



July 17, 2024

Bryan Hawkins
Port Director and Harbormaster
City of Homer
4311 Freight Dock Road
Homer, AK 99603

Subject: Proposal for Homer Large Vessel Harbor Expansion Project Owner's Representative – USACE Work In Kind Amendment for Geotechnical Investigation Services with Survey

Shortly following execution of the Task Order #22-02 Homer Large Vessel Harbor Expansion Project Owner's Representative between the City of Homer (City) and HDR, the City was notified by the U.S. Army Corps of Engineers (USACE) that the General Investigation (also referred to as the Feasibility Study) for the harbor expansion project had been funded through a Congressional Directed Spending Request. This action gave the authority to the USACE to enter into a project agreement with the City and begin the Integrated Feasibility Report and Environmental Assessment (IFR/EA).

As part of the cost share agreement with USACE, the City will be providing engineering services through HDR as Work In Kind (WIK) for executing the IFR/EA. Services for coastal engineering are covered under Task #23-02. Since then, an additional WIK request has been made to include geotechnical investigations which is covered under Task #24-03. With this work, there is an opportunity which has been requested to perform topographic survey during the Task 1 Geophysical Work duration.

A revised detailed Scope of Work for Task Order #24-03 (Amended) is provided as an attachment.

Schedule

It is assumed the WIK tasks will occur over a 1-year time period and will need to coincide with the USACE Feasibility Study process. Geotechnical boring work will need to occur during a period of the year with significant light to allow for 24-hour activity.

Fee

The additional estimated fee for this work is \$48,033.44 resulting in a total fee of \$908,396.61 on a fixed fee basis. The breakdown of costs and estimated labor hours are shown on the attached Cost Estimate spreadsheet. Invoices for the work performed will be submitted monthly.

July 17, 2024

Thank you again for this opportunity to work with the City of Homer.

Sincerely,



Ronny L McPherson
Vice President
HDR Coastal and Maritime Program Lead



Matthew Stone
Vice President
Alaska Area Operations Manager

Attachments:

1. Detailed Scope of Work for Task Order #24-03 – Revised July 17, 2024
2. Shannon & Wilson Subconsultant Proposal – Dated July 17, 2024



Detailed Scope of Work for Task Order #24-03

Revised – July 17, 2024

Task 1 – Geophysical Survey

Task 1.1 Geophysical data Collection

HDR, through subcontractor Shannon & Wilson, will perform geophysical surveying utilizing sub-bottom profiling methods in the project area defined as the project alternatives footprint (to include the Favored Alternative Footprint and Other Alternatives Footprint Additions) as shown in Figure 1. A geophysical survey grid will be determined with a grid pattern or survey lines to systematically cover the survey area. The spacing between survey lines and grid nodes will be suited for the equipment used and provide the desired resolution for the target size. Geophysical lines may be adjusted in the field based on field data processing.

