

CITY OF UNALASKA
UNALASKA, ALASKA

RESOLUTION 2021-56

A RESOLUTION OF THE UNALASKA CITY COUNCIL AUTHORIZING THE CITY MANAGER TO ENTER INTO AN AGREEMENT WITH HDR ENGINEERING, INC. TO PREPARE A COST/BENEFIT ANALYSIS FOR THE CAPTAINS BAY ROAD AND UTILITIES IMPROVEMENTS PROJECT IN THE AMOUNT OF \$234,019.75

WHEREAS, the Captains Bay Road and Utilities Improvements Project is an approved component of the City of Unalaska Capital & Major Maintenance Program; and

WHEREAS, the Unalaska City Council directed Staff to arrange for the preparation of a Cost/Benefit Analysis to assist with decision making for the Project; and

WHEREAS, Staff publicly advertised a Request for Proposals to prepare a Cost/Benefit Analysis and received two (2) proposals; and

WHEREAS, HDR ENGINEERING, INC., an experienced engineering firm, was determined through a transparent and impartial scoring process to be the most qualified firm to perform the work; and

WHEREAS, funding is available in the Capital Project budget to award the work.

NOW THEREFORE BE IT RESOLVED that the Unalaska City Council authorizes the City Manager to enter into an Agreement with HDR ENGINEERING, INC., to perform a Cost/Benefit Analysis for the Captains Bay Road and Utilities Improvements Project for \$234,019.75.

PASSED AND ADOPTED by a duly constituted quorum of the Unalaska City Council on August 24, 2021.



Vincent M. Tutiakoff, Sr.
Mayor

ATTEST:



Marjie Veeder, CMC
City Clerk



MEMORANDUM TO COUNCIL

To: Mayor and City Council Members
From: Tom Cohenour, Director, Department of Public Works
Through: JR Pearson, Acting City Manager
Date: August 24, 2021
Re: Resolution 2021-56: Authorizing the City Manager to enter into an agreement with HDR Engineering, Inc. to perform a Cost/Benefit Analysis for the Captains Bay Road and Utilities Improvements Project in the amount of \$234,019.75

SUMMARY: Resolution 2021-56 will award the preparation of a Cost/Benefit Analysis for the Captains Bay Road and Utilities Project to HDR Engineering, Inc., at a cost of \$234,019.75.

PREVIOUS COUNCIL ACTION: The FY19 Capital Budget, Ordinance 2018-04, approved and adopted on May 22, 2018, initiated the project with \$250,000 from the General Fund. Budget Amendment, Ordinance 2018-08, passed on July 24, 2018, provided an additional \$1,000,000 from the General Fund. Ordinance 2019-07, the FY20 Capital Budget, provided a further \$750,000 from the General Fund. On July 10, 2018, via Resolution 2018-48, the design work for the Project was awarded to HDL Engineering Consultants, LLC, for \$195,868. Change Orders to HDL's contract total \$1,237,080, for a total contract value of \$1,432,948.

BACKGROUND: The Captains Bay Road and Utility Improvements Project consists of approximately 7,000 feet of paving and other improvements from the intersection of Captains Bay and Airport Beach Roads to the Westward Seafoods facility, plus an additional 6,696 feet of paving, utility upgrades, utility extensions, and other improvements along Captains Bay Road from Pyramid Valley Road to the entrance to Offshore Systems' facility where the City right-of-way ends. Due to the extensive, complicated, and expensive nature of this construction project, Staff was directed by Council to hire a consultant to perform a Cost/Benefit Analysis of the Project.

DISCUSSION: Staff sent a Request for Proposals (RFP) to perform a Cost/Benefit Analysis via email directly to several engineering firms and posted the document on the City's website. Two firms submitted proposals in response to the RFP: (1) Northern Economics in association with HDL Engineering Consultants LLC; and (2) HDR Engineering, Inc. City staff reviewed and scored the proposals utilizing the criteria set out in the RFP, and HDR's proposal was selected as the best organized and most responsive proposal. Staff requested HDR provide a Price Proposal to perform the work and their Price Proposal of \$234,019.75 was deemed fair and reasonable.

HDR's proposal includes assistance to prepare the most appropriate Federal Infrastructure Grant Application once the final Cost/Benefit Analysis is complete. In most years, the USDOT issues a Notice of Funding Opportunity (NOFO) in late January or early February of each year, establishing the grant requirements of each of the different grant programs.

Upon issuance of the Federal NOFO, HDR will:

- Identify the most appropriate grant opportunity
- Work with the City to identify the most feasible segment of the Captains Bay Road project

- Use the newly completed Cost/Benefit Analysis to develop a grant application as the basis for the application package

ALTERNATIVES: Council directed Staff to obtain a Cost/Benefit Analysis on the Project. Council could elect to re-advertise the RFP, decide not to move forward with the Cost/Benefit Analysis, or other options as they deem appropriate.

FINANCIAL IMPLICATIONS: As of this writing, the Project's total available budget is \$496,206.

LEGAL: Not Applicable

STAFF RECOMMENDATION: Staff recommends Council adopt Resolution 2021-56 and award the Cost/Benefit Analysis to HDR for \$234,019.75.

PROPOSED MOTION: I move to approve Resolution 2021-56.

CITY MANAGER COMMENTS: I recommend Council approve Resolution 2021-56.

ATTACHMENTS:

1. [Request for Proposals](#)
2. [Northern Economics/HDL Proposal](#)
3. [HDR Proposal](#)
4. [Scoring Sheet Summary](#)
5. [Form of Agreement with Fee Proposal](#)



REQUEST FOR PROPOSALS

Qualified Architectural / Engineering / Economics Services
to Perform a
Cost/Benefit Analysis
for the
Captain's Bay Road & Utilities Improvements Project

Issue Date: June 11, 2021

Due Date: July 15, 2021

If Questions arise, contact the following:

Lori Gregory, City of Unalaska, Administrative Office Manager, at 907-581-1260
Tom Regan, Regan Engineering, at 360-903-5064, tom@reganengineering.com

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I. PURPOSE OF THE COST/BENEFIT ANALYSIS

The City of Unalaska is soliciting Requests for Proposals from qualified firms to conduct a Cost/Benefit Analysis for the Captain's Bay Road & Utilities Upgrades Project (The Project). The Project will construct drainage, utilities, and pavement on Captains Bay Road from Airport Beach Road to Offshore Systems, Inc, a distance of 2.6 miles. The typical road section would include two 13-foot-wide paved travel lanes, 2-foot-wide paved shoulders, ocean side rolled curb and gutter and a 6-foot-wide asphalt walkway. The Project would also include utility relocations/upgrades/extensions (electrical, communications, sanitary sewer, and potable water) and the installation of street lighting. Considering the high cost of completing the above summarized improvements, The City desires a professional systematic evaluation of the economic advantages (benefits) and disadvantages (costs) provided by each of the 6 phases of the improvements. It is anticipated that The Project will be completed at an estimated total cost of \$54,000,000.

The results from the analyses will be used to determine if one or more of the 6 phases should be pursued or not. See Scope of Services in Section III for phasing breakdown.

II. DESCRIPTION OF EXISTING CONDITIONS

This description is provided for general informational purposes only and is not a substitute for site inspection and completion of other necessary due diligence by interested respondents. Respondents must make their own independent assessment of the conditions and shall not rely on any representation, description, or diagram provided by the City in preparing their proposal.

The City of Unalaska has about 4,500 permanent residents and supports the largest seafood industry in the U.S. in terms of volume. During various seafood processing seasons, the total population may swell to more than 8,000 due to an influx of transient employees hired to work for the seafood processors.

Captains Bay Road is a high traffic area of heavy vehicles that are used by the fishing and support industries which are vital to the community's economic welfare. During the public meetings regarding the 2011 Road Improvement Master Plan, residents and industry representatives discussed the hazards that the high road crown, which is needed for adequate drainage, creates for the large trucks and school buses traveling the existing gravel road. In addition, the gravel surface cannot sustain the heavy truck traffic and deteriorates to potholes and washboard conditions shortly after grading, causing significant wear and tear and damage to the commercial vehicles. These conditions are compounded by the narrow road width and sharp curves in several sections of the road.

Captains Bay Road was originally constructed by the U.S. military and is a relatively flat gravel surfaced road with shot rock base from the adjoining cliffs. In general, it is adjoined by a rock

cliff on the inland side and armor stone clad coastline on the shore side. The shot rock is underlain with bedrock, very shallow in some locations, and there appears to be a shallow rock shelf beneath the road at the former coastline. Various locations may be underlain with native soils, some of which can be unsuitable for foundations.

At intervals the terrain opens up at the outlets of various creeks and drainages into flatter areas of which the larger areas are developed. Captains Bay Road serves as a primary transportation route for Westward Seafoods, Alaska Chadux Network, North Pacific Fuel, Offshore Systems, Trident Seafoods, Alaska Marine Lines, Bering-Shai Rock & Gravel, other small businesses as well as residential concerns. Many of the employees of the industries do not own vehicles and regularly walk along the road. ADOT traffic counts measured average daily traffic of 1,057 and 2,100 daily vehicle miles traveled in 2013.

The extent of the work is from the intersection of Captains Bay Road with Airport Beach Road to the entrance of Offshore Systems, Inc. facility, totaling approximately 13,696 feet.

Intersection of Captains Bay Road and Airport Beach Road

The intersection of Airport Beach Road and Captains Bay Road is a heavily traveled intersection commonly known as Agnes Beach. The pedestrian access is an awkward transition from the shore side of Captains Bay Road walkway to the walkway on the opposite side of Airport Beach Road leading to the South Channel Bridge and Amaknak Island.

Agnes Beach to Pyramid Valley Road (Westward Seafoods)

Agnes Beach to Westward Seafoods had 35 KVA electrical power installed in 2017. The 35 KVA line also branches to feed Pyramid Creek Road which was installed in 2013. Above ground electrical gear is predominantly installed on the coastal side and all conduits are below ground.

Communications spares were installed with both the 2013 and 2017 35 KVA upgrades. They are City of Unalaska owned. TelAlaska installed fiber optics cable in their existing conduits in 2017 which closely follow the City of Unalaska electrical gear.

Local speed limits are unlikely to exceed 30 mph.

Streetlights will be installed at 200' intervals on the ocean side.

The existing drainage structures are a mixture of pipe culverts.

The sanitary sewer is a 6" diameter ductile iron force main installed in 1989 along the cliff side.

The water main is 24" Class 52 ductile iron installed in 1989.

Westward Seafoods to Offshore Systems, Inc

The 35 KVA electrical power installed in 2017 ends at the Westward Seafoods Powerhouse at the entrance to the facility. There is a 15 KVA service extension to the North Pacific Fuel facility.

The sanitary sewer is the 6" diameter ductile iron force main installed in 1989 originating in a lift station located on an easement within the Westwards Seafoods facility. There are gravity sanitary sewer lines with manholes located in the Westward Seafoods area.

The water main water main installed in 1989 terminates in the Westward Seafoods Facility near the entrance to the facility and becomes a private 16" diameter main.

There are a great deal of private utilities in the North Pacific Fuel Facility crossing the ROW.

There is a tight corner against a particularly high cliff overhanging the ROW known as Deadman's Curve.

The bridge over Pyramid Creek is fairly new and does not need replacement.

The City of Unalaska committed \$2,000,000 for engineering and design.

Cost estimate based on 35% design is \$54,000,000.

Grant funding to complete the project has been applied for but not yet secured.

For detailed information, see **Attachment A**, Executive Summary with 65% partial plan set. Complete 65% plan set available upon request.

III. SCOPE OF SERVICES

Respondents shall provide a narrative description of the methods proposed to accomplish a Cost/Benefit Analysis Report that addresses each of the 6 phases of The Project individually. Describe the Firm's qualifications to perform the requested services including the following key elements outlined below:

1. Perform a Cost/Benefit Analysis of each of the following aspects of the Project:
 - A: Vehicle safety improvements (realignment of existing roadway)
 - B: Pedestrian safety improvements (asphalt pathway and streetlights)
 - C: Utility Extension (water, sewer, electric)
 - D: Paving of road surface
2. Perform the cost/benefit analysis for each segment of Captain's Bay Road
 - a. Airport Beach Road to Westward Seafoods(STA 100 to STA 168)
 - b. Westward Seafoods to North Pacific Fuel (STA 168 to STA 220)
 - c. North Pacific Fuel to Offshore Systems, Inc (STA 220 to STA 235)
3. Illustrate the effects of the investments in monetary terms and account for the accrual of benefits projected year by year, 20 years into the future, compared to the short term construction costs.

4. Produce a Cost-Benefit Analysis of transportation related elements that can be monetized such as travel time costs, vehicle operating costs, safety costs, and ongoing maintenance costs.
5. Evaluate future economic development potential for areas served by Captains Bay Road.
6. Identify potential funding sources (grants/cost-sharing/low interest loans) for each of the 6 phases.
7. Identify and evaluate potential use of Local Improvement Districts as funding sources.
8. Identify and evaluate potential effects of property tax assessments as they relate to future economic development for areas served by Captains Bay Road.

IV. TIMELINES AND PRESENTATION OF WORK PRODUCT

- | | | |
|----|---------------------------------|----------------|
| A. | Submittal of proposals due: | July 15, 2021. |
| B. | Interview selected finalists: | July 19, 2021. |
| C. | Award of Contract: | July 27, 2021. |
| D. | Anticipated performance period: | 4 months. |

The final report should be presented to the Unalaska City Council in Unalaska, Alaska on December 14, 2021. The City may, in its sole discretion, extend any or all timelines set forth herein.

V. PROPOSAL REQUIREMENTS

It is expected that each respondent will undertake all inspections or investigations reasonably deemed necessary to become thoroughly acquainted with the project prior to preparation of a proposal. Consultants should demonstrate the professional/technical expertise necessary to accomplish the services. Unique solutions are encouraged which would result in a marked advance in scheduling, cost savings, or would use a state-of-the-art technique. For purposes of comparison, any unique solutions proposed should be made supplemental to, and not instead of, the Scope of Work as outlined.

To achieve a uniform review process and obtain the maximum degree of comparability, it is required that proposals be organized in the manner specified below.

- A. Title Page: Show the Request for Proposal subject, the name of the firm, local address, telephone number, name of contact person, and the date.
- B. Table of Contents: Identify the material clearly by section and page number.
- C. Letter of Transmittal: Limit to no more than two printed pages. Briefly state the firm's understanding of the services to be provided and include the names of persons who will

be authorized to make representations for the firm, their titles, addresses, and telephone numbers. This letter must be signed by an individual who has the authority to bind the firm.

D. Qualifications/Proposal for Work as outlined in the rating criteria below.

Proposals should be organized to address the following rating criteria in a clear and concise manner. Proposal lengths should be as short as practical and all material included should be germane to the project. All drawings or documentation in support of the proposal must be complete at the time of submittal.

1. Professional Qualifications: Briefly describe the proposed methodology used to complete the Condition Assessment. The descriptions should be clearly expressed and should reflect the major, individual elements of the overall effort set out as tasks to be accomplished. The proposal should be logical, reasonable, and should indicate an understanding of the project.
2. Schedule and Deliverable Products: A schedule should be included, which represents the consultant's reasoned estimate of the time required for completion of each task. The schedule should be related to the Scope of Work. Deliverable products should be discussed and approximate submission dates included on the schedule.
3. Team Experience: Describe briefly the type of firm or firms comprising the project team and briefly explain areas of technical competence. Give specific examples of only related past projects, annotating those projects that parallel this proposal.

Identify and include the resumes for the partners, managers, and supervisors who will work on the project.

The satisfactory completion of similar projects of equal size and complexity will be an important element in the proposal's evaluation. Include information on all subcontractors that will be used.

The City reserves the right to approve or disapprove the use of any or all subcontractor(s).

VI. PROPOSAL SUBMISSION REQUIREMENTS

One complete hard copy of proposal along with one electronic copy in PDF format must be submitted to the Office of the City Clerk by 2:00 P.M., July 15, 2021. Tele-faxed proposals will not be accepted. It is the respondent's sole and independent responsibility to timely submit their proposals and respondents assume the risk of delays in delivery of mail or delay or interruption of electronic transmissions. Note that mail service to Unalaska is regularly delayed

due to bad weather. The City may, in its sole discretion, relax or extend the submission deadline if reasonably deemed necessary in the interest of justice and fair administration.

The qualifications and proposals must be in a package clearly marked Captains Bay Road – Cost Benefit Analysis – Proposal and submitted to:

Office of the City Clerk
City of Unalaska
43 Raven Way
P.O. Box 610
Unalaska, AK 99685

VII. PROPOSAL EVALUATIONS AND SELECTION PROCESS

The factors to be evaluated and the points available for each are as follows:

- A. The presentation and completeness of the proposal and the proposal's responsiveness in clearly stating an understanding of the work to be performed, including evidence of adequate planning and commitment of staff resources (maximum 25 points).
- B. Professional Qualifications: The qualifications and experience of the individuals who will be assigned to the project (maximum 25 points).
- C. Schedule and Deliverable Products: (maximum 25 points)
- D. Team Experience: The firm's experience with similar engagements (maximum 25 points).

VIII. OTHER ITEMS

The City reserves the right to reject any or all proposals received, or to negotiate for terms and conditions that may end up substantially different from the initial proposal received.

The selection of a successful proposal shall be at the sole discretion of the City of Unalaska. No proposed agreement between the City and any proposer shall be effective until approved by the City Council of the City of Unalaska and signed by the City Manager or authorized City official.

The City is not liable for any costs incurred by proposers in preparing or submitting proposals.

In submitting a proposal, each proposer acknowledges that the City shall not be liable to any person for any costs incurred therewith or in connection with costs incurred by any proposer in anticipation of City Council action approving or disapproving any agreement without limitation.

Nothing in this request for proposal or in subsequent negotiations creates any vested rights in any person.

Payment will be made upon receipt of detailed invoices listing specific activities for which the charge is being made.

Relationship of Parties: The contractor shall perform its obligations hereunder as an independent contractor of the City. The City may administer the contract and monitor the architect firm's compliance with its obligations hereunder. The City shall not supervise or direct the architect firm other than as provided in this section; provided, however, that nothing in this paragraph shall preclude the City from insisting on complete and timely performance of obligations under the contract.

Nondiscrimination: The contractor will not unlawfully discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, age, sex, marital status, or mental or physical handicap.

The contractor shall state, in all solicitations for employees to work on contract jobs, that all qualified applicants will receive consideration for employment without unlawful discrimination based upon race, color, religion, national origin, ancestry, age, sex, marital status, or mental or physical handicap.

Permits, Laws and Taxes: The contractor shall acquire and maintain in good standing all permits, licenses, and other entitlements necessary to its performance under this contract. All actions taken by the contractor under this contract shall comply with all applicable statutes, ordinances, rules, and regulations. The contractor shall pay all taxes pertaining to its performance under this contract.

Required Insurance: The contractor shall carry and maintain throughout the life of this contract, at its own expense, insurance not less than the amounts and coverage herein specified, and the City, its employees, agents, and officials, both elected and appointed, shall be named as additional insured under the insurance coverage so specified and where allowed with respect to the performance of the work. There shall be no right of subrogation against the City or its agents performing work in connection with the work, and this waiver of subrogation shall be endorsed upon the policies. Insurance shall be placed with companies acceptable to the City; and these policies providing coverage thereunder shall contain provisions that no cancellation or material changes in the policy relative to this project shall become effective except upon 30 days prior written notice thereof to the City.

Prior to commencement of the work, the contractor shall furnish certificates to the City, in duplicate, evidencing that the Insurance policy provisions required hereunder are in force. Acceptance by the City of deficient evidence does not constitute a waiver of contract requirements.

The contractor shall furnish the City with certified copies of policies upon request. The minimum coverages and limits required are as follows:

Workers' Compensation insurance in accordance with the statutory coverages required by the State of Alaska and Employers Liability insurance with limits not less than \$1,000,000 and, where applicable, insurance in compliance with any other statutory obligations, whether State or Federal, pertaining to the compensation of injured employees assigned to the work, including but not limited to Voluntary Compensation, Federal Longshoremen and Harbor Workers Act, Maritime and the Outer Continental Shelf's Land Act.

Commercial General Liability with limits not less than \$1,000,000 per Occurrence and \$2,000,000 Aggregate for Bodily Injury and Property Damage, including coverage for Premises and Operations Liability, Products and Completed Operations

Liability, Contractual Liability, Broad Form Property Damage Liability, and Personal Injury Liability.

Commercial Automobile Liability on all owned, non-owned, hired, and rented vehicles with limits of liability of not less than \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage per each accident or loss.

Umbrella/Excess Liability insurance coverage of not less than \$1,000,000 per occurrence and annual aggregate providing coverage in excess of General Liability, Auto Liability, and Employers Liability.

If work involves use of aircraft, Aircraft Liability insurance covering all owned and non-owned aircraft with a per occurrence limit of not less than \$1,000,000.

If work involves use of watercraft, Protection and Indemnity insurance with limits not less than \$1,000,000 per occurrence.

Professional Liability insurance with limits of not less than \$1,000,000 per claim and \$1,000,000 aggregate, subject to a maximum deductible \$10,000 per claim. The City has the right to negotiate increases of deductibles subject to acceptable financial information of the policyholder.

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, officials, employees, and volunteers; or the contractor shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration, and defense expense.

All insurance policies as described above are required to be written on an "occurrence" basis. In the event occurrence coverage is not available, the contractor agrees to maintain "claims made" coverage for a minimum of two years after project completion.

If the contractor employs subcontractors to perform any work hereunder, the contractor agrees to require such subcontractors to obtain, carry, maintain, and keep in force during the time in which they are engaged in performing any work hereunder, policies of insurance which comply

with the requirements as set forth in this section and to furnish copies thereof to the City. This requirement is applicable to subcontractors of any tier.



Captains Bay Road Paving and Utility Extension

City of Unalaska, Alaska



Executive Summary

Project Need: Captains Bay Road Is:

- Flat, narrow, gravel-surfaced coastal road
- Primary transportation route for business traffic
- Supports the largest (by tonnage) seafood industry in the United States
- Serves Westward Seafoods, North Pacific Fuel, Northland Services, Alaska Marine Lines, and Offshore Systems, Inc.
- Heavily traveled by truck traffic associated with fishing and support industries
- Receives approximately 1,200 total vehicles daily
- A safety hazard for pedestrians near large trucks on narrow road
- Frequent rock slides off tall, steep cliffs is a safety hazard for pedestrians and vehicles

Project Description: This Project Will:

- Improve storm drainage systems to minimize sediment impact on fish
- Extend/upgrade electrical, water, sewer, and comms utilities in support of fishing industry
- Enhance pedestrian safety by installing a 6 foot wide walkway
- Increase nighttime visibility/safety by installation of street lighting
- Improve traffic flow by upgrading 2.6 miles of roadway to current design standards
- Reduce road and vehicle maintenance costs
- Provide public utilities for current and future development

Project Status: As of April 9, 2019

- Design firm selected
- Preliminary work completed by design firm:
 - Surveying
 - geotechnical investigation
 - rock mapping
 - Existing utilities located and mapped
 - Environmental overview study
 - Identified design criteria
 - Studied alternate roadway alignment options
 - Prepared preliminary roadway design
 - Prepared preliminary cost estimate
- Designated by City Council resolution as the City of Unalaska's number one funding priority
- Statewide Transportation Improvement Program (STIP) funding application in process
- Preliminary total project cost estimate is \$59,000,000
- Project to be phased over 3+ years



CITY OF UNALASKA

Captains Bay Road Paving and Utility Extension

City of Unalaska Project No. 19201

Project Scope

The City of Unalaska has contracted with HDL Engineering Consultants, LLC, (HDL) to provide professional engineering services for paving and utility extensions on Captains Bay Road (CBR). In general, the project will:

- Pave CBR 30 feet wide for approximately 7,000 feet, from Airport Beach Road past Westward Seafoods. Include a 6-foot wide pedestrian walkway and illumination on the shore side.
- Extend and upgrade approximately 6,700 feet of utilities from Pyramid Creek Road to the end of CBR, including electrical, communications, sewer, and water.
- Optionally extend paving another 6,400 feet to the end of the roadway at Offshore Systems, including the pedestrian walkway and illumination.
- Upgrade the roadway to current design standards for criteria such as roadside clear zones, superelevation on curves, and stopping sight distance.

In the first phase of the project, HDL performed surveying, conducted a geotechnical investigation with rock mapping, mapped utilities, provided an environmental overview study, prepared technical memorandums identifying design criteria for the roadway and utilities, and prepared a preliminary roadway design and a construction cost estimate. After initial review, HDL prepared additional preliminary roadway designs and cost estimates to study alternative alignments. HDL will perform additional surveying, expand the geotechnical investigation, and prepare roadway plans, specifications, and estimates for the selected alignment. HDL will also assist to obtain permits and to acquire needed right of way and easements for the project.



Project Purpose and Need

The purpose of the project is to improve traffic and pedestrian safety, reduce road and vehicle maintenance costs, and provide public utilities for current and future development.

CBR is a relatively flat, narrow, gravel-surfaced coastal road that serves as the primary transportation route for businesses supporting the largest (by tonnage) seafood industry in the US, including Westward Seafoods, North Pacific Fuel, Northland Services, Offshore Systems, and several smaller businesses, as well as a residential area. The road is heavily traveled by truck traffic associated with fishing and supporting industries (estimated at 10% of 1,200 total vehicles per day). The truck traffic exacerbates the typical maintenance issues of gravel roads, and the relatively high travel-speeds on the frequently uneven gravel surface causes safety concerns. Additionally, the narrowness and proximity to tall rock faces poses a safety hazard associated with rock fall.

Many industry employees are transient and do not own vehicles in Unalaska; thus, they regularly walk along the roadway shoulder. The combination of frequent rough road conditions, higher traffic speeds, large trucks, and pedestrians creates a safety hazard.



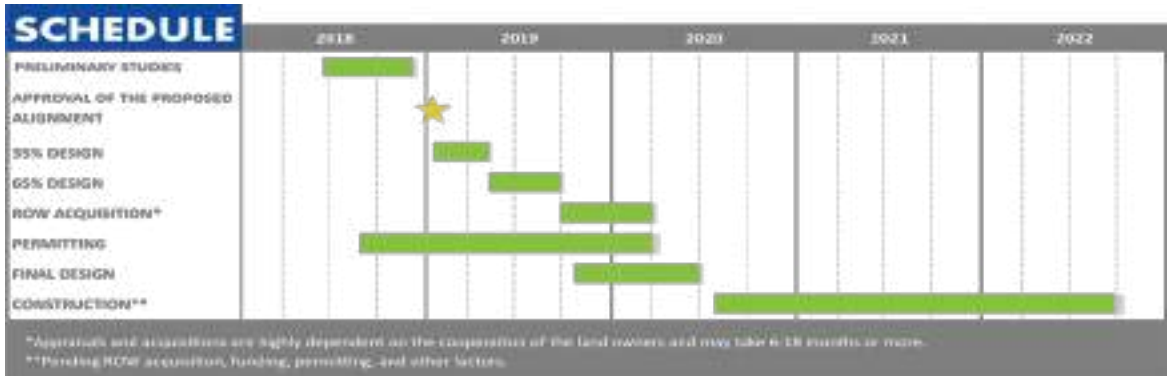
Fact Sheet

The city water distribution and wastewater collection systems extend only to Westward Seafoods. The lack of public water and sewer beyond Westward Seafoods limits development in the area. Although North Pacific Fuel is served with public water from a private pipeline starting near the Pyramid Water Treatment Facility, this pipeline is known to leak and waste significant quantities of stored and treated city water. This project will facilitate elimination of the private pipeline and the associated water loss, and may eliminate the need to build a second chlorine contact (CT) tank.

Roadway Design Constraints

City staff and HDL have identified the following roadway design constraints:

- Provide realignment and general straightening for curve radii and sight distances using a 40 mph design speed, anticipating a signed 30 mph speed limit, except through Westward Seafoods and North Pacific Fuel, use 20 mph design speed.
- Provide parking and access for traditional and subsistence uses and access for adjacent property owners.
- Minimize tall rock cuts by moving the roadway seaward where necessary; scale any unsafe rock overhangs.
- Minimize ocean fills.
- Minimize easement and right-of-way acquisitions.
- Reuse the Pyramid Creek bridge.
- Improve Airport Beach Road and Pyramid Creek Road intersections, including ADA upgrades.



