

**FIRST AMENDMENT
AGREEMENT FOR CONSULTANT SERVICES
BY AND BETWEEN
COUNTY OF HUMBOLDT
AND
GHD, INC.
SEA LEVEL RISE ADAPTATION PLAN FOR HUMBOLDT BAY
TRANSPORTATION INFRASTRUCTURE (PHASE 1)
PROJECT NUMBER: 251007**

This First Amendment to the Agreement for Consultant Services dated February 5, 2019, by and between the County of Humboldt, a political subdivision of the State of California, hereinafter referred to as “COUNTY,” and GHD, Inc, a California corporation, hereinafter referred to as “CONSULTANT,” is entered into this _____ day of June, 2020.

WHEREAS, on February 5, 2019, COUNTY and CONSULTANT entered into an Agreement for Consultant Services (“Agreement”) regarding the provision of planning, engineering and environmental services to develop a sea level rise adaptation plan for the Eureka Slough hydrographic area pursuant to a grant agreement between COUNTY and Caltrans (“Sea Level Rise Adaptation Planning Project”); and

WHEREAS, the performance period of the Agreement for the Sea Level Rise Adaptation Planning Project would otherwise end on June 30, 2020; and

WHEREAS, additional time beyond June 30, 2020, is needed to complete the Sea Level Rise Adaptation Planning Project; and

WHEREAS, COUNTY and CONSULTANT are evaluating natural shoreline infrastructure techniques as a potential adaptation strategy for the Sea Level Rise Adaptation Planning Project; and

WHEREAS, COUNTY has secured additional funding from the National Fish and Wildlife Foundation and Ocean Protection Council to perform site characterization and prepare preliminary design for a sea level rise adaptation project utilizing natural shoreline infrastructure techniques along portions of the Eureka-Arcata Highway 101 and railroad transportation corridor (“Natural Shoreline Infrastructure Project”); and

WHEREAS, the Natural Shoreline Infrastructure Project is situated within the planning area for the Sea Level Rise Adaptation Planning Project; and

WHEREAS, the COUNTY intends to integrate the Natural Shoreline Infrastructure Project and Sea Level Rise Adaptation Planning Project for efficiency and cost-effectiveness; and

WHEREAS, the parties intend to amend certain provisions of the Agreement in order to extend the term thereof, expand the scope of services provided thereunder and adjust the allowable costs and payments set forth therein.

NOW, THEREFORE, it is mutually agreed as follows:

1. The first recital of the Agreement is hereby amended to read as follows:

WHEREAS, COUNTY, by and through its Department of Public Works – Environmental Services, desires to retain the services of CONSULTANT to assist COUNTY in

performing planning, engineering and environmental services, which are further described in Attachment A – Scope of Work and Attachment C – Supplemental Scope of Work; and

2. Article I – Introduction of the Agreement is hereby amended to read as follows:

ARTICLE I – INTRODUCTION

- A. The Project Manager for CONSULTANT will be Jeremy Svehla. The Contract Administrator for COUNTY will be Hank Seemann, Deputy Director of Public Works, or a designee thereof.
- B. The work to be performed under this contract is described in Attachment A – Scope of Work, Attachment B – Cost Proposal & Schedule of Work, Attachment C – Supplemental Scope of Work and Attachment D – Supplemental Cost Proposal & Schedule of Work, which are attached hereto and incorporated herein by reference as if set forth in full. If there is any conflict between the approved Cost Proposals and this contract, this contract shall take precedence.
- C. CONSULTANT, and its agents and employees, in the performance of this contract, shall act in an independent capacity and not as officers or employees or agents of COUNTY.
- D. Without the written consent of COUNTY, this contract is not assignable by CONSULTANT either in whole or in part.
- E. No alteration or variation of the terms of this contract shall be valid, unless made in writing and signed by the parties hereto; and no oral understanding or agreement not incorporated herein, shall be binding on any of the parties hereto.
- F. The consideration to be paid to CONSULTANT as provided herein, shall be compensation for all of CONSULTANT’s expenses incurred in the performance hereof, including travel and per diem, unless otherwise expressly so provided.

