

FY 2020 BUILD PROGRAM



Gary Paxton Industrial Park Haulout City and Borough of Sitka

Type: Port Infrastructure Investment

Location: City and Borough of Sitka, Alaska
Alaska's at-large Congressional District
Alaska Rural Area

Amount Requested: \$6.539 million

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Table of Contents

Project Description.....	1
Transportation Challenges Addressed.....	1
History of Completed Projects	2
Other Transportation Infrastructure Investments	4
Detailed Statement of Work.....	4
Project Location	5
Geographical Description.....	6
Map of Project Location.....	6
Connections to Existing Infrastructure.....	7
Grant Funds, Sources and Uses of all Project Funding	7
Estimated Costs	7
Source of Funds.....	7
Documentation of Funding Commitment	7
Budget	8
Selection Criteria	8
Safety.....	8
State of Good Repair	8
Economic Competitiveness.....	9
Environmental Sustainability	10
Quality of Life.....	10
Secondary Selection Criteria.....	10
Innovative Technologies, Project Delivery, and Financing	11
Partnership.....	11
Project Readiness	11
Environmental Risk.....	11
Technical Capacity	12
Financial Capacity.....	12
Environmental Risk Review	12
Project Schedule.....	12
Approvals and Permits	12
NEPA Compliance	13

Risk and Mitigation Strategies	13
Benefit Cost Analysis	13
Assumptions	13
Present Value Costs.....	14
Present Value Benefits	15
BCR.....	15
Additional Considerations	16
Appendix Introduction	Appendix 1
Commodity Forecast.....	Appendix 1
Vessel Forecast	Appendix 1
Base Case – No Action.....	Appendix 3
150-ton Travelift Alternative	Appendix 3
Vessel Avoided Travel.....	Appendix 4
Vessel Emissions	Appendix 6
Opportunity Cost of Time.....	Appendix 8
Summary Benefits Calculations.....	Appendix 11
Qualitative Considerations.....	Appendix 12
Safety.....	Appendix 12
Quality of Life.....	Appendix 13
Community Cohesiveness	Appendix 13
Vessel and Infrastructure Damage	Appendix 13
Employment	Appendix 13
Cost Estimates.....	Appendix 13
Benefit-Cost Summary.....	Appendix 15

Table of Tables

Table 1 – Cost Share table	7
Table 2 – GPIIP Haulout/Travelift Cost Estimate	8
Table 3 – GPIIP Project Schedule.....	12
Table 4 – GPIIP 150-Ton Travelift Present Value Calculations Selected Years.....	14
Table 5 – 150-Ton Travelift Benefit Calculations Selected Years.....	15
Table 6 – Benefit/Cost Ratio Calculations.....	15
Table 7 – Number of Vessels with 2020 Commercial Permits.....	Appendix 2
Table 8 – Hours of Travel.....	Appendix 4

Table 9 – Vessel Operating Costs	Appendix 5
Table 10 – Vessel Travel Costs under Base Case and 150-ton Travelift Scenarios	Appendix 6
Table 11 – Emissions Costs under Base Case and 150-ton Travelift Scenarios.....	Appendix 8
Table 12 – Wage Rates for Captain and Crew	Appendix 9
Table 13 – Opportunity Cost of Time Calculations.....	Appendix 10
Table 14 – Base Case Calculations	Appendix 11
Table 15 – 150-Ton Travelift Benefit Calculations	Appendix 12
Table 16 – 150-Ton Travelift construction costs and periodic maintenance.....	Appendix 14
Table 17 – 150-Ton Travelift Residual Value Calculations	Appendix 14
Table 18 – Comparison of Benefits and Costs.....	Appendix 15

Table of Figures

Figure 1 – GPIIP investments over time	4
Figure 2 – Gary Paxton Industrial Park Location map	6

Project Description

The proposed project is to develop a Marine Haulout facility at the Gary Paxton Industrial Park (GPIP) located in Sitka Alaska, owned by the City and Borough of Sitka (CBS). This project is critical for the commercial fishing industry and the marine service sector in Sitka. Sitka is one of the largest fishing fleets in Alaska and the only existing haulout facility in Sitka will be shutting down within 18 months to pursue other business opportunities, leaving the community without infrastructure to haul vessels.

The GPIP is managed by the Sitka Economic Development Association (SEDA), in partnership with CBS Administration, under the direction of a 5-member Board of Directors appointed by the CBS Assembly, the municipal governing body.

The goal of the CBS and GPIP Board of Directors is to develop a site that has the capability of hauling out vessels up to 150 tons as well as hauling out larger barges for repair and refurbishment. A local haulout facility is vital to the Sitka maritime industry to support the local marine trades and reduce the carbon footprint of the commercial fishing industry.

Transportation Challenges Addressed

The GPIP Board has long recognized the importance of the fishing and the maritime industry to the community of Sitka. The GPIP Board and CBS have been working on vessel haulout development concepts since the GPIP properties were acquired in 1999. This haulout facility serves an important link to the fishing industry and economic activity of the Sitka region.

The Alaska Department of Fish and Game (ADF&G) Commercial Fisheries Entry Commission helps to conserve and maintain the economic health of Alaska's commercial fisheries.¹ In addition, the ADF&G Division of Commercial Fisheries manages commercial, subsistence, and personal use fisheries within the jurisdiction of the State of Alaska. ADF&G records show more than 400 vessel permits in 2020 participating in 65 different fisheries and almost 1,200 permits to various individuals. 2018 records show that 415 fishermen landed 23.9 million pounds with an estimated gross earnings of \$41.1 million.² In 2019, preliminary records show 398 fishermen landed 27.8 million pounds with an estimated value of \$38.3 million.³ Needless to say, the fishing industry is an important component in this community of 8,532 people.⁴ And furthermore, the capability to conduct repair and maintenance activity close to home and the fishing grounds enables vessel owners to be safer and more efficient.

The announcement of the closure of the only haulout facility in the community has put additional pressure on the operators of the Gary Paxton Industrial Park to prioritize the development of a

¹ <https://www.adfg.alaska.gov/index.cfm?adfg=about.cfec>

² <https://www.cfec.state.ak.us/gpbycen/2018/220470.htm>

³ <https://www.cfec.state.ak.us/gpbycen/2019/220470.htm>

⁴ <https://live.laborstats.alaska.gov/pop/index.cfm>

haulout facility. This analysis looks at the fishing industry in Sitka and how those vessel owners will need to modify their operations in order to function efficiently without a haulout, and then compares that scenario to one in which GPIIP is able to accommodate those vessels for their annual maintenance and repair needs.

Initially, the community examined a 100-ton versus a 150-ton Travelift but since the 150-ton Travelift accommodates about 90 percent of the vessels in the Sitka area, the GPIIP Board agreed to pursue this option. In addition, the CBS and the GPIIP Board agree that they need to be planning for the future and as vessels have become wider in response to fishing regulations, a 100-ton Travelift would not be suitable.

The following is a brief history of the Gary Paxton Industrial Park, its management, and previously completed projects.

History of Completed Projects

1940'S THE DAIRY

In 1940, Mr. Edward Morke purchased land where Sawmill Creek emptied into the Pacific Ocean for the purpose of starting a business called the Sanitary Dairy.



Using the fresh waters of Sawmill Creek for his dairy cows, Mr. Morke provided fresh milk to Sitka's children. In 1947, the dairy was sold to Mr. Harold Rice where he operated it until 1952. It was then sold to John and Freda Van Horn who renamed it Blue Lake Farms and continued to produce milk until mid-1950.

EARLY 1960'S PULP MILL



In 1956 the site was sold to a newly formed company called Alaska Pulp Corporation. This company would go on to make the first Japanese investment in the United States since World War II.

In 1959, the Alaska Pulp Corporation pulp mill began producing wood fiber from timber harvested from the Tongass National Forest under a long-term contract with the US Forest Service.

1980'S PULP PROCESSING FACILITY

The mill employed 450 Sitkans at its peak, making wood fiber used primarily in the production of rayon fabrics and later used in paper manufacturing. In 1993, Alaska Pulp Corporation announced the closure of the mill. After repeated attempts to sell the site and mill, Alaska Pulp decided to demolish the former mill and donate the site to the City of Sitka. In 1999, the City & Borough of Sitka officially took ownership of the site upon completion of demolition.



