On March 13, 2020, the City Council adopted Resolution 2020-021 ratifying the City Administrator's Proclamation of the Existence of a Local On March 13, 2020, the City Council adopted Resolution 2020-021 ratifying the City Administrator's Proclamation of the Existence of a Local Emergency Due to the Worldwide Spread of the Coronavirus ("COVID-19").

In the absence of actions to mitigate the spread of COVID-19, County wide health services may become overwhelmed and unable to keep up with medical demand for care and availability of hospital or care facility capacity.

In order to mitigate the spread of COVID-19, it is necessary for the immediate preservation of the public peace, health and safety to adopt rules of conduct at City facilities.

On February 28, 2022, the City Council adopted Urgency Ordinance No. 2022-001 adopting rules of conduct at City Facilities. During that meeting, City Administrator Chip Rerig advised the Council that the Urgency Ordinance would be applied only for meetings of Legislative Bodies and the proposed First Amendment to the Urgency Ordinance includes such provisions.

On April 4, 2022, the City Council adopted Urgency Ordinance No. 2022-002, amending the rules of conduct at City Facilities (Attachment 1).

Since the adoption of Urgency Ordinance 2022-002, the Monterey County Health Department has deferred guidance on masking in Monterey County to the California Department of Public Health. The newest guidance from the California Department of Public Health (CDPH) went into effect on September 23, 2022, shifting from a "strong recommendation" for the general population to mask in all indoor settings at all times, to using the CDC Community Levels to help inform masking recommendations. The CDC Community Levels for every County are updated weekly on Thursday and posted online:

https://www.cdc.gov/coronavirus/2019-ncov/your-health/covid-by-county.html. The levels are determined by hospital based metric data (COVID-19 hospital admissions, % inpatient beds occupied with COVID-19, new cases per 100,000 population), and are intended to "provide a broad framework for jurisdictions to use and adapt...based on local needs" and are summarized as follows:

Low – recommendations focus on best practices for prevention and control, vaccinations

Medium – strengthens emphasis on protecting people are immunocompromised, enhanced prevention measures for high-risk settings

High – focus on wearing masks indoors in public and providing added protection to populations at high risk

On October 3, 2022, the CDC Community level for Monterey County was "Low". The CDPH guidelines when the level is low are:

- Stay up to date with COVID-19 vaccines
- Get tested if you have symptoms
- People may choose to mask at any time
- People with symptoms/positive test/exposure should wear a mask

On October 4, 2022, City Council gave direction to staff to return with another Urgency Ordinance to repeal and replace Ordinance 2022-002, with updated rules of conduct for attending meetings of legislative bodies at City facilities to keep our community and members of the public safe and using the guidance from the California Department of Public Health as a broad framework. The new proposed rules of conduct for attending meetings of legislative bodies at City facilities outlined in Urgency Ordinance 2022-006 (attachment 2) are as follows:

***Rules of Conduct for Attending Meetings of Legislative Bodies at City Facilities.***
*It is hereby ordered and ordained that the following rules of conduct shall apply to attendance at meetings of Legislative Bodies at City facilities, as defined herein:*

*7.1 City Facility. For purposes of this Urgency Ordinance, the term "City Facility" or "City Facilities" means City Hall and any other property owned by the City where there is a meeting held of a Legislative Body.*

*7.2 Legislative Body. For purposes of this Urgency Ordinance, the term "Legislative Body" means the City Council, Planning Commission, Forest and Beach Commission, Historic Resources Board, Harrison Memorial Library Board of Trustees, Community Activities Commission and the Building Code Board of Appeals.*

*7.3 Face Covering. No person shall be permitted to enter or remain in City Facility at a meeting of a Legislative Body unless that person wears a face covering which covers both the mouth and nose at all times when the CDC Community Level for the County Monterey is medium or high as of the date of posting the agenda for the meeting of the Legislative Body. The agenda will state the CDC Community Level and whether a face covering will be required for attendance at that meeting of the Legislative Body. Upon request, the City will provide anyone seeking to enter City Facility to attend a meeting of a Legislative Body with a face covering if they do not have one.*

*7.4 If anyone is unable or unwilling to comply with the requirements of this Section 7, they may attend the meeting remotely in the manner described in the Agenda posted for the meeting.*

Based upon the foregoing, the recommendation is for the City Council to find pursuant to Government Code Section 36937 (b) that adoption of Urgency Ordinance No. 2022-006 is necessary for the immediate preservation of the public peace, health and safety, and for the City Council to adopt this Urgency Ordinance which requires a 4/5 vote of the City Council.

## FISCAL IMPACT:

No direct fiscal impact for this action.

## PRIOR CITY COUNCIL ACTION:

On March 13, 2020, the City Council adopted Resolution 2020-021 ratifying the City Administrator's Proclamation of the Existence of a Local Emergency Due to the Worldwide Spread of the Coronavirus ("COVID-19").

On February 28, 2022, the City Council adopted Urgency Ordinance No. 2022-001 adopting rules of conduct at City Facilities. During that meeting, City Administrator Chip Rerig advised the Council that the Urgency Ordinance would be applied only for meetings of Legislative Bodies and the proposed First Amendment to the Urgency Ordinance includes such provisions.

On April 4, 2022, the City Council adopted Urgency Ordinance No. 2022-002, amending the rules of conduct at City Facilities.

## ATTACHMENTS:

Attachment 1) Urgency Ordinance No. 2022-002 (currently in effect)
Attachment 2) CDPH Masking Guidelines Effective 9-23-22
Attachment 3) Urgency Ordinance No. 2022-006

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**URGENCY ORDINANCE NO. 2022-002**

**FIRST AMENDMENT TO URGENCY ORDINANCE NO. 2022-001 OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA ADOPTING RULES OF CONDUCT FOR ATTENDING MEETINGS OF LEGISLATIVE BODIES AT CITY FACILITIES**

WHEREAS, the City of Carmel-by-the-Sea ("City") is authorized by Article XI, Section 7 of the California Constitution to make and enforce all regulations and ordinances using its police powers; and

WHEREAS, the California Emergency Services Act (California Government Code Section 8550, et. seq.) defines a local emergency as the existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a city, caused by conditions such as an epidemic, which are or are likely to be beyond the control of the services, personnel, equipment, and facilities of a city, and require the combined forces of other political subdivisions to combat (Emphasis Added); and

WHEREAS, Section 2.64.020 of the City Municipal Code defines "emergency" as the actual or threatened existence of conditions of disaster or of extreme peril to the safety of persons and property within this City caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, earthquake, or other conditions, including conditions resulting from war or imminent threat of war, but other than conditions resulting from a labor controversy, which conditions are or are likely to be beyond the control of the services, personnel, equipment, and facilities of this City, requiring the combined forces of other political subdivisions to combat (Emphasis Added); and

WHEREAS, Government Code section 37359 allows cities to "limit the access or use [of city-owned property] in area or time or in any reasonable manner deemed necessary" and enforce such limitations through trespass law; and

