CITY OF CARMEL-BY-THE-SEA
CLIMATE COMMITTEE

Contact: 831.620.2000 www.ci.carmel.ca.us/carmel

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

REGULAR MEETING
Thursday, September 15, 2022

3:30 PM

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, this meeting 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/93340805428 Meeting ID 93340805428, Passcode 669209 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. The meeting will also be web streamed on the City's website.

The public can also email comments to yoblander@ci.carmel.ca.us. Comments must be received 2 hours before the meeting in order to be provided to the legislative body. Comments received after that time and up to the beginning of the meeting will be added to the agenda and made part of the record.

CALL TO ORDER AND ROLL CALL

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

ORDERS OF BUSINESS

Orders of Business are agenda items that require Committee discussion, debate, direction to staff, and/or action.

1. Review a draft consultant proposal for the Coastal Engineering and Adaptation Planning Study Project

FUTURE AGENDA ITEMS

ADJOURNMENT

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 Climate Committee regarding any item on this agenda, received after the posting of the agenda will be available at the Public Works Department located on the east side of Junipero Street between Fourth and Fifth Avenues during normal 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
Climate Committee
Staff Report

September 15, 2022
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Robert M. Harary, P.E., Director of Public Works
SUBJECT:	Review a draft consultant proposal for the Coastal Engineering and Adaptation Planning Study Project

RECOMMENDATION:

Receive a report regarding a draft consultant proposal for the Coastal Engineering and Adaptation Planning Study Project, and provide direction to staff.

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 Kashunich & 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.

The City then held a series of meeting with representatives of all three firms to review the scope of the City's projects and asked if these firms to consolidate into one team so that the City could enter into one Professional Services Agreement, and the team obliged. They are recommending that EMC be 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 the lion's share of the technical work in Phases I and II.

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, https://www.cityofsantacruz.com/home/showpublisheddocument/80548/637272981588530000

and the 2019 City of Marina's Existing Conditions and Sea Level Rise Reports. https://www.cityofmarina.org/DocumentCenter/View/10614/Marina_ExistingConditionsAndAdaptationReport_vFINAL?bidId=

Draft Proposal Development Process

The Consultant team has 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 consultant team submitted several iterations of their proposal which was reviewed, modified, and negotiated with City staff. Their most recent proposal, dated September 1, 2022 is attached, and is considered by staff to be ready for review by the Climate Committee.

Once we receive feedback from the Climate Committee and members of the public, staff will continue to work with the consultant team to tweak the proposal to incorporate such comments. If comments are minor, we will convert the proposal into a Professional Services Agreement and submit it to the City Council for award at an upcoming Council meeting. However, if there are more extensive comments and/or the Climate Committee requests to review the proposal once more, we will return to the Climate Committee with a revised proposal at the earliest opportunity.

Scope of Work Outline

As shown in the attached Proposal, the work is proposed to be completed in two phases, with key tasks and deliverables as 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

Fees and Budget

Consultant fees for the Project are proposed to be $175,000 for services to be performed in Phase 1, and $100,000 for Phase 2. Funding in the amount of $175,000 for Phase I is available in the FY 2022/23 Capital Improvement Program (CIP) Budget from a combination of $150,000 for the Coastal Engineering Study plus $25,000 for the Beach Sand Survey Project.

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.

The draft Proposal included a bulleted list of potential tasks for a future Phase 3. While future phases are anticipated, it is premature to estimate fees, and no funding has been identified at this time.

Schedule

Phase 1 is anticipated to take up to 16 months to complete once a Professional Services Agreement is awarded buy the City Council and Notice to Proceed is issued. Phase 2 is also anticipated to take up to 16 months to complete, but is anticipated to be performed somewhat concurrently with Phase, subject to approval and timing of the LCP Grant.

September 15, 2022 Climate Committee Meeting

At this meeting, staff will briefly review the history of the projects, discuss the consultant selection methodology, and review the proposal development and negotiations process. Next, a representative of the consultant team will cite a few examples of similar projects they have completed for other agencies, provide an overview of the technical scope of work for this Project, and describe their proposed deliverables for each key task. Staff will then summarize the next steps to finalize a Professional Services Agreement and open it up to questions from the Committee and Public.

FISCAL IMPACT:

Consultant fees for the project are proposed to be $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.

Funding for Phase 2 is anticipated to come from a non-competitive California Coastal Commission LCP Grant in the amount of $100,000.