2000'S THE INDUSTRIAL PARK



Since 1999, the City has installed new utilities: potable water, sanitary sewer and electrical system at the park. A large diameter freshwater pipeline from Blue Lake to the shoreline and deep-water wastewater outfall pipe have also been completed. Much of the industrial debris has been cleared and main roads within

the core of the Park have been paved. In May of 2014, the Industrial Park was officially renamed the Gary Paxton Industrial Park (GPIP) in honor of Mr. Paxton's many contributions to the community of Sitka and his key role in acquiring the Park property for the City after closure of the pulp mill. In 2017, the City & Borough of Sitka installed a deep-water dock that allows for in-water boat maintenance and drive-down access. The dock opened early 2018 whereupon GPIP became a true marine industrial park.

The following graphic displays some of the funding received over the years for a variety of projects including storm, sewer, and water system upgrades, paving projects, fire suppression infrastructure, buildings, and a fish processing plant. The CBS has worked diligently over the years to maintain and improve this important industrial infrastructure serving the marine industry and has been successful in collaborating with public and private entities.



Figure 1 – GPIIP investments over time

Other Transportation Infrastructure Investments

The Gary Paxton Industrial Park is linked to downtown Sitka by a 5-mile road that is maintained by the City. The community also has a state-owned public-use airport, the Rocky Gutierrez Airport, serving the community with daily jet service and located just west of the central business district.⁵ There is no road access to outside communities from Sitka, but vehicles can be transported to town using the Alaska Marine Highway ferry system.

Detailed Statement of Work

The primary purpose of this project is to develop a haulout facility at the GPIIP site that has the capability of hauling out vessels up to 150 tons at a minimum. Current barge haulout operations at GPIIP are successfully conducted on an existing 8 percent gradient gravel ramp using pneumatic rollers and winches. There are several manufactures of marine haulout equipment including *Hostar Marine*, *Ascom*, *Conolift/Kropf Industrial* and *Brownell Trailers*, are available in the U.S., each with their own unique designs and specifications. Further research will be conducted with each of these manufacturers prior to moving forward with procurement and requesting complete performance based proposals.

A boat haul-out facility consists of the following equipment and infrastructure:

- Mobile Marine Boat Hoisting Machine – 150-ton
- Pile supported haul-out pier to lift the boat out of the water
- Wash down pad with wash water treatment facilities and optional heated slab for winter use
- Outside work areas

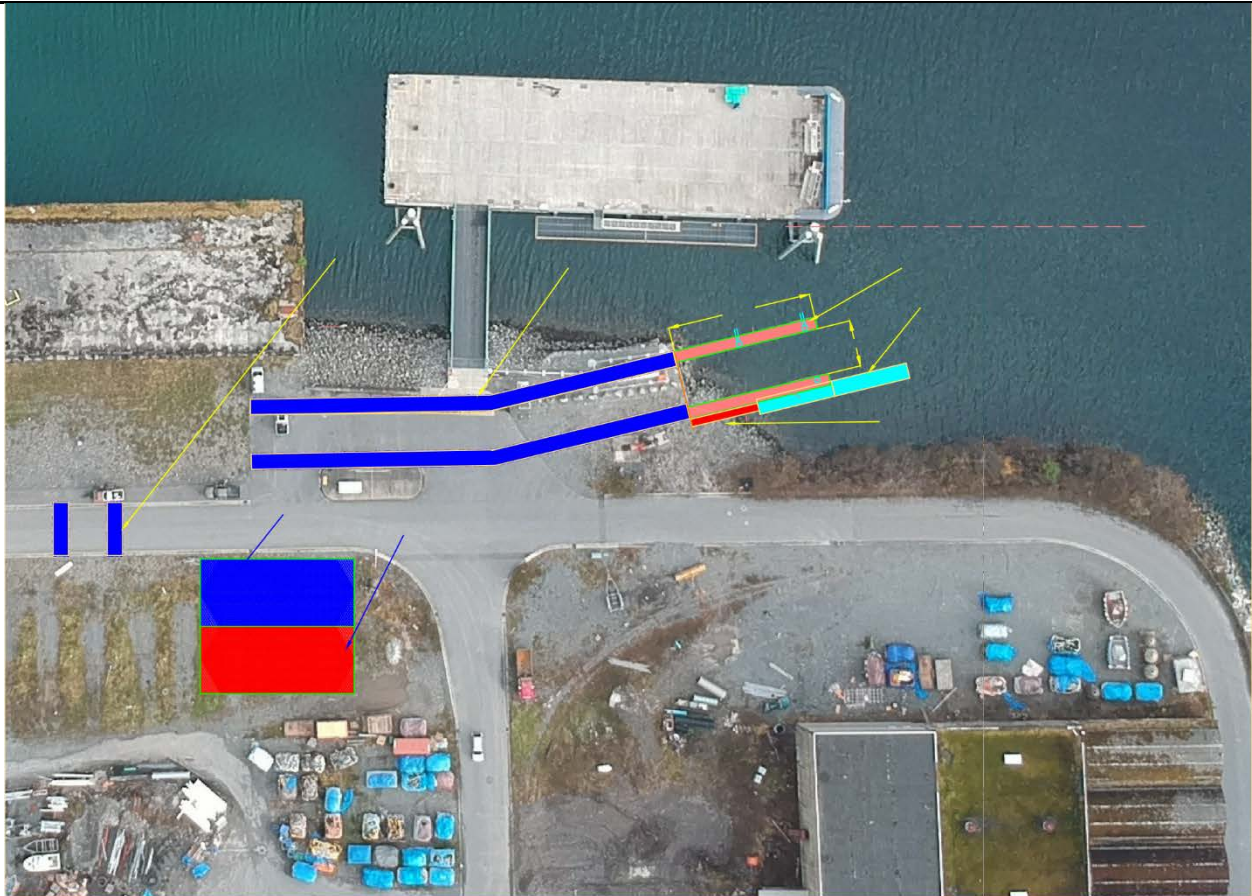
⁵ https://en.wikipedia.org/wiki/Sitka_Rocky_Gutierrez_Airport

- Sheltered work and lease areas for services to be performed in controlled workspace environments
- Boat storage areas
- Storm water runoff and discharge treatment facilities
- Security fencing and surveillance
- Water, sewer, power and lighting utilities
- Optional hydraulic trailer for yard operations and efficient onsite storage of vessels
- Appropriate environmental and operating permits

The preferred concept design for a Boat Haul-out Facility to be located along the north side of the Multi-Purpose Dock with direct an access to available space for boatyard work and staging areas.

See SCIP+Phase+2A+Preliminary+Screening-Level+Assessment+FINAL+(1).pdf and Support for 150-ton Travelift.docx for additional detail.

Project Location



Geographical Description

Sitka is located on the west coast of Baranof Island fronting the Pacific Ocean, on Sitka Sound. An extinct volcano, Mount Edgecumbe, rises 3,200 feet above the community. It is 95 air miles southwest of Juneau and 185 miles northwest of Ketchikan. Seattle, Washington, lies 862 air miles to the south. The CBS is located at Latitude, Longitude: 57.0583, -135.3448.

Sitka falls within the southeast maritime climate zone, characterized by cool summers, mild winters and heavy rain throughout the year. This zone lacks prolonged periods of freezing weather at low altitudes and is characterized by cloudiness and frequent fog. The combination of heavy precipitation and low temperatures at high altitudes in the coastal mountains of southern Alaska accounts for the numerous mountain glaciers. The CBS encompasses 2,874 square miles of land and 1,937.5 square miles of water.⁶

While many communities in Alaska are listed, the CBS is not on the list of Qualified Opportunity Zones (QOZ) as per the IRS Notice 2018-48, 2018–28 Internal Revenue Bulletin 9, July 9, 2018.

Map of Project Location



Figure 2 – Gary Paxton Industrial Park Location map

See GPIP Map1.pdf and GPIP Map2.pdf for site location courtesy of the City and Borough of Sitka.

⁶ State of Alaska Department of Commerce Community and Economic Development.
<https://dced.maps.arcgis.com/apps/MapJournal/index.html?appid=2ded44ad6dd4456fbe353f1292e285c2#>

Connections to Existing Infrastructure

GPIP is connected to the rest of the CBS by the Sawmill Creek Road. Connections from there include the state-owned Rocky Gutierrez Airport on Japonski Island with a paved and lighted runway. In addition to daily jet service, several scheduled air taxis and air charters are available. The CBS operates five small boat harbors with 1,350 stalls and a seaplane base on Sitka Sound. Cruise ships anchor in the harbor and lighter visitors to shore. The Old Sitka Dock, privately owned, is the only deep-water moorage facility in Sitka capable of accommodating large vessels. The Alaska Marine Highway System (state ferry) has a docking facility approximately 6 miles north of town. The ferry serves Sitka several times a week, with a twelve-hour run to Juneau. Freight arrives by barge and cargo plane.