WHEREAS, in December 2019, reports began spreading worldwide about a flu-like virus first found in China that was significantly more deadly than the flu generally, with the virus becoming known as the Coronavirus ("COVID-19"); and

WHEREAS, the federal Centers for Disease Control and Prevention ("CDC") has confirmed thousands of cases of individuals who have severe respiratory illness caused by COVID-19, as well as deaths caused by this illness; and

WHEREAS, on or about March 4, 2020, as part of the State of California's response to address the global COVID-19 outbreak, Governor Gavin Newsom declared a State of Emergency to make additional resources available, formalize emergency

actions already underway across multiple state agencies and departments, and help the state prepare for broader spread of COVID-19; and

WHEREAS, on March 6, 2020, the County Administrative Officer of Monterey County proclaimed a Local Emergency due to the threat of COVID-19 in the County; and

WHEREAS, on March 11, 2020, the World Health Organization ("WHO") classified the spread of COVID-19 internationally as a global pandemic; and

WHEREAS, on March 12, 2020, the City Administrator of the City of Carmel-by-the-Sea, acting in his capacity as the Director of Emergency Services for the City, declared the existence of a local emergency within the City due to COVID-19; and

WHEREAS, on March 13, 2020, the City Council adopted Resolution 2020-021 ratifying the City Administrator's Proclamation of the Existence of a Local Emergency Due to the Worldwide Spread of the Coronavirus ("COVID-19"); and

WHEREAS, the COVID-19 pandemic, including its variants, continues to present an immediate and significant risk to public health and safety, and resulting in serious illness or death to vulnerable populations, especially the elderly and those with underlying health conditions; and

WHEREAS, City Municipal Code Section 1.16.010 provides that every person convicted of a violation of any provision of the Municipal Code may be punished as a misdemeanor with a fine not exceeding $1000 and/or imprisonment for a term not exceeding six month or punished as an infraction with a fine up to $100.00 for each violation, $200.00 for second violation within one year and $500.00 for a third and any subsequent violation within one year; and

WHEREAS, in the absence of actions to mitigate the spread of COVID-19, County wide health services may become overwhelmed and unable to keep up with medical demand for care and availability of hospital or care facility capacity; and

WHEREAS, in order to mitigate the spread of COVID-19, it is necessary for the immediate preservation of the public peace, health and safety to adopt rules of conduct at City facilities; and

WHEREAS, the City desires to further combat COVID-19 by establishing safe protocols for conduct within city-owned facilities, including requiring persons to provide proof of vaccination and wear a mask at all times covering the mouth and nose, before entry or remaining within city-owned facilities; and

WHEREAS, the City further desires to identify certain city-owned facilities as limited public forums opened to the public for the limited purpose of conducting city business, that this policy for conduct is intended to prevent disruptive conduct that prevents the efficient processing of city business by establishing reasonable time, place,

and manner requirements for persons wishing to enter or use such city-owned facilities, and that this policy is not intended to limit rights protected by the First Amendment; and

WHEREAS, based upon the foregoing, the City Council finds pursuant to Government Code Section 36937 (b) that this First Amendment to Urgency Ordinance is necessary for the immediate preservation of the public peace, health and safety; and

WHEREAS, the City Council has considered all information related to this matter, as presented at the public meetings of the City Council identified herein, including any supporting reports by City staff, and any information provided during public meetings; and

WHEREAS, the City Council adopted Urgency Ordinance 2022-001 on February 28, 2022 with Rules of Conduct at City Facilities; and

WHEREAS, this First Amendment to Urgency Ordinance No. 2022-001 amends Section of 7 of said Urgency Ordinance and sets forth the Rules of Conduct For Attending Meetings of Legislative Bodies at City Facilities.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CARMEL- BY-THE-SEA DOES ORDAIN AS FOLLOWS:**

**Section 1:** Incorporation of Findings. The City Council of the City of Carmel- by-the-Sea incorporates the Whereas Clauses above by reference as though fully set forth here.

**Section 2:** Codification. This Ordinance shall not be codified in the Carmel-by-the-Sea Municipal Code.

**Section 3:** CEQA/Environmental Findings. The City Council exercises its independent judgment and finds that this First Amendment to Urgency Ordinance is not subject to the California Environmental Quality Act (CEQA) pursuant to the CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, sections: 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment); 15060(c)(3) (the activity is not a project as defined in Section 15378); and 15061(b)(3), because the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. The proposed First Amendment to Urgency Ordinance maintains the status quo and prevents changes in the environment pending the completion of the contemplated municipal code review. Because there is no possibility that this First Amendment to Urgency Ordinance may have a significant adverse effect on the environment, the adoption of this First Amendment to Urgency Ordinance is exempt from CEQA.

**Section 4**. Authority Pursuant to Applicable Law. Pursuant to California Government Code Section 8610, the City, while in a state of emergency proclaimed by the Director of Emergency Services and ratified by the City Council, may establish rules

and regulations for dealing with the local emergency. The City Council finds and determines that it has the authority to enact this First Amendment to Urgency Ordinance pursuant to all applicable laws including, but not limited to, the California Emergency Services Act, the City Municipal Code, the declaration of local emergency issued by the City Council on March 13, 2020, Government Code Section 36937 (b) and the Findings set forth herein.

**Section 5**. Local Emergency. A local emergency continues to exist throughout the City, and the City has been undertaking, and will continue through cessation of this emergency to undertake, necessary measures and incur necessary costs, which are directly related to the prevention of the spread of the COVID-19 Virus and are taken in furtherance of: the Governor's Proclamation of a State of Emergency on March 4, 2020; the President of the United States' Declaration of a National Emergency on March 13, 2020; the City Council Resolution 2020-021 declaring the existence of a local emergency with the City due to COVID 19, the Orders issued by the Governor, State Public Health Officer and the County Public Health Officer due to COVID-19 and all applicable laws.

**Section 6**. Powers of City Director of Emergency Services. During the existence of the local emergency due to COVID-19, the powers, functions, and duties of the City Director of Emergency Services shall be those prescribed by state law, ordinances, and resolutions of this City notwithstanding otherwise applicable procedures, timelines or methods of action and the City Director of Emergency Services is expressly authorized to take any and all actions in furtherance of emergency powers to address the local emergency.

**Section 7.** Rules of Conduct For Attending Meetings of Legislative Bodies at City Facilities. It is hereby ordered and ordained that the following rules of conduct shall apply to attendance at meetings of Legislative Bodies at City facilities, as defined herein:

7.1 City Facility. For purposes of this First Amendment to Urgency Ordinance, the term "City Facility" or "City Facilities" means City Hall and any other property owned by the City where there is a meeting held of a Legislative Body.

7.2. Legislative Body. For purposes of this First Amendment to Urgency Ordinance, the term "Legislative Body" means the City Council, Planning Commission, Forest and Beach Commission, Historic Resources Board, Harrison Memorial Library Board of Trustees, Community Activities Commission and the Building Code Board of Appeals.