3. Article II – Statement of Work of the Agreement is hereby amended to read as follows:

ARTICLE II – STATEMENT OF WORK

The work to be performed under this contract is described in Attachment A – Scope of Work, Attachment B – Cost Proposal & Schedule of Work, Attachment C – Supplemental Scope of Work and Attachment D – Supplemental Cost Proposal & Schedule of Work.

4. Article IV – Performance Period of the Agreement is hereby amended to read as follows:

ARTICLE IV – PERFORMANCE PERIOD

- A. This contract shall go into effect on February 5, 2019, contingent upon approval by COUNTY, and CONSULTANT shall commence work after receiving notification to proceed from COUNTY’s Contract Administrator. This contract shall end on December 31, 2021, unless extended by a written amendment hereto.

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- B. CONSULTANT is advised that any recommendation for contract award is not binding on COUNTY until the contract is fully executed and approved by COUNTY.
5. Article V – Allowable Costs and Payments of the Agreement is hereby amended to read as follows:

ARTICLE V – ALLOWABLE COSTS AND PAYMENTS

- A. CONSULTANT will be reimbursed for hours worked at the hourly rates specified in Attachment B – Cost Proposal & Work Schedule and Attachment D – Supplemental Cost Proposal & Schedule of Work. The specified hourly rates shall include direct salary costs, employee benefits, overhead and fees. These rates are not adjustable for the performance period set forth in this contract. CONSULTANT shall provide separate invoices for the services rendered under Attachment B – Cost Proposal & Work Schedule and Attachment D – Supplemental Cost Proposal & Schedule of Work, respectively.
- B. In addition, CONSULTANT will be reimbursed for actual direct costs incurred other than salary costs that are identified in the Cost Proposals.
- C. Reimbursement for transportation and subsistence costs shall not exceed the rates as specified in the approved Cost Proposals.
- D. When milestone cost estimates are included in the approved Cost Proposals, CONSULTANT shall obtain prior written approval for a revised milestone cost estimate from COUNTY’s Contract Administrator before exceeding such estimate.
- E. Progress payments will be made monthly in arrears based on services provided and actual costs incurred.
- F. CONSULTANT shall not commence performance of work or services until this contract has been approved by COUNTY, and notification to proceed has been issued by COUNTY’s Contract Administrator. No payment will be made for any work performed prior to approval of this contract.
- G. This contract is of no force or effect until returned to COUNTY and signed by an authorized representative of COUNTY. No expenditures are authorized on the project and work shall not commence until the contract has been executed by COUNTY.
- H. The period of performance for the work required hereunder shall be in accordance with the dates specified in Attachment B – Cost Proposal & Work Schedule and Attachment D – Supplemental Cost Proposal & Schedule of Work. No work will be undertaken which extends beyond the expiration date of this contract.
- I. CONSULTANT will be reimbursed, as promptly as fiscal procedures will permit upon receipt by COUNTY’s Contract Administrator of itemized invoices in triplicate. Invoices itemizing all costs are required for all work performed under this contract. Invoices shall be submitted no later than forty five (45) calendar days after the performance of work for which CONSULTANT is billing, or upon completion of the work. Invoices shall detail the work performed on each milestone. Invoices shall follow the format stipulated for the approved Cost Proposals and shall reference the

contract number and project title. Credits due to COUNTY that include any equipment purchased under the provisions of Article XI – Equipment Purchase of this contract, must be reimbursed by CONSULTANT prior to the expiration or termination of this contract. Invoices shall be mailed to COUNTY’s Contract Administrator at the following address:

COUNTY: Humboldt County Department of Public Works – Environmental Services
Attention: Hank Seemann, Contract Administrator
1106 Second Street
Eureka, California 95501
Email: hseemann@co.humboldt.ca.us