Funding and Cost

\$2 Million

The City of Unalaska has approved ~~\$1.25 million~~ for design and initial project costs and has identified a rough overall project cost of \$24 million in its Capital Improvement Plan.

Preliminary Estimated Project Cost

Realignment, paving, and related work from Airport Beach Road through Westward Seafoods	\$15,000,000
Utility extension and related work from Westward Seafoods through NPF	\$ 7,000,000
Realignment, paving, and related work from Westward Seafoods through NPF	\$29,000,000
Utility extension and related work from NPF to OSI	\$ 3,000,000
Realignment, paving, and related work from NPF to OSI	\$ 5,000,000
Total	-\$59,000,000

Revised Estimate = \$54,000,000



Captains Bay Road

2.5 miles from Agnes Beach to Offshore Systems





Most industry employees are transient and do not own vehicles in Unalaska; thus they regularly walk along the roadway shoulder. The combination of frequent rough road conditions, higher traffic speeds, heavy truck traffic mixed with large numbers of pedestrians create a safety hazard.





Captains Bay Road is flat, narrow, hugs the cliff, and is very curvy as it follows the shoreline. These features require slow moving traffic, continual maintenance, and unsafe pedestrian / driving conditions.

This is the only transportation route for Westward Seafoods, North Pacific Fuel, Northland Services, Offshore Systems, and Alaska Marine Lines all of which support the seafood industry.





The narrow road and proximity to tall rock cliffs poses very serious daily safety hazards associated with falling rock.



Captains Bay Road Paving and Utility Extension

Unalaska, Alaska

Phase 1: Safety Improvements

Description: The first phase of this 7 phase project will eliminate the danger posed by tall rock cliffs by drilling, blasting, and shaving the sheer rock face back at a stable angle. The sheer cliffs continue shedding small rocks to large boulders onto the driving surface creating hazards for pedestrians and vehicles associated with falling rock. The first phase will also straighten very curvy sections of the roadway that snake along between the ocean and the rock cliffs. The curvy roadway is especially dangerous in winter when roads ice up.



Cracks in the cliff face collect water that freezes in the winter causing “ice-jacking” which breaks off truck sized boulders that land on the road.



Phase 1 work will also straighten curvy sections of the roadway which are dangerous in summer and treacherous in winter with snow and ice accumulations.

Project Title: Unalaska - Captains Bay Road and Utility Improvements

TPS Number: 59616

Priority: 1

Agency: Commerce, Community and Economic Development
Grants to Municipalities (AS 37.05.315)

Grant Recipient: Unalaska

FY2022 State Funding Request: \$4,000,000

Future Funding May Be Requested

Brief Project Description:

This project will provide drainage improvements, paving, and utilities upgrades to Captains Bay Road in Unalaska, Alaska. Unalaska City Council has identified this project as the number one project funding priority.

Funding Plan:

Total Project Cost:	\$54,000,000	
Funding Already Secured:	(\$2,000,000)	City Funding Allocated
FY2022 State Funding Request:	(\$4,000,000)	
Project Deficit:	\$48,000,000	

Explanation of Other Funds:

The City has funded \$2,000,000 (in FY19-FY20) to complete design, geotechnical investigation and permitting. \$4,000,000 requested in FY22 to complete Phase 1 Safety Improvements. Additional funding will be requested in a phased approach.

Detailed Project Description and Justification:

This project will construct drainage, utilities, and pavement out Captains Bay Road to the entrance of Offshore Systems, Inc. (OSI). This will involve approximately 2.5 miles of drainage improvements from Airport Beach Road to OSI, 2.5 miles of road realignment/paving/walkways/lighting from Airport Beach Road to OSI, and 1.3 miles of water/sewer/electric utility extensions from Westward Seafood Processors to OSI along Captain's Bay Road in Unalaska, Alaska.

The Captain's Bay area is the logical location for future commercial and residential expansion for the community of Unalaska. Captain's Bay has the docking facilities and space for equipment storage to accommodate this, and other industrial growth. However, Captain's Bay Road and the existing utilities are inadequate to support any expansion of industrial or residential growth. Oil companies have expressed interest in Unalaska's deep water port as a resupply port for their northern seas oil exploration and drilling operations. Construction of the road and utility improvements needs to begin now so Unalaska can meet the current and future needs of the community.

Captain's Bay Road is three miles in length and connects the southern portion of Unalaska Island to the City of Unalaska. Captain's Bay Road serves as a primary transportation route for Westward Seafoods, Crowley Marine Transportation, North Pacific Fuel, Northland Services, Offshore Systems, Inc., and several smaller businesses as well as residential homes. The section of road making up this project is a high traffic area of heavy vehicles that are used by the fishing and support industries which are vital to the community's economic welfare. During the public meetings regarding the 2011 Road Improvement Master Plan, residents and industry representatives discussed the hazards that the high road crown, which is needed for adequate drainage, creates for the large trucks and school buses traveling the road. In addition, the gravel surface cannot sustain the heavy truck traffic and deteriorates to potholes and washboard conditions shortly after grading, causing significant wear and tear and damage to the commercial vehicles. These conditions are compounded by the narrow road width and sharp curves in several sections of the road. There is strong support from the public for improvements to Captain's Bay Road. This project will rebuild the road base, widen and straighten the road and provide upgraded drainage along all of Captain's Bay Road. It will also install pavement on the first mile of road to Westward Seafoods.

In 2017, The City upgraded the electrical service on the first mile of Captains Bay Road to 35KV, from Airport Beach Road to Westward Seafoods. An additional 2 miles of upgrades are required to extend the 35KV to Offshore Systems, Inc. This final section of the electrical

service line is 30 years old and is at its maximum capacity. This project will replace the 15KV primary electrical line with 2 miles of 35KV primary electrical line, from Westward Seafoods to Offshore Systems, Inc.

Captain's Bay Road also has water and sewer line services from the intersection of Airport Beach Road to Westward Seafoods, a distance of one mile. This project will extend the water and sewer utility lines two miles further to Offshore Systems, Inc.

Unalaska is the number one commercial fishing port in the nation. Our contribution to Alaska's tax base exceeds \$27 million per year which is twice the State of Alaska per capita average. Investment in Unalaska's infrastructure also strengthens this tax producing infrastructure.

Project Timeline:

Pre-design 01/2019 to December 2019 -COMPLETED-
Engineering and Design 01/2020 to 9/2021 -UNDERWAY-
Construction 06/2022 to 12/2027 -IN THE FOLLOWING PHASED APPROACH:
2022 Safety improvements / Road realignment
2023 Extend waterline
2024 Extend electric
2025 Install sewer
2026 Install curb & gutter, sidewalk, streetlights
2027 Paving

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

City of Unalaska

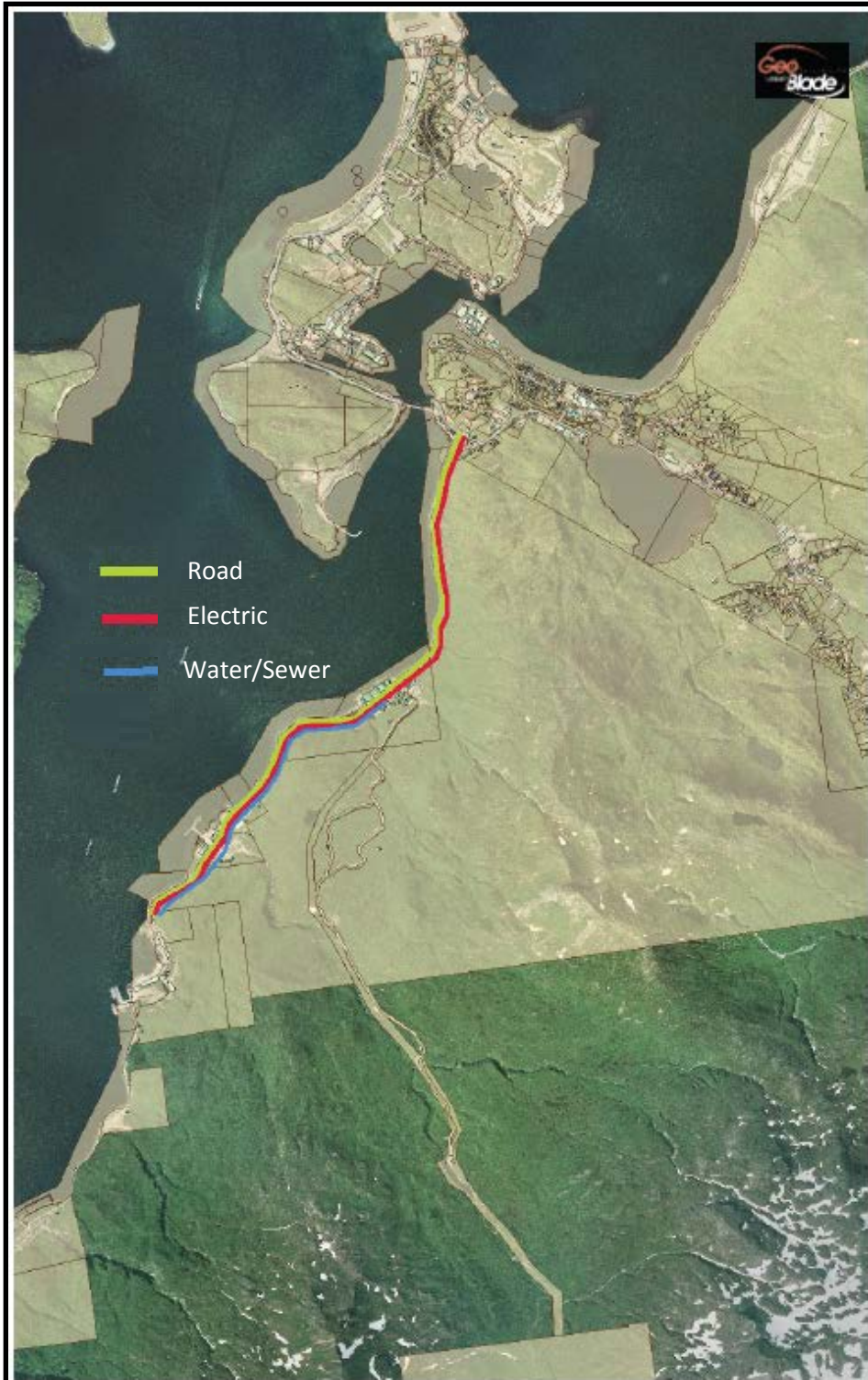
Grant Recipient Contact Information:

Name: Erin Reinders
Address: 43 Raven Way
Unalaska, AK 99685
Phone Number: (907)581-1251
Email: ereinders@ci.unalaska.ak.us

This project has been through a public review process at the local level and it is a community priority.

City of Unalaska

Captains Bay Road and Utility Improvements

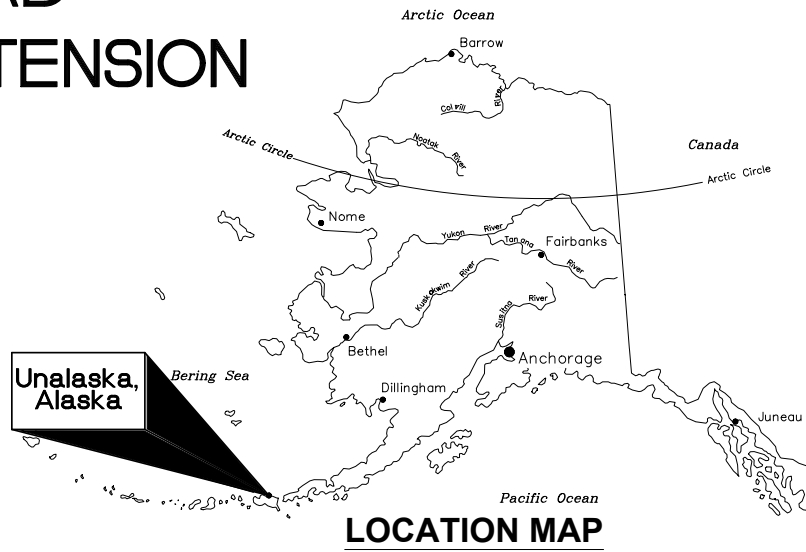


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CAPTAINS BAY ROAD PAVING AND UTILITY EXTENSION

CITY OF UNALASKA

P.O. BOX 610
Unalaska, Alaska 99685
(907) 581-7738



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2020	A1	A5

INDEX	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	ABBREVIATIONS, GENERAL NOTES, AND LEGEND
A3	LEGEND SHEET
A4	PLAN SCHEMATIC
A5	SURVEY CONTROL SHEETS
B1-B2	TYPICAL SECTIONS
C1-C2	ESTIMATE OF QUANTITIES
D1-D7	SUMMARY SHEETS
E1-E5	DETAIL SHEETS
F1-F15	PLAN AND PROFILE SHEETS
G1	GRADING PLAN
H1-H32	ELECTRICAL SHEETS
HS1-HS12	SIGNING AND STRIPING SHEETS
U1-U5	PYRAMID CREEK BRIDGE UTILITY CROSSING SHEETS
UA1-UA7	PUMP STATION SHEETS
UB1-UB6	WATER EOD BUILDING SHEETS
UE1-UE34	LIFT STATION SHEETS
US1-US26	SANITARY SEWER SHEETS
UW1-UW28	WATER SYSTEM SHEETS



VICINITY MAP
NOT TO SCALE

THIS PROJECT
CAPTAINS BAY
ROAD

65% REVIEW
SUBMITTAL

WORK IN PROGRESS
This document represents
current concepts as of ____
(See date @ left border)

HDL ENGINEERING CONSULTANTS, LLC
3335 ARCTIC BOULEVARD, STE 100
ANCHORAGE, AK 99503
(907)564-2120
AECL861

CITY OF UNALASKA
UNALASKA, ALASKA
**CAPTAINS BAY ROAD
PAVING AND UTILITY EXTENSION**

TITLE SHEET

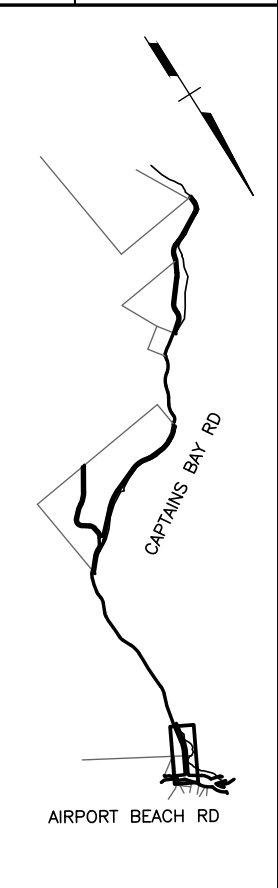
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SHEET NO.	TOTAL SHEETS
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STATE	YEAR
ALASKA	2020

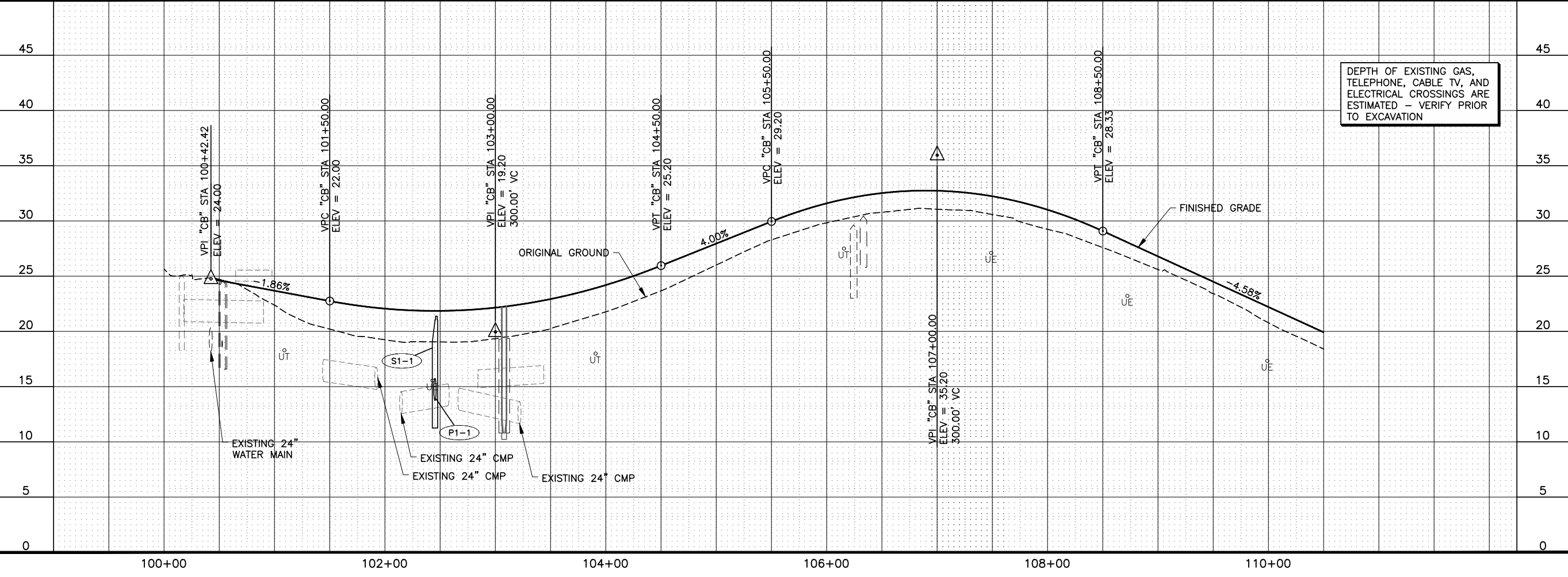
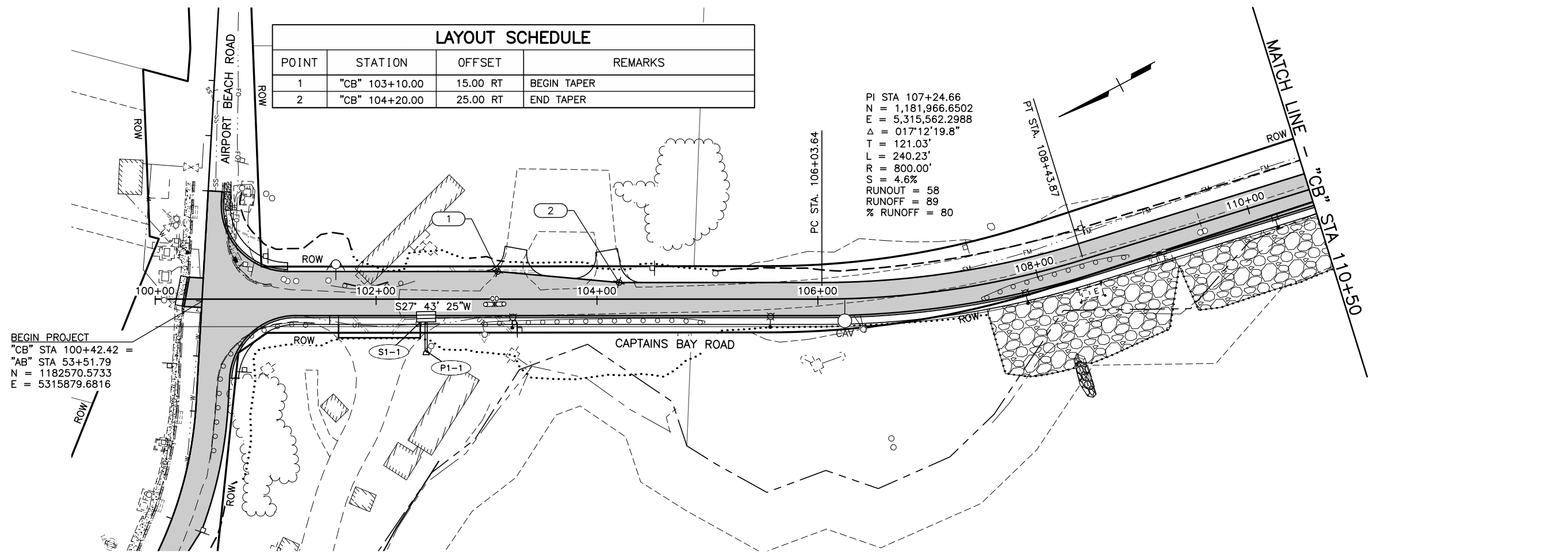
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NO.	REVISION
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DATE	
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DATE	



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DEPTH OF EXISTING GAS, TELEPHONE, CABLE TV, AND ELECTRICAL CROSSINGS ARE ESTIMATED - VERIFY PRIOR TO EXCAVATION

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 (907) 564-2120
 AECL861

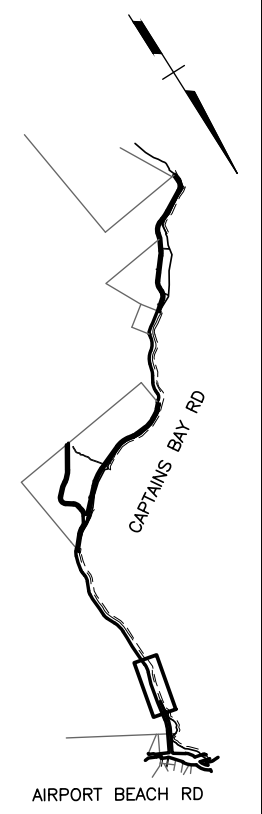
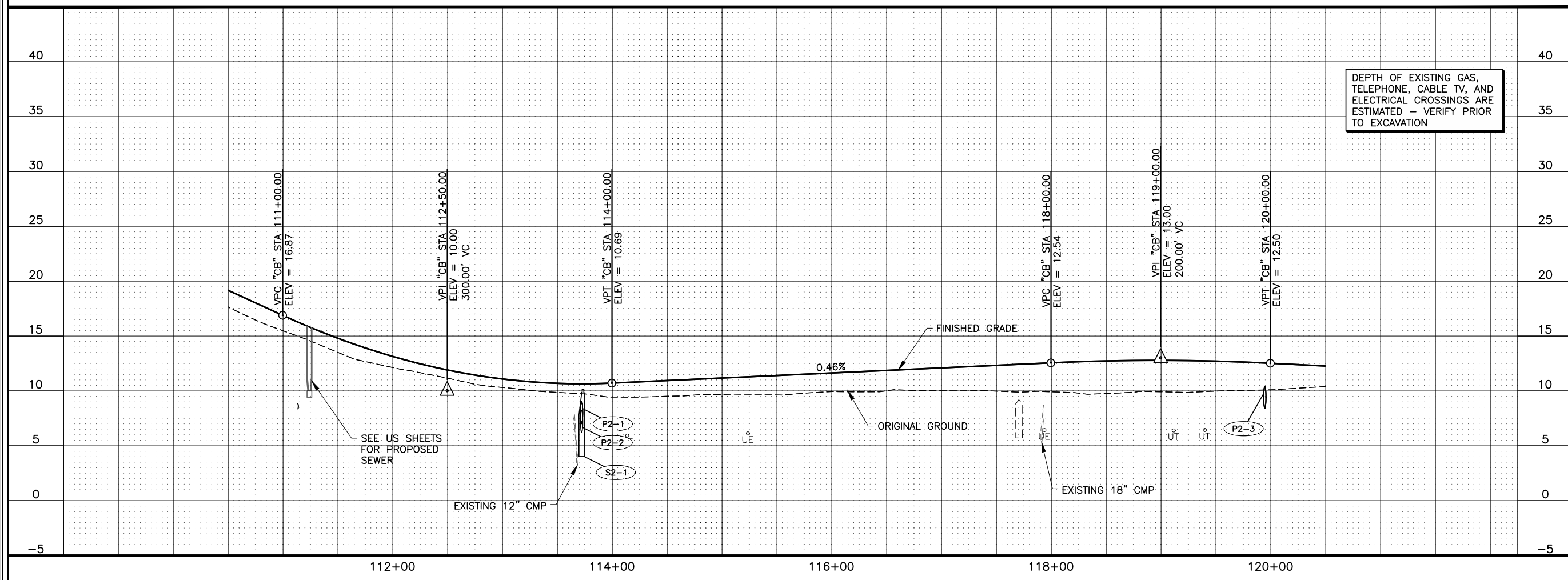
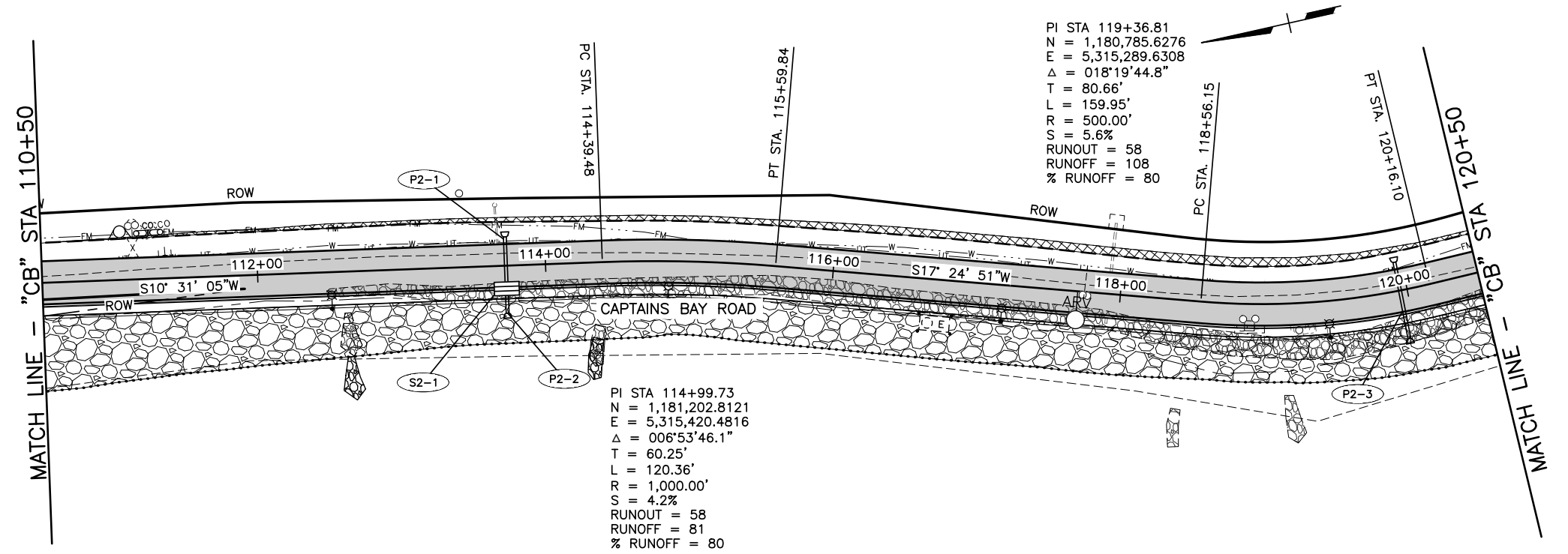
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 UNALASKA, ALASKA
 CAPTAINS BAY ROAD
 PAVING AND UTILITY
 EXTENSION
 PLAN AND PROFILE
 "CB" STA 100+00 TO
 STA 110+50

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STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

