SECOND AMENDMENT TO AGREEMENT

This Second Amendment of the Agreement ("**Second Agreement**"), entered into this _____ day of _____, 2025, by and between the CITY OF ALAMEDA, a municipal corporation (hereinafter "the **City**") and CONGER MOSS GUILLARD, INC. dba CMG LANDSCAPE ARCHITECTURE, a California corporation, whose address is 444 Bryant Street, San Francisco, CA 94404, (hereinafter "**Provider**"), is made with reference to the following:

RECITALS:

A. On September 6, 2023, an agreement was entered into by and between the City and Provider (hereinafter "Agreement") in an amount not to exceed $2,767,000, for the technical work on the sea level rise adaptation projects.

B. On February 4, 2025, the parties entered into a First Amendment of the Agreement ("First Amendment") to modify the services performed, and to increase the total compensation in an amount not to exceed $2,842,000.

C. The City and the Provider desire to modify the Agreement on the terms and conditions set forth herein.

NOW, THEREFORE, it is mutually agreed by and between the undersigned parties as follows:

1. Paragraph 2, SCOPE OF WORK, of the Agreement is modified to read as follows:

> "Provider agrees to do all necessary work at its own cost and expense, to furnish all labor, tools, equipment, materials, except as otherwise specified, and to do all necessary work included in Exhibit A2 as requested. Provider acknowledges that the work plan included in Exhibit A2 is tentative and does not commit the City to request Provider to perform all tasks included therein."

2. Paragraph 3, COMPENSATION TO PROVIDER, of the Agreement is modified to read as follows:

> "a. By the 7th day of each month, Provider shall submit to the City an invoice for the total amount of work done the previous month. Pricing and accounting of charges are to be according to the fee schedule as set forth in Exhibit A2 and incorporated herein by this reference. Extra work must be approved in writing by the City Manager or his/her designee prior to performance and shall be paid on a Time and Material basis as set forth in Exhibit A2."

> "b. The total compensation under this Second Amendment to Agreement shall not exceed $545,000. Total compensation for this Agreement shall not exceed $3,387,000."

3. Except as expressly modified herein, all other terms and covenants set forth in the Agreement shall remain the same and shall be in full force and effect.

Signatures on following page

IN WITNESS WHEREOF, the parties hereto have caused this modification of Agreement to be executed on the day and year first above written.

CMG LANDSCAPE ARCHITECTURE
A California corporation

Charles Moss
President

Chris Guillard
Chief Financial Officer

CITY OF ALAMEDA
A Municipal Corporation

Jennifer Ott
City Manager

RECOMMENDED FOR APPROVAL

Signed by:
Allen Tai
E83362141C4D41A...

Allen Tai
Director, Planning, Building and
Transportation Department

APPROVED AS TO FORM:
City Attorney

Signed by:
Cara Silver
9326AF59A39F47B...

Cara Silver
Special Counsel

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 6/26/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Risk Strategies Company
2040 Main Street, Suite 450
Irvine, CA 92614

www.risk-strategies.com CA DOI License No. 0F06675

CONTACT NAME: Risk Strategies Company
PHONE (A/C, No, Ext): 949-242-9240 **FAX (A/C, No):**
E-MAIL ADDRESS: syoung@risk-strategies.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : The Hanover American Insurance Company	36064
INSURER B : Hartford Casualty Insurance Company	29424
INSURER C : Arch Insurance Company	11150
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Conger Moss Guillard, Inc.
dba CMG Landscape Architecture
444 Bryant St.
San Francisco CA 94107

COVERAGES **CERTIFICATE NUMBER:** 80686431 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	✓ **COMMERCIAL GENERAL LIABILITY** ☐ CLAIMS-MADE ✓ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ✓ PRO-JECT ☐ LOC ☐ OTHER:	✓		OZ3D617755	6/26/2024	6/26/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 1,000,000 $ 10,000 $ 2,000,000 $ 4,000,000 $ 4,000,000
A	**AUTOMOBILE LIABILITY** ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ✓ HIRED AUTOS ONLY ✓ NON-OWNED AUTOS ONLY			OZ3D617755	6/26/2024	6/26/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 2,000,000 $ $ $
A	✓ **UMBRELLA LIAB** ✓ OCCUR **EXCESS LIAB** ☐ CLAIMS-MADE ☐ DED ✓ RETENTION $ 0			OZ3D617755	6/26/2024	6/26/2025	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
B	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		72WEGBG9NJ9	7/1/2024	7/1/2025	✓ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
C	Professional Liability			PAAEP0168900	6/26/2024	6/26/2025	Per Claim: $2,000,000 Aggregate: $4,000,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Projects as on file with the insured including but not limited to De Pave Park Project.
City of Alameda is named as additional insured on the general liability policy-see attached endorsement.