7.3 Vaccination against COVID-19. No person shall be permitted to enter or remain in a City Facility at a meeting of a Legislative Body unless that person has been fully vaccinated against COVID-19. The term "fully vaccinated" means the person has been vaccinated against COVID-19 and received a booster. Persons shall not be permitted to enter a City Facility unless they first present proof to an authorized City employee that they are fully vaccinated.

7.4 Face Covering. No person shall be permitted to enter or remain in City Facility at a meeting of a Legislative Body unless that person wears a face covering

which covers both the mouth and nose at all times. Upon request, the City will provide anyone seeking to enter City Facility to attend a meeting of a Legislative Body with a face covering if they do not have one.

7.5 If anyone is unable or unwilling to comply with the requirements of this Section 7, they may attend the meeting remotely in the manner described in the Agenda posted for the meeting.

7.6 Due to the size of the City Council chambers, and in order to maintain social distancing, 27 members of the public will be allowed in the Chamber at any one time with seats being available on a first come first served basis. All others will need to wait outside of the building for their turn to speak during public comments or they may instead attend the meeting remotely.

**SECTION 8.** Violations of this First Amendment to Urgency Ordinance shall be punishable as set forth in the City Municipal Code Section 1.16.010 and Section 2.64.100. In addition, persons who do not follow the Rules of Conduct set forth in this First Amendment to Urgency Ordinance must remain outside city-owned facilities or may be considered trespassers subject to removal by peace officers or any other method authorized under this First Amendment to Urgency Ordinance or under Government Code section 37359.

**Section 9.** Authorization of City Code Compliance Coordinator. Pursuant to California Penal Code § 836.5, the City Code Compliance Coordinator is authorized to issue criminal citations following the procedures set forth in California Penal Code §§ 853.5 through 853.6a, or such other procedures as the State of California may subsequently enact for violations of this First Amendment to Urgency Ordinance and violations of any section of the City Municipal Code or violation of any City ordinance.

**Section 10.** Authorization of City Director of Emergency Services. The City Director of Emergency Services and his/her designee(s) are hereby authorized to take all necessary action to implement and enforce this First Amendment to Urgency Ordinance.

**Section 11.** Severability. If any section, subsection, sentence, clause, or phrase of this First Amendment to Urgency Ordinance is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision will not affect the validity of the remaining portions of this First Amendment to Urgency Ordinance. The City Council declares that it would have passed this First Amendment to Urgency Ordinance and each and every section, subsection, sentence, clause, or phrase not declared invalid or unconstitutional without regard to whether any portion of this First Amendment to Urgency Ordinance would be subsequently declared invalid or unconstitutional.

**Section 12.** Effective Date and Duration. This First Amendment to Urgency Ordinance enacted under California Government Code Section 36937 will take effect immediately upon adoption by a four fifths (4/5) vote of the City Council. This First Amendment to Urgency Ordinance will remain in effect until rescinded by the City Council.

**Section 13.** Publication. The City Clerk is directed to certify this First Amendment to Urgency Ordinance and cause it to be published in the manner required by law.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL BY-THE-SEA this 4th day of April, 2022, by the following vote:**

AYES: COUNCIL MEMBERS BARON, FERLITO, THEIS, MAYOR PRO TEM RICHARDS, MAYOR POTTER

NOES: NONE

ABSENT: NONE

ABSTAIN: NONE

APPROVED:

Dave Potter
Mayor

ATTEST:

Yashin Abbas
Interim City Clerk

TOMÁS J. ARAGÓN, M.D., Dr.P.H.
*State Public Health Officer & Director*

State of California—Health and Human Services Agency
**California Department of Public Health**

**GAVIN NEWSOM**
*Governor*

September 20, 2022

**TO:** All Californians

**SUBJECT:** Guidance for the Use of Face Masks

**Note: This guidance takes effect on 9/23/2022. View the current guidance effective until 9/23/2022.**

Related Materials: Masking Q&A | Masking Fact Sheet (PDF) | Face Mask Tips and Resources | Face Shields Q&A (PDF) | Safe Schools for All Hub | More Home & Community Guidance | All Guidance | More Languages

**Updates as of September 20, 2022:**

- Shifts from a strong recommendation for the general population, in all indoor settings at all times to use of CDC Community Levels to help inform masking recommendations, which is consistent with August 11th CDC updated recommendations
- Aligns **correctional facilities** with current CDC recommendations (CDC updated guidance on May 3rd) which notes that correctional facilities may make masks optional when CDC community levels are low.
- Aligns recommendations for **homeless shelters**, **emergency shelters** and **cooling centers** to the above recommendation for correctional facilities, i.e., also shifts from requirements to masking recommendations in these settings when CDC community levels are low
- Updated guidance is effective September 23, 2022.

# Guidance For the Use of Masks

## Background

California has used science to guide our health protection strategies throughout the pandemic. Data show that because of these strategies, we have saved lives. This is due in large part to the collective efforts of Californians to get vaccinated, get boosted, and wear masks indoors.

A universal indoor masking requirement was reinstated on December 15, 2021, to add a layer of mitigation as the Omicron variant, a Variant of Concern as labeled by the World Health Organization, increased in prevalence across California, the United States, and the world and spread much more easily than the original SARS-CoV-2 virus and

the Delta variant. Implementing the universal masking requirement in all indoor public settings during the winter season was an important tool to decrease community transmission and protect critical healthcare system capacity during the highly infectious Omicron surge. Since the peak in case rates during the Omicron surge in early January 2022, the dramatic surge in cases and hospitalizations due to the highly infectious Omicron variant has declined significantly. Californians have also become increasingly knowledgeable about how to protect themselves and their loved ones with effective masks when they may be at risk of COVID-19 exposure or transmission. Accordingly, CDPH amended this masking guidance to allow the universal indoor masking requirement to expire on February 15, 2022 as scheduled.

On March 1, 2022, the requirement for unvaccinated persons to mask in indoor public settings and businesses was replaced by a strong recommendation that all persons, regardless of vaccine status, mask in indoor public settings and businesses (examples: retail, restaurants, theaters, family entertainment centers, meetings, state and local government offices serving the public). Additionally, after March 11, 2022, the universal masking requirement for K-12 and Childcare settings terminated.

On April 20, 2022, the universal masking requirement on public transit and in transit hubs was replaced by strong recommendations that individuals in these settings continue to mask while on public transit and indoors in transit hubs to continue protecting our most vulnerable and those communities disproportionately impacted by COVID-19.

## Masking recommendations in general community settings, including public transit and transit hubs:

Earlier this year, California announced the release of the state's SMARTER Plan, the next phase of California's COVID-19 response. While state and local leaders must continue to prepare for the future, California's path forward will be predicated on individual, smarter actions, that will collectively yield better outcomes for our neighborhoods, communities, and state. Consistent with the SMARTER Plan, California is shifting its masking recommendations to a framework intended to provide information and recommendations that each Californian should consider based on the unique circumstances happening within their own community and county.