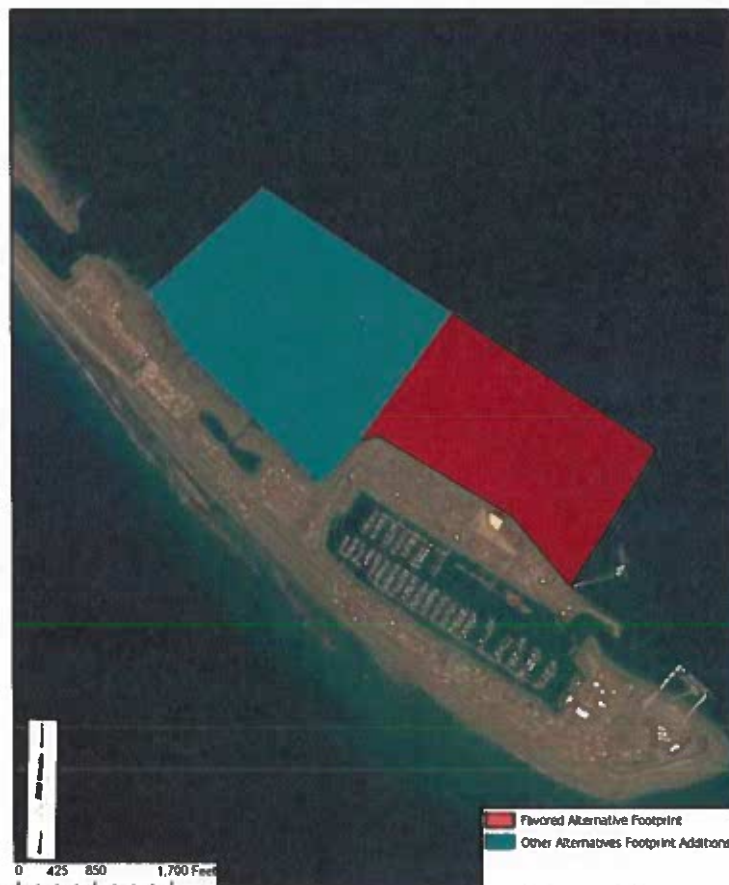


Figure 1. Geophysical survey area

Task 1.2. Geophysical Survey Report

HDR will provide a written Geophysical Survey Report that documents the geophysical survey work, data reductions and analyses, determinations of site stratigraphic conditions and any detected objects and debris, and relevant impacts on the proposed design structures. A preliminary Geophysical Survey Report will be submitted prior to Subsurface Drilling and Sampling (Task 2) activities to allow time to reassess the quantity and location of additional sampling. The final Geophysical Survey Report will be submitted in conjunction with the Geotechnical Investigation. The final report shall include, but not be limited to, the following:

- Project description.
- Purpose and scope.
- Geophysical survey work (equipment, procedures, and execution details).
- Site stratigraphy and material descriptions based on field work, data analyses, local geology, and existing information.
- Discussion of the analyses and correlations used in evaluating the field data to arrive at engineering appraisals.
- Plan view and profile view drawings of geologic cross sections for the Homer Harbor Project area. Cross section lines will be placed along proposed breakwaters and other project features. The geologic cross sections shall show the profile depth, elevation, and lateral position of stratigraphic units. Geotechnical lithology stick logs from all boreholes will be shown and scaled to the geophysical cross sections to verify changes in stratigraphic units. Interpretation will be added for the geophysical report using soil properties from the geotechnical investigation.
- Plan view drawings showing elevation contours of all major stratigraphic soil and bedrock units within the geophysical survey limits.
- Conclusions and recommendations regarding how the investigation findings would impact navigational improvements for the site, including fine grained soils and bedrock extents in the location of the modification.
- Maps, drawings, and figures to support all of the above presented work. Appendices as necessary, including but not limited to field testing data and results, analyses, photos of samples if obtained, and site working photos.
- PDF and AutoCAD drawings files showing the geophysical investigation limits and survey lines with notes describing geophysical survey equipment, procedures, execution details, coordinate point table, and list of surface or subsurface objects and debris within the defined geophysical investigation limits that are larger than 1-ft by 1-ft, which may include metal debris, sheet piling, concrete debris, boulders, and armor rock.

Task 2 – Subsurface Drilling and Sampling

Up to ten (10) boreholes extending 80 feet below mudline will be performed in the project area. This quantity is subject to change based on results of Task 1 and upon approval by the City of Homer and their partner U.S. Army of Corps of Engineers. Changes in the quantity of the boreholes will accompany an amendment to capture the change in effort of the work. The proposed drilling equipment will be able to penetrate and advance through gravel and fine-grained soils to the depths up to 80 feet below the mudline while maximizing the recovery of soil samples.

Boreholes will be placed based on the results of Task 1 and will be within the project area (Figure 1). Boreholes will be used to provide ground-truth to the geophysical survey. Proposed breakwater and preliminary harbor configuration will inform the placement of boreholes (e.g., placing boreholes in areas that are proposed to have uplands or breakwaters).

Task 2.1 Soil Sampling

Soil samples will be collected with a method that can be used to determine the in-situ density of the subsurface materials, including but not limited to SPT blow counts, split-barrel samples with liners, dual tube direct push sampling, or sonic sampling liners. Samples will be collected continuously for the first 10 feet of each boring and then at five-foot intervals to the bottom of the boreholes. If bedrock is encountered within the proposed test boring depths, rock coring must extend to the boring termination depths and a minimum of 5 feet into the bedrock. Rock core drilling operations will be performed in accordance with ASTM Standard D2113 – Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation. Core samples will be handled in accordance with ASTM D5079 Standard Practices for Preserving and Transporting Rock Core Samples.

HDR, through subcontractor Shannon & Wilson, will utilize sampling techniques that will maximize the recovery of the subsurface sediment. Enough sediment shall be collected to perform the required geotechnical index testing.

