Application for RAISE Transportation Discretionary Grants

FY 2022 RAISE

Marine Service Center Sheet Pile Wall and Crane

City and Borough of Sitka

Type: Maritime – State of Good Repair – Port Infrastructure
Location: City and Borough of Sitka, Alaska
Alaska's at-large Congressional District
Alaska Rural Area

Amount Requested: $7,842,488

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Project Description

The City and Borough of Sitka's Marine Service Center (MSC) seawall is a vital harbor element in Sitka and is need of repair. It is approximately 46 years old and has surpassed the end of its useful design life. Because of the condition and design of the current wall, the proposed project is to construct a new tied-back steel sheet pile wall on the seaward side of the original wall with a high slope tie-back anchored sheet wall in bedrock. Minor upgrades include a concrete wall cap and replacement of mooring bollards and 2-ton jib crane. A cathodic protection system will be installed to control corrosion. A condition assessment report from October 2011 estimated that the existing seawall structure had a remaining life of 5 years. See attachment 4, MSC Condition Assessment Oct. 2011.pdf. A 2021 inspection confirmed the defects from the 2011 inspection and noted some additional concerns. See attachment 4 MSC Inspection Report June 2021.pdf. If the seawall fails, the upland seafood cold storage facility which sits partially on the seawall will need to be condemned.

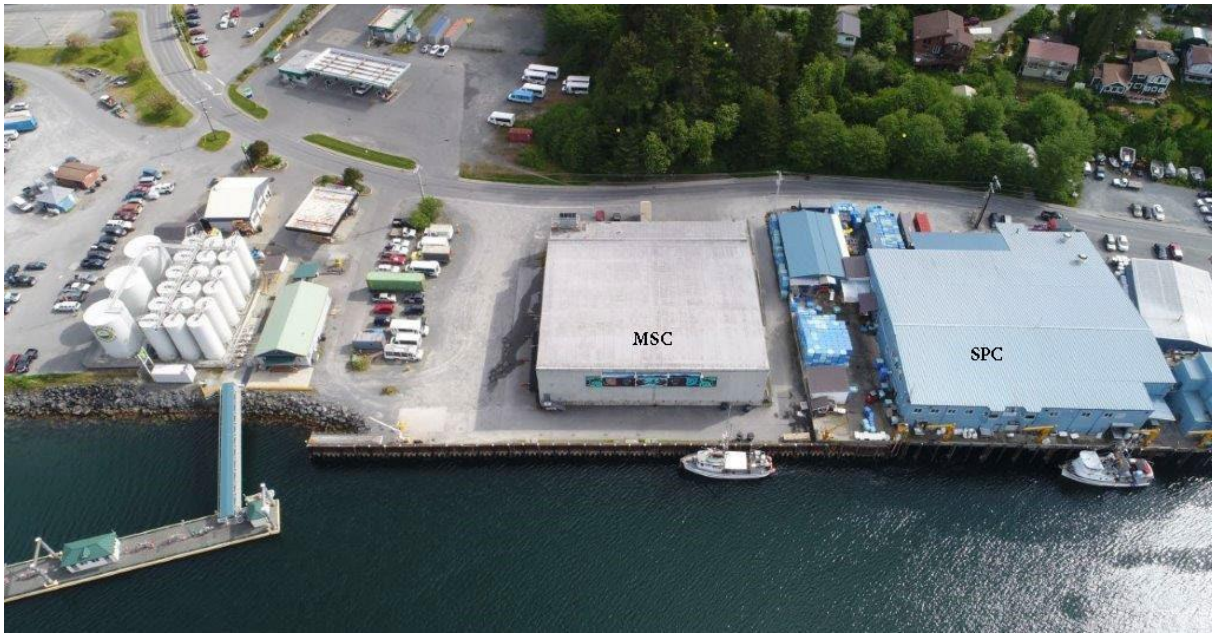

Figure 1- Marine Service Center Cold Storage Facility and Adjacent Seafood Processing Plant

The waterfront side of the cold storage property is supported by a sheet pile retaining wall. The wall is utilized as a berth for commercial vessels. Marine vessels including small passenger vessels, freighters, and fishing boats utilize the retaining wall to transfer goods, cargo, and passengers to/from vessels. However, its primary purpose is for commercial cargo to benefit the city and residents of Sitka. The building called the Marine Service Center contains about 21,000 square feet of which about 16,500 square feet is presently operated as cold storage where container vans are hand loaded and shipped direct to the Asia and Europe markets as well as transferred by barge to Washington state for domestic markets. Adjacent to the Northwest end of the retaining wall is a 2-ton electro-hydraulic telescope boom slewing crane with main boom, tele boom, winch, wire rope, load block with safety latch, controls, over booming cut out, and

hoses / fittings. The crane is available for public use and used for offloading fish product and loading of mail, supplies, and groceries. It is manufactured by the North American Crane and Equipment Company.

Figure 2 - Sheet Pile Corrosion in Splash Zone, July 2021

Figure 3- Sheet Pile Corrosion in Splash Zone, July 2021

Basic benefits to repairing this seawall include avoided travel, additional transportation costs for vessels seeking alternate docks, opportunity cost of time for captain and crew, and avoided emissions for the induced travel.

The Marine Service Center in Sitka serves a variety of customers. Fishing vessels, trampers, sailing vessels, small passenger vessels, government vessels including US Coast Guard and National Oceanic and Atmospheric Administration (NOAA) ships, and barges are all users.

Transportation Challenges Addressed

Fishing vessels currently deliver harvest for cold storage or processing, pick up bait and ice and collect crew and equipment from this seawall. There are other docks in town where fishing vessels could conduct their business but there are a variety of issues with using these alternatives. Vessels will generally deliver their product to the dock that can most efficiently get the product either to the processing plant or into cold storage in the shortest amount of time. Other docks in Sitka are busy with vessels who have those established relationships.

The City and Borough of Sitka (Sitka) operates the seawall and crane facility and owns the cold storage. The cold storage facility was constructed to provide infrastructure for economic development and enhancement of direct and indirect employment opportunities in the community. Sitka has leased the facility to Seafood Producers Cooperative since 1991 and the Cooperative operates a service cold storage business in the leased space. The Cooperative is contracted to provide uniform and competitive rates with a requirement that rate changes must be approved by Sitka.