Grant Funds, Sources and Uses of all Project Funding

Estimated Costs

Cost estimates for this project have been conducted for a variety of alternatives over the years. Industry experts and the changing shape of the fishing fleet revealed that a 100-ton Travelift would not be adequate to serve the needs of the Sitka marine industry for long. This analysis focuses on the preferred 150-ton Travelift. The NE Prelim Screening March 2014.pdf shows the total estimated costs for the Concept 1 project at \$12.5 million. There was a bulkhead included in this cost estimate which has since been deleted as unnecessary for the project. The project costs have been updated to 2019 dollars using the Anchorage Consumer Price Index. Total project costs are \$8.2 million in today's dollars.

Source of Funds

The CBS has the 20 percent match on hand and currently available in its SE Economic Development Fund and/or its General Fund. The Industrial Park Enterprise Fund could also contribute a small portion. See Table 1 – Cost Share table.

Table 2 – Cost Share table

Total Project Costs:	\$ 8,174,000	100%
Funding Sources (Non-Federal):	Amount:	Percent:
City and Borough of Sitka (resolution attached)	\$1,634,800	20%
Federal BUILD Funds Requested	\$6,539,200	80%

Documentation of Funding Commitment

Assembly meeting minutes or letter from the Municipal Administrator. Maybe both.

Budget

The following budget is based on engineering design estimates from 2014 which have been updated to today's dollars using the Anchorage Consumer Price Index.

Table 3 – GPIP Haulout/Travelift Cost Estimate

Improvement Component	Total Cost	BUILD Funds	Non Federal Funds
Mobilization & Surveying	\$594,000	\$475,200	\$118,800
Upland Improvements	\$1,389,000	\$1,111,200	\$277,800
Washwater On-site Pre-treatment Facility	\$745,000	\$596,000	\$149,000
Boat Haulout Piers	\$1,975,000	\$1,580,000	\$395,000
Equipment - 150-ton Travelift	\$1,170,000	\$936,000	\$234,000
Power and Lighting	\$319,000	\$255,200	\$63,800
Contingency	\$929,000	\$743,200	\$185,800
Planning, Permitting, Surveying & Geotech	\$124,000	\$99,200	\$24,800
Design Engineering, Contract Admin & Inspections	\$929,000	\$743,200	\$185,800
Totals	\$8,174,000	\$6,539,200	\$1,634,800

See BCA GPIP Haulout.xlsx for further detail on the cost estimate.

Selection Criteria

Primary Selection Criteria includes Safety, State of Good Repair, Economic Competitiveness, Environmental Sustainability, and Quality of Life. Each of these topics are discussed in turn.

Safety

This project will contribute to a reduction in crashes, fatalities, and injuries as Sitka vessel owners will now have the opportunity to remain in Sitka to conduct annual repair and maintenance activities. The induced travel from the closure of the existing haulout facility can be hazardous to vessel operators already working long harvest hours. In addition, the reduction in travel to alternate ports will contribute to improved air quality and the reduced risk of hazardous spills.

State of Good Repair

The CBS is a rural community without road access to other communities in Southeast Alaska. As such, the community relies on air and marine travel for the transport of goods, people, and vehicles so the community can properly function. The marine infrastructure improvement outlined in this grant application will replace and improve the existing haulout facility and contribute to continued economic development in the region.

This infrastructure development is consistent with the Gary Paxton Industrial Park Strategic Plan (GPIP) adopted by the GPIP Board on July 31, 2017. See [GPIPstrategicplan2017approved.pdf](#). This development is also consistent with the Sitka Comprehensive Plan 2030 adopted May 2018.

See FinalCompPlanreducedsize.pdf. And this is consistent with the Sitka Economic Development Association Strategic Plan 2016. See SEDAStrategicPlan.pdf. Improving Sitka's marine infrastructure and providing employment and economic development are key components of all of these documents.

If left unimproved, Sitka vessel owners and crew will have to devote extraordinary amounts of time traveling to alternate locations in order to conduct their business. This infrastructure improvement will allow fishing industry participants in Sitka and the surrounding communities to continue efficiently and safely harvesting fish products and providing tourism opportunities.

The GPIIP is managed by the Sitka Economic Development Association (SEDA), in partnership with the CBS Administration. In this role, SEDA manages contracts, provides data, negotiates and drafts leases for property, provides budget information, conducts tours, and holds public meeting of the GPIIP Board of Directors. SEDA has developed a budget with revenue and expense projections that was presented to the Assembly. While there may be some shortfalls in the early years of operation, the CBS is prepared to cover those shortfalls until the operation breaks even. The goal is for the facility to provide jobs, serve the fishing fleet, and infuse additional dollars to the CBS.

CBS is not a border community. There are customs officers working in the community during the cruiseship season. If a foreign vessel needed haulout, the customs officer would coordinate those activities at the GPIIP facility.

The CBS plans to maintain this infrastructure and the linkages to the marine environment and the landside transportation in a state of good repair. SEDA's monthly public meetings with the Board is the check on any problems that arise so that immediate action can be taken to remedy the situation.

[Economic Competitiveness](#)

The potential for closure of the existing haulout facility at Sitka has given local residents a fair bit of angst in recent years. For that reason, the Assembly asked the facility owner to provide advance notice in the event of a planned closure. Thankfully, the haulout facility owner has complied with that request which has given CBS the opportunity to pursue this needed infrastructure improvement in advance of closure. Without this improvement, the time spent traveling to alternate ports for repair and maintenance will be extraordinary. Please see the Benefit Cost Analysis discussion located further in this grant application.

The existing haulout facility cannot accommodate larger vessels already operating in the region. This project proposes a larger haulout facility in order to meet the needs of the vessels currently operating in the area and to meet the future needs of the marine industry operating.

The GPIIP is already an industrial park and this addition will increase the capability of the park to continue to meet the needs of the vessels now and into the future. Productivity of this land will be increased with this addition.

It is expected that small businesses servicing the marine industry will either relocate or establish additional satellite operations in the area once the haulout facility is operational. This will create long-term jobs and other economic opportunities for the local community.

Environmental Sustainability

This project would allow vessel owners to avoid lengthy travel to distant ports in order to conduct annual repair and maintenance on their vessels. There will be significant savings in fuel and reductions in air and water pollution if vessels can remain in Sitka to conduct vessel repairs. Vessels seeking haulouts at other Southeast Alaska ports would need to travel between 16 and 27 hours one way to arrive at their destination. Vessels traveling to Pacific Northwest for repairs would need to travel approximately 87 hours or about 3 ½ days to reach their destination.

The construction plan calls for wastewater collection and washdown facility along with pretreatment of water collected per EPA regulations. There are no wetlands affected by this construction project.

The GPIIP monthly meeting of February 2020 included a discussion by the Board to prioritize EPA approved water treatment infrastructure and EPA approved washdown pad or water collection infrastructure. Meeting minutes regularly reflect the GPIIP desire to operate and maintain this industrial park in an environmentally sustainable way. See GPIIP+2.28.20+Board+Meeting+Packet.pdf.

This project will also benefit the conversion of vessels to more energy efficient models. Sitka recently saw the first conversion of a vessel to a hybrid electric engine.⁷

Quality of Life

The GPIIP haulout improvements will increase the transportation choices for individuals as marine transportation is the lifeblood of Southeast Alaska communities. Once the existing haulout facility closes, Sitka residents will need to travel great distances to conduct essential services supporting the marine industry. The ability to conduct business activity close to home, family, and community cannot be understated. Additionally, the loss of local marine trade jobs would have a negative impact on the quality of life in Sitka.

There are no fiber or broadband deployments envisioned for this project. SEDA worked with a regional telecommunication company to bring sufficient fiber to the doorstep of the GPIIP for future development at the park in 2015.

⁷ <https://www.kcaw.org/2020/01/30/hybrid-fishing-boat-quietly-makes-waves-in-sitka-sound/>

Secondary Selection Criteria

Secondary Selection Criteria include Innovation and Partnership and are discussed further here.