NO.	REVISION

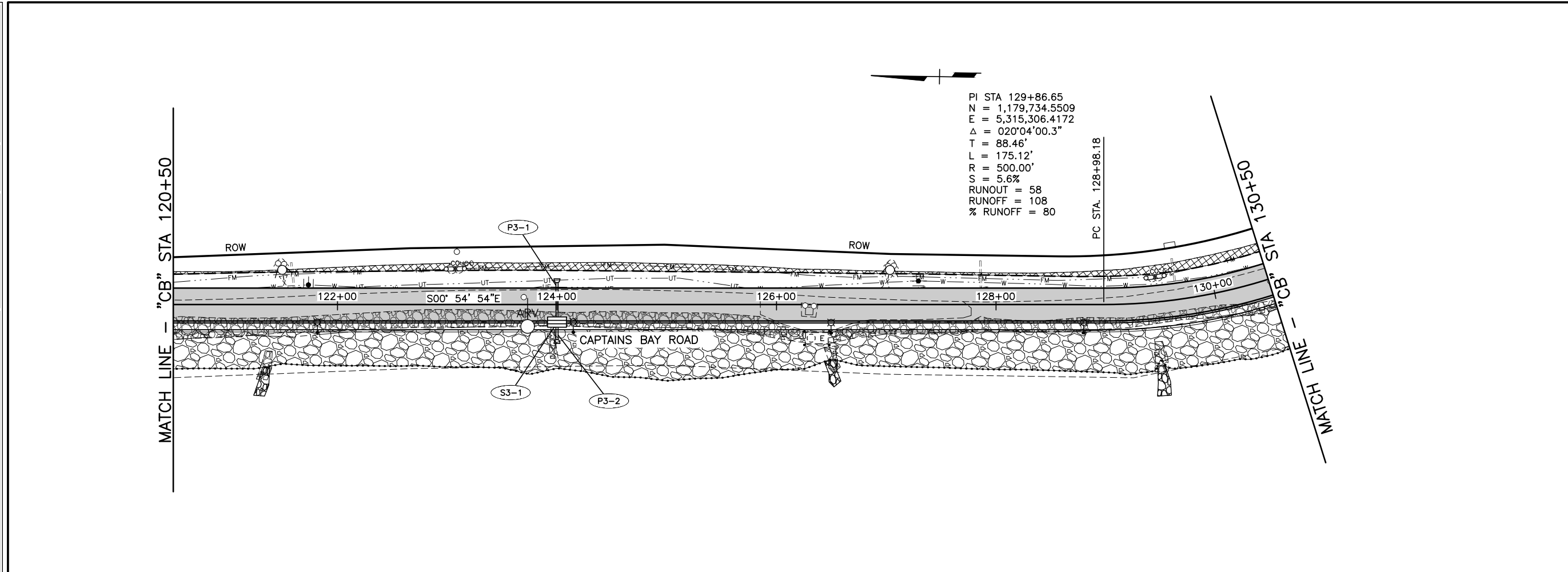


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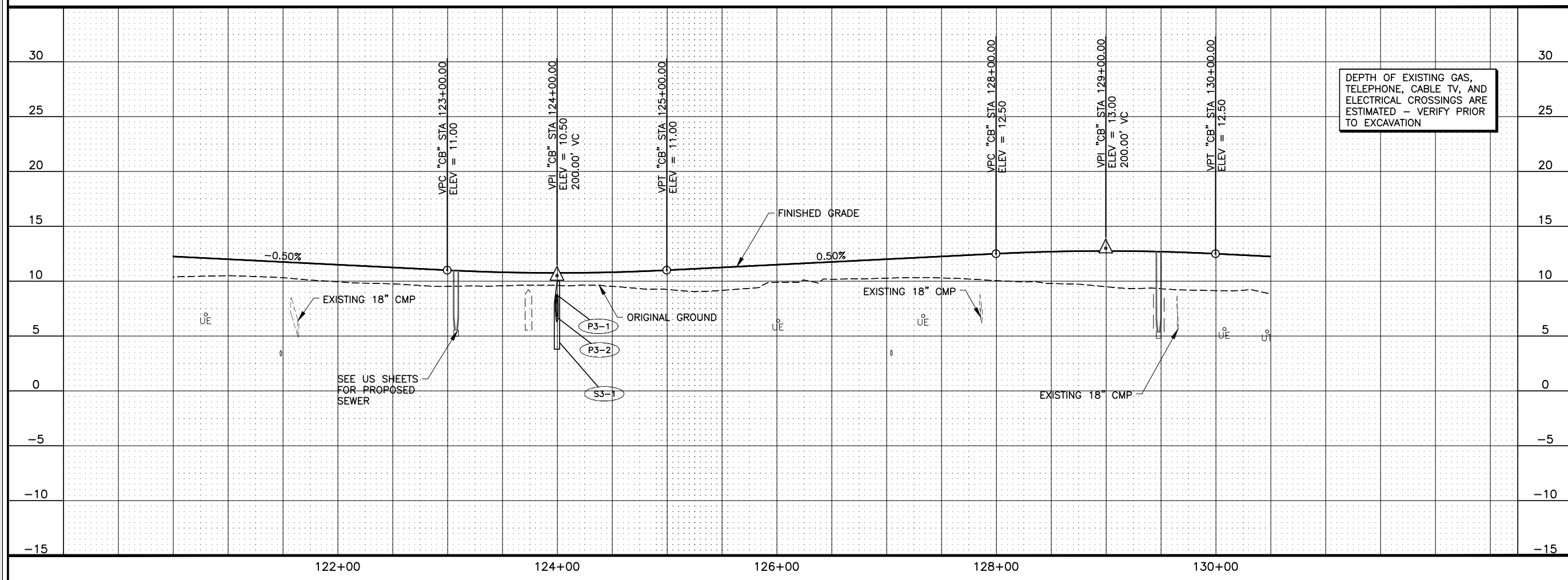
HDL ENGINEERING CONSULTANTS, LLC
 3335 ARCTIC BOULEVARD, STE 100
 ANCHORAGE, AK 99503
 (907) 564-2120
 AECLB61

CITY OF UNALASKA
 UNALASKA, ALASKA
 CAPTAINS BAY ROAD
 PAVING AND UTILITY
 EXTENSION
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 "CB" STA 110+50 TO
 STA 120+50

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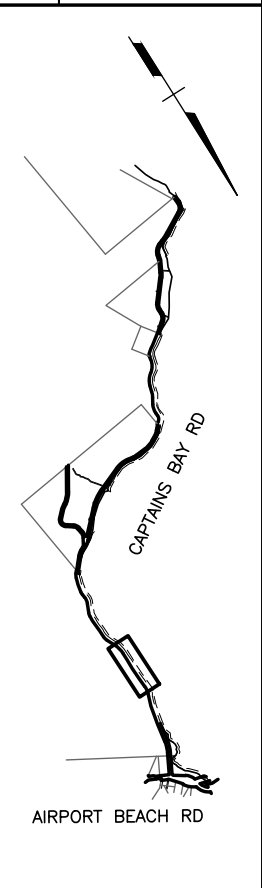
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DEPTH OF EXISTING GAS,
 TELEPHONE, CABLE TV, AND
 ELECTRICAL CROSSINGS ARE
 ESTIMATED - VERIFY PRIOR
 TO EXCAVATION

SHEET NO.	TOTAL SHEETS
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STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION	
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NO.	REVISION



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 (907) 564-2120
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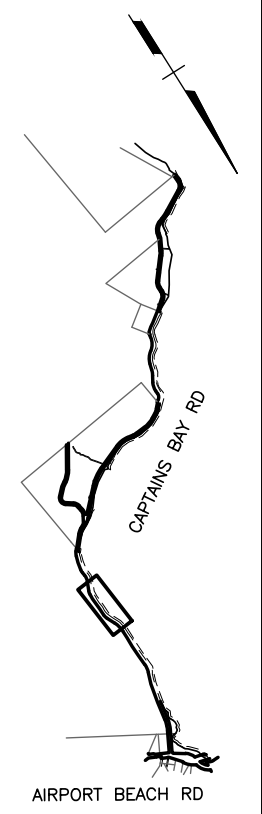
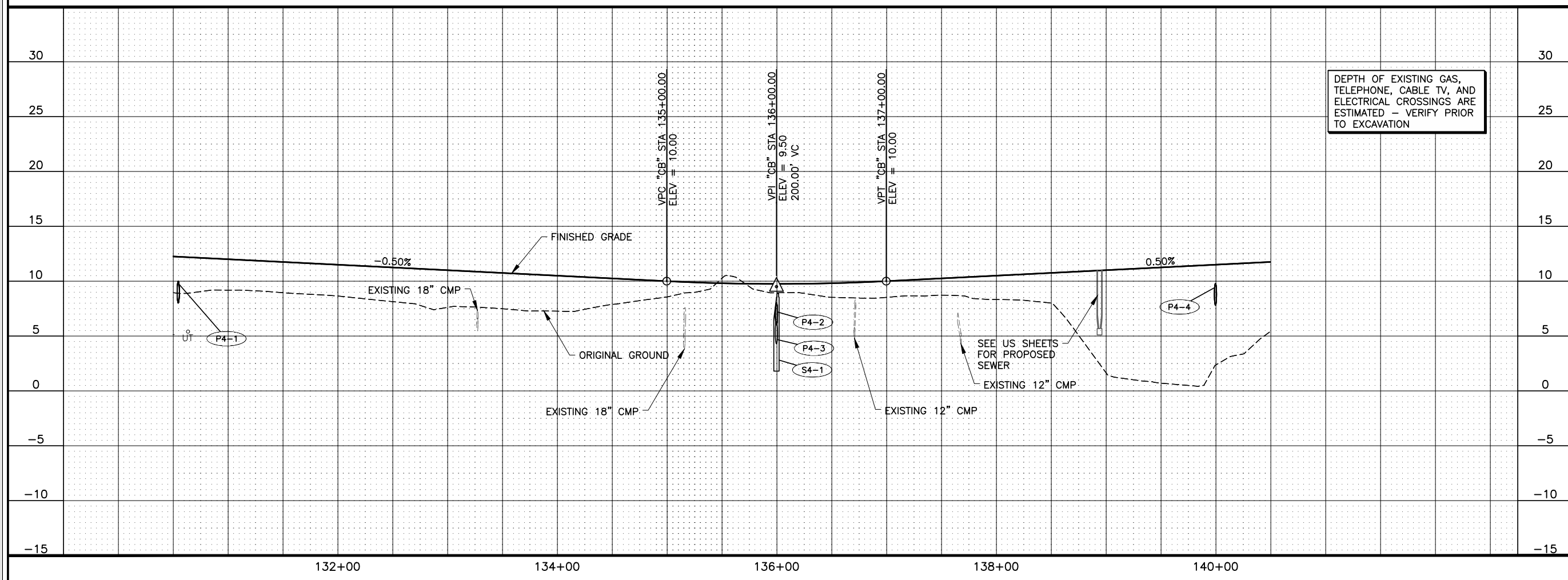
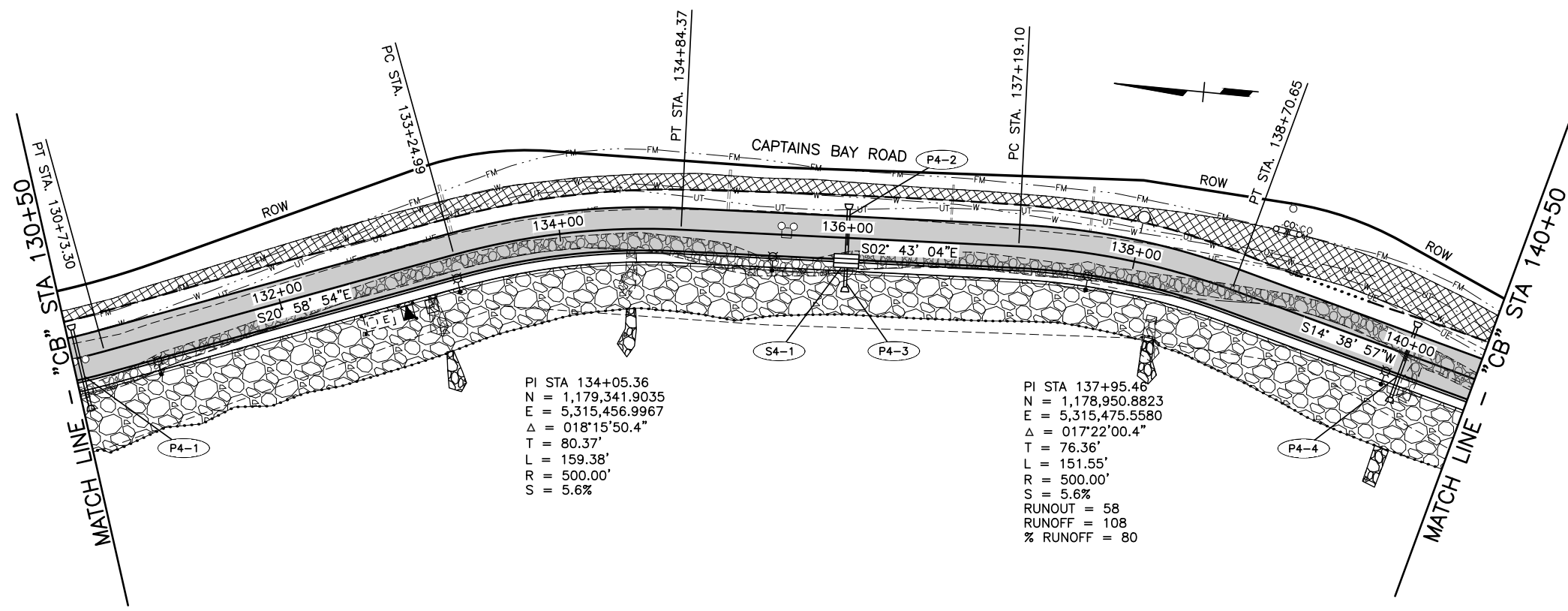
CITY OF UNALASKA
 UNALASKA, ALASKA
 CAPTAINS BAY ROAD
 PAVING AND UTILITY
 EXTENSION
 PLAN AND PROFILE
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 STA 130+50

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SHEET NO.	TOTAL SHEETS
F4	F15
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

NO.	REVISION



WORK IN PROGRESS
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HDL ENGINEERING CONSULTANTS, LLC
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 ANCHORAGE, AK 99503
 (907) 564-2120
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CITY OF UNALASKA
 UNALASKA, ALASKA
 CAPTAINS BAY ROAD
 PAVING AND UTILITY
 EXTENSION
 PLAN AND PROFILE
 "CB" STA 130+50 TO
 STA 140+50

Cost/Benefit Analysis: Captain's Bay Road and Utilities Project

Proposal

Prepared for

The City of Unalaska

July 15, 2021

Prepared by

	800 E Dimond Boulevard
	Suite 3-300
	Anchorage, Alaska 99515-2049
	Phone: 907-274-5600
	Fax: 907-290-2464
	www.northerneconomics.com

Contact: Marcus Hartley, President

In Association with



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July 15, 2021

Office of the City Clerk
City of Unalaska
43 Raven Way
P.O. Box 610
Unalaska, AK 99685

Dear Selection Committee:

Northern Economics is pleased to submit the following proposal to assist the City of Unalaska with its Cost/Benefit Analysis of Captain's Bay Road & Utilities Improvements Project. Northern Economics has completed more than 30 projects for the City of Unalaska over our firm's 39-year history, including economic development, port planning, rate and tariff setting, and feasibility and demand analyses. Our economists have also completed dozens of cost/benefit analyses around the state, and have a long history studying the massive fisheries of the Bering Sea and Aleutian Islands that regularly place Unalaska/Dutch Harbor among the top fishing and processing ports in the U.S.

The Captain's Bay Road and Utilities Improvements Project is both complex and costly. While the Project is deemed a high priority by the City of Unalaska, it has not qualified as part of the Alaska Statewide Transportation Improvement Program (STIP) and is therefore not qualified to receive funding through the Federal Highway Administration. Because of this, the City of Unalaska, along with its residents and businesses, must either pay for the project on its own, or search out alternative sources of funding. These alternative funding sources are typically highly competitive, and because they want to get the "most bang for their buck", they require that applicants submit technically sound and well-documented assessments of costs and benefits. In general, projects are much less likely to be awarded funding if the net present value of quantifiable benefits attributable to the project do not exceed the project costs over the expected service life of the proposed infrastructure. It is also true that these alternative funding sources do not have unlimited resources, and it appears they may be more likely to fund smaller projects over larger ones.

It is apparent that the combination of these issues has led to a Request for Proposals not simply for a cost/benefit analysis of the project a whole, but indeed for a cost/benefit analysis that could be utilized to apply for separate funding on a phase-by-phase basis.

Because of the complexity of the proposed project, Northern Economics has teamed with two strong partner firms: HDL Engineering Consultants, LLC, and DOWL Engineers. As the engineers working with the City of Unalaska on the road design project to date, HDL brings vital historical knowledge of the project development, and will provide understanding of the project background, design considerations, and many other critical pieces of the puzzle. HDL also supplies needed expertise in use of widely accepted models that can provide estimates of the quantifiable benefits attributable to surface transportation infrastructure improvements. DOWL, our second partner, will supply a fresh set of eyes to verify project capital costs, and will develop realistic estimates of the costs of operations and maintenance (O&M). They also bring unique expertise in understanding utility rate analysis and potential funding options.

As President of Northern Economics, Inc., I am authorized to make representations for, and bind, the firm. We hope the following proposal meets the City of Unalaska's needs, and we are open to discussion of changes to the proposed scope and schedule to better serve the City.

Sincerely,

Marcus Hartley
President

Northern Economics, Inc.
800 E Dimond Blvd, Suite 3-300
Anchorage, AK 99515
907-274-5600

Professional Qualifications: Methodology

Northern Economics has extensive experience with CBAs, including several following the USDOT's *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*,¹ which covers most benefit categories seen in Alaska BCAs and which will serve as the primary guide for our analysis. We have worked with other agencies' guidance documents as well. For benefits that aren't specifically addressed in these guides, we structure the analysis to be consistent with their approach to be acceptable to reviewers.

During our nearly 40 years of economic consulting in Alaska we have found that it is critically important that we specifically define the types of economic analysis that we will be developing. In the broad sense, a cost/benefit analysis examines both internal and external costs and benefits of a proposed project or investments. The internal costs and benefits are those experienced by the project developer—in many cases the internal assessment is referred to a feasibility study because it answers the question “will the developer/investor be able to recoup the funds spent to develop the project through revenues and payments from the users of the project's outputs?” The external costs and benefits are those experienced by a much broader group or society in general. External benefits for this Project include the transportation and safety benefits that are experienced by the users of the road and the utilities, many of which are called out in the RFP including: improved safety of pedestrians, improvements to vehicle safety, reduction of wear and tear on vehicles using the road, reduced travel times of vehicles using the road, and reduced costs of electricity and water. From an even broader perspective, society in general benefits through improved air quality through dust abatement and reduced siltation of Captain's Bay.

The guidance document described earlier covers the technical aspects of conducting a CBA, but we build in additional tasks to ensure our projects meet our standards and our client's for excellence. These additional tasks include:

- **kick-off meetings** to ensure consistency of understanding, discuss objectives and available data, and establish good working relationships;
- **data collection and estimation** efforts, supported through research, interviews, and other methods;
- **Interim deliverables**, built into our projects to ensure that we and our clients are working with the same set of assumptions about the work and the project finding that are under development;
- **model development** to ensure our work is well organized and understandable to both our clients and grant application reviewers;
- **regular progress meetings** to address any issues that might arise, ensure progress in the right direction, and coordinate use of the CBA in a grant application, if applicable; and
- **draft and final reports** to document findings.

In addition to these tasks that apply to most CBAs, our staff have knowledge and experience with a variety of advanced sensitivity analysis, decision analysis, and other tools to support more complex situations and decisions. While reviewing agencies do not always want to see alternatives addressed in grant applications, these tools can be beneficial for internal evaluations and decision-making prior to the application process.

A frequent challenge is the availability of quantitative and qualitative data to support the CBAs. We incorporate as much quantitative information as possible in our CBAs, relying on workarounds such as developing estimates and assumptions to account for data gaps and unknowns. Qualitative information doesn't directly contribute to the benefit-cost ratio since it can't be incorporated into calculations, but it is

¹ Available at [Benefit Cost Analysis Guidance 2021.pdf \(transportation.gov\)](#).

valuable in developing supporting narratives and can further the idea that the benefit-cost ratio is a conservative estimate.

Description of Major Tasks

For the Captain's Bay Road CBA we have developed a set of 14 tasks, many of which include interim deliverables that describe our work plan for the study. A table summarizing the major tasks, their deliverables and our proposed schedule is provided in the next section of the proposal.

1. **Kick-off Meeting.** A meeting with the City will be scheduled to occur immediately following the award and receipt of the notice to proceed. The meeting objectives will be as follows: a) introduce key staff from Northern Economics, DOWL and HDL; b) discuss project tasks and schedule; c) review and finalize the "constructable phasing plan" around which the CBA will be built; d) identify data needs and data sources, and key informants; e) discuss other project expectations and communication protocols.
2. **Determine a "Constructable Phasing" Plan.** While the RFP suggests six project phases, it is not entirely clear how those phases are defined. In discussions with HDL during the development of this proposal, six distinct phases could not be defined with certainty. The eight-phase list below (which includes an initial construction schedule by fiscal year (FY) was provided by HDL and represents what they believe is a logical sequence for constructing the Project in its entirety. We believe this list represents a good start to a phasing plan around which the CBA can be developed. It is our intent to make this initial phasing plan one of the key discussion points of the kickoff meeting. HDL will lead this task of the CBA. It is presumed that both parties will agree to the final version of the Project Phasing Plan and that this plan will serve to as the guide for the final outline of the CBA.

Initial Draft of the Project Phasing Plan²

- i. FY22 – Pave Segment 1 (no realignment), partial excavation and realignment in Segment 2 (Deadman's Curve)
 - ii. FY23 – Remaining excavation and realignment of Segment 2; install water and sewer in Segment 2
 - iii. FY24 – Realignment of Segment 3; install water and sewer in Segment 3; install elec/comms in Segments 2 and 3
 - iv. FY25 – Realignment of Segment 1 (partial)
 - v. FY26 – Realignment of Segment 1 (remaining)
 - vi. FY27 – Install storm drains; Realign water, sewer, and elec/comms in Segment 1
 - vii. FY28 – Construct pathway, street lights, and pave Segment 1
 - viii. FY29 - Construct pathway, street lights, and pave Segments 2 and 3
3. **Develop framework and initial models for estimating external benefits (and potentially cost) of the project.** Estimation of the external benefits and costs of the project in general will follow the guidelines described in U.S. DOT's *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*. We will also incorporate

² The following segment definitions are used: Segment 1 = BOP (Agnes Beach) to Westward Seafoods (WSI); Segment 2 = WSI to North Pacific Fuels (NPF); Segment 3 = NPF to EOP (Offshore Systems, Inc).

methodologies, models, and data developed by AASHTO³ in its *Highway Safety Manual*.⁴ Finally, we will review previously completed CBAs from around the U.S. to find methodologies for quantifying benefits that may not be explicitly documented in either of the guidance resources described above. HDL will lead the effort to quantify these benefits, with extensive participation from Northern Economics. We are proposing to include quantitative estimates of the following benefits:

- Improved safety for pedestrians
- Improved safety for vehicle drivers and passengers
- Reduction in vehicle wear and tear
- Reductions in travel times
- Reductions in costs due to rock falls and slides
- Reductions in amount of water treated at the water treatment facility (This savings is created by the elimination of the existing leak-prone system that currently provides water to users at the far end of Captain's Bay Road)
- Fuel use savings for electrical generation by connecting Offshore Systems and North Pacific Fuel to the City electric grid; this also reduces greenhouse gas emissions, which will be quantified.
- Other potential costs and benefits that may be identified during the course of the project. A potential benefit could be reductions in vehicle fuel use and greenhouse gas emissions resulting from paving and realignment of the road. A potential cost might be the need to purchase additional right-of-way from current property owners.

We note that several of the benefit categories will include probabilistic likelihoods that an event occurs (e.g. the likelihood of a vehicle accident or a catastrophic rock fall). The assessment of benefits for these types of probabilistic events will include the use of the @RISK software program within the Excel spreadsheet template. @RISK is an add-in to Excel that enables Northern Economics to analyze the probabilities associated with an event using Monte Carlo simulation. @RISK can show the possible outcomes for any of these situations and informs the user how likely they are to occur in any given year.

In addition to costs and benefits that can be quantified, we will identify and describe qualitatively other benefits and/or costs that are believed to result from the Project. These are likely to include reduction in airborne dust from paving the road and reductions in silt flowing into Captain's Bay.

- 4. Review of existing designs and engineering work.** We believe having both DOWL and HDL on the team for the CBA gives our proposed approach the added benefit of a detailed review of the existing designs and engineering work for the Project. By teaming with DOWL we assure ourselves, and the City, that the existing design and engineering work will withstand serious scrutiny from a third party, such as a lender or granting entity. The fact that HDL is on the project team means they are readily available to answer questions that a third-party review will raise—particularly with respect to issues regarding the decision-making process for choosing design elements. DOWL's review of capital costs will note any potential improvements to the design that may reduce the project's capital cost, speed up the schedule,

³ AASHTO is a nonprofit, nonpartisan association representing highway and transportation departments throughout the U.S.

⁴ Additional information about the development and content of AASHTO's *Highway Safety Manual* is available at <http://www.highwaysafetymanual.org/Pages/About.aspx>.

reduce the long-term operational cost, and/or increase the safety of the design.⁵ The capital cost will be broken out by the following segments:

- i. Airport Beach Road to Westward Seafoods
- ii. Westward Seafoods to North Pacific Fuel
- iii. North Pacific Fuel to Offshore System, Inc.

5. **Estimate operating and maintenance costs** (O&M costs) under existing conditions (the status quo) and with the Project by segment and/or phase as appropriate. DOWL's engineers will evaluate the annual O&M costs along with periodic repair and replacement costs. The difference between O&M costs under the status quo and O&M costs with the Project will represent a project benefit.
6. **Data collection and key informant interviews** with City employees (including the city manager, city assessor, emergency personnel (police, fire, medical), directly affected property owners, the Ounalashka Corporation, and other local business interests. Data collection will include information on vehicle and pedestrian traffic, information on historic accidents including single vehicle incidents, multiple vehicle incidents, and vehicle-pedestrian incidents. We will also seek to obtain information on occurrences of rock falls, with a particular emphasis on rock falls that create a safety or navigational issue. Data on electricity and water use will also be collected. Key informant interviews will be conducted with managers of Westward Seafoods, North Pacific Fuel and Offshore Systems to determine how they believe the infrastructure improvement will impact their businesses and employees. In addition, other owners of property on or directly adjacent to Captain's Bay Road will be asked to participate in order to determine whether the road and utility improvements will lead to cost savings or additional revenue (i.e., project benefits).
7. **Assessment of economic development potential resulting from improvements** including an assessment in changes in property tax assessments. This assessment will be a direct result of key informant interviews. To the extent that business and property owners indicate that the Project will lead to economic development, these potential changes will be incorporated into the report. Discussions with the City Manager and the City Tax Assessor will provide an indication of the relationship between: a) services provided by the City, b) levels of business activity and changes in business profitability, and c) assessed property values and property taxes.
8. **Identify and assess potential external funding sources for capital costs.** DOWL will lead the effort to investigate potential funding sources for the project phases. They will use existing lists and contacts to identify existing and potential state and federal grants, cost-sharing, and low-interest loans. The effort will include compilation of application requirements and evaluation criteria (where available) from program websites, as well as interviews with existing contacts at state and federal agencies to determine appropriate courses of action. If available, they will include application deadlines, competitiveness, and other relevant information. For low-interest loan programs, the DOWL team will include the basis for rate determination and loan terms.
9. **Assess feasibility of Local Improvement Districts** for financing capital improvements and/or O&M costs of the project. Special Assessment Districts are authorized in the City of Unalaska Code of Ordinances under Chapter 6.16: Special Assessments. The study will provide a summary of the code as currently authorized and generate estimates of the annual costs to property owners if they are required to pay for the improvement. The study will also estimate annual cost to property owners under a range of alternative obligation percentages.

⁵ Neither DOWL nor HDL will provide any redesign of the road or utilities if the review finds potential savings or other issues with initial designs.

- 10. Assess utility rate changes for water and electricity** if costs of improvements and O&M are shared by the City, local businesses, and residents. DOWL staff will perform a simplified rate analysis for electric and water/sewer utilities. Using available financial information, current tariffs, and the change in annual operating costs, depreciable expenses, and sales, they will make an estimate for future utility rates needed to cover the extended utilities. The assessment can include a sensitivity analysis based on: a) change in utility sales and/or customers, and b) percentage of capital costs paid for by customer revenue.
- 11. Complete the assessment of cost and benefits** of the Project and other sections of the study and integrate into a draft report and submit the report to the City. An annotated outline of the report will be provided as an interim deliverable. Based on the USDOT guidelines, the CBA will assume a 30-year time horizon for the Project. This corresponds to the standard design service life of road project. We note that design service lives of water and electrical utility lines are generally longer than 30 years, and there the CBA will include an estimate of the residual value of capital improvement to utility infrastructure using a straight-line depreciation schedule. As per the USDOT guidelines a 7% percent discount rate will be used to calculate the net present value (NPV) of the quantified costs and benefits of the Project. Costs and benefits that cannot be easily quantified in terms of dollars will be addressed qualitatively. Costs and benefits will be developed for the overall project, and for each project phase as developed and agreed to in Task 2. As specified in the next section, we are proposing to deliver the draft report on 11/21/21.
- 12. Receive comments from the City.** We are requesting that the City provide written comments on the draft report to Northern Economics no later than 12/03/21.
- 13. Revise and submit final report to the City.** Comments will be addressed, and the final report submitted to the City on 12/13/21.
- 14. Present findings of the CBA to the City Council.** We are proposing to present the study results to the City Council via remote teleconference on 12/14/2014.