While a future Phase 3 is anticipated, it is premature to estimate fees, and no funding has been identified at this time.

ATTACHMENTS:

Attachment #1 - Consultant Proposal for Coastal Engineering and Adaptation Planning Project

integral consulting inc.

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MEMORANDUM

To:	Agnes Martelet, Bob Harary
From:	David Revell, PhD, Moses Cuprill, Polaris Kinison Brown
Date:	09/01/2022
Subject:	City of Carmel Coastal Engineering and Adaptation Planning
Project No.:	P3449

PURPOSE

Purpose of this memo is to outline a scope of work to the City of Carmel to meet their Climate Committee needs to address Coastal Engineering and Coastal Adaptation Planning needs. The scope estimates a budget of $275,000 in Two Phases based on different funding sources. Each Phase is broken into multiple work tasks with deliverables identified. A Phase 3 comprised of likely tasks is also identified to show additional work likely to be necessary to continue adaptation work in the City.

PROPOSED ROLES

EMC – Prime, policy and outreach lead, adaptation pathway technical review.
Integral –Mapping, hazard modeling, shoreline change analysis, GIS, vulnerability assessment, adaptation pathway, econ, policy tech review.
HKA - Lead coastal engineering, technical review on exposure modeling and shoreline change, engineering cost estimates, and input on feasibility of alternatives.

PHASE 1 – COASTAL ENGINEERING AND HAZARD ASSESSMENT

This Phase of work is outlined in the Climate Committee Implementation Appendix, 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.

We assume that the City will provide necessary City data in a digital format (e.g., GIS or CAD) and support on data collection efforts with other entities. Meeting assumptions are stated in the deliverables aside from internal team meetings covered under project management necessary to complete the work. The estimated hours for each task are presented in the attached cost estimate table.

Task 0 – Project Management

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

Deliverable: *Quarterly progress calls with summary notes, monthly invoices.*

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 available 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 with 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 what adaptation tools remain on the table for community discussion, ruling out those tools are off the table 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).*

PHASE 2 –HAZARDS POLICY REVIEW AND REVISIONS, OUTREACH, AND ADAPTATION PATHWAY DEVELOPMENT

It is anticipated that this task would be funded by the CCC Non-Competitive LCP grant and that the City Council resolution would be put forward by the City early in the Project. This funding source allows up to $100K under the non-competitive funding. We assume the City will lead meeting notification and work with the Team to set the agenda and manage the meeting.

Task 0 – Project Management

This task includes billing hours after The City issues a purchase order number to complete, project administration, preparation and execution of subconsultant contracts, and monthly invoices.

Deliverable: *Quarterly progress calls with summary notes.*

Task 1 – Policy Review and Revised Hazard Policies

Review the City's existing coastal hazard policies, identify triggers and thresholds, develop DRAFT coastal hazards policies, and provide other Local Coastal Program LUP policy update recommendations. This task will not include actual LCP language updates in this phase.

Deliverables: *Memo summarizing the City's existing coastal hazard policies, technical work and adaptation feasibility completed as Phase I, policy recommendations for climate adaptation, triggers and thresholds recommendations for policy implementation, and recommendations for LCP updates. This task includes one Climate Committee presentation (remote-EMC).*

Task 2 – Public Outreach and Engagement

Assist the City staff with preparation of a technical presentation for the Climate Change Committee (CCC) – 1 city council, 1 planning commission meeting ($5K per meeting for prep, staff support for staff reports, technical presentation development, participation, travel, and follow ups). Attended by Integral and EMC lead. (In person attendance – Integral-EMC)

Deliverable: *Technical content and PowerPoint slides for input into City Presentation to CCC.*

Task 3 – Adaptation Pathway Development

Using results of Phase 1 Task 4, Phase 2 Tasks 1 and 2. Develop an adaptation pathway for each of the four neighborhoods in the City evaluated identifying appropriate adaptation strategies for the short, medium and long term (by time and/or SLR elevation), as well as monitoring triggers for initiating planning steps to move to the next phase of adaptation.

Deliverables: *Short technical memo on monitoring needs and adaptation pathway graphics for each section. This task will include one presentation to the Climate Change Committee (remote-Integral/EMC).*

PHASE 3

- Socio-economic survey and fiscal impact analyses
- A full synthesis and executive summary report of the work done to date
- Comprehensive LCP policy update
- Geotechnical and Coastal Engineering Investigation
- Technical support for ongoing community adaptation dialogs
- Update Capital Improvement Plan
- Develop a Public Works Plan
- Identify financing mechanisms
- Implement specific projects
- Implement monitoring of identified triggers

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Schedule

CITY OF CARMEL PHASE 1 & 2 TIMELINE		2022			2023												2024					
		Oct	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																					
PHASE 2	**SOCIO-ECONOMIC ANALYSIS, OUTREACH, AND LCP POLICY UPDATES**																					
Task 1	Policy Review and Revised Hazard Policies																					
a	One Climate Committee Presentation																					
Task2	Public Outreach and Engagement																					
a	1 city council, 1 planning commission meeting																					
Task 3	Adaptation Pathway Development																					

Attachment 1

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Budget

Project Title

Task	LABOR (HOURS)																	EXPENSES		BUDGET				
	EMC Planning Group							Integral							HKA									
	Senior Principal	Principal Planner	Associate Planner	Graphics/Mapping	Administrative/ Production	EMC Planning Group Hours	EMC Planning Group Costs	David Revell	Matt Jamieson	Cheryl Hapke/Chris Flanary	Sam M/Tim N	Sam B	Integral Hours	Integral Costs	Moses Cuprill	Staff Engineer	HKA Hours	HKA Costs			Labor ($)	Expenses ($)	Subtotal ($)	5% Markup*	Subtotal ($)
	$250	$200	$150	$95	$115			$260	$185	$216	$190	$150			$250	$115			Expense	Cost					
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	$12,260.00	$70.00	$12,330.00		$12,330.00
1. Coastal Engineering Condition Evaluation						0	$0	5	24				29	$5,740	40	120	160	$23,800	Mileage (Integral, HK	$114	$29,540.00	$114.00	$29,654.00		$29,654.00
2. Shoreline and Beach Change Analysis						0	$0	12	90				102	$19,770	4	8	12	$1,920			$21,690.00	$0.00	$21,690.00		$21,690.00
3. Shoreline and Beach Erosion Exposure Modeling						0	$0	20	100	20	90		230	$45,120	8	16	24	$3,840			$48,960.00	$0.00	$48,960.00		$48,960.00
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	$52,990.00	$1,500.00	$54,490.00		$54,490.00
Subtotal Task A (Hours)	8	38	0	0	0	46		80	332	70	90	40	612		68	160	228								
Subtotal Task A (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
Phase 2 - Policy, Outreach, Adaption Pathway																								
Project Management	8	30				38	$8,000	2	4				6	$1,260			0	$0			$9,260.00	$0.00	$9,260.00		$9,260.00
1. Policy Review and Revised Hazard Policies	5	150	80	8	5	248	$44,585	10	4				14	$3,340			0	$0	Production/Misc (EMC	$400	$47,925.00	$400.00	$48,325.00		$48,325.00
2. Public Outreach and Engagement		25				25	$5,000	20					20	$5,200			0	$0	Mileage (EMC, Integr	$205	$10,200.00	$205.00	$10,405.00		$10,405.00
3. Adaptation Pathway Development		20	4		1	25	$4,715	20	80			30	130	$24,500	4		4	$1,000			$30,215.00	$0.00	$30,215.00		$30,215.00
Subtotal Task B (Hours)	13	225	84	8	6	336		52	88	0	0	30	170		4	0	4								
Subtotal Task B (Cost)	$3,250	$45,000	$12,600	$760	$690		$62,300	$13,520	$16,280	$0	$0	$4,500		$34,300	$1,000	$0		$1,000		$605	$97,600	$605	$98,205	$1,795	$100,000
TOTAL ESTIMATED HOURS	21	263	84	8	6			132	420	70	90	70			72	160									
TOTAL ESTIMATED LABOR BUDGET	$5,250	$52,600	$12,600	$760	$690			$34,320	$77,700	$15,120	$17,100	$10,500			$18,000	$18,400					$263,040	$2,289	$265,329	$9,671	$275,000
TOTAL LABOR BUDGET PER FIRM					$71,900							$154,740				$36,400									

NOTES:

a. For this proposal, EMC Planning Group has reduced it's standard 10% subconsultant markup of 10% to 5%. The markup does not apply to EMC Planning Group labor costs.

b. This proposal is valid for 90 days

Attachment 1