Task 2.2 Test Boring Location and Survey

Test boring locations will be identified and marked with a buoy for ease in planning and moving between test borings using the geographical coordinates provided. Actual locations will be determined when the drill is positioned on each test boring. The final horizontal and vertical coordinates for test boring locations will be provided and used for post processing. Horizontal coordinates will be referenced to Alaska State Plane Zone 4 NAD83 in U.S. survey feet and determined to the closest foot. Ground surface elevations will be referenced to MLLW in U.S. survey feet to the closest 0.1 foot. The location, identification, coordinates, and elevations of each test boring will be plotted on a map with a scale large enough to show their location with reference to other structures. Final coordinates and elevations will be tabulated on a survey summary sheet in the Geotechnical Data Report. Individual coordinates, elevation, and datums will be shown on each Exploration Log.

Lost tooling that is above the mudline will be removed. All tooling lost below the mudline will be documented in exploration logs and geotechnical data report for removal during construction activities and may be left in place.

Task 3- Laboratory Testing

Task 3.1 Laboratory

Geotechnical laboratory materials testing will be completed by a U.S. Army Corps of Engineers validated laboratory. Samples will be transported from the work site to their laboratory and select samples representative of the soil types encountered during drilling for testing.

Task 3.2 Laboratory Test Methods

Laboratory test methods will correspond to the latest addition of the referenced standard. All tests will be performed on samples selected by HDR. Table 1 provides proposed quantity and type of laboratory tests.

Table 1. Proposed type and number of soil laboratory tests

ASTM Test Procedures	Number of Tests
ASTM D6913 Standard Test Methods for Particle-Size Distribution of Soils Using Sieve Analysis	30
ASTM D7928 Standard Test Methods for Particle-Size Distribution of Fine-Grain Soils Using the Sedimentation Analysis	10
ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils	10
ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock and Mass	150
ASTM D2435 Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading	4

Task 4 – Geotechnical Data Report

Task 4.1 Geotechnical Data Report Development

HDR will provide a written report detailing the design of project elements including research, inspections, evaluations, analyses, conclusions, and recommendations. The final report will be signed and stamped by a Professional Civil Engineer registered in the State of Alaska. The report will provide results of the geotechnical field investigation and laboratory materials testing performed, followed by a detailed characterization of surface and subsurface conditions present, with specific relevancy to the project design, evaluation of all potential geologic and seismic hazards. The report will include, but not limited to the following:

- Project Description
- Purpose and Scope
- Field Exploration, Field Testing, and Laboratory Testing
- Site Conditions: Surface, Regional Geology, Regional Seismicity, and Subsurface Conditions
- Discussion based on field and laboratory results and existing information, including:
 - A description of the analyses and correlations used in evaluating the lab/field test data to arrive at engineering appraisals.
 - Seismic considerations including liquefaction potential and any other natural hazard issues that need to be addressed by the project designers.
 - Discussion of in-situ density and rock strengths for each area and soil unit encountered.
 - Interpretation of subsurface conditions based on results of geophysical survey and geotechnical boreholes.
- Figures including, but not limited to, project location map, boring location map, stratigraphic cross sections, isopach maps of different strata, and regional geology map

- Appendices, including but not limited to, field exploration logs, field testing data and results, laboratory testing reports, engineering analyses, sample photos, site working photos, and geophysical survey report.
- Final Exploration Logs: The final exploration logs will be prepared in the Bentley OpenGround database system at a scale between 1-inch equals 3 feet or 5 feet and will contain the following information:
 - Temporary I. D.
 - Permanent I. D. (assigned by Government before or after drilling.
 - Contact Amy Steiner at amy.i.steiner@usace.army.mil for permanent I.D. numbers)
 - Survey coordinates and elevation
 - Names of individuals and firms doing drilling and logging
 - Type, make and model of drill rig
 - Size and type of casing and tools
 - Water table depth(s) and elevation
 - Sampling interval
 - Laboratory soil classification following ASTM D2487
 - Field soil classification (where not lab tested) following ASTM D2488
 - Sample drive hammer weight
 - Sampling device description
 - Blow count per 6-inch interval
 - Date(s) of boring
 - Size of rock coring bit used if coring was performed
 - Description of rock encountered to include the type of rock, weathering, surface texture, lamination, discontinuity spacing, color, hardness, and rock quality designation (RQD) in accordance with ASTM D6032
 - Rock core logs will have corresponding run times, intervals, and classifications

Task 4.2 Review of Draft Geotechnical Data Report

The draft Geotechnical Data Report will be provided to the City of Homer and U.S. Army Corp of Engineers review. Review comments from the City of Homer and U.S. Army Corps of Engineers shall be submitted to HDR via email. If comments cannot be resolved in one round, a review conference may be scheduled and held. The review conference will be facilitated by HDR and is not anticipated to exceed two (2) hours.