Schedule and Deliverables

The following table summarizes the major project tasks discussed above and identifies their associated deliverables and the proposed project timeline.

Table 1. Task List, Deliverables and Project Schedule for the Cost/Benefit Analysis

Task	Scheduled Delivery
1. Kickoff Meeting with the City of Unalaska.	No later than 8/6/21.
2. Determine a "Constructable Phasing Plan" around which to build the analysis. Initial concepts will be discussed at the kickoff meeting.	Start on Notice to Proceed. Concept memo will be provided and discussed at kickoff meeting. Final phasing plan by 08/16.
3. Develop framework and initial models for estimating external benefits and costs of the project.	Start after kickoff meeting. Deliver methodology memo by 08/30.
4. Review of existing designs and engineering work.	Start on Notice to Proceed. Deliver draft assessment by 09/17.
5. Estimate operating and maintenance costs of overall project and of project phases.	Start after kickoff meeting. Deliver draft assessment by 10/04.
6. Data collection and interviews with property owners and other local business interests.	Start after kickoff meeting. Deliver summary memo by 10/04.
7. Assessment of economic development potential resulting from improvements including an assessment in changes in property tax assessments.	Start after completion of data collection and interviews. Assessment will be included in draft report.
8. Identify and assess potential external funding sources for capital costs.	Start after kickoff meeting. Summary included in draft report.
9. Assess feasibility of Local Improvement Districts for financing improvement and O&M of: a) road; b) water system, c) electricity infrastructure improvements. <ul style="list-style-type: none"> • Develop and deliver initial framework memo • Include full assessment with draft report 	Start after kickoff meeting. Initial framework memo by 09/30. Assessment will be included in draft report.
10. Assess utility rate changes for water and electricity if costs of improvements and O&M are shared by the City, and local businesses and residents.	Start no later than 10/4. Assessment will be included in draft report.
11. Complete the assessment of cost and benefits of the Project and other sections of the study and integrate into a draft report. An annotated outline of the report will be provided as an interim deliverable. The full deliverable is considered to the draft report.	Annotated outline of the report by 10/04. Draft report delivered no later than 11/22.
12. Receive comments from the City.	No later than 12/03.
13. Revise and submit final report to the City.	No later than 12/13.
14. Present findings of the CBA to the City Council.	12/14.

Note: This schedule is dependent on the date of the award of the project and the notice to proceed. If the award date of the contract or delivery of the notice to proceed is delayed through no fault of the contractor, then it is assumed that the project schedule will be adjusted accordingly.

Team Experience

Team Firms



Northern Economics, Inc. is Alaska's leading economic consulting firm, with over 35 years of experience in transportation economics within Alaska. The company's work experience extends from Ketchikan to Adak to Kaktovik. No one knows Alaska economics better. Northern Economics has assisted the City of Unalaska with more than 30 projects including economic development, port planning, rate and tariff setting, and feasibility and demand analyses. Our projects for the City include economic development plans for the City and for the Port of Dutch Harbor, rate and tariff studies for port facilities, revenue models for the City and the Unalaska Marine Center (UMC), and regional vessel needs and harbor demand studies. Northern Economics has also assisted the City with two benefit-cost analyses of proposed improvements to the UMC dock as part of the City's applications for TIGER grant assistance in 2014 and 2015.



HDL Engineering Consultants, LLC specializes in civil, geotechnical, and transportation engineering, environmental services, planning, surveying and mapping, construction administration, and material testing. What began as a small consulting firm 20 years ago has expanded to a full-service, multi-disciplinary organization of highly skilled professionals who can identify challenges and deliver creative solutions. With offices in Anchorage, Palmer, and Kenai, HDL has provided consulting and engineering services to federal, state, and municipal projects throughout Alaska.



DOWL is a multi-disciplined consulting firm that has been providing civil engineering and related services for nearly 60 years. Since its founding in Anchorage, Alaska in 1962, the firm has grown and expanded their technical capabilities to provide a comprehensive suite of consulting services, including complex roadway analyses in urban and rural settings, relevant to this project. DOWL maintains in-house expertise in civil engineering, transportation and airfield engineering, hydrology, sanitary engineering, environmental services and permitting, geotechnical engineering, structural engineering, public involvement, master planning and project permitting, landscape architecture, land surveying, Geographic Information Systems, construction administration services, and construction inspection. The firm is 425 employees strong and has a solid western U.S. regional presence with 16 offices spread throughout Alaska, Arizona, Montana, Oregon, Washington, and Wyoming.

Key staff

The following section provides profiles of project leads for each of the team firms. Detailed resumes for each person are provided at the end of the proposal.

Northern Economics

Mike Fisher, MBS, MSPM | Project Management, Cost/Benefit Analysis Lead



Mike Fisher's transportation projects include the development or improvement of airports, ports, harbors, and roads. He has led a number of CBAs, many in support of discretionary grant applications. His recent DOT&PF CBA projects include the Tanana Road Upgrade Project (as well as earlier iterations in 2017 and 2018), Cowles Street Reconstruction, Kodiak Harbor Channel Bridge Improvement, and Parks Highway Milepost 231 Improvements. His other recent work includes the Haines Borough's Lutak Dock Replacement CBA for a BUILD Grant, and the Mat-Su Borough Rail Extension CBA for an INFRA Grant. He was also Northern Economics' internal project manager for the Northwest Alaska Transportation Plan Phase II Update.

Mike's work for the City of Unalaska includes rate structure studies for Port of Dutch Harbor facilities, a ten-year port and harbor development plan, a Little South America Harbor revenue model, an analysis of potential benefits of upgrading Position 1 at the Unalaska/Dutch Harbor Marine Center, and a five-year sustainable revenue forecasting model for the City of Unalaska. He has also led a Little South America (LSA) land development study for the Ounalashka Corporation.

Mike has an M.S. in Project Management, an MBA, and a B.S. in Physics, and is a certified Project Management Professional.

Marcus Hartley, M.S. | Economic Modeling and Fisheries Industry Subject Matter Expert



Marcus Hartley is Northern Economics' President and Principal Economist. He has over 29 years of experience, with his work focusing primarily on natural resource issues, and the way that regulations concerning natural resources, and natural resource use, affect industries and stakeholders, as well as local, state, and federal governments and economies. Mr. Hartley is our primary fisheries economist and a nationally recognized expert in fishery management issues. He has worked with key players in the Bering Sea pollock pacific cod and crab fisheries for over 30 years and is intimately familiar their contributions to the City of Unalaska economic well-being.

Marcus has been a professional economist since receiving his M.Sc. in Agricultural and Natural Resource Economics from Oregon State University 1989. Working as an applied economist to help communities and individuals make good decisions about their resources became a priority for Marcus after 2 years in the Peace Corps. Working in Nepal as a fisheries extension officer, Marcus witnessed the power of economic thinking and the consequences of uninformed decisions. Before joining NEI in 1997, he was Senior Economist at the North Pacific Fishery Management Council

HDL

Trevor Strait, PE, PTOE (AELC14864) | Transportation Engineer



As a traffic design engineer, Trevor has worked on various roadway and highway projects throughout urban and rural Alaska, from pavement preservation to rehabilitation and reconstruction projects. Trevor's roadway engineering experience, paired with his thorough knowledge of AASHTO, will assist the team in determining the transportation-related benefits such as crashes eliminated, the travel time saved, the vehicle travel miles reduced, and maintenance cost reduction.

Trevor is currently serving as the Project Engineer for the Chiniak Highway Rehabilitation: Milepost 15-31 project. He conducted numerous cost-benefit analyses using crash data to assess and compare the construction costs and benefits of curvature improvements. For the same project, Trevor led a team to develop a Corridor Health Index, which adapted the available transportation asset management data into a planning tool that helped the DOT&PF determine how to segment the project and prioritize improvements.

David Lundin, PE (AELC10127; AELV14314) | HDL Project Manager



David has managed many roadway and utility projects throughout Alaska for over 20 years. He is currently Contract/Project Manager for the Captains Bay Road Paving and Utility Extension project, making him intimately familiar with this project's history and current evolution. His familiarity with current construction costs and design plans for Captains Bay Road brings an understanding to this project that is unmatched. His relationship with the City of Unalaska will ensure that the City's priorities and needs are met for this cost-benefit analysis.

DOWL

Rich Pribyl, PE | Road Engineering



Rich has 14 years of experience on Alaska roadway projects for clients such as the State of Alaska Department of Transportation and Public Facilities, federal entities, and rural cities and boroughs. He has participated in seven value engineering studies in Alaska with services similar to the proposed road in Unalaska, including highway and hydrologic and hydraulic design. Other projects Rich has worked on that required similar services include the Ambler Mining District Industrial Access Project, Akutan Harbor Access Road Design, and Sterling Highway Milepost (MP) 58-79 and MP 157-169. Rich spent a decade leading the preliminary engineering effort for the Ambler Mining District Industrial Access Project, including development of the preliminary road design, alternatives analysis, and cost estimating. On the Akutan Harbor Access Road Design project, he held a key role investigating the proposed roadway alignment, completing the H&H report, and completing the drainage design. For the Sterling Highway MP 58-79 and MP 157-169 projects, Rich was the engineer of record. Components of the Sterling Highway projects included typical section and pavement design, cost/benefit analysis of passing lane alternatives, geometric improvements, pedestrian and trail facilities, and utility coordination. Rich's rural Alaska expertise and thorough knowledge of roadway design will allow him to efficiently lead road engineering efforts to evaluate design alternatives and provide valuable input on benefits gained from various alternatives. His comprehensive

understanding of road corridor design and strong communication skills will help provide the City of Unalaska with a clear understanding of the potential returns on investment for this project.

Kevin Johnson, PE | Water/Wastewater Engineering



Kevin is the leader of DOWL's water supply and wastewater practice area. He has more than two decades of experience in the facility planning, grant writing, design, and construction administration of diverse and complex municipal projects, including pump stations, pipelines, water storage tanks, and water and wastewater treatment facilities. These projects involved extensive cost estimating and life-cycle alternatives analysis of major capital facilities and planning evaluations. Kevin brings recent, related experience providing quality control for design of multiple sewer lift stations in Sitka and Kodiak and a major water transmission pipeline in Ketchikan, which is in complex geologic conditions. As part of funding pursuits for recent projects from Bethel to Kodiak, the capital and long-term operations costs were a major part of assessing the cost-benefit relationships among infrastructure alternatives under consideration. Kevin will leverage this experience to assist in evaluating the overall cost and benefits of the water and sewer system extensions for the Captains Bay Road Improvement project.

Neil McMahon, MS | Rate Analysis/Funding Options/Project Management



Neil brings strong research, data analysis, and planning skills to the team from his 12 years of experience in Alaska energy planning, consulting, and project management. He is practiced in identifying and implementing creative solutions to complex problems, including economic analyses, project funding solutions, managing state grant programs, and quantitative and qualitative data analysis. Neil has analyzed the benefits and costs of dozens of energy-related proposals, projects, technologies, and resources across Alaska. He developed and modified multiple economic and scenario models of various complexity to make funding decisions and developed decision-making processes.

Relevant Project Experience

The Northern Economics team has a wealth of relevant project experience. The following examples provide descriptions of recent relevant work.



UMC TIGER Grant BCA, 2015

In 2015 the City of Unalaska contracted with Northern Economics to conduct a benefit-cost analysis (BCA) of a proposed expansion and improvement project for the Unalaska Marine Center Dock Positions III and IV. The BCA was prepared in support of the city's application for funds from the Transportation Investment Generating Economic Recovery (TIGER) Grant program. The study documented "baseline" and "alternative" scenarios, where the baseline referred to the current, or "without-project" option, and "alternative" referred to the proposed project and consisted of the partial replacement and upgrade (with backfill) of UMC dock positions III and IV, as well as an upgrade to the crane rail and associated concrete work.

The study included a description of the affected population, including fishing vessels, fuel tankers and barges, container ships, Ferries, cruise ships, oil exploration and mining project traffic, dock workers (particularly from a safety perspective) and other support operations at the UMC.

The study then examined capital costs, and benefits (principally in the form of avoided costs) which included major maintenance, fuel expenditures, the social cost of carbon, and the economic value of injuries.

Finally, the study included a sensitivity analysis that tested the sensitivity of the Benefit-cost ratio to the addition of the avoided cost of Position IV repairs

City of Unalaska TIGER Grant BCA, 2014

Northern Economics prepared a benefit-cost analysis for the City of Unalaska of proposed improvements to the Unalaska Marine Center dock. The work was done as part of a grant application to the U.S. Department of Transportation to fund a project that would improve the functionality and extend the life of the dock.

Little South America (LSA) Land Development Study, 2013

Northern Economics was contracted to provide economic analysis of suitable land development options for Ounalashka Corporation's land holdings on LSA in Unalaska, Alaska. The first phase of the analysis consisted of a study to determine the potential for LSA to support outer continental shelf oil and gas exploration and development activities, and to conduct a highest and best use analysis of the lands for a range of other potential purposes. For Ounalashka Corporation, 2012-2013.

Tanana Road Phase II Benefit-Cost Analysis for BUILD Grant, 2018

Northern Economics was contracted by the Alaska Department of Transportation and Public Facilities to conduct a BCA to support the City of Tanana's BUILD grant application for the Tanana Road Phase II project.

The BCA was conducted according to the U.S. Department of Transportation's 2018 Guidance for Discretionary Grant Programs, which specifies five categories of benefits for consideration: 1) Value of Travel Time Savings, 2) Vehicle Operating Cost Savings, 3) Safety Benefits, 4) Emissions Reduction Benefits, and 5) Other Issues in Benefits Estimation.

The fifth category, and particularly the sub-category of Benefits to Existing and Additional Users, was the primary source of benefits considered in the analysis, including benefits from reduced costs of transporting cargo (air cargo, barge freight, and barge fuel), passengers (air), and mail (air). The values associated with those savings were estimated based on a study Northern Economics conducted in 2012–2013 that considered benefits of the road that would accrue to Tanana and other downriver communities it could support. Other benefits not addressed in the BCA but discussed qualitatively included resiliency and emergency response. This project was follow-on work to our 2017 Benefit-Cost Analysis for a TIGER Discretionary Grant on the Tanana Road Upgrade Project.

Tanana Road Upgrade Project Benefit-Cost Analysis for TIGER Discretionary Grant, 2017

Northern Economics was contracted by the Alaska Department of Transportation and Public Facilities to conduct a benefit-cost analysis to support the City of Tanana's TIGER grant application for the Tanana Road Upgrade Project.

Benefit-Cost Analysis of the Emmonak Barge Ramp and Dock Project, 2018

This BCA prepared for the City of Emmonak and the Yukon Delta Fishery Development Association, was prepared in support of a BUILD Grant Application for the barge dock and ramp project in Emmonak. The BCA was developed using the U.S. Department of Transportation's "Benefits-Cost Analysis Guidance for Discretionary Programs." The study assessed quantifiable costs and benefits of the Project including capital costs, operations and maintenance (O&M), residual value of assets, direct project revenues, and benefits to commercial fisheries. The study also qualitatively discussed three unquantified benefits: cost savings from erosion control, cost savings from reductions in barge operating costs, and reductions in cost of goods and

services. In 2018 the City of Emmonak was awarded a grant of \$23.1 million from the U.S. Department of Transportation.

FASTLANE Grant Cost Benefit Analysis, 2016

At the request of the Matanuska Susitna Borough, Northern Economics analyzed the cost and societal benefits of completing a rail spur from Houston to Port Mackenzie for use in a USDOT transportation grant proposal. The team assembled and compared the net present value of cost and operations, with the net present value of benefits including rail transportation savings, safety from truck removal, and avoided maintenance cost. After developing a flexible modeling framework, the team performed sensitivity analysis using two different future shipping demand assumptions, along with two different discount rates to provide a likely range of future benefit cost ratios as opposed to a static figure.



Captains Bay Road Paving and Utility Extension, Unalaska

HDL, led by Contract/Project Manager David Lundin, conducted this project providing planning and engineering services for upgrades and realignments to the roadway, and extensions to water, wastewater, and power utilities. The proposed project will improve vehicle and pedestrian safety, reduce road and vehicle maintenance costs, and provide public utilities for current and future development in this portion of Unalaska that is dominated by seafood and support sector businesses.

Chiniak Highway, MP 15-31 Rehabilitation

The purpose of this project was to rehabilitate 16 miles of rural highway on Kodiak Island. The first task of this project was to determine how to segment the project and prioritize improvements into a phased construction approach. The HDL team developed a Corridor Health Index, adapting the transportation asset management data available into a planning tool implemented to complete the task. Project Engineer Trevor Strait also conducted numerous cost-benefit analyses using crash data to assess and compare the construction costs and impacts of curvature improvements.



Bethel Avenues Piped Water and Sewer Preliminary Engineering Report (PER)/Environmental Assessment (EA)

DOWL staff prepared a PER and EA for the extension of municipal piped water and sewer to The Avenues neighborhood in the Bethel, Alaska. The PER included a high-level assessment of the extension's capital cost and an analysis of the current and proposed operational costs of the system.

Sterling Highway Milepost (MP) 45-79

The Sterling Highway MP 45-79 corridor has experienced substantial improvements over the course of 10 years with \$500M in investments. This 34-mile corridor traverses environmentally sensitive lands, high-valued wildlife habitat, federally managed conservation lands, and challenging hydrology and geotechnical conditions. The work is about 1/3 complete, with MP 60-79 constructed and MP 45-60 in the midst of final design using Construction Manager/General Contractor procurement. The project includes large and small bridges, wildlife crossings, and land agreements, and requires substantial agency coordination. DOWL was awarded the 2016 Outstanding Partner Award for the Alaska Region of the U.S. Fish and Wildlife Service for the work they did in the Kenai National Wildlife Refuge, including designing six wildlife underpass culverts and a new bridge over the East Fork of Moose River, as well as material site restoration. The Sterling Highway design has included considerable cost/benefit analysis throughout the life of the project to weigh

capital costs against road safety, environmental concerns, and long-term maintenance. Solutions developed for challenging terrain and cut-fill balances on Sterling Highway will also be directly relevant for consideration on Captains Bay Road.

Ambler Mining District Industrial Access Project

DOWL staff provided a wide variety of services for this 200+ mile industrial road through northwest Alaska. DOWL conducted reconnaissance engineering and environmental studies for the Alaska Department of Transportation and Public Facilities to evaluate several potential road and rail corridors from the Ambler Mining District to potential port sites on Alaska's west coast and to road and rail connections to the east of the District. When the project was transferred to the Alaska Industrial Development and Export Authority, the team continued to provide a variety of services in support of the project. The bulk of the preliminary design efforts on this project to date have centered around providing an economically efficient roadway corridor to meet project objectives while minimizing maintenance costs and environmental impacts and maximizing the safe operation of the road. DOWL's development of construction and operation cost estimates and design alternatives that met challenging topographic constraints will be directly applicable when considering roadway cost/benefit analysis for Captains Bay Road.

Akutan Harbor Access Road Design

The Native Village of Akutan hired DOWL for a new, two-mile road on Akutan Island, connecting Akutan with a small boat harbor constructed by the U.S. Army Corps of Engineers. The Village obtained federal Bureau of Indian Affairs dollars to fund the project. Akutan Island is characterized by steep topography and remoteness, sizeable mountainside watersheds and streams, and conflict with protected wildlife. After evaluating a number of alignments, a shoreline alignment was selected to improve constructability and cost effectiveness. The project schedule was aggressive given the complexity but was successfully completed in 15 months. The Akutan Harbor access road required similar design considerations as Captains Bay Road, including similar terrain, geology, and ocean-side constraints. Construction and maintenance costs will likely be similar for the two roads on a per-mile basis.

Resumes

Resumes for key staff are provided on the following pages.

EDUCATION and CERTIFICATION

- 2006 Master of Science in Project Management, University of Alaska Anchorage
- 2005– Project Management Professional #278257, Project Management Institute
- 2001 Master of Business Administration, Western Washington University
- 1999 Bachelor of Science in Physics, Western Washington University

NORTHERN ECONOMICS EXPERIENCE

July 2001–Present

Vice President, September 2017–Present

Principal Consultant, June 2015–Present

Areas of concentration include ports and harbors, financial analyses, business planning, feasibility studies, and risk analysis. Projects include:

Projects

- Cape Blossom Road Benefit-Cost Analysis. Principal in Charge. The Northwest Arctic Borough contracted with Northern Economics to update a benefit-cost analysis for a 2020 BUILD Grant application. The borough has worked with the Alaska Department of Transportation and Public Facilities to design a 10.5-mile road and deepwater port site at Cape Blossom, near Kotzebue, Alaska. Northern Economics documented the project benefits and costs in accordance with USDOT grant application guidance. 2020.
- Parks Highway MP 305–325 Reconstruction Benefit-Cost Analysis. Principal in Charge. Northern Economics conducted a benefit-cost analysis of reconstruction of and improvements to a 20-mile stretch of the Parks Highway between Nenana and Fairbanks, to support a future Alaska Department of Transportation and Public Facilities discretionary grant application. 2019.
- Kodiak Harbor Channel Bridge Improvement Benefit-Cost Analysis for BUILD Grant. Principal in Charge. Northern Economics conducted a benefit-cost analysis to support a BUILD Grant application for replacement of the bridge's surface and approaches. For Alaska Department of Transportation and Public Facilities, 2019.
- Tanana Road Phase II Benefit-Cost Analysis for BUILD Grant. Principal in Charge. Benefit-cost analysis to support the City of Tanana's BUILD grant application for the Tanana Road Phase II project. For this iteration, additional consideration was given to benefits the road would provide to mining and tourism activities. For the City of Tanana, 2019.
- Lutak Dock Replacement Benefit-Cost Analysis for BUILD Grant. Principal in Charge. Northern Economics conducted a benefit-cost analysis of replacement of the Lutak Dock to support Haines Borough's BUILD Grant application. For Haines Borough, 2019.
- Matanuska-Susitna Borough Rail Extension Benefit-Cost Analysis for INFRA Grant. Project Manager. Updated a BCA for a rail extension from Alaska Railroad Corporation's main rail line near Houston to Port MacKenzie. For the Matanuska-Susitna Borough, 2018–2019.

- Tanana Road Upgrade Project Benefit-Cost Analysis for TIGER Discretionary Grant. Principal in Charge. Northern Economics was contracted by the Alaska Department of Transportation and Public Facilities to conduct a benefit-cost analysis to support the City of Tanana's TIGER grant application for the Tanana Road Upgrade Project. For the Alaska Department of Transportation and Public Facilities and City of Tanana, 2017.
- Port MacKenzie Rail Extension Benefit-Cost Analysis for FASTLANE Assessment and Economic Effects of the Port MacKenzie Rail Extension Project. Principal in Charge. Updated a 2007 study looking at the economic effects of the proposed Port MacKenzie Rail Extension Project, which would connect the port to the existing Alaska Railroad Corporation line to the north, near Houston, Alaska. 2016.
- Benefit-Cost Analysis of the Lutak Dock Replacement. Principal in Charge. Haines Borough contracted with Northern Economics to conduct a benefit-cost analysis of replacing the aging Lutak Dock, for use in a FASTLANE grant application. For the Haines Borough, 2016.
- Susitna-Watana Hydroelectric Project: Benefit-Cost and Economic Impact Analyses. Northern Economics conducted separate studies to evaluate the merits of the proposed Susitna-Watana Hydroelectric Project. Mike's work was focused on a benefit-cost analysis of the facility. For the Alaska Energy Authority, 2014–2015.
- Noatak Airport and Road Benefit-Cost Analysis. Conducted a detailed analysis of the costs and benefits of a road linking the Native Village of Noatak to the Delong Mountain Transportation System—a road and port system that serves Red Dog, the world's largest zinc mine. The economic analysis quantified the monetary costs and benefits of the road and airport upgrade options. The analysis also examined non-monetary issues including access to private and public lands and disturbance of wetlands. For Alaska Department of Transportation and Public Facilities, 2004–2005.
- Little South America (LSA) Land Development Study. Project Manager. Northern Economics was contracted to provide economic analysis of suitable land development options for Ounalashka Corporation's land holdings on LSA in Unalaska. The first phase of the analysis consisted of a study to determine the potential for LSA to support outer continental shelf oil and gas exploration and development activities, and to conduct a highest and best use analysis of the lands for a range of other potential purposes. For Ounalashka Corporation, 2012–2013.
- Port of Dutch Harbor Rate Structure Study. Project Manager. Northern Economics worked on a rate structure study for Port of Dutch Harbor facilities. The goal of the study was to make the rate structure consistent across all port and harbor facilities, while allowing for differences in use types, capabilities, and amenities. For the City of Unalaska, 2014–2016.
- Arctic Deep Draft Port Comments. Project Manager. Northern Economics conducted interviews and collected information about historical and planned use of Unalaska and Port of Dutch Harbor facilities by vessels operating in the Arctic, including oil and gas exploration activities. This information was compiled for the City of Unalaska to prepare comments on an upcoming report by the U.S. Army Corps of Engineers. For the City of Unalaska, 2014–2015.
- Benefits of Upgrading Position 1. Describe potential benefits of upgrading Position 1 at the Unalaska/Dutch Harbor Marine Center. Work includes identifying and describing potential benefits of the upgrade, providing qualitative and quantitative justifications for benefits, and report preparation. For the City of Unalaska, 2003.

EDUCATION

- 1989 M.S. in Agricultural and Resource Economics, Oregon State University
Thesis: "An Evaluation of Input Purchasing Behavior at Cooperatives."
- 1980 B.A. in History with additional coursework in Natural Sciences,
Lewis and Clark College, Oregon; nominated for honors.

EXPERIENCE

2014–present

President & Principal Economist, Northern Economics, Inc., Anchorage, Alaska

1997-2013

Vice President (since 2001) & Senior Economist, Northern Economics, Inc., Anchorage, Alaska

Published works and presentations for Northern Economics are listed separately below.

1989–1997

Senior Economist and Staff Economist, North Pacific Fishery Management Council, Anchorage, Alaska

Author or co-author of economic analyses on major allocation issues between sport and commercial halibut fishers, inshore and offshore pollock processors, and users of trawl and fixed gears for Pacific Cod, as well as assessments of Individual Fishing Quotas for sablefish and halibut.

Projects

- A Benefit Cost Analysis (BCA) of the development of proposed port infrastructure in the City of Emmonak on the Yukon River Delta was a part of a successful application for a \$23.1 million grant through the U.S. Department of Transportation's **Better Utilizing Investments to Leverage Development (BUILD)** program.
- An assessment of the costs and benefits of the transition to the Interagency Electronic Reporting System (also known as the eLandings System) for Alaska fishery management agencies and stakeholders. For NMFS-Alaska Region and AK Dept. of Fish and Game in 2014–2015.
- Benefit Cost Analysis and Economic Impact Assessment of road and airport options linking the Native Village of Noatak to the Delong Mountain Transportation System, for the Alaska Department of Transportation and Public Facilities in 2004. The study incorporated an innovative approach to calculating benefits that included reductions in local building costs, reductions in travel time and changes in commuting patterns.
- Feasibility assessment of a fish meal plant and other alternative measures to eliminate fish processing waste discharges in St. Paul Alaska; for the Central Bering Sea Fishermen's Association in 2013.
- An assessment of social and economic impact of the proposed road linking Cold Bay and King Cove as part of the U.S. Fish Wildlife Environment Impact Statement in 2012.
- A spreadsheet model to assess the feasibility of replacing trawl catcher vessels in the Bering Sea shore-based pollock fishery for Great Pacific Alaska, LLC in 2012.

