

Rebuilding
American
Infrastructure with
Sustainability and
Equity (**RAISE**)
program

LUTAK DOCK REPLACEMENT

HAINES BOROUGH

FY 2021 GRANT APPLICATION

ED COFFLAND

Public Facilities Director
Haines Borough
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Application for Federal Assistance SF-424		
* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	* If Revision, select appropriate letter(s): <input type="text"/> * Other (Specify): <input type="text"/>
* 3. Date Received: <input type="text" value="07/09/2021"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>	
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="Haines Borough"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="47-0888706"/>	* c. UEI: <input type="text" value="E9E5AVP1J6R1"/>	
d. Address:		
* Street1: <input type="text" value="103 Third Ave S"/>	Street2: <input type="text"/>	
* City: <input type="text" value="Haines"/>	County/Parish: <input type="text" value="Haines Borough"/>	
* State: <input type="text" value="AK: Alaska"/>	Province: <input type="text"/>	
* Country: <input type="text" value="USA: UNITED STATES"/>	* Zip / Postal Code: <input type="text" value="99827-1209"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="Public Facilities"/>	Division Name: <input type="text"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text" value="Mrs."/>	* First Name: <input type="text" value="Carolann"/>	
Middle Name: <input type="text"/>	* Last Name: <input type="text" value="Wooton"/>	
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Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

B: County Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Department of Transportation

11. Catalog of Federal Domestic Assistance Number:

20.933

CFDA Title:

National Infrastructure Investments

*** 12. Funding Opportunity Number:**

PKG00266501

* Title:

FY 21 RAISE GRANTS

13. Competition Identification Number:

RAISE-FY21

Title:

FY21 RAISE Grants

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment

Delete Attachment

View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Haines Borough Lutak Dock Replacement

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424**16. Congressional Districts Of:**

* a. Applicant

AK

* b. Program/Project

AK-all

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

* a. Start Date:

12/31/2021

* b. End Date:

12/31/2024

18. Estimated Funding (\$):

* a. Federal	23,211,284.00
* b. Applicant	2,400,000.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	25,611,284.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?** a. This application was made available to the State under the Executive Order 12372 Process for review on . b. Program is subject to E.O. 12372 but has not been selected by the State for review. c. Program is not covered by E.O. 12372.*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)** Yes No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

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21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

 ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:

Mrs.

* First Name:

Aleka

Middle Name:

* Last Name:

Fullerton

Suffix:

* Title:

Interim Borough Manager

* Telephone Number:

907-766-6402

Fax Number:

* Email:

afullerton@haines.ak.us

* Signature of Authorized Representative:

Aleka Fullerton

* Date Signed:

07/06/2021



TABLE OF CONTENTS

LUTAK DOCK REPLACEMENT FY2021 Grant Application

1. EXECUTIVE SUMMARY.....	1
Project Description.....	1
Remaining Development Phase Activities.....	2
Phase 1: New Uplands and Relocated Boat Launch Ramp.....	3
Phase 2: Replace Existing Dock.....	3
Transportation Challenges Addressed by Project.....	6
Project History.....	7
2. PROJECT LOCATION.....	8
Community Profile.....	9
3. GRANT FUNDS, SOURCES & USES OF ALL PROJECT FUNDING.....	9
4. SELECTION CRITERIA.....	10
Safety.....	10
Environmental Sustainability.....	11
Quality of Life.....	12
Economic Competitiveness.....	12
State of Good Repair.....	13
Partnership.....	14
Innovation.....	14
5. ENVIRONMENTAL RISK REVIEW.....	15
Project Schedule.....	15
Required Approvals.....	15
Environmental Permits and Reviews.....	15
State and Local Approvals.....	18
Risks and Mitigation Strategies.....	19
6. BENEFIT-COST ANALYSIS.....	20
REFERENCES.....	22

LIST OF TABLES

Figure 1: Lutak Dock.....	1
Figure 2: Typical Closed-Cell Bulkhead Configuration	2
Figure 3: Phase 1 Construction.....	3
Figure 4: Phase 2 Construction.....	3
Figure 5: Intermodal Fuel Operations	6
Figure 6: Intermodal Cargo Operations	7
Figure 7: Corrosion Failure of the Interconnecting Closure Arc	7
Figure 8: 2004 Collapse Near Alaska Marine Highway System Terminal	7
Figure 9: Project Vicinity Map.....	8
Figure 10: Cargo Barge, Fuel Barge, and Ocean Export Routes	8
Figure 11: Sink Hole at Lutak Dock	11
Figure 12: Community Meeting Advertisement for the Lutak Dock Project.....	18

LIST OF TABLES

Table 1: Development Phase Activities Scope and Cost Estimate.....	2
Table 2: Phase 1 Scope and Cost Estimate	4
Table 3: Phase 2 Scope and Cost Estimate	5
Table 4: Race and Hispanic or Latino Origin in Haines Borough, AK; 2019: ACS 5-Year Estimates	9
Table 5: Project Costs by Phase and Funding Source.....	10
Table 6: Project Costs by Year(s) of Expenditure.....	10
Table 7: Per-Ton-Mile Emissions: Barge vs. Trucks.....	12
Table 8: Project Schedule	16
Table 9: Public and Stakeholder Involvement Summary.....	18
Table 10: Risk Assessment Summary	20
Table 11: Project Summary Matrix from BCA.....	21

SUPPORTING INFORMATION

Attachment A: Benefit-Cost Analysis Technical Memo
Attachment B: Benefit-Cost Analysis Spreadsheet
Attachment C: Letters of Support
Attachment D: Haines Lutak Dock Design & Development Concepts Report
Attachment E: Funding Commitment Resolution
Attachment F: Engineer's Scope & Cost Estimate
Attachment G: Phase 1 & 2 Site Plans
Attachment H: Lutak Dock Structural Assessment (2014)
Attachment I: Inspection and Assessment of Lutak Dock (2014)
Attachment J: Haines Borough 2025 Comprehensive Plan
Attachment K: Memorandum of Understanding with AML

1. EXECUTIVE SUMMARY



Figure 1: Lutak Dock

The Haines Borough is requesting \$23,211,284 in Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant funding to complete Phases 1 and 2 of the Lutak Dock Replacement (Project) for a total project cost of \$25,611,284. The Project is necessary to (1) prevent regional supply chain disruptions due to additional structural failures, (2) meet operational and storage demands, and (3) promote the most equitable and climate-sensitive transportation mode that meets Haines' geographic constraints.

Lutak Dock is a critical link in Haines' transportation infrastructure and an integral part of the supply chains that service the Haines Borough, Southeast Alaska, the Interior, and the Yukon. Virtually all fuel and consumer goods for Haines come over Lutak Dock, and it serves as a key node in the Alaska Marine Highway System. This deepwater port is a year-round, sheltered harbor with excellent road connectivity and the potential to develop spacious upland storage that could support the maritime services industry, bulk cargo handling, and transshipment of ore, timber, bio-

mass/woodchips, and rock/gravel.

Originally constructed in 1953 by the U.S. Army Corps of Engineers, the Lutak Dock has recently experienced substantial local failures, causing a portion of the dock to be unusable. The remaining dock area is expected to fail or be condemned

as unsafe within a decade. A 2014 structural assessment prepared by PND Engineers, Inc. concluded "the structure has reached the end of its credible 60-year service life" and "is effectively on borrowed time."