The Seafood Producers Cooperative processing plant has been in operation since 1944 and is located adjacent to the cold storage facility at MSC. Seafood product from the plant can travel from the dock to the processing plant and then another 100 yards back to the cold storage facility in a short amount of time. “The Seafood Producers Cooperative is owned by over 500 members who fish the waters of the North Pacific. Each member is a small boat hook and line fisherman

and owner of the cooperative, and therefore receives the benefits of ownership"[1]

Another processing plant that uses the MSC and its convenient location is Sitka Sound Seafoods, located 0.2 miles from the cold storage facility or a 1-minute drive. "The Sitka Sound Seafoods plant started processing in the late 1960s, with North Pacific Seafoods and its sister companies purchasing a majority interest in 1990. A full merger of Sitka Sound and North Pacific was completed in 1997. This plant location has access to northern harvesting areas of Southeast Alaska, from Yakutat to the south end of Baranof Island. The plant processes all species of salmon from all gear types, halibut, sablefish, rockfish, herring, sea cucumbers, lingcod, Pacific cod, shrimp and Dungeness crab."[2]

Figure 4- Seafood workers produce product for MSC and export

If the seawall fails, and the cold storage facility is condemned, there is insufficient cold storage space in Sitka to capture the overflow. Cold storage users suggest they would need to get 25 to 40 freezer vans to accommodate their needs.

Trampers offload about 160 tons of product per visit. Trampers have averaged 6 visits per year over the last three years with 11 visits in 2019. This is northbound freight consisting of fiber, salt, machinery, and bait. Their southbound freight consists of frozen fish. Trampers can also offload at alternate ports in Sitka though the vessel owners would need to wait for available space to do so. In addition, inbound freight would need to be transported to alternate ports for vessel retrieval. Outbound frozen fish would need to be stored in freezer vans until transport. All of which adds additional costs for the tramper industry.

Much of the harvested fish in Sitka have value added with smoking and packaging and again this product would have to compete for limited cold storage space in town.

Due to the proximity of the existing Sitka Cold Storage Building, demolition and in-kind replacement of the existing bulkhead is not feasible. One option was to remove the bulkhead wall entirely, but this was quickly ruled out due to the importance of the seawall to the community.

History of the Project

The Marine Service Center sheet pile bulkhead dock was originally constructed in 1976. The tie-back wall structure is approximately 36-ft high (from mudline) by 356-ft long along the face,

[1] https://www.spcsales.com/co-op
[2] https://www.northpacificseafoods.com/sitka-sound-seafoods.html

with approximately 10-ft long end/return walls at each end of the bulkhead. The PZ27 sheet piles are driven approximately 10-ft to underlying bedrock, and are laterally restrained by exterior, MC8x22.8 walers located at elevations 0.0 ft (MLLW) and -10.0 ft. Each waler is connected via tie-rods to a sheet pile anchor wall approximately 70-ft behind the bulkhead face. The steel, round bar tie-rods are 2 ½-inch diameter, with ends upset to 3 ¼-inch diameter. They are spaced at 6-ft on-center, with the upper tie-rods being offset from the lower tie-rods by 3 feet. The walers and tie-rods are of ASTM A36 chemistry while the sheet piles are of ASTM A690 material. Creosote-treated timber fender piles protect the face of the bulkhead and a 12x12 timber bullrail caps the top of the wall. Steel pipe bollards and access ladders are positioned at varied spacing along the dock face.

In 1990, Sitka contracted for the design and construction of a 140-ft wide by 150-ft long cold storage building that is positioned approximately 30-ft behind the face of the bulkhead. The building is a "user" of the seawall. In 1993, Sitka contracted with WS Construction Inc. to install 22 anodes along the face of the bulkhead and perform associated electrical bonding work. In November of 1999, Sitka engaged Tryck Nyman Hayes, Inc. (TNH) to perform an inspection and condition assessment of the facility which did not include an underwater inspection.

Shortly thereafter, in April of 2000, Foreshore Technologies, Inc. (FTI) performed a dive inspection. Potential readings were taken during the underwater inspection which indicated that the structure was actively corroding. Both the TNH and FTI reports noted significant corrosion existed throughout the bulkhead face sheet piles as well as at the walers and tie-rod ends. In 2002, in response to the TNH and FTI inspections, Sitka again contracted with WS Construction Inc. to install an additional 36 anodes along the face of the bulkhead, and in 2003, Sitka retained the local engineering company, Structural Solutions, to design a complete cathodic protection system for the facility.

The designed cathodic protection system was installed in 2004. Included in the construction documents were the requirements to provide electrical bonding and continuity between all steel bulkhead face elements. All tie-rod locations were required to be videotaped, and continuity was to be verified at each tie-rod location using a reference electrode. See Sitka Marine Service Center Bulkhead Replacement - Report Update October 2011 Final.pdf.

Other Transportation Infrastructure Investments

Transportation infrastructure investments Sitka is actively working on include: 1) a major airport renovation project of $20 million, 2) Lincoln Street phase 1 and 2 at approximately $10 million in the design phase, 3) the Marine Service Center Sheet Pile Wall and Crane replacement at over $9 million, 4) construction of a new Seaplane Base in final permitting with construction is scheduled to begin in 2024 for $18 million, and 5) Critical Secondary Water project at $18 million to be completed by the end of 2022 summer. Other projects include a system wide traffic study for $200,000, Katlian Street $6.5 million, Knutson Drive at $880,000, High Load Dock for $1 million, Lake Street at $5 million, Fisherman's Work Float at $3 million, Crescent Harbor Phase 2 for $6 million, Sea Walk $2 million, Cross Trail Phase 6 $3 million, Eliason Harbor Electrical $3.5 million and Wachusettes Street culvert $1 million.