Innovative Technologies, Project Delivery, and Financing

The technologies being deployed for this construction project are similar to technologies already demonstrated at other harbors in Sitka and ports around the state. There is discussion of utilizing a design-build project delivery method for this improvement, however final decisions will only occur after surveying and final design are complete.

CBS does not expect to finance any portion of this project at this time. Sitka's Economic Development funds are sufficient to cover the 20 percent match. CBS has sufficient cash flow to proceed with the project and accept reimbursement of funds when available.

Partnership

In 2000, the CBS partnered with the SEDA to manage the GPIIP. It is the mission of the GPIIP Board and management, with direction from the Sitka Assembly, to strategically develop the park in a fiscally responsible manner that maximizes its economic benefit to the community through creation of meaningful jobs in conformance with established community plans and policies.⁸

The CBS partnered with Northline Seafoods, Inc. (Northline) to construct the current access ramp in 2017. Northline leased property from the CBS to construct the access ramp to allow for its seafood processing barge to be hauled out at the GPIIP for retrofitting of the barge to operate as low temperature floating processor. Northline terminated its lease in 2019 to allow the CBS to move forward with its plans to develop a public haul out for the community.

The CBS continues to support and partner when possible with the seafood industry operating in the region. This project will allow those partnerships to continue. See Figure 1 for a list of private entities who have shared in the GPIIP development.

Project Readiness

The City and Borough of Sitka are committed to providing employment to local residents and adding value to the economic activity within their region. This project will replace a necessary function for the many vessels participating in the fishing, tourism, and commodity transportation industries. The CBS stands ready to complete this project in a fashion that allows vessel owners to continue their livelihoods uninterrupted.

Environmental Risk

This construction project is planned for an industrial area of Sawmill Cove. Every precaution will be taken to protect the land and waters affected as Sitka's tourism and fishing industries

⁸ <https://www.sawmillcove.com/>

would be negatively affected otherwise. Land and water surveys will be conducted promptly upon grant award in order to reveal any unknown environmental conditions.

The CBS will follow all regulations required by the USACOE, EPA, and Alaska DEC.

Technical Capacity

Alaska’s marine environment is well known and construction of this type ramp and installation of a haulout in Southeast is commonplace. There are no new technologies being proposed here. However, bidders will be encouraged to offer technological advances in their proposals.

Financial Capacity

The CBS has not pursued other BUILD, INFRA, or TIGER grants in the past. The CBS financial team stands ready to complete the required statements of activity and request for payments as directed by the US DOT.

Environmental Risk Review

Project Schedule

CBS assumes a 2-year schedule from grant award to final project completion. Sitka is not as limited by ice and snow during the winter season as some Alaska communities, so many tasks can be performed during the winter months to move the project forward. See Table 3.

Table 4 – GPIP Project Schedule

Project Milestones	Date
BUILD grant application deadline	May-20
BUILD grant award	Sep-20
Site Survey	Oct-20
Final Design & Permitting	Jun-21
Bid package ready	July-21
Award and Notice to Proceed	Sep-21
Site construction work starts	Nov-21
Fabrication and materials procurement	Jan-22
Hydraulic Lift arrival	Feb-22
Site work complete	April-22
Project completion	May-22
Grant close-out	April-22

Approvals and Permits

The CBS plans to engage agencies for approvals and permits quickly once grant funds have been authorized. A listing of environmental and operational permits required include:

1. USACE – Section 10 and Section 404 Authorizations
2. ADFG Fish Habitat Permit

3. ADEC Stormwater Treatment & Runoff Design Review
4. ADEC Water & Sewer Utilities
5. ADEC MSGP Operational SWPPP for Boatyards
6. Local Building Permits
7. Access Easement to define the ramp and existing Utility Dock operations

NEPA Compliance

The SEDA manages the GPIIP and holds monthly public meetings concerning proposed improvements. Due to the COVID-19, the most recent meeting was cancelled. However, the February 28, 2020 meeting included a lengthy discussion of the proposed haulout improvements and received several comments from the public on the path forward. Please see GPIIP+2.28.20+Board+Meeting+Packet.pdf. Future meetings will occur with appropriate precautions to protect the health and safety of participants.

The CBS fully intends to meet the requirements of NEPA for this project including public meetings once they are allowed. Other forms of gathering public input may be required depending on timing and conditions of the COVID-19 environment.

Risk and Mitigation Strategies

Risks to this project include site specific conditions, scheduling, funding, and project management. The CBS has mitigated these risks by including multiple surveying efforts, allowing for design/build components to the construction, allocating the funding in advance of grant award, and relying on CBS's Public Works Department with many years of experience to manage the designers, surveyors, construction activity, and grant reporting. The COVID-19 environment is an ongoing risk that will be managed in accordance with CDC and State recommendations and may impact schedule.

Benefit Cost Analysis

Assumptions

The following assumptions have been used for the economic analysis.

- All commercial fishing vessels must haul boats at least annually for pressure washing below the water line, anti-fouling paint, and replacement of sacrificial zincs, and other activity.
- The existing boat haulout will be closed by the end of 2021 requiring commercial vessels to seek haulout services elsewhere.
- Vessels less than 20-feet in length can be removed by trailer for annual maintenance and repair.
- Vessels in the 20-foot to 40-foot length listed as trollers on the vessel permit file are too large (wide) to haul out by trailer and must travel to Wrangell for haul out. Vessels in the under 40-foot category are estimated to travel at 8.3 nautical miles per hour.

- Vessels in the 40-foot to 60-foot length must travel to either Ketchikan (167 nautical miles) or Wrangell (273 nautical miles) for annual haulout. Vessels in the 40-60-foot category are estimated to travel at 10 nautical miles per hour.
- Vessels greater than 60-feet in length will need to travel to Bellingham, or similar location in the Pacific Northwest, for annual maintenance and repair. Bellingham is 869 nautical miles away. Vessels in the greater than 60-foot category are estimated to travel at 10 nautical miles per hour.
- The useful life of the haulout/Travelift prior to needing upgrades or major repairs is assumed to be 20 years so this forecast uses a 20-year present value calculation.
- Benefits and costs have been discounted at a 7 percent discount rate in order to compare values in today's dollars.

Present Value Costs

The loss of the current haul out in Sitka would greatly affect the marine trades industry. The jobs would more than likely be lost to other communities.

Initial cost estimates are \$8.2 million spread over a 2-year construction season. Periodic maintenance for the facility is assumed at 1 percent of initial construction cost every five years over the 20-year period of analysis.

Table 5 – GPIP 150-Ton Travelift Present Value Calculations Selected Years

Year	Construction	Periodic Maintenance	Total Cost	NPV Factor	Net Present Value
2021	\$ 3,600,960		\$ 3,600,960	0.93458	\$ 3,365,383
2022	\$ 4,572,480		\$ 4,572,480	0.87344	\$ 3,993,781
2027		\$ 81,740	\$ 81,740	0.62275	\$ 50,904
2032		\$ 81,740	\$ 81,740	0.44401	\$ 36,294
2037		\$ 81,740	\$ 81,740	0.31657	\$ 25,877
Totals	\$ 8,173,440	\$ 245,220	\$ 8,418,660		\$8,173,440
Total Construction Cost and Maintenance					\$ 7,472,238
Less Residual Value after 20 years				\$2,703,300	\$ 4,489,300
Present Value of Haulout Improvement				\$4,768,938	\$ 7,613,374

Present Value Benefits

The net present value of benefits from avoided travel, opportunity cost of time, and emissions avoided over the 20-year period of analysis is \$31.1 million. Table 5 shows the summary for these benefits for selected years.

Table 6 – 150-Ton Travelift Benefit Calculations Selected Years

Year	Avoided Travel	OCT Diff from base case	Emissions Avoided	Total	NPV Factor	Net Present Value
2022	\$1,794,930	\$249,225	\$860,264	\$2,904,419	0.87344	\$2,536,832
2023	\$1,813,322	\$251,394	\$870,018	\$2,934,735	0.81630	\$2,395,618
2027	\$1,889,498	\$260,378	\$910,418	\$3,060,293	0.62275	\$1,905,797
2032	\$1,990,860	\$272,331	\$964,176	\$3,227,367	0.44401	\$1,432,990
2037	\$2,099,505	\$285,144	\$1,021,797	\$3,406,445	0.31657	\$1,078,393
2041	\$2,192,015	\$296,053	\$1,070,860	\$3,558,928	0.24151	\$859,528
Totals	\$39,704,326	\$5,433,315	\$19,223,665	\$64,361,305		\$31,122,380

BCR

The 150-ton Travelift has positive benefit to cost ratio of 6.5. The 150-ton Travelift meets most of the Sitka vessel owners' needs now and plans for future. See Table 6 for details on the benefits and costs along with the residual value after 20 years and the benefit/cost ratio.