DS LC 6/16/2025

CERTIFICATE HOLDER

City of Alameda
Recreation and Parks Department
2226 Santa Clara Ave.
Alameda CA 94501

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
RSC Insurance Brokerage

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 6/26/2024

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PRODUCER
Risk Strategies Company
2040 Main Street, Suite 450
Irvine, CA 92614

www.risk-strategies.com CA DOI License No. 0F06675

CONTACT NAME: Risk Strategies Company
PHONE (A/C, No, Ext): 949-242-9240 **FAX (A/C, No):**
E-MAIL ADDRESS: syoung@risk-strategies.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : The Hanover American Insurance Company	36064
INSURER B : Hartford Casualty Insurance Company	29424
INSURER C : Arch Insurance Company	11150
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Conger Moss Guillard, Inc.
dba CMG Landscape Architecture
444 Bryant St.
San Francisco CA 94107

COVERAGES **CERTIFICATE NUMBER:** 80686432 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	✓ **COMMERCIAL GENERAL LIABILITY** ☐ CLAIMS-MADE ✓ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ✓ PRO-JECT ☐ LOC ☐ OTHER:	✓		OZ3D617755	6/26/2024	6/26/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 2,000,000 $ 1,000,000 $ 10,000 $ 2,000,000 $ 4,000,000 $ 4,000,000 $
A	**AUTOMOBILE LIABILITY** ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ✓ HIRED AUTOS ONLY ✓ NON-OWNED AUTOS ONLY			OZ3D617755	6/26/2024	6/26/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) 	$ 2,000,000 $ $ $ $
A	✓ **UMBRELLA LIAB** ✓ OCCUR **EXCESS LIAB** ☐ CLAIMS-MADE ☐ DED ✓ RETENTION $ 0			OZ3D617755	6/26/2024	6/26/2025	EACH OCCURRENCE AGGREGATE 	$ 5,000,000 $ 5,000,000 $
B	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		72WEGBG9NJ9	7/1/2024	7/1/2025	✓ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
C	Professional Liability			PAAEP0168900	6/26/2024	6/26/2025	Per Claim: $2,000,000 Aggregate: $4,000,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Projects as on file with the insured including but not limited to
Alameda Point Maritime Use and Feasibility for Landscape Architectural Support Services.
City of Alameda, its City Council, boards, commissions, officials, employees, volunteers, members, officers, and directors are named as additional insureds as their interests may appear.

CERTIFICATE HOLDER

City of Alameda
2263 Santa Clara Ave.
Alameda CA 94501

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
RSC Insurance Brokerage

OAAC Adapt Project

Scope of Services for 2025 – 2026 CIP

The CMG consultant team is proposing to provide the following services to the City of Alameda to support ongoing design and engineering associated with OAAC Adapt Sea Level Rise Adaptation Projects.

BAY FARM ISLAND NEAR-TERM PROJECT

Task 1 Surveying

Record document and field surveying of the following items:

1. Cross sections from existing Trail to low tide areas offshore of the project area (topographic and bathymetric field survey).
2. Location of site features and structures, such as but not limited to: buildings, curbs, sidewalks, paths, walls, trees, and fences, surface material (A/C, concrete, ground, etc.).
3. Location of visible surface utilities, within and crossing the project area including storm and sewer manholes, catch basins, pipe sizes, rim and invert elevations will be measured if accessible.
4. Parcel boundaries for properties within and adjacent to the project area.
5. All mapping and utility location data will be provided electronically in AutoCAD.
6. The survey and mapping shall be field verified by the Surveyor's project manager prior to submittal.

Assumptions:

- The 2021 LiDAR will be used for design refinement
- Following items will need to be surveyed at a later date for 60% design:
    - Shoreline jurisdictional lines (Mean High Water, Hight Tide Line, Top of Bank)

Deliverables:

1. AutoCAD and Civil 3D survey files

Task 2 Geotechnical Investigation and Report

1. (2) Geotechnical borings
2. (4) Cone Penetration Tests
3. Preliminary Geotechnical report
4. Coordination of design refinement based on geotechnical report.

Assumptions:

- No borings below MHHW (no agency permits needed)
- Additional geotechnical effort to be provided at a later date for 60% design:
    - Geotechnical Recommendations Report

Deliverables:

1. Geotechnical Data Report

Task 3 Schematic Design Refinement and Agency Coordination

1. Refine the Schematic Design based on survey and geotechnical report, including adjustments to layout and design of project features and levee design.
2. Prepare a Preliminary Design Report that advances the Basis of Design to include the geotechnical report and survey, design refinements, and description of project elements to a level of detail appropriate for BRITT coordination meetings and consultation
3. Initiate the Bay Restoration Regulatory Integration Team (BRRIT) pre-application consultation process to identify and resolve issues early in project planning and identify additional information needed prior to the permit application process. ESA will prepare an initial estimate of jurisdictional impacts prior to the first BRRIT meeting. ESA will coordinate two BRRIT meetings including attendance, collation of read-ahead materials, follow up notes, and comment review and responses.

Assumptions:

- Consultation will be initiated once 30% design plans have been prepared.
- Up to three (3) ESA staff will attend each BRITT meeting.
- BRRIT meetings will be held virtually.
- Design Team will provide project information and exhibits.
- The geotechnical investigations are all outside of jurisdictional habitats. No BRRIT-related coordination will be required.

Deliverables:

1. Preliminary Design Report and Updated Schematic Design documents
2. BRRIT meeting agendas, presentations, meeting notes, responses to comments (all digital).
3. An initial estimate of jurisdictional impacts based on the proposed project's 30% design plans.

Compensation for the above services shall be provided on an hourly basis and shall not exceed the following amounts.

Fee Table

	Tasks	Budget	CMG	Pathways	ESA	MN	SW	EMI	Survey
1	Survey	$40,000							$40,000
2	Geotechnical Investigation and Report	$68,000				$5,000		$63,000	
3	Permitting Coordination	$40,000	$7,500		$25,000	$7,500			
4	Preliminary Design Report and SD Refinement	$130,000	$45,000	$2,500		$68,000	$14,500		
5	Expenses	$2,500	$2,500						
6	Contingency	$24,500							
	TOTAL BUDGET	**$305,000**	$55,000	$2,500	$25,000	$80,500	$14,500	$63,000	$40,000

OAAC Adapt 2025 – 2026 CIP
Scope of Services

CMG is proposing to provide the following services to the City of Alameda to support ongoing design and engineering associated with OAAC Adapt Sea Level Rise Adaptation Projects.

Geomorphology and Ecological Study
Southshore, Elsie Roemer and Bay Farm Island Northshore

Purpose: Sand movement along Crown Beach, South Shore Beach, Elsie Roemer Bird Sanctuary, and within the San Leandro Bay Estuary is a key uncertainty for the implementation of nature-based strategies.

Summary: South Shore and Crown beaches are manmade features requiring ongoing annual sand management. Understanding the natural movement of sand between the Bay and the beaches, and along the beach towards the San Leandro Bay Estuary will help inform potential natural-based pilot studies that may improve sand management and help address future sea level rise and coastal erosion. The study will leverage existing resources, including EBRPD sand management records, and include new data collection and modeling to better understand how actions such as mudflat augmentation and eelgrass restoration may reduce sediment loss and enhance sand management activities.

The study will also inform the designs along northern Bay Farm Island (BFI) and will provide sediment transport and hydrodynamic insights that may inform nature-based strategies along the San Leandro Bay shoreline.

Task 1 Project Management and Coordination

- Internal team project management and coordination
- Regular coordination and meeting attendance with the Cities of Oakland and Alameda and EBRDP (up to 5 meetings)
- Presentations to the OAAC Steering committee (up to 3 meetings).
- Coordination and meeting attendance with the BFI Near-term Project, and the South Shoreline / Elsie Roemer Committee (to be developed) (up to 5 meetings, may be concurrent with meeting attendance with the Cities of Oakland and Alameda and EBRDP to maximize efficiency and conserve budget.

Assumptions:

- This task is specific to the Geomorphology and Ecology Study and is not intended to supplement or replace the project management needs for Long-term Regional Adaptation Plan (RSAP) development.
- Presentations representing project progress to the OAAC Steering Committee, Design Review Team, or other groups will rely on the presentations prepared for the OAAC Project Partners. Presentations are anticipated to represent specific milestones (e,g., findings from wave modeling, hydrodynamic modeling) and results of the project.
- Meeting attendance may be limited to one staff member from either Pathways or ESA to conserve budget for the technical tasks. Additional non-current meetings would require additional scope and budget.

Deliverables:

- Up to 3 presentations to the OAAC Project Partners, OAAC Steering Committee, or a subset of the OAAC Steering Committee focused on these shoreline reaches.

Task 2: Data Gathering

- Pathways and ESA will gather readily available information to support the modeling and analysis efforts, including bathymetry data, water levels, long-term wind data, and updated near-term topography from the most recent 2021 LiDAR.
- ESA will collect wave data for nearshore waves within the project area to inform and supplement the wave model. Wave monitoring instruments will consist of up to two sonic wave sensors in the intertidal zone to measure nearshore wave heights – likely to consist of one at Southshore / Elsie Roemer and one near the BFI Near-term Project along Bay Farms Island's Northshore. The wave data will be post processed and made available to inform the modeling and analysis efforts.

Assumptions:

- Publicly available site conditions data has enough accuracy and resolution for the purpose of this study.
- Data collected during the Subregional Adaptation Plan (Existing Conditions Memorandum) will inform and supplement the model results.
- ESA will deploy instruments for up to 8 weeks of duration to collect continuous data for comparison of wave conditions at several locations along the site.
- There are risks associated with field data collection, especially in the marine environment. ESA maintains insurance for instruments and therefore takes the risk of damage to the hardware or loss. ESA also applies quality control procedures to reduce the possibility of malfunction. However, ESA cannot guarantee that data collection will be complete. ESA will endeavor to complete the scope of work within the estimated fee and schedule with the data collected. ESA's policy is to notify clients if a problem arises and results in the need for added effort or schedule revision, so that the appropriate remedy can be identified and implemented. ESA reserves the right to not re-deploy instruments if the risk of damage or loss, especially due to theft or vandalism, appears high.

Deliverables:

- Input to summary report (Word and graphic formats anticipated)
- Wave data (digital).

Task 3 Wave Modeling

- ESA will conduct wave modeling to characterize the wave climate along the South Shore / Elsie Roemer shoreline and Bay Farm Island Northshore. Results of the modeling will provide baseline data for use in the shoreline change assessment (Task 6) and for refinement of the BFI 30% design funded under a separate project.
- Model set up and simulation runs. We propose using a spectral wave model, the Simulating Waves and Nearshore (SWAN) model, to simulate and hindcast the historical wave climate near the project site. The model grid will be a subset of the grid developed for the larger hydrodynamic model in Task 4. The grid will be refined sufficiently to approximate high-level design concepts for the South Shore / Elsie Roemer shoreline and Bay Farm Island Northshore.
- Wave Hindcast. A lookup table that relates wind conditions to nearshore wave parameters will be developed based on SWAN model results. An historical wave time series will be developed using the lookup table.
- Sea level rise scenarios and design concepts. ESA will simulate existing conditions (baseline) and high-level design concepts for one extreme event and two sea level rise scenarios, consistent with the project sea level rise criteria and Tasks 4 and 5.
- The extreme event will be selected in consultation with Pathways (Task 4) and review of the historical record.

Assumptions:

- Model limitations from a standard spectrum wave model are acceptable.

- Design concepts will be limited to simple concepts such as large woody debris groins or habitat islands at an approximate level to inform discussion. Up to two design concepts will be modeled (consistent with Task 4).
- The modeling is intended to inform a high-level shoreline change assessment that will inform the feasibility of the design concepts to protect/maintain the shoreline as sea levels rise. The modeling is not intended to replace detailed design analysis.

Deliverables:

- Sections of summary report describing input data, model setup, and model results (Word, Excel, and graphic formats anticipated)
- Draft Presentation of Wave Analysis Results (PowerPoint)

Task 4. Hydrodynamic Modeling

- Pathways will use the San Francisco Bay Delft3D Community Model developed by the USGS/Deltares and assess the natural movement of sand between the Bay and the beaches, and along the beach towards the San Leandro Bay Estuary.
- Pathways will refine the bathymetry data sets used in the Community Model and update the bathymetry used as appropriate. The adjacent nearshore and overland areas not captured in the updated bathymetry data will be updated using the 2021 LiDAR
- Pathways will refine the model grid in the vicinity of the Oakland-Alameda project area, including along Southshore Beach, Elsie Roemer March, the northern Bay Farm Shoreline, and San Leandro Bay including Arrowhead Marsh. The grid will be refined sufficiently to resolve proposed high-level design concepts intended to retain sand and limit the natural drift of sand. The design concepts will be consistent with Task 3 and 5.
- Pathways will model up to 4 multiple periods of interest, representing typical and extreme conditions, such as:
    - The significant erosion events that occurred in winter 2024 and winter 2022/2023
    - Typical winter conditions associated with recent El Nino winters
    - Typical seasonal conditions selected based on a review of EBRPD sand management records (from Task 5).
    - Pathways and ESA will coordinate on the selection of events for the wave modeling (Task 4) and hydrodynamic modeling.
- Pathways will use particle tracking to inform sediment transport and the concept-level sediment budget (Task 6).
- The Delft3D simulations will inform
    - The natural movement of sand between the Bay and the beaches
    - The potential movements of sand towards the San Leandro Bay Estuary
    - The shoreline change assessment (Task 5).
    - How geomorphic and ecological features, such as mudflat augmentation or eelgrass restoration, may reduce sediment loss and enhance sand management activities.
- How the proposed designs along South Shore / Elsie Roemer shoreline and BFI Northshore may alter sand movement and retention, which could impact nature-based solutions and/or Arrowhead Marsh in the San Leandro Bay Estuary.

Assumptions:

- Use of the calibrated and validated Community Model will limit the need for model calibration
- Sand movement will be approximated using particle tracking simulations, and a full sediment transport model will not be developed.
- The SWAN modeling (Task 3) will not be coupled with the Delft3D modeling (Task 4) (i.e., wave results will be independent of hydrodynamics), although they can be coupled in a future effort if required.

- Up to two sea level rise scenarios and up to two high-level design concepts will be modeled (consistent with Task 3 and 5).

Deliverable:

- Sections of summary report describing input data, model setup, and model results. (Word, Excel, and graphic formats anticipated).
- Draft Presentation of Hydrodynamic Modeling Results (PowerPoint)

Task 5. Shoreline Change Assessment

- ESA will provide an assessment of past and potential future shoreline (beach and dune) change at the South Shore / Elsie Roemer shoreline and Bay Farm Island Northshore.
- This assessment will be informed by:
    - Previous site-based geomorphic observations
    - Review of shoreline change using available satellite imagery
    - Results of the wave data collection (Task 2), wave modeling (Task 3), and hydrodynamic modeling (Task 4)
    - Estimated rates of sediment transport using established, empirical coastal engineering equations.
    - A concept-level sediment budget of the Southshore and Elsie Roemer shoreline

Assumptions:

- The beach at BFI North Shore is narrow and is not well resolved in satellite imagery. Due to this lack of data, BFI Northshore area is excluded from the historic shoreline change and sediment budget analyses.
- EBRPD will provide data on historic and planned sediment placement dates, locations, and volumes at the Southshore and Elsie Roemer areas. EBRPD will also provide sand management records that note when sand management has occurred each year since the last large sand placement effort was completed.
- The results will be used to inform a conceptual model of sediment transport and will be interpreted to infer the potential influence of (up to two) design interventions (e.g. large woody debris groins or habitat islands), but these effects will not be directly modeled.
- The assessment will focus on existing conditions and up to two future sea level rise scenarios (consistent with Tasks 3 and 4).
- Pathways will provide current data from the hydrodynamic modeling (Task 4).
- Presentation of the Shoreline Change Assessment will be included within the final presentation (Task 6)

Deliverables:

- Section of summary report describing existing and future shoreline change (Word).

Task 6. Final Report

- Pathways and ESA will prepare a final summary report documenting the results of geomorphic and ecological study (Tasks 2 – 5).
- The report will characterize the overall water level, wave climate, and sediment movement in the area, including identifying areas where existing sand placed on the South Shore beach may be lost and/or retained.
- The report will also summarize how the design concepts may impact or interrupt sediment movement in the area, documenting the potential benefits and impacts of these changes.

Assumptions:

- Two rounds of review are anticipated. One round with the Cities of Alameda, Oakland, and EBRPD, and one round with the OAAC Steering Committee (or a subset of this committee focused on these shoreline reaches).

- Collated comments will be provided to Pathways and ESA.
- No outreach materials are anticipated to be developed under this study

Deliverables:

- Draft and Final Geomorphology and Ecology Study (Word and PDF formats)
- Draft and Final Presentation of Results (PowerPoint and PDF formats)

Compensation for the above services shall be provided on an hourly basis and shall not exceed the following amounts.

Fee Table

Task	Task Name	ESA	Pathways	CMG
Task 1	**Project Management and Coordination**	**$11,696**	**$18,430**	**$6,634.13**
Task 2	**Data Gathering**	**$20,646**	**$9,730**	
Task 3	**Wave Modeling**	**$29,038**	**$5,080**	
Task 4	**Hydrodynamic Modeling**	**$0**	**$50,025**	
Task 5	**Shoreline Change Assessment**	**$19,076**	**$5,080**	
Task 6	**Final Report**	**$15,544**	**$31,590**	**$6,634.13**
		$96,000	**$119,935**	**$13,268.25**
Subconsultant markup				**$10,797**
Total Fee				**$240,000**