Detailed Statement of Work

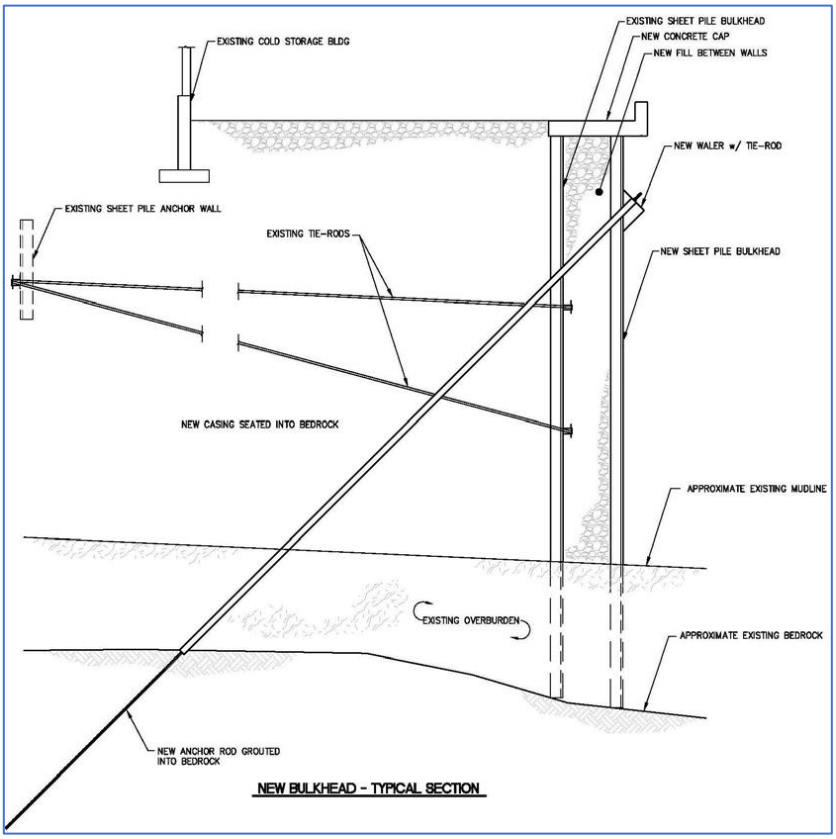

Figure 5- Typical Replacement Bulkhead Wall Section

This project proposes to construct a new, similar bulkhead design located slightly seaward of the existing bulkhead, utilizing grouted anchor rods drilled through the existing fill material and into the underlying bedrock (See Figure 5). The rough order of magnitude estimate provides for an upgraded facility with superior materials and improved cathodic protection systems. In addition to the seawall repair, the project calls for replacement of the existing crane. The crane is an Electro-Hydraulic Telescope boom slewing crane with main boom, tele boom, winch, wire rope, load block with safety latch, controls, over booming cut out, and hoses / fittings. See attachment 4 the NPC Company Crane Specs.pdf.

Sitka will follow a traditional design, bid, build process in which a professional design consultant team will be competitively selected based on Federal best practices and qualifications. Design and permitting will be completed by way of contracting consultant services who specialize in marine design and permitting following traditional 30/60/90 percent review process managed by the CBS Engineering Department. The construction phase will be bid and awarded to the lowest qualified bidder.

The contractor will mobilize the site with a large crane and barge and construct a new wall from the water side with the same function of the exiting wall. The new wall will have the same function and size as the existing wall approximately 356 feet in length and 36 feet in height. It will be similar to the existing structure with sheet pile walls utilizing a stem of walers and tie-rods that will be drilled deep into bedrock. By drilling the tie-rods that will be drilled deep into bedrock, it will help improve maintenance and inspection access for the future. All sheet piles and walers will be able to be prefabricated off site and coated to ensure maximum corrosion protection.

The new wall will have an anticorrosion anode system to significantly increase the life span compared to the existing wall and a fender system similar to the existing wall with piling to

protect it from vessel damage, safety ladders, and mooring cleats. Dredging or major dewater will not be necessary.

The ability to use the existing wall to hold back the embankment while building the new wall in front of the old wall with greatly reduce impacts to the marine environment. From a barge the contractor can float in place, drive the sheet piles, the tie-rods and piling with very little marine disturbance or footprint increase. Once the new wall is in place, the relatively small gap between the new wall will be isolated from the marine environment and can be filled in with high density fill and a cap on top.

Project Location

The cold storage facility is located at 600 Katlian Street in Sitka, Alaska adjacent to a local processor Seafood Producers Cooperative facility. The waterfront land parcel contains about 71,014 square feet. The legal description is Tract A Port Development, a portion of ATS 15.

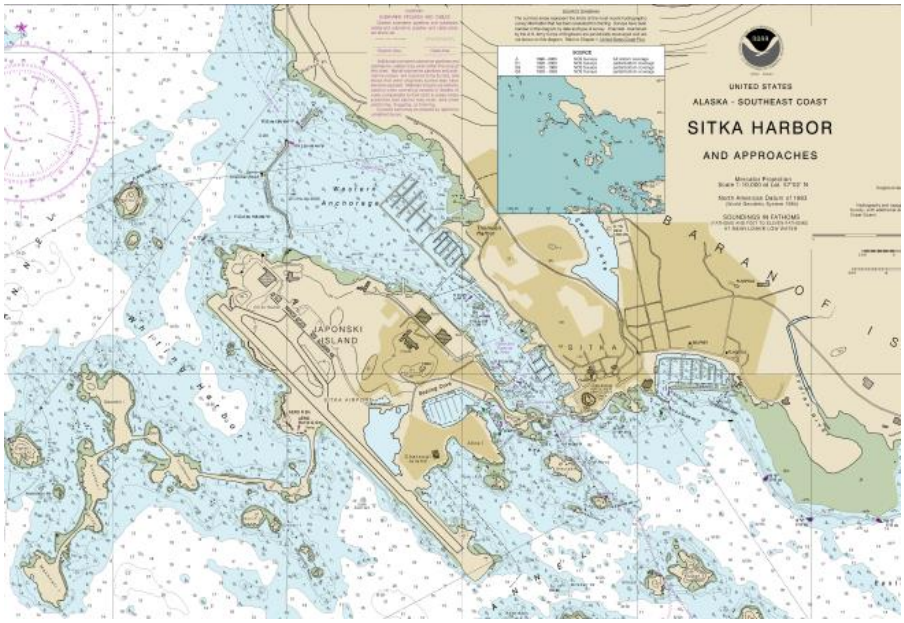

Figure 6- NOAA Chart 17327

NOAA Chart 17327 (August 2010) shows at a mean lower low water or 0.0 tide it is 22 feet at the MSC dock face while the PND engineering drawings show the toe of the bulkhead at minus 20 feet.

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 project location within the Harbor is 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. Sitka encompasses 2,874 square miles of land and 1,937.5 square miles of water.

Figure 8- Map of Alaska with Sitka location

Map of Project's Location

This is a coastal port project at tidal water and forms one of the elements of the Sitka Port system. The City and Borough of Sitka is not in an Area of Persistent Poverty nor is it close to any of those areas in the State of Alaska. The project is census tract 2 and not located in a historically disadvantaged community nor located in any of the four Federally designated community development zones. However, the residents of Sitka are very much dependent on this harbor for bringing in and exporting vital goods and services, especially fish. According to the U.S. Census Bureau, a combination of more than one race that includes American Indian and Alaska Native percentage population of Sitka is 14.9 percent relative to

Figure 7- Project Location in relation on Sitka infrastructure

2.8 percent for the U.S. as a whole.[3]

Connections to Existing Infrastructure

The Marine Service Center is in downtown Sitka. It is linked by road to several other harbors owned and operated by Sitka and its harbor department. Sitka operates five boat harbors with 1,350 stalls and a seaplane base on Sitka Sound. The Sitka Sound Cruise Terminal is a privately-owned deep-water moorage facility in Sitka capable of accommodating large vessels. MSC is 7.7 miles to the Gary Paxton Industrial Park which could be an alternative for the fishers when the downtown harbors are busy although all of Sitka's harbor infrastructure is incredibly busy and full. 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. In addition to daily jet service, several scheduled air taxis and air charters are available. There is no road access to outside communities from Sitka, but vehicles can be transported to town using the Alaska Marine Highway ferry system located six miles north of town or through barge operators.