Table 7 – Benefit/Cost Ratio Calculations

Summary of Calculations	150-ton Haulout
Benefit calculations - 2020 \$\$	
Vessel avoided travel	\$19,207,000
Opportunity Cost of time	\$2,637,000
Emissions reduced	\$9,279,000
PV Benefits summary	\$31,122,000
Cost Calculations - 2020 \$\$	
PV Cost of Project	\$7,472,000
Less residual value	\$2,703,000
Effective cost (PV)	\$4,769,000
PV Net benefits (benefits - costs)	\$26,353,000
Benefit/cost ratio (benefits/costs)	6.53

See the Economics Appendix attached to this narrative for further details.

Additional Considerations

The rural community of Sitka, Alaska is heavily dependent on a working waterfront. Sitka has the largest fleet of vessels and harbor system in the state, and is 4th in the state and 11th in the nation in value of fish landings. Sitka's only privately-owned shipyard, Halibut Point Marine, is closing their operation in the summer of 2021. Ultimately, this amounts to a catastrophic failure to haul-out and marine services for Sitka's fleet.

Appendix

Benefit-Cost Analysis for the Gary Paxton Industrial Park Haulout Facility

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Introduction

Commercial fishing is the backbone of Sitka's economy. Sitka has the largest boat fleet in Alaska and is also one of the top fishing ports. Recently, the City and Borough of Sitka learned that the only boat haulout facility in the community will be shutting down in the next 18 months. This presents an opportunity for the CBS and a challenge to meet the needs of the fishing fleet in a timely manner.

Commodity Forecast

The fishing industry is stable. Tourism may realize some bumps this year due to COVID-19 restrictions but is expected to reestablish activity in 2021 once a vaccine is approved for the virus. Population typically drives the need for commodities and Sitka population has been stable in recent years. The Alaska Department of Labor and Workforce Development forecasts that Sitka's population will decline slightly (-0.3 percent) in the next ten years or about 30 persons.⁹

Vessel Forecast

There are more than 400 fishing vessels permits with Sitka addresses in the Alaska Commercial Fisheries Entry Commission (CFEC) database for 2020. Using these vessels and their characteristics as a minimum for vessels wishing to haulout to conduct repairs and maintenance at Sitka is a conservative estimate. There are many more vessels that could use the haulout facility including recreational, government, barges, and research vessels. In addition, vessels from other communities could also find the need to haulout at Sitka. Supporting data for these other vessels is not readily available so they have not been included in the benefits analysis, which strongly suggests that benefits are understated in this evaluation.

The following assumptions were made in order to determine benefits for the project:

- All commercial fishing vessels must haul their boats at least annually for pressure washing below the water line, anti-fouling paint, and replacement of sacrificial zincs, and other activity.
- The existing boat haulout close by the end of 2021 requiring commercial vessels to seek haulout services elsewhere.
- Vessels less than 20-feet in length can be removed by trailer for annual maintenance and repair.
- Vessels in the 20-foot to 40-foot length listed as trollers on the vessel permit file are too large to haul out by trailer and must travel to Wrangell for haul out. Vessels in the under 40-foot category are estimated to travel at 8.3 nautical miles per hour.

⁹ <https://live.laborstats.alaska.gov/pop/projections.cfm>.

- Vessels in the 40-foot to 60-foot length must travel to either Ketchikan (167 nautical miles) or Wrangell (273 nautical miles) for annual haulout. Vessels in the 40-60-foot category are estimated to travel at 10 nautical miles per hour.
- Vessels greater than 60-feet in length will need to travel to Bellingham, or similar location in the Pacific Northwest, for annual maintenance and repair. Bellingham is 869 nautical miles away. Vessels in the greater than 60-foot category are estimated to travel at 10 nautical miles per hour.
- The useful life of the haulout/Travelift prior to needing upgrades or major repairs is assumed to be 20 years so this forecast uses a 20-year present value calculation.
- Benefits and costs have been discounted at a 7 percent discount rate in order to compare values in today's dollars.

The methodology used to determine the number of vessels benefiting is as follows:

1. Obtain 2020 vessel permits with Sitka mailing addresses from Alaska Commercial Fisheries Entry Commission (CFEC) database. This probably understates the number of vessels who would use the haulout as other communities may travel for this purpose much like Sitka will have to once the local haulout closes.
2. Sort the vessel permit file by vessel type, length overall, and gross tonnage.
3. Identify average gross tonnages by vessel length. Note that not all vessels report their gross tonnage to CFEC so the averages are probably understated.
4. Eliminate vessels with gross tonnages over 150 tons. There were five vessels in this category. These vessels are more likely to use haulout facilities in Ketchikan or Pacific Northwest Ports.

Table 7 shows the number of vessels by category with Sitka mailing addresses. This table also displays the average, minimum, and maximum gross tonnages for the vessels.

Table 8 – Number of Vessels with 2020 Commercial Permits

Vessel Activity	# Vessels	Avg Gross Tons	Min Gross Tons	Max Gross Tons
FISHING <40	220	6	0	31
FISHING >=40	132	33	0	94
FREEZER CANNER >40	1	91	91	91
FREEZER CANNER, FISHING <40	1	10	10	10
FREEZER CANNER, FISHING >=40 and <60	13	35	0	49
FREEZER CANNER, TENDER PACKER, FISHING >=40 and <60	4	45	37	52
TENDER PACKER <40	2	0	0	0
TENDER PACKER >=40 and <60	0	0	0	0
TENDER PACKER >=60	2	75	0	150
TENDER PACKER, FISHING <40	9	5	0	15
TENDER PACKER, FISHING >=40 and <60	12	41	7	85
TENDER PACKER, FISHING >=60	5	82	30	129
Total Vessels	401			

Source: State of Alaska Commercial Fisheries Entry Commission.

In order to facilitate the choice of project to pursue, the benefit analysis then looked at the base case and an alternative with 150-ton Travelift. The base case is needed in order to compare the other alternative to a “no action” scenario. Using a 20-year period of analysis allows for comparison to the construction costs which occur in advance of benefits accruing. Benefits are assumed to begin accruing in 2022 after a 2-year construction period.

Assumptions for each of the alternatives follows:

Base Case – No Action

In this case, the existing haulout facility closes by the end of 2021 and vessel owners must seek alternatives to maintain and repair vessels. The following assumptions were used:

- Vessels under 20-feet in length can be removed by trailer and stay in Sitka for maintenance and repairs.
- Vessels in the 20-foot to 40-foot range identifying as trollers cannot be hauled out by trailer (due to width) and are expected to travel to Wrangell for haulout. Wrangell will probably be overwhelmed with the number of vessels and it is expected that Petersburg will serve as a back-up to Wrangell.
- Vessels in the 40-foot to 60-foot category must travel to either Wrangell or Ketchikan for annual haulout. This analysis assumes that half of the vessels go to either location.
- Vessels greater than 60-feet in length must travel to Bellingham or similar Pacific Northwest location for annual haulout.
- The existing haulout owner provided ten years data showing a slight increase in the demand for haulout services. This increased demand was about 1.4 percent annually for vessels in the under 60-foot category. So, the vessels in the under 60-foot category are assumed to increase by 1.4 percent annually.

150-ton Travelift Alternative

Several more vessels can be accommodated with a larger travelift than are currently accommodated with the existing 88-ton Travelift. Assumptions concerning the 150-ton Travelift are as follows:

- 84 percent of vessels in the under 40-foot category will use the 150-ton travelift based on current usage.
- 84 percent of vessels in the 40-foot to 150-foot category will also use the 150-ton travelift.
- The number of vessels grows in the under 60-foot category annually by 1.4 percent based on most recent 10 years of existing haulout usage.
- Vessels greater than 150-feet report gross tonnages more than 150 tons so cannot use the 150-ton travelift and must travel to Pacific Northwest ports or repair and maintenance.