- A programmatic review of the impacts of the American Fisheries Act on the pollock fisheries of the Bering Sea and its participants. For the North Pacific Fishery Management Council. February 2017.
- An assessment of the economic importance of the Bristol Bay commercial salmon fishery; for the Bristol Bay Economic Development Corporation in 2012.
- Assessment of existing conditions in communities and fisheries likely to be affected by the proposed offshore lease sale in Area 214 of the North Aleutian Basin for the Aleutians East Borough and the US Minerals Management Service in 2009 and 2010.
- An historical overview of the importance of the Bristol Bay salmon fishery to the regional economy and the impact of declining participation of local residents. For the Bristol Bay Economic Development Corporation in 2009.
- Development of commercial fishing engagement and dependency profiles of communities of Dutch Harbor/Unalaska, Akutan, King Cove, and Kodiak in partnership with EDAW, Inc. for the North Pacific Research Board in 2004. The study demonstrates the different amount of information that can be provided for communities under state and federal confidentiality rules with varying levels of involvement in the fisheries.
- Southwest Alaska and Prince William Sound long-range transportation planning studies, for Alaska Department of Transportation and Public Facilities and Parsons Brinckerhoff. Estimated ridership changes and revenue impact of alternative ferry systems including fast ferries and traditional ferries.
- Development of market report and non-binding price formula for the 2005 Aleutian Island Brown King Crab Fishery. This pioneering study developed a justifiable price formulation algorithm for use in arbitration in the event that price negotiations fail under the newly implemented individual fishing quota program for King and Tanner crab in the Bering Sea.
- Developed decision process and methodology to estimate potential impacts of the designation of critical habitat for Steller's eiders; reviewed U.S. Fish and Wildlife Service document *Draft Economic Analysis of Critical Habitat Designation for the Steller's Eider*; for the City of Unalaska, 2000.
- Assessment of economic importance of commercial salmon fisheries to communities of the Aleutians East Borough, with particular attention to proposed changes in the management regime in response to federal takeover of subsistence fisheries in Alaska; for the Aleutians East Borough in 2000.
- An assessment of the Importance of the Seafood harvesting and processing industry to the State of Alaska in 2008; for the Marine Conservation Alliance.
- Evaluation of the use of ice and refrigerated seawater fish chilling systems in the Bristol Bay salmon fishery. For the Bristol Bay Regional Seafood Development Association in 2008.
- An econometric model of the impact of management changes on the price of Bristol Bay set gillnet permit prices; for the Bristol Bay Economic Development Corporation; 2013.
- Economic modeling and feasibility assessment of a processing and cold-storage facility and related infrastructures including a power plant, fuel storage tanks, seawall and sheet-pile dock for the Yukon Delta Fisheries Development Association in 2008.
- A review of Alaska's economy and prospects for the interstate and international marine shipping industry for Matson Navigation, Inc.



TREVOR STRAIT, PE, PTOE

Registrations

- Professional Civil Engineer, Alaska: 14864

Education

- M.S., Civil Engineering, University of Alaska Anchorage, 2014
- B.S., Engineering, Northwest Nazarene University, 2004
- B.S., Engineering Physics, Northwest Nazarene University, 2004

Certifications

- Certified Professional Traffic Operations Engineer

Publications

- "Calibration of the Highway Safety Manual Model for Application Cold Regions", Western Institute of Transportation Engineers Newsletters, June 2011.

Trevor is a traffic design engineer at HDL and a life-long Alaskan who takes a common-sense approach to design and construction projects. Trevor has a wide range of engineering experience, including traffic and safety studies, urban and rural roadway design, and pavement preservation, rehabilitation and reconstruction projects. He is also very knowledgeable of the AASHTO "Greenbook," MUTCD, and Alaska Highway PCM. In addition, Trevor has been responsible for producing numerous DSRs, plansets, and submittals. Trevor has performed research determining local calibration factors for the AASHTO Highway Safety Manual as a research associate at the University of Alaska Anchorage where he has also taught Traffic Engineering as an adjunct professor. Trevor currently serves on the PE Transportation Civil Exam Committee for NCEES.

Relevant Project Experience

Chiniak Highway, MP 15-31 Rehabilitation. Trevor is currently serving as the Project Engineer for this project to rehabilitate 16 miles of rural highway on Kodiak Island. The first task of this project was to determine how to segment the project and prioritize improvements into a phased construction approach. To accomplish this, Trevor led a team to develop a Corridor Health Index, adapting the transportation asset management data available into a planning tool implemented to complete the task. Trevor also conducted numerous cost-benefit analyses using crash data to assess and compare the construction costs and impacts of curvature improvements.

East 120th Avenue Traffic Study. For this project, Trevor performed a traffic study in support of this Municipality of Anchorage project. Efforts included studying traffic volumes and turning movements, performing traffic forecasting and parking analyses, conducting elementary school trip generation, and determining sight distance.

Trunk Road Connector Traffic and Safety Report. Trevor produced the traffic and safety report for this project that included the design of a new roadway connecting Trunk Road with Stringfield Road/Old Trunk Road and providing a new signalized access for the Pioneer Peak Elementary School.

Parks Highway, MP 44-52, Wasilla to Big Lake Road. Trevor served as Project Engineer to design the rehabilitation of Parks

Highway between Wasilla and Big Lake Road. In addition, he was responsible for addressing access management issues, determining trip generation for access points, and improving intersection safety with left-turn and right-turn offsets. He was responsible for the geometric design and development of plans for the Parks Highway, new frontage roads, realigned existing frontage roads, and side streets between Wasilla and Big Lake Road. The overall design included upgrading 8 miles of a two-lane rural/urban highway to a four-lane highway with adjacent two-way frontage roads and four signalized intersections. Additionally, Trevor provided support to DOT&PF Central Region staff in developing a Wiki database to store Frequently Asked Questions to provide consistency in responses to public questions.

New Seward Highway/92nd Avenue. As Staff Engineer, Trevor was responsible for designing the frontage roads, highway ramps, and a signalized intersection in this grade-separated crossing project. His responsibilities included developing various interchange alternatives.

Lucus Road Rehabilitation. Trevor served as Staff Engineer and was responsible for conducting a crash analysis on this project. He also prepared the Utility Conflict Report and evaluated right-of-way impacts.

C Street, 40th Ave to Minnesota, Pavement Preservation. Trevor served as Project Engineer for this project that rehabilitated the existing pavement by constructing a new asphalt pavement overlay and improved accessibility conforming to ADA Standards for Accessible Design. The project included striping, bridge deck improvements, erosion control, curb ramp improvements, Automated Traffic Recorder rehabilitation, pathway reconstruction, minor drainage improvements, and signal pole relocations.

Parks Highway Seward Meridian to Lucus Road, Pavement Preservation. Trevor was the Project Engineer for this project that rehabilitated the existing pavement by constructing a new asphalt pavement overlay and improved accessibility conforming to ADA Standards for Accessible Design. The project included striping, erosion control, curb ramp improvements, guardrail replacement, and Automated Traffic Recorder rehabilitation.

HSIP: Seward Highway Rockfall Mitigation. As Project Engineer, Trevor responsible for the traffic control design of this project. With limited space available at eight work locations, Trevor designed traffic control methods that allowed for minimal disruption to traffic on this critical highway while providing the Contractor with the time and flexibility to complete the work.

Southcoast Regionwide Non-NHS Slope Stabilization. As Project Engineer, Trevor was responsible for the traffic control design of this rockfall mitigation project. With several project sites in Ketchikan, Trevor designed traffic control methods that allowed for minimal disruption to traffic on these routes while providing the Contractor with the time and flexibility to complete the work.

UAA Mat-Su Campus Fire Road Upgrade. Trevor served as Staff Engineer for this project and was responsible for developing plans and specifications. The project consisted of upgrading an existing gravel road to a wider paved road and adding parking and pedestrian improvements. Trevor also provided assistance during the bid and construction phases of these projects.



DAVID LUNDIN, PE

Registrations

- Professional Civil Engineer, Alaska: AELC10127
- Professional Environmental Engineer, Alaska: AELV14314
- Professional Civil Engineer, California: C60393

Education

- B.S., Civil Engineering, University of California Davis, 1993

David is a Principal Civil and Environmental Engineer at HDL. He manages the company's site development, water and wastewater engineering, construction administration, and geotechnical services groups. With more than 28 years of experience, David has led planning, design, cost estimating, construction administration and construction inspection services for public and private site development, water and sewer utilities, roads, airports, and fuel storage projects throughout Alaska. With his keen eye for detail, he is often called upon to provide peer and quality control reviews

Relevant Project Experience

Captains Bay Road Paving and Utility Extension, Unalaska.

David is Contract/Project Manager for this project overseeing planning and engineering services for upgrades and realignments to the roadway, and extensions to water, wastewater, and power utilities. The proposed project will improve vehicle and pedestrian safety, reduce road and vehicle maintenance costs, and provide public utilities for current and future development in this portion of Unalaska that is dominated by seafood and support sector businesses.

Seldon Road and Lucille Street Upgrades, Wasilla.

David was the Contract Manager for the coordination and development of the PS&E for this suburban project to upgrade approximately two miles of roadway with widened shoulders, improved drainage, a multi-use pathway, and a new roundabout intersection. David provided oversight and quality review of all deliverables, including the acquisition of 17 ROW parcels.

Mack Drive Extension/Clapp Street Improvements, Realignment & Signalization at Knik-Goose Bay (KGB) Road, Wasilla.

David served as the Contract and Project Manager for this \$6.6 million project consisting of 2.15 miles of street and pathway connecting the Parks Highway to KGB Road and a new signalized intersection. The project included coordination with the three roadway owners (the Alaska Department of Transportation and Facilities, City of Wasilla, and Matanuska-Susitna Borough) and meeting various documentation requirements.

Southwest Utility System Extension Phases I and II, Palmer. David was the Lead Civil Engineer and Assistant Project Manager for planning and design of the first phase of Palmer's extension of utilities to the southwest portion of their service area. This phase included design of 70,000 feet of gravity and pressure pipelines for water and wastewater and three wastewater pumping stations. Prepared construction cost estimates, assisted with public meetings, and coordinated the work with several agencies and local organizations. David provided construction administration and oversight of full-time inspection and material testing services.

For Phase II of the project, David was the Project Manager for design and construction administration of a 10,000-foot extension of the water system, a new 1-million gallon reservoir, and a booster pumping station, as well as 1,500 feet of new roadway and distribution main to serve the Mat-Su College campus.

Chlorine Contact/Storage Tank, Unalaska. David was Project Manager for the preliminary design of a new 2.6-million-gallon welded steel chlorine contact/storage tank and constant pressure booster station, as well as evaluation of the Unalaska's operational data to determine the project need. Following this evaluation, it was determined to delay development of the reservoir until the need increased.

Kenai Wastewater Treatment Facility Functional Assessment. As part of our Water/Wastewater Term Engineering contract with the City of Kenai, David provided management and quality review for a functional assessment (FA) of the Kenai Wastewater Treatment Facility. The FA included a review of the existing facility infrastructure and operations, identification and cost estimates of needed improvements, and prioritizing the projects based on cost and benefit. David and HDL are currently preparing a similar FA for Kenai's water system and wastewater collection system.

Rural Power System Upgrades, Sleetmute, Stony River, and Crooked Creek. David prepared concept design reports for power system upgrades in each of these villages, including needs assessment, forecasting, equipment sizing, site selection, and project cost estimate.

Steel Water Main Replacement Program, Palmer. David was the Project Manager for planning, design and construction oversight of 12 projects over 14 years to replace over 30,000 feet of steel water pipeline. HDL has provided planning, CIP programming to sustainably forecast projects with available funding, assistance with ADEC grant applications, public involvement, environmental analysis/permitting, surveying, easement acquisition, geotechnical, environmental, and civil engineering, construction inspection, and material testing. Every project leveraged available local funding with grant or loan match money, some of which required the development of local improvement districts or energy efficiency analysis to meet grant requirements. For each project, HDL identified project challenges early on and worked with Palmer staff to mitigate the challenges and successfully complete each project. Because we have continually performed to the highest level and have done whatever it takes to get the job done, our relationship with Palmer on these projects lasted through five different Public Works Directors, four City Managers, and numerous changes to the City Council.



Senior Water Resources
Engineer

Professional Experience

Rich has 14 years of experience on Alaska roadway projects for clients such as the State of Alaska Department of Transportation and Public Facilities (DOT&PF), federal entities, and rural cities and boroughs. He has participated in seven value engineering studies in Alaska with services similar to the proposed road in Unalaska, including highway and hydrologic and hydraulic (H&H) design, as well as other road projects with difficult geologic restrictions. Rich's rural Alaska expertise and thorough knowledge of roadway design will allow him to efficiently lead road engineering efforts to evaluate design alternatives and provide valuable input on benefits gained from various alternatives. His comprehensive understanding of road corridor design and strong communication skills will help provide the City of Unalaska with a clear understanding of the potential returns on investment this project will bring.

Education

Bachelor of Science
Civil Engineering
University of Wyoming
2005

Licenses

Alaska #13149
2011/Professional
Engineer

#GY2EKP 2019/First Aid
CPR AED

#1125 2012/Certified
Inspector of Sediment
Erosion Control

Years of Experience

14

Professional Affiliations

American Society of Civil
Engineers · Institute of
Transportation Engineers

Project Experience

Ambler Mining District Industrial Access, Ambler Mining District, Alaska. Rich led engineering services for this 211-mile industrial road project, beginning with evaluation of several potential road and rail corridors from the Ambler Mining District to potential port sites on Alaska's west coast and to road and rail connections to the east of the District. During preliminary investigations, Rich investigated hydrologic conditions along the corridor alternatives, identified data gaps, and recommended field investigations. He oversaw development of design criteria, conceptual cost estimates for corridor alternatives, and construction phasing plans. He had a major role in coordinating logistics for environmental and engineering field efforts, and led fieldwork investigating roadway alignments, bridge siting, snowpack, wind drifting, aufeis formation, river breakup, and river morphology along the proposed corridor over multiple years. Rich managed the preliminary roadway design (plan and profile) and associated engineering tasks required for the National Environmental Policy Act (NEPA) permit application process in support of the consolidated federal permit applications. He prepared cost estimates for pioneer, single-lane, and two-lane road options and helped identify material needs and available resources. Rich was actively involved in agency coordination and the public outreach process through the life of the project, traveling to rural communities to discuss project needs and concerns. Rich continued to support the Alaska Industrial Development and Export Authority as the project advanced through the environmental impact statement process.

Akutan Harbor Access Road Engineering Design and Survey Services, Akutan, Alaska. The Native Village of Akutan hired DOWL for a new, two-mile road on Akutan Island, connecting Akutan with a small boat harbor constructed by the U.S. Army Corps of Engineers. The Village obtained federal Bureau of Indian Affairs dollars to fund the project. Akutan Island is characterized by steep topography and remoteness, sizeable mountainside watersheds and streams, and conflict with protected wildlife. After evaluating a number of alignments, a shoreline alignment was selected to improve constructability and cost effectiveness. The project schedule was aggressive given the complexity but was successfully completed in 15 months. Rich led the H&H analysis, traveling to Akutan to investigate the proposed roadway alignment and document stream crossings and drainage features crossing the corridor. He oversaw the

Training

2010 Fish Passage
Training Expense Report

Confined Space

delineation of 40 drainage basins to complete hydrologic computations to size crossing structures, which included one stream simulation fish passage crossing. He also performed a fetch analysis to size armor rock providing shoreline protection from wind-generated waves.

Sterling Highway Milepost (MP) 58 to 79, Skilak Lake, Alaska. DOWL performed environmental and design services for the \$54 million project that included an H&H analysis, traffic analysis, utility conflicts and agreements, public involvement, agency permitting, final design, and construction support tasks. Major elements included new passing lanes and expanded shoulders to bring this 21-mile stretch of highway up to rural arterial standards. In addition, DOWL completed a moose-vehicle collision analysis and developed mitigation countermeasures in conjunction with DOT&PF and the U.S. Fish and Wildlife Service (USFWS). Mitigation consisted of six wildlife underpasses and a bridge to span the East Fork of Moose River. As the project engineer (engineer of record), Rich was responsible for completing the H&H report, design study report, construction documents (plans, specifications, and cost estimate), and providing permitting support. Rich coordinated environmental and geotechnical field investigations and reports. He attended public meetings in support of NEPA (required public involvement process) and coordinated extensively with the Kenai National Wildlife Refuge. The project team was awarded the USFWS 2016 Partnership Award.

Sterling Highway MP 157-169 Rehabilitation, Kenai Peninsula Borough, Alaska. The project will improve this heavily traveled corridor by rehabilitating the existing surface, replacing existing culverts at North Fork Anchor River with a new bridge, replacing the Anchor River bridge with a new bridge, realigning and straightening curves to bring the roadway to current highway design standards, constructing passing and climbing lanes, improving intersections, and widening shoulders. As the project engineer, Rich oversaw development of the environmental document, including completion of the noise analysis, traffic analysis, and H&H report. Rich led the project team through preliminary engineering, preparation of the design construction documents, and completion of the design study report. He attended public meetings, helped resolve right-of-way needs, optimized the passing/climbing lanes, and assisted DOT&PF in evaluating options for phasing the project to match available funding. Rich is currently leading final design efforts concurrent with utility coordination and right-of-way appraisal and acquisition services with construction planned to start in 2022.



Senior Water Resources
Engineer

Professional Experience

Kevin is the leader of DOWL's water supply and wastewater practice area. He has more than two decades of experience in the facility planning, grant writing, design, and construction administration of diverse and complex municipal projects, including pump stations, pipelines, water storage tanks, and water and wastewater treatment facilities. These projects involved extensive cost estimating and life-cycle alternatives analysis of major capital facilities and planning evaluations. Kevin brings recent, related experience providing quality control for design of multiple sewer lift stations in Sitka and Kodiak and a major water transmission pipeline in Ketchikan, which is in complex geologic conditions. As part of funding pursuits for recent projects from Bethel to Kodiak, the capital and long-term operations costs were a major part of assessing the cost-benefit relationships among infrastructure alternatives under consideration. Kevin will leverage this experience to assist in evaluating the overall cost and benefits of the water and sewer system extensions for the Captains Bay Road Improvement project.

Education

Bachelor of Science
Civil Engineering
University of Wyoming
1996

Licenses

Alaska #12625
2010/Professional
Engineer

Years of Experience

25

Training

American Membrane
Technology Association;
Technology Transfer
Workshop

Confined Space

Improved Project
Communication

Project Management
Bootcamp, PSMJ
Resources, Inc.

Project Experience

Ketchikan Raw Water Main Replacement, Ketchikan, Alaska. DOWL provided design services for replacement of a failing 36-inch ductile iron pipeline with a new 42-inch High Density Polyethylene pipeline, which is the sole source of municipal and industrial water into Ketchikan. The pipeline route crossed difficult soil and groundwater conditions and required limited shut down times to complete the tie ins to the existing system. Kevin was the design engineer for replacement of the transmission main.

Juneau Biosolids and Facility Design, Juneau, Alaska. This project included design and construction administration for a new biosolids dryer facility at the Mendenhall Wastewater Treatment Plant. The dryer has a capacity of 7,200 pounds per hour of wet cake and can produce 92 percent dry solids. The new facility includes multiple pumping systems, a new belt filter press, two wet cake storage hoppers, biosolids dryer, thermal fluid skid, solids bagging station, odor control system, and supporting infrastructure. Kevin assisted with the mechanical process design and modeling along with modifications to the plant water supply and sludge pumping system modifications.

Mendenhall/Juneau Douglas Wastewater Treatment Plant Headworks Design, Juneau, Alaska. This project involved the expansion of two existing headworks facilities, which included extensive structural evaluation of existing facilities. For the Mendenhall wastewater treatment plant, DOWL evaluated new screening and washing/compaction alternatives and grit removal improvements in the multi-story headworks building. For the Juneau Douglas Wastewater Treatment Plant, DOWL designed a headworks building expansion to construct new influent channels and install mechanical screening devices. Kevin was lead designer and engineer of record for the Mendenhall headworks replacement components, including the dual screen installation and modification of interior 12-inch to 24-inch process piping necessary to accommodate the new fine screens.

Sitka Lift Stations Design Build, Sitka, Alaska. DOWL worked with the City and Borough of Sitka and the prime contractor on this design-build project for two of Sitka's oldest



Kevin Johnson, PE, BCEE

Use of Polymers,
Coagulants, Flocculants in
Water Treatment (METC)

Wastewater Treatment &
Process Design, Montana
State University

Workshop on Retrofitting
and Optimizing the
Operation of Drinking
Water Treatment Plants;
Las Vegas, NV

lift stations. Both lift stations were in poor condition and in desperate need of replacement. DOWL worked quickly to assess the lift stations and future development in the project areas and obtain an Approval to Construct from the Alaska Department of Environmental Conservation (ADEC). DOWL facilitated design reviews and worked with the owner on design specifics to accommodate needs of the operators. We specified a pump type that is not widely accepted by ADEC and worked hard to show it would perform the job. Within three months of receiving a Notice to Proceed, DOWL had secured an Approval to Construct. Kevin provided quality control and design support for completion of these lift stations.



Project Manager

Education

Master of Science
Energy, Environmental
Technology, and
Economics
City University of London
2012

Bachelor of Science
Engineering
University of Alaska,
Anchorage
2009

Master of Arts
Secondary Education
University of Alaska,
Anchorage
1999

Bachelor of Arts
Physics-Geology
Whitman College
1997

Licenses

Alaska 2010/Engineer in
Training

Years of Experience

9

Professional Experience

Neil brings strong research, data analysis, and planning skills to the team from his 12 years of experience in Alaska energy planning, consulting, and project management. He is practiced in identifying and implementing creative solutions to complex problems, including economic analyses, project funding solution, managing state grant programs, and quantitative and qualitative data analysis. Neil's approach is team-oriented with an eye on larger, longer-term objectives. He is best known for his objectivity, intellectual curiosity, high-output productivity, and a nimbleness across subject areas that allows him to successfully manage a broad and diverse project portfolio.

Project Experience

Utility Business Plans, Kivalina, Diomedes, Akiak, Alaska. The Alaska Native Tribal Health Consortium (ANTHC) hired DOWL to provide water and wastewater utility business plans for the cities of Kivalina, Diomedes, and Akiak, Alaska. ANTHC requested that DOWL provide utility business plans to comply with the Alaska Department of Environmental Conservation funding requirements. Neil interviewed utility personnel, collected and analyzed financial documents, incorporated engineering estimates, and developed financial projections for the utilities based on current consumption trends.

Prior Experience

Program Manager, Energy Planning, Alaska Energy Authority (AEA), Anchorage, Alaska 2014-2020. Neil worked closely with the executive team at AEA to manage all aspects of planning and data analysis, including the design, implementation, and evaluation of programs, projects, and policies. As a project manager, Neil designed and implemented all aspects of project portfolios to meet program goals. He initiated and developed multiple projects and programs, developed project management plans, maintained project documentation, and tracked progress consistent with agency requirements. Neil's key roles included data and data modeling, development and training of a rural utility handbook, project evaluation to improve program performance and economic efficiency, technical studies, and policy studies. As a program manager, Neil planned and implemented programs consistent with State statutes, regulations, and policies. For the Renewable Energy Fund, he collaborated with the advisory committee and used quantitative and qualitative analysis to make recommended changes to the existing application assessment process, updated and improved an Excel-based economic model, and produced numerous templates, best practice guides, and other tools to guide applicants. Neil developed new project management controls to track and report project progress and established processes to create consistent data collection from operational projects.

Energy Planning Consultant, McMahon Energy Consultancy, Anchorage, Alaska 2013-2014. Neil provided regional and project planning services as an energy planning consultant for McMahon Energy Consultancy. Through this role, he planned, coordinated, and wrote a regional energy plan for southwest Alaska, including stakeholder input from community, regional, and tribal leaders, as well as State and

federal agencies. Neil also performed economic analyses and developed technical engineering descriptions for three successful energy infrastructure grant applications to the Alaska Renewable Energy Fund.

Assistant Project Manager, Energy Infrastructure, AEA, Anchorage, Alaska , 2009-2011. Neil provided project, grant, and program management as an assistant project manager for AEA. His notable project roles included providing proposal assessment, such as economic and technical evaluations of applications to the Renewable Energy Fund grant program, and leading a 90-member Alaska Hydrokinetic Working Group to identify barriers to development and collaborate with stakeholders. Neil also managed the hydrokinetic, geothermal, and emerging energy technology programs for AEA and led a team to develop the Emerging Energy Technology Fund grant program.

July 15
2021



City of Unalaska

RFP

Qualified Architectural/ Engineering/Economics Services to Perform a Cost- Benefit Analysis for the Captain's Bay Road & Utilities Improvements Project

Tim Gallagher,
Vice President / Alaska Area Manager

2525 C Street, Suite 500
Anchorage, Alaska 99503
907.644.2000
hdrinc.com





Stand Out.

HDR leads the industry as a source for innovative ideas and strategies.

The capacity to accomplish the City of Unalaska (City's) objectives requires strong leadership, technical capability, and project management. Our team has been selected for you based on past success, demonstrated leadership capabilities, specific project experience, and the ability to manage resources for a successful project.

Successful projects are those that fulfill the client's needs, and are completed on-time and within a prescribed budget. Achieving this requires technical proficiency, problem solving abilities, and a team with Alaskan knowledge and international experience.

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July 15, 2021

City of Unalaska, Office of the City Clerk
43 Raven Way
PO Box 610
Unalaska, AK 99685

RE: RFP: Qualified Architectural/Engineering/Economics Services to Perform a Cost/Benefit Analysis for the Captain's Bay Road & Utilities Improvements Project

Dear Selection Committee,

The City of Unalaska has requested a consultant to provide a cost-benefit analysis for the Captain's Bay Road & Utilities Upgrades Project. HDR is pleased to have this opportunity to support the City of Unalaska in its overall goal of prioritizing and evaluating the benefit of infrastructure improvements. We are proposing to support the City managers with HDR subject matter experts in economics, finance, road design, civil and utility design, and best practices in rate structures. HDR's team includes a Contract Manager and Project Manager with experience in Unalaska, road design experts, economists who have provided CBA for public and private clients and have assisted the whole range of transportation agencies in securing grants for major infrastructure projects including in Alaska. HDR has combined our most experienced economists and civil design subject matter experts to create a team with deep and diverse expertise to help the City of Unalaska meet its goals. HDR has several key attributes that will make this a successful effort.

- **National Expertise.** We can provide best practices developed through years of providing cost-benefit analyses for public transportation projects. We offer a unique combination of economic, infrastructure, and road and utility design expertise.
- **Experienced Project Manager.** Our Project Manager, Wescott Bott, PE, has familiarity with Unalaska infrastructure and utilities, having successfully managed the Unalaska Water Master Plan in 2018.
- **The Right Team.** Our local Contract Manager, Murph O'Brien, has 45 years of Alaskan planning and management experience. He has worked on several Unalaska projects and has worked with Tom Cohenour on past projects.
- **Economics Expertise.** Our team has extensive experience in identifying funding sources and applying for grant funding for transportation projects. Since 2009, we have assisted clients in procuring **\$2.3 billion in grant funding**, 15.9% of the total funds available.

I am authorized to make all representations for our firm and assure you that our team has the commitment, availability, and expertise to support you on this project. If you have questions, please contact me directly at 907.644.2000.

Sincerely,

HDR Engineering, Inc.

Tim Gallagher
Alaska Area Manager/Vice President

2525 C Street, Suite 500
Anchorage, Alaska 99503

01 Professional Qualifications

HDR's Proposed Methodology

Under this proposal, HDR Engineering, Inc. (HDR) will assist the City of Unalaska (the City) in the development of the Cost-Benefit Analysis (CBA) for the proposed Captain's Bay Road & Utilities Improvement Project (the Project).

Task 1. Kick-Off and Strategic Guidance Meeting

The HDR team will meet with the City representatives for this Project to formally "kick-off" the project and to establish administrative and management protocols for the project duration.

The kick-off meeting is also an opportunity to introduce our team to the City, to review the project objectives, present our initial approach, deliverables, and to establish communications and project management protocols. Also, we will leverage this opportunity to acquire first-hand the City's perspective on the Project and the type/range of expected benefits, which we will further explore and define for the purpose of this engagement.

In addition, this meeting will also be an opportunity to identify and collect relevant information pertaining to the Project, and to identify information sources. While HDR has access to a range of data and modeling parameters needed to conduct a cost-benefit analysis, some information and data specific to a project or project area may have to be obtained directly from the project sponsor and stakeholders. This includes data and information such as traffic data, accident data, existing planning and transportation studies, or economic development studies. This discussion will be summarized into a formal data request for the City for data items which are not publicly accessible. We will also prepare and submit a revised and refined work plan for this engagement reflecting the discussions.