Grant Funds, Sources, and Uses of all Project Funding

Estimated Costs

Cost estimates for this project were obtained from the Marine Service Center Steel Pile Bulkhead Inspection Report prepared by DOWL Engineering in July 2021. See attachment 4.

Source of Funds

Sitka has the 20 percent match on hand and ready to deploy upon award of the RAISE grant. The matching funds shall be provided in part by the MSC Enterprise Fund Working Capital. In addition, since revenue generated from the seawall is paid to the Harbor Fund, there is justification to use Harbor Fund working capital to fund part or all the required match for the MSC seawall. There are no restrictions on these funds and Sitka's Assembly meeting of April 12, 2022, notes that these funds be set aside for this purpose. See Sitka's financial statements on the city's website for verification of funds.[4]

Table 1- Project Cost Allocation

Total Project Costs:	**$ 9,803,109**	**100%**
Funding Sources (Non-Federal):	**Amount:**	**Percent:**
City of Sitka (resolution attached)	$ 1,960,622	20 %
Federal RAISE Funds Requested	**$ 7,842,488**	**80%**

[3] https://www.census.gov/quickfacts/fact/table/US,sitkacityandboroughalaska/PST045221
[4] https://www.cityofsitka.com/departments/Finance

Documentation of Funding Commitment

See the attached City and Borough of Sitka signed resolution number 2022-07 as of April 12, 2022, committing the funding for this project. See attachment 9 (Assembly Signed Res 2022-07.pdf). There are no previously incurred expenses included in the budget and no other Federal funds authorized for this project.

Budget

Total project costs for the sheet pile wall and crane replacement are $9.8 million, approximately $7.84 million in Federal funds and $1.96 million in non-Federal funds. See Table 2 and attachment 3, Detailed Project Cost Estimate.

Table 2- Budget Cost-share for Sheet Pile Wall and Crane Replacement

Description	**Amount ($2021)**
Mobilization	$ 575,000
Demolition & Disposal	$ 200,000
Misc Underground Utility mods/extensions	$ 30,000
Misc Site Work - grading, aggregate surfacing	$ 40,000
Steel Sheet Pile Wall (PZ35)	$ 1,480,000
Horizontal strong-back/water system	$ 520,000
Grouted tie-back anchors into bedrock - upper	$ 819,000
Grouted tie-back anchors into bedrock - lower	$ 588,000
Washed rock fill btwn original and new wall	$ 225,500
Steel Sheet Pile Wall week holes	$ 32,000
Reinforced Concrete wall cap	$ 281,250
Steel Access Ladder coated	$ 16,000
Mooring Bollards	$ 32,500
Berthing Fenders (not used)	-
Timber bull rail	$ 50,000
Timber Fender piles	$ 360,000
Riprap	$ 25,000
Cathodic Protection System	$ 500,000
2-ton Service Standalone Jib Crane	$ 35,000
Subtotal	**$ 5,809,250**
Contingency @ 25%	$ 1,452,313
Environmental, NEPA & permitting @5%	$ 363,078
Design and Geotechnical Engineering @15%	$ 1,089,234
Construction Phase Admin/Eng/Testing @15%	$ 1,089,234
Total Budget Sheet Pile Wall and Crane Replacement	***$ 9,803,109***

Merit Criteria

Safety

This project will contribute to a reduction in crashes, fatalities, and injuries as vessel owners will be able to continue functioning as they have in the past by using this harbor with a new protected seawall. In the no-build scenarios, these users would need to travel to alternate ports for product delivery, introducing new risks as vessels compete for limited space to conduct their business. We estimate that almost 700 nautical miles of travel annually can be avoided with this project. The addition of several hundred vehicles on Sitka roads traveling between harbors, seafood processing plants, and competing with the summer tourist traffic and road construction will lead to more congestion and the potential for unwanted interactions between vehicles and pedestrians. We estimate about 2,600 annual vehicle miles can be avoided with the project. Additional miles traveled by vessels and vehicles increases the risks of accidents and incidents which could be avoided.

Repairing the sheet pile wall at the MSC is an important solution to ensuring the safety of people and equipment working in the fish harvesting business and the many tourists that visit Sitka annually. Failure of this wall could be catastrophic and will certainly lead to inefficiencies for the varied users of the facility. Failure could also lead to unintended releases of hazardous materials into Sitka's waterfront such as fluids from vessels caught in the failure or vehicles which may be parked on the seawall at the time.

Environmental Sustainability

The existing seawall is more than 46 years old and in danger of failure. Replacing the seawall prior to failure will protect the environment from the damage that could result from this old structure or vessels/vehicles using the seawall at the time from falling in the water. The construction plan calls for constructing a new bulkhead to the seaward side of the existing structure.

This project addresses environmental sustainability in the following ways:

1. The EJSCREEN report for the City and Borough of Sitka shows higher than State and Nation Environmental Justice readings for all categories. The EJ Index highlights which block groups contribute the most toward low-income/minority residents nationwide having a higher environmental indicator score on average than the rest of the US population. See attachment ejscreen_report.pdf.
2. The project supports reduced emissions and marine travel demands.
3. The project supports reduced truck travel demand on roads in Sitka.
4. There are no wetlands affected by this construction project.
5. The project avoids adverse environmental impacts to air and water quality and wetlands.
6. The project promotes energy efficiency because once the seawall fails, the cold storage facility will no longer be usable, and the only alternative at this point is for freezer vans with much higher rates of electric utility consumption.
7. This project repairs existing dilapidated infrastructure.

Quality of Life

Figure 9 - F/V Eyak

Support for the fishing industry is not the only use of the MSC dock. The Eyak is a fishing vessel making at least weekly visits to the MSC dock to pick up mail, fuel, and groceries for outlying villages. Small geographically challenged communities face barriers in accessing basic amenities and they rely on the Eyak. The Eyak serves the city of Port Alexander, Armstrong Keta Hatchery, Little Port Walter NOAA Research Station, and Sitka.