The preferred project alternative has broad community support and reflects the specific needs identified through the planning and public involvement process.

The Project scope contains multiple components with independent utility, and the project team can easily modify the scope to accommodate a funding amount less than the original request.

Project Description

The Haines Borough is developing plans for the future Lutak Dock Replacement (Project). Lutak Dock accommodates regularly scheduled shipments of fuel and freight, both of which support consumer and industrial activities in the region. The dock utilizes a closed-cell bulkhead configuration, with closure arcs to prevent loss of fill (Figure 2).

The entire Lutak Dock Replacement contains three distinct construction phases with independent utility; however, this application seeks funding for:

- Remaining Development-Phase Activities
- Phase 1 Construction
- Phase 2 Construction

Remaining Development Phase Activities

While the grant request only covers the most urgent Project phases, planning and development takes a whole-project approach. This proactive approach ensures all future design and construction adequately considers the full range of planning and environmental impacts. This is also a more cost-effective use

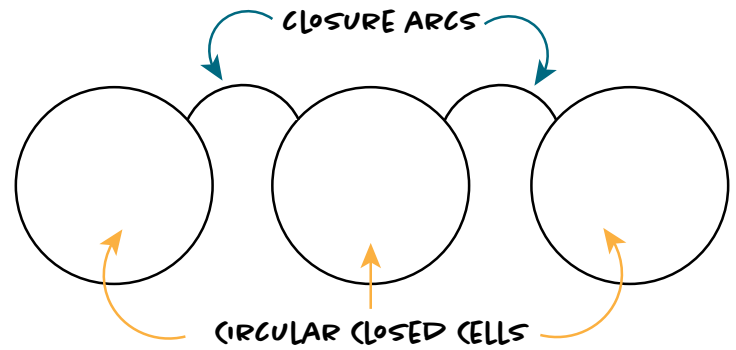


Figure 2: Typical Closed-Cell Bulkhead Configuration

of public funds and staff time. Table 1 shows the remaining development phase activities and their estimated costs. (See *Attachment F: Engineer's Scope & Cost Estimate*).

Table 1: Development Phase Activities Scope and Cost Estimate

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
PERMITTING				
U.S. Army Corps of Engineers (USACE) Section 10/404 Permitting	Lump Sum	1	\$22,000	\$22,000
National Marine Fisheries Service (NMFS) Incidental Harassment Authorization (IHA) Permitting	Lump Sum	1	\$88,000	\$88,000
NEPA Compliance	Lump Sum	1	\$110,000	\$110,000
Permitting Subtotal				\$220,000
DESIGN FIELD WORK				
Design Upland Survey	Lump Sum	1	\$60,500	\$60,500
Design Offshore Hydrographic Survey	Lump Sum	1	\$22,000	\$22,000
Design Geotechnical Program	Lump Sum	1	\$175,000	\$175,000
Design Field Work Subtotal				\$257,500
PHASE 1-3 DESIGN				
Phase 1 Design	Lump Sum	1	\$142,882	\$142,882
Phase 2 Design	Lump Sum	1	\$1,292,966	\$1,292,966
Phase 3 Design	Lump Sum	1	\$573,018	\$573,018
Phase 1-3 Design Subtotal				\$2,008,866
TOTAL ENVIRONMENTAL & ENGINEERING COSTS				\$2,486,366
25% CONTINGENCY				\$621,592
TOTAL WITH CONTINGENCY				\$3,107,958



Figure 3: Phase 1 Construction

Phase 1: New Uplands and Relocated Boat Launch Ramp

Phase 1 relocates the existing boat launch ramp to the adjacent northwest of the existing dock along with a new uplands area (approximately 1.8 acres), tying into the Alaska Marine Lines roll-on/roll-off facility (Figure 3). Phase 1 is necessary to ensure operations can continue during the construction of Phase 2, and it creates additional usable acreage for

the Haines Borough and Lutak Dock's users to meet existing and expected demand.

Table 2 on the following page shows the Phase 1 scope and estimated costs. (See *Attachment F: Engineer's Scope & Cost Estimate* and *Attachment G: Phase 1 & 2 Site Plans*.)

Phase 2: Replace Existing Dock

Phase 2 demolishes the entire Lutak Dock, installs a partial bulkhead (0.5 acres) with cat-

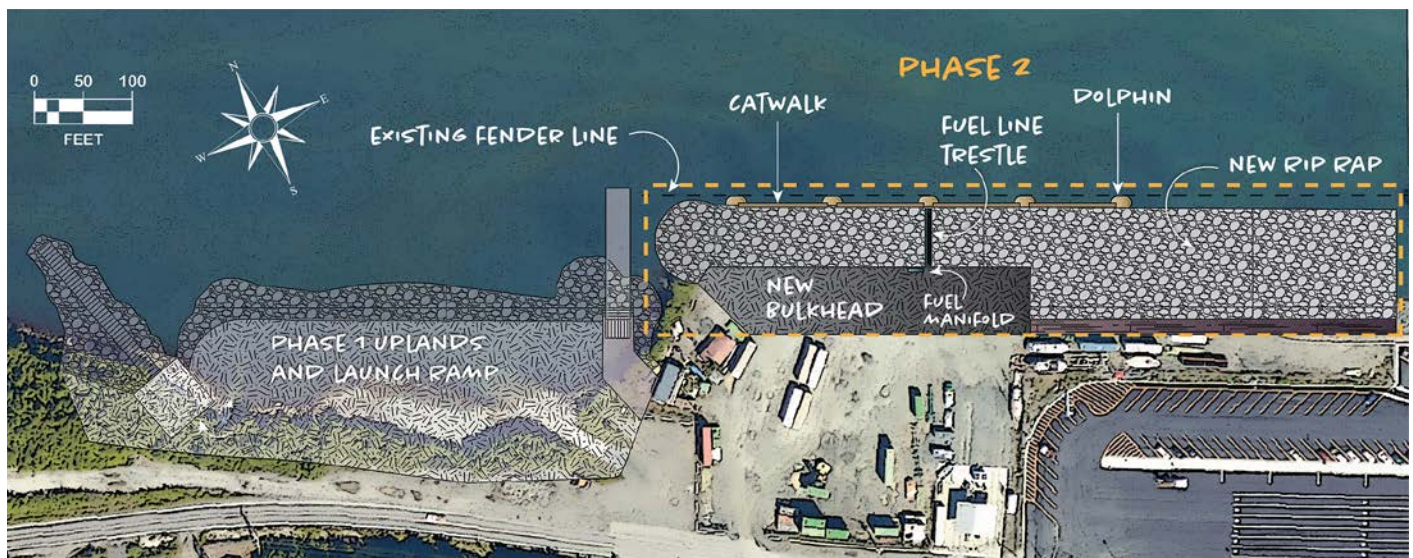


Figure 4: Phase 2 Construction

walks, places rip rap over the existing footprint of the dock for slope protection, and adds dolphins and modern fenders for moorage.

Table 3 (page 5) shows the Phase 2 scope and estimated costs. (See *Attachment F: Engineer's Scope & Cost Estimate* and *Attachment G: Phase 1 & 2 Site Plans*.)

Phase 3 construction is out of this RAISE Grant application's scope but includes extending the partial bulkhead (0.6 acres) further east to the Alaska Marine Highway System's ferry terminal.