Regarding project management protocols, HDR proposes to schedule a series of "touch points" throughout the project duration in the form of bi-weekly calls and project reports. The calls and reports will be used to outline the work progress completed since the previous meeting, and highlight any outstanding data needs, issues, or problems encountered.

Depending on the City's preferences, the Kick-Off Meeting may be conducted as an online call or in-person meeting. In the latter case, HDR would combine it with the site visit.

Deliverables for Task 1:

- Revised Work Plan; and
- Data Request.

Task 2. Cost-Benefit Analysis Preparation

HDR will quantify public benefits and costs related to the Project using a

HDR's full portfolio of economics and finance services include:

- Alternative delivery methods
- Benefit-cost analysis
- Business case analysis
- Decision support frameworks
- Demand forecasting
- Economic evaluation
- Econometric modeling
- Economic development
- Economic impact analysis
- Economic research
- Economic forecasting
- Financial feasibility analysis
- Fiscal analysis
- Funding and financial analysis
- Grant application support
- Labor analysis
- Least cost planning
- Life-cycle cost analysis
- Policy analysis
- Pricing and revenue forecasting
- Public-private partnership program support rate setting
- Real estate analysis
- Regulatory impact analysis
- Resiliency and climate
- Risk management
- Statistics and data analytics
- Sustainable Value Assessment

methodology aligned with federal guidance for cost-benefit analysis — in particular, guidance from the United States Department of Transportation (US DOT).[1]

Generally, this methodology follows a multi-step process outlined below:

Step 1: Define Baseline/No-Build and Alternative/Build Scenarios

The benefits of an investment project are estimated relative to a No-Build scenario (the absence of the proposed Project). The No-Build scenario may stipulate the continuation of status-quo but should factor in less capital-intensive improvements that would be implemented anyway within the existing budgetary plans and allocations. Under this step, HDR will work with the City to clarify the baseline conditions and the No-Build scenario as well as alternatives, or Build scenarios, for consideration. The build scenario would consist of an analysis for each of the three segments of the Captain's Bay Road specified as:

- Segment A: Airport Beach Road to Westward Seafoods (STA 100 to STA 168);
- Segment B: Westward Seafoods to North Pacific Fuel (STA 168 to STA 220); and
- Segment C: North Pacific Fuel to Offshore Systems, Inc (STA 220 to STA 235).

Given that the above segments are adjacent to each other, we propose to define the alternative Build scenarios sequentially from Segment A to Segment C as outlined below. However, we will discuss this with the City and refine as appropriate.

- Build Scenario 1: Segment A only (Airport Beach Road to Westward Seafoods);
- Build Scenario 2: Segment A and B (Airport Beach Road to North Pacific Fuel); and
- Build Scenario 3: Segment A, B, and C (Airport Beach Road to Offshore Systems).

Step 2: Identify Project Benefits and Develop Benefits Methodology

This step formalizes the benefits categories to be evaluated. We anticipate three broad categories of benefits of this Project: (1) transportation and safety benefits, (2) utility extension benefits, and (3) economic developments benefits.

Typical **transportation benefits** from transportation infrastructure improvement projects include travel time savings for commuters and commercial truck traffic, accident cost savings, vehicle emissions cost savings, and quality of life improvements — all resulting from improved road standards and driving conditions. For example, the RFP suggests that current speeds on the road are unlikely to exceed 30 mph. The improved road may support higher driving speeds, generating travel time savings for autos and trucks. Driver and pedestrian **safety** are identified issues with the steep cut-slope cliff along much of the uphill side of the road and a treacherous outer shoulder that could send an out-of-control vehicle down the steep fill slope and into the water. We are aware that there have also been instances of rocks tumbling



down onto the road from the cliffs just past Westward Seafood, damaging vehicles, and potentially harming pedestrians.

Benefits of utility extension and improvement projects may include reduction in user operating costs, service quality improvements, quality of life improvements, reduction in environmental pollution, and utility operational efficiency improvements. From our work on your 2018 Water Master Plan, we understand several key benefits of a water utility extension at the site, and we already have the necessary economic data to perform this work. Specific benefits are detailed in the box at right.

In addition, this Project may offer **economic development potential benefits** to areas served by Captain's Bay Road. This is because the Project may allow economic activities and production which are not currently practical and economical. This may lead to additional economic benefits for the community, including new business revenues (and value added), creation of jobs, or tax revenues. These types of benefits are sometimes referred to as wider economic benefits of transportation infrastructure projects and are an emerging area of interest.

HDR will leverage insights from the kick-off meeting and data/documents obtained from the City to expand these categories as appropriate and define them for the purpose of this analysis. To define and help assess the economic development benefits, HDR also proposes a series of interviews with the City's economic development officers and businesses or stakeholders that will be directly affected by the Project to better understand the possible impacts.

For each project benefit identified, logic models will be developed to represent the methodology to quantify and monetize it to the extent possible. Logic models are charts that graphically illustrate the underlying logic of a benefit, as well as how various data inputs combine to quantify it and convert to a monetary value. Benefits that are difficult to quantify because of their underlying nature, conceptual challenges in defining measurement metrics, or limited data availability will be considered qualitatively.

The above benefit methodology will be documented in a working paper and submitted to the City for review and comments. Within this Step, HDR also proposes to organize a strategy/workshop session with the City representatives



Extending the water main along Captain's Bay Road would remove a bottleneck in the water system and allow the City to use the Icy Creek Reservoir (pictured here) and Pyramid WTP to their fullest potential.

Benefits of New Water Main Extension:

- Enable the abandonment of that facility's old leaky wooden pipeline and would eliminate the waste of about 50 million gallons of water per year.
- Solve a decades-old bottleneck in the City's water system and finally enable use of the Icy Lake/Creek Reservoir and Pyramid Water Treatment Plant (WTP) to their fullest potential.
- Enable the Pyramid WTP water storage tank to be taken offline for maintenance and cleaning - something that has never been possible without major disruption.
- Offshore Systems Inc. sometimes trucks City water to their facility. A piped water system extension to that facility would eliminate this inefficient and environmentally wasteful process.

for this Project to review the methodology. The purpose of this session will be both to present the approach and to validate the list of benefits to be included in the cost-benefit analysis. The approach and the list of benefits will be refined as appropriate following this strategy session and after written comments are obtained.

Step 3: Develop and Code Cost-Benefit Model, Collect Data, and Produce Cost-Benefit Results and Economic Benefits Assessment

The benefit logic models will be coded into an Excel spreadsheet as a series of relationships. These will be populated with the data and model parameters so as to estimate their annual values over a period of 20 years, a typical evaluation period in cost-benefit analyses.

As suggested earlier, HDR will collect model input data and parameters from a variety of sources including US DOT guidance, project documentation, data obtained from the City, and review of literature pertaining to similar project aspects and objectives.

Project benefits will be supplemented with project costs coded into the model according to the construction schedule. Summary Project evaluation metrics, net present value, and benefit-cost ratio will be evaluated over a period of 20 years using a discount rate recommended by US DOT (currently, 7 percent annually for baseline assessment and 3 percent for sensitivity analysis).

We anticipate that the cost-benefit model will be focused primarily on transportation and safety benefits and utility extension benefits. Economic development benefits may be more difficult to quantify in a format suitable for inclusion in a cost-benefit analysis. Therefore, the evaluation of these benefits will be supplemental to the CBA with a combination of qualitative evaluation and a range of quantitative metrics such as possible number of incremental jobs, or business revenues.

In addition to the overall Project CBA results, separate tabulations will be developed to focus on specific project aspects desired by the City, such as:

- CBA of roadway versus CBA of utility extension (water, sewer, electric);
- CBA of pedestrian safety improvements (asphalt pathway and streetlights);
- Other elements in consultation with the City.

We will generate the above tabulations by comparing benefits pertaining to a project element with the cost to implement and construct this element (for example, incremental pedestrian safety benefits from asphalt pathway with streetlights compared to their incremental construction costs). We note here, however, that some project benefits may be joint with respect to two or more project elements and their costs. HDR will then carefully consider inter-relationships between benefits and project elements before completing such tabulations.

Step 4: Test Sensitivity of Results Against Key Variables

The CBA outcomes rely on a large number of assumptions and long-term projections which may be subject to some level of uncertainty. The primary purpose of the sensitivity analysis is then to help identify the variables and model parameters whose variations have the greatest impact on the CBA outcomes, the "critical variables." This helps assess the robustness of the CBA and evaluate, in particular, whether the conclusions reached under the "preferred" set of input values are significantly altered by reasonable departures from those values.

In this step, we will flag key variables for testing, re-run the model, and generate results based on alternative input assumptions.

Additionally, a senior economist familiar with cost-benefit principles will serve as a quality control reviewer for the model. The review will focus on coding, modeling, and results. The reviewer's comments will be addressed at this step as appropriate.

Step 5: Issue Results

In this step, we will document CBA methodology, input data and assumptions, and results of the analysis in a draft report. Both the report and the CBA model (in a MS Excel file format) will be provided to the City for review and comments. HDR will review comments from the City and refine or revise the report and the CBA model as necessary to produce final report and final CBA model.

Deliverables for Task 2:

- Working Paper: Methodology of Cost-Benefit Analysis of Captain's Bay Road Improvements;
- Cost-Benefit Analysis Model (in Excel spreadsheet); and
- Interim Report #1 documenting methodology of cost-benefit analysis, interviews with Project stakeholders, workshop with City's representatives, data inputs/assumptions, and analysis results.

Task 3. Identify and Evaluate Funding Sources

Several funding sources are available that could be potentially accessed or applied at for funding. These include the following:

- USDOT's competitive grant programs (e.g., RAISE, INFRA) for transportation infrastructure;
- State Transportation Improvement Program (STIP);
- State General Fund Grants, State Revolving Loan Fund through DEC, USDA Rural Development grants for water and sewer infrastructure;
- TIFIA Loans;
- Impact fees, local improvement districts, and other tax instruments.

In evaluating the various sources, we will reflect on the following considerations that together will assist in assessing the advantages and disadvantages associated with each identified source.

- **What is available and does it fit my need?** Certain sources of funding may fit certain projects better than other sources. Identifying and evaluating sources includes defining eligibility requirements, selection criteria, legislative requirements, political support, and funding level history.
- **What is the experience with a given source of funding?** We will undertake a brief literature review to identify the experience of other jurisdictions of similar sizes that used the various sources.
- **What amount can be realistically obtained from a source?** Grant and loan sources typically have some limitations as to the amount that can be obtained. On the other hand, tax instruments may depend on current and future population and business activity as well as the legislative ability to raise taxes/implement tax instruments and political support for them. Based on the existing practice for an instrument and tax roll data, we will estimate at a high level the amounts that could be raised.

Deliverables for Task 3:

- Interim Report #2 on identification and evaluation of infrastructure funding sources

Task 4. Final Report and Presentation to the City

Under this task HDR will compile Report #1 and Report #2 into a Final Project Report and present findings to the City.

Deliverables for Task 4:

- Final Project Report
- PowerPoint presentation on study findings

02 Schedule and Deliverable Products

Schedule

The RFP stipulates a performance period of 4 months with a presentation of study findings to the City on December 14, 2021. Assuming contract award at the end of July 2021, we anticipate the following high-level schedule, by task (and with task deliverables/major activities):

- **Task 1: From Notice to Proceed to mid-August 2021**
 - Kick-off Meeting and Optional Site Visit: Two Weeks from Notice to Proceed
 - Revised Work Plan and Data Request: One Week after Kick-off Meeting
- **Task 2: From mid-August to November 1, 2021**
 - Data collection, literature review, etc.
 - Interviews with City's Economic Development Officers and Local Businesses: Second Week of September 2021
 - Working Paper: Methodology of Cost-Benefit Analysis of Captain's Bay Road Improvements: September 24, 2021
 - Workshop Session to Review Methodology: October 1, 2021
 - Interim Report #1, CBA Model: November 1, 2021
- **Task 3: November 1 - 30, 2021**
 - Interim Report #2, Evaluation of Potential Funding Sources: November 30, 2021
- **Task 4: December 1 – 31, 2021**
 - Presentation to the City: December 14, 2021
 - Final Report: by December 31, 2021.
- **Project Management: From Project Award to December 31, 2021**
 - Bi-weekly Touch-Point Calls: Every Two Weeks after Kick-Off Meeting

[1] United States Department of Transportation, "Benefit-Cost Analysis Guidance for Discretionary Grant Programs", February 2021.

HDR's Adaptability to Provide Required Services

Integrating Economics, Finance, and Engineering for Fully Informed Decisions

Helping clients achieve their goals is at the heart of what we do. With today's uncertain economic climate and limited fiscal resources, HDR can help you make important decisions through objective, independent and transparent economic and financial analysis. With more than 30 economists and finance professionals, we have the largest team focused on transportation and municipal infrastructure in the industry. We integrate financial, economic, and engineering disciplines to help clients make informed decisions covering a wide range of complexities and challenges. Our integrated engineering and economic teams have recently completed cost-benefit analyses for the Port of Alaska and the Alaska Railroad to help them both secure federal transportation funding from USDOT.

Unbiased Economic Evaluations for Better Decision Support

Our international economics experience provides a broad base of knowledge to inform you about the opportunities and constraints associated with a proposed investment and the impacts of meeting long-range objectives. We combine this global economics expertise with practical local knowledge of Unalaska's infrastructure and economy to provide customized solutions to best meet the City of Unalaska's needs.

We do this by coupling our economists with HDR's Alaskan engineers and transportation planners who have specific

knowledge of Unalaska. For example, we know that by building the water main extension to North Pacific Fuel you can eliminate the costly waste of 50 million gallons of treated water annually. By building the water main extension you can also avoid the need for a second water storage tank at the Pyramid WTP – a tank that is only needed because you currently do not have the ability to take the existing tank offline for cleaning or maintenance. There are clear and economically quantifiable benefits to parts of the Captains Bay Road and Utilities Project, and HDR brings the advantage of already understanding many of these aspects of the project.

Financial Modeling to Determine Best Funding Approach

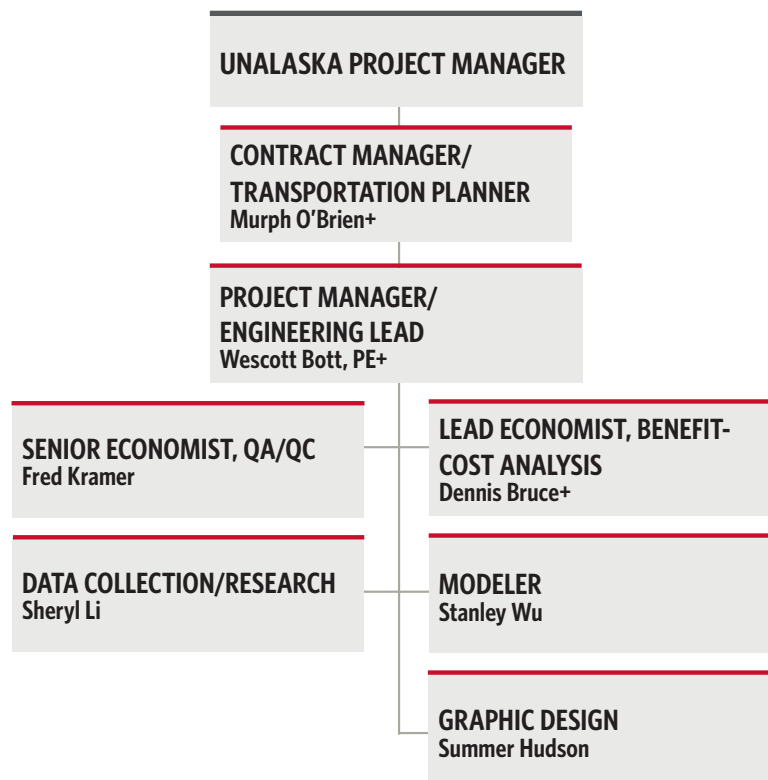
Our team offers extensive experience in developing dynamic, integrated, long-range financial programs for use in strategic decision-making, including budgeting, capital expenditure prioritization, and debt planning. Whether it is for public-private partnerships, financial planning or third-party reviews, the City of Unalaska will benefit from our proven approach to getting infrastructure projects funded. Our success in helping clients secure funding for transportation projects remains unrivalled in the industry. We have supported more than 80 projects in successful requests for funding under USDOT programs, providing our clients with more than \$2 billion in federal funds.

03 Key Project Staff and Subconsultants

HDR Team

HDR's team takes advantage of diverse staff, who have in-depth knowledge of Unalaska's infrastructure, goals, and challenges, coupled with HDR's industry-leading experts from throughout the country. HDR's focus on self-performing the work means that we will be able to minimize the expenses and inherent inefficiencies of managing multiple subconsultants, leaving more budget and time to focus on what matters to you: delivering a successful project.

Organizational Chart



Key: + = in responsible charge

Key Personnel

Murph O'Brien: Contract Manager/Transportation Planner



Firm: HDR
Location: Anchorage, AK
Experience: 45 years

QUALIFICATIONS AND EXPERIENCE

Murph is a transportation and community planner with more than 45 years of Alaskan planning and management experience. Murph cut his teeth at DOT&PF in the early 1980s working on projects in the Aleutian and Pribilofs area, including the Unalaska Airport Land Use Plan, Unalaska Runway Extension, Dutch Harbor Dock, and assessing the viability of a small boat harbor at Xatacyon Lagoon (formerly Margaret Bay). He wrote the first DOT&PF Port and Harbor Master Plan. Murph was involved with the original St. Paul and St. George Harbor Feasibility Studies and was part of HDR's team when we updated St. George's Harbor Design in 2014. He was the state project manager for several U.S. Army Corps of Engineers Feasibility Studies, including Homer Spit Erosion Control, Homer Harbor Expansion, and Kodiak St. Herman's Harbor. All of these projects included a cost-benefit analysis. He is currently serving as HDR's contract manager for the Municipality of Anchorage's Port of Alaska Rate Advice Study, where Dennis and other HDR economists are assessing rate options to help fund dock reconstruction at the Port of Alaska. **Benefit to You:** Murph is familiar with the infrastructure needs of Unalaska and has a good working relationship with Tom Cohenour that will facilitate smooth communication.

Wescott Bott: Project Manager/Engineering Lead (AELC #11521)



Firm: HDR
Location: Anchorage, AK
Experience: 20 years

QUALIFICATIONS AND EXPERIENCE

Wescott is a senior civil engineer for HDR and has one of the most diverse resumes of projects in HDR's Alaska practice, having worked on design, construction management, and permitting of roads, pipelines, bridges, rail, water treatment plants, water storage tanks, sewer systems, aquaculture, hydroelectric, and a variety of other projects throughout Alaska. His projects have taken him to every part of the state, including Unalaska, and he is no stranger to the logistical and weather challenges Alaska projects face. Wescott served as Project Manager for the Unalaska 2018 Water Master Plan. Building on the previous plan HDR developed for the City, he updated the city's existing water supply and distribution system and outlined improvements to meet future demands and regulations. Successes from that 2018 Water Master Plan were a clear path forward with respect to the proposed Captain's Bay Road Waterline project and the cost-benefit analysis for installation of micro-hydroelectric turbines in the Pyramid Creek WTP. **Benefit to You:** Wescott likes seeing projects through design and construction, but only if they are feasible. He has experience in planning and feasibility studies for many types of infrastructure projects and can apply his keen sense of practicality to the Captain's Bay Road.

Dennis Bruce: Lead Economist



Firm: HDR
Location: Cornerbrook, NL
Experience: 34 years

QUALIFICATIONS AND EXPERIENCE

Dennis is an economist and financial analyst with a diverse range of experience in infrastructure economics. He has developed innovative solutions in the areas of business case development, financial planning and rate development, cost-benefit analysis, and forecasting. He has worked with many municipalities across North America to assess transportation infrastructure projects, including cost-benefit analysis in support of and project funding through grant applications. Dennis and his team have helped secure clients billions in federal grant funding for transportation projects across North America. Dennis is Senior Vice President of HDR and manages HDR's Economic and Finance Practice. He has conducted cost-benefit analyses of several projects in Alaska and is currently working with the Port of Alaska to establish rates to recover their port modernization investments. This will provide a framework to establish fair and equitable rates and tariffs to help fund the replacement of its aging infrastructure. He has played the role of Project Principal and/or Project Manager on numerous major infrastructure projects across North America. **Benefit to You:** Dennis brings significant experience in cost-benefit analyses and will provide Unalaska with transparent and rigorous analysis to assess the Captain's Bay Road. He will develop a robust funding and financing plan to develop the Captain's Bay Road.

Fred Kramer: Senior Economist/QA/QC



Firm: HDR
Location: Calgary, AB
Experience: 32 years

QUALIFICATIONS AND EXPERIENCE

Fred Kramer is an experienced transportation economist with a thorough understanding of decision support, specifically in the creation and interpretation of business case, multiple account, benefit-cost, and risk analyses. With HDR for the past 14 years, Fred has successfully contributed to and managed numerous economic assessments with a focus on the quantification of public benefits of proposed transportation projects. Leading HDR's freight and passenger rail economics practice, Fred has led successful public funding applications on behalf of numerous Class 1 freight railroads, including Alaska Railroad Corporation. He is currently providing grant writing services for ARRC under a term contract. He has also been active in port rail infrastructure benefit-cost analyses, helping secure federal and state funds on behalf of the Port of Alaska and others. **Benefit to You:** Fred's experience with cost-benefit analyses and grant funding applications for Alaska transportation projects will result in a streamlined schedule for the City of Unalaska.

Stanley Wu: Financial Modeling



Firm: HDR
Location: Vancouver, BC
Experience: 3 years

QUALIFICATIONS AND EXPERIENCE

Stanley Wu will lead modeling for this project. Stanley is a driven economist focused on conducting research and econometric analysis in support of infrastructure projects. Since joining HDR, he has worked on a variety of projects conducting benefit-cost analysis, risk-adjusted forecasting, and cluster analysis. He developed a model assessing the socio-economic benefits of replacing two bridges relative to the project cost as part of an Alaska Railroad Corporation BUILD Grant Application. He also developed a benefit-cost model for two ARRC CRISI Grants. **Benefit to You:** His experience working with this project team on cost-benefit analyses will lead to a smooth project process and improved communications.

Sheryl Li: Data Collection/Research



Firm: HDR
Location: Toronto, ON
Experience: 5 years

QUALIFICATIONS AND EXPERIENCE

Sheryl is an economist proficient in economic research and quantitative modeling for a variety of industries. Her experience has provided her with knowledge in conducting micro and macroeconomic research, analyzing large volumes of data, constructing complex economic models, and providing actionable results. She has worked on an array of transportation projects with HDR, including conducting cost-benefit analysis, economic forecast, market research, risk assessments, and market feasibility analysis. Most recently, Sheryl developed a comprehensive benefit-cost analysis for the construction of a Petroleum and Cement Terminal at the Port of Alaska to assist in the application of INFRA by the U.S. Department of Transportation. **Benefit to You:** Sheryl's expertise in economic research and cost-benefit analysis for Alaska projects will help our team meet Unalaska's standards.

Summer Hudson: Graphic Design



Firm: HDR
Location: Anchorage, AK
Experience: 21 years

QUALIFICATIONS AND EXPERIENCE

Summer is a versatile and conscientious designer who has spent the last 8 years working with DOT&PF to develop design concepts for project websites, public involvement material and collateral, and project specific graphic design needs. She has provided public involvement and graphic design services for transportation projects in Unalaska, including the Unalaska Airport Master Plan and the FUDS Public Involvement Project. For the FUDS project, HDR has assisted USACE in evaluating the need for a Restoration Advisory Board in communities throughout Alaska that have been identified as Formerly Used Defense Sites, including Unalaska. **Benefit to You:** Her graphic design experience on Alaska transportation projects, as well as her experience in the community of Unalaska, will lead to high-quality deliverables that support efficient project completion.

Past Projects

HDR has provided design for similar projects. The following pages detail some of our most relevant project experience.



City of Unalaska 2018 Water Master Plan

City of Unalaska

Reference: Jeremiah Kirchofer, Water Supervisor, City of Unalaska, 907.581.1260

HDR prepared a comprehensive Water Master Plan to evaluate the City's existing water supply and distribution system and outline improvements to correct deficiencies and meet future demands and regulations. Key tasks included gathering existing water system asset information; analyzing water system components and customer demands; evaluating current and future regulatory compliance issues; determining regulatory-driven and non-regulatory driven improvements; preparing pre-design for improvements; and developing a recommended capital improvement program. As part of the information gathering effort a team of HDR engineers, including Wescott Bott, visited Unalaska to inspect water system facilities and discuss the system with operators.

A major theme in the master plan was the need to extend a new water main along Captain's Bay Road from Westward Seafoods at least to North Pacific Fuel's facility. The lack of this critical water main has required numerous workarounds for many years in order to maintain water service to North Pacific Fuel; has prevented the City from realizing the full potential of a number of other water system assets; has caused the City many years of inefficient water supply management; has delayed several other critical projects due to interdependencies; and accounts for the waste of almost 50 million gallons of water annually through existing pipe leaks.



2020 CRISI Grant Application: MP 25.7 Trail River Bridge Replacement

Alaska Railroad Corporation (ARRC)

Reference: Brian Lindamood, Vice President of Engineering, 907.265.2300

With input from ARRC's engineering department, HDR's team of economists and grant writers created a successful CRISI grant application to help fund a critical bridge replacement project. The project will enable passengers and freight to continue to move safely and economically by rail between Anchorage and the Port of Seward, two critical traffic and revenue sources; maintain ARRC's vital rail connection for passengers to and from Seward and enable the port's growth potential; preserve and contribute to economic development opportunities within the State of Alaska through the increased use of modern, heavier rail cars; and enhance safety and quality of life for the public by preserving and improving an alternate mode of transportation to the local roadways in the region.

HDR covered all aspects of the grant application preparation. Economists provided the report's financial foundation through a thorough benefit-cost analysis. The grant writers explained the need for USDOT funding to improve railroad safety, efficiency, capacity, and reliability by replacing this aging, deteriorated, railroad bridge across the Trail River. An HDR project coordinator managed the required supporting forms, and an HDR graphic designer streamlined the report's visual language, including graphs and figures for a consistent and aesthetically pleasing layout. The application was successful, and ARRC obtained the full funding contribution they had requested.

"Every time I use the **Water Master Plan** that [you] put together for us I am **pleased all over again**. It has such a solid grasp of our system and its various issues. It is very informative but not so wordy as to drown the reader... Kudo's! again." - **Jeremiah Kirchofer, Water Supervisor, City of Unalaska.**

"I just finished reviewing the Draft WMP. It has been very much a pleasure to work with you. You have a **very good grasp of process** which has helped your team produce an excellent product!" - **Clint Huling, Water Supervisor (Retired), City of Unalaska.**



2019 Grant Application: MP 86.6 Bird Creek Pony Truss Bridge Replacement

Alaska Railroad Corporation (ARRC)

Reference: Brian Lindamood, VP, Engineering, 907.265.2300

HDR's economists and grant writers worked with ARRC's engineering department to successfully apply for a bridge replacement project. The project will replace an aging bridge approaching the end of its useful life on ARRC's main line linking Anchorage with the Ports of Whittier and Seward, three key traffic and revenue generating locations and ARRC's connection to the rest of the North American rail network. The project will enable ARRC to upgrade the capacity of its main corridor, provide necessary freight and passenger transportation, and pursue new business opportunities well into the future.

Working with ARRC, HDR developed the grant preparation. Economists calculated the relevant financial metrics through a benefit-cost analysis and supported ARRC in defining the project's benefits. The grant writers created a compelling narrative that included the operational, environmental, financial, and safety benefits, both locally and for the larger region. HDR completed supporting forms and also provided captivating illustrations for visual consistency throughout the application. The application was successful, and ARRC obtained the full funding contribution requested.



Port of Alaska Infrastructure Development Program

Municipality of Anchorage, Port of Alaska

Reference: Steve Ribuffo, Port Director, 907.343.6201

HDR completed a Cost Benefit Analysis (CBA) of the Port of Alaska's replacement of the existing Petroleum, Oil, and Lubricants/Cement Terminal 1 with a new facility named Petroleum and Cement Terminal – a critical fuel and cement handling facility for the Port and the State of Alaska. The CBA was in support of the Municipality of Anchorage/Port of Alaska's request of USDOT funds under the Better Utilizing Investments to Leverage Development (BUILD) program. Each grant application requires a full CBA to demonstrate the project provides net economic benefits to the public.