In the past three years, the Eyak has averaged 80 visits to the MSC annually. If the seawall were unavailable, it would be a challenging hardship for their program and would limit these outlying communities' ability to access Sitka vendors as the Eyak would need longer periods of time between mail deliveries for the surrounding Alaska Native villages since there is limited space and therefore wait times for other docks and the docks are further in distance. Without this downtown facility available, the mail and groceries would need to be delivered to the GPIP location which has no place to store product at the site. It is estimated that three vehicles would need to travel the extra distance of 7.7 miles as well to deliver mail, groceries, fish food, and construction materials. Total avoided travel for both the Eyak and the supply vehicles is valued at $48,046 annually. See Table 3 in the attached MCS Wall and Crane BCA Analysis.

Sitka's population, according to the U.S. Census Bureau is roughly 8,500 people of which 23.6 percent are a combination of more than one race that includes American Indian and Alaska Native.[5] Many Alaska Natives are involved in the commercial fishing and marine service sector and have strong connections to Sitka.

The MSC and associated uplands infrastructure are important components to the Sitka fishing industry. Maintaining this infrastructure allows Sitkans to continue to work where they live and maintain active community ties. The need to travel to other harbors to conduct business will negatively affect fishing, tourism, and commodity movements within the community. There are no fiber or broadband deployments envisioned for this project. This project addresses quality of life with the following examples:

1. Contracts with Sitka may not "discriminate against any employee or applicant for employment because of race, religion, color, national origin, age, disability, sex, marital status, changes in marital status, pregnancy, or parenthood." (actual contract language)
2. This project will improve freight transportation with its close proximity to the seafood processing plant and the cold storage facility.

[5] https://data.census.gov/cedsci/table?tid=ACSDP5Y2020.DP05&g=0400000US02_860XX00US99835

3. This project will improve freight movements to shore with the replacement crane.
4. The project will allow the community to avoid the costly deterioration of their working seawall.
5. This project will protect the Sitka workers on the vessels, at the processing plants, and those leasing cold storage space from unnecessary travel and added expenses.
6. The project will continue the current efficient value chain movement of product.

Mobility and Community Connectivity

A major benefit to the location of this facility and the need to replace it is its proximity to downtown Sitka with many amenities nearby and opportunities for non-motorized travelers. It is a main reason why this facility and dock is so sought after. Users of this facility can easily access non-motorized ways to the gas station, grocery store, gear store, and more. The following is a list showing easily walkable or bikeable distances from the MSC:

- Petro Marine gas station, 350 feet
- The RIDE bus stop, 0.1 mile, and 0.2 mile, 0.3 mile
- Sitka Medical Center, 0.1 mile
- Hotel and restaurant, Fly in Fish Inn, 0.1 mile
- LFS Marine Supply, 0.2 mile
- AC Lakeside, which houses a local grocery store, retail store, outdoors shop, 0.3 mile
- Moller Park, 0.3 mile
- McDonald's, 0.4 mile
- Mountainside Clinic and urgent care, 0.4 mile
- Sitka Laundry Center, a laundromat and dry-cleaning service, 0.4 mile

Sitka has a long history dating back to 2008 of a bike friendly community with the highest percentage of bicycle commuters in the state and was the first Alaska community to earn a Bicycle Friendly designation. According to the League of American Bicyclists, in 2008, Sitka was designated as a Bronze-level community and in 2016, Sitka moved up to the Silver Level designation in the program which has a rigorous application that promotes safer streets and better bicycling. Sitka is bustling especially in the summer months especially those working in the processing facilities biking to/from their workplace.

A Walk Friendly Community is a city or town that has shown a commitment to improving and sustaining walkability and pedestrian safety through comprehensive programs, plans, and policies. Sitka has been in the program and a Bronze Level designation since 2011 due to its consistently high walking mode share and low crash rate, exceptional trail system and community support for walking initiatives and events. This project is highly pursued because of the above-mentioned close locations that are walkable.

The transit system in Sitka is excellent and the MSC provides a transit-accessible facility that benefits workers, and Sitka has invested to make sure this facility is transit served. Owned and

operated by the Sitka Tribe of Alaska which is partly funded by Sitka and includes three bus routes that run on the hour or half-hour. The system includes an accessibility service to provide transportation for persons with disabilities and services for seniors aged 60 or older. The MSC is a short walking distance to two Sitka RIDE stations on the Green Line.

Sitka as a local government entity is subject to the Americans with Disabilities Act requirements (ADA) since 1991 is in accordance with the ADA Title II Regulations Nondiscrimination on the Basis of Disability in State and Local Government Services. The ADA Compliance Program coordinates statewide implementation of disability rights laws to ensure people with disabilities have access to facilities, programs, and services within the executive branch of state government. Since this facility is owned by Sitka, the project will follow all ADA regulations and Sitka has an ADA Title II coordinator on staff.

Without this facility, freight that is offloaded at this facility which travel both northbound and southbound would cause delays in shipment as there would be a wait time for them to offload. Sitka simply does not enough capacity/other dock space for this type of movement and the delays may affect the efficient systems in place that link them to their suppliers. Delays in producing and distributing goods and products would occur.

Economic Competitiveness and Opportunity

Replacement of the sheet pile wall and crane at the MSC will allow users to continue benefitting from this important community infrastructure. The cost of cold storage in Sitka can be a full $0.05 a pound less than cold storage in the Pacific Northwest. The ability for seafood processors to consolidate product at Sitka prior to shipment to customers is also of extreme value as processors would need to lease additional cold storage space to fill containers for shipping. MSC users reveal that 72.22 percent of their product gets shipped directly to customers in Asia and Europe and once they have been able to consolidate

Once the seawall fails and the cold storage facility is condemned, seafood processors must find temporary freezer space until they can ship the product. Seafood processors have suggested that they would need refrigerated vans, or reefers, to keep product frozen. Storing frozen fish in freezer vans for transport adds a new dimension of difficulty to the fish processing industry. Cold storage at MSC currently allows users to accumulate enough product to ship fish that have been consolidated. Each lot is defined by fish type, quality, and size, meaning a load of chum salmon could have up to 16 different lots based on size and quality. There are five different kinds of salmon harvested in the Sitka region along with halibut, sablefish, rockfish, herring, crab, and shrimp. Storing fish in freezer vans would not allow this option for the accumulation and consolidation, so fish would have to be shipped en masse to Seattle/Bellingham where it would then be sorted. If there is insufficient fish product to fill a particular container with the same species, quality, and size of fish, the shipper would still need to pay the full fee for that partially filled container. Storage costs could be as much as five times higher in Seattle due to minimum lot expense and the pounds of fish.

The cost to supply alternate cold storage with the use of refrigerated vans is estimated between $259,000 and $57,000 depending on the number of vans estimated between 25 and 40.

In addition to the cost of establishing a system of refrigerated vans to accommodate the frozen seafood product, there are demands on the city's electric utilities to supply power to these storage units. The cost differential of electric utilities between the cold storage facility and the freezer vans is between $486,000 and $900,000 annually.