- J. The total amount payable by COUNTY for all work performed hereunder shall not exceed Six Hundred Forty-Two Thousand Five Hundred Ninety-Four Dollars (\$642,594.00), unless modified by a written amendment hereto. The specific rates and costs shall be as set forth in Attachment B – Cost Proposal & Work Schedule and Attachment D – Supplemental Cost Proposal & Schedule of Work.
 - K. If CONSULTANT fails to satisfactorily complete a deliverable according to the schedule set forth in Attachment B – Cost Proposal & Work Schedule and Attachment D – Supplemental Cost Proposal & Schedule of Work, no payment will be made until the deliverable has been satisfactorily completed.
 - L. Change orders may not be used to amend this contract and may not exceed the scope of work under this contract.
6. Article XII – State Prevailing Wage Rates of the Agreement is hereby amended to read as follows:

ARTICLE XII – STATE PREVAILING WAGE RATES

- A. CONSULTANT shall comply with the State of California’s General Prevailing Wage Rate requirements in accordance with California Labor Code Section 1770, and all federal, state, and local laws and ordinances applicable to the work required hereunder.
 - B. Any subcontract entered into as a result of this contract, if for more than Twenty-Five Thousand Dollars (\$25,000.00), for public works construction or more than Fifteen Thousand Dollars (\$15,000.00) for the alteration, demolition, repair, or maintenance of public works, shall contain all of the provisions of this Article.
 - C. When prevailing wages apply to the services described herein and Attachment A – Scope of Work and Attachment C – Supplemental Scope of Work, transportation and subsistence costs shall be reimbursed at the minimum rates set by the Department of Industrial Relations (DIR) as outlined in the applicable Prevailing Wage Determination. (See <http://www.dir.ca.gov>.)
7. The Agreement is hereby amended to include Attachment C – Supplemental Scope of Work and Attachment D – Supplemental Cost Proposal & Schedule of Work, which are attached hereto and incorporated herein by reference as if set forth in full.

8. Except as modified herein, the Agreement dated February 5, 2019, shall remain in full force and effect. In the event of a conflict between the provisions of this First Amendment and the original Agreement, the provisions of this First Amendment shall govern.

IN WITNESS WHEREOF, the parties hereto have executed this First Amendment to the Agreement dated February 5, 2019, on the first date written above.

TWO SIGNATURES ARE REQUIRED FOR CORPORATIONS:

- (1) CHAIRPERSON OF THE BOARD, PRESIDENT, OR VICE PRESIDENT; AND*
- (2) SECRETARY, CHIEF FINANCIAL OFFICER OR ASSISTANT TREASURER.*

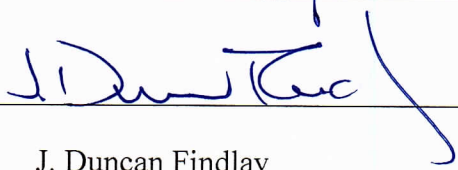
GHD, INC.:

By:  _____

Date: May 27, 2020

Name: Steven Allen

Title: Principal/Vice President

By:  _____

Date: 27 MAY 2020

Name: J. Duncan Findlay

Title: Secretary

COUNTY OF HUMBOLDT:

By: _____
Thomas K. Mattson
Public Works Director

Date: _____

INSURANCE AND INDEMNIFICATION REQUIREMENTS APPROVED:

By: _____
Risk Management

Date: _____

LIST OF ATTACHMENTS;

- Attachment C – Supplemental Scope of Work
- Attachment D – Supplemental Cost Proposal & Work Schedule

ATTACHMENT C

Supplemental Scope of Work

for

Natural Shoreline Infrastructure in Humboldt Bay for Intertidal Coastal Marsh Restoration and Transportation Corridor Protection

May 22, 2020

Project Understanding

The purpose of the project is to restore and enhance salt marsh habitat, protect transportation infrastructure, and create adaptable space for salt marsh migration. The overarching goal is to optimize ecosystem benefits and habitat resiliency, alleviate flood risks, and avoid or minimize adverse impacts. The project will integrate the natural flood risk reduction properties of salt marsh into a shoreline management strategy to help protect a critical transportation corridor along Humboldt Bay from flood hazards. The project will perform site characterization and prepare preliminary design (50%) for a project utilizing tidal benches or similar natural infrastructure techniques. The project will lay the groundwork for implementation of an innovative approach to restore and perpetuate intertidal coastal marsh, increase community resilience to flooding, and demonstrate the use of natural ecological systems for sea level rise adaptation.