Through the CBA, HDR demonstrated that the existing terminal had exceeded its useful life and is unlikely to survive a design earthquake, and that the facility should be replaced with a modern, resilient terminal built to current standards. Without this project, the Port may soon lose its ability to provide fuel and cement to 87 percent of Alaska residents.

Through this grant application, the Port of Alaska was successful in receiving \$20 million in USDOT funding for the project.

HDR-Assisted USDOT Winning Grant Applications

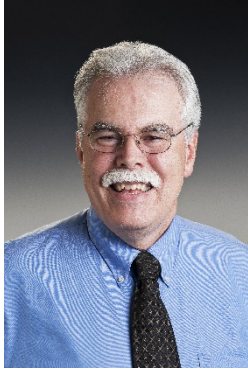
The following section includes select highlights of HDR's successful federal funding applications for transportation infrastructure. When compared to competing transportation consultancies, HDR has unrivaled success in preparing winning grant applications on behalf of clients across North America. Additionally, we have supported more than 80 projects in successful requests for funding under the Better Utilizing Investment to Leverage Development (BUILD) and Infrastructure for Rebuilding America (INFRA) grant funding programs. Together, these projects have received \$2.0 billion in federal funds for key planning and constructing transportation projects. This accounts for more than 15.9 percent of the total construction funds awarded. HDR's experts in all aspects of grant writing, planning, and project development bring a wealth of knowledge and ability to scale solutions for current and future needs.

BUILD, 2020, Jefferson Avenue and 20th Street Revitalization Corridors St. Louis, MO, \$7.9 million
BUILD, 2020, Pyramid Highway Improvements Washoe County, NV, \$23 million
BUILD, 2020, Reconstruction of US-281 Bridgeport Bridge Caddo and Canadian Counties, OK, \$22 million
CRISI, 2019, Quonset Freight Rail Enhancements and Expansion (Q-FREE) for Mill Creek Railyard North Kingstown, RI, \$3 million
CRISI, 2019, Vineyard Rail Consolidation Project Vineyard, UT, \$6.8 million
CRISI, 2019, Pines Road/BNSF Grade Separation Project Spokane Valley, WA, \$1.2 million
CRISI, 2019, MP 86.6 Bird Creek Pony Truss Bridge Replacement Anchorage, AK, \$3.8 million
PID, 2019, Port of Alaska Modernization Program Anchorage, AK, \$20 million
PID, 2019, Port Canaveral Cargo Berth Rehabilitation and Modernization Project Cape Canaveral, FL, \$14.1 million
PID, 2019, Container Berth 1 Realignment Savannah, GA, \$34.6 million
PID, 2019, Wando Welch Terminal Wharf Toe Wall and Berth Deepening Project Charleston, SC, \$20 million
PID, 2019, Missouri River Terminal Intermodal Facility Kansas City, MO, \$9.9 million
INFRA, 2019, I-10 Congestion Relief: Mobile River Bridge and Bayway Mobile, AL, \$125 million
INFRA, 2019, I-17: Flexible Demand Maricopa & Yavapai Counties, AZ, \$90 million
INFRA, 2019, I-70 Rocheport Bridge & Mineola Climbing Lanes Project Montgomery, Boone, & Cooper Counties, MO, \$81 million
INFRA, 2019, Southeast Arkansas and Northeast Louisiana Multi-modal Freight Corridor Improvement Southeast Arkansas Economic Development District, AR, \$11 million
BUILD, 2019, Petroleum and Cement Terminal Anchorage, AK, \$25 million
BUILD, 2019, Phoenix Sky Harbor Northside Rail Expansion Phoenix, AZ, \$24 million
BUILD, 2019, I-70/Picadilly Interchange Aurora, CO, \$25 million
BUILD, 2019, Heartland Parkway Campbellsville, KY, \$9.8 million
BUILD, 2019, Paducah Riverfront Infrastructure Improvement Project Paducah, KY, \$10.4 million
BUILD, 2019, Conley Terminal Container Storage and Freight Corridor Boston, MA, \$20 million
BUILD, 2019, Bridging the Interstate Divide Brookings, SD, \$18.7 million
BUILD, 2018, Gateway Boulevard (CR 106) Improvement Project - Phase 2 Tea, SD, \$9 million
BUILD, 2018, I-95 at Belvedere Road Interchange Cecil County, MD, \$20 million
BUILD, 2018, Geiger Boulevard Infrastructure Improvements Project Spokane County, WA, \$14 million
BUILD, 2018, US 641 Widening Calloway County, KY, \$23 million
BUILD, 2018, SEMO Port Loop Track Terminal Project Southeast Missouri Regional Port Authority, MO, \$20 million
BUILD, 2018, Port of Muskogee Rail Access Muskogee City-County Port Authority, OK, \$6 million
BUILD, 2018, Urban Core Riverfront Revitalization and Complete Streets/Bay Street Innovation Corridor City of Jacksonville/Jacksonville Transportation Authority, FL, \$25 million
BUILD, 2018, Market Street Marine Terminal Main Wharf Rehabilitation Pease Development Authority, NH, \$8 million

We are ready to go to work with you, resolving issues and delivering the collaborative, feasible Captain's Bay Road Cost-Benefit Analysis that Unalaska deserves.

Appendix A: Resumes





Murph O'Brien

Senior Project Manager

Murph is a transportation and community planner with more than 45 years of Alaskan planning and management experience. He worked in planning and operations positions at the Department of Natural Resources, held various planning and management positions at Alaska DOT&PF, and rounded out his public sector career as Planning Director for the Matanuska-Susitna Borough. He has been a Senior Project Manager at HDR since 2010. Murph cut his teeth at DOT&PF in the early 1980's working on various projects in the Aleutian and Pribilof's Planning area including the Unalaska Airport Land Use Plan, Unalaska Runway Extension, Dutch Harbor Dock, and assessing the viability of a small boat harbor at Xatacyon Lagoon (aka Margaret Bay). While working at the Alaska DOT&PF he wrote the Department's first Port and Harbor Master Plan. He has experience in port planning and has been involved with the Alaska Association of Harbormasters and Port Administrators. Murph was involved with the original St. Paul and St. George Harbor Feasibility Studies in the early 1980s and was part of HDR's team when we were contracted to review and update St. George's Harbor Design in 2014. He served as the state project manager for several U.S. Army Corps of Engineers Feasibility Studies, including Homer Spit Erosion Control, Homer Harbor Expansion, and Kodiak St. Herman's Harbor. He managed harbor master plans at Whittier and Ninilchik. He worked with several harbors and ports to develop fee programs to pay for major repair and replacement activities. He helped negotiate the transfer of ownership of State of Alaska-owned facilities to local governments to allow for more efficient and effective harbor management. Murph is a Certified Port Executive and has taken training from the International Association of Maritime and Port Executives.

Murph has extensive multi-modal transportation planning experience and was HDR's project manager of the Mat Su Borough's 2035 Long Range Transportation Plan which developed a fiscally constrained capital improvement program. He also served as the project manager for the Wasilla Main Street Reconstruction Environmental Assessment.

He is currently serving as HDR's contract manager for the Municipality of Anchorage's Port of Alaska Rate Advice Study where Bruce Dennis and other HDR economists are assessing rate options to help fund dock reconstruction at the Port of Alaska. Murph will serve as HDR's contract manager for Unalaska's Cost/Benefit Analysis for the Captain's Bay Road & Utilities Improvements Project .

RELEVANT EXPERIENCE

MOA Port of Alaska Rate Study Advisory Services

Murph is serving as HDR's contract manager and local contact for this important rate study. The study will help the Municipality of Anchorage and its Port of Alaska determine what level of rates are needed to help pay for the Port of Alaska Modernization Project (PAMP). The PAMP is a total reconstruction of the Port of Alaska and managers are determining what level of debt service can be retired through an updated rate schedule. He is working with HDR Economists Dennis

EDUCATION

Bachelor of Science, Natural Resources, Humboldt State University, 1975

Port Executive: International Association of Maritime and Port Executives

INDUSTRY TENURE

45 years

HDR TENURE

12 years

Bruce and Tony Homan and Port Management Specialist Captain Jeff Monroe on this project.

Northwest Alaska Transportation Plan (NWATP) Update

HDR, as a sub-consultant to PDC Engineers, updated the Northern Region DOT&PF's NWATP. The plan identified multimodal transportation needs for the next 20 years for Northwest Alaska, an area that includes the North Slope, Northwest Arctic Borough, Norton Sound/Seward Peninsula, and Yukon-Koyukuk census areas. Murph led HDR's team focusing on highway and marine needs and produced documents relative to the impacts of a warming climate, the opening of the Arctic, and transportation needs related to mineral and oil and gas developments in the study area. The project engaged in public involvement efforts to hear the needs of communities, and Murph coordinated with Native corporations and transportation programs to determine the state of their current and future operations to generate effective plans.

Fairbanks Area Road/Rail Crossing Reduction Study

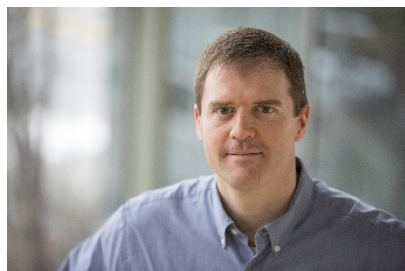
Murph is managing HDR rail engineers to determine cost effective rail options to reduce road rail conflicts in the Fairbanks North Star Borough. Kinney Engineering as the prime contractor is integrating the highway elements to address safety, congestion, and delay issues. Together they are ensuring that this study is consistent with the Alaska State Rail Plan (ASRP). The primary purpose of this plan is to serve as a long-range road/rail planning document. The plan will enable FAST Planning and its agency partners to implement a more efficient and effective approach to integrate passenger and freight rail elements into the larger multimodal and intermodal transportation framework. This plan will cover, at a minimum, a period of 20 years for integration with the FAST Planning Metropolitan Transportation Plan (MTP) with the understanding that it may take longer to fully implement the desired vision.

Matanuska-Susitna Borough Long Range Transportation Plan

Murph led the Long-Range Transportation Plan that was developed to guide transportation decisions in the Matanuska-Susitna Borough for 20 years. He headed an innovative public involvement program that employed an online open house with an interactive map to engage the public and identify concerns. He also facilitated several targeted workshops with various levels of government, including road services, community councils, transit providers, transportation professionals, and elected officials.

St. George Harbor Breakwater and Dredging Improvements

Murph led the St. George breakwater's original feasibility study. He returned as a community advisor when the breakwater was damaged by major storms and shoaling within the entrance channel limited draft available to the fishing fleet. HDR then provided engineering and environmental review to find cost-effective solutions to the harbor's deficiencies.



Wescott Bott, PE

Senior Civil Engineer / Project Manager

Wescott is a professional engineer and senior project manager for HDR's Anchorage office. Wescott has a diverse background in civil engineering and has acted as Project Manager, Project Engineer, or Quality Control Reviewer on the planning, design, and construction phase of a wide variety of transportation, water, sewer, aquaculture, mining, and water resources projects. Wescott also serves as the Industrial Market Sector Lead, helping to grow HDR presence in the Alaska mining industry.

EDUCATION

Bachelor of Science, Civil Engineering, Virginia Military Institute

Master of Science, Civil Engineering, Virginia Tech

REGISTRATIONS

Professional Engineer - Environmental, Alaska, United States, No. 14371, Expires: 12/31/2021

Professional Engineer - Civil, Alaska, United States, No. 11521, Expires: 12/31/2021

PROFESSIONAL MEMBERSHIPS

Alaska Water Wastewater Management Association, Past President

Water Environment Federation, Member

Alaska Miners Association

INDUSTRY TENURE

20 years

HDR TENURE

16 years

RELEVANT EXPERIENCE

City of Unalaska, 2018 Water Master Plan

Wescott served as Project Manager for the Unalaska 2018 Water Master Plan. Building on the previous master plan that HDR developed for the City, he updated the city's existing water supply and distribution system and outlined improvements to meet future demands and regulations. Successes from that 2017 Water Master Plan were a clear path forward with respect to the proposed Captain's Bay Road Waterline project and the cost-benefit analysis for installation of micro-hydroelectric turbines in the Pyramid Creek WTP.

Anchorage Water & Wastewater Utility, Downtown to Kincaid Water Transmission Main

HDR provided planning and preliminary engineering to AWWU for the Downtown to Kincaid project from 2016 to 2018. This project's focus was to finish looping the Anchorage Water Utilities water distribution system with a 36-inch water main through developed corridors and business districts within the City of Anchorage. The project also envisioned a new reservoir and connections to multiple water transmission lines and facilities that are were underutilized due to hydraulic limitations. Wescott assisted with writing the conceptual design report, as well as the plan and profile drawings.

Anchorage Water & Wastewater Utility, Elmore Reservoir Design-Build

Wescott began the project as an engineer, then took over as Project Manager for the preliminary design, design-build RFP production, and construction management of Anchorage Water & Wastewater Utility's 10-million-gallon Elmore Water Storage Tank. During the predesign phase, HDR prepared the contract documents for a design-build RFP. HDR then provided construction support for the project including stakeholder outreach submittal, materials testing, and tank inspections.

Anchorage Water & Wastewater Utility, Hillside Water Transmission Main

HDR designed the extension of 14,000 feet of 24-foot diameter water transmission main from the intersection of Bragaw Street and Abbott Road, south along Elmore Road to the 135th Booster Station. Wescott

assisted with the engineering and construction management of the 3-mile 24-inch ductile iron transmission main.

Anchorage Water & Wastewater Utility, Lift Station #12 Pump Improvements Study

As a part of a civil engineering term contract, Wescott made pump improvement recommendations for Lift Station #12 for the Anchorage Water & Wastewater Utility. Tasks included determining a new projected design flow, sizing replacement pumps and motors, gathering cost information for various pump alternatives, and recommending a design alternative to improve the existing pumps. Due to oversized force mains and pipe freezing concerns, the project also required an investigation of alternative operation methods to improve sediment transport through the force mains.

Anchorage Water & Wastewater Utility, West Dowling Road Water Transmission Main Design

Wescott assisted with the design of several short segments of 36-inch water transmission pipeline that were installed during a major road project. These segments were critical to get designed and installed as part of the road project in order to facilitate the eventual Downtown to Kincaid water transmission main project.

City of Valdez, WWTP Outfall Design

Wescott was the project manager and lead designer of a new outfall pipeline and diffuser for the Valdez Wastewater Treatment Plant. The outfall extends into the marine waters of Port Valdez, a tidal bay connected to Prince William Sound. The outfall is 24-inch diameter SDR-17 HDPE pipe. The outfall is approximately 2,300 feet long and has a 60-foot long 12-inch diameter multi-port diffuser at the end. 900 of the total 2,300 feet of pipe was installed through uplands. 1,100 feet of the pipe was trenched through tidal flats, and the remaining 300 feet of outfall pipe and the diffuser were installed from a crane barge.

City of Valdez, Force Main Condition Assessment Study

Employing the expertise of HDR's pipeline condition assessment team, Wescott managed and delivered a condition assessment study of a critical 3-mile long 16-inch sewer force main for the City of Valdez. The study considered a wide variety of condition assessment methods and tools in order to provide the City with a path forward for eventual replacement or rehabilitation of the pipeline.

City of King Cove, Emergency Water Supply Pipeline

Wescott managed the design, materials procurement and delivery, and construction of an emergency pump system and pipeline designed to provide necessary processing water to a critical seafood processing plant in King Cove, Alaska. The project involved a custom-built pump skid and 7,500 linear feet of 6 HDPE pipe that was designed, delivered, installed, and operational in less than 2 months.



Dennis Bruce

Senior Vice President

Dennis is an economist and financial analyst with a diverse range of experience in both the private and public sectors. He has developed innovative solutions in the areas of business case development, financial planning and rate development, cost-benefit analysis, and forecasting. Dennis has worked with many ports across North America to develop port plans, assess infrastructure investments, and secure funding. He has developed and implemented specific methods for incorporating risk and uncertainty into decision making in both the private and public sectors. He has provided due diligence services for bond insurers on traffic, revenue, and financial forecasts related to infrastructure financings across North America. He has developed financial models in support of capital market transactions.

Dennis is Senior Vice President of HDR and manages HDR's Economic and Finance Practice in Canada. He has provided testimony on financial and economic matters in many forums, including the California Public Utilities Commission, federal finance committees, the Federal Court of Canada, the Canadian Radio and Telecommunications Commission, and the Ontario Energy Board.

EDUCATION

Master of Arts, Economics,
University of Western
Ontario, 1997

Bachelor of Science,
Mathematics, Memorial
University of Newfoundland,
1986

INDUSTRY TENURE

34 years

HDR TENURE

19 years

RELEVANT EXPERIENCE

Port of Argentia, Port Development Plan

He developed a port develop plan to enable the port to take advantage of opportunities in the resource industry in Newfoundland, primarily opportunities in the offshore oil and the mining sector. The plan will also take into account various financing opportunities with industry and government(s) to develop the site through examination of experiences in the North Sea and the Gulf Coast.

Port of Corner Brook, Business Case of Infrastructure Improvements

He conducted a business case analysis for infrastructure improvements at the port. The business case included a functional assessment of current infrastructure, the identification of business opportunities at the port, the new infrastructure required for these opportunities, and the financial and economic impacts of these opportunities. The port is leveraging the analysis contained in the final report as well as economic and financial models to seek funding in support of new infrastructure development at the port.

Port of Longview, WA, Forecasting of Port Volumes

He conducted a market assessment and forecast of commodity movements as input into the port's master plan development.

Long Pond Harbour Authority Inc., Port Development Plan

He conducted a market assessment to identify potential opportunities for the Port of Long Pond. Through research, interviews, and knowledge, he identified 10 opportunities for the port, and estimated revenue potential and the infrastructure required in order to realize the opportunities. He determined the ROI and economic impact of each opportunity, a marketing plan, and implementation plan as part of the overall port development plan.

Panama Canal Authority, Due Diligence of Financial Model

He reviewed the financial analysis and feasibility model for a transshipment terminal and recommended modifications to improve result validity and reliability as well as the methodology compliance with industry standards.

City of Toronto, Transit Fare Integration Modeling

He provided economic analysis and traffic modeling support in relation to transit fare integration. The overall objective was to develop an independent analytical tool to support the City of Toronto's review of transit fare policies, including an elasticity model and fare policy simulation tool for the Toronto context.

Transport Canada, Economic Impact of Great Lake and St. Lawrence Seaway Ports

He led and managed an economic evaluation study to determine the economic impact of the St. Lawrence Seaway and Great Lake marine system on the Canadian economy. The study determined the overall level of employment and output associated with the project.

Transport Canada and the U.S. Army Corps of Engineers, Great Lakes and St. Lawrence Seaway Study

He managed the development of a cost benefit analysis tool to determine the optimal long run investment strategy for maintaining the infrastructure (e.g., locks, bridges) of the St. Lawrence Seaway and Great Lakes. This was used as input into the Great Lakes St. Lawrence Seaway Study to evaluate the infrastructure needs of the Great Lakes St. Lawrence Seaway system, specifically the engineering, economic, and environmental implications of those needs as they pertain to commercial navigation.

Several Port Clients, Grant Support for Applicant's Submissions to Transport Canada's National Trade Corridors Fund (NTCF)

He led grant submissions to demonstrate the business case application for the client's grant applications under Transport Canada's NTCF Program. Similar to USDOT's programs, the grant application demonstrates the strategic alignment of the project to Transport Canada's evaluation criteria, including financial, economic, operational, trade facilitation, and other criteria. Through the development of the grant applications, Dennis has engaged stakeholders, including shippers, project sponsors, truckers and Transport Canada to ensure that the project justification was well supported. HDR has helped clients secure more than \$300 million in funding from this program over the last 2 years.

MBIA Insurance Corporation and LatAM Capital (Bond Insurer), Risk Analysis and Due Diligence of Transportation Infrastructure Financing

He managed studies that provided risk analysis of their Latin American highway, airport infrastructure, and tax revenue-secured government financings. In each of the individual financings, he provided an independent opinion as to the probability that traffic levels will be attained, whether the concession related to transportation infrastructure will default, and what claims will have to be paid by MBIA. Key considerations assessed in these studies included the impact of differential toll rates for electronic tolling and time of day pricing. To date, projects have included several privatized urban toll roads in Mexico, major international airports in Santiago and Mexico City, and numerous state tax revenue-based securitizations. Study outcomes were presented to rating agencies such as Fitch, S&P, and Moody's.



Fred Kramer

Senior Economist/QA/QC

EDUCATION

Master of Arts,
Economics, Simon Fraser
University

Bachelor of Arts and
Science, University of
Lethbridge

INDUSTRY TENURE

31 years

HDR TENURE

14 years

Fred Kramer is an experienced transportation economist with a thorough understanding of decision support, specifically in the creation and interpretation of business case, multiple account, benefit-cost, and risk analyses. With HDR for the past 14 years, Fred has successfully contributed to and managed numerous economic assessments with a focus on the quantification of public benefits of proposed transportation projects. Leading HDR's freight and passenger rail economics practice, Fred has led successful public funding applications on behalf of numerous Class 1 freight railroads, including Alaska Railroad Corporation. He is currently providing grant writing services for ARRC under a term contract. He has also been active in port rail infrastructure benefit-cost analyses, helping secure federal and state funds on behalf of the Port of Alaska and others. Fred's experience with cost-benefit analyses and grant funding applications for Alaska transportation projects will result in a streamlined schedule for the City of Unalaska.

RELEVANT EXPERIENCE

Alaska Railroad Corporation, Bird Creek Bridge Replacement CRISI Grant Application

Provided full application writing and benefit cost analysis services utilizing a triple-bottom line approach. Alaska Railroad requested and received a \$3.8 million grant. The project will replace an aging bridge approaching the end of its useful life on the Alaska railroad's main line linking Anchorage with the Ports of Whittier and Seward.

Alaska Railroad Corporation, 2020 CRISI Grant Application: MP 25.7 Trail River Bridge Replacement

Created a successful CRISI grant application to help fund a critical bridge replacement project with input from ARRC's engineering department. ARRC requested and received a \$4.1 million grant.

Portland Marine Terminal Freight and Jobs Access Project Benefit-Cost Analysis

Provided a detailed benefit cost analysis of a grade separation over a busy marine terminal rail lead and construct associated road, intersection, and multimodal improvements to increase access and connectivity on a National Highway System Connector in support of a Tiger VIII discretionary grant application. The Port requested and received \$7.3 million.

San Joaquin Regional Rail Commission, Stockton Diamond Grade Separation Benefit-Cost Analysis

Provided a detailed benefit-cost analysis of the Stockton Diamond Grade Separation project in support of a CRISI grant application. SJRRC requested and received \$20 million.

BNSF and UP, Tower 55 At-Grade Rail Improvement Project

HDR developed benefit-cost analysis and economic impacts of enhancements to Tower 55 in Fort Worth. The project was awarded \$34 million.

BNSF and UP Railroads, Colton Crossing Grade Separation Project

HDR developed a public benefits analysis for the proposed Colton Crossing grade separation project. The study quantified the potential benefits accruing from increased time saving to motorists and inventories, reduced vehicle operating costs and lower environmental emissions. This project was allocated \$97.3 million in Transportation Corridor Improvement Funding (TCIF).

SEMO Port, Loop Tracks Terminal Project BUILD Grant

SEMO proposes construction of a new state-of-the-art, highly efficient rail-barge terminal consisting of a railroad loop track for the accommodation of unit freight rail trains, a rail-to-barge conveyor system for rapid unloading and product transfer, and a river barge loadout terminal. HDR provided full application development and a benefit-cost analysis in support of a federal funding request under the BUILD program. SEMO Port received \$19.8 million.

Georgia Port Authority, Port of Savannah International Multi-modal Connector USDOT Grant Application

Developed a comprehensive benefit-cost analysis and federal funding grant applications on behalf of the Georgia Port Authority's (GPA) International Multi-Modal Connector (IMMC) project. Upon review of the application the USDOT awarded GPA \$44 million from the U.S. Department of Transportation's FY2016 FASTLANE Grant Program.

Port of Vancouver, West Vancouver Freight Access (WVFA) Project Federal Funding Application

The WVFA project constructs a new rail access route that eliminates severe rail traffic congestion on a high-speed intercity passenger rail corridor to which USDOT granted \$580 million. In support of the Port of Vancouver's TIGER II application, HDR provided full application writing and benefit-cost analysis services utilizing a triple-bottom line approach. The Port requested and received a \$10 million grant.

Port of Coos Bay, Benefit-Cost Analysis in Support of Federal Funding Application, OR. Principal Economist.

In support of the Port of Coos Bay TIGER II application, HDR provided full application writing and benefit-cost analysis services utilizing a triple-bottom line approach. The Port requested and received a \$13.5 million grant.

Port of Prince Rupert, Economic Impact Analysis in Support of the National Trade Corridor Fund Application

In support of a Canadian National Trade Corridor Fund (NTCF) grant application HDR provided a detailed analysis of the costs and benefits of the terminal improvement and bridge replacement projects for the Port of Prince Rupert. Following a triple bottom line approach, HDR monetized economic, social (safety), and environmental (emissions reductions) aspects of the projects.



Sheryl Li

Economist

EDUCATION

Master of Food and Resource Economics, University of British Columbia

Bachelor of Arts, Economics Major, Mathematics Minor, University of British Columbia

INDUSTRY TENURE

5 years

HDR TENURE

2 years

Sheryl is an economist proficient in economic research and quantitative modeling for a variety of industries. Her experience has provided her with knowledge in conducting micro and macroeconomic research, analyzing large volumes of data, constructing complex economic models, and providing actionable results. She has worked on an array of transportation projects with HDR, including conducting cost-benefit analysis, economic forecast, market research, risk assessments, and market feasibility analysis. Most recently, Sheryl developed a comprehensive benefit-cost analysis for the construction of a Petroleum and Cement Terminal at the Port of Alaska to assist in the application of INFRA by the U.S. Department of Transportation. Benefit to You: Sheryl's expertise in economic research and cost-benefit analysis for Alaska projects will help our team meet Unalaska's standards.

RELEVANT EXPERIENCE

Port of Alaska, Cost-Benefit Analysis for the Construction of a Petroleum and Cement Terminal

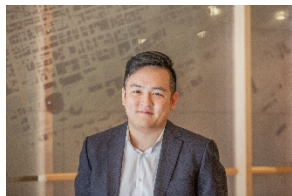
Developed a comprehensive cost-benefit analysis with advanced Microsoft Excel modeling for evaluating the replacement of a petroleum and cement terminal for the Port of Alaska. The analysis focused on impacts including shipper cost savings, avoided capital costs, safety, pavement maintenance cost and greenhouse gas emissions. Sensitivity analysis provided decision makers with information regarding potential risks of the project.

San Diego Association of Governments, Cost-Benefit Analysis in Support of Trade Corridor Enhancement Program (TCEP) Grant Applications

Developed comprehensive cost-benefit analysis with advanced Microsoft Excel modeling to assist in the application of TCEP grant application for a proposal. San Diego Association of Governments is looking to expand freight and passenger rail capacity, as well as stabilize the right-of-way rail track along part of the Los Angeles – San Diego – San Luis Obispo Rail Corridor. Such improvements will ensure continuous rail service efficiency and accountability. The analysis focused on financial, social and environmental impacts. The project was awarded \$106 million through TCEP.

Prince Rupert Port Authority, Cost-Benefit Analysis in Support of National Trade Corridors Fund (NTCF) Grant Applications

Developed comprehensive cost-benefit analysis with advanced Microsoft Excel modeling to assist in the application of NTCF by Transport Canada for 2 proposals. Prince Rupert Port Authority is looking to replace a single-track rail bridge with a new double track rail bridge and develop an inter-modal logistics park, which will significantly alleviate existing bottlenecks of the rail traffic, and enable the continuous growth of container exports. The analysis focused on financial, social and environmental impacts. Sensitivity analysis provided decision makers with information regarding potential risks of the projects. The project was awarded \$154 million by Transport Canada through NTCF.