The levels included in this framework are based on CDC COVID-19 Community Levels released in March 2022 as well as consideration of metrics based on California's historical data.

Persons should use information about the current COVID-19 Community Levels (CCLs) in their county to decide which prevention behaviors to use and when (at all times or at specific times), based on their own risk for severe illness and that of members of their household, their risk tolerance, and setting-specific factors. CCLs are based on hospitalization rates, hospital bed occupancy, and COVID-19 incidence during the preceding period. At all CCLs (low, medium, and high), CDPH continues to strongly recommend that all persons:

- Stay up to date with COVID-19 vaccination, including all primary series doses and boosters.
- If you've been exposed, wear a mask for 10 days.
- Stay home when sick and know what to do if you have been infected with COVID-19, including seeking treatment early.
- Test if you are sick or have been exposed to someone with COVID-19.
- Improve ventilation and air quality in their setting.
- Wash hands regularly.
- Sign up for CA Notify to receive alerts when you have been in close contact with someone who tests positive for COVID-19.

Despite what level your community may be in, masks that offer the best fit and filtration (e.g., N95s, KN95s, KF94s), are highly recommended, and remain a critical component of our multi-layered approach for protection against COVID-19 infection. A series of cross-sectional surveys in the U.S. suggested that a 10% increase in self-reported mask wearing tripled the likelihood of slowing community transmission.[1] Our recently published case-control study conducted in California from February 18 to December 1, 2021 demonstrated that consistently wearing a face mask or respirator in indoor public settings reduces the risk of acquiring SARS-CoV-2 infection.[2] . Masks also remain a critical component for protecting those that are most vulnerable in our communities, including the unvaccinated, the immunocompromised, or those at risk for severe disease and illness.

| **CDC COVID-19 Community Level** | **CDPH recommended actions** |
|---|---|
| **Low**<br><br>There is lower community spread and impact on healthcare system of COVID-19 | **Everyone:**<br><br>People can wear a mask based on personal preference, informed by their own personal level of risk.<br><br>**Vulnerable people*:**<br><br>Consider wearing a mask in crowded indoor public places. Ensure your mask provides the best fit and filtration (respirators like N95s, KN95s and KN94s are best).<br><br>If you are a vulnerable person* or live with a vulnerable person*, consider taking additional precautions. |
| **Medium**<br><br>There is medium community spread and impact on healthcare system of COVID-19 | **Everyone**:<br><br>• Consider wearing a mask in indoor public places. Ensure your mask provides the best fit and filtration (respirators like N95, KN95 and KN94 are best).<br><br>**Vulnerable people***:<br><br>• Wearing a mask is recommended in crowded indoor public places. Ensure your mask provides the best fit and filtration (respirators like N95s, KN95s and KN94s are best).<br><br>If you have household or social contact with a vulnerable person*, wearing a mask is recommended when indoors with them |

| | |
|---|---|
| **High**<br><br>There is high community spread and impact on healthcare system of COVID-19 | **Everyone**:<br><br>• Wearing a mask is recommended in indoor public places. Ensure your mask provides the best fit and filtration (respirators like N95, KN95 and KN94 are best).<br><br>**Vulnerable people***:<br><br>• Wearing a mask is strongly recommended in indoor public places. Ensure your mask provides the best fit and filtration (respirators like N95s, KN95s and KN94s are best).<br><br>If you have household or social contact with a vulnerable person*, wearing a mask is recommended when indoors with them. |

*Those that are vulnerable include the unvaccinated, those that are immunocompromised, have certain disabilities, or have underlying health conditions, and those at risk of severe illness of death if they are infected with COVID-19. Such persons should consider taking extra precautions.

Vaccination continues to remain the ultimate exit strategy out of the COVID-19 pandemic. While the percentage of Californians fully vaccinated and boosted continues to increase, we continue to have areas of the state where vaccine coverage is low, putting individuals and communities at greater risk for COVID-19. As a state, we need to remain vigilant.

## Masking Requirements in Specified High-Risk Settings

The CDC COVID-19 Community Levels can also be used to define the level of recommended mitigation strategies for certain settings.

Accordingly, CDPH is updating its masking requirements in specified high-risk settings, consistent with current CDC recommendations. These changes shall become effective September 23, 2022. CDC has noted that CDC COVID-19 Community Levels do not apply in healthcare settings, such as hospitals and skilled nursing facilities. CDPH will continue to monitor the science and current CDC recommendations to ensure we continue protecting our most vulnerable populations and the workforce that delivers critical services in these settings.

In the following healthcare and long-term care indoor settings, masks are required for all individuals regardless of vaccination status. Surgical masks or higher-level respirators (e.g., N95s, KN95s, KF94s) with good fit are highly recommended.

- Healthcare settings[3] (applies to all healthcare settings)*
- Long Term Care Settings & Adult and Senior Care Facilities[4]

In the following non-healthcare indoor settings, facilities may use the CDC COVID-19 Community Levels to determine the level of masking requirements within their facility.

- Homeless shelters[5], Emergency shelters[6] and cooling and heating centers[7]
- State and local correctional facilities and detention centers[8]

1) When the COVID-19 Community Level is low, masking may be optional:

    1. Only in **non-clinical areas** (such as in housing units, communal dining areas, visitation areas, and in administrative areas where only staff may have access), **and**

2. When there have been no outbreaks (defined as three suspected, probable, or confirmed COVID-19 cases within a 14-day period among epidemiologically linked residents and/or staff) in the entire facility or within separated, closed subunits that do not allow for mixing of those residents or staff with the general population.

Facilities should make surgical masks or higher-level respirators (e.g., N95s, KN95s, KF94s) with good fit available at all times to any residents and staff who would like to use them based on their personal preference.

2) When the COVID-19 Community Level is medium or high, facilities must maintain or reinstate universal masking requirements for all staff and residents, regardless if there are no outbreaks within the facility.

Universal masking of all staff and residents, regardless of vaccination status and Community Level, is required in all clinical areas (or when any healthcare is being delivered), including isolation and quarantine areas, or any other areas that are covered by other specified high-risk settings.

*In certain healthcare situations or settings surgical masks (or higher filtration masks) are required. In workplaces, employers and employees are subject to either the CalOSHA COVID-19 Emergency Temporary Standards (ETS) or the Cal/OSHA Aerosol Transmissible Diseases (ATD) Standard and should consult those regulations for additional applicable requirements.

## Additional Masking Requirements

Finally, CDPH is maintaining the requirement that businesses and venue operators, including K-12 school and childcare settings, must allow any individual to wear a mask if they desire to.

In workplaces, employers and employees are subject to either the CalOSHA COVID-19 Emergency Temporary Standards (ETS) or the Cal/OSHA Aerosol Transmissible Diseases (ATD) Standard and should consult those regulations for additional applicable requirements.

Local health jurisdictions and entities may continue to implement additional requirements that go beyond this statewide guidance based on local circumstances.