Scope of Services

Task 1: Project Initiation

This task includes coordinating the integration of the Natural Shoreline Infrastructure Project with the Sea Level Rise Adaptation Project and execution of a contract amendment.

Deliverable: Executed contract amendment

Task 2: Stakeholder Engagement and Consultation

This task involves engagement with stakeholders including public agencies, environmental organizations, hunting and fishing organizations, and interested community members. Stakeholders will assist in defining the specific project goals and objectives, identifying community interests, evaluating constraints and opportunities, sharing pertinent information, refining the design process, and reviewing preliminary work products.

Humboldt County will convene a Technical Working Group composed of local scientists and engineers from public agencies with experience working on related conservation or adaptation projects. The role of the Technical Working Group is to provide guidance, recommendations, and assistance as appropriate. Six Technical Working Group meetings are planned. Humboldt County will plan, coordinate, and facilitate the Technical Working Group meetings. GHD will prepare technical content (presentation materials) and participate in the Technical Working Group meetings.

This task includes a regulatory constraints analysis of the California Coastal Act, Clean Water Act, Endangered Species Act, Porter-Cologne Water Quality Control Act,

California Environmental Quality Act, and Humboldt Bay Harbor District policies and regulations. GHD will perform the analysis, consult with agency representatives, and document the results in the Final Report.

Deliverable: Presentation materials from Technical Working Group meetings. Content for Final Report.

Task 3: Site Assessment

GHD will plan and implement the following technical studies:

Task 3.1 – Topographic and bathymetric survey

This task involves collection of topographic and bathymetric data as needed with standard real-time kinematic global position system (RTK-GPS) surveying techniques to supplement existing LiDAR and other datasets. The existing and new data will be processed to create an integrated surface model and base map.

Task 3.2 – Sediment characterization

Existing geotechnical data from the project area will be compiled and reviewed. A minimum of eight (8) sediment samples will be collected to characterize the sediment substrate within the mudflat and remnant salt marsh areas of the project area. Samples will be tested for particle size distribution, salinity, organic content, and water content. This work will support the development of specifications for the fill material to be used to create the natural shoreline features, and to ensure that the properties of the surface layer will support the target vegetation species in the re-vegetation plan (Task 4.4).

Task 3.3 – Habitat evaluation and vegetation mapping

The existing habitat types within the project area will be mapped and significant microhabitat features such as tidal channels will be identified. This task includes a survey for special-status species following the protocols established by the California Natural Resources Agency (2018). Field work will be performed during seasonally-appropriate times of the year. Vegetation within the existing salt marsh remnants will be sampled using the quadrat method. A one-square-meter quadrat will be positioned randomly across transects distributed throughout the marsh units. Species composition will be recorded and percent cover will be estimated for each cover class. Transects will be positioned to ensure adequate representation of the vegetation zones that may be present along the gradient from low marsh to high marsh. Salt marsh vegetation types will be classified to the alliance level following Sawyer (2009). The topographic data collected in Task 3.1 will be used to correlate vegetation zones with elevation ranges. This work will support the development of the re-vegetation plan and the comparison between pre- and post-project conditions (Task 4.7).

Task 3.4 – Geomorphic evaluation

The geomorphic context within the project area will be characterized. This work is needed to support a process-based restoration approach based on an understanding of the physical processes that affect the landforms and habitat in the project area. The geomorphic evaluation will include a preliminary conceptual model that identifies

historic conditions (based on historical maps and photographs), characterizes existing landforms, identifies patterns of erosion and sediment deposition, analyzes landscape evolution, and predicts the anticipated geomorphic response to post-project and future conditions. The review of historical conditions is important to address the question whether it is desirable to attempt to closely replicate historical salt marsh boundaries, or if the geomorphic context has changed significantly such that more design freedom is appropriate. The geomorphic evaluation will identify the likely sources of sediment supply and compare the anticipated sediment accretion rate with local sea level rise to predict the likely trajectory of the site. This work is important to inform the salt marsh design elevations. This task will also assess the stability of the existing salt marsh remnants and identify any areas of erosion, to help determine whether there is a need to enhance the stability of these remnants as part of the project. This task will also assess the existing drainage network and develop recommendations for drainage features within the project design.

Task 3.5 - Hydraulic analysis

The existing hydrodynamic model developed by Northern Hydrology & Engineering (2015) for Humboldt Bay will be utilized to specify tidal datums within the project area for current conditions and various sea level rise scenarios. This sub-task includes an analysis of the relationship between marsh plain elevations and the Mean Higher High Water tidal datum, which will support the project design (Task 4). This work will provide the technical basis for designing the project to provide space for salt marsh to migrate upward with sea level rise. Existing analysis from ESA (2018) and new information from the USGS regarding wind waves will be utilized to characterize the wave environment. New analysis will be performed using a suitable model (such as Simulated WAVes Nearshore [SWAN] or Wave Height Analysis for Flood Insurance Studies [WHAFIS]) to model the wave attenuation effects under existing conditions and with the project. This work is important for sizing the rock in the marsh sill portion of the project, developing the re-vegetation plan, and optimizing the geometry of the project. This subtask includes an evaluation whether the project has any potential adverse impacts on wave reflection or circulation patterns in the bay.

Deliverable: Content for Final Report

Task 4: Preliminary Design

GHD will plan and implement the following preliminary design work:

Task 4.1 - Goals and objectives

This task involves developing specific project goals and objectives which will be informed by stakeholder engagement and consultation (Task 2).

Task 4.2 - Options evaluation

This task involves a detailed evaluation of options for natural infrastructure within the project area. The differences between tidal benches and horizontal levees will be analyzed and compared by reviewing the literature and design reports from analogous projects (e.g. in San Francisco Bay). This work is important to provide a sound, viable

basis for project design. This task includes consideration of potential project elements such as a breakwater feature and/or options for stabilizing the bayward edge of the project. Another important design question is how to integrate restored/new salt marsh with existing salt marsh. This task includes evaluating construction best management practices especially with regard to minimizing impacts to water quality and sensitive species. This task includes scoping for potential material sources, such as beneficial reuse of dredged sediment. Opportunities for beneficial reuse of sediment is a regional priority and the Humboldt Bay Harbor District is developing an integrated approach by establishing storage areas, planning material handling logistics, and conducting programmatic permitting. This work is important to identify opportunities for reduced project costs and environmentally beneficial construction practices.

Task 4.3 – Engineering design

Engineering design will be performed in three iterations using AutoCAD computer aided design software. The plan set will include schematics in plan view superimposed on the base map (Task 3.1) along with typical cross-sections. The first iteration will be an initial conceptual design (10% design level) consistent with the goals and objectives and informed by early feedback from stakeholders and the technical working group (Task 2), along with the preliminary results of the site assessment (Task 3). The second iteration (35% design level) will be refined based on comments from the Technical Working Group. This design set will provide the basis for the initial hydraulic analysis (Task 3.5). The third iteration (50% design level) will reflect further refinement based on completion of the site assessment and further review from the Technical Working Group and stakeholders. The second (35%) and third (50%) design sets will include design details and estimates of material quantities, construction costs, and impact areas.

Task 4.4 – Re-vegetation plan

A plan for establishing vegetation in the restored habitat areas will be developed. The plan will specify species mix, planting methods, and maintenance activities. The plan will be informed by the vegetation mapping of the existing salt marsh remnants and evaluation of nearby reference sites. The plan will address the challenge of establishing vegetation on disturbed ground subject to frequent inundation. The plan will address the critical goal of avoiding establishment of the invasive dense-flowered cordgrass. The plan will describe the anticipated level of periodic maintenance.

Task 4.5 – Access and staging plan

An access and staging plan will be developed to identify construction methods, equipment types and sizes, material types and quantities, travel routes, and locations for site access, equipment staging, and material stockpiling. This plan is important to ensure that the project is feasible within the constraints of a tightly constrained project area and to avoid disturbance of environmental sensitive habitat areas. This plan will be needed to obtain an encroachment permit from Caltrans and a coastal development permit from the Coastal Commission.

Task 4.6 – Monitoring plan

A robust plan for effectiveness monitoring will be developed including key monitoring questions, performance criteria, parameters, scale, sampling methods, analysis approach,

and reporting. The monitoring plan will be consistent with Roni and Beechie (2013).

Task 4.7 – Habitat effects analysis

Habitat type and ecological function will be analyzed within the project area under three basic scenarios: (1) existing conditions, (2) future conditions if no action is taken, and (3) future conditions with the proposed project. This analysis will characterize the function and quality of habitat for fish (including the endangered tidewater goby, three threatened salmonid species, and species that are important for recreational and commercial fisheries), birds (including waterfowl and shorebirds), mammals, amphibians, and plant communities (including eel grass and sensitive plant species). The future-condition scenarios will be developed based on the geomorphic evaluation (Task 3.4) and projected sea level rise rates (Task 3.5). This analysis will be documented in the Final Report (Task 5).

Deliverable: 10% design plans, 35% design plans, 50% design plans, re-vegetation plan, access and staging plan, monitoring plan, content for Final Report.

Task 5: Reporting

This task includes preparation of a Final Report summarizing the work performed in Tasks 2 through 4. The report will document the basis of project design and provide recommendations for next steps to implement the project. GHD will prepare a Draft Report for review and comment by Humboldt County and the Technical Working Group. GHD will make appropriate revisions to produce the Final Report.

Deliverable: Draft Report, Final Report

ATTACHMENT D

Supplemental Cost Proposal & Schedule of Work

for

Natural Shoreline Infrastructure in Humboldt Bay for Intertidal Coastal Marsh Restoration and Transportation Corridor Protection

May 22, 2020

Task	Total Fee
Task 1 – Project Initiation	\$0
Task 2 – Stakeholder Engagement and Consultation	\$15,000
Task 3 – Site Assessment	\$80,000
Task 4 – Preliminary Design	\$105,000
Task 5 – Reporting	\$22,595
Total:	\$222,595

Notes:

1. Labor hours will be billed in accordance with GHD's effective rate sheets for 2020-2021.
2. Charges for invoicing, subcontracting, and other administrative tasks will be incorporated into the billing for Tasks 2-5.

Date	Activities / Milestones
June 2020	<ul style="list-style-type: none">• Execute contract amendment
July-September 2020	<ul style="list-style-type: none">• Initial site assessment and preliminary design tasks• Technical working group meetings #1 and #2• Stakeholder engagement• Completion of 10% design plans
October-December 2020	<ul style="list-style-type: none">• Technical working group meeting #3• Stakeholder engagement• Site assessment• Preliminary design tasks
January-March 2021	<ul style="list-style-type: none">• Technical working group meeting #4• Stakeholder engagement• Continued site assessment• Preliminary design tasks• Completion of 35% design plans

April-June 2021	<ul style="list-style-type: none">• Technical working group meeting #5• Continued stakeholder engagement• Complete site assessment
July-September 2021	<ul style="list-style-type: none">• Technical working group meeting #6• Completion of 50% design plans, supporting plans, Draft and Final Reports
October-December 2021	<ul style="list-style-type: none">• Project close-out