Table 2: Phase 1 Scope and Cost Estimate

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
MOBILIZATION/DEMOBILIZATION				
Mobilization/Demobilization (5% of Construction)	Lump Sum	1	\$71,441	\$71,441
Construction Survey	Lump Sum	1	\$50,000	\$50,000
Erosion and Pollution Control	Lump Sum	1	\$34,375	\$34,375
Silt Curtain – Boom	Lump Sum	1	\$132,000	\$132,000
Mobilization/Demobilization Subtotal				\$287,816
DEMOLITION				
Demolition of Existing Launch Ramp Planks	Lump Sum	1	\$25,000	\$25,000
Demolition Subtotal				\$25,000
NEW UPLAND AREA				
Furnish and Install Class I Rip Rap Slope Protection	Cubic Yards	1,220	\$115	\$140,300
Furnish and Install Class IV Rip Rap Slope Protection	Cubic Yards	2,735	\$125	\$341,875
Furnish and Install Bulk Fill	Cubic Yards	25,700	\$15	\$385,500
Furnish and Install Select Material Type A	Cubic Yards	1,620	\$22	\$35,640
Furnish and Install Subbase Grading Type B	Cubic Yards	3,300	\$28	\$92,400
Furnish and Install Leveling Course D-1	Cubic Yards	750	\$44	\$33,000
New Upland Area Subtotal				\$1,028,715
NEW LAUNCH RAMP				
Subgrade for Boat Launch Ramp	Square Feet	2,700	\$15	\$40,500
Furnish and Install Concrete Planks	Cubic Yards	150	\$2,000	\$300,000
Furnish and Install Concrete Pad	Cubic Yards	25	\$1,200	\$30,000
Furnish and Install Class I Rip Rap Slope Protection	Cubic Yards	40	\$115	\$4,600
New Launch Ramp Subtotal				\$375,100
ADMIN				
Construction Administration (6% of Construction)	Lump Sum	1	\$85,729	\$85,729
Admin Subtotal				\$85,729
TOTAL CONSTRUCTION & ADMIN COSTS				\$1,802,360
25% CONTINGENCY				\$450,590
TOTAL WITH CONTINGENCY				\$2,252,950

Table 3: Phase 2 Scope and Cost Estimate

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
MOBILIZATION/DEMOBILIZATION				
Mobilization/Demobilization (5% of Construction + \$1.5M for Barge Fees and Crane)	Lump Sum	1	\$2,146,483	\$2,146,483
Construction Survey	Lump Sum	1	\$50,000	\$50,000
Protected Species Observer	Lump Sum	1	\$132,000	\$132,000
Erosion and Pollution Control	Lump Sum	1	\$34,375	\$34,375
Silt Curtain – Boom	Lump Sum	1	\$132,000	\$132,000
Mobilization/Demobilization Subtotal				\$2,494,858
DEMOLITION				
Demolition of Pile Caps and Misc. Structure	Linear Feet	770	\$561	\$431,970
Demolition of Existing Dolphins	Lump Sum	1	\$55,000	\$55,000
Demolition of Closure Arcs	Each	10	\$27,500	\$275,000
Demolition of Existing Fenders	Each	11	\$2,200	\$24,200
Demolition of Existing Fender Piles	Each	22	\$2,750	\$60,500
Excavation and Disposal of Existing Fill	Cubic Yards	72,157	\$17	\$1,226,669
Dredging and Disposal	Cubic Yards	34,369	\$26	\$893,594
Demolition Subtotal				\$2,966,933
BULKHEAD CONSTRUCTION				
Furnish NZ-19 Sheet Piling	Linear Feet	6,160	\$110	\$677,600
Install NZ-19 Sheet Piling, Per Pair	Each	59	\$2,500	\$147,500
Furnish 30" Diameter x 5.8" Wall King Piling	Linear Feet	3,840	\$392	\$1,505,280
Install 30" Diameter x 5.8" Wall King Piling	Each	60	\$7,500	\$450,000
Furnish and Install 200lb Anodes	Each	60	\$1,200	\$72,000
Furnish and Install Class I Rip Rap Slope Protection	Cubic Yards	9,510	\$115	\$1,093,650
Furnish and Install Class IV Rip Rap Slope Protection	Cubic Yards	12,050	\$125	\$1,506,250
Furnish and Install Salvaged Bulk Fill	Cubic Yards	97,500	\$15	\$1,462,500
Furnish and Install Select Material Type A	Cubic Yards	14,500	\$22	\$319,000
Furnish and Install Subbase Grading Type B	Cubic Yards	2,170	\$28	\$60,760
Furnish and Install Leveling Course D-1	Cubic Yards	480	\$44	\$21,120
Bulkhead Construction Subtotal				\$7,315,660
DOLPHINS AND CATWALKS				
Furnish 36" Diameter x 1" Wall King Piling	Linear Feet	550	\$748	\$411,400
Install 36" Diameter x 1" Wall King Piling in Rock Socket	Each	5	\$25,000	\$125,000
Furnish 30" Diameter x .625" Wall Batter Piling	Linear Feet	1,120	\$392	\$439,040
Install 30" Diameter x .625" Wall Batter Piling in Rock Socket	Each	10	\$25,000	\$250,000
Furnish and Install Fender Panel	Each	5	\$20,000	\$100,000
Furnish 18" Diameter Catwalk Support and Abutment Piling	Linear Feet	360	\$232	\$83,520

Install 18" Diameter Catwalk Support and Abutment Piling	Each	6	\$4,000	\$24,000
Furnish and Install Catwalks	Linear Feet	475	\$1,250	\$593,750
Furnish and Install 200lb Anodes	Each	65	\$1,200	\$78,000
Subtotal: Dolphins and Catwalks				\$2,104,710
MISC. CONSTRUCTION				
Modifications to Fuel System	Lump Sum	1	\$50,000	\$50,000
Furnish and Install Life Rings	Each	5	\$1,320	\$6,600
Furnish and Install Fire Extinguishers	Each	5	\$1,320	\$6,600
Furnish and Install Fire Standpipe	Linear Feet	1,000	\$132	\$132,000
Electrical and Lighting	Lump Sum	1	\$347,160	\$347,160
Misc. Construction Subtotal				\$542,360
ADMIN				
Construction Administration (6% of Construction)	Lump Sum	1	\$775,780	\$775,780
Subtotal: Admin			\$775,780	\$775,780
TOTAL: CONSTRUCTION AND ADMIN COSTS				\$16,200,301
25% CONTINGENCY				\$4,050,075
TOTAL WITH CONTINGENCY				\$20,250,376

Transportation Challenges Addressed by Project

The primary challenges addressed by replacing Lutak Dock are:

- Mitigating major safety risks associated with further structural failure
- Returning Lutak Dock to a state of good repair
- Preventing significant supply-chain disruptions during Project construction
- Increasing uplands storage acreage to meet demand

These challenges are interconnected, and the Project is designed to address them concurrently. See Section 4: Selection Criteria for additional details.

Constructing the new uplands and boat launch ramp in Phase 1 is a direct response to the need for operational

continuity. The regional supply chain depends on the regular fuel barge service provided by Delta Western and cargo barge service provided by Alaska Marine Lines (Figures 5 and 6). The existing dock footprint has limited upland space available, much of which will be lost when the sheet pile cells are removed. There is currently no economically viable space to relocate operations while Lutak Dock undergoes demolition and reconstruction. While the uplands added in Phase 1 will not meet the

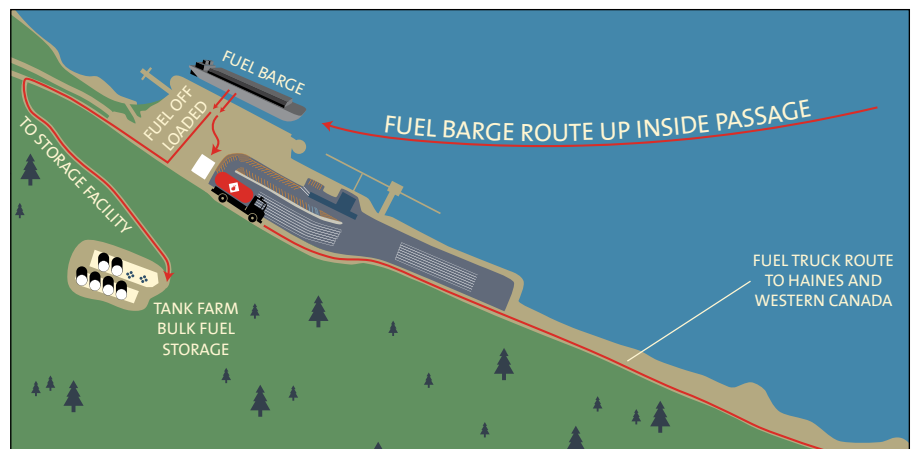


Figure 5: Intermodal Fuel Operations

full demand, it provides a location to facilitate intermodal transshipment and limited cargo storage while Phase 2 is constructed.

Regarding safety and state of repair, Lutak Dock is made of cellular structures which have all exceeded their useful life, and a portion of the dock has already collapsed. Repairing the existing facility is no longer a viable option due to current levels of deterioration. A 2014 structural assessment concluded “the structure has reached the end of its credible 60-year service life” and “further utilization is effectively on borrowed time” [Attachment H: *Lutak Dock Structural Assessment (2014)*, page 1]. This carries both safety and state of repair risks, further detailed in Section 4: Selection Criteria.

Project History

The original Lutak Dock was constructed in 1953 by the United States Army Corps of Engineers (USACE). It consisted of 15 full-circle sheet pile cells and interconnecting sheet pile arcs. An L-shaped, concrete cap about 9’ high sits on top of the front face of the cells.

The State of Alaska Department of Transportation and Public Facilities (DOT&PF) Alaska Marine Highway System (AMHS) previously owned four of the cells (1-4) on the east end of the Lutak Dock, which is used for the Ferry Terminal; however, cells 1-5 and portions of cells 6 and 7 were removed in a 2015 ferry berth renovation project. Haines Borough owns the

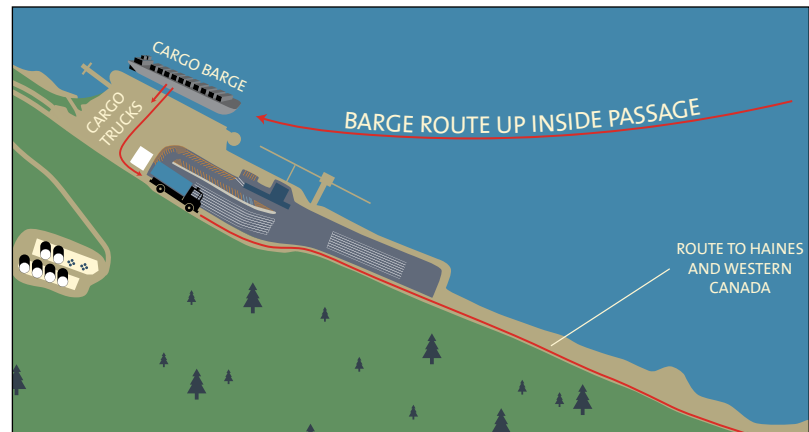


Figure 6: Intermodal Cargo Operations



Figure 7: Corrosion Failure of the Interconnecting Closure Arc



Figure 8: 2004 Collapse Near Alaska Marine Highway System Terminal

remaining cells 8 through 15, with approximately 550 feet of dock face. There is a series of chronological records of localized failures and various reports documenting this:

- In 2002, the interconnecting sheet pile arcs between the main cells were found to have complete perforations due to corrosion. A repair project was advanced to drive new sheets in these areas.
- In 2004, cell # 4 on the east end of the dock split a seam in the sheet piling and spilled earth fill into Lutak Inlet. The cell and adjacent fenders were both damaged beyond repair. This formed a sinkhole in the pavement and resulted in condemning a portion of the dock (Figure 8).
- In 2007, a project was advanced to stabilize the pile cap in the area of cell #4.
- In 2014, an underwater investigation of the dock revealed heavy pitting with section loss between 20% and 87% on the main cells (*Attachment I: Inspection and Assessment of Lutak Dock*).
- The structural assessment of the dock published by PND Engineers in 2014 documented additional sinkholes, failures at the closure arcs, and significant section loss in the remaining steel sheet pile cells.
- Public engagement and a Design & Development Concept Report were completed by R&M Consultants in 2017 to develop project alternatives.

2. PROJECT LOCATION

Haines is located in rural Southeast Alaska between the Chilkoot and Chilkat rivers on Chilkoot Inlet, near the end of Lynn Canal. Haines is approximately 80 miles north of Juneau, 500 Miles east of Anchorage, and 950 miles north of Seattle. The only road access is via the Haines Highway from Haines Junction, 150 road miles to the north in Yukon, Canada. The Lutak Dock is located near the mouth of Lutak Inlet, about four miles from downtown Haines (Latitude 59.282827, Longitude



Figure 9: Project Vicinity Map

-135.466502). The depth along the dock is -35' at mean lower low water.

Haines is a crossroads that connects Southeast waterways with Interior Alaska and Canada (Figure 9). The Tlingit peoples historically controlled nearby trade routes leading inland, and miners and prospectors moved through Haines during the Klondike Gold Rush in the 1890s.

The moderate climate, ice-free deep-water port, and year-round road access are advantageous and support the Borough's role as a local transportation hub. Haines acts as a



Figure 10: Cargo Barge, Fuel Barge, and Ocean Export Routes

port facility for portions of Western Canada, and many of the goods that come over the dock go to Haines Junction, Whitehorse, and other communities in the Yukon Territory. Because transportation costs are a significant economic barrier in Southeast Alaska, coordination with Canada and the Alaskan Interior enables Haines to generate sufficient economies of scale.

The Lutak Dock is well situated for maritime commerce. It is located near the northern end of the Inside Passage, a waterway that connects Southeast Alaska with the Seattle-Tacoma area. There is regularly scheduled fuel and cargo barge service up the Inside Passage, with stops at Ketchikan, Wrangell, Petersburg, Juneau, and Haines. Haines is also located near Icy Strait, which provides direct access to the national and international shipping lanes in the North Pacific.

Community Profile

Haines' 2019 population estimate is 2,518. The Haines Borough is one of Alaska's Opportunity Zones, with 11.3% of the total population below the poverty level—this is increased to 17.1% for native-born residents from Alaska

Table 4: Race and Hispanic or Latino Origin in Haines Borough, AK; 2019: ACS 5-Year Estimates

RACE AND HISPANIC OR LATINO ORIGIN	ESTIMATE (%)
One race	92.2
White	81.6
Black or African American	0.0
American Indian and Alaska Native	8.8
Asian	1.3
Native Hawaiian and Other Pacific Islander	0.2
Other	0.3
Two or more races	7.8
Hispanic or Latino origin (of any race)	4.5
White alone, not Hispanic or Latino	77.5

residing in Haines. The median individual income is \$34,411. Table 4 shows race and Hispanic or Latino origin estimates in the Haines Borough (2019: ACS 5-Year Estimates). The two recognized tribal groups in the area are the Chilkoot and Chilkat (DCRA, 2021).

3. GRANT FUNDS, SOURCES & USES OF ALL PROJECT FUNDING

The total cost of the Project is estimated at \$25,611,284. The Haines Borough is able to commit \$2,400,000 to the Project, but \$23,211,284 is required to complete the remaining development phase work and construction of Phases 1 and 2. No prior federal funds have been used for this Project.

Without federal grant funding, project construction will be delayed indefinitely while the Haines Borough seeks alternate funding sources. In the event of dock closure, barged goods would need to be trucked into Haines at a significantly higher financial and environmental cost. See Section 6: Benefit-Cost Analysis for more information about the altered supply chain and environmental costs.

Section 1: Project Description includes a detailed scope and cost estimate for development and permitting, Phase 1, and Phase 2. Table 5 on the following page presents a summarized version showing the cost allocation by phase and funding source. Table 6 shows the same costs by year of expenditure.

The Haines Borough can access, and begin obligating, the non-federal match portion immediately upon project award. The funds are currently available in the Haines Borough's Enterprise Fund and have been set aside specifically to provide match funding for this Project. (See *Attachment E: Funding Commitment Resolution*.)

Before construction funds can be expended, all development and permitting work must

Table 5: Project Costs by Phase and Funding Source

PHASE	COST (USD)	FUNDING ALLOCATION					
		Non-Federal: Haines Borough Match		RAISE (USD)		Other Federal	
		USD	%	USD	%	USD	%
Development & Permitting	\$3,107,958	\$291,242.69	9.37	\$2,816,715.31	90.63	\$0	0
Phase 1	\$2,252,950	\$211,121.00	9.37	\$2,041,829.00	90.63	\$0	0
Phase 2	\$20,250,376	\$1,897,636.31	9.37	\$18,352,739.69	90.63	\$0	0
Total	\$25,611,284	\$2,400,000.00	9.37	\$23,211,284.00	90.63	\$0	0

Table 6: Project Costs by Year(s) of Expenditure

YEARS	2021-2022	2022-2023	2023-2024
PROJECT COSTS	\$3,107,958	\$2,252,950	\$20,250,376

be completed. Section 5: Environmental Risk Review provides additional detail regarding the Haines Borough's ability to complete all preconstruction requirements and obligate all RAISE funding before September 30, 2024 on a conservative timeline.

No project expenses are expected to be incurred, nor submitted for reimbursement, between the time of award and obligation.

4. SELECTION CRITERIA

This section demonstrates how the Lutak Dock Replacement Project is a strong candidate for RAISE funding, based on its alignment with the stated selection criteria.

Safety

Two primary safety concerns the Project addresses are related to (1) dock failure risk and (2) the increased risk of accidents and injuries associated with a major mode shift to truck traffic that would occur in the event of dock closure.

Regarding dock failure, a 2014 Structural Assessment of Lutak Dock revealed significant safety concerns associated with the dock's pervasive deterioration. Sink holes in Lutak

Dock's working surface have contributed to a loss of fill, with visible gaps between the main cells and Z-sheet pile sections that were used for repairs in 2003. The assessment directly states several safety concerns [See *Attachment H: Lutak Dock Structural Assessment (2014).*]

- “Lutak Dock does not meet current USACE minimum factors of safety for cellular structures for the classic failure mode of vertical shear under the conditions of dead load plus operating live load, and for dead load plus phreatic water pressure” (p. 1).
- “The structure meets USACE criteria for low-intensity earthquakes [but] above this level of ground shaking the structure cannot withstand earthquakes at the current ‘design event’ level criteria mandated by building codes, waterfront design guidelines, or departments of transportation manuals” (p. 1).
- “The magnitude of the sinkholes suggests that significant volumes of material have been lost, which de-stabilizes the working surface of the dock. Highly loaded vehicles may suddenly fall into an undetected hole with potentially severe consequences to persons, and equipment and property” (p. 3-4).



Figure 11: Sink Hole at Lutak Dock

Conditions have worsened recently — in December 2020, the full length of the dock face (600 feet long by 45 feet wide) was closed to all heavy equipment traffic. This was due to the December winter storm disaster that affected Haines and caused another sinkhole to develop near the pass/pass operations, where freight barges are unloaded (<https://www.cbc.ca/news/canada/north/haines-winter-storm-recovery-1.5859008>).

The Haines Borough was able to close off the area because Alaska Marine Lines had recently completed installing a new roll-on/roll-off ramp. This allowed the Lutak Dock to transition cargo operations to the ramp.

Release of hazardous materials is also a potential consequence of dock failure. Lutak Dock receives containers of explosives with every AML barge to support mining operations.

Regarding increased accident and injury risk, the benefit-cost analysis (BCA) describes how dock closure would result in a modal shift from marine to road transportation, resulting in increased vehicle miles traveled. Increased truck traffic also increases the risk of accidents and injuries. [See *Attachment A: Benefit-Cost Analysis Technical Memo (Section 3.4)*.]

To compound this risk, the rural nature of the alternative truck routes means that emergency response times can be significantly longer, and limited cell phone coverage can add to delays—potentially increasing the severity of injuries (e.g. serious injuries can become fatalities due to long response times).

The Project improves safety by (1) replacing the existing unsafe dock with one built to modern engineering standards and (2) avoiding increasing vehicle miles traveled on remote roads to supply the Haines Borough in the event of dock closure.

Environmental Sustainability

The Lutak Dock Replacement Project's key contribution to environmental sustainability is the fact that barge transportation emits nearly 1/10th the CO₂ emissions as truck traffic on a grams-per-ton-mile basis, and similarly small proportions for other greenhouse gases. A Texas A&M Transportation Institute report compared multiple transportation modes and found that, on average, inland waterway towing had significantly lower per-ton-mile emissions than truck transportation. Table 7 presents a version of the emissions summary found in the report, which has been modified to include a calculation of barge emissions as a percentage of truck emissions (Texas A&M Transportation Institute, 4).

If the Lutak Dock closes, the subsequent mode shift to truck transportation for fuel and cargo would result in significantly higher

Table 7: Per-Ton-Mile Emissions: Barge vs. Trucks

Greenhouse Gas	EMISSIONS (GRAMS/TON-MILE)				
	HC/VOC	CO	NOx	PM-10	CO ₂
Inland Towing (Barge)	0.0094	0.0411	0.2087	0.0056	15.62
Truck	0.08	0.27	0.94	0.05	154.08
Barge Emissions as a Percentage of Truck Emissions	11.75%	15.22%	22.20%	11.20%	10.14%

greenhouse gas emissions, including a 986% increase for CO₂.

Replacing the dock also helps prevent adverse effects to water quality. A four-month storage agreement was completed in June 2021, reserving 20,000 square feet to store contaminated soils from further north along the Haines Highway.

Due to Haines' coastal setting, Haines residents are particularly susceptible to the effects of climate change and sea level rise. As noted previously in the Safety response, weather in Haines has directly affected the dock's condition. Completing the Project to modern standards will dramatically improve Lutak Dock's resilience to future extreme weather events.

The EPA's EJSCREEN tool did not indicate high levels of exposure to any of the listed environmental hazard variables. Environmental impacts resulting from the Project would not disproportionately harm vulnerable populations, including low-income households, racial minorities, or tribal groups.

Quality of Life

The Project meets quality-of-life considerations primarily through (1) ensuring the most cost-efficient transportation mode is maintained and (2) maintaining a key source of employment in the community.

The BCA describes how the majority of consumer and industrial goods that come into Haines are currently transported by barge, which is the most cost-efficient mode of transportation in the region. Dock closure causing

a shift to truck freight would significantly increase transportation costs, which would be passed on to the end consumers through higher priced goods. [See *Attachment A: Benefit-Cost Analysis Technical Memo (Section 3.2)*].

The community profile in Section 2: Project Location explains that the Haines Borough is in a Federal Opportunity Zone, and that there is a significant proportion of Haines' population below the poverty line.

Low-income households are less able to financially absorb these price increases, since a higher proportion of their incomes are spent on essential goods. Low-income households would disproportionately bear the consequences of Lutak Dock closure.

Economic Competitiveness

As stated in the Quality of Life response and the BCA (*Attachment A: Benefit-Cost Analysis Technical Memo; Section 3.2*), barge transportation is the most cost-efficient transportation mode for Haines. The Project extends the availability of this mode, keeping the cost of doing business in the area as low as possible.

Dock closure would create a significant economic barrier for businesses and residents in Haines, with effects extending to the region. The increase in transportation costs from a modal shift to truck transportation is expected to impact the cost of goods and services in Haines for both consumer- and industrial-end users.

The BCA describes a combination of four alternate routes that would feasibly be utilized

to import goods into Haines following Lutak dock closure, based on existing transportation networks and the transportation facility capacities available along each route:

- Freight is trucked directly from Seattle to Haines (1,805 road miles).
- Freight is shipped from Seattle to Anchorage (weekly service provided by AML) and then trucked from Anchorage to Haines (756 road miles).
- Freight is shipped from Seattle to Valdez (weekly service provided by AML), and then trucked from Valdez to Haines (691 road miles).
- Freight is shipped from Seattle to Skagway (weekly service provided by AML), and then trucked from Skagway to Haines (352 road miles).

The cost of transportation is a great hindrance to commerce in Southeast Alaska. The costs are predominantly generated because our communities lack economies of scale in sending and receiving of freight. To enjoy the benefits of maritime logistics, our communities must coordinate with Canada and the Interior to reach these needed economies. This can be done through Lutak Dock. Its strategic location provides an opportunity to tie Haines to the Canadian and Alaskan Interior's demand, thereby creating an attractive market opportunity.

– Haines Chamber of Commerce

The Project is necessary to maintain a functional local economy, given Haines' rural location. Haines' economy largely depends on its ability to cost-effectively meet Western Canada and the Alaskan Interior's demand for fuel and cargo. Following this, the Project is necessary

to maintain local employment levels associated with meeting this regional and transnational demand for fuel and cargo. The Borough's comprehensive plan has a stated objective to "Capitalize on Haines' position as a transportation hub to increase transfer and shipment of cargo, supplies, fuel and other commodities with the Yukon, northern British Columbia, and Interior Alaska" (Haines Borough, 2012).

In addition to the Project maintaining existing operations, Phase 1 directly responds to the fact that there is already unmet demand for upland storage at Lutak Dock. As an example, Alaska Marine Lines (AML) is one of the primary users of Lutak Dock—it must use a second yard in Haines proper due to upland storage constraints. This is both inefficient for AML, and it adds undesirable industrial traffic in town. The Borough comprehensive plan includes a strategy to avoid or minimize impacts from industrial truck traffic along the Haines Highway from Lutak Dock (Haines Borough, 2012). This represents a lost business opportunity for the Haines Borough that can be remedied by completing Phase 1.

A 2021 jobs analysis was completed to estimate job creation and retention resulting from completion of the project. The Project is expected to generate (1) near-term temporary jobs associated with project development and construction, (2) retention of existing direct, indirect, and induced jobs that rely on continued dock operations, and (3) long-term, year-round jobs created with the new and expanded dock operations (Northern Economics, Job Creation Analysis: Lutak Dock Project, 2021).

State of Good Repair

The Project clearly results in bringing Lutak Dock into a state of good repair. Inspections have revealed loss of nearly all the support structures on the face of the dock. Corrosion

includes complete wall penetration of the thinner wall sections on the interconnecting arcs.

A 2014 inspection conducted by Echelon Engineering for PND Engineers reported thickness readings on the main sheet pile cells of between 0.400 and 0.175 inches with an average loss of 37% of the original 0.500-inch wall thickness, indicating major to severe damage [Attachment I: *Inspection and Assessment of Lutak Dock (2014)*].

With this type of damage, local failures and buckling are possible, and loading restrictions may be necessary. According to national inspection standards for docks, existing damage indicates that repairs should be carried out on a high-priority basis and with urgency (Attachment D: *Haines Lutak Dock Design & Development Concepts Report*).

Section 1: Project Description explains how the Project will completely replace the existing dock and construct a new dock to meet modern engineering standards. Previous discussion of the Safety criterion explains how the project will improve the dock's resiliency to seismic activity. The BCA describes how, in addition to re-setting Lutak Dock's useful life, the Project's full life-cycle costs are cost effective when compared to the quantified benefits.

The Haines Borough commits to funding repairs and maintenance to ensure the good condition of the Lutak Dock. The creation of the Enterprise Fund exclusively for Lutak Dock expenses is a tangible step toward ensuring a state of good repair.

Partnership

Frequent and close coordination with the Haines community, including residents, business and industry stakeholders, elected officials, the local Ports and Harbors Committee and Planning Commission has been an integral part of planning and development for the

Lutak Dock Replacement Project. The attached letters of support indicate broad community support for the Project (Attachment C: *Letters of Support*). The project website documents these efforts and their effect on the Project: <https://www.hainesalaska.gov/ports/lutak-dock>.

Key collaborators that contributed meaningful input throughout project development include:

- Alaska Industrial Development and Export Authority (AIDEA)
- Alaska Marine Lines (AML)
- Constantine Metal Resources
- Delta Western
- Haines Borough Assembly
- Haines Chamber of Commerce
- Haines Economic Development Corporation
- Haines Planning Commission
- Haines Ports and Harbors Advisory Council
- Southeast Conference
- State of Alaska Department of Transportation & Public Facilities
- Yukon Chamber of Commerce

Of note, AML funded the entire design and construction of the existing roll-on/roll-off ramp, which may be used by any vessel accessing Lutak Dock. (See Attachment K: *Memorandum of Understanding with AML*).

The Haines Chamber of Commerce has been instrumental in developing opportunities to attract new business through Lutak Dock.

An exciting potential partnership opportunity is with OpenTug, discussed under Innovation.

Innovation

Completing the Project provides a unique opportunity to utilize innovative technology to further expand the Lutak Dock's role as a regional transportation hub and simultaneous-

ly mitigate a pervasive issue throughout rural Alaska: the prohibitively high cost of trash removal. At approximately \$0.26 per pound, it is very expensive to remove trash from rural areas, so it generally accumulates in place. The Haines Borough has particularly struggled to remove abandoned vehicles and other hazardous or contaminated debris.

To illustrate, the following article provides a vivid example of excessive trash and junk vehicle accumulation in Bethel, AK: <https://99percentinvisible.org/episode/dead-cars/>.

OpenTug provides an innovative solution, and has expressed keen interest in seeing the Lutak Dock Replacement Project completed, creating a partnership opportunity. OpenTug is an online, marine logistics marketplace. The company works with barge operators to sell excess barge capacity. This has numerous benefits to the Alaskan economy, including (1) enabling operators to efficiently maximize their loads and (2) lowering the cost to remove smaller loads for rural communities.

It is generally not cost effective for the larger operators to alter their routes to retrieve these small loads, but replacing Lutak Dock and adding the Phase 1 uplands enables Haines to accumulate the approximately 1,200-1,600 ton loads from surrounding communities that would make it cost effective for the larger operators to make the one-day detour from their standard route to the Lutak Dock. OpenTug's website (<https://opentug.com/>) also shows current job requests in the cargo marketplace—many of these requests include electronic waste, pallets of lead acid batteries, and other hazardous waste that would otherwise continue to accumulate in the remote villages. It is environmentally important to remove these materials, especially given many of these communities' acute vulnerability to sea level rise and the potential for hazardous waste to pollute the nearby waters. See OpenTug's sup-

port letter for more information (*Attachment C: Letters of Support*).

5. ENVIRONMENTAL RISK REVIEW

Project Schedule

See Table 8 on the following page for the Project Schedule. Note:

- All RAISE Grant funds can be obligated before June 30, 2021 and fully expended before September 29, 2024.
- Project work can begin quickly upon receiving a RAISE Award due to the amount of preparatory work completed to date.
- No right-of-way acquisition is necessary.

Required Approvals

Environmental Permits and Reviews

1. *Information about the NEPA status of the project.*

Should the project receive grant funding for a portion or entirety of the project, the Haines Borough would be required to evaluate potential project impacts on the natural and human environment in accordance with local, state, and federal regulations. Given the scope of the proposed work, the anticipated NEPA document is an Environmental Assessment. At a minimum, the proposed action (preferred alternative) and the "No Action" alternative would be evaluated during the NEPA process. The NEPA process has not yet begun.

2. *Information on review, approvals, and permits by other agencies.*

Environmental permits would need to be acquired for exploratory surveys (geotechnical, bathymetric surveys, etc.) as well as for construction of the final proposed design. At a minimum, a Section 404/10 permit from the USACE would need to be obtained for in-water construction activities such as dredging, fill placement, sheet pile installation, and

Table 8: Project Schedule

TASK NAME	2021	2022				2023				2024			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NTP													
Field Work													
Survey													
Geotechnical													
Preliminary Design													
Design													
Review													
Permitting													
Section 10 & 404													
NEPA													
NMFS IHA													
Final Design													
Design													
Review													
Phase 1													
Bidding													
Procurement													
Construction													
Phase 2													
Bidding													
Procurement													
Construction													
Project Closeout													

pile driving. Concurrently with the USACE permitting process, a water quality certification from the Alaska Department of Environmental Conservation (ADEC) would be obtained in accordance with the Clean Water Act. Based on the proposed design, additional permits and/or concurrence may need to be obtained from the Alaska Department of Fish and Game, Department of Natural Resources, National Marine Fisheries Service (see below), and the U.S. Fish and Wildlife Service.

Given the amount of unavoidable in-water construction, an Incidental Harassment Au-

thorization (IHA) would likely be required for potential impacts to species protected under the Marine Mammal Protection Act and the Endangered Species Act (ESA). A Biological Assessment would be prepared to support formal consultation under the ESA and to inform the IHA application. The application would include a marine mammal mitigation and monitoring plan outlining monitoring requirements and shutdown protocols to implement during construction. Agency coordination and the regulatory permitting process has not been initiated for the project. Permits and other

required information and mitigation during construction will meet or exceed current federal, state, and local laws and ordinances.

3. *Environmental studies or other documents that describe in detail known project impacts, and possible mitigation for those impacts.*

Project-specific environmental studies and other documents have not yet been conducted or generated; however, a large component of this project is replacement of the existing dock structure within the same disturbance footprint, which minimizes project impacts. The recent AML roll-on/roll-off ramp project required similar permits (USACE and NMFS IHA) and provides a good reference for potential impacts and mitigation. Noise impacts to marine mammals during in-water construction (pile installation, rock placement, etc.) is likely unavoidable and will need to be minimized and mitigated in consultation with the appropriate agencies. Mitigation measures typically involve monitoring for the presence of marine mammals, ramp up procedures for construction equipment, establishing shut down zones to prevent impacts, and potentially implementing timing restrictions to avoid peak seasons.

The area proposed for adding upland areas is an adjacent facility and has likely already been indirectly affected by the original and recent (AML) projects. Filling in this 1.8-acre area could impact marine habitat; therefore, efforts to minimize the footprint during design and mitigate impacts during the permitting process will be required.

In-water fill and placement of riprap has the potential to impact water quality. Mitigation measures typically include the development and implementation of a storm water pollution prevention plan during construction and the requirement that fill material must be clean sand, gravel or rock, free from contamination.

Impacts to other resources (e.g. air quality, historic/cultural sites, recreation, land use, etc.) are anticipated to be minor or avoidable.

4. *A description of discussions with the appropriate DOT operating administration field or headquarters office regarding compliance with NEPA and other applicable environmental reviews and approvals.*

Discussions have not yet occurred with the appropriate DOT modal administration field or headquarters office regarding compliance with NEPA and other applicable environmental reviews and approval. The State of Alaska DOT&PF's Southcoast Region PD&E will be the appropriate office, and the project team will coordinate with the following staff:

- Greg Lockwood; PD&E Chief; greg.lockwood@alaska.gov
- Benjamin Storey; Regional Environmental Manager; benjamin.storey@alaska.gov

5. *A description of public engagement to date about the project including details on the degree to which public comments and commitments have been integrated into project development and design.*


Frequent and close coordination with the Haines community, including residents, businesses and industry stakeholders, elected officials, the local Ports and Harbors committee and Planning Commission has been integral to Project development since it started. Based on community input and feedback, the project team along with the Haines Borough updated the study concepts, clarified cost estimates and added refinements to the concepts to include future mining exploration as an added benefit of repairing or replacing the dock.

All project documents including preliminary concept plan sets, community and industry meeting summaries and feedback have been posted to the project website to further the inclusive and public transparency goals of the



Table 9: Public and Stakeholder Involvement Summary

MEETING	DATE	AGENDA
Community Opinion Survey	2011	Supporting the Haines Borough 2025 Comprehensive Plan; showed strong support to expand Lutak Dock (<i>Attachment J: Haines Borough 2025 Comprehensive Plan</i>).
Industry Stakeholder Coordination Meeting	Nov. 1, 2016	Ensure issues to be solved are correctly identified and provide feedback on preliminary design options.
Community Meeting #1	Nov. 1, 2016	Identify dock user needs and review preliminary design concepts.
Community Meeting #2	Dec. 15, 2016	Present preliminary dock concept designs and cost estimates for public feedback.
Business Community Meeting; Haines Chamber of Commerce	Dec. 16, 2016	Present preliminary findings.
Community Meeting #3; Joint Session with Ports and Harbors Advisory Committee and Planning Commission	Feb. 1, 2017	Present findings and recommended alternative.
Town Hall Meeting #1	June 3, 2021	Discussed Phases 1 & 2 with the public.
Town Hall Meeting #2	June 24, 2021	Discussed future Phase 3 and possible Phase 4 with the public (not in RAISE grant scope, but useful context). Presentations from potential future partners/stakeholders.

HAINES BOROUGH LUTAK DOCK COMMUNITY MEETING #2



R&M Consultants Inc. will present on preliminary dock concept designs and cost estimates for each concept. This is a great opportunity for the community to ask questions and provide feedback that will help inform future decisions on the preferred design concept.

THURSDAY, DECEMBER 15
5:30 PM to 7:00 PM

HAINES PUBLIC LIBRARY
COMMUNITY MEETING ROOM
111 3rd Ave

For more information contact:
Brad Ryan: Haines Borough, Director of Public Facilities at 907-766-2256 or bryan@haines.ak.us
Van Le, AICP: R&M Consultants, Inc. Public Involvement at 907-646-9659 or vle@rmconsult.com

project. The project team has also coordinated with mining and fuel barge operators to ensure technical input has been captured and reflected in the preliminary concept plans.

Table 9 summarizes the public & stakeholder involvement that helped shape alternatives development and selection. More information can be found at <https://www.hainesalaska.gov/ports/lutak-dock>, including public and stakeholder meeting materials and summaries.

State and Local Approvals

Attachment E: Funding Commitment Resolution shows the Haines Borough Assembly's approval to move forward with the Lutak Dock Reconstruction project and pursue grant funding.

In addition to specific State and local approvals, several of the selection criteria

Figure 12: Community Meeting Advertisement for the Lutak Dock Project

responses contained references demonstrating how the project either implements or is consistent with the Haines Borough's Comprehensive Plan.

Risks and Mitigation Strategies

The level of risk associated with the Project funded under this grant program is extremely low. Engineer's conceptual designs and cost estimates have already been completed by R&M Consultants, Inc. which has a proven track record of success planning, designing, and building projects of similar scope and function in Alaska (See *Attachment F: Engineer's Scope & Cost Estimates* and *Attachment G: Phase 1 & 2 Site Plans*).

Included in the project are all the permitting and NEPA requirements to be completed along with planning and community outreach. Another common source of project delay and cost increases is right-of-way acquisition, which is not needed for this project.

The funds committed to this project are from the Haines Borough's Lutak Dock Enterprise Fund, which is highly liquid. Additionally, Lutak Dock has been identified by the Haines Borough Assembly as the No. 1 priority for requesting federal funds, and the Assembly has approved a resolution supporting the



project (*Attachment E: Funding Commitment Resolution*).

The Haines Borough will not seek a waiver for relevant domestic preference laws, and Project cost estimates were developed specifically to reflect domestic sourcing.

Unavailability of domestic equipment is considered a low risk for the Project.

A Risk Assessment Summary prepared by project engineers is on the following page (Table 10).



Table 10: Risk Assessment Summary

RISK ASSESSMENT					
Identified Risk	Description	Probability of Occurrence	Severity of Impact	Mitigation Strategies	
FINANCIAL	Funding for Construction	Possible inability to fund a major construction project.	2	3	Multiple funding sources are being pursued. The Alaska congressional delegation is aware of the project and supportive of funding. The RAISE grant is critical to the success of this project.
MANAGEMENT	Project Management	Borough staff time and expertise could be taxed under implementing and managing a large construction project.	2	3	The Borough has experienced staff and will augment them with consultants as required. The project budget includes independent construction administrative services from a consultant.
CONSTRUCTION	Business Disruption	Existing users will be impacted during construction.	1	1	The construction will be done in phases. The existing barge end loading ramp at the north end of the site will remain operational until a usable portion of the new dock is put into service.
	Pile Driving	Driving piling through existing fill may be challenging.	3	2	A geotechnical exploration program is planned. This will help to identify and define the risk. Project specifications will outline the risks and acceptable means to deal with them.
ENVIRONMENTAL	NEPA Compliance	Completion of NEPA compliance documents is required. Delays would impact the project schedule.	1	1	A team experienced in NEPA and other agency permitting will participate in the planning and permitting phase of the project. The RAISE grant is critical to securing the proper permitting and documentation.
	Marine Mammals IHA	An incidental harassment authorization (IHA) for marine mammals due to pile driving will likely be required. This will require consultation with the National Marine Fisheries. The provisions of the IHA may impact the project costs.	1	1	A team experienced in IHA and pile driving noise abatement will participate in the planning and permitting phase of the project. The RAISE grant is critical to securing the required IHA.

1 Low 2 Moderate 3 High

6. BENEFIT-COST ANALYSIS

The BCA prepared for this RAISE grant application concludes that the *Project is cost effective under all analyzed scenarios*, using conservative estimates and excluding potential benefits with higher degrees of uncertainty. The base scenario yielded an average benefit-cost ratio (BCR) of 2.17. The BCA included alternative scenarios

to test assumptions, yielding a total BCR range of 1.73 to 2.39.

Table 11 summarizes quantified project benefits. See *Attachment A: Benefit-Cost Analysis Technical Memo* and *Attachment B: Benefit-Cost Analysis Spreadsheet* for the full analysis.

Table 11: Project Summary Matrix from BCA

CURRENT STATUS/ BASELINE & PROBLEM TO BE ADDRESSED	CHANGE TO BASELINE/ ALTERNATIVES	TYPE OF IMPACTS		POPULATION AFFECTED BY IMPACTS	ECONOMIC BENEFIT	SUMMARY OF RESULTS	PAGE REFERENCE IN BCA
Primary port for cargo, fuel, and passengers in Haines has reached the end of its credible service life and does not meet current USACE minimum factors of safety for cellular structures	Replace the existing dock (see Section 1.1 Lutak Dock Replacement Recommended Design)	1	Transportation	Businesses and consumers in Haines and surrounding region (industrial and consumer goods)	Reduced freight transportation costs	Estimated transportation cost savings	Section 3.2 Page 9
		2	Maintenance	Motorists using routes connecting Haines to Seattle, Valdez, Anchorage, or Skagway	Reduced maintenance cost resulting from lower traffic volumes	Estimated maintenance cost savings	Section 3.3 Page 9
		3	Safety	Motorists using routes connecting Haines to Seattle, Valdez, Anchorage, or Skagway	Reduced costs associated with lower crash rates and resulting injuries	Estimated accident cost savings	Section 3.4 Page 10
		4	Uplands	Businesses and Consumers in Haines and the surrounding region	Increased economic development from a net gain of uplands	Estimated savings and increased uplands compared to an alternative design	Section 3.5 Page 11
		5	Emissions	All communities along the significant length of road associated with a modal switch from barge to truck	Averted future economic damages associated with greenhouse gas emissions	Estimated monetized benefits of reduced CO ₂ emissions	Section 3.6 Page 11
		6	Reliability of Service	Organizations using Lutak Dock and residents of Haines that rely on goods moved across Lutak Dock	Reduced frequency of facility closures due to disrepair and safety risk	Qualitative assessment	Section 3.5 Page 11

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