Vessel Avoided Travel

Additional assumptions concerning the avoided travel include:

- Sitka vessels would be making a roundtrip to the alternate port for haulout as these vessel owners have addresses in Sitka and are presumed to live there year-round.
- Vessel speeds are estimated at 8.3 nautical miles per hour for vessels under 40-feet.
- Vessel speeds are estimated at 10 nautical miles per hour for vessels greater than 40-feet.
- Vessels make one trip per year for haulout repairs and maintenance.
- Vessels must haulout every three years for inspections. This haulout is assumed to take place the same time as repair and maintenance.
- The forecast assumes that the vessels in the under 60-foot category increase by 1.4 percent annually based on the historical usage of the existing haulout facility.

Table 8 shows the hours of travel under the Base case (No Action), and the 150-ton Travelift scenarios. In the base case when the existing haulout facility closes, vessels must travel for 16,451 hours to arrive at alternate ports. This number drops to 5,482 hours with the 150-ton Travelift.

Table 9 – Hours of Travel

Vessel type	# vessels	Base travel hours	150-ton travel hours
Fishing <40-feet	220	6,519	-
Fishing >=40-feet	132	6,998	4,857
Freezer Canner >40-feet	1	55	-
Freezer Canner, Fishing <40-feet	1	40	-
Freezer Canner, Fishing >=40-feet	13	572	478
Freeze Canner, Tender Packer, Fishing >40-feet	4	176	147
Tender Packer <40-feet	2	80	-
Tender Packer >=40-feet and <60-feet	0	-	-
Tender Packer >60-feet	2	348	-
Tender Packer, Fishing <40-feet	9	267	-
Tender Packer, Fishing >=40-feet and <60-feet	12	528	-
Tender Packer, Fishing >=60-feet	5	869	-
Totals	401	16,451	5,482

The Vessel Operating Costs (VOCs) are then calculated for each of the vessel categories. Vessel Operating costs were taken from the Craig Small Boat Harbor Navigation Improvements Economics Appendix produced by the U.S. Army Corps of Engineers in December 2014. The VOCs were updated to today's dollars using the Gross Domestic Product Deflator index. The index for the 4th Quarter of 2019 is 118.676 and the index for 2014 was 111.590. The calculation

then was 118.676 divided by 111.590 and multiplied by the vessel operating costs from that report.

Vessel operating costs for each of the vessel categories is as follows:

Table 10 – Vessel Operating Costs

Vessel operating costs:	Per Hour
Fishing <40-feet	\$ 118.92
Fishing >=40-feet	\$ 231.30
Freezer Canner >40-feet	\$ 231.30
Freezer Canner, Fishing <40-feet	\$ 118.92
Freezer Canner, Fishing >=40-feet	\$ 231.30
Freeze Canner, Tender Packer, Fishing >40-feet	\$ 231.30
Tender Packer <40-feet	\$ 118.92
Tender Packer >=40-feet and <60-feet	\$ 231.30
Tender Packer >=60-feet	\$ 259.19
Tender Packer, Fishing <40-feet	\$ 118.92
Tender Packer, Fishing >=40-feet and <60-feet	\$ 231.30
Tender Packer, Fishing >=60-feet	\$ 259.19

Total travel in the base case for the 20-year period of analysis is \$50.1 million. This travel cost compares to the 150-Ton travelift with \$29 million in travel expenses. These total travel costs will be discounted in a subsequent step along with discounting of project costs in order to determine the net benefits and benefit to cost ratio. Following is the calculation used to determine total travel costs.

$\text{Equation 1: } AD_{(year)} = C_{(year)} \times H \times VOC$
--

- Where:**
- AD_(year) is the value of the transportation cost in a particular year
 - C_(year) is the number of vessels traveling for the given year
 - H is the average hours associated with each transportation occurrence
 - VOC is the vessel hourly operating costs

Vessel travel costs under the base case – no action plan over the 20-year period of analysis is \$68.7 million. Travel costs with the 100-ton Travelift fall to \$35.3 million, a benefit of \$33.4 million, and the travel with the 150-ton Travelift fall further to \$29 million, a benefit of \$39.7 million, over the 20-year period of analysis. Travel benefits will be discounted in a subsequent step along with discounting of project costs in order to determine the net benefits and benefit to cost ratio. See Table 10.

Table 11 – Vessel Travel Costs under Base Case and 150-ton Travelift Scenarios

Year	Travel - No Action	Travel with 150-ton Travelift
2022	\$ 3,062,960	\$ 1,268,030
2023	\$ 3,099,072	\$ 1,285,749
2024	\$ 3,135,688	\$ 1,303,716
2025	\$ 3,172,816	\$ 1,321,934
2026	\$ 3,210,462	\$ 1,340,407
2027	\$ 3,248,635	\$ 1,359,137
2028	\$ 3,287,341	\$ 1,378,130
2029	\$ 3,326,588	\$ 1,397,387
2030	\$ 3,366,383	\$ 1,416,914
2031	\$ 3,406,735	\$ 1,436,714
2032	\$ 3,447,650	\$ 1,456,790
2033	\$ 3,489,137	\$ 1,477,147
2034	\$ 3,531,204	\$ 1,497,789
2035	\$ 3,573,859	\$ 1,518,719
2036	\$ 3,617,109	\$ 1,539,941
2037	\$ 3,660,964	\$ 1,561,460
2038	\$ 3,705,432	\$ 1,583,279
2039	\$ 3,750,522	\$ 1,605,404
2040	\$ 3,796,241	\$ 1,627,837
2041	\$ 3,842,599	\$ 1,650,585
Totals	\$ 68,731,396	\$ 29,027,071

Vessel Emissions

“Transportation activities contribute significantly to localized air pollution, and some transportation projects offer the potential to reduce the transportation system’s impact on the environment by lowering emissions of air pollutants that result from production and combustion of transportation fuels. The economic damages caused by exposure to air pollution represent externalities because their impacts are borne by society as a whole, rather than by the travelers and operators whose activities generate these. By lowering these costs, transportation projects that reduce emissions may produce environmental benefits.”¹⁰

Once the existing haulout facility shuts down, there will be additional travel requirements imposed on the Sitka commercial vessels as they seek haulout facilities elsewhere. This analysis takes a conservative approach and uses the 2010 total cost per cylinder for Stoichiometric

¹⁰ Benefit-Cost Analysis Guidance for TIGER and INFRA Applications – July 2017

Gasoline Direct Injections¹¹ and assumes at least one 8-cylinder engine for each of the vessel types described in this analysis.

The 2010 cost per cylinder from the National Highway Transportation Safety Administration Final Regulatory Impact Analysis was \$67.00. Updating this to 2020 dollars using deflator indexes from the Bureau of Economic Analysis results in \$77.55 per cylinder in emissions reduction. (Calculation: $\$67 * 118.676(2020\$) / 102.532(2010\$) = \77.55)

The calculation to arrive at emissions due to transportation to alternate ports is displayed in Equation 2.

$$Equation\ 2:\ E_{(year)} = C_{(year)} \times H \times TC$$

Where: $E_{(year)}$ is the value of the emissions during a particular year
 $C_{(year)}$ is the number of vessels traveling for the given year
H is the hours associated with that travel
TC is the total cost per cylinder of the emissions

Emissions under the base case total \$29.1 million. Emissions under the 150-ton Travelift are \$9.9 million. Emissions will be discounted in a subsequent step along with discounting of project costs in order to determine the net benefits and benefit to cost ratio. Emissions avoided with the 150-ton Travelift are \$19.2 million (\$29.1 million minus \$9.9 million). See Table 11.

¹¹ https://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FRIA_2017-2025.pdf

Table 12 – Emissions Costs under Base Case and 150-ton Travelift Scenarios

Year	Emissions No Action	Emissions with 150-ton Travelift
2022	\$ 1,291,344	\$ 431,080
2023	\$ 1,307,122	\$ 437,104
2024	\$ 1,323,121	\$ 443,212
2025	\$ 1,339,343	\$ 449,405
2026	\$ 1,355,792	\$ 455,685
2027	\$ 1,372,471	\$ 462,053
2028	\$ 1,389,383	\$ 468,509
2029	\$ 1,406,531	\$ 475,056
2030	\$ 1,423,919	\$ 481,694
2031	\$ 1,441,550	\$ 488,426
2032	\$ 1,459,427	\$ 495,251
2033	\$ 1,477,554	\$ 502,171
2034	\$ 1,495,934	\$ 509,189
2035	\$ 1,514,572	\$ 516,304
2036	\$ 1,533,469	\$ 523,519
2037	\$ 1,552,631	\$ 530,834
2038	\$ 1,572,060	\$ 538,252
2039	\$ 1,591,761	\$ 545,773
2040	\$ 1,611,737	\$ 553,400
2041	\$ 1,631,993	\$ 561,133
Totals	\$ 29,091,714	\$ 9,868,049

Opportunity Cost of Time

The opportunity cost of time measures the choice of the next best alternative to the thing chosen. In this case, vessel operators must stay on their vessel during travel to alternate harbors. Vessel operators could elect to do something else with their time. For instance, being with family, visiting with friends, and enjoying all that Alaska has to offer.