Task 4.3 Deliverables

Task 4.2.1 Final Geotechnical Data Report

HDR will submit one Final Geotechnical Data in Adobe Portable Document Format (pdf) to the City of Homer.

Task 4.2.2 Project Files Report

July 17, 2024

Data generated from this task order will be compiled in a separate project file report. The file report will contain, but not limited to, the contract statement of work, approved work plan, quality control plan, daily reports, field exploration logs, field testing notes, sample photographs, site working photographs, comments and responses, and include native files used to generate the Final reports (including all GIS files).

HDR will provide drilling and soil testing data utilizing USACE Bentley OpenGround Cloud configured for the Homer Harbor Modification project. USACE will provide necessary permissions to HDR for entering data. HDR will enter the data for the drill holes on the project, including, but not limited to, exploratory drilling and sediment sampling.

Task 5 – Additional Survey Services

Task 5.1 Additional Survey Services

Additional topographic and hydrographic survey activities will be performed in the vicinity of the project area (Figure 1). Survey work will follow the draft Scope of Work provided by the USACE on July 1, 2024. The survey services include establishing horizontal and vertical control for the survey activities, acquiring additional vessel- and vehicle-based survey data in offshore and upland areas. Survey data (XYZ or similar) will be provided with Task 1.2 deliverables.

July 17, 2024

Mr. Ronald McPherson, PE
HDR
582 East 36th Avenue, Suite 500
Anchorage, Alaska 99503

**RE: ADDITIONAL SURVEY SERVICES, HOMER HARBOR EXPANSION PROJECT,
 HOMER, ALASKA**

Dear Mr. McPherson:

We are pleased to submit herein our proposal and cost estimate for performing additional survey services for the above referenced project. Our original scope of work included offshore hydrographic and subbottom surveys in a defined project area. We understand that the offshore survey area has been expanded and that uplands topographical survey also needs to be added to the effort. The project area includes our currently authorized under our existing contract and the areas defined by the scope of work and survey area figures provided by you on July 1, 2024.

SCOPE OF SERVICES

The effort described in this proposal consists of additional survey activities to be added to the already authorized effort. We assume that there are no changes to the originally authorized scope of work (SOW) as described in our August 31, 2023 proposal. We also assume that the effort described in this proposal will be conducted in addition to the already authorized hydrographic survey and will be carried out in accordance with the SOW forwarded by you on July 1, 2024. We believe that the geotechnical effort included herein is consistent with what was requested and the local standard of practice.

The additional services included in this proposal will be performed by our geophysical subcontractor eTrac, Inc. The services include establishing horizontal and vertical control for the survey activities, acquiring additional vessel and vehicle based survey data in offshore and upland areas. The costs also include additional processing, analysis, and reporting efforts for the additionally collected data. Additional mobilization effort is included to account for additional survey equipment to be mobilized to the site.

SCHEDULE

The costs assume that the additional survey work will take place under the same mobilization as the originally authorized work. The additional time in the field required (above that described in our August 2023 proposal) is approximately four to five days. We anticipate that this work will take place in late summer 2024. If difficulties are encountered that would affect our schedule, we will notify you and work with you to adjust the work plan as necessary. We will work closely with you to provide preliminary information on a continuing basis as it is developed by our studies.

ESTIMATED COST AND FEE BASIS

We are prepared to undertake the work under an amendment to our existing contract for professional services. Our subcontractor, eTrac, will charge standby time at 50 percent of the daily rate depending on the stage of fieldwork underway in the event that weather or other conditions outside of their control prevent them from performing their proposed work. We will inform you immediately if standby time is needed, but will also aim to conduct our work during a reasonable weather window considering local forecasts and typical weather patterns. To guide you in understanding and evaluating the nature of our work, we have also enclosed for your use Important Information about your Geotechnical/Environmental Proposal.

Should you have questions or comments or wish to revise the scope of our services, please contact the undersigned. We look forward to working with you on this project and appreciate the opportunity to be of service to you.

SHANNON & WILSON

Kyle Brennan,
PE

Digitally signed by Kyle
Brennan, PE
Date: 2024.07.17 15:35:45
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Kyle Brennan, PE
Vice President

Enc. Summary Cost Estimate (two sheets)
Important Information about your Geotechnical/Environmental Proposal



Date: July 2024

To: HDR

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL PROPOSAL

More construction problems are caused by site subsurface conditions than any other factor. The following suggestions and observations are offered to help you manage your risks.