These requirements and recommendations will continue to be updated as CDPH continues to assess conditions on an ongoing basis.

For additional information on the most effective types of masks and ensuring a well-fitted mask for adults, individuals should refer to CDPH Get the Most out of Masking and see CDPH Masking Guidance Frequently Asked Questions. For additional information on the most effective types of masks and ensuring a well-fitted mask for children, individuals should refer to CDPH Masks for Kids: Tips and Resources.

## Guidance for Businesses, Venue Operators or Hosts

When CDC COVID-19 Community levels are medium or high, businesses, venue operators or hosts should consider:

- Providing information to all patrons, guests and attendees regarding masking recommendations for all persons, regardless of vaccine status.
- Providing information to all patrons, guests and attendees to consider better fit and filtration for masks [Surgical masks or higher-level respirators (e.g., N95s, KN95s, KF94s) with good fit are recommended over cloth masks].
- Requiring all patrons to wear masks, especially when risk in the community may be high, or if those being served are at high-risk for severe disease or illness.
- Requiring attendees who do not provide proof of vaccination to enter indoor Mega Events to continue masking during the event, especially when not actively eating or drinking.

No person can be prevented from wearing a mask as a condition of participation in an activity or entry into a business.

## Exemptions to masks requirements

The following **individuals** are exempt from wearing masks at all times:

- Persons younger than two years old. Very young children must not wear a mask because of the risk of suffocation.
- Persons with a medical condition, mental health condition, or disability that prevents wearing a mask. This includes persons with a medical condition for whom wearing a mask could obstruct breathing or who are unconscious, incapacitated, or otherwise unable to remove a mask without assistance.
- Persons who are hearing impaired, or communicating with a person who is hearing impaired, where the ability to see the mouth is essential for communication.
- Persons for whom wearing a mask would create a risk to the person related to their work, as determined by local, state, or federal regulators or workplace safety guidelines.

[1] Rader B, White LF, Burns MR, et al. Mask-wearing and control of SARS-CoV-2 transmission in the USA: a cross-sectional study. The Lancet Digital Health. 2021;3(3):e148–e157.

[2] Andrejko KL, Pry JM, Myers JF, et al. Effectiveness of Face Mask or Respirator Use in Indoor Public Settings for Prevention of SARS-CoV-2 Infection — California, February–December 2021. MMWR Morb Mortal Wkly Rep. ePub: 4 February 2022

[3] CDC Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic

[4] CDC Nursing Homes and Long-Term Care Facilities

[5] CDC Interim Guidance for Homeless Service Providers to Plan and Respond to Coronavirus Disease 2019 (COVID-19)

[6] CDC's Interim Guidance for General Population Disaster Shelters During the COVID-19 Pandemic

[7] CDC COVID-19 and Cooling Centers

[8] CDC Interim Guidance on Management of Coronavirus Disease 2019 (COVID-19) in Correctional and Detention Facilities

Originally published on November 16, 2020

California Department of Public Health
PO Box, 997377, MS 0500, Sacramento, CA 95899-7377
Department Website (cdph.ca.gov)

**CITY OF CARMEL-BY-THE-SEA**
**CITY COUNCIL**

**URGENCY ORDINANCE NO. 2022-006**

**URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CARMEL-BY-THE-SEA ADOPTING RULES OF CONDUCT FOR ATTENDING MEETINGS OF LEGISLATIVE BODIES AT CITY FACILITIES**

WHEREAS, the City of Carmel-by-the-Sea ("City") is authorized by Article XI, Section 7 of the California Constitution to make and enforce all regulations and ordinances using its police powers; and

WHEREAS, the California Emergency Services Act (California Government Code Section 8550, et. seq.) defines a local emergency as "the existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a city, caused by conditions such as an epidemic, [emphasis added] which are or are likely to be beyond the control of the services, personnel, equipment, and facilities of a city, and require the combined forces of other political subdivisions to combat"; and

WHEREAS, Section 2.64.020 of the City Municipal Code defines "emergency" as the "actual or threatened existence of conditions of disaster or of extreme peril to the safety of persons and property within this City caused by such conditions as air pollution, fire, flood, storm, epidemic, [emphasis added] riot, earthquake, or other conditions, including conditions resulting from war or imminent threat of war, but other than conditions resulting from a labor controversy, which conditions are or are likely to be beyond the control of the services, personnel, equipment, and facilities of this City, requiring the combined forces of other political subdivisions to combat"; and

WHEREAS, Government Code section 37359 allows cities to "limit the access or use [of city-owned property] in area or time or in any reasonable manner deemed necessary" and enforce such limitations through trespass law; and

WHEREAS, in December 2019, reports began spreading worldwide about a flu-like virus first found in China that was significantly more deadly than the flu generally, with the virus becoming known as the Coronavirus ("COVID-19"); and

WHEREAS, the federal Centers for Disease Control and Prevention ("CDC") has confirmed thousands of cases of individuals who have severe respiratory illness caused by COVID-19, as well as deaths caused by this illness; and

WHEREAS, on or about March 4, 2020, as part of the State of California's response to address the global COVID-19 outbreak, Governor Gavin Newsom declared a State of Emergency to make additional resources available, formalize emergency actions already underway across multiple state agencies and departments, and help the state prepare for broader spread of COVID-19; and

WHEREAS, on March 6, 2020, the County Administrative Officer of Monterey County proclaimed a Local Emergency due to the threat of COVID-19 in the County; and

WHEREAS, on March 11, 2020, the World Health Organization ("WHO") classified the spread of COVID-19 internationally as a global pandemic; and

WHEREAS, on March 12, 2020, the City Administrator of the City of Carmel-by-the-Sea, acting in his capacity as the Director of Emergency Services for the City, declared the existence of a local emergency within the City due to COVID-19; and

WHEREAS, on March 13, 2020, the City Council adopted Resolution 2020-021 ratifying the City Administrator's Proclamation of the Existence of a Local Emergency Due to the Worldwide Spread of the Coronavirus ("COVID-19"); and

WHEREAS, the COVID-19 pandemic, including its variants, continues to present an immediate and significant risk to public health and safety, and resulting in serious illness or death to vulnerable populations, especially the elderly and those with underlying health conditions; and

WHEREAS, City Municipal Code Section 1.16.010 provides that every person convicted of a violation of any provision of the Municipal Code may be punished as a misdemeanor with a fine not exceeding $1000 and/or imprisonment for a term not exceeding six month or punished as an infraction with a fine up to $100.00 for each violation, $200.00 for second violation within one year and $500.00 for a third and any subsequent violation within one year; and

WHEREAS, in the absence of actions to mitigate the spread of COVID-19, County wide health services may become overwhelmed and unable to keep up with medical demand for care and availability of hospital or care facility capacity; and

WHEREAS, in order to mitigate the spread of COVID-19, it is necessary for the immediate preservation of the public peace, health and safety to adopt rules of conduct at City facilities; and

WHEREAS, the City desires to further combat COVID-19 by establishing safe protocols for conduct within city-owned facilities, including requiring persons wear a face covering at all times covering the mouth and nose, before entry or remaining within city-owned facilities; and

WHEREAS, the City further desires to identify certain city-owned facilities as limited public forums opened to the public for the limited purpose of conducting city business, that this policy for conduct is intended to prevent disruptive conduct that prevents the efficient processing of city business by establishing reasonable time, place, and manner requirements for persons wishing to enter or use such city-owned facilities, and that this policy is not intended to limit rights protected by the First Amendment; and

WHEREAS, based upon the foregoing, the City Council finds pursuant to Government Code Section 36937 (b) that this to Urgency Ordinance is necessary for the immediate preservation of the public peace, health and safety; and

WHEREAS, the City Council has considered all information related to this matter, as presented at the public meetings of the City Council identified herein, including any supporting reports by City staff, and any information provided during public meetings; and

WHEREAS, the City Council adopted Urgency Ordinance 2022-001 on February 28, 2022 with Rules of Conduct at City Facilities; and

WHEREAS, the Council adopted Urgency Ordinance 2022-002 on April 4, 2022 amending Section of 7 of Urgency Ordinance 2022-001 with Rules of Conduct for attendance at meeting of Legislative Bodies; and

WHEREAS, Since the adoption of Urgency Ordinance 2022-002, the Monterey County Health Department has deferred their guidance on masking to the California Department of Public Health ("CDPH") recommendations; and

WHEREAS, As of September 23, 2022, the CDPH shifted from a "strong recommendation" for the general population to mask in all indoor settings at all times, to using the CDC Community Levels to help inform masking recommendations: Website: https://www.cdc.gov/coronavirus/2019-ncov/your-health/covid-by-county.html; and

WHEREAS, CDC Community Levels – are updated weekly on Thursday, and are determined by hospital based metric data (COVID-19 hospital admissions, % inpatient beds occupied with COVID-19, new cases per 100,000 population), and are intended to "provide a broad framework for jurisdictions to use and adapt...based on local needs"; and

WHEREAS, the three CDC Community Levels may be summarized as follows:

Low – recommendations focus on best practices for prevention and control, vaccinations

Medium – strengthens emphasis on protecting people are immunocompromised, enhanced prevention measures for high-risk settings

High – focus on wearing masks indoors in public and providing added protection to populations at high risk

WHEREAS, the Monterey County COVID-19 Community Level as of October 3, 2022 was "Low"; and

WHEREAS, Recommended Guidance from the CDPH when the level is low:

- Stay up to date with COVID-19 vaccines
- Get tested if you have symptoms
- People may choose to mask at any time
- People with symptoms/positive test/exposure should wear a mask

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CARMEL- BY-THE-SEA DOES ORDAIN AS FOLLOWS:**

**Section 1:** Incorporation of Findings. The City Council of the City of Carmel- by-the-Sea incorporates the Whereas Clauses above by reference as though fully set forth here.

**Section 2:** Codification. This Ordinance shall not be codified in the Carmel-by-the-Sea Municipal Code.

**Section 3:** CEQA/Environmental Findings. The City Council exercises its independent judgment and finds that this Urgency Ordinance is not subject to the California Environmental Quality Act (CEQA) pursuant to the CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, sections: 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment); 15060(c)(3) (the activity is not a project as defined in Section 15378); and 15061(b)(3), because the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. The proposed Urgency Ordinance maintains the status quo and prevents changes in the environment pending the completion of the contemplated municipal code review. Because there is no possibility that this Urgency Ordinance may have a significant adverse effect on the environment, the adoption of this Urgency Ordinance is exempt from CEQA.

**Section 4**. Authority Pursuant to Applicable Law. Pursuant to California Government Code Section 8610, the City, while in a state of emergency proclaimed by the Director of Emergency Services and ratified by the City Council, may establish rules and regulations for dealing with the local emergency. The City Council finds and determines that it has the authority to enact this Urgency Ordinance pursuant to all applicable laws including, but not limited to, the California Emergency Services Act, the City Municipal Code, the declaration of local emergency issued by the City Council on March 13, 2020, Government Code Section 36937 (b) and the Findings set forth herein.

**Section 5**. Local Emergency. A local emergency continues to exist throughout the City, and the City has been undertaking, and will continue through cessation of this emergency to undertake, necessary measures and incur necessary costs, which are directly related to the prevention of the spread of the COVID-19 Virus and are taken in furtherance of: the Governor's Proclamation of a State of Emergency on March 4, 2020; the President of the United States' Declaration of a National Emergency on March 13, 2020; the City Council Resolution 2020-021 declaring the existence of a local emergency with the City due to COVID 19, the Orders issued by the Governor, State Public Health Officer and the County Public Health Officer due to COVID-19 and all applicable laws.

**Section 6**. Powers of City Director of Emergency Services. During the existence of the local emergency due to COVID-19, the powers, functions, and duties of the City Director of Emergency Services shall be those prescribed by state law, ordinances, and resolutions of this City notwithstanding otherwise applicable procedures, timelines or methods of action and the City Director of Emergency Services is expressly authorized to take any and all actions in furtherance of emergency powers to address the local emergency.

**Section 7.** Rules of Conduct for Attending Meetings of Legislative Bodies at City Facilities. It is hereby ordered and ordained that the following rules of conduct shall apply to attendance at meetings of Legislative Bodies at City facilities, as defined herein:

7.1 City Facility. For purposes of this Urgency Ordinance, the term "City Facility" or "City Facilities" means City Hall and any other property owned by the City where there is a meeting held of a Legislative Body.

7.2. Legislative Body. For purposes of this Urgency Ordinance, the term "Legislative Body" means the City Council, Planning Commission, Forest and Beach Commission, Historic Resources Board, Harrison Memorial Library Board of Trustees, Community Activities Commission and the Building Code Board of Appeals.

7.3 Face Covering. No person shall be permitted to enter or remain in City Facility at a meeting of a Legislative Body unless that person wears a face covering which covers both the mouth and nose at all times when the CDC Community Level for the County Monterey is medium or high as of the date of posting the agenda for the meeting of the Legislative Body. The agenda will state the CDC Community Level and whether a face covering will be required for attendance at that meeting of the Legislative Body. Upon request, the City will provide anyone seeking to enter City Facility to attend a meeting of a Legislative Body with a face covering if they do not have one.

7.4 If anyone is unable or unwilling to comply with the requirements of this Section 7, they may attend the meeting remotely in the manner described in the Agenda posted for the meeting.

**SECTION 8.** Violations of this Urgency Ordinance shall be punishable as set forth in the City Municipal Code Section 1.16.010 and Section 2.64.100. In addition, persons who do not follow the Rules of Conduct set forth in this Urgency Ordinance must remain outside city-owned facilities or may be considered trespassers subject to removal by peace officers or any other method authorized under this Urgency Ordinance or under Government Code section 37359.

**Section 9.** Authorization of City Code Compliance Coordinator. Pursuant to California Penal Code § 836.5, the City Code Compliance Coordinator is authorized to issue criminal citations following the procedures set forth in California Penal Code §§ 853.5 through 853.6a, or such other procedures as the State of California may

subsequently enact for violations of this Urgency Ordinance and violations of any section of the City Municipal Code or violation of any City ordinance.

**Section 10.** Authorization of City Director of Emergency Services. The City Director of Emergency Services and his/her designee(s) are hereby authorized to take all necessary action to implement and enforce this Urgency Ordinance.

**Section 11.** Severability. If any section, subsection, sentence, clause, or phrase of this Urgency Ordinance is for any reason held to be invalid or unconstitutional by a decision of any court of Urgency Ordinance. The City Council declares that it would have passed this Urgency Ordinance and each and every section, subsection, sentence, clause, or phrase not declared invalid or unconstitutional without regard to whether any portion of this Urgency Ordinance would be subsequently declared invalid or unconstitutional.

**Section 12**. Urgency Ordinance 2022-001 and Urgency Ordinance 2022-002 are hereby repealed.

**Section 13.** Effective Date and Duration. This Urgency Ordinance enacted under California Government Code Section 36937 will take effect immediately upon adoption by a four fifths (4/5) vote of the City Council. This Urgency Ordinance will remain in effect until rescinded by the City Council.

**Section 14.** Publication. The City Clerk is directed to certify this Urgency Ordinance and cause it to be published in the manner required by law.

**PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF CARMEL BY-THE-SEA this 1st day of November 2022, by the following vote:**

AYES:

NOES:

ABSENT:

ABSTAIN:

APPROVED:

ATTEST:

_____
Dave Potter
Mayor

_____
Nova Romero, MMC
City Clerk

Correspondence Received: 10/31/2022
From: Karyl Hall, Carmel Preseservation Assoc.

Carmel's Preservation Association
Invites you to help SAVE Carmel's appeal, charm, and magic!

*THE STATEMENT BELOW WAS SIGNED BY 737 PETITIONERS:*

**"PETITION TO SAVE THE UNIQUE ARCHITECTURAL CHARACTER OF CARMEL BY THE SEA"**

"The following residents of and visitors to Carmel love our village character, and we respectfully ask that the City Council/Planning Commission reassess the approval process for demolitions, remodels, and new construction. Please consider the ambiance that has been Carmel for over 100 years. It is being eroded with "anywhere USA" buildings: sterile facades and box-like structures, including use of excessive glass and industrial materials that do not fit the old world charm of our village in the forest."

WHO SIGNED THIS PETITION?

43% OR 315 CARMEL BY THE SEA RESIDENTS (93921 only)
19% OR 141 CARMEL SPHERE OF INFLUENCE
29% OR 217 VISITORS
09% OR 64 UNKNOWN ZIPS

PLUS 110 supportive facebook RESPONDENTS in one exposure.

TOTALING 847 SUPPORTERS and COUNTING!

HERE ARE TYPICAL EXAMPLES OF WHAT PEOPLE SAID:
visitor: "yes, of course we've noticed the modern style homes coming into the village. If this continues, we won't be coming back."

local: "I went down to get some blood taken for tests, you know, got into conversation with the two nurses. They were saying, Oh, no, we're losing Carmel. No, no, we see it."

visitor: "We have been coming here since the 80s. We absolutely love it. We come multiple times a year. And I have noticed that over the past 30 years, it is definitely

losing its charm, the quaintness and the rustic quality of the cottages, it's just disappearing, And what you're left with is McMansions with no consideration whatsoever for the original charm, what you have come here for, and now you want to change it. And it makes no sense. It needs to stop."

MESSAGE:

Carmel's fate is in your hands. Carmel is extraordinary and deserves to be protected for future generations. Over the past few years, Carmel has fallen vulnerable to the pressures of demolition and development in this period of unprecedented prosperity. People, who want what they have in Anywhere, USA, are bringing their A*nywhere, USA, house designs* into our tiny residential tree-lined streets, without consideration that they do not "blend in" with their neighbors or the rest of the village. The bigger, the squarer, the more glass, the straighter, the flatter, the taller, …yes, the better! Carmel's Preservation Association disagrees with this concept and what Carmel-by-the-Sea is and was created to be.

For those who want to alter Carmel because this is America and they want what they want, we say: *to honor Carmel means to cherish what we have been given, not to make it look like the rest of the country.*

We are encouraging locals to support, through their vote, leaders who protect Carmel's appeal from the pressure of change in the name of "progress."

kh: 10.28.22

Below are common arguments we hear from "modernists" regarding Carmel's architecture. We have provided our responses to these comments below. We hope they help clarify our position for you.

Carmel Preservation Association
ISSUES/ARGUMENTS: QUESTIONS AND ANSWERS

1. Define "Carmel character." What are you talking about…can you describe exactly what you mean by that?

This type of question is used commonly on **any** topic to disarm an opinion. Almost all issues/opinions lie on a continuum. Many Carmel houses are easily defined as having Carmel character or charm, with almost 100% agreement. Likewise many are clearly not of that ilk. Then there are those along the continuum, where opinions differ. That's why we have committees, and hopefully clear guidelines, to discuss and determine whether an individual house plan qualifies as having Carmel character.

Below are definitions of "traditional" vs. "modern style" buildings. However, Carmel charm is probably best described in pictures, not words.

2. Architectural designs need to be represented from every decade.

Carmel is not an encyclopedia of architectural styles. They are well represented in other communities (less desirable ones, we might add).

Because Carmel has limited undeveloped land, newer designs actually eliminate the charming cottages. Taking this to the extreme, continued demolition of older homes to be replaced by new "modern" buildings will eventually eliminate what is Carmel's charm.

> TO USE AN ANALOGY, IF CARMEL WERE A MUSEUM OF IMPRESSIONIST ARTWORK OF ALL KINDS, AND THE MODERATOR DECIDED TO INTRODUCE MODERN ART, BECAUSE OF LIMITED SPACE EACH PIECE OF IMPRESSIONIST ART WOULD EVENTUALLY BE REPLACED WITH MODERN ART. THE MUSEUM IS NO LONGER WHAT IT WAS. CARMEL IS ALSO GOING THE WAY OF MOST OTHER BEACH DESTINATION COMMUNITIES, ACCORDING TO OUR VISITORS—RUINED.

3. Diversity. Diversity is good.

Diversity is good among people---maybe not as much among houses. Yes, some diversity is desirable—we don't want "cookie cutter" designs that all look alike. We do not have that. The diversity among the older Carmel traditional styles thrives.

Carmel has maintained an architectural integrity atypical of the vast majority of communities. We are special, in that the residential designs have, for the most part, *a warm, inviting, cozy feel, impervious to trends of the time.*

In any community worth visiting there is an atmosphere, expressed through its architecture, which speaks not only to diversity within a genre, but *homogeneity* as well. Carmel is world-renowned for a reason, much of it due to the "magical" designs of its homes.

4. "You can't stop progress."

Yes we can. What have we been doing for the last 100+ years in Carmel, when it comes to housing designs? That does not mean that we won't embrace new and better ways to deal with issues generally. However, Carmel has maintained an architectural integrity atypical of the vast majority of communities. We hope this will continue to be, as it has been accomplished through hard work, over and over again by those before us. Carmel is in danger of becoming an "Anywhere USA" community. Many of the beach communities have already succumbed to "'progress." *At this point the village of Carmel is losing the battle to maintain its traditional character, maybe for the first time in its history.*

5. People should be able to do what they want with their house styles.

….Individual rights. If your neighbor wants to build a warehouse next to you, is that ok? How about a huge flat-top box home painted purple that blocks all the neighbors' views? *Any community worth visiting has strict building guidelines.* European villages exemplify this well. People can build pretty much what they want in other, but less desirable areas.

6. New construction should not mimic the older styles of earlier decades.

As for **"mimicry,"** aren't the contemporary homes mimicking others just as much as the traditional styles? Original nuances can appear on any style of home. Yes, it is important to monitor the quality of construction to assure that false facades and *poor* attempts at capturing the past are discouraged. However, there are many examples of charming newer buildings in the village that uphold the magic of Carmel.

Many of the Carmel cottages are beyond repair, but they can be remodeled, added to, or demolished if necessary while keeping in the character of what makes Carmel so unique and special.

Take the analogy of modern art. Are paintings of landscapes, or still lives mimicking others on the same topic? Is not modern art mimicking a style as well? Everything old is new again.

7. it doesn't say in the design guidelines that we can't do this.

Our present guidelines are just that, guidelines. They cannot be comprehensive in covering every possible issue presented. The "spirit" of the guidelines is ideally determined/upheld in committee discussion and decision making. This is not a perfect world, but we can strive toward that ideal. This is also why we need stronger language in the updated guidelines, allowing our Commissioners backup for holding the line.

8. There are other examples of modern styles in our neighborhood—why can't we build a modern house too?

Unfortunately true, modern houses have been approved. Two (or more) wrongs do not make a right. Let's start making better decisions regarding designs in Carmel!

9. We don't want "Disneyland," or cutsy cottages.

Well, Disneyland is not what we want either, but people flock there for a reason. We don't want false fronts. We do want the real thing. There is nothing wrong with making an environment welcoming and comfortable, different from other places. There IS something wrong with making it sterile and bare, particularly in Carmel by the Sea. Comstock would not have been allowed to build his cottages today. Not just because of codes, but because they would not have been seen as "acceptable" (e.g., volumetric guidelines preclude high peeked roofs, and the Commission recommends "simple" lines/designs). The most common requests of visitors at the Visitors Center (other than asking where the bathrooms are) is "where are the fairytale cottages?").

10. Isn't it ok to have *some* modern houses?
Who do you say "yes" to and who do you say "no" to? This is the approach we presently have, and has caused a proliferation of modern styles in Carmel. If we give them an inch, they'll take a mile," as we see presently. This speaks to updating our design guidelines to be more prescriptive, and adhere to them. People deserve to know what is expected architecturally *before* they draw up plans.

Kh 10.28.22

DEFINITIONS:

Traditional Carmel Elements

- Natural materials
- Pleasant open spaces
- Abundant informal landscaping
- Carmel Stone and local granite
- Wooden hand carved doors, arched doors
- Wood window frames, sills, and moldings
- Wooden (or stone, e.g. slate) roofing materials
- Detail and craftsmanship
- Embellished work with detail
- Interest and continual delight in design
- Surfaces broken up by ridges, insets, decorative tiles, cavities, niches and abrupt changes of material
- Variety in textures, from smooth troweled plaster, brick, stone, rock or exposed aggregate to painted, carved or unfinished wood
- Corners exhibit bevels, bullnoses, cornices and moldings
- Human scale
- Warm, friendly, unassuming, inviting, magical, whimsical, cozy, welcoming, heartwarming

Modern style elements/and or unacceptable elements:

- rectilinear right angles and squares
- box-like walls
- no overhangs
- flat roofs, or shallow pitch, asymmetrical roofs, ribbed metal roofs
- geometry that is squared and has straight lines
- expansive and undivided glass windows, windows resembling commercial storefronts
- the elimination of detail and trim
- featureless, industrial materials such as steel, glass and concrete
- faux materials
- excessive use of dull colors (white, gray, black)
- a machine-like crafted appearance that is stark, cold, lifeless, and impersonal, sensational, trendy, ostentatious
- overpowering in appearance

Carmel-
by-the-Sea

Attachment 2

Nova Romero <nromero@ci.carmel.ca.us>

# Please forward . . . my statement for the record

2 me age

**surfing** <[redacted] Sat, Oct 29, 2022 at 11:47 AM
To: cityclerk@ci.carmel.ca.us

Dear Carmel City Council, Planning Commissioners, and Carmel Design Traditions Project Committee Members

Why do you think the "Pit" developer didn't present citizens with scale models showing how his latest design submission will look beside the existing neighboring buildings . . . beside, behind, and across the street? Not even cross section illustrations! A 3-D printer could spit out scale models in minutes. The reason there are no scale model depictions is: It would illustrate to everybody what a monstrosity this project will be, compared to neighboring buildings! It will be another Carmel Plaza Big, bulky, boxes All new Carmel buildings should: be in human scale and in proportion to nearby buildings. They must have integrity, character, and charm. Is this project in scale with humans and in proportion to nearby buildings? No. Will it stick out from its surroundings? For sure. Does it imbue integrity? No. Character? No. Charm? Surely not! Will it make you feel pleasure when looking at it? Likely not The City must wait until it completes its nearly finished, Downtown Design Policy Updates before approving any new buildings. It seems like the City is rushing this project through, immediately in advance of their commercial district design policy update, currently approaching completion? What possible reason could there be, not to wait a couple of months longer?

Thank you one and all for your dedicated service to the Village.

Jason Wachs
[redacted]
Carmel Valley

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**Nova Romero** nromero@ci carmel ca u Mon, Oct 31, 2022 at 8 41 AM
To: Dave Potter <dpotter@ci.carmel.ca.us>, Bobby Richards <brichards@ci.carmel.ca.us>, Carrie Theis <ctheis@ci.carmel.ca.us>, Karen Ferlito <kferlito@ci.carmel.ca.us>, Jeff Baron <jbaron@ci.carmel.ca.us>
Cc: Chip Rerig <crerig@ci.carmel.ca.us>, Brandon Swanson <bswanson@ci.carmel.ca.us>, Leah Young lyoung@ci carmel ca u

Good morning Mayor and Council,

Please see the correspondence received below.

**Nova Romero, MMC**
**City Clerk**
City of Carmel-by-the-Sea
P.O. Box CC
Carmel-by-the-Sea, CA 93921
(831) 620-2016
nromero@cbts.us

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