Given the hectic pace of the summer fishing season in Alaska, most vessel operators would choose to continue other productive work. However, failing data to support this assumption, this analysis assumes that vessel operators would choose leisure activity if transportation to alternate ports could be avoided with haulout improvements. Leisure activity for purposes of this analysis is 1/3 of the wage rate for the various positions on each of the vessel types described. Wage rates were obtained from the State of Alaska Department of Labor and Workforce Development Occupational Database for May 2018 – Statewide wage rates, the most recent data available. These wage rates probably understate the actual wage rates of captains and mates working in Alaska waters. See Table 12.

Table 13 – Wage Rates for Captain and Crew

Vessel type	Workers	# Crew	Hourly rate	Leisure rate
Fishing <40-feet	Captain	1	\$43.59	\$14.53
Fishing >=40-feet	Captain	1	\$43.59	\$14.53
	Deckhand	1	\$33.37	\$11.12
Freezer Canner >40-feet	Captain	1	\$43.59	\$14.53
	Deckhand	1	\$33.37	\$11.12
Freezer Canner, Fishing <40-feet	Captain	1	\$43.59	\$14.53
Freezer Canner, Fishing >=40-feet	Captain	1	\$43.59	\$14.53
	Deckhand	1	\$33.37	\$11.12
Freeze Canner, Tender Packer, Fishing >40-feet	Captain	1	\$43.59	\$14.53
	Deckhand	1	\$33.37	\$11.12
Tender Packer <40-feet	Captain	1	\$43.59	\$14.53
	Deckhand	1	\$33.37	\$11.12
Tender Packer >=40-feet and <60-feet	Captain	1	\$43.59	\$14.53
	Engineer	1	\$51.90	\$17.30
	Mate	1	\$25.27	\$8.42
Tender Packer >=60-feet	Captain	1	\$43.59	\$14.53
	Engineer	1	\$51.90	\$17.30
	Deckhand	1	\$33.37	\$11.12
	Mate	2	\$25.27	\$8.42
Tender Packer, Fishing <40-feet	Captain	1	\$43.59	\$14.53
Tender Packer, Fishing >=40-feet and <60-feet	Captain	1	\$43.59	\$14.53
	Engineer	1	\$51.90	\$17.30
	Mate	1	\$25.27	\$8.42
Tender Packer, Fishing >=60-feet	Captain	1	\$43.59	\$14.53
	Engineer	1	\$51.90	\$17.30
	Deckhand	1	\$33.37	\$11.12
	Mate	2	\$25.27	\$8.42

Source: State of Alaska Department of Labor and Workforce Development Occupational Database – May 2018 – Statewide wage rates. All wage rates based on May 2018 Wages in Statewide Alaska.¹²

1. Captain’s wages based on 75th percentile wage Occupation Code 53-5021 for Captains, Mates, and Pilots of Water Vessels
2. Engineer’s wages based on median wages for mechanical engineers Occupation Code 17-2141
3. Mates wages based on 25th percentile wage for Occupation Code 53-5021 for Captains, Mates, and Pilots of Water Vessels
4. Deckhands wages based on median wage for Occupation Code 53-5021 for Captains, Mates, and Pilots of Water Vessels

¹² <http://live.laborstats.alaska.gov/wage/index.cfm?at=01&a=000000#g53>

$$\text{Equation 3: } OCT_{(\text{year})} = C_{(\text{year})} \times H \times W \times R$$

Where: $OCT_{(\text{year})}$ is the value of cost of time for workers on transported vessels in a given year

$C_{(\text{year})}$ is the number of vessels traveling for the year

H is the average hours associated with travel to alternate ports

W is the number of workers in that particular position on the vessel

R is the wage rate from the State of Alaska Dept. of Labor and Workforce Development for May 2018 divided by 3 to determine the leisure rate

Table 14 – Opportunity Cost of Time Calculations

Year	OCT No Action	OCT with 150-ton Travelift
2022	\$ 389,861	\$ 140,636
2023	\$ 393,995	\$ 142,601
2024	\$ 398,187	\$ 144,594
2025	\$ 402,438	\$ 146,614
2026	\$ 406,748	\$ 148,663
2027	\$ 411,118	\$ 150,741
2028	\$ 415,549	\$ 152,847
2029	\$ 420,043	\$ 154,983
2030	\$ 424,599	\$ 157,149
2031	\$ 429,218	\$ 159,345
2032	\$ 433,902	\$ 161,571
2033	\$ 438,652	\$ 163,829
2034	\$ 443,468	\$ 166,118
2035	\$ 448,351	\$ 168,440
2036	\$ 453,303	\$ 170,793
2037	\$ 458,324	\$ 173,180
2038	\$ 463,415	\$ 175,600
2039	\$ 468,577	\$ 178,054
2040	\$ 473,811	\$ 180,542
2041	\$ 479,118	\$ 183,065
Totals	\$ 8,652,679	\$ 3,219,364

Opportunity Cost of time for captain and crew who must accompany the vessel to alternate ports for haulout maintenance and repairs totals \$8.6 million over the 20-year period of analysis. Opportunity Cost of Time for the 150-ton Travelift is \$3.2 million. The difference between the

base case and the 150-ton Travelift is a benefit of \$5.4 million. Opportunity Cost of Time will be discounted in a subsequent step along with discounting of project costs in order to determine the net benefits and benefit to cost ratio.

Summary Benefits Calculations

Base Case Calculations for Travel, Opportunity Cost of Time, and Vessel Emissions are found in Table 14. The difference between the base case and the 150-Ton Travelift forms the basis for the benefit calculations. Benefit calculations are determined using a 7 percent discount rate and a project period of analysis of 20 years.

Table 15 – Base Case Calculations

Year	Travel	OCT	Emissions	Total	NPV Factor	Net Present Value
2022	\$3,062,960	\$389,861	\$1,291,344	\$4,744,165	0.87344	\$4,143,738
2023	\$3,099,072	\$393,995	\$1,307,122	\$4,800,189	0.81630	\$3,918,384
2024	\$3,135,688	\$398,187	\$1,323,121	\$4,856,996	0.76290	\$3,705,379
2025	\$3,172,816	\$402,438	\$1,339,343	\$4,914,597	0.71299	\$3,504,040
2026	\$3,210,462	\$406,748	\$1,355,792	\$4,973,002	0.66634	\$3,313,721
2027	\$3,248,635	\$411,118	\$1,372,471	\$5,032,224	0.62275	\$3,133,816
2028	\$3,287,341	\$415,549	\$1,389,383	\$5,092,273	0.58201	\$2,963,749
2029	\$3,326,588	\$420,043	\$1,406,531	\$5,153,162	0.54393	\$2,802,978
2030	\$3,366,383	\$424,599	\$1,423,919	\$5,214,901	0.50835	\$2,650,991
2031	\$3,406,735	\$429,218	\$1,441,550	\$5,277,503	0.47509	\$2,507,304
2032	\$3,447,650	\$433,902	\$1,459,427	\$5,340,980	0.44401	\$2,371,459
2033	\$3,489,137	\$438,652	\$1,477,554	\$5,405,343	0.41496	\$2,243,025
2034	\$3,531,204	\$443,468	\$1,495,934	\$5,470,606	0.38782	\$2,121,595
2035	\$3,573,859	\$448,351	\$1,514,572	\$5,536,782	0.36245	\$2,006,784
2036	\$3,617,109	\$453,303	\$1,533,469	\$5,603,881	0.33873	\$1,898,229
2037	\$3,660,964	\$458,324	\$1,552,631	\$5,671,919	0.31657	\$1,795,584
2038	\$3,705,432	\$463,415	\$1,572,060	\$5,740,907	0.29586	\$1,698,527
2039	\$3,750,522	\$468,577	\$1,591,761	\$5,810,859	0.27651	\$1,606,751
2040	\$3,796,241	\$473,811	\$1,611,737	\$5,881,789	0.25842	\$1,519,966
2041	\$3,842,599	\$479,118	\$1,631,993	\$5,953,710	0.24151	\$1,437,899
Totals	\$68,731,396	\$8,652,679	\$29,091,714	\$106,475,789		\$51,343,921

The calculations for the 150-ton Travelift are based on the reduced travel for vessels seeking haulout at alternative ports. Table 15 shows the difference between the base case travel and the travel still required when there is a 150-ton Travelift.

The addition of a 150-Ton Travelift to the Gary Paxton Industrial Park is estimated to result in \$31.1 million in benefits over the 20-year period of analysis. These benefits will be compared to costs in a separate calculation to determine the benefit to cost ratio.

Table 16 – 150-Ton Travelift Benefit Calculations

Year	Avoided Travel	OCT Diff from base case	Emissions Avoided	Total	NPV Factor	Net Present Value
2022	\$1,794,930	\$249,225	\$860,264	\$2,904,419	0.87344	\$2,536,832
2023	\$1,813,322	\$251,394	\$870,018	\$2,934,735	0.81630	\$2,395,618
2024	\$1,831,972	\$253,594	\$879,909	\$2,965,474	0.76290	\$2,262,346
2025	\$1,850,881	\$255,824	\$889,938	\$2,996,643	0.71299	\$2,136,565
2026	\$1,870,055	\$258,085	\$900,107	\$3,028,247	0.66634	\$2,017,849
2027	\$1,889,498	\$260,378	\$910,418	\$3,060,293	0.62275	\$1,905,797
2028	\$1,909,211	\$262,702	\$920,874	\$3,092,787	0.58201	\$1,800,030
2029	\$1,929,200	\$265,060	\$931,475	\$3,125,735	0.54393	\$1,700,193
2030	\$1,949,469	\$267,450	\$942,224	\$3,159,143	0.50835	\$1,605,948
2031	\$1,970,021	\$269,874	\$953,124	\$3,193,019	0.47509	\$1,516,980
2032	\$1,990,860	\$272,331	\$964,176	\$3,227,367	0.44401	\$1,432,990
2033	\$2,011,990	\$274,823	\$975,383	\$3,262,196	0.41496	\$1,353,695
2034	\$2,033,415	\$277,350	\$986,746	\$3,297,511	0.38782	\$1,278,832
2035	\$2,055,140	\$279,912	\$998,268	\$3,333,319	0.36245	\$1,208,148
2036	\$2,077,168	\$282,510	\$1,009,950	\$3,369,628	0.33873	\$1,141,410
2037	\$2,099,505	\$285,144	\$1,021,797	\$3,406,445	0.31657	\$1,078,393
2038	\$2,122,153	\$287,815	\$1,033,808	\$3,443,776	0.29586	\$1,018,889
2039	\$2,145,118	\$290,523	\$1,045,988	\$3,481,628	0.27651	\$962,699
2040	\$2,168,403	\$293,269	\$1,058,337	\$3,520,010	0.25842	\$909,637
2041	\$2,192,015	\$296,053	\$1,070,860	\$3,558,928	0.24151	\$859,528
Totals	\$39,704,326	\$5,433,315	\$19,223,665	\$64,361,305		\$31,122,380

Qualitative Considerations

Safety

The rural community of Sitka, Alaska is heavily dependent on a working waterfront. Sitka has the largest fleet of vessels and harbor system in the state, and is 4th in the state and 11th in the nation in value of fish landings. Sitka's only privately-owned shipyard, Halibut Point Marine, announced that they will close their operation in the summer of 2021. Ultimately, this amounts to a catastrophic failure to haul-out and marine services for Sitka's fleet.

Quality of Life

The GPIIP haulout improvements will increase the transportation choices for individuals because marine transportation is the lifeblood of Southeast Alaska communities. Once the existing haulout facility closes, Sitka residents will need to travel great distances to conduct essential services supporting the marine industry. The ability to conduct business activity close to home, family, and community cannot be understated.

Community Cohesiveness

Many residents of Alaska’s rural communities must travel for employment. This often means days at a time when a family member is away from town and unable to assist with the day-to-day activities of home life. The GPIIP haulout improvements will improve the economic conditions in the community and potentially offer employment for residents who would otherwise have to travel. This is especially true for captains and crew on large vessels who will need to travel to Pacific Northwest ports for repair and maintenance once the existing haulout facility shuts down. Being able to conduct repair and maintenance close to home will contribute to family and community cohesiveness.

The loss of the current haul out in Sitka would greatly affect the marine trades industry. The jobs would more than likely be lost to other communities.

Vessel and Infrastructure Damage

When vessels travel long distances to unfamiliar ports, the potential for incidents and accidents rises. Having a haulout available in the community where these vessels operate will limit unnecessary vessel and infrastructure damages.

Employment

It is anticipated that local small business owners may relocate or open satellite offices in the Gary Paxton Industrial Park to support haulout activities. While there is no estimate for increased employment at this time, it is anticipated that this infrastructure investment will reap economic benefits far in excess of the initial investment.

Cost Estimates

Initial costs and periodic maintenance for the 150-ton Travelift follows. Periodic maintenance is estimated at 1 percent of total project costs every 5 years during the 20-year period of analysis. Costs have been discounted with a 7 percent interest rate. See Table 16.

Table 17 – 150-Ton Travelift construction costs and periodic maintenance

Year	Construction	Periodic Maintenance	Total Cost	NPV Factor	Net Present Value
2021	\$3,600,960		\$3,600,960	0.93458	\$ 3,365,383
2022	\$4,572,480		\$4,572,480	0.87344	\$ 3,993,781
2023			\$ -	0.81630	\$ -
2024			\$ -	0.76290	\$ -
2025			\$ -	0.71299	\$ -
2026			\$ -	0.66634	\$ -
2027		\$81,740	\$81,740	0.62275	\$ 50,904
2028			\$ -	0.58201	\$ -
2029			\$ -	0.54393	\$ -
2030			\$ -	0.50835	\$ -
2031			\$ -	0.47509	\$ -
2032		\$81,740	\$81,740	0.44401	\$ 36,294
2033			\$ -	0.41496	\$ -
2034			\$ -	0.38782	\$ -
2035			\$ -	0.36245	\$ -
2036			\$ -	0.33873	\$ -
2037		\$81,740	\$81,740	0.31657	\$ 25,877
2038			\$ -	0.29586	\$ -
2039			\$ -	0.27651	\$ -
2040			\$ -	0.25842	\$ -
2041			\$ -	0.24151	\$ -
Totals	\$8,173,440	\$245,220	\$8,418,660		\$ 7,472,238

At the end of the 20-year period of analysis, there is still value to the project components. See Table 17 for residual value calculations. Total residual value at the end of the 20-year period of analysis is \$2.7 million.

Table 18 – 150-Ton Travelift Residual Value Calculations

Improvement Component	Initial Construction	Expected useful life (years)	Residual value after 20 years
Upland Improvements	\$1,389,000	40	\$694,500
Washwater and Treatment Facility	\$745,000	40	\$372,500
Boat Haulout Piers	\$1,975,000	40	\$987,500
150-ton Travelift	\$1,170,000	40	\$585,000
Power and Lighting	\$319,000	25	\$63,800
Total Residual Value of improved infrastructure			\$2,703,300

Benefit-Cost Summary

Net benefits for the 150-ton Travelift alternative is \$26.4 million over the 20-year period of analysis. See Table 18. The benefit to cost ratio from the 150-ton Travelift infrastructure improvement at the Gary Paxton Industrial Park in Sitka is a 6.53 using a 7 percent discount rate and a 20-year period of analysis.

Table 19 – Comparison of Benefits and Costs

Summary of Calculations	150-ton Travelift
Benefit calculations - 2020 \$\$	
Vessel avoided travel	\$19,207,000
Opportunity Cost of time	\$2,637,000
Emissions reduced	\$9,279,000
PV Benefits summary	\$31,122,000
Cost Calculations - 2020 \$\$	
PV Cost of Project	\$7,472,000
Less residual value	\$2,703,000
Effective cost (PV)	\$4,769,000
PV Net benefits (benefits - costs)	\$26,353,000
Benefit/cost ratio (benefits/costs)	6.53