The MSC is centrally located in Sitka so that vessels like the F/V Eyak can stop at one location to receive multiple shipping orders going to neighboring villages. Benefits to the F/V Eyak business are estimated at almost $50,000 annually for the vessel and the vehicles needed to supply the vessel.

The MSC dock serves smaller passenger vessels although the primary purpose of the dock is the import and export of commercial goods and services. The city subsidizes the busing of passengers from the private dock outside of town. The small passenger vessels calling at the MSC are in the 176 – 240-foot range. They have averaged 12 visits annually to the MSC dock and bring up to 1,200 visitors to Sitka each year. If the dock were unavailable, they would have to anchor offshore and lighter customers or seek alternate ports of call. While passenger activity was light in 2020 due to COVID-19, activity returned in July 2021 and will exceed any previous activity of almost double in 2022.

Sitka currently employs some union workers through the Alaska State Employees Association. Depending on who gets the contract for the construction of this project, there could be additional union employees.

State of Good Repair

This development is consistent with the Sitka Comprehensive Plan 2030 adopted May 2018. Improving Sitka's marine infrastructure and providing employment and economic development are key components of this document.

Southeast Conference, the state and federal designated regional economic development organization for Southeast Alaska through the US Economic Development Administration has developed the regional Comprehensive Economic Development Strategy (CEDS) 2021-2025 for the region which identifies regional priorities for economic and community development. See page 3. This project is in line with their priorities of: Transportation 4) Move freight to and from markets more efficiently and 5) Ports and harbors infrastructure improvements.

Avoiding the risk of failure of this seawall will allow Sitkans to enjoy the benefits of the economic activity already occurring in the area. The primary purpose of this grant application is to keep the dock and crane in a state of good repair as the aged infrastructure is at significant risk of failure resulting in damage to the surrounding environment and loss of jobs to Sitka and the

surrounding Alaskan villages.

Partnership and Collaboration

This project will continue to benefit the seafood processing facilities in Sitka, the fishing industry harvesters, the passengers of the small vessels, government workers, and barge operations in the area.

The lease agreement for the cold storage space between Sitka and the Seafood Producers Cooperative has a discrimination clause and storage rights are available to the public without discrimination to all customers. The processing plants that Sitka partners with for the cold storage will continue to benefit with their workforce and supply chain. The Seafood Producers Cooperative Sitka plant employs up to 75 mostly Hispanic and Filipino who live and work in Sitka year-round in various departments of the plant: administration, freezer, line processing, and shipping with opportunity for advancement. North Pacific Seafoods is committed to diversity, equity and inclusion and value diversity as a strategic advantage. Their Diversity and Equity Taskforce identifies opportunities to become more diverse, equitable and inclusive by developing goals and action items to implement throughout the company. Their peak season employs up to 180 active processors and has a year-round office staff of 10 with opportunity for upward mobility. The company demographic is over three-quarters ethnically diverse. They recently set an increase in wages by 28% for all tiers of employment.

Figure 10- Figure 5- Seafood workers processing product for MSC and export

Supplying small communities of southern Baranof Island for almost three decades, the F/V Eyak is a user of the seawall to load mail, freight, and groceries and the communities consider as a part of the infrastructure of their communities. The F/V Eyak services Armstrong-Keta Hatchery a private non-profit Alaskan salmon hatchery to support the commercial and sport fishing fleets, the rural communities and fishing-related businesses of Southeast Alaska with research into salmon enhancement and the production of additional salmon. The F/V Eyak also services the city of Port Alexander, a small community accessible by float plane or small boat which provides a safe harbor during the gales and storms that frequent Chatham Strait and is an ice-free port during the winter. Little Port Walter research station is also serviced by the F/V Eyak. It is the

oldest year-round biological research station in Alaska accessible only by boat or seaplane.

Figure 11- Fish to School's Program

The MSC also serves as a storage for the Fish to School's program. The Sitka Conservation Society, all processors, fishermen, and other volunteers donate to the program with the mission of deepening youth understanding of local seafood resources by integrating locally caught seafood into the school lunch program. The program also introduces stream to plate curricula and fosters a connection to the local fishing culture giving our students access to nutritious, local food that drives our local economy and represents the interconnectedness of the community.

Sitka discusses this project with users of the seawall and crane regularly to provide updates on the project during public meetings and at the request of users. Sitka will continue to operate the seawall and crane facility under the Harbormaster's purview and the cold storage users will continue to function with the lease agreement with the city. Sitka owns the cold storage facility but relies on the partnership with two main leaseholders that manage the facility. Operations and maintenance will be covered by user fees in future years.

Stakeholders include:

- Upwards of 60 Sitka cold storage users
- North Pacific Seafoods (formerly Sitka Sound Seafoods)
- Seafoods Producers Cooperative
- F/V Eyak and the outlying villages
- State of Alaska Department of Environmental Conservation
- Operators of small passenger vessels
- City and Borough of Sitka Harbor Department
- U.S. Coast Guard
- National Oceanic and Atmospheric Administration
- Fishing vessels utilizing the seawall

Innovation

Innovative Technologies

The technologies recommended here are similar to the previous design of the seawall. Building a wall on the seaward side of the existing wall may be innovative in other places but is common in Alaska for these types of projects. Using tried and true technologies helps to minimize risks of project overruns and increases risk of quality construction. There are no innovative approaches being discussed at this time. However, once a Request for Proposal is issued, Sitka would entertain innovative ideas to enhance usability and project component longevity improvements.

Innovative Project Delivery

Sitka will invite respondents to the request for proposals to suggest innovative project delivery for consideration. In addition, Alaska is currently one of the states engaged in the program with FHWA on responsibilities assigned through a Memorandum of Understanding for NEPA compliance.

Innovative Financing

There is no need for non-traditional mechanisms to raise additional funds for development of the project as Sitka will finance the 20 percent match.

Project Readiness: Environmental Risk

Project Schedule

The construction calls for an 18-month schedule and users of the facility will be notified and directed/scheduled elsewhere. See Table 3.

Table 3- Pro Forma Sheet pile Wall and Crane Replacement Schedule

Overall Task	Date
Grant award	Aug 2022
Final Design & Permitting inc. NEPA	Sept 2022
Mobilization	Nov 2022
Demolition/Disposal	Jan 2023
Sheet pile installation	Feb 2023
Rock fill	June 2023
Lighting & Crane installation	Oct 2023
Final inspection	Dec 2023
Grant closeout	Jan 2024
Federal funding obligation deadline	Sept 2026

Required Approvals

Sitka has contacted and discussed this project with the MARAD regional office and will engage all Federal, State, and local agencies for approvals and permits quickly once grant funds have been authorized.

At the Federal level, the U.S. Army Corps of Engineers, Section 10 and Section 404 Authorizations will be completed.

Sitka fully intends to meet the requirements of NEPA for this project including public meetings. With a project of this scale, it is possible that an Environmental Assessment would suffice, thereby shortening the time between award and construction. Construction scheduling will include windows of time when construction will be interrupted to account for fish migration and other marine interactions. This is common for Alaska projects near and in the water. Monitors will be on hand for the construction period to ensure that fish migration is unaffected.

State and Local Approvals

A listing of State environmental and operational permits include:

- Alaska Department of Fish and Game - Fish Habitat Permit
- Alaska Department of Environmental Conservation - Stormwater Treatment & Runoff Design Review
- ADEC Water & Sewer Utilities
- ADEC Multi Sector General Permit - Operational SWPPP for Boatyards

Local Building Permits will be completed with the City and Borough of Sitka.

Project Risks and Mitigation Strategies

Risks to this project include site specific conditions, scheduling, funding, and project management. It is anticipated that construction of a new sheet pile wall seaward of the existing structure will limit any unforeseen site-specific conditions that warrant special treatment.

Other risks and mitigation strategies follow:

- While Sitka does not have previous experience with RAISE or INFRA grants, the city does have an active Public Works Department with experience in projects of similar size and nature size along with a Grant Accountant that is knowledgeable in the post-award stage of state harbor facility grants and other Federal grants.
- The footprint of this project is owned by the city so real estate acquisitions will not be required.
- Coordination with current tenants of the seawall will be required and could pose a risk which will be mitigated with routine and regular updates to those users.

- Environmental concerns are always an unknown but since this property was constructed by the city in 1976, the soil composition is expected to be similar and the construction of the seawall to the seaward side of the existing wall will mitigate any unforeseen changes to the substrate.
- The windows of fish migration in Sitka are well known and will be incorporated into construction contracts to limit adverse impacts.
- The timeline for construction could have an adverse effect on current users but Sitka would mitigate this impact with frequent updates to the community on the project status and alternative ports for use. There may be periods of time when the seawall is unusable and vessel owners will need to secure alternate mooring options. These will be coordinated with the Sitka harbormaster office.
- Domestic content: Sitka does not anticipate requiring any waiver for Buy America on the equipment or supplies needed for this project.
- Sitka reached out to USDOT headquarters to confirm the proposed schedule was reasonable.

Sitka has a very successful track record of finishing large scale projects on time and within budget. Risks are managed on projects through incorporation of high-level experienced staff and consultant teams to ensure best practices are followed in planning, organizing, and executing projects. Sitka has extensive experience in marine projects and has recently completed four major marine projects in excess of $5 million including an award-winning harbor project. The harbor project award was based on superb project delivery methods that saved the project time and money.

Sitka has been recognized with several awards for their projects and delivery methods over the last 10-years. Sitka regularly manages projects with grant funds including Federal funding and understands well how to manage such projects to success including all the necessary procurements. Sitka is staffed with professional engineers, contract managers, procurement specialists, construction inspectors, and project managers skilled in risk management of contracts and projects of this nature.

Sitka's team is continually and successfully executing over $20 million in projects per year including having carried out projects up to $150 million. The Public Works Director was certified in managing Federally funded projects under the State of Washington's Department of Transportation program for managing Federal Highway funds and his work has been referenced in training manuals for local government. The best practices used in managing Federal Highway funds has been carried over to Sitka policy and staffing efforts to mitigate risk on projects and has served Sitka well over the last 12 years executing over $240 million in projects without incident or contractor claims

Benefit Cost Analysis

The following assumptions form the basis of the benefit/cost analysis. These assumptions have been vetted with the Sitka harbormaster, users of the cold storage facility, the director of the Sitka Economic Development Association, and vessel owners operating in the area.

Assumptions

- The seawall at the Marine Service Center is in danger of imminent failure. A 2011 report suggested there were 5 more years of useful life to the seawall. We assume that, in the build scenario construction begins in 2022 and benefits begin accruing in 2024.
- In the no-build scenario, once the seawall fails, the cold storage facility will be condemned and unusable as the building partially sits on the seawall. The crane used at the MSC is more than 20 years old. The existing crane has an estimated remaining life of about 3-4 years.
    - Vessels delivering seafood product at this location will need to find alternate drop-off points for unloading their catch.
    - Vessels with disembarking passengers may need to lighter passengers to shore on smaller vessels.
    - The cold storage facility receives between 11 million (low case) and 18 million (high case) pounds of fish product annually.
    - There is insufficient cold storage available in Sitka to replace the Marine Service Center 21,000 square foot facility.
    - Refrigerated freezer vans can help fill that gap but at a much higher cost.
    - Of the two main tenants at the cold storage facility, one would continue to operate out of Sitka with the freezer vans and the other would flash freeze product and immediately ship from town.
    - The ability to consolidate product is an important component for keeping costs down in the export of frozen fish. Freezer vans will not allow for this activity.
    - The loss of one of the cold storage users will result in the loss of 10-20 jobs for 4 months of the year as consolidation will need to take place in the PNW rather than Sitka.

Users of the MSC seawall engage in the following primary activity:

Table 4- MSC Seawall Users

Users	Cold Storag	Commodity over wall	Crane/hoist
North Pacific Seafoods (previously, Sitka Sound Seafoods)	yes	Bait	yes
Seafood Producers Cooperative (SPC)	yes	Fiber, salt, machinery, bait, ice, and inbound/outbound fish	yes
F/V Eyak (supplies to outlying villages)	No	Fuel, groceries, mail, outbound fish food for hatchery	yes

Small Passenger Vessels	no	Passengers	no
Government	no	Crew changes, supplies	no
Fishing Vessels	Yes	Fish, bait, ice, and supplies	yes

There are two primary tenants of the cold storage facility, both seafood processors, each renting half of the space. One seafood processor reveals they move between 5 and 8 million pounds of product annually and that they rent 20 percent of their space to the public or private entities. Using these same percentages for the second processor, they would move between 6.25 and 10 million pounds of product annually as all their space is utilized. The cold storage facility allows seafood processors to consolidate product by species, size, and quality. Without the cold storage facility, product must be shipped to Pacific Northwest facilities and sorting/consolidation would take place there.

We examine two future scenarios for this evaluation, a low case of 10 million pounds of product and a high case of 16 million pounds of product. See attachment MSC Wall and Crane BCA Analysis.pdf for further detail on the changed conditions when the seawall fails.

Present Value Costs

Initial cost estimates are $9.3 million (in 2020$) 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. Cathodic protection is needed in year 15 of the analysis. See Table 5.

Table 5- Sheet pile Wall and Crane Replacement Cost Estimate – Select Years

Year	Construction	Periodic Maintenance	Total Cost	NPV Factor	Net Present Value
2022	$ 4,686,188		$ 4,686,188	0.87344	$ 4,093,098
2023	$ 4,686,188		$ 4,724,700	0.81630	$ 3,825,325
2028		$ 93,724	$ 93,724	0.58201	$ 54,548
2033		$ 93,724	$ 93,724	0.41496	$ 38,892
2038		$ 571,724	$ 571,724	0.29586	$ 169,152
2043		$ 93,724	$ 93,724	0.21095	$ 19,771
Totals	**$ 9,372,375**	**$ 852,895**	**$10,225,270**		**$ 8,200,786**
Total Present Value Construction Cost and Maintenance					**$ 8,200,786**

Present Value Benefits

Benefit calculations for this evaluation include avoided travel costs, avoided product transportation costs, opportunity costs of time, and emissions avoided. The economics appendix describes these in more detail. The present value of benefits for the low case scenario are $9 million (in 2020$) over the 20-year period of analysis. See Table 6.

Table 6- Low Case Scenario Benefit Calculations – Select Years

Year	Avoided Travel	Add'l Trans Costs	Cold Storage Alt	OCT	Emissions Avoided	Noise & Conges-tion	Total	NPV Factor (3%)	Net Present Value (3%)
2024	$ 63,091	$ 437,490	$ 258,675	$ 11,837	$ 35,447	$ 360	$ 806,900	0.88849	$ 620,032
2025	$ 63,091	$ 437,490	$ 486,000	$ 11,837	$ 35,886	$ 360	$ 1,034,664	0.86261	$ 743,071
2029	$ 63,091	$ 437,490	$ 486,000	$ 11,837	$ 37,646	$ 360	$ 1,036,424	0.76642	$ 572,122
2034	$ 63,091	$ 437,490	$ 486,000	$ 11,837	$ 38,245	$ 360	$ 1,037,023	0.66112	$ 412,628
2039	$ 63,091	$ 437,490	$ 486,000	$ 11,837	$ 38,268	$ 360	$ 1,037,046	0.57029	$ 297,994
2043	$ 63,091	$ 437,490	$ 486,000	$ 11,837	$ 38,287	$ 360	$ 1,037,065	0.50669	$ 230,089
Totals	**$1,261,822**	**$8,749,800**	**$ 9,492,675**	**$ 236,739**	**$ 754,876**	**$7,201**	**$ 20,503,112**		**$ 8,976,061**

Note: Emissions have been calculated at the 3% discount rate and all other categories are discounted at 7%.

The present value of benefits for the high case scenario are $14.7 million (in 2020$) over the 20-year period of analysis. See Table 7.

Table 7- High Case Scenario Benefit Calculations – Select Years

Year	Avoided Travel	Add'l Trans Costs	Cold Storage Alt	OCT	Emissions Avoided	Noise & Conges-tion	Total	NPV Factor (3%)	Net Present Value (3%)
2024	$ 63,091	$ 699,984	$ 456,868	$ 11,837	$35,447	$ 360	$ 1,267,587	0.88849	$ 971,488
2025	$ 63,091	$ 699,984	$ 900,000	$ 11,837	$35,886	$ 360	$ 1,711,158	0.86261	$ 1,225,401
2029	$ 63,091	$ 699,984	$ 900,000	$ 11,837	$37,646	$ 360	$ 1,712,918	0.76642	$ 940,090
2034	$ 63,091	$ 699,984	$ 900,000	$ 11,837	$38,245	$ 360	$ 1,713,517	0.66112	$ 674,984
2039	$ 63,091	$ 699,984	$ 900,000	$ 11,837	$38,268	$ 360	$ 1,713,540	0.57029	$ 485,050
2043	$ 63,091	$ 699,984	$ 900,000	$ 11,837	$ 38,287	$ 360	$ 1,713,540	0.50669	$ 372,793
Totals	**$1,261,822**	**$13,999,680**	**$ 17,556,868**	**$236,739**	**$ 754,876**	**$7,201**	**$ 33,817,185**		**$ 14,661,656**

Note: Emissions have been calculated at the 3% discount rate and all other categories are discounted at 7%.

BCR

Replacement of the MSC seawall and installation of a new crane has positive benefit to cost ratios of 1.23 and 1.95 for the low and high case scenarios, respectively. Net benefits are almost $2 million for the low case scenario and $7.5 million for the high case scenario. See Table 8.

Table 8- Benefit to Cost Ratios for the Low and High Case Scenario

NPV Summary of Calculations	Low Case PV Emissions at 7%	Low Case PV Emissions at 3%	High Case PV Emissions at 7%	High Case PV Emissions at 3%
Benefit calculations - 2020 $$				
Vessel avoided travel	$ 546,000	$ 546,000	$ 546,000	$ 546,000
Additional Transport Cost	$ 3,783,000	$ 3,783,000	$ 6,053,000	$ 6,053,000
Opportunity Cost of time	$ 102,000	$ 102,000	$ 102,000	$ 102,000
Emissions reduced	$ 324,000	$ 512,000	$ 324,000	$ 512,000
Cold storage replacement	$ 4,029,000	$ 4,029,000	$ 7,445,000	$ 7,445,000
Noise and Congestion	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Subtotal benefits summary	**$ 8,787,000**	**$ 8,975,000**	**$ 14,473,000**	**$ 14,661,000**
Residual Value	$ 480,000	$ 480,000	$ 480,000	$ 480,000
Repair and maintenance	$ 282,000	$ 282,000	$ 282,000	$ 282,000
PV Benefits summary	**$ 9,549,000**	**$ 9,737,000**	**$ 15,235,000**	**$ 15,423,000**
Cost Calculations - 2020 $$				
PV Cost of Project	$ 7,918,000	$ 7,918,000	$ 7,918,000	$ 7,918,000
PV Net benefits (benefits - costs)	**$ 1,631,000**	**$ 1,819,000**	**$ 7,317,000**	**$ 7,505,000**
Benefit/cost ratio (benefits/costs)	**1.21**	**1.23**	**1.92**	**1.95**

See MSC Wall and Crane BCA Analysis.pdf for further details.

Additional Considerations

The rural community of Sitka, Alaska is heavily dependent on a working waterfront for the fishing and other industries. Sitka has the largest fleet of vessels and harbor system in the state and is 19th in the nation in harvest and value of fish landings according to current fishery statistics by NOAA, page 39. The loss of the Marine Service Center seawall and crane will affect all commercial and government vessels presently using this facility. The ability to retain this important asset for the City and Borough of Sitka and the surrounding communities cannot be understated.