Stanley D. Wu

Economist

EDUCATION

Graduate Diploma, Risk Management, Queen's University, Kingston, 2017

Master of Arts, Economics, Queen's University, Kingston, 2016

Bachelor of Arts, Economics, Simon Fraser University, 2015

INDUSTRY TENURE

3 years

HDR TENURE

3 years

Stanley Wu is a driven economist focused on conducting research and econometric analysis in support of infrastructure projects. Stanley holds a Master's degree in Economics and a Graduate Diploma in Risk Policy and Regulation (financial risk) from Queen's University. His academic background has provided him with considerable experience in analyzing and solving complex problems through econometric modeling and presenting insightful findings. His experience in econometric analysis has allowed him to be well versed in Excel, R, STATA, and SAS.

Since joining HDR, Stanley has worked on a wide array of projects, including benefit-cost analysis, risk-adjusted forecasting, and cluster analysis. He also gained experience in conducting Monte Carlo simulations through At-Risk®, as well as statistical analysis through SPSS.

RELEVANT EXPERIENCE

Alaska Railroad Corporation, ARRC BUILD Grant

Stanley prepared a BUILD Grant and Benefit-cost Analysis. The proposed program is looking at replacing two rail bridges on the main line connecting Anchorage and Fairbanks. Currently, these two bridges are located on a bed of melting permafrost that has significantly impacted the structure's integrity leading to a potential structural failure. If either of the bridges were to fail, transportation of passengers and freight will divert from the rail to roadway.

Stanley developed a model assessing the costs and the benefits from replacing the two rail bridges. The project is expected to allow the safe transportation for freight and passengers along the rail line, as well as avoid the need to use the roadway.

Alaska Railroad Corporation, ARRC CRISI

HDR supported Alaska Railroad (ARRC) in the development of a Federal Railroad Administration (FRA), CRISI grant application.

The project looks to replace the current Bird Creek Rail Bridge connecting Anchorage to Seward and Whittier, two key Alaskan ports. The current rail bridge is structurally obsolete and part of the only rail connection from Anchorage to the two port cities. The project looks to avoid the potential need to divert transportation to roadway options (i.e., trucks and busses) when the structurally obsolete bridge fails. The project was awarded \$3.9 million in funding from the federal grant program.

Stanley developed a model assessing the costs and benefits from replacing the obsolete rail bridge. The project is not only expected to allow safe transportation along the rail line but will also allow the railroad to transport heavier railcars in line with current industry standards. The project is expected to avoid the potential need to truck freight and bus passengers between Anchorage and Seward or Whittier.

Alaska Railroad Corporation, ARRC CRISI Grant #2

Stanley prepared a BUILD grant application for ARRC. The project looks to replace a rail bridge connecting Seward, Alaska with Anchorage. The current rail bridge, originally constructed in 1951, is a structurally obsolete bottleneck that is reaching the end of its useful life. If the bridge failed, transportation of passengers and freight would divert from rail to highway.

Stanley developed a model assessing the costs and benefits from replacing the rail bridge. The project is expected to allow the safe transportation of freight and passengers along the rail line, as well as avoid the need to use the roadway.



Summer Hudson

Graphic Design

EDUCATION

Bachelor of Arts, Arts,
Prairie View A&M
University

Associate of Science,
Graphic Design,
Westwood College

INDUSTRY TENURE

21 years

HDR TENURE

8 years

Summer is a versatile and conscientious designer who has spent the last 8 years working with DOT&PF to develop design concepts for project websites, public involvement material and collateral, and project specific graphic design needs. She has provided public involvement and graphic design services for transportation projects in Unalaska, including the Unalaska Airport Master Plan and the FUDS Public Involvement Project. For the FUDS project, HDR has assisted USACE in evaluating the need for a Restoration Advisory Board in communities throughout Alaska that have been identified as Formerly Used Defense Sites, including Unalaska. Her graphic design experience on Alaska transportation projects, as well as her experience in the community of Unalaska, will lead to high-quality deliverables that support efficient project completion.

RELEVANT EXPERIENCE

ARRC FY2021 MARAD PIDP Grant Application

Summer is providing graphic design to support ARRC in the development of a MARAD PIDP discretionary grant application.

ARRC CRISI Grant #2

Summer provided graphic design for this BUILD Grant application for ARRC.

Unalaska Airport Master Plan Update

Summer provided graphic design for this project that involved reviewing and compiling a list of the issues affecting the Unalaska Airport. This project included a robust public involvement program.

TO-FY19 FUDS Public Involvement

Since 2016 HDR has assisted the USACE Alaska District in implementing the necessary activities to evaluate the need for a Restoration Advisory Board in communities throughout Alaska that have been identified as Formerly Used Defense Sites (FUDS). Our team prepares a Public Involvement Plan for each location that addresses the FUDS properties and recommends implementation of public outreach and community involvement initiatives that are suited to the planned cleanup activities at these properties.

Airport Way/Steese Expressway Interchange

HDR provided preliminary engineering through final design for this Highway Safety Improvement Program (HSIP) project to construct a grade-separated facility at the intersection to improve safety and traffic flow.

Angoon Airport

HDR is providing roadway engineering, hydrology & hydraulic engineering, environmental support services, public involvement, and Right of Entry (ROE) acquisition services with acquired ROEs from residents and community entities in the City of Angoon, and assisting with public outreach to the community

Chiniak Highway Erosion Design

HDR has completed bid-ready PS&E at nine discrete sites between MP 19-43 on the Chiniak Highway and supported the DOT&PF during construction.

Dalton Highway MP 109-144 Reconstruction

HDR provided technical design and led the reconstruction of 35 miles of the Dalton, which will widen the highway to 32 feet with 12-foot lanes and 4-foot shoulders, resurface the highway, provide embankment repairs and new signage, replace culverts to improve drainage, and replace the Douglas Creek Bridge and guardrails at seven bridge crossings.

Egan-Yandukin PEL

This intersection project, DOT&PF's first Planning and Environmental Linkages (PEL) Study in Southcoast Region, simultaneously evaluated issues such as traffic operations and safety, business and property impacts, land use planning, non-motorized connectivity, wetlands, and other environmental concerns.

South Tongass Highway: Deermount to Surf Design Services

HDR is leading design improvements of a 3-mile stretch of the South Tongass Highway that connects the cities of Ketchikan and Saxman. Work includes highway widening, minor realignments, retaining walls, drainage improvements, utility relocation, and construction of a multiuse pathway.

13th Street Traffic Calming Design

This HDR lead effort began with a robust public outreach process to determine beneficial ways to calm traffic along each corridor. Alternative solutions presented consisted of bulb-outs at key intersections, placement of Rectangular Rapid Flashing Beacons (RRFB), chicanes, radar speed signs, and improvements to non-compliant ADA pedestrians access points. The outreach process and planning level analysis resulted in a distinct approach to traffic calming for each corridor. 13th St traffic calming primarily consisted of bulb-outs at key intersection crossings, and placement of an RRFB. Kootenai St will develop chicanes, signalized intersection upgrades, and replacing sections of on-street parking with raised sidewalks and dedicated bicycle lanes. Both corridors will improve non-ADA complaint driveways and pedestrian ramps.

Qualifications Evaluation
Capt. Bay Road Paving and Utility Extension
Cost/Benefit Analysis RFP

For each Technical Attribute rank each Respondent starting with 1,2,3,4,5 and 6 and so forth. 1 is best, 2 is next best, 3 is third best, etc.. Do not skip or repeat numbers.

<i>Technical Attributes</i>	<i>Weight</i>	<i>%</i>
Responsiveness and Understanding	25	25.0%
Professional Qualifications	25	25.0%
Schedule and Deliverable Products	25	25.0%
Team Experience	25	25.0%
Technical Proposal Raw Score	100	
Technical Proposal Adjusted Score		50%

HDR	Northern Economics		
100	95		
100	95		
100	95		
100	95		
100	95		
100	95		
1	0		

Total Score
Ranking

50%	48%		
1	2		



CITY OF UNALASKA
Consulting Services Agreement
Captains Bay Road and Utilities Upgrades Project
Cost/Benefit Analysis
Project No. 19201

Prepared By:
City of Unalaska
P.O. Box 610
Unalaska, Alaska 99685
907.581.1260

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AGREEMENT FOR CONSULTING AND RELATED SERVICES

THIS AGREEMENT is entered into this _____ day of _____, 2021, by and between HDR ENGINEERING, INC. (hereinafter called "Consultant"), and the CITY OF UNALASKA (hereinafter called "City").

WITNESSETH THAT:

WHEREAS City desires to engage Consultant to render consulting and related services for the performance of a Cost/Benefit Analysis and Other Professional Services for the **Captains Bay Road & Utilities Upgrades Project** and

WHEREAS Consultant represents that it has the experience and ability to perform such services; and

WHEREAS the parties hereto desire to enter into a basic agreement setting forth the terms under which Consultant will, as requested, perform such work;

NOW THEREFORE the parties hereto do mutually agree as follows:

1. Employment of Consultant

Consultant agrees to provide professional services in accordance with the provisions of this Agreement. A written description of the work to be performed, schedule and compensation is set out in Exhibits A-C of this Agreement.

2. Performance

Consultant agrees to perform the work described in Exhibit A- Scope of Services; however, the Consultant is not authorized to perform any work or incur any expense which would cause the amount for which he is entitled to be paid under this Agreement to exceed the amount set forth in Exhibit C – Fee Proposal without the prior written approval of the City. All services shall be rendered in accordance with the schedule set forth in Exhibit B – Contract Schedule.

The work shall include but not be limited to the following: furnishing all equipment, transportation, per diem, travel, and supplies to perform all scopes of work that are authorized under their State of Alaska's Professional License, in connection with the **Cost/Benefit Analysis and Other Professional Services** for the City of Unalaska **Captains Bay Road & Utilities Upgrades Project**.

3. Fee

After receipt of a periodic billing for said services, the City agrees to pay Consultant as compensation for the services under this Agreement such sums of money as set forth in Exhibit C of this Agreement. The amount payable to the Consultant shall not exceed the amount specified in Exhibit C.

4. Payments

City agrees to make periodic payments to Consultant as services are performed and costs are incurred, provided Consultant submits a proper invoice for each payment, in such form accompanied by such evidence in support thereof as may be reasonably required by the City. All invoices are otherwise due and payable within thirty (30) days of receipt by City. City shall pay Consultant for the services identified in Exhibit A the **Not to Exceed Total Fee of Two Hundred Thirty Four Thousand, Nineteen Dollars and**

Seventy Five Cents (\$234,019.75). The Not to Exceed Total Fee is based on the distribution of the Not to Exceed Total Fee between tasks set forth in Exhibit A. The portion of the Not to Exceed Total Fee billed and paid for Consultant's services shall be equal to the proportion of services actually completed for each task set forth in Exhibit A during the billing period to the fee total specified for that task.

5. Personnel

Consultant agrees to furnish all personnel necessary for expeditious and satisfactory performance of this Agreement, each to be competent, experienced, and well qualified for the work assigned. No person objected to by the City shall be employed by Consultant for work hereunder.

6. Independent Contractor Status

In performing under this Agreement, Consultant acts as an independent contractor and shall have responsibility for and control over the details and means for performing the consulting services required hereunder.

7. Indemnification

Consultant shall defend and save harmless City or any employee, officer, insurer, or elected official thereof from and against losses, damages, liabilities, expenses, claims, and demands but only to the extent arising out of any negligent act or negligent omission of Consultant while performing under the terms of this contract.

8. Assignment

Consultant shall not assign this Agreement or any of the monies due or to become due hereunder without the prior written consent of City.

9. Subcontracting

Consultant may not subcontract its performance under this Agreement without prior written consent of City. Any subcontractor must agree to be bound by terms of this Agreement.

10. Designation of Representatives

The Parties agree, for the purposes of this Agreement, the City shall be represented by and may act only through the **Director of Public Works, Tom Cohenour**, or such other person as he may designate in writing. Consultant shall advise City in writing of the name of its representative in charge of the administration of this Agreement, who shall have authority to act for and bind Consultant in connection with this Agreement.

11. Termination

Either party shall have the right to terminate this Agreement in whole or in part at any time and for reasonable cause, by delivery of thirty (30) days written notice, specifying the extent and effective date thereof. After receipt of such notice, Consultant shall stop work hereunder to the extent and on the date specified in such notice, terminate all subcontracts and other commitments to the extent they relate to the work terminated, and deliver to City all designs, computations, drawings, specifications and other

material and information prepared or developed hereunder in connection with the work terminated. Consultant shall not be terminated for cause if it has cured the default or event that would have otherwise given rise to the termination within 15 days from receipt of written notice of such default or event.

In the event of any termination pursuant to this clause, Consultant shall be entitled to be paid as provided herein for direct labor hours expended and reimbursable costs incurred prior to the termination pursuant to Section 3 hereof, and for such direct labor hours and reimbursable costs as may be expended or incurred thereafter with City's approval in concluding the work terminated, it being understood that Consultant shall not be entitled to any anticipated profit on services not performed. Except as provided in this clause, any such termination shall not alter or affect the rights or obligations of the parties under this Agreement.

12. Ownership and Use of Documents

Consultant agrees that all original design reproducible drawings, all pertinent calculations, specifications, reports, data, and other documents prepared for the City hereunder are the property of the City and the City shall have the right, without payment of additional compensation, to disclose, reproduce, and use such documents for this project. However, City's re-use of such deliverables or materials for purposes not contemplated in this Agreement shall be at City's sole risk and without liability to Consultant.

13. Insurance

- A. During the term of the contract, the Consultant shall obtain and maintain in force the insurance coverage specified in these requirements. Such coverage shall be with an insurance company rated "Excellent" or "Superior" by A. M. Best Company, or a company specifically approved by the City.
- B. The Consultant shall carry and maintain throughout the life of this contract, at its own expense, insurance not less than the amounts and coverage herein specified, and the City of Unalaska, its employees, and agents shall be named as additional insured under the insurance coverage so specified and where allowed, with respect to the performance of the work. There shall be no right of subrogation against the City or its agents performing work in connection with the work, and this waiver of subrogation shall be endorsed upon the policies. Insurance shall be placed with companies acceptable to the City of Unalaska; and these policies providing coverage thereunder shall contain provisions that no cancellation in the policy relative to this project shall become effective except upon 30 days prior written notice thereof to the City of Unalaska.
- C. Prior to commencement of the work, the Consultant shall furnish certificates to the City of Unalaska, in duplicate, evidencing that the Insurance policy provisions required hereunder are in force. Acceptance by the City of Unalaska of deficient evidence does not constitute a waiver of contract requirements.
- D. The Consultant shall furnish the City of Unalaska with certified copies of policies upon request. The minimum coverages and limits required are as follows:
 - 1. Workers' Compensation insurance in accordance with the statutory coverages required by the State of Alaska and Employers Liability insurance with limits not less than \$1,000,000 and, where applicable, insurance in compliance with any other statutory

obligations, whether State or Federal, pertaining to the compensation of injured employees assigned to the work, including but not limited to Voluntary Compensation, Federal Longshoremen and Harbor Workers Act, Maritime and the Outer Continental Shelf's Land Act.

2. Commercial General Liability with limits not less than \$1,000,000 per Occurrence and \$2,000,000 Aggregate for Bodily Injury and Property Damage, including coverage for Premises and Operations Liability, Products and Completed Operations Liability, Contractual Liability, Broad Form Property Damage Liability and Personal Injury Liability.
 3. Commercial Automobile Liability on all owned, non-owned, hired, and rented vehicles with limits of liability of not less than \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage per each accident.
 4. Umbrella/Excess Liability insurance coverage of not less than \$1,000,000 per occurrence and annual aggregate providing coverage in excess of General Liability, Auto Liability, and Employers Liability.
 5. If work involves use of aircraft, Aircraft Liability insurance covering all owned and non-owned aircraft with a per occurrence limit of not less than \$1,000,000.
 6. If work involves use of watercraft, Protection and Indemnity insurance with limits not less than \$1,000,000 per occurrence.
 7. Professional Liability insurance with limits of not less than \$1,000,000 per claim and \$1,000,000 aggregate
- E. All insurance policies as described above are required to be written on an "occurrence" basis. In the event occurrence coverage is not available, the Consultant agrees to maintain "claims made" coverage for a minimum of two years after project completion.
- F. If the Consultant employs subcontractors to perform any work hereunder, the Consultant agrees to require such subcontractors to obtain, carry, maintain, and keep in force during the time in which they are engaged in performing any work hereunder, policies of insurance which comply with the requirements as set forth in this section and to furnish copies thereof to the City of Unalaska. This requirement is applicable to subcontractors of any tier.

14. Claims Recovery

Claims by City resulting from Consultant's failure to comply with the terms of and specifications of this contract and/or default hereunder may be recovered by City by withholding the amount of such claims from compensation otherwise due Consultant for work performed or to be performed. City shall notify Consultant of any such failure, default or damage therefrom as soon as practicable and no later than 10 days after discovery of such event by written notice. Nothing provided herein shall be deemed as constituting an exclusive remedy on behalf of City, nor a waiver of any other rights hereunder at law or in equity. Design changes required as a result of failure to comply with the applicable standard of care shall be performed by the Consultant without additional compensation.

15. Performance Standard

Services performed under this Agreement will be performed with reasonable care or the ordinary skill of the profession practicing in the same or similar location and under similar circumstances and shall comply with all applicable codes and standards.

16. Compliance with Applicable Laws

Consultant shall in the performance of this Agreement comply with all applicable federal, state, and local laws, ordinances, orders, rules, and regulations applicable to its performance hereunder, including without limitation, all such legal provisions pertaining to social security, income tax withholding, medical aid, industrial insurance, workers' compensation, and other employee benefit laws. Consultant also agrees to comply with all contract provisions pertaining to grant or other funding assistance which City may choose to utilize to perform work under this Agreement. The Consultant and all subcontractors must comply with state laws related to local hire and prevailing wages.

17. Records and Audit

Consultant agrees to maintain sufficient and accurate records and books of account, including detailed time records, showing all direct labor hours expended and all reimbursable costs incurred and the same shall be subject to inspection and audit by City at all reasonable times. All such records and books of account pertaining to any work performed hereunder shall be retained for a period of not less than six (6) years from the date of completion of the improvements to which the consulting services of this Agreement relate.

18. Reporting of Progress and Inspection

Consultant agrees to keep City informed as to progress of the work under this Agreement by providing monthly written progress reports, and shall permit City to have reasonable access to the work performed or being performed, for the purpose of any inspection City may desire to undertake.

19. Form of City Approval

Except as otherwise provided in this Agreement, City's requests and approvals, and Consultant's cost estimates and descriptions of work to be performed, may be made orally where necessary, provided that the oral communication is confirmed immediately thereafter in writing.

20. Duration of Agreement

This agreement is effective for a period of one (1) year from the date first shown above. The agreement may be extended by the mutual written agreement of City and Consultant.

21. Inspections by City

The City has the right, but not the duty, to inspect, in the manner and at reasonable times it considers appropriate during the period of this Agreement, all facilities and activities of the Consultant as may be engaged in the performance of this Agreement.

22. Endorsements on Documents

Endorsements and professional seals, if applicable, must be included on all final plans, specifications, estimates, and reports prepared by the Consultant. Preliminary copies of such documents submitted for review must have seals affixed without endorsement (signature).

23. Notices

Any official notice that either party hereto desires to give the other shall be delivered through the United States mail by certified mail, return receipt requested, with postage thereon fully prepaid and addressed as follows:

To City:
Tom Cohenour
City of Unalaska
Box 610
Unalaska, Alaska 99685

To HDR Engineering:
Wescott Bott
HDR Engineering
2525 C Street Suite 500
Anchorage, Alaska 99503

The addresses hereinabove specified may be changed by either party by giving written notice thereof to the other party pursuant to this paragraph.

24. Venue/Applicable Law

The venue of any legal action between the parties arising as a result of this Agreement shall be laid in the Third Judicial District of the Superior Court of the State of Alaska and this contract shall be interpreted in accordance with the laws of the State of Alaska.

25. Attorney's Fees

In the event either party institutes any suit or action to enforce its right hereunder, the prevailing party shall be entitled to recover from the other party its reasonable attorney's fees and costs in such suit or action and on any appeal therefrom.

26. Waiver

No failure on the part of City to enforce any covenant or provisions herein contained, nor any waiver of any right hereunder by City, unless in writing and signed by the parties sought to be bound, shall discharge or invalidate such covenants or provisions or affect the right of City to enforce the same or any other provision in the event of any subsequent breach or default.

27. Binding Effect

The terms, conditions and covenants contained in this Agreement shall apply to, inure to the benefit of, and bind the parties and their respective successors.

28. Entire Agreement/Modification

This agreement, including Exhibits A-C, and the Consultant's proposal dated August 12, 2021 constitutes the entire Agreement between the parties with respect to the subject matter hereof, and all prior

negotiations and understandings are superseded and replaced by this Agreement and shall be of no further force and effect. No modification of this Agreement shall be of any force or effect unless reduced to writing, signed by both parties and expressly made a part of this Agreement.

In witness whereof, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in duplicate on the respective date indicated below.

HDR ENGINEERING, INC.

CITY OF UNALASKA, ALASKA

By: _____
Tim Gallagher, Vice President

By: _____
Erin Reinders, City Manager

State of Alaska)
) ss.
Third Judicial District)

State of Alaska)
) ss.
Third Judicial District)

The foregoing instrument was acknowledged before me on the ____ day of _____, 2021, by Tim Gallagher, the Vice President of **HDR Engineering, Inc.**, a Corporation qualified to do business in Alaska, on behalf of the corporation.

The foregoing instrument was acknowledged before me on the ____ day of _____, 2021, by Erin Reinders, City Manager for the City of Unalaska, a First Class Alaska Municipal Corporation, on behalf of the City of Unalaska.

Notary Public, State of Alaska
My Commission Expires _____

Notary Public, State of Alaska
My Commission Expires _____

**CITY OF UNALASKA
EXHIBIT "A"
SCOPE OF SERVICES**

The Consultant's Proposal dated August 12, 2021, is attached and incorporated into this Scope of Services. An abbreviated Scope of Services is set out below.

Task 1. Project Management

Deliverables for Task 1

1. Monthly Project Status Meetings
2. Monthly Invoices and Progress Reports

Task 2. Kick-Off and Strategic Guidance Meeting

Deliverables for Task 2

1. Revised Work Plan
2. Data Request

Task 3. Site Visit

Deliverables for Task 3

1. Field Trip Report and Recommendations

Task 4. Cost-Benefit Analysis Preparation

Deliverables for Task 4

1. Initial version of Technical Memorandum #1: Methodology of Cost-Benefit Analysis of Captains Bay Road Improvements
2. Cost-Benefit Analysis Model (in a MS Excel spreadsheet)
3. Updated version of Technical Memorandum #1 documenting the CBA methodology, interviews with Project stakeholders, workshop with City's representatives, data inputs and assumptions, and analysis results

Task 5. Identify and Evaluate Funding Sources

Deliverables for Task 5

1. Technical Memorandum #2 on identification and evaluation of infrastructure funding sources

Task 6. Draft/Final Report and Presentation to the City

Deliverables for Task 6

1. Draft Project Report for review and comment
2. Final Project Report
3. PowerPoint presentation on study findings

Task 7. Prepare Federal Infrastructure Grant Application

Deliverables for Optional Task 7

1. Draft Federal Grant Application
2. Final Federal Grant Application

**CITY OF UNALASKA
EXHIBIT "B"
CONTRACT SCHEDULE**

The proposed contract schedule is set forth below.

Tasks 1 - 6

September 1 – September 30, 2021:

1. NTP
2. Kickoff Meeting
3. Field Investigation
4. Data Gathering
5. City and Stakeholder Interviews
6. CBA Initiation

October 1, – November 15, 2021

1. CBA Development
 - a. Identification of No Build and Build Alternatives and Engineering Review
 - b. Project Benefits Identification and Benefit Methodology
 - c. CBA Model Development, Data Input, Draft CBA Results, Economic Benefits Assessment
 - d. Sensitivity Analysis
 - e. Final Results
2. Identify and Evaluate Funding Sources

November 15 – December 31, 2021

1. Draft Final Report Preparation
2. Draft Report Presentation
3. Review Comments and Provide Response
4. Final Report Preparation and Submittal

January 1 – January 31, 2022

1. Project Closeout

Task 7

January 15 – January 31, 2022

1. NTP
2. Kickoff Meeting with City
3. Review of NOFO
4. Initiate Grant Application
 - a. Identify Appropriate Project Alternative
 - b. Identify Appropriate Grant Program

February 1 – February 28, 2022

1. Prepare Draft Grant Application

March 1, 2022 – March 31-2022

1. Draft Grant Review
2. Address Comments

3. Prepare Final Grant Application

April 1 – April 30, 2022

1. Submit Final Grant Application
2. Project Closeout

CITY OF UNALASKA
EXHIBIT "C"
FEE PROPOSAL

CONSULTANT FEE PROPOSAL DETAIL

CITY OF UNALASKA
 DEPARTMENT OF PUBLIC WORKS
 P.O. BOX 610
 UNALASKA, AK 99685

PROJECT NAME:
 DPW CONTRACT NO.:
 CONSULTANT:

INVOICE DATE:
 PAY ESTIMATE NO.:
 PERIOD: FROM TO

TASK	DESCRIPTION	FEE TOTAL (\$)	% COMPLETE	\$ VALUE TO DATE	\$ REMAINING
1	Project Management	\$20,436.46	%	\$	\$
2	Kickoff/Strategy Meeting	\$ 6,578.96	%	\$	\$
3	Site Visit	\$22,645.52	%	\$	\$
3.1	Site Visit Report and Data Organization	\$ 3,075.26	%	\$	\$
4	Cost Benefit Analysis		%	\$	\$
4.1	Identify Baseline/No Build/Build Scenarios	\$36,025.48	%	\$	\$
4.2	Identify Project Benefits/ Benefits Methods Memo	\$18,335.68	%	\$	\$
4.3	Cost Benefit Model/ Economic Benefit Assessment	\$22,870.84	%	\$	\$
4.4	Sensitivity Analysis	\$ 5,832.12	%	\$	\$
4.5	Document Results	\$ 9,637.44	%	\$	\$
5	Identify and Evaluate Funding Sources	\$26,142.84	%	\$	\$
6	Draft and Final Report and Presentation	\$21,640.73	%	\$	\$
7	Federal Grant Preparation	\$	%	\$	\$
7.1	Project Management	\$ 4,235.48	%	\$	\$
	Grant Preparation and Submittal	\$36,562.95	%	\$	\$
	Total All Tasks	\$234,019.75	%	\$	\$

Budget Assumptions Tasks 1-6:

1. Assumes 12/31/21 submittal of final report with project closeout extending to 1/31/22
2. Assumes one field visit to review the project area by project engineering staff. Economist will participate in any meetings associated with the field trip virtually.
3. Assumes all interviews of stakeholders and City personnel by economists will be virtual or by telephone.
4. Assumes monthly status meetings, work product review meetings and final presentation to the City will be virtual.
5. Assumes between 4 to 6 alternatives will receive a Cost Benefit Analysis
6. Cost associated with travel delays or schedule changes outside HDR's control are not included in the budget and will be assessed on a Time and Expense Basis

7. Task 1 Project Management includes \$75.00 for black and white and color copying
8. Task 3 includes travel, lodging and per diem for one overnight trip for two HDR staff.
9. The fee is built on 2021 labor rates assuming that the majority of the work for Task 1-6 will be accomplished by 12/31/21. If there is a delay in project start up or other delays that are beyond HDR's control that push the majority of the basic services related to tasks 1-6 into 2022, HDR requests the opportunity to negotiate a fee adjustment with the City to reflect changes in HDR's labor rates.

Budget Assumptions for Task 7

1. Assumes project elements meet federal grant criteria
2. Assumes separate NTP after the completion of the Cost Benefit Analysis Tasks
3. Assumes federal grant Notice of Funding Opportunity will be issued in early 2022.
4. Assumes all grant meetings will be virtual
5. Estimate is based on the submittal of one grant application for a feasible alternative based on the findings of the Cost Best Analysis.
6. Estimate is based on the 2021 federal grant criteria for various infrastructure grants with the assumptions that federal 2022 grant criteria will be similar. Cost for any major increases in 2022 grant requirements will be negotiated prior to the issuance of the NTP.
7. The fee for Task 7 is based on 2021 labor rates. If task 7 is approved, HDR requests the opportunity to negotiate a revised fee reflecting to reflect changes in HDR labor rates.