HAVE REALISTIC EXPECTATIONS.

If you have never before dealt with geotechnical or environmental issues, you should recognize that site exploration identifies actual subsurface conditions at those points where samples are taken, at the time they are taken. The data derived are extrapolated by the consultant, who then applies judgment to render an opinion about overall subsurface conditions; their reaction to construction activity; appropriate design of foundations, slopes, impoundments, and recovery wells; and other construction and/or remediation elements. Even under optimal circumstances, actual conditions may differ from those inferred to exist, because no consultant, no matter how qualified, and no subsurface program, no matter how comprehensive, can reveal what is hidden by earth, rock, and time.

DEVELOP THE SUBSURFACE EXPLORATION PLAN WITH CARE.

The nature of subsurface explorations—the types, quantities, and locations of procedures used—in large measure determines the effectiveness of the geotechnical/environmental report and the design based upon it. The more comprehensive a subsurface exploration and testing program, the more information it provides to the consultant, helping to reduce the risk of unanticipated conditions and the attendant risk of costly delays and disputes. Even the cost of subsurface construction may be lowered.

Developing a proper subsurface exploration plan is a basic element of geotechnical/environmental design, which should be accomplished jointly by the consultant and the client (or designated professional representatives). This helps the parties involved recognize mutual concerns and makes the client aware of the technical options available. Clients who develop a subsurface exploration plan without the involvement and concurrence of a consultant may be required to assume responsibility and liability for the plan's adequacy.

READ GENERAL CONDITIONS CAREFULLY.

Most consultants include standard general contract conditions in their proposals. One of the general conditions most commonly employed is to limit the consulting firm's liability. Known as a "risk allocation" or "limitation of liability," this approach helps prevent problems at the beginning and establishes a fair and reasonable framework for handling them, should they arise.

Various other elements of general conditions delineate your consultant's responsibilities. These are used to help eliminate confusion and misunderstandings, thereby helping all parties recognize who is responsible for different tasks. In all cases, read your consultant's general conditions carefully and ask any questions you may have.

HAVE YOUR CONSULTANT WORK WITH OTHER DESIGN PROFESSIONALS.

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a consultant's report. To help avoid misinterpretations, retain your consultant to work with other project design professionals who are affected by the geotechnical/environmental report. This allows a consultant to explain report implications to design professionals affected by them, and to review their plans and specifications so that issues can be dealt with adequately. Although some other design professionals may be familiar with geotechnical/environmental concerns, none knows as much about them as a competent consultant.

OBTAIN CONSTRUCTION MONITORING SERVICES.

Most experienced clients also retain their consultant to serve during the construction phase of their projects. Involvement during the construction phase is particularly important because this permits the consultant to be on hand quickly to evaluate unanticipated conditions, to conduct additional tests if required, and when necessary, to recommend alternative solutions to problems. The consultant can also monitor the geotechnical/environmental work performed by contractors. It is essential to recognize that the construction recommendations included in a report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site.

Because actual subsurface conditions can be discerned only during earthwork and/or drilling, design consultants need to observe those conditions in order to provide their recommendations. Only the consultant who prepares the report is fully familiar with the background information needed to determine whether or not the report's recommendations are valid. The consultant submitting the report cannot assume responsibility or liability for the adequacy of preliminary recommendations if another party is retained to observe construction.

REALIZE THAT ENVIRONMENTAL ISSUES MAY NOT HAVE BEEN ADDRESSED.

If you have requested only a geotechnical engineering proposal, it will not include services needed to evaluate the likelihood of contamination by hazardous materials or other pollutants. Given the liabilities involved, it is prudent practice to always have a site reviewed from an environmental viewpoint. A consultant cannot be responsible for failing to detect contaminants when the services needed to perform that function are not being provided.

ONE OF THE OBLIGATIONS OF YOUR CONSULTANT IS TO PROTECT THE SAFETY, PROPERTY, AND WELFARE OF THE PUBLIC.

A geotechnical/environmental investigation will sometimes disclose the existence of conditions that may endanger the safety, health, property, or welfare of the public. Your consultant may be obligated under rules of professional conduct, or statutory or common law, to notify you and others of these conditions.

RELY ON YOUR CONSULTANT FOR ADDITIONAL ASSISTANCE.

Your consulting firm is familiar with several techniques and approaches that can be used to help reduce risk exposure for all parties to a construction project, from design through construction. Ask your consultant, not only about geotechnical and environmental issues, but others as well, to learn about approaches that may be of genuine benefit.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland

