

Seward Marine Terminal Expansion Planning



Master Plan

August 2017

Seward Marine Terminal Expansion Planning MASTER PLAN

Prepared for:



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Acronyms

AADT	Average Annual Daily Traffic	PTR	Permanent Traffic Recorder
ADA	Americans with Disabilities Act of 1990	PTZ	Pan-tilt-zoom
ADEC	Alaska Department of Environmental Conservation	ROW	Right of Way
ADF&G	Alaska Department of Fish and Game	SBS	Spenard Building Supplies
AGDC	Alaska Gasline Development Corporation	SFHA	Special Flood Hazard Area
AHRS	Alaska Heritage Resources Survey	SLF	Seward Loading Facility
ANS	Aquatic Nuisance Species	SMIC	Seward Marine Industrial Center
APE	Area of Potential Effect	TCP	Traditional Cultural Property
ARRC	Alaska Railroad Corporation	TIGER	Transportation Investment Generating Economic Recovery
ASAP	Alaska Stand-Alone Pipeline	TSA	Transportation Security Administration
Catalyst	Catalyst Marine Engineering	TWIC	Transportation Worker Identification Credentials
CFR	Code of Federal Regulations	TWLTL	Two Way Left Turn Lane
Crowley	Crowley Marine Services	USACE	U.S. Army Corps of Engineers
DOT&PF	Alaska Department of Transportation and Public Facilities	USC	United States Code
EA	Environmental Assessment	USCG	United States Coast Guard
EFH	Essential Fish Habitat	USFWS	U.S. Fish and Wildlife Service
ESA	Endangered Species Act	Vigor	Vigor Alaska Seward
FAA	Federal Aviation Administration		
FMP	Fishery Management Plan		
FONSI	Finding of No Significant Impact		
FEMA	Federal Emergency Management Agency		
FIRM	Flood Insurance Rate Maps		
IC	Institutional Controls		
IHA	Incidental Harassment Authorization		
Kirby	Kirby Offshore Marine		
LNG	Liquefied Natural Gas		
MI	Mile		
MP	Milepoint		
MT	Metric Tons		
MLLW	Mean Lower Low Water Level		
MMPA	Marine Mammal Protection Act		
MUTCD	Manual on Uniform Traffic Control Devices		
NEPA	National Environmental Policy Act		
NMFS	National Marine Fisheries Service		
NRHP	National Register of Historic Places		
OHA	Office of History and Archaeology		
PTC	Positive Train Control		



Part I: Executive Summary



Credit: Judy Patrick Photography, 2012

Part I: Executive Summary

ES.1 Introduction

The Seward Marine Terminal is owned and operated by the Alaska Railroad Corporation (ARRC). It is located at the head of Resurrection Bay, and is accessed via Port Avenue in Seward. The land reserve comprises 328 acres, and extends north to border with Seward Airport to the east, and Seward Highway to the west. The land reserve also extends south along the old rail belt toward downtown Seward, and encompasses an area of land at the northern end of the Seward Small Boat Harbor. The site supports a range of port and rail activities, including passenger rail service, cruise ships, freight operations, and associated real estate. In 2016, ARRC hosted nearly 65,000 train customers and 185,000 cruise ship customers (many of whom also used rail service), as well as tens of thousands of tons of freight through its facilities at the Seward Marine Terminal.

In 2013, a conditions assessment was carried out for the passenger (west) dock at the Seward Marine Terminal and confirmed the facility was nearing the end of its usable life. This, coupled with a changing economic picture impacting freight was the catalyst in 2014 for ARRC to apply for a Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant to complete the Seward Marine Terminal Expansion Planning Effort. The planning effort included completion of a Passenger Traffic Study, a Freight Traffic Study and a Transportation Connectivity Study, all supported by extensive public outreach and visioning, which has led to the creation of the Seward Marine Terminal Expansion Master Plan (Figure ES-1.1)

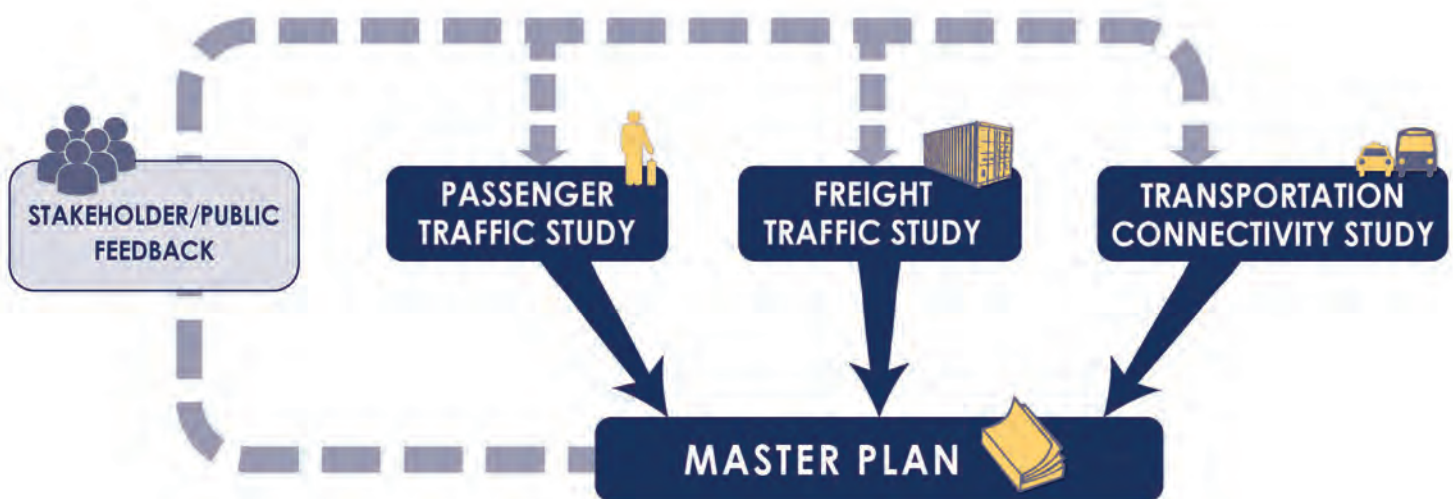


Figure ES-1.1: Components of Seward Marine Terminal Expansion Planning Effort

ES.2 Vision

The following vision statement guides the Seward Marine Terminal Expansion Planning Effort:



Reimagining travel and trade to enhance economic vitality and increase opportunities in the region by balancing port, rail, and real estate to meet transportation demands.



The vision statement provides a concise purpose for the Master Plan and has guided planners in considering the best uses of ARRC's assets in Seward. It takes into account stakeholder input, ARRC's core values, economic forecasting, and the requirements of the project's TIGER grant funding. The vision statement will continue to serve ARRC through planning and into the implementation of recommendations in the Master Plan to ensure this nationally- and regionally-significant port continues to meet current and future demand.

ES.3 Master Plan Purpose

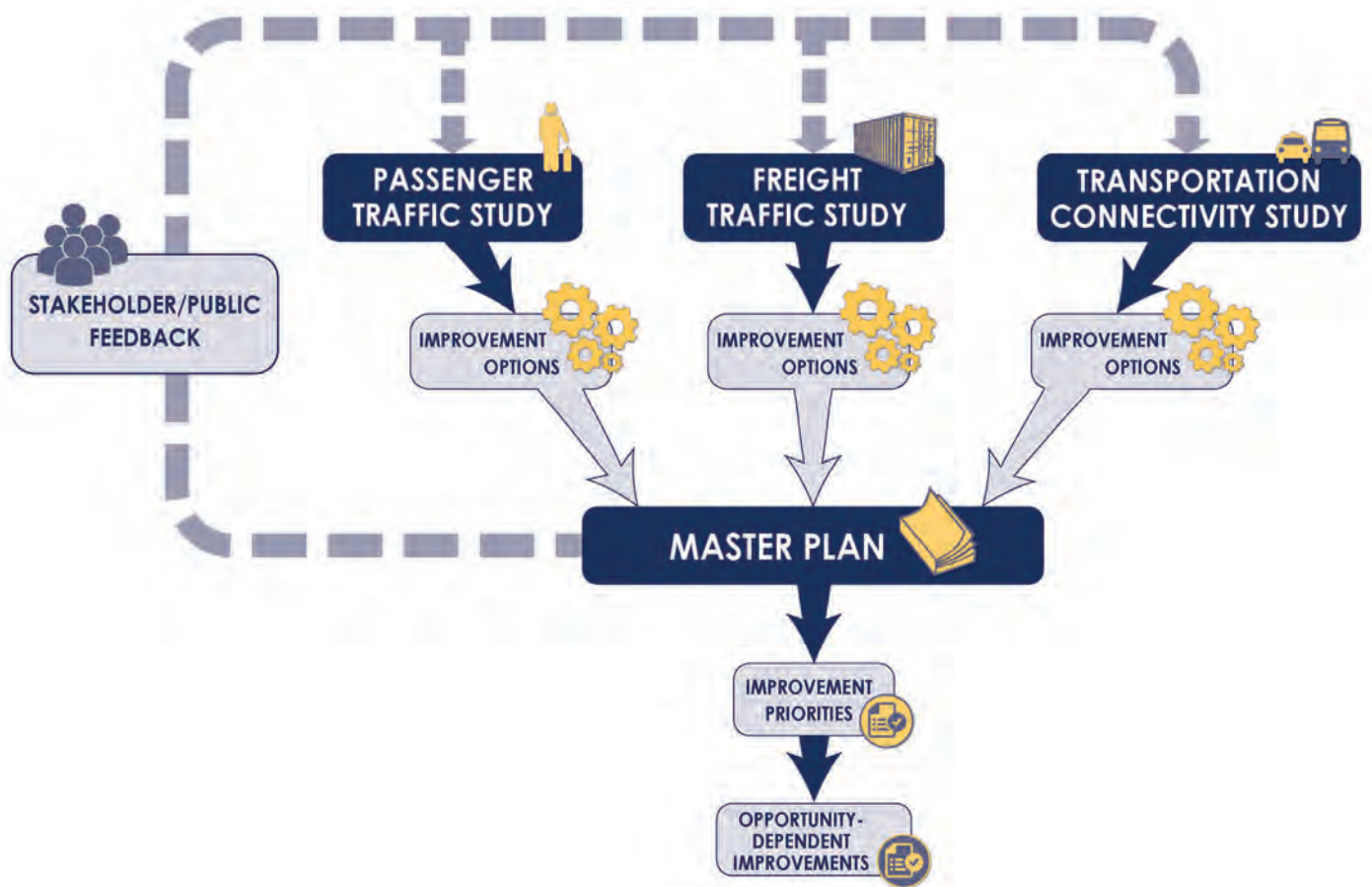


Figure ES-3.1: Flow of Seward Marine Terminal Expansion Planning Effort Documents

All trains originating or terminating in Seward must be processed through ARRC's Seward Terminal. The rail yard was largely constructed more than 50 years ago and includes the passenger dock, freight dock, Seward Loading Facility (primarily used for loading coal), train depot, passenger terminal, rail tracks and other infrastructure to support the broad range of uses at the site. Some incremental additions have been made to support changing port and rail needs over the years, but the volume and mix of traffic has matured to a point where technical analysis is needed to ensure the terminal continues to operate effectively and efficiently in the future.

The Master Plan considers options developed in the Passenger Traffic, Freight Traffic, and Transportation Connectivity Studies completed as part of this planning effort, and analyzes them to enable recommendations for improvement priorities. Improvement priorities include concepts, planning-level designs, and cost estimates for the identified improvement priorities. The analysis has looked at how to continue to support ARRC's existing terminal operations, constructability/phasing, cost, and the balancing of short and long-term infrastructure needs with modal demands and space availability. Extensive public and stakeholder involvement has also enabled consideration of how the recommended improvements integrate into the local Seward community and transportation network. Figure ES-3.1 sets out how the Seward Marine Terminal Expansion Planning Effort has developed and analyzed opportunities for recommended improvements in the Master Plan.

ES.4 Improvement Priorities

The improvement priorities recommended are as follows.

- **Improvement Priority 1:** Passenger Dock Replacement
- **Improvement Priority 1A:** Freight Dock Improvements to Accommodate Cruise Ships While Replacement Passenger Dock is Constructed
- **Improvement Priority 2:** Passenger Terminal Replacement
- **Improvement Priority 3:** Traffic Staging at Terminal
- **Improvement Priority 4:** Seward Loading Facility
- **Improvement Priority 5:** Extending Port Avenue through Seward Marine Terminal Site to Connect with Airport Road

The improvement priorities are considered necessary to support the reasonably foreseeable operational needs of the Seward Marine Terminal in the short to medium term (i.e. next five to ten years). They respond directly to known issues with assets at the site, in particular the aging passenger dock and the terminal building located on the dock.

It is anticipated that the Master Plan will guide future development at the Seward Marine Terminal for the next 20 to 25 years. In addition to the improvement priorities listed above, a number of opportunity-dependent improvements are considered feasible, and are set out in Part IV of the Master Plan. These improvements can be advanced as opportunities and funding become available.

ES.5 Implementation

Improvements recommended at the Seward Marine Terminal have been prioritized according to need and the likelihood to generate a positive return on investment. Figure ES-5.1 on the following page sets out these priorities and the critical timeframe for their implementation.

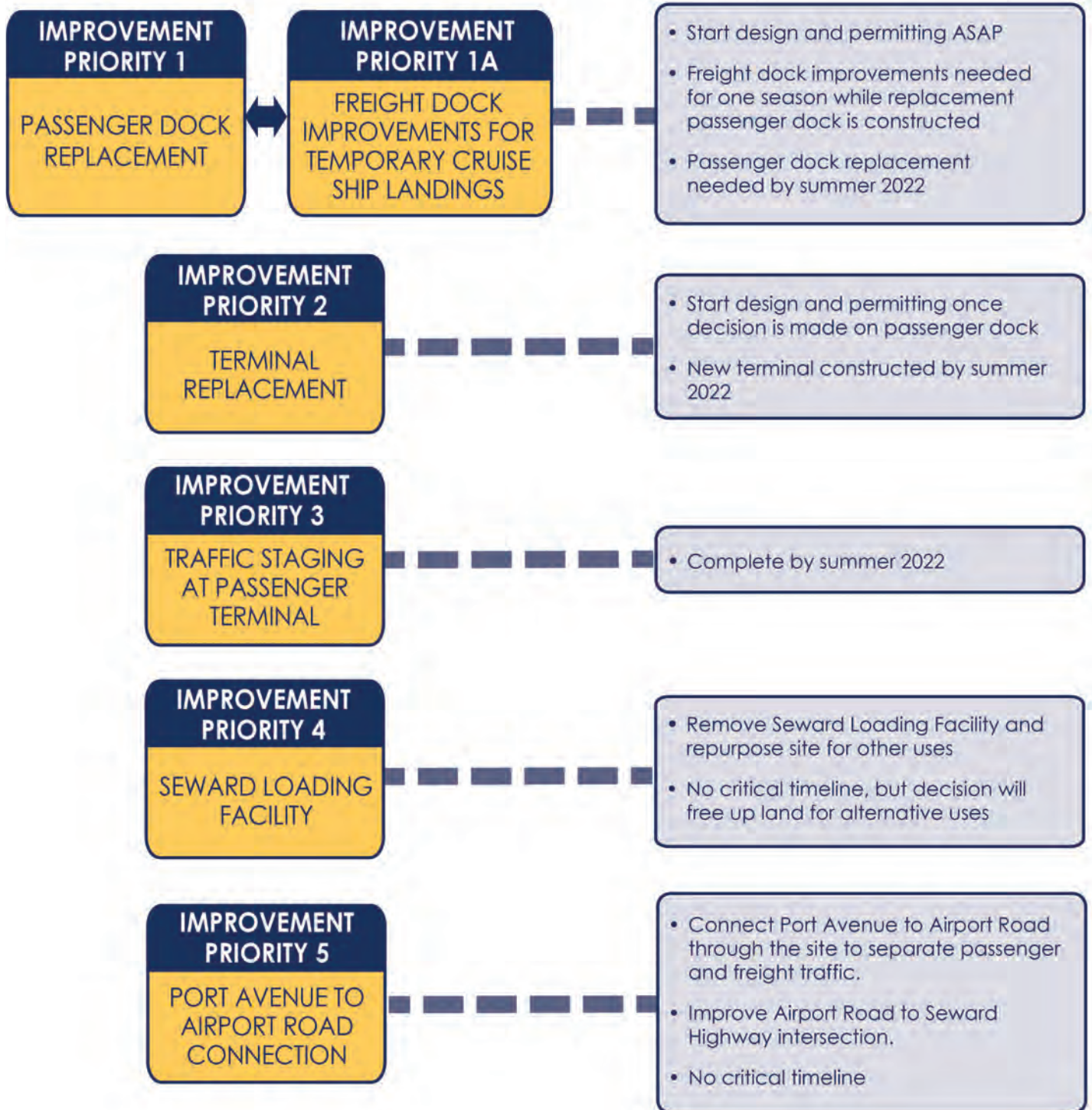


Figure ES-5.1: Improvement Priorities and Required Timing

ES.6 Outcomes

Implementing the recommended improvement priorities identified in this Master Plan will achieve the following outcomes:

- **Operational and financial:** A clear vision for the future operation of the Seward Marine Terminal will be implemented, with a clear understanding of investment priorities and costs associated with the provision of facilities to support viable future operations. This will increase user confidence in their investments at the site and a well thought out plan should facilitate future operational efficiencies.
- **Environmental:** The environmental impacts of capital improvements and operations will be well-understood and managed, with appropriate environmental permits and protections in place to facilitate development and support the operation of a well-managed terminal site.
- **Social:** Residents and visitors to Seward will have a clear understanding of what the Seward Marine Terminal is and its integral role in Seward's tourism industry. With the improvement in facilities, visitors will be provided with an enhanced first impression of the City of Seward and improved connections to the City, and residents will continue to be able to use ARRC's facilities at the site for community events.
- **Amenity and built form:** The new passenger dock, terminal and associated facilities will provide a modern gateway to the City of Seward for cruise ship passengers. Other improvement priorities, including making decisions around the future of the Seward Loading Facility also have the potential to enhance the amenity and built form at the Seward Marine Terminal site and enable it to be a modern facility that meets the needs of all users for at least the next 20 years.
- **Safety and maritime security:** The planning effort has focused on ensuring that maritime security can continue to be maintained at the site and a range of opportunity-dependent improvements also provide opportunities for improving the safety and security of facilities away from the marine interface provided by the docks. The replacement passenger dock provides the opportunity for a facility that meets modern safety and security requirements, and the replacement passenger terminal will enable comfortable and safe accommodations for passengers and visitors of all ages and abilities.

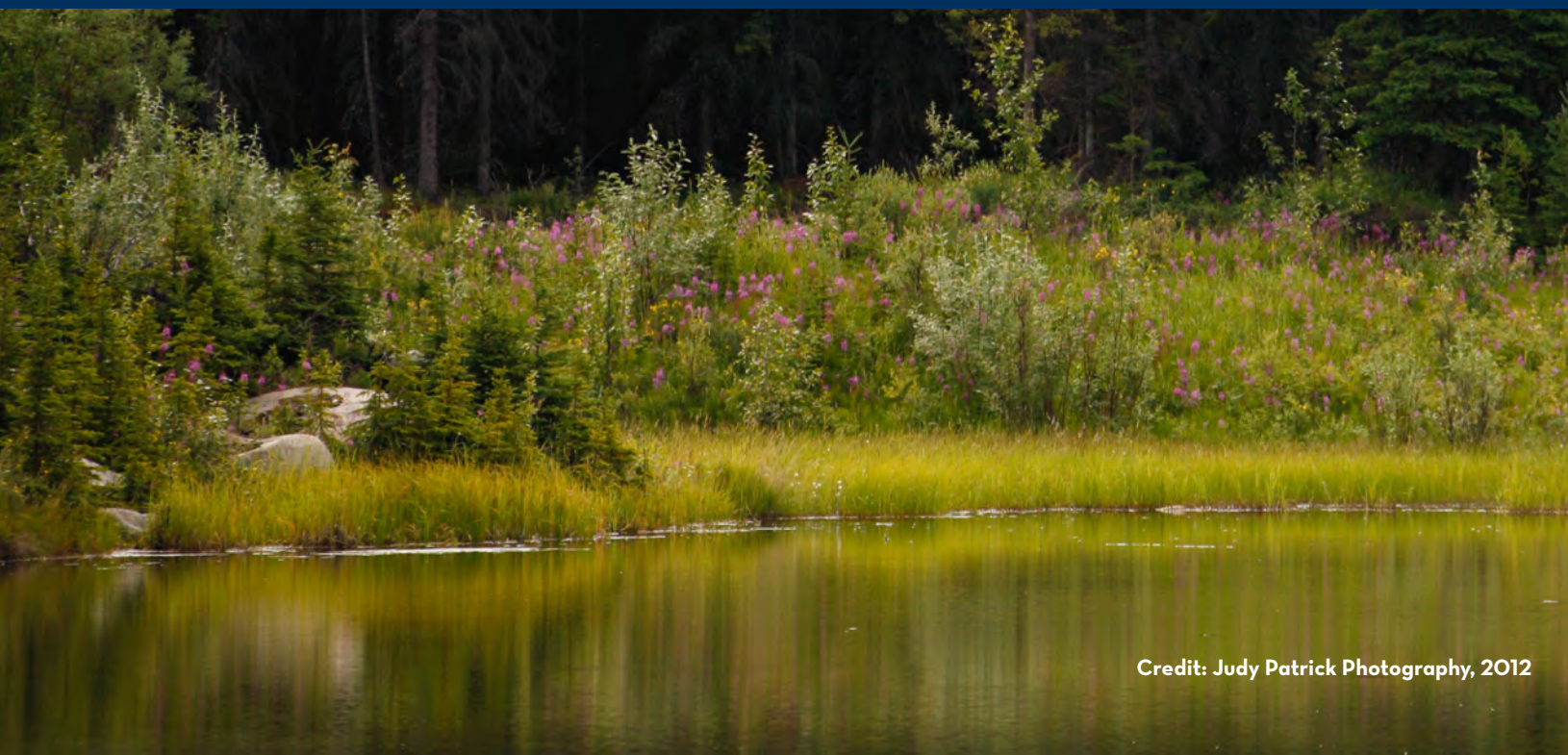
ES.7 Next Steps

Key to the success of the Master Plan is implementing the recommendations. Time-critical next steps include:

- Deciding on which passenger dock replacement option to pursue.
- Proceeding with design and permitting for the replacement passenger dock.
- Confirming funding to support the passenger dock and terminal replacement.
- Proceeding with design and permitting (as required) for freight dock improvements to support temporary cruise ship landings while the replacement passenger dock is constructed.



Part II: Introduction and Vision



Part II - Introduction & Vision

1. Introduction

The Alaska Railroad Corporation (ARRC) provides a Class II railroad that extends from Seward to Eielson Air Force Base, with passenger and freight services operated throughout the rail belt. In addition to the railroad track, ARRC has significant land reserves, including the 328 acre Seward Marine Terminal site.

The Seward Marine Terminal was established at its current location at the head of Resurrection Bay in 1964. Facilities include a passenger dock and terminal, freight dock, tracks, roundhouse, associated facilities and uplands for the various port activities conducted at the site. The Seward Depot is located separate from the dockside facilities, approximately 0.6 mile to the west of the terminal site along Port Avenue, near the intersection of Port Avenue and Fourth Avenue. The depot provides the arrival point for the Coastal Classic train, which provides scheduled passenger services between Anchorage and Seward from mid-May to mid-September every year.

In 2013, a conditions assessment was carried out for the passenger (west) dock at the Seward Marine Terminal and confirmed the facility was nearing the end of its usable life. This, coupled with changes to the global and state economy, was the catalyst for ARRC to apply for a grant from the Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grant Program, to invest in a comprehensive master planning effort for the Seward Marine Terminal. The ARRC was fortunate to receive a generous award to proceed with this planning effort in 2014.

The Seward Marine Terminal Expansion Planning Effort is comprised of the following components.

- A **Passenger Traffic Study**, that considers ARRC passenger facilities and activities at the Seward Marine Terminal. The passenger facilities are concentrated in two separate locations: at the Seward depot near the corner of Port Avenue and Fourth Avenue, where scheduled passenger services on trains are located, and at the Dale R. Lindsey Intermodal Terminal, where cruise ships land and passengers transfer to other modes of transportation.
- A **Freight Traffic Study**, which considers ARRC freight facilities and activities at the Seward Marine Terminal. The freight facilities are generally focused around the freight dock and uplands area, which ARRC and a range of freight permit holders use for laydown, storage, and staging. In addition, the Seward Loading Facility (SLF) has until recently been used for the staging and loading of bulk coal freight. This activity has currently ceased and the facility has been shut down until demand increases. Freight activities include ship, barge, train and heavy vehicle (truck) movements to, from and throughout the site.
- A **Transportation Connectivity Study**, which considers the intermodal connections that occur at the site (i.e. passenger and freight), and the various connections within and between the site and other significant transportation facilities in Seward and Southcentral Alaska. The study characterizes the existing connections, analyzes gaps, and proposes improvements with a particular focus on separating conflict between passenger and freight movements within and from the site.

Together, these documents have led to the development of the Seward Marine Terminal Expansion Master Plan, as shown in Figure II-1.1.

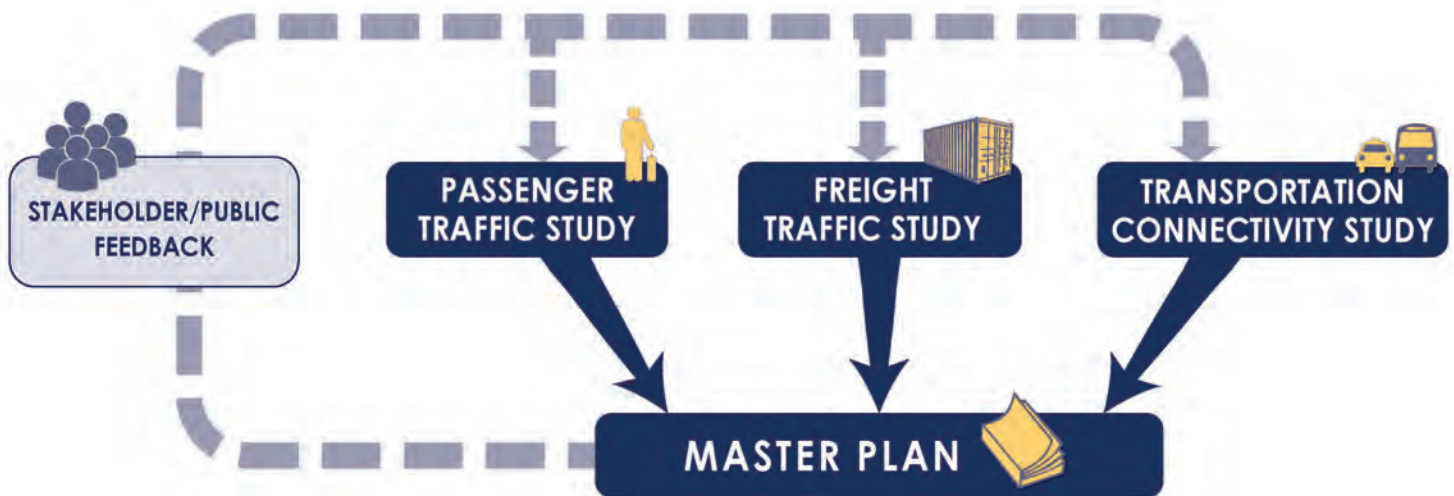


Figure II-1.1: Structure of the Seward Marine Terminal Expansion Planning Effort

In addition to the studies, extensive public and stakeholder outreach has been conducted in support of the planning effort. Input from these efforts have influenced the development of the studies and the Master Plan. Specific comments are summarized in the **Project Visioning Report**, which also describes the process for the development of the project’s vision and outreach.

2. Vision

2.1 - Master Plan Vision

The following vision statement guides the Seward Marine Terminal Expansion Planning Effort:

“

Reimagining travel and trade to enhance economic vitality and increase opportunities in the region by balancing port, rail, and real estate to meet transportation demands.

”

The vision statement provides a concise purpose for prospective design alternatives and guides planners in considering the best uses of ARRC’s assets in Seward. The statement is a living guide for the planning process as the project looks at Seward and the region’s transportation needs. It takes into account stakeholder input, ARRC’s core values, economic forecasting, and the requirements of the project’s TIGER grant funding. The statement will continue to serve ARRC through planning and beyond to ensure this nationally- and regionally-significant port continues to meet current and future demand.

2.2 - Alaska Railroad Corporation Mission and Values

The Alaska Central Railway built the first railroad in Alaska in 1903. It started in Seward and extended 50 miles to the north. In 1914, the US Congress agreed to fund the construction and operation of the Alaska Railroad from Seward to Fairbanks, and the golden spike, marking the completion of the Alaska Railroad, was driven into the ground in Nenana by President Warren G. Harding in 1923. The fortunes of the Railroad fluctuated until World War II, which generated large profits for the Railroad from hauling military and civilian supplies and materials. The Railroad continued to operate and expand until the mid- to late 1970s, when the Federal Railroad Administration sought to transfer its ownership of the Alaska Railroad. During this time, the Railroad endured an infrastructure-poor and equipment-strapped era as investments declined while options were considered. Eventually in 1983, President Ronald Reagan signed into law legislation authorizing the transfer of the Alaska Railroad to the State of Alaska, and it became the property of the state in 1985. Since then the ARRC has operated as a self-supporting, state-owned entity responsible for the operation and maintenance of all rail activity along the rail belt from Seward to Fairbanks/North Pole. ARRC provides regularly-scheduled passenger services along 580 miles of track and also operates freight services along the main line and additional spur lines.

The ARRC's mission is:

“Through excellent customer service and sound business practices, the Alaska Railroad Corporation (ARRC) provides safe, efficient and economical transportation and real estate services that support and grow economic development opportunities for the State of Alaska.”

The ARRC achieves its mission through three business lines: freight service, passenger service, and real estate holdings. It delivers on its mission by meeting the following values. The recommendations made in this Master Plan will be most successful in assisting ARRC to achieve its mission if they support these values.

- **Safety:** Safety is a fundamental value. ARRC seeks an accident-free, incident-free work environment in all areas of its operations. Without exception, keeping each other safe is the responsibility of each employee at every level. Employees are expected and empowered to act immediately to eliminate unsafe conditions and to prevent the risk of injury in the workplace.
- **Service Excellence:** ARRC goes the extra mile for its customers. It creates long-term relationships by delivering value; helping customers reach their goals by understanding their business needs; being consistent, proactive and establishing realistic expectations for its company and those ARRC serves.
- **Integrity:** ARRC is honest, ethical and transparent in all its actions. ARRC inspires trust by saying what it means and following through with actions that match its words. ARRC is accountable to each other and its stakeholders acting in a manner that maintains public confidence.
- **Teamwork:** ARRC strives to be one team - engaged and aligned in its mission. ARRC participates, collaborates and uses its collective skills to achieve common objectives. ARRC shares knowledge and information and focuses on the success of the Alaska Railroad, its customers, the state and the communities it serves. ARRC has fun together.
- **Sustainability:** ARRC is focused on growing its business to support the Alaska Railroad's long-term financial viability and its purpose to foster economic development. ARRC values stewardship for the environment, the organization, the communities it serves and its responsibility as a state-owned enterprise.

3. History & Strategic Importance of Seward Marine Terminal

3.1 - History of the Port of Seward 1903 - 1964

The development of the City of Seward is inextricably linked with the Alaska Railroad and the port facilities. The town was founded in 1903 as the ocean terminus for the Alaska Central Railway, and was chosen owing to Resurrection Bay's characteristics as a year-round, deep water ice-free port¹. Construction of the railroad line started in 1909². The railroad's port facilities and terminus were located at the south end of downtown Seward, near where the Alaska Sea Life Center is today, and included dock facilities, fish processing plants, warehouses, a small boat harbor, and large Texaco and Standard Oil tanks³. The port was a major part of Seward's economy, but the fortune of the railroad itself fluctuated for several years, until the advent of World War II when the economy of Seward and its port flourished. Resurrection Bay became a strategic military port, and by 1944, the railroad was one of the most prosperous in the United States⁴.

On March 27, 1964, a magnitude 9.2 earthquake was centered 95 air miles northeast of Seward⁵. The entire shoreline, including the majority of the port facilities and a large section of the railroad line dropped into Resurrection Bay⁶. The area was further devastated by subsequent seiche waves and a tsunami, as well as fires that destroyed almost the entire town. The Alaska Railroad subsequently reconstructed its facilities at the head of Resurrection Bay, in the current location of the Seward Marine Terminal. The railroad itself was not reconstructed to downtown Seward, and now commences at the northern end of Resurrection Bay (known as Mile Post 2.8).

3.2 - Seward Marine Terminal 1964 - Today

The Seward Marine Terminal is located at the head of Resurrection Bay, and is accessed via Port Avenue. The land reserve comprises 328 acres, and extends north to border with Seward Airport to the east, and the Seward Highway to the west. The land reserve also extends south along the old rail belt toward downtown Seward, and encompasses an area of land at the northern end of the Small Boat Harbor. Figure II-3.1 shows the boundary of the ARRC land reserve at Seward.

The first asset constructed at the site in 1965 was a freight dock, now referred to as the Passenger Dock. The building now known as the Dale R. Lindsey Intermodal Terminal building was also constructed at the same time on the dock. Since the 1960s, activities have grown at the site. The SLF was constructed in 1984 and primarily provides for the loading of coal to ships. The Freight Dock was constructed in 2000 to alleviate pressure on the existing aging dock and to provide an exclusive freight facility with separation from passenger activities being undertaken at the site. A range of other buildings and facilities are also present that cater to passenger, freight, and real estate activities at the site. The Seward Depot is located near the corner of Port Avenue and Fourth Avenue, and provides the terminus for the arrival and departure of the Coastal Classic train, which operates daily between Seward and Anchorage in the summer months.

The Seward Marine Terminal is a significant part of Seward's economy, contributing to both the tourism and industrial economy of the City. In 2016, nearly 185,000 people arrived or departed Seward on a cruise ship from the Seward Marine Terminal, and nearly 64,000 people arrived or departed Seward on the Coastal Classic Passenger Train. The number of people arriving and departing Seward on a cruise ship or by train has been increasing every year for the last several years.

¹<http://www.alaska.org/detail/seward-railroad-history>

²Ibid.

³<http://www.alaska.org/detail/64-quake-seward-waterfront>

⁴<http://www.cityofseward.us/index.aspx?NID=764>

⁵Ibid.

⁶<http://www.alaska.org/detail/64-quake-seward-waterfront>



Figure II-3.1: Seward Marine Terminal Land Reserve

3.3 - Key Seward Marine Terminal Tenants and Users

The tenants and users of the Seward Marine Terminal can be broadly divided into businesses that support passenger or tourism operations, and businesses that support freight operations. Key tenants and users include (note that this list is not exhaustive):

- **Passenger/Tourism Operators:** Cruise Line Agencies of Alaska, Celebrity Cruises, Crystal Cruises, Holland America Princess, Norwegian Cruises, Regent Seven Seas Cruises, Royal Caribbean Cruises, Seabourn Cruises, Silversea Cruises, and Premier Alaska Tours.
- **Freight Operators and Tenants:** Samson Tug and Barge, Alaska Logistics, Crowley Marine Services, SeaTac Marine Services, Shoreside Petroleum Inc, Kirby Offshore Marine, Colaska/QAP, Orion Marine, and Carlile Transportation.

Further information on tenants and users is provided in Part III, section 3.0 of the Master Plan.

3.4 - The City of Seward

The City of Seward is located in Kenai Peninsula Borough and is a first class city. The 2014 Census Bureau estimates the population of the city as approximately 2,500 people. The geographic area of the city covers approximately 21.5 square miles, of which approximately one third is water. Adjacent communities include Bear Creek to the north and Lowell Point to the south. The City experiences moderate temperatures for Alaska, with a mean winter temperature of approximately 23 degrees Fahrenheit, and a mean summer temperature of 55 degrees. Due to its coastal location along the Gulf of Alaska, Seward experiences relatively high levels of precipitation⁷.

⁷https://en.wikipedia.org/wiki/Seward,_Alaska

Seward’s major industries include fishing and tourism. It is unique among most small Alaska cities for its location on both the road and rail network. The City is located at the southern end of the Seward Highway and is approximately 2.5 hours’ drive time, or 125 miles from Anchorage.

4. Purpose of the Master Plan

All trains originating or terminating in Seward must be processed through ARRC’s Seward Terminal. The rail yard was largely constructed more than 50 years ago. Some incremental additions have been made to support changing port needs over the years, but the volume and mix of traffic has grown to a point where technical analysis is needed to ensure the terminal continues to operate effectively and efficiently in the future.

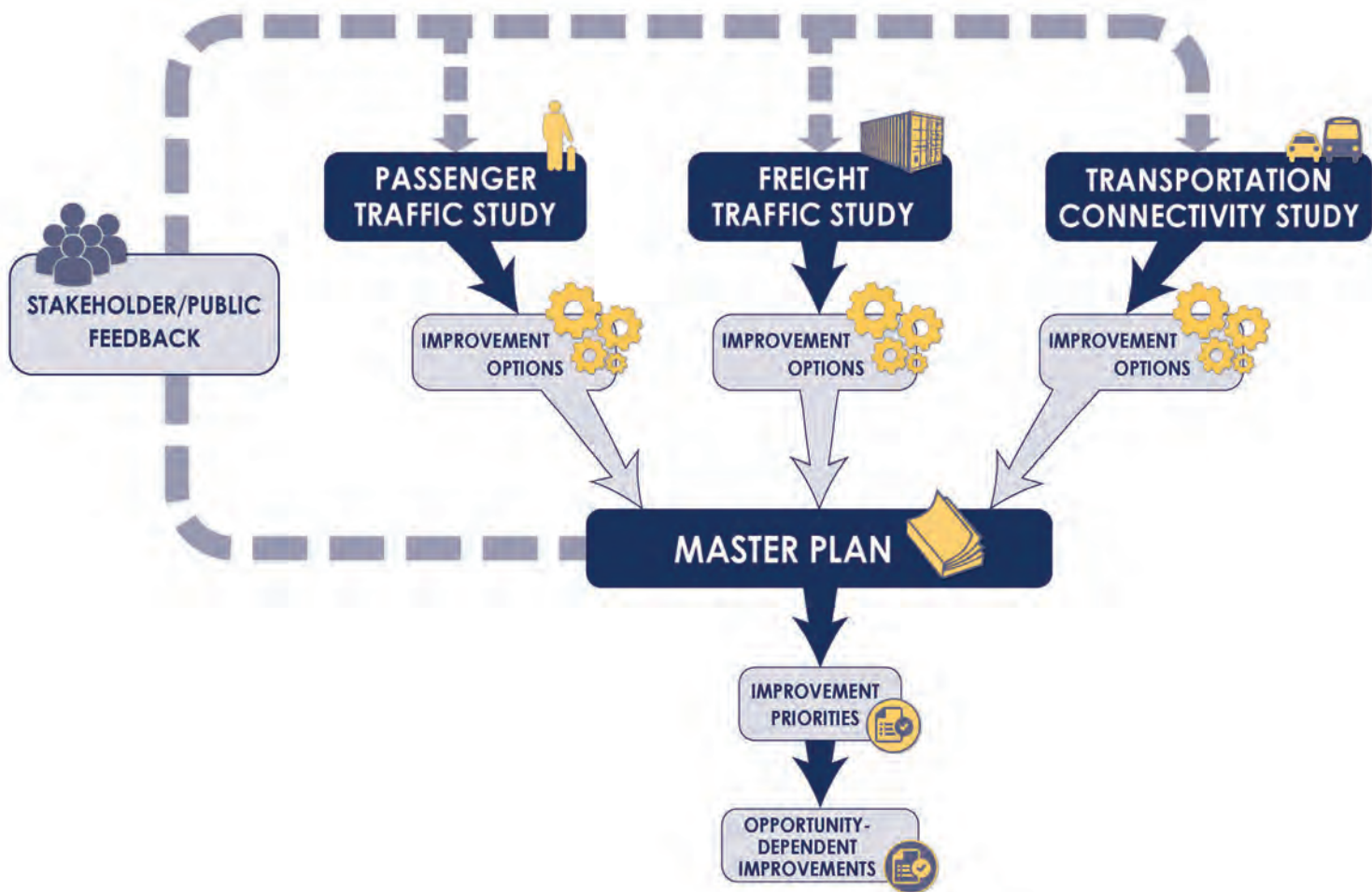


Figure II-4.1: Flow of Seward Marine Terminal Expansion Planning Effort Documents

The Master Plan considers options developed in the Passenger Traffic, Freight Traffic, and Transportation Connectivity Studies conducted as part of this planning effort, and analyzes them to enable recommendations for improvement priorities. Improvement priorities include concepts, planning-level designs, and cost estimates for the identified improvement priorities. The analysis has looked at how to continue to support ARRC’s existing terminal operations, constructability/phasing, cost, and the balancing of short and long-term infrastructure needs with modal demands and space availability. Extensive public and stakeholder involvement has also enabled consideration of how the recommended improvements integrate into the local Seward community and transportation network. Figure II-4.1 sets out how the Seward Marine Terminal Expansion Planning Effort has developed and analyzed opportunities for recommended improvements in the Master Plan.

The recommended improvement priorities are as follows.

- **Improvement Priority 1:** Passenger Dock Replacement
- **Improvement Priority 1A:** Freight Dock Improvements to Accommodate Cruise Ships While Replacement Passenger Dock is Constructed
- **Improvement Priority 2:** Passenger Terminal Replacement
- **Improvement Priority 3:** Traffic Staging at the Terminal
- **Improvement Priority 4:** Seward Loading Facility
- **Improvement Priority 5:** Extending Port Avenue through the Seward Marine Terminal site to connect with Airport Road

5. Strategic Objectives Underpinning the Master Plan

The improvement priorities are considered necessary to support the reasonably foreseeable operational needs of the Seward Marine Terminal in the short to medium term (i.e. next five to ten years). They respond directly to known issues with assets at the site, in particular the aging passenger dock and the terminal building located on the dock.

It is anticipated that the Master Plan will guide future development at the Seward Marine Terminal for the next 20 to 25 years. In addition to the improvement priorities listed above, a number of opportunity-dependent improvements are considered feasible and are set out in Part IV of the Master Plan. These improvements can be advanced as opportunities and funding become available.

In 2013, ARRC applied for a TIGER Grant to facilitate the extension and expansion of the freight dock. This application was not awarded a grant, owing to the lack of an overall Master Plan guiding development at the Seward Marine Terminal. In 2014, ARRC once again applied for a TIGER Grant to facilitate the extension and expansion of the freight dock, and it also made a second application to enable the completion of the Seward Marine Terminal Expansion Planning Effort. This planning effort was anticipated to:

- Provide clear justification that would enable a future application to secure funding for the extension and expansion of the freight dock;
- Enable comprehensive consideration of the aging passenger dock's future, with a clear path for addressing future provision of this facility (either rehabilitation of the existing facility, or replacement with a new passenger dock);
- Provide clear guidance on development of the remainder of the site to support existing and anticipated future business activities at the freight dock, passenger dock, and SLF; and
- Set out the development costs for the freight dock, passenger dock, and any other infrastructure required to support future site development.

The ARRC was fortunate to be awarded funding to complete the Seward Marine Terminal Expansion Planning Effort as part of the 2014 TIGER Grant cycle. Work commenced on the planning effort in September 2015. An early part of the planning effort was the completion of economic analysis to understand Seward's position in relation to other Southcentral ports, the current market in Alaska and how this would influence the port of Seward, and what future opportunities existed to increase the use of the Seward Marine Terminal and generate a positive return on investment at the site.

Between when the TIGER grant was awarded in 2014 and the completion of the economic analysis, the state of Alaska's, and the world's economies shifted significantly, with a dramatic decrease in the price of crude oil (Alaska's major export), and an almost total cessation in demand for Alaska's coal. These market influences had a major impact on freight activity at the Seward Marine Terminal, with the SLF being placed in 'cold shutdown' and the future viability of the facility being considered. The cessation of coal exports from the site has also clearly highlighted the relatively low level of other freight activity over the last several years, and the economic analysis does not expect any significant change in freight at the terminal for the next 20 years.

The economic analysis highlighted that the passenger business at Seward is its bright spot. However, the existing passenger dock is nearing the end of its usable life and future provision of a quality passenger facility needs to be ensured. The findings of the economic analysis, passenger traffic studies and freight traffic studies have therefore shifted the strategic focus of this Master Plan as follows:

- Prioritize replacement of the passenger dock, and provide clear options and associated costs to enable decisions to be made about which option is the most feasible and best balances the needs of users with funding constraints.
- Replace the passenger terminal, which is located on the passenger dock and will therefore be demolished when the dock is replaced.
- Provide associated infrastructure, such as traffic staging and loading areas, at the replacement passenger dock and terminal.
- Remove the SLF and repurpose the site for alternative uses.
- Extend Port Avenue through the Seward Marine Terminal site and connect it with Airport Road.

The freight dock extension and expansion project, which was the initial driver for the Seward Marine Terminal Planning Effort, is considered to be opportunity-dependent. A range of opportunity-dependent improvements have been identified, and grouped according to whether they will benefit passengers, freight, connectivity, or railroad operations (see Part IV, section 4 of the Master Plan).

6. Outcomes Sought

Implementing the recommended improvement priorities identified in this Master Plan will achieve the following outcomes:

- **Operational and financial:** A clear vision for the future operation of the Seward Marine Terminal will be implemented, with a clear understanding of investment priorities and costs associated with the provision of facilities to support viable future operations. This will increase user confidence in their investments at the site and a well thought out plan should facilitate future operational efficiencies.
- **Environmental:** The environmental impacts of capital improvements and operations will be well-understood and managed, with appropriate environmental permits and protections in place to facilitate development and support the operation of a well-managed terminal site.
- **Social:** Residents and visitors to Seward will have a clear understanding of what the Seward Marine Terminal is and its integral role in Seward's tourism industry. With the improvement in facilities, visitors will be provided with an enhanced first impression of the City of Seward and improved connections to the City, and residents will continue to be able to use ARRC's facilities at the site for community events.
- **Amenity and built form:** The new passenger dock, terminal and associated facilities will provide a modern gateway to the City of Seward for cruise ship passengers. Other improvement priorities, including making decisions around the future of the Seward Loading Facility also have the potential to enhance the amenity and built form at the Seward Marine Terminal site and enable it to be a modern facility that meets the needs of all users for at least the next 20 years.
- **Safety and maritime security:** The planning effort has focused on ensuring that maritime security can continue to be maintained at the site and a range of opportunity-dependent improvements also provide opportunities for improving the safety and security of facilities away from the marine interface provided by the docks. The replacement passenger dock provides the opportunity for a facility that meets modern safety and security requirements, and the replacement passenger terminal will enable comfortable and safe accommodations for passengers and visitors of all ages and abilities.

7. Community Involvement & Engagement

To identify current deficiencies and concerns around passenger and freight movement and services at ARRC’s Seward Marine Terminal, the project team gathered input from people and businesses that use or have a relationship with the facilities. Two types of interests were identified:

- Internal stakeholders across company-wide ARRC departments; and
- External interests, comprised of current ARRC customers, local elected officials, Seward citizen planning commissions, and commercial property owners and leaseholders near the Seward Marine Terminal reserve.

Meetings, surveys, email and telephone correspondence, workshops, newsletters, and a website were used to initiate and maintain outreach during the course of the planning process. The sections below detail the stakeholder engagement process, identify the individual stakeholders involved, and describe specific outreach activities conducted and key priorities observed. Full details on community involvement and engagement are included in the Stakeholder Visioning Report, which is Appendix A to this Master Plan.

7.1 - Visioning Process

Stakeholder outreach sought to identify common goals between ARRC and the local community. In-person meetings, surveys, email and telephone correspondence, workshops, newsletters, and a website were used to initiate and maintain outreach during the course of the planning process. Throughout visioning, outreach sought to educate stakeholders about the project; inform stakeholders how, when and where they could provide input; obtain meaningful feedback to guide development of the vision statement, and establish points of contact with subject matter experts.

The project documented stakeholder data on passenger and freight traffic demands, modes and flow in Seward and throughout Southcentral Alaska, and gathered ideas on how to improve ARRC’s facilities and real estate to serve the region and state. For the purpose of continuing to meet local and global economic fluctuations, visioning has remained an ongoing activity throughout the life of the project.

7.2 - Outreach to Interested Parties

7.2.1 Internal Stakeholder and External Interest Meetings



Photo II-71: ARRC Marketing Division Participating in an Internal Stakeholder Meeting, October 2015
(Source: E3 Environmental, 2015)

The primary method for obtaining feedback from interested parties was through meetings. A total of seven internal and 53 external meetings occurred in October 2015 through July 2016, in person or via teleconference. To ensure consistent and appropriate qualitative data, the same set of meeting materials were presented at the meetings.

Meeting materials included planning-level slide presentations, a survey questionnaire, and a tabletop aerial map of the project area to orient and document stakeholder comments around the Seward Marine Terminal assets. The survey questionnaire was provided to meeting attendees in hard copy format at each meeting and also emailed as a fillable PDF. Attendees were encouraged to forward or share the survey questionnaires with personnel in their department or organization with subject matter expertise. A total of three internal stakeholder and 19 external interest survey questionnaires were returned.



Photo II-7.2: External Interest Meeting at Seward Passenger Terminal, October 2015
(Source: E3 Environmental, 2015)

Photo II-7.1 was taken during an internal stakeholder meeting, and Photo II-7.2 was taken during an external interest meeting. All meetings were documented with meeting minutes and aerial map notes. Copies of meeting materials and presentations, along with additional emailed comments, meeting minutes, and returned surveys are included in an appendix to the Visioning Report.

In addition to the meetings, the project team traveled to Seward on November 16-18, 2015, to meet with ARRC’s on-site staff for a three-day work session. The purpose was to view and discuss the operation of facilities, conduct a site walk-through, and inventory the existing facilities.

7.2.2 Anchorage Transportation Fair

ARRC hosted a booth at the Anchorage Transportation Fair on February 4, 2016 and on February 15, 2017, with project representatives in attendance to answer questions. A poster and fact sheet were developed to support stakeholder education. This material is included as an appendix to the Visioning Report.

7.2.3 Additional Outreach Efforts

Contact was attempted with additional external interests without success. For interested persons who missed initial meetings, a follow-up email invitation to a second meeting was sent, along with a survey questionnaire and the presentation materials in a final effort to obtain input prior to the project moving into the study phase.

7.3 - Key Issues

A summary of comments received during the visioning process is provided in Table II-7.1 on the following page. This summary helps highlight key issues identified by ARRC, the local community, and other interested parties.

Table II-7.1: Summary of Comments Received from Internal Stakeholders and External Interests

Topic	Internal Stakeholder Comments	External Interest Comments
Passenger Dock	<ul style="list-style-type: none"> Cruise ships are getting larger and require accommodations for different luggage and gangway configurations. Shoreside Petroleum has a fuel line on the dock, but still takes trucks out to fuel vessels. Current weight restrictions prevent heavy freight use. Making the dock dual purpose would allow year-round use. 	<ul style="list-style-type: none"> Tour companies would like to continue to drive motor coaches onto the dock and/or have rail on the dock for passenger loading. They would also like to separate passengers from luggage vehicles for better safety. Cruise ships would like hard data lines on both sides of the dock, accommodations for larger ships and configurations, and fresh water. Freight companies said securing dock space was a hassle, the dock was not configured for small vessels, and they would like year-round use. They also noted Shoreside Petroleum has a fuel line on the dock but still takes trucks out to fuel vessels.

Topic	Internal Stakeholder Comments	External Interest Comments
Freight Dock	<ul style="list-style-type: none"> • Current fendering is dangerous and needs improvement. • Traffic congestion is a problem. Pilots do not like to take their vessels all the way in at the landward end of the Port because of current draft. Weather and tide conditions can prevent loading and offloading. • Roll on/roll off ramps would make moving freight easier. • Ability to load directly from ship to railcars would be ideal for pipe and containers. • The freight dock gets muddy which makes it hard to move equipment and requires constant cleaning of the tracks. • Extend the track all the way to the end of the freight dock and any future extensions. 	<ul style="list-style-type: none"> • Current fendering is dangerous and needs to be improved. • Traffic congestion is a problem. Pilots do not like to bring vessels all the way in to the landward edge of the Port because of the current draft. Weather and tide conditions can prevent loading or offloading and delays are expensive. • Large ships cannot access all their holds at once because the dock is too short, and small barges find the dock too high for offload. Roll on/roll off ramps would make moving freight easier, as well as the ability to offload on both sides of the dock. • Freight operators want mooring dolphins at the current barge ramp, paving to support heavy equipment, better lighting, fresh water for vessels, and a wider gate in the fence surrounding the freight dock uplands area. • Independent barge operators prefer the option for facilities to not be shared with other operators and don't want to be reliant on ARRC staff for support. • Vessel-mounted cranes cannot reach the second set of rails currently installed on the freight dock. The ability to load pipe or containers directly from ship to railcars would be ideal.
Terminal	<ul style="list-style-type: none"> • Upgrade technology (i.e. electronic signs and free Wi-Fi). • Keep terminal rates competitive to retain current customers. • Seward's current terminal layout allows passengers to transition in and out quickly, giving Seward a high rating with cruise operators. • The community appreciates space large enough to hold events and use in an emergency situation. • Maintaining and operating the building during winter is costly due to its design characteristics and age. • Upgrade technology for freight office spaces. 	<ul style="list-style-type: none"> • Tour companies like technology such as electronic signs and free Wi-Fi, improved exterior aesthetics, wayfinding signage, stationary check-in podiums, covered pedestrian walkways, and dry space for luggage drop-off and sorting. • Cruise companies appreciate competitive rates, Seward's current terminal layout (which allows passengers to transition in and out quickly), and secure storage space for pre-cleared cargo. • The community appreciates a space large enough to hold events. • Other customers want upgraded technology in office spaces and the ability to use it to stage sensitive freight during the off season.
Depot	<ul style="list-style-type: none"> • Wayfinding signage to and from the depot needs to be clearer and traffic flow needs to be improved. • Improve aesthetics and modernize. • A better luggage system and additional space to shelter waiting passengers are needed. • The location of the depot is important to downtown Seward businesses. • Moving the depot closer to the terminal might alleviate pedestrian vs. freight conflicts on Port Avenue. 	<ul style="list-style-type: none"> • The depot requires improved aesthetics and modernization, primarily with luggage handling and shelter for waiting passengers. • Alleviating pedestrians vs. freight conflicts is important, as well as providing wayfinding signage that is clear and will help to improve traffic flow. Additional ideas included moving the depot closer to the passenger terminal. • Proximity to downtown is important to Seward businesses.

Topic	Internal Stakeholder Comments	External Interest Comments
Seward Loading Facility (SLF)	<ul style="list-style-type: none"> Run a fuel line down SLF dock to keep fuel vessels out of the way of other vessels at the freight dock. Repurposing the SLF for aggregate loading, wood chips, sand, gravel, limestone and gypsum were suggested. The amount of horsepower (in terms of the number of locomotives) required to haul items to or from Seward renders most commodities not cost-effective. Use SLF for mooring when it is not running coal. The height of the dock limits its purpose for other things. 	<ul style="list-style-type: none"> Repurposing the SLF for aggregate loading, wood chips, sand, gravel, limestone and gypsum were suggested. It was also noted the infrastructure, if removed, would be expensive to replace. Other ideas included mooring and developing an energy dock (running fuel lines for vessels). Vessels also need cement, mud, fuel and water, which a retrofitted dock could be used for. If the SLF is repurposed, the dock piles need to be improved including the ladders and catwalks. The dock height currently limits other uses.
Uplands	<ul style="list-style-type: none"> More laydown area is needed. There are few ports on Alaska's road system with area like this. Office space with utilities would be great, or at least a commercial user spot with RV hookups to water, sewer, and electricity. Bring utilities into the uplands with capacity and redundancy to support commercial businesses. Create an area for explosives laydown. If the mining industry picks up there will be a need. Build a new communications shelter with fenced-off areas for vendors. Everyone around the terminal uses radio now and it causes interference. Put wireless telecommunication towers on railroad property to increase revenue and benefit community. 	<ul style="list-style-type: none"> Many stakeholders remarked on the lack of long-term lease options in Seward. Suggestions for use of ARRC real estate included retail business lease opportunities in the parking lot outside the terminal, vessel pull-out for repair and maintenance at the barge uplands, potential for fish processing or cold storage areas, and increased laydown requirements. Some freight operators who set up mobile offices requested a place for RV hookups to water, sewer and electricity. Future considerations for improvement include incorporating better lighting through the uplands for laydown and installing buried utilities to prevent accidents while moving tall freight.
Rail	<ul style="list-style-type: none"> Include rail on the new passenger dock. Put track all the way to the end of the freight dock extension. Current marine/rail interface requires extra handling of freight to move it off the dock. More ideal to load directly to rail. Rail is the best way to move freight from Seward to Fairbanks. Tunnels and highway overpass outside Seward preclude double stacking. Seward has a lot of 70lb rail, which is outdated for freight. 	<ul style="list-style-type: none"> The passenger and freight dock should include rail tracks, with double tracks extended from the freight dock to the uplands to ease loading and handling. Freight operators also want rail switching closer to the freight dock to alleviate delays in moving railcars. In general, rail is the best way to move freight from Seward to Fairbanks. Tour companies also prefer passenger rail to motor coaches. General consensus is that coal is on the downturn and tourism is not sufficient to support the ongoing long-term operation of the Railroad.
Roads	<ul style="list-style-type: none"> The pedestrian traffic between the depot and the terminal on Port Avenue is dangerous because it conflicts with freight traffic. Find a way to separate passengers and freight, such as a restricted freight corridor. Connect Port Avenue to Airport Road. Eliminate blind spots, potholes, and drainage issues. 	<ul style="list-style-type: none"> The pedestrian traffic between the depot and the terminal (Port Avenue) is a major concern articulated by many stakeholders. Requested improvements include: improving the sidewalk condition, sidewalks on both sides of the road, a covered walkway, and wayfinding signage. Freight operators asked for paving and/or repairing potholes and drainage within the site. They also asked for wider roads, to eliminate blind spots, and to improve at-grade rail crossings. Separate passengers and freight. Connect Port Avenue to Airport Road or creating a restricted freight corridor was suggested.

Topic	Internal Stakeholder Comments	External Interest Comments
Economics	<ul style="list-style-type: none"> Seward is a safe tourist destination; tourist business is expected to increase. Some companies are looking at the opportunity to offload fishing tenders or a place for a new fish processing facility. Compress liquefied natural gas (LNG) in Seward and transport it by rail. Development of key private partnerships is necessary. 	<ul style="list-style-type: none"> Seward is considered a safe tourist destination. Alaska needs options for other industries, such as fishing, LNG fuel and chemicals. Seward has potential for these development areas. Full-time, year-round employment is important to Seward's economy.
Economics, Competition	<ul style="list-style-type: none"> Cruise line customers are not going away anytime soon. There is discussion of TOTE Maritime ships coming into Seward. Seward Marine Industrial Center (SMIC) will have minor amounts of freight coming across the dock, but will be mostly for marine repair. Port Mackenzie is a good import/export facility, but the tide range is bad and vessels need pumps and filters. Whittier is limited in growth potential. The amount of cargo projected if AKLNG moves forward will be enormous. Seward has key resources that appeal to the project. Shoreside Petroleum needs to move four million gallons of fuel by rail 	<ul style="list-style-type: none"> Valdez's floating dock is nice, but lack of rail makes it less competitive. SMIC will have minor amounts of freight coming across the dock, but will be mostly for marine repair. Port Mackenzie would be a good import/export facility, but the tide range is bad and vessels need pumps and filters. Anchorage's barge dock goes dry and is difficult to use. Homer does not have a good roll on, roll off dock. Cranes and bulk handling are difficult there. Whittier is limited because of real estate. The amount of cargo coming if AKLNG moves forward will be enormous. All ports in Alaska will have to be on board. Seward has key resources like laydown and access to rail and the road system. Seward could be competitive for the chemical and fuel needs of the State. There has been discussion of TOTE Maritime ships coming into Seward. Cruise lines to southeast Alaska are reaching capacity, and Seward might be a good alternative.

7.4 -Ongoing Community Engagement

The project team continued visioning activities and community outreach throughout the duration of the project. Activities undertaken include workshops, presentations, newsletters, and a website.

7.4.1 Internal Stakeholder and External Interest Meetings

To keep internal stakeholders apprised of the project's progress and alternatives development, periodic workshops and presentations were held with key staff from ARRC. To date, four division workshops have been held. The purpose of these workshops was to allow continued input on project development and screening in accordance with the project vision. Dates and topics covered at each workshop, together with internal presentations and feedback, are included in the Visioning Report.

7.4.2 External Interest Follow-Up Presentations

Continued outreach to the City of Seward and its citizens and business owners was performed through follow-up presentations in Seward. To date, three additional presentations have been held: one with the Seward City Council, one with the Seward Chamber of Commerce, and one with the Seward Rotary Club. The purpose of these workshops was to allow continued input on project development and screening in accordance with the project vision. Dates and topics covered at each workshop, together with copies of external presentations and feedback, are included in the Visioning Report.

7.4.3 Seward Public Meeting No. 1

A public meeting was held on October 11, 2016 at the Dale R. Lindsey Alaska Railroad Terminal in Seward. The meeting was advertised with the local newspapers, in the Alaska Dispatch News, through the online Seward Chamber Events Calendar, and via area flyers. The project website and a timely newsletter also announced the event. Interested persons who previously provided input were emailed direct invitations.

The purpose of this meeting was to present project cornerstones, with a particular focus on the progress made on preliminary passenger dock replacement and passenger terminal alternatives. A presentation was shown, informational stations with posters were set up around the room, and team subject matter experts were available to answer questions. Photo II-7.3 was taken at the first public meeting.



Photo II-7.3: Attendees Listening to the Presentation at the First Seward Public Meeting, October 2016 (Source: DOWL, 2016)

7.4.4 Seward Public Meeting No. 2

A second public meeting was held on May 9, 2017 at the Dale R. Lindsey Alaska Railroad Terminal in Seward. As with the first meeting, the second public meeting was advertised in local newspapers, the Alaska Dispatch News, through the online Seward Chamber Events Calendar, via area flyers, the project website and a project newsletter. Interested persons on the project mailing list who had previously provided comments on the project received personalized email invitations.

The purpose of this meeting was to update the public on progress towards a preferred development approach for the Seward Marine Terminal, with a particular focus on the passenger dock and terminal, which are key priorities for replacement/redevelopment at the site. A presentation was shown, informational stations with posters were set up around the room, and team subject matter experts were available to answer questions. Photo II-7.4 was taken at the second public meeting.



Photo II-7.4: Attendees Listening to the Presentation at the Second Seward Public Meeting, May 2017 (Source: E3 Environmental, 2017)

7.4.5 Agencies and Other Governmental Outreach

Agency outreach to date has consisted of contacting agencies to determine points of contact for future outreach and to assess their desire to provide input on the Master Plan. The following agencies have been contacted:

- United States Coast Guard (USCG)
- U.S. Fish and Wildlife Service (USFWS)
- Alaska Department of Transportation and Public Facilities (DOT&PF)
- State Historic Preservation Office
- U.S Army Corps of Engineers (USACE)
- U.S. Navy
- Federal Aviation Administration (FAA)

A summary of meetings with these organizations is provided in the Visioning Report.

7.4.6 Additional Outreach

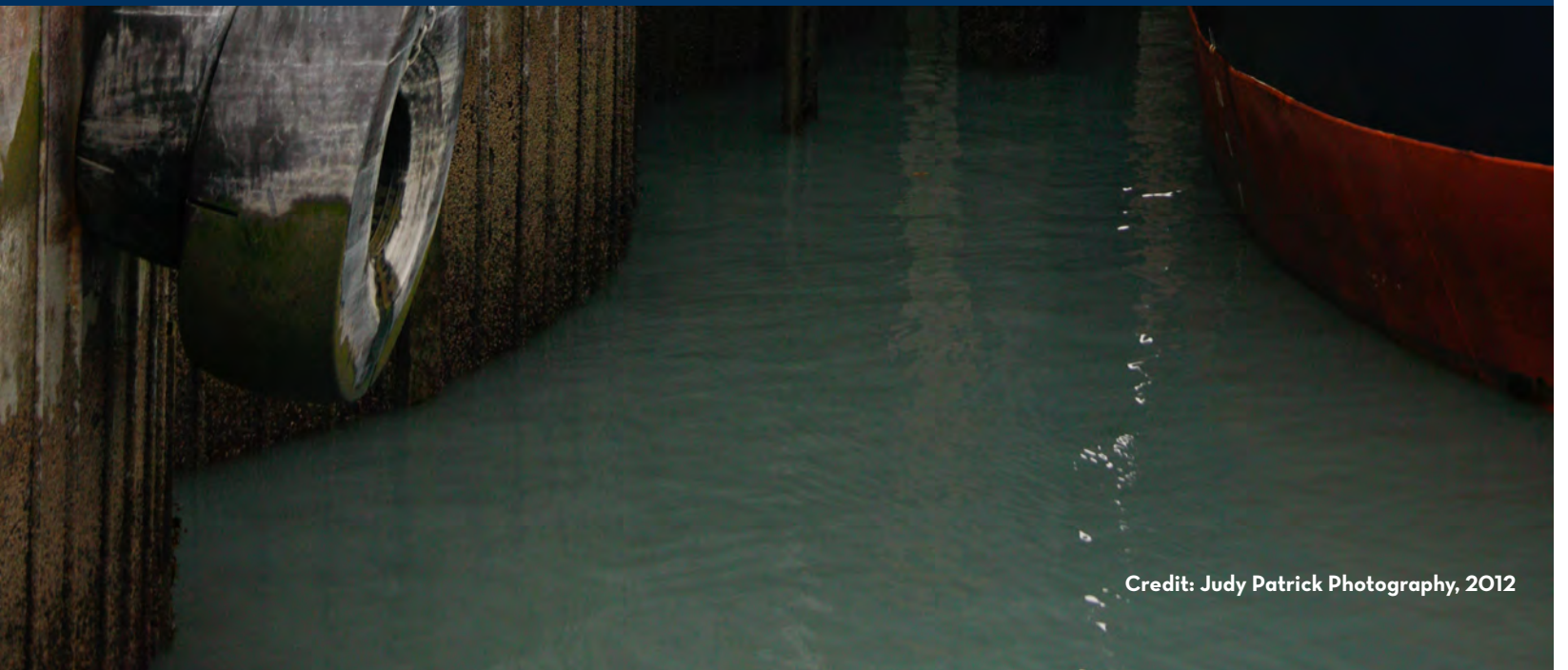
The project team has also provided the following electronic and print media for interested parties to hear about the project and its meetings and workshops.

- A project website, railportseward.com, has been established and is regularly updated to provide information on the project. The website also includes the ability for interested parties to sign up for newsletters and provide comments and feedback on the project.
- Regular project newsletters are prepared and distributed to a mailing list to provide updates on the project.

Following the completion of the Master Plan, a final open house/drop-in session will be held in Seward to present the Master Plan recommendations and answer any questions. It is anticipated that this will be held in September 2017.



Part III: Existing and Projected Conditions



Part III - Existing & Projected Conditions

1. Operational Context

1.1 - Alaska Railroad Network

The Alaska Railroad extends a total of 470 miles (760 kilometers) from Seward, in Southcentral Alaska, to Eielson Air Force Base, which is located near Fairbanks. It includes 15 land reserves (see Figure III-1.⁸), four of which have railyards, including Seward.

The ARRC owns the Ports of Seward and Whittier, and has significant land holdings at the Port of Anchorage. Rail connection is provided to all of these ports for freight purposes and to nearby depots for passenger purposes.

1.1.1 Scheduled Passenger Train Services

ARRC operates the following scheduled passenger train services:

- The **Coastal Classic** operates between Anchorage, Girdwood, and Seward between mid-May and mid-September each year. The Coastal Classic is a daily round-trip service that departs Anchorage at 6:45am daily and arrives in Seward at approximately 11:05am. It spends the day in Seward and departs at 6:00pm, returning to Anchorage at approximately 10:15pm.
- The **Denali Star** is ARRC's flagship train. Each day between mid-May and mid-September, the train departs Anchorage for a 12-hour journey north to Fairbanks, while a sister train in Fairbanks makes the same trip in reverse. Along the way, the Denali Star may stop in Wasilla, Talkeetna, and Denali National Park. The Denali Star departs Anchorage and Fairbanks daily at 8:15am, and arrives at the opposite destination at 8:00pm.

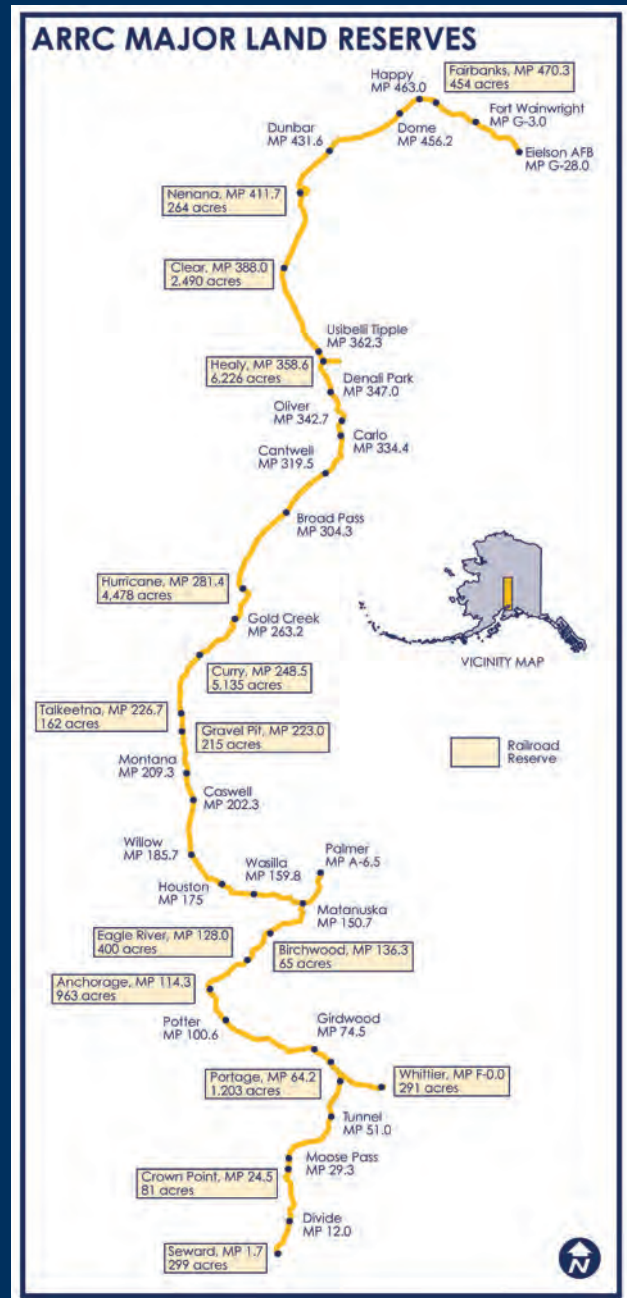


Figure III-1.1: Alaska Railroad Network and Land Holdings

⁸https://www.alaskarailroad.com/sites/default/files/akrr_pdfs/2015_02_19_Real_Estate_Business_FS_PR.pdf

- The **Glacier Discovery** train travels south daily between late-May and mid-September from Anchorage and makes a brief stop at Girdwood before continuing on to Whittier, Portage, the Spencer Glacier Whistle Stop, and Grandview. On the return journey, Anchorage and Girdwood-bound passengers may opt to disembark at Portage for a direct motorcoach transfer, or stay on the train for a longer journey, including a stop in Whittier.
- The **Hurricane Turn** train serves as a lifeline for Alaskans living off the road system in the backcountry wilderness north of Talkeetna. In summer, the Hurricane Turn train operates Thursday through Monday, departing Talkeetna and providing flag stop service along the way to the turnaround point of Hurricane Gulch. The Winter Hurricane operates on the first Thursday of the month October through May, departing from Anchorage and making the round-trip journey to Hurricane Gulch (Mile (MI) 281.4). This is a flag stop train. Typical stops are: Chase (MI 236.2), Curry (MI 248.5), Sherman (MI 257.7), Gold Creek (MI 263.2), Twin Bridges (MI 270), and Chulitna (MI 273.8).
- The **Aurora Winter** Train operates from mid-September to mid-May, connecting Anchorage and Fairbanks and providing flagstop service between Talkeetna and Hurricane. The train operates in either a northbound or southbound direction, depending on the day and as advertised on the ARRC website⁹.



Photo III-1.1: GoldStar Class Cars
(Glenn Aronwits Photography)



Photo III-1.2: Adventure Class Cars
(Source: Glenn Aronwits Photography)

The Coastal Classic is the only service that operates with scheduled departures to and from the Seward Marine Terminal. The Coastal Classic operates two different classes of service as follows:

- **GoldStar Class** is the Alaska Railroad's premium class of service. Glass-dome ceilings on cars allow for panoramic views of Alaska and an outdoor, upper-level viewing platform offers fresh air and an excellent vantage point for photos. On the lower level of GoldStar railcars, passengers enjoy a full-service dining room; beverages, and two complimentary adult beverages per trip for passengers over 21. Photo III-1.1 is of a GoldStar Class car.
- **Adventure Class** cars offer comfortable seating and large picture windows. Open-air vestibules between railcars provide an opportunity for fresh air and excellent photo opportunities. Adventure Class guests are encouraged to take advantage of the open seating in the Vista Dome cars or visit the Wilderness Café. Cars feature large picture windows, on-board dining and bar service available for purchase, freedom to explore between Adventure Class cars, and access to open seating in the Vista Dome car. Photo III-1.2 is of an Adventure Class Car.

In addition to passenger cars, a dining car, baggage service, non-smoking cars, and wheelchair accessible service are available.

Almost all cruises that start and finish in southcentral Alaska arrive or depart from Seward or Whittier. Both of these ports are located in small coastal cities with relatively low population and no scheduled passenger air service. Although a broad range of activities are available for tourists, most of these cater to visitors staying for a short time and there are limited accommodation options available in these cities.

⁹<https://www.alaskarailroad.com/ride-a-train/our-trains>

1.1.2 Cruise Train Services



Photo III-1.3: Grandview Cruise Train at Seward
(Source: DOWL, 2016)

Therefore, almost all cruise ship passengers need to be transported to Anchorage or Fairbanks for transportation in or out of the State and for connections to other activities throughout Alaska. The only available option for cruise ship passengers to make this 120 mile journey is by train, motor coaches, or by private passenger vehicle.

As well as scheduled passenger train services as described above, a range of contracted train services operate on the Alaska Railroad network to provide passenger transportation connections between Seward and Whittier to cities, airports and other locations throughout the State. Owing to demand, almost all cruise ships choose to offer this train service. The Seward cruise train only offers trips to Anchorage. Passengers can then choose to transfer to other cruise trains or scheduled services to travel north to Denali

or Fairbanks. Photo III-1.3 shows the Grandview Cruise Train at Seward.

Discussions with operators and Alaska Railroad passenger services staff has indicated that the cruise train is an extremely popular service and is almost always fully booked. Passengers who are unable to secure bookings on the cruise train are offered a transfer to the Coastal Classic.

1.1.3 Freight Train Services

The ARRC's freight service fleet includes 863 railcars that are owned or leased by ARRC, along with 180 railcars leased by customers¹⁰. Historically, freight has generated about two-thirds (65 percent) of operating revenues (excluding capital grants), although this situation has been changing with the downturn in the coal market worldwide.

The railroad operates a comprehensive fleet management program involving rehabilitation and replacement of freight assets, which means that not all the assets are available for use on a continuous basis. The railroad's revenue-service freight fleet of 1,043 railcars is as set out in Table III-1.1.

Table III-1.1: ARRC Freight Fleet¹¹

Railcar Type	Purpose	Fleet
Tank Car	Moves liquid bulk cargo including jet fuel, gasoline, asphalt, vegetable oils, aircraft deicer, and various other chemicals.	2 cars plus 180 tankers leased by customers for in-state use only
Flat Car	Moves trailers and containers, pipe, lumber, and heavy equipment.	354 cars
Air Dump	Side-dumping railcars used primarily to transport ballast and other rock materials for track maintenance.	31 cars
Open Top Hopper	Moves bulk solids, primarily coal and gravel, and unloads from the bottom.	396 cars
Covered Hopper	Moves dry bulk including grain, fertilizer and cement.	41 cars
Box Car	Moves a variety of commodities including lumber, paper and drilling mud.	14 cars
Gondola	Moves metal products (pipe, sheet pile, rebar) north and scrap south.	10 cars

¹⁰https://www.alaskarailroad.com/sites/default/files/Communications/2016_ARRC_Feight-Business_or.pdf

¹¹Alaska Railroad Corporation (2016) Business Facts: Real Estate and Facilities

Annual freight volumes have dropped 44 percent over the last eight years, with the total tonnage moved dropping from 6.6 million tons in 2008 to 3.7 million tons in 2016¹². Freight train operations have reduced due to lower demand, with scheduled freight operating between Fairbanks and Anchorage being lowered from two trains, seven days per week to one train, five days per week in 2017¹³.

There are currently no scheduled freight services operating to and from Seward. Freight trains are constructed on an as-needed basis, dependent on customer requirements and demand. Prior to 2015, there were regular coal trains moving between the Usibelli coal mine in Healy and the Seward Marine Terminal. Additional freight cars could be added to these trains when required. With the coal market downturn there are no coal trains scheduled to visit Seward in 2017.

1.2 - Seward Passenger Facilities

The ARRC owns a range of passenger facilities in Seward that collectively accommodate over 280,000 passengers from cruise ships and trains every year, together with other areas of the 328 acre Seward Marine Terminal site that are essential for all train operations. Railroad land not used to support freight or passenger operations is set aside for capital and expansion opportunities or is made available for lease. Figure III-1.2 shows the location of ARRC’s passenger-related facilities.

1.2.1 Seward Depot Services

The Seward Depot provides accommodations for passengers using the daily-scheduled Coastal Classic train between mid-May to mid-September. It is a single-story building constructed in 1997, which provides a waiting area, storage room, small mechanical room, a single restroom, and a reception/ticketing counter area with storage. Tourist pamphlets, brochures, and other information are available at the depot. Rail passengers can make transportation connections to the City of Seward, local tours, restaurants, attractions, hotels, and cruise ships from the depot. Additional restrooms are provided in a small, separate structure north of the depot.



Figure III-1.2: Passenger Facilities and Locations at Seward Marine Terminal

¹²https://www.progressiverailroading.com/short_lines_regionals/article/At-Alaska-Railroad-workforce-cuts-reflect-traffic-decline--51025

¹³ibid.



Photo III-1.4: Seward Depot (Source: DOWL, 2015)

Luggage handling occurs in a steel-framed tent located north of the restroom building. A small storage shed is located at the far north end of the depot site and a shore power connection is provided for parked trains at the south end. Photo III-1.4 shows the main Seward Depot building.

Both the depot and restroom buildings are raised construction, approximately 12 inches above adjacent grade, and are equipped with ramp and stair access that meet current Americans with Disabilities Act of 1990 (ADA) requirements. The one-story structures have modified hip roofs and horizontal wood siding. The facilities are seasonal, operating mid-May to mid-September. Currently, the Coastal Classic train arrives

in Seward daily at 11:05am and departs for Anchorage at 6:00pm. The heaviest use of the building is between 5:00pm and 6:00pm, which is after passengers have checked in for the return trip to Anchorage.

The depot and its parking lot are accessed by a one-way drive aisle that enters northeast of the depot from Leirer Road and exits south to Port Avenue. The parking available at the Seward Depot site is very restricted and overflow parking takes place on the south side of Port Avenue at “The Train Wreck”, a local café and site of interest. Similarly, traffic staging space at the depot is very restricted by the small size and dimensions of the site.

1.2.2 Dale R. Lindsey Alaska Railroad Intermodal Terminal



Photo III-1.5: Exterior View of Terminal (Source: Judy Patrick Photography, 2012)

The Dale R. Lindsey Alaska Railroad Intermodal Terminal (the terminal) was constructed in 1966 and is a 26,555 square foot, steel framed, rectangular building located on the Seward Passenger Dock. The main entrance to the building is located on the north end facing toward the Seward Marine Terminal uplands, and cruise ship access is located at the south end of the terminal, which crosses directly onto the passenger dock. The majority of the internal building area comprises an open space with a polished and heated concrete floor and a 25-foot ceiling. The walls are decorated with scenic banners of Seward and the Kenai Fjords National Park. The area has capacity to accommodate up to 1,675 people at one time. Photo III-1.5 is the exterior view of the terminal.



Photo III-1.6: Terminal Interior During Cruise Ship Embarkation (Source: DOWL, 2016)

The northeastern corner of the ground floor of the terminal contains a large storage closet, mechanical room, office space, and public restrooms. This area also contains a stairwell to an upper level with six additional offices, a mezzanine level meeting space and viewing area to the ground floor, a single male restroom, and a single female restroom. Photo III-1.6 shows the ground floor of the terminal building during a cruise ship embarkation.

The terminal building was initially constructed as an unheated warehouse to support dock operations. Substantial renovations were undertaken between 2001 and 2004 involving connecting the building to city sewer and increasing the useable floor plan by partially covering an existing depressed railroad track area.

Improvements also included seismic/structural upgrades, concrete floor poured over radiant heat tubing, new lighting, replacement of some doors and windows, exterior lighting replacement, security fence additions, and replacement and upgrades of the mechanical and electrical systems.

During the cruise ship season a variable layout is used for the building, dependent on whether an embarkation or disembarkation from a cruise ship is underway. The layout is also dependent on the cruise line operator and the number of ships at the passenger dock. Limited amenities such as a small coffee stand and a car rental concession stand are provided from portable facilities. Outside of the cruise ship season, the terminal is available for hire and has limited usage as a venue for sports practices, community festivals, weddings and other celebrations, and conferences.

1.2.3 Passenger Dock



Photo III-1.7: Buses Staged On Passenger Dock on Cruise Ship Day
(Source: Judy Patrick Photography, 2012)



Photo III-1.8: Passenger Dock
(Source: lokedavisphotography.smugmug.com, 2017)

The Seward Passenger Dock (also known as the West Dock) was constructed in 1965. The dock was a replacement dock for the original ARRC dock that was destroyed in the tsunami following the 1964 Good Friday Earthquake. The original dock and ARRC facilities were located in downtown Seward near the present day location of the Alaska Sealife Center, and these facilities were completely destroyed. The dock is a pile-supported pier dock with a concrete deck, a length of 736 feet and a width of 200 feet. The surface area of the dock is 147,200 square feet and it has an elevation of 24 feet relative to Mean Lower Low Water Level (MLLW). It is equipped with seven ship fenders, three barge fenders, 12 mooring bollards, and two mooring dolphins at 300 feet and 400 feet from the end of the dock. The Dale R. Lindsey Alaska Railroad Intermodal Terminal is located in the middle of the northern end of the Passenger Dock. Photos III-1.7 and III-1.8 show the Seward Passenger Dock.

The Seward Passenger Dock served as a multi-use dock for cargo vessels, cruise ships, and the Alaska Marine Highway System passengers until the construction of the Seward Freight Dock in 2001. While a majority of the current freight operations have now moved to the Seward Freight Dock, the Passenger Dock continues to provide support and moorage space for freight vessels during the tourist off-season.

The dock has reached its 50-year design life. The foundation has experienced significant corrosion, which has limited the remaining useful life of the dock and has resulted in weight restrictions being

implemented. As a result, the single rail track spur extending to the end of the dock is no longer in service. The current fendering system is in relatively good condition, although there is minor damage present on the timbers in the corner fenders. The dock surface is worn but in generally good condition.

1.2.4 Traffic Staging Area Outside Terminal

Traffic staging to support cruise ship activities takes place in a five-acre area located immediately to the north of the terminal at the head of the passenger dock. The area is used for loading and unloading passengers and luggage from buses and trains after they enter and exit the terminal. Tour companies also store vehicles at the site overnight. During the winter months the area is sometimes used as a temporary laydown area for freight. Access to the staging area is provided by a paved one-way loop road that connects to Port Avenue. A path located on the western side of the loop road provides pedestrian access between the terminal and Port Avenue, which provides connections west to the depot and small boat harbor. The eastern boundary of the staging area is defined by railroad tracks that are used by cruise train services.

In 2008, a parking and staging plan was developed that designates loading/unloading operations and short-term parking for shuttles and taxis immediately north of the main terminal entrance. Further to the north, the plan designates angled parking spaces for up to 13 buses and perpendicular parking spaces for at least 50 passenger vehicles. Pedestrian walkways and three travel lanes are designated to provide access to parking and loading/unloading areas. Currently, the staging/parking area is not striped in accordance with the plan illustrated in Figure III-1.3. ARRC staff members must coordinate staging of the traffic area on cruise ship days to facilitate safe passenger loading/unloading and traffic movements.

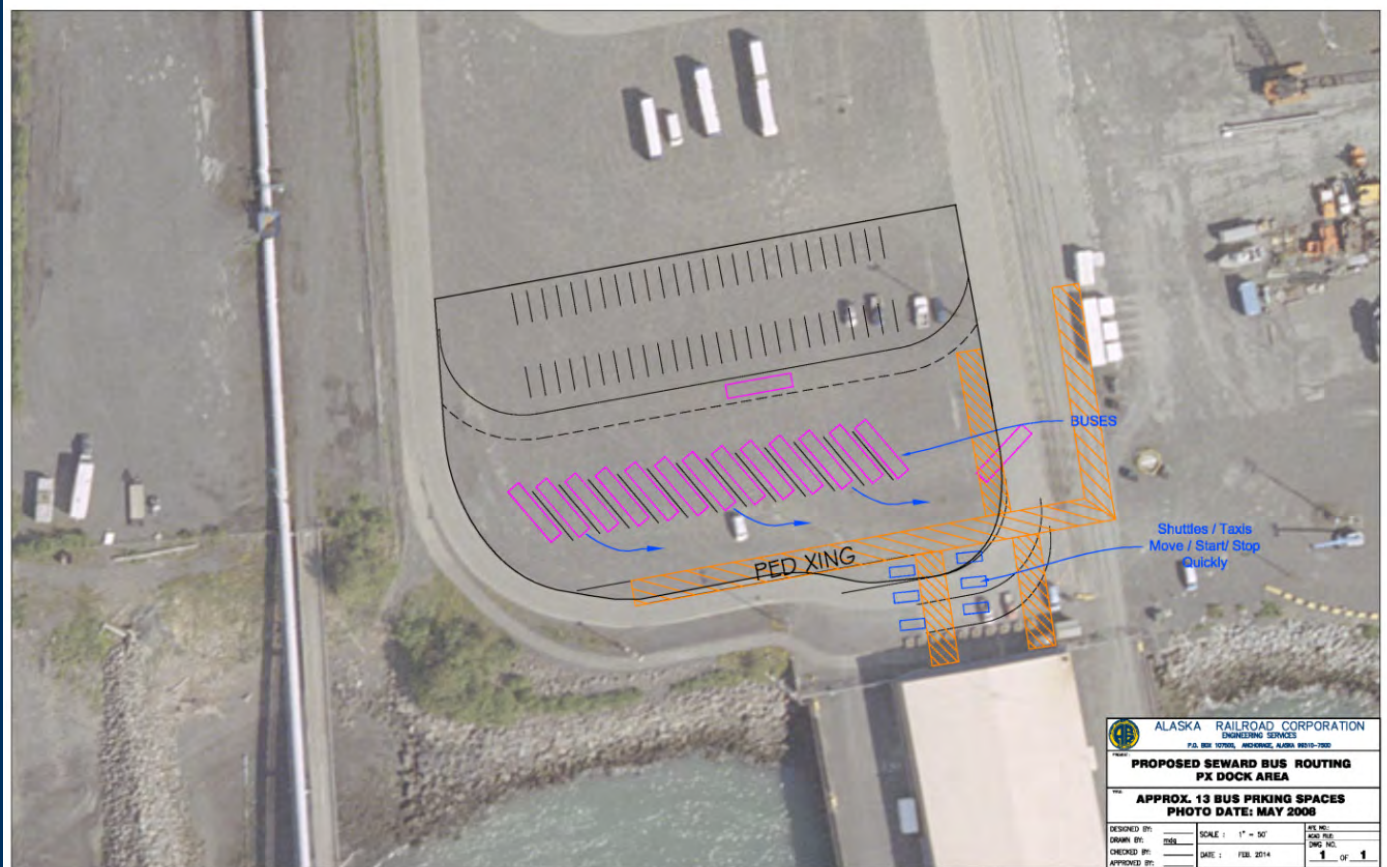


Figure III-1.3: Terminal Parking and Staging Plan

1.2.5 Passenger Dock Tracks

The tracks near the passenger dock were originally constructed in 1966. They are used for loading and unloading cruise ship passenger trains and occasionally for loading and unloading freight from rail cars. There are two parallel tracks located along the eastern edge of the traffic staging area outside the Terminal. A portion of the track extends onto the passenger dock, but this is out of service due to weight restrictions on the aging dock. Photo III-1.9 shows the passenger dock tracks.

1.2.6 Small Boat Harbor Land

The Seward Small Boat Harbor is bordered by Port Avenue to the north and Fourth Avenue to the west. The area provides a full service, small vessel port that is bordered on the western side by restaurants, hotels, tourist facilities, and other amenities. The ARRC owns the land located at the northern end of the small boat harbor, including land occupied by “The Train Wreck”, Hotel 360, Chinooks Restaurant, and an empty building that formerly used to house the Seward Yacht Club. The small boat harbor is located approximately 0.6 mile from the Seward Terminal and provides a hub for tourist activities in Seward. Photo III-1.10 is taken from the northern end of the small boat harbor, looking south.

1.2.7 Port Avenue

The facilities owned and operated by ARRC are connected by Port Avenue, which is classified as a rural collector road and is owned by the City of Seward. Port Avenue has an industrial character and provides a sidewalk on the northern side of the road that connects the railroad depot with the Seward Marine Terminal. Signage directs that pedestrians are not allowed to walk on the south side of the road, but this occurs anyway. The only tourism-focused business along the road is the Hertz rental car office. Other businesses along Port Avenue include Shoreside Petroleum and Icicle Seafoods, as well as a range of small industrial operations. Port Avenue also provides access to a public boat ramp and parking facility at the small boat harbor. Photo III-1.11 is taken close to the intersection of Fourth Avenue looking east along Port Avenue.



Photo III-1.9: Passenger Dock Tracks
(Photo: Hanson, 2015)



Photo III-1.10: Seward Small Boat Harbor
(Source: DOWL, 2017)



Photo III-1.11: Port Avenue (Source: DOWL, 2016)

1.3 - Seward Freight Facilities

The ARRC owns a range of freight-related facilities in Seward, which, together with other ARRC freight facilities and assets, provided for the movement of 4.29 million tons of freight in 2015¹⁴. In addition, ARRC owns approximately 328 acres of adjacent land essential for all train operations. Railroad land not used to support freight or passenger operations is set aside for capital and expansion opportunities or is made available for lease. Figure III-1.4 shows the location of ARRC's freight-related facilities.



Figure III-1.4: Freight Facilities and Locations at Seward Marine Terminal

¹⁴https://www.alaskarailroad.com/sites/default/files/akrr_pdfs/2015_O2_19_Real_Estate_Business_FS_PR.pdf

1.3.1 Freight Dock

The freight dock was constructed in 2001 to relieve the aging passenger dock and separate freight and passenger operations. The dock is used primarily for freight operations and has moved an average of 33,000 tons of freight annually between 2003 and 2014. The most significant vendors using the facility include Samson Tug and Barge, Alaska Logistics, LLC, Crowley Marine Services, and Shoreside Petroleum. The facility currently services barges, container ships, break bulk, and fishing and military vessels. The dock has also accommodated numerous other vessel types. Photo III-1.12 shows the west face of the freight dock, looking south.

The freight dock consists of compacted gravel fill supported on the west face by a sheet pile bulkhead and on the east face with a riprap armored embankment. It is 620 feet in length and has a width varying between 200 feet to 320 feet. It has an approximate area of 145,000 square feet, of which approximately 75,000 square feet is usable as a freight laydown area. The dock elevation is 20 feet MLLW, and the west face of the freight dock provides seven heavy duty pin pile fenders and nine mooring bollards. One mooring dolphin with an additional mooring bollard is provided at the south end of the freight dock.

The facility is connected directly to rail through two sets of rail extending to the south end of the dock. A security gate surrounds the facility and is monitored by active security detail and video surveillance. The dock is closed off to passengers and is principally used by heavy trucks, forklifts, and cranes. Vehicles access the dock via Port Avenue and must cross the tracks serving the passenger dock. The freight dock is in good condition with little to no damage and only minor corrosion.

In 2016, ARRC added a 7,000 square foot concrete slab, electrical power, and water service to the south end of the freight dock to accommodate fish unloading operations.

1.3.2 Seward Loading Facility

The SLF was built in 1984 as an economic development project for the State of Alaska, providing a facility to transfer bulk materials from Seward for shipment worldwide. The facility was constructed on property leased from the ARRC to Suneel Alaska Corporation. In 2003, ownership of the SLF was transferred to ARRC and it was operated by Aurora Energy Services, LLC, a subsidiary of Usibelli Coal Mine, Inc. on a permit basis. Photo III-1.13 shows the SLF dock trestle, conveyer, and ship loader.

The SLF was designed to transfer bulk materials, such as coal and gravel, from railcars, stockpile the materials on ARRC land, and load the material into bulk carriers, tethered to mooring dolphins. Coal has been the primary bulk material shipped to international markets.

The SLF consists of a coal bunker for unloading coal directly from rail cars, a conveyer, a stationary ship loader, and vehicle access. Three buildings provide operational and administrative spaces associated with the facility. The dock itself is a pile-supported trestle conveyer facility that measures 1,700 feet. The entire SLF facility is located on a 33.91 acre site, which includes the SLF itself and associated buildings, as well as capacity to stockpile 130,000 tons of material for loading. Figure III-1.5 sets out the various components of the SLF.

In 2016, due to diminishing demand for coal the facility was taken out of service and currently serves as a temporary mooring location for vessels. While both the superstructure and substructure of the dock, trestle, and conveyer are in good condition, other buildings on the site are in relatively poor condition and have reached the end of their useful life. Significant maintenance will likely be required to bring the conveyer and loader back into full operation. ARRC is currently considering alternative uses for the SLF land including providing some short-term permit space for storage on an acre of vacant land close to the small boat harbor.



Photo III-1.12: Freight Dock (Source: lukedavisphotography.smugmug.com, 2017)



Photo III-1.13: SLF Dock with Conveyer and Ship Loader (Source: Judy Patrick Photography, 2012)

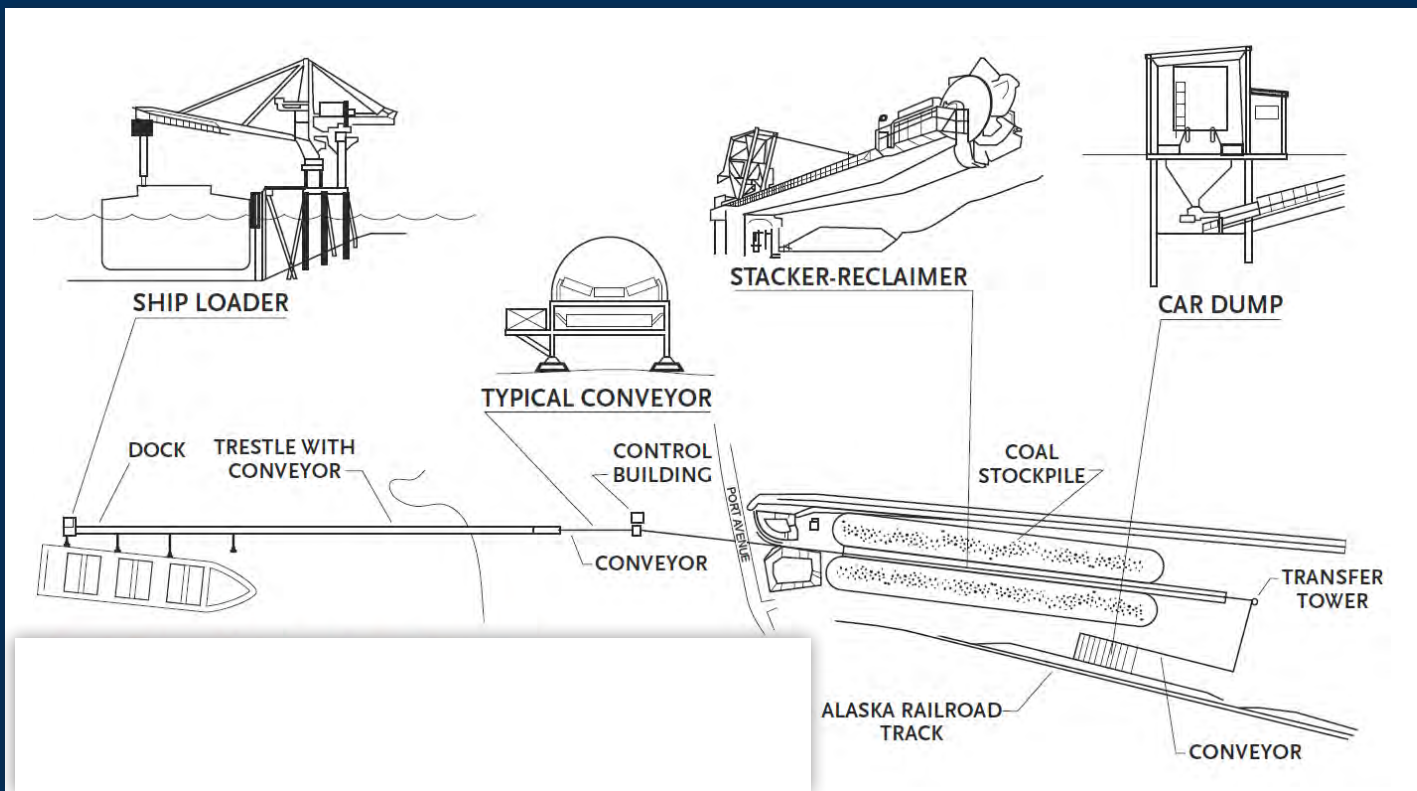


Figure III-1.5: Components of SLF

1.3.3 Permit Area Inside Freight Dock Fence

The permit area located inside the freight dock fence measures 18 acres and is used for the laydown of goods prior to loading for shipment from the freight dock or transport by truck or train from Seward. The area is shown in Figure III-1.6 on the following page.

The area is bordered on the east and south side by water and is fenced on the north and west side by the freight dock fence. Two 30-foot wide automatic gates, one at the west fence and one at the north fence, and a 30 foot cantilever gate at the north fence control access to the Seward Freight Dock. Pan-tilt-zoom (PTZ) security cameras monitor the permit area and moored vessels. Photo III-1.14 shows an aerial view of the permit and laydown area inside the freight dock fence.



Photo III-1.14: Permit and Laydown Area Inside Freight Dock Fence (Source: lokedavisphotography.smugmug.com, 2017)

The freight dock tracks traverse the permit area and provide a constraint to space that can be made available for laydown. A small building located just outside the Northwestern corner of the area, which is a shelter for the communications facilities operated by ARRC. This shelter is scheduled for replacement in the same location. Currently, three permit holders use designated spaces in the permit area.



Figure III-1.6: Permit Area Inside Freight Dock Fence

1.3.4 Permit Area Outside Freight Dock Fence



Photo III-1.15: Signage Upgrades Near the Port Avenue Access to the Freight Permit Area (Source: DOWL, 2017)

The permit area located outside of the freight dock fence extends north from the Port Avenue terminus. The area includes the freight building and associated well house, and the barge basin haul-out area. The area's borders are shown on Figure III-1.7.

The area is used by a range of permit holders for the laydown of goods prior to loading for vessel shipment from the freight dock or transport by truck or train from Seward. The area around the freight building has been used for marine maintenance activities by a range of permit holders and is also used for pipe laydown. Figure III-1.8 shows the location of current permit holder areas.

The barge basin is located on the eastern side of the freight dock, but it is not well used due to issues associated with siltation because the jetty that runs along the eastern side

of the barge basin is of insufficient height, which results in it being regularly overtopped and silt being deposited directly toward the basin from the braid of the Resurrection River. However, the uplands immediately adjacent to the barge basin have been used on a regular basis over the last several years for vessel haul-out to enable maintenance activities to be carried out. Figure III-1.9 shows the location of the barge basin and adjacent uplands.

Road access to the area is provided by Port Avenue, which is paved up to the at-grade crossing of the freight dock track. Roads are not paved beyond this point, but are visible due to regular use. Signage adjacent to the area directs unauthorized vehicles to stay out but has been described by some stakeholders as confusing and inadequate. Some upgrades were undertaken to signage during summer 2016, as shown in Photo III-1.15.



Figure III-1.9: Barge Basin

1.3.5 New Laydown Area



Photo III-1.16: New Laydown Area from the Southern End Looking Northeast (Source: DOWL, 2016)

In early 2015, ARRC commenced work at the northern end of the site to create a 10.9 acre gravel work pad for the storage of pipe, containers, or equipment. The area is divided into three sub-areas as shown on Figure III-1.10. Area 1 measures 5.1 acres; Area 2 measures 2.5 acres; and Area 3 measures 2.3 acres.

Development of the area is divided into two phases. Phase 1 is underway, and included 10.9 acres of vegetation clearing followed by the placement of granular fill in the fall of 2015. This fill material was previously stored on the site next to the passenger terminal parking area. The remainder of Phase 1 included the construction of an embankment along the eastern edge of the fill. Plans also provided for access roads to Airport Road, but these have not

been constructed. Phase 2 will consist of additional fill placement, compaction, and leveling of the new laydown area. On completion of the filling, compaction and leveling work, it will be available for lease. Photo III-1.16, on the previous page, shows construction progress on filling the area during summer of 2016.

The new laydown area has been developed as lease/permit space for a range of projects, particularly for the LNG pipeline being promoted by the state of Alaska's company, the Alaska Gasline Development Corporation (AGDC). Overhead electrical and communication lines cross the northern end of the laydown area. Gate-

controlled road access to Airport Road is available along the railway right-of-way, but it is not developed for commercial vehicle traffic and there is insufficient separation from the rail tracks for this to be converted into a formal road. Wetlands separate the laydown area from Airport Road.



Figure III-1.10: New Laydown Area

1.3.6 Freight Building



Photo III-1.17 Freight Building
(Source: Bettisworth North, 2015)

The freight building is a 4,000 to 5,000 square foot warehouse and heavy equipment maintenance structure with four offices, storage, a break room, and a restroom. Photo III-1.17 shows the western façade of the building.

It is a leasing asset for ARRC and is typically leased to permit holders operating out of the Port and uplands areas that benefit from proximity to barge, railroad, and truck freight traffic. Permit-holding on this property includes approximately 2.79 acres of uplands yard space, which includes a driveway around the building. The building is currently leased by Carlile Transportation Services.

The building is a steel framed structure with a slab-on-grade floor. It is clad in metal siding and roofing.

Outbuildings include a well house, which is located to the west of the freight building, and a septic field that is located to the east. There are semi-trailers that are used as storage units situated at the north end of the building. A portable toilet facility is located near the southeast corner of the building, which is made available for non-Carlile permit holders operating in the uplands area.

1.3.7 Railyard

The railyard consists of railway tracks between the Jesse Lee Main at the Airport Road grade crossing and Track #1 to the freight dock on Resurrection Bay. Features of the railyard include a wye connection to the Jesse Lee Main, three roundhouse tracks, a coal bunker track, and a seven track yard connecting to three upper lead tracks. The ARRC uses the railyard for:

- receiving freight trains from the north,
- departing freight trains to the north,
- sorting freight cars for delivery to local customers,
- storing empty railway cars and equipment until needed,
- inspecting and repairing rail cars,
- unloading coal,
- turning trains via the wye, and
- accessing the freight dock tracks.

With the exception of Tracks #3, #4 and #5, the rail at the Seward Marine Terminal is jointed 115 pounds/yard (lb/yd). Tracks #3, #4 and #5 are jointed 70lb/yd rail, which restricts their use for heavy freight loads. Wooden ties are used to anchor the tracks throughout the site. Figure III-1.11 shows the track map for the Seward Marine Terminal Site.

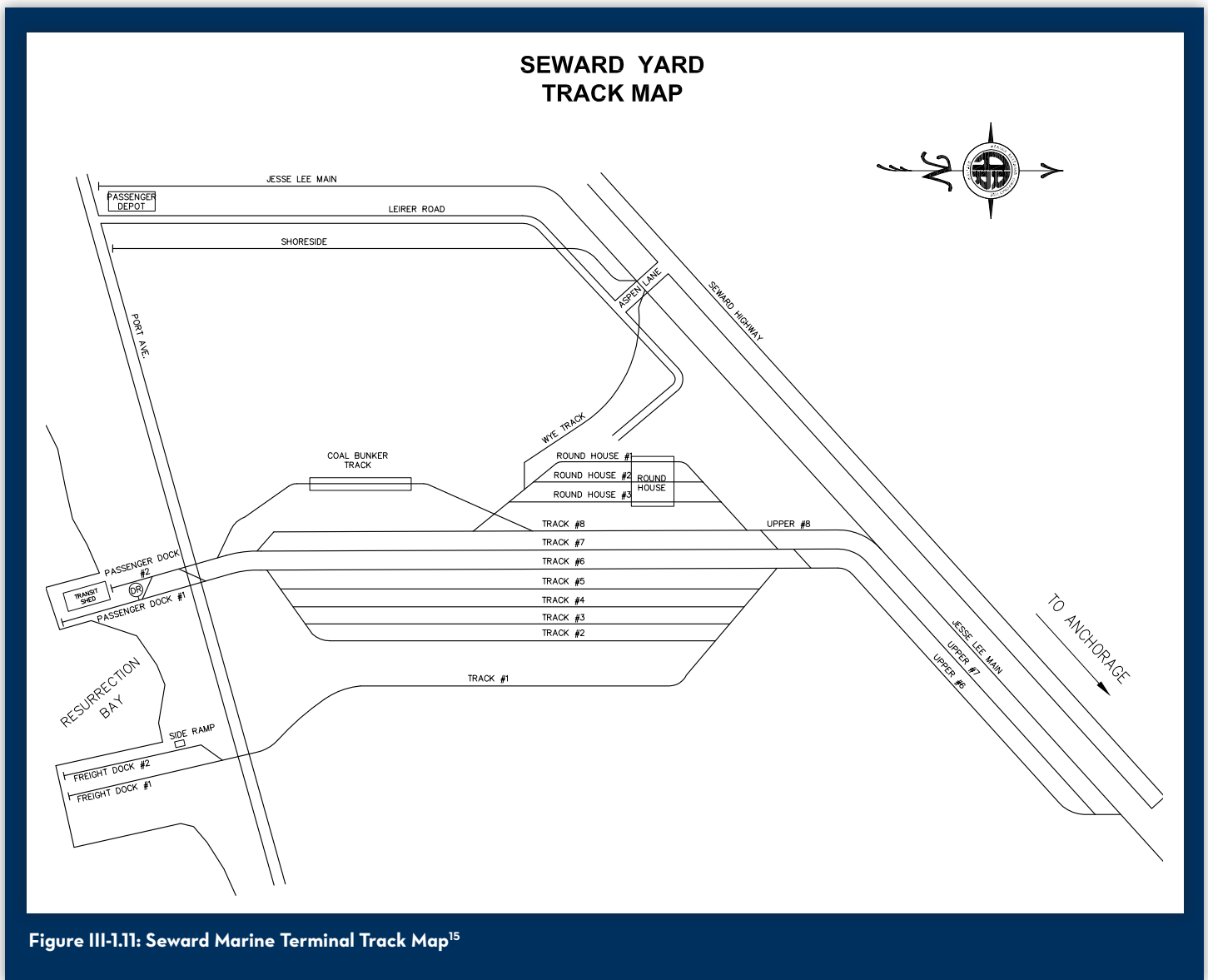


Figure III-1.11: Seward Marine Terminal Track Map¹⁵

¹⁵ARRC, 2017

2. Transportation Connections

2.1 - Nodes

A number of nodes serve or attract ARRC passenger and freight customers within the immediate Seward Marine Terminal vicinity and at outside locations. Nodes discussed in this study can be classified either as:

- primary points of service (i.e., locations where ARRC delivers customer service), or
- other points (i.e., origin/destination locations or intermediate attractions on the way to or from a primary point of service).

2.1.1 Passenger Nodes

ARRC owns a range of passenger facilities in Seward that collectively accommodate over 280,000 passengers from cruise ships and trains every year. Figure III-2.1 shows the location of ARRC's passenger-related facilities and nearby attraction.



Figure III-2.1: Passenger Nodes

Passenger Node 1: Passenger Dock

Cruise ship passengers arrive and depart from Seward at the Passenger Dock from mid-May to mid-September each year. The passenger dock is described in further detail in Part III, section 1.2.3.

Passenger Node 2: Terminal

Upon disembarking from their ship for a port of call or at the completion of a cruise, passengers walk or use a wheelchair for approximately 500 feet to move north along the dock to the terminal. Disembarking passenger

access is located at the south end of the terminal building and passengers then exit through the main doors on the north side of the terminal. After all passengers have disembarked, the terminal building is reconfigured for embarking passengers, who are processed through the terminal in the reverse direction and enter the building from the north. After clearing security provided by Transportation Security Administration (TSA) officials, embarking passengers exit the terminal through the south door and walk the length of the passenger dock to reach awaiting cruise ships. The terminal building is described in further detail in Part III, section 1.2.2.

Passenger Node 3: Terminal Staging/Parking Area

The main entrance to the terminal is located on the north end of the building, which provides access to a five acre exterior staging area used for loading and unloading passengers and luggage from buses and trains after passengers enter or exit the terminal. The terminal staging/parking area is described in further detail in Part III, section 1.2.4.

Passenger Node 4: Seward Depot

The Seward Depot accommodates rail passengers between mid-May to mid-September each year. Disembarking passengers alight at the depot and connect with subsequent modes of transport. Embarking passengers are marshalled by ARRC staff in groups designated by letters which correspond to train cars and are signaled by portable flags that are set up immediately adjacent to the train. The Seward depot is described in further detail in Part III, section 1.2.1.

Passenger Node 5: Small Boat Harbor

The Seward Small Boat Harbor is south of Port Avenue and east of Fourth Avenue. The area provides a full service, small vessel port that is bordered on the western side by restaurants, hotels, tourist facilities, and other amenities. The Small Boat Harbor is typically a destination or intermediate attraction between primary points of ARRC service. The Small Boat Harbor is described in further detail in Part III, section 1.2.6.



Photo III-2.1: Downtown Seward (Source: DOWL, 2017)

Passenger Node 6: Downtown Seward

Seward's downtown business district is located approximately 1.5 miles south of the Seward Marine Terminal. The downtown area offers restaurants, lodging accommodations, retail shopping and galleries, and attractions such as the Alaska Sealife Center bordering Resurrection Bay and the Seward Museum on Sixth Avenue immediately east of the downtown core along Fourth Avenue. Downtown Seward also offers a historic walking tour featuring landmark public buildings and private residences dating to the early 1900s. Photo III-2.1 illustrates downtown Seward, typically a destination or intermediate attraction between primary points of ARRC service.

Passenger Node 7: Locations North

The Municipality of Anchorage is located approximately 125 highway miles and 114 rail miles north of Seward. Most cruise ship passengers fly into or out of Ted Stevens Anchorage International Airport in Anchorage at the beginning or end of their visit. From Seward, Anchorage also commonly serves as a gateway to other areas to the north, including Denali National Park. Locations north of Seward are generally grouped together as a single node for purposes of this Plan and typically serve as origins/destinations or intermediate attractions between primary points of ARRC service.

2.1.2 Freight Nodes

ARRC customers move between multiple freight nodes, depending on the shipping commodity and mode of travel. Figure III-2.2 shows the location of ARRC's freight related facilities and destinations.



Figure III-2.2: Freight Nodes

Freight Node 1: Freight Dock

The Seward Freight Dock is located east of the passenger dock, is used primarily for freight operations, and has moved an average of 33,000 tons of freight annually between 2003 and 2014. Further detail on the Freight Dock is provided in Part III, section 1.3.1.

Freight Node 2: Permit and Laydown Areas

The permit area located inside the freight dock fence measures 18 acres and is used for the laydown of goods prior to loading for shipment from the freight dock or transport by truck or train from Seward. The permit area located outside the freight dock fence extends north from the Port Avenue terminus. The area includes the freight building and associated well house, and the barge basin haul-out area. The area around the freight building has been used for marine maintenance activities by a range of permit holders and is currently also used for pipe laydown. The barge basin is located on the eastern side of the freight dock. Over the last several years, the uplands immediately adjacent to the barge basin have been used on a regular basis for vessel haul-out to enable maintenance activities to be carried out. In early 2015, ARRC commenced work at the northern end of the site to create a 10.9 acre gravel work pad for storage of pipe, containers, or equipment. On completion of the filling, compaction, and leveling work, the area will be available for lease. Gate-controlled road access to Airport Road is available along the railroad right-of-way, but it is not developed for commercial vehicle traffic and there is insufficient separation from the rail tracks for this to be converted into a formal road. Further detail on the permit and laydown areas is provided in Part III, sections 1.3.3, 1.3.4 and 1.3.5.

Freight Node 3: Railyard

The railyard consists of railway tracks between the Jesse Lee Main at the Airport Road grade crossing and Track #1 to the freight dock on Resurrection Bay. Features of the railyard include a wye connection to the Jesse Lee Main, three roundhouse tracks, a coal bunker track, and a seven-track yard connecting to three upper lead tracks.

Freight Node 4: Loading Facility

The SLF was used to transfer bulk materials such as coal and gravel from railcars, stockpile the materials on ARRC land, and load the material into bulk carriers tethered to mooring dolphins. Coal has been the primary bulk material shipped to international markets.

Freight Node 5: Fish Processing Facility and Worker Dormitory

Icicle Seafoods operates a seafood processing facility on land leased from the City of Seward. The facility is bordered by Port Avenue to the north and by the small boat harbor to the south. The facility provides processing and shipping for fish products arriving at the Port of Seward. A worker dormitory is located on Leirer Road, which provides temporary accommodation for seasonal workers. Photo III-2.2 illustrates fish processing facilities, considered an origin or destination between primary points of ARRC service.

Freight Node 6: Petroleum Facilities

Just to the northeast across Port Avenue, Shoreside Petroleum operates a petroleum storage, fueling, and loading facility for petroleum products arriving at the Port of Seward. Shoreside Petroleum also holds a land permit for their fuel headers at the freight dock. Photo III-2.3 illustrates petroleum facilities, considered an origin or destination between primary points of ARRC service.

Freight Node 7: Marine Repair and Maintenance

Catalyst Marine Engineering (Catalyst) operates a shop on Alameda Road, near the Seward Marine Terminal. Catalyst undertakes marine repair and maintenance operations throughout Alaska and frequently obtains permits from ARRC to undertake marine repair and maintenance activities on land near the barge basin at the Seward Marine Terminal. Areas utilized for marine repair and maintenance activities are considered an origin or destination between primary points of ARRC service.

Freight Node 8: Locations North

The majority of freight received at the Port of Seward is ultimately moved to final destinations outside of Seward, primarily to the north, including Anchorage and Fairbanks. As the state's most populated city, Anchorage generates strong demand for goods. Other northern destinations, such as the Kenai Peninsula or Fairbanks, also receive products that have landed at the Port of Seward. Rather than identify individual destinations, this node broadly encompasses freight destinations north of Seward, considered an origin or destination between primary points of ARRC service.

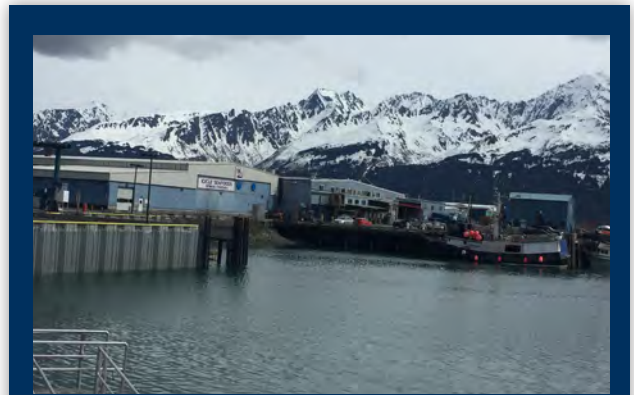


Photo III-2.2: Fish Processing Facilities
(Source: DOWL, 2017)



Photo III-2.3: Petroleum Facilities (Source: DOWL, 2017)

2.2 - Links

Passenger and freight customer trips involve multiple combinations of origins, destinations, and modes. To simplify the discussion of linkages, this section examines primary movements of ARRC passenger and freight customers. Depending on data availability, movement includes a discussion of typical routes between origin and destination points; travel modes and associated infrastructure assets and transportation services; trip duration, distance and cost; and relative trip demand. Potential barriers are also discussed that may impede trip efficiency and execution.

Passenger Movements - Cruise Ship Port of Call

Route

The Port of Seward serves as a port of call for multiple cruise ship lines during the summer tourist season. The term “port of call” indicates an intermediate stop in a cruise itinerary rather than an origin or destination point. Ships that call on Seward are most frequently on a cruise that circumnavigates multiple countries, and Alaska is one of the many destinations visited during the cruise. During a port of call, cruise ship passengers are often afforded an opportunity to disembark for a day in Seward. Many choose to enjoy the small boat harbor area or downtown Seward during their stay, as well as a range of tours and short trip options. Figure III-2.3 illustrates these movements.

Mode Description

At the terminal, passengers must navigate the staging and parking area. Paving and striping was installed at the terminal in 2014, which significantly improved traffic circulation. However, even with the recent improvements, there is still a need for the Port Manager to marshal traffic during the disembarkation and embarkation peak periods. From the terminal, cruise ship passengers may choose to access Seward’s primary tourist hubs using transit services, chartered vehicles, or by walking/using a wheelchair.

- **Transit**

The City of Seward operates a free shuttle with regularly scheduled service daily from 10:00am to 7:00pm and from 8:00am to 7:00pm on cruise ship days from May through September. Starting at the passenger terminal, the shuttle completes a 30-minute loop with fifteen stops that include the train depot, small boat harbor, downtown Seward, and a number of other attractions. The free shuttle service uses a school bus, which has a high first step, narrow aisles, and absence of space for luggage.

- **Chartered Services**

A wide variety of chartered vehicles may be commissioned to provide transportation while passengers are in Seward.

- **Walking/Wheelchair**

Directional signage is lacking between the depot, terminal, small boat harbor, and downtown areas. Instructions are issued to passengers prior to arrival at Seward, but insufficient signage assists passengers in navigating the area.

Departing the passenger dock and terminal, a paved pathway is provided on the west side of the traffic staging area (approximately 0.2 mile in length) and a five-foot concrete sidewalk is located on the north side of Port Avenue (approximately 0.3 mile in length). To remain on paved walking facilities, passengers leaving the terminal by foot or wheelchair must cross Port Avenue at a striped crosswalk directly onto a bridge spanning SLF pipelines. The bridge and transitions on each end do not meet accessibility standards under the ADA. Specifically tripping hazards, excessive grades, and narrow widths limit access to people with disabilities. Additionally, the Port Avenue sidewalk crosses multiple intersecting roadways and industrial driveways, exposing passengers to safety hazards associated with heavy vehicle movements.

Rather than crossing Port Avenue to the north, some passengers choose to travel on an unpaved surface along the south side of Port Avenue (or even within the eastbound vehicle travel lane) directly adjacent to industrial uses, exposing them to operational conflicts from the Iccle Seafoods plant, entrance road to the small boat harbor boat ramp, and other heavy vehicle movements.

Within this industrial portion of the study area, street maintenance is not prioritized, resulting in a dirty, unattractive environment, and street furniture is largely absent or poorly maintained. Sidewalks are not regularly cleared during winter months (which generally does not affect ARRC’s summertime passengers). In the spring, street sweeping and crosswalk marking often does not occur until after the tourism season has started, which can add to confusion for passengers walking along Port Avenue during the early weeks of the cruise ship season. After traveling approximately 0.3 mile along Port Avenue sidewalks, passengers must cross to the south side of Port Avenue at a second marked crosswalk to access a boardwalk serving the small boat harbor or sidewalks on Fourth Avenue leading to downtown Seward.



Figure III-2.3: Passenger Movements - Cruise Ship Port of Call

The boardwalk may be accessed beginning on the south side of Port Avenue behind “The Train Wreck” and continuing along the west side of the small boat harbor. The boardwalk provides direct access to tourist-oriented businesses including hotels, restaurants, and boat tours leaving from the harbor. The boardwalk is not ADA-compliant and is discontinuous in locations, forcing passengers to navigate through parking lots around the front side of businesses facing Fourth Avenue before rejoining the facility. The boardwalk extends approximately 0.3 mile, ending at Seward Safari Lodge.

For passengers desiring to access downtown Seward by foot or wheelchair, marked crosswalks and sidewalks along Fourth Avenue provide a direct route approximately 1.5 miles in length. The facilities are in good to fair condition but do not meet ADA requirements. Heading downtown from Port Avenue, sidewalks initially extend along both sides of Fourth Avenue until Van Buren Street. Then, sidewalks continue along the west side of the street until Madison Street, transition to the east side of the street until Jefferson Street, and then extend again on both sides of Fourth Avenue through the core tourist-oriented portion of downtown, which extends from Jefferson Street to Railway Avenue, terminating at the head of Resurrection Bay. Passengers may also access downtown Seward via the Coastal Walkway, which extends from the intersection of Fourth Avenue and Van Buren Street to the Alaska Sealife Center at Fourth Avenue and Railway Avenue.

Sidewalk and path facilities within the study area generally traverse level terrain. Although walking speeds vary, passengers can typically reach the small boat harbor within 15 minutes and downtown Seward within 45 to 60 minutes from the passenger dock.

Trip Demand

The total volume of cruise ship passengers is set out in Part III, section 3.1.1. This includes the total number of passengers starting or ending their cruise trip in Seward, combined with the total number of passengers visiting Seward as a port-of-call on the way to another destination. The volume of round trip (i.e., port-of-call) passengers has fluctuated widely, ranging in recent years from a low of 2,208 passengers in 2006 to a peak of 23,400 passengers in 2011. In 2016 (the most recent year for which information is available), 6,794 passengers made a port of call in Seward. The project team was unable to secure data on the passenger volumes for individual modes of transport. Pedestrian, shuttle, and chartered service counts were not collected.

Passenger Movements - Cruise Ship Embark/Disembark

Route

The Port of Seward is one of four primary departure ports used for most Alaska cruises. Seward is also a top cruise landing location. Passengers beginning or ending their cruise in Seward typically fly into or out of Ted Stevens Anchorage International Airport. Figure III-2.4 illustrates these movements.

Mode Description

The two primary means of travel between Seward and Anchorage for cruise passengers are the Alaska Railroad and Seward Highway.

Alaska Railroad

Many cruise passengers purchase package plans that include chartered service on the Grandview Cruise Train arriving at or departing directly from the terminal.

- ***Grandview Cruise Train***

A cruise train provides passenger transportation connections between the cruise ship landing location in Seward to cities, airports and other locations throughout the state. The cruise train service is provided to and from the Seward passenger dock and terminal to the Ted Stevens Anchorage International Airport and destinations north of Anchorage as a service to the cruise line companies and an alternative to transportation by motor coach. Passengers also have the choice of riding the Coastal Classic train, or making alternative arrangements for transportation. The majority of operators making calls to Seward offer the cruise train to passengers ending their cruise and new passengers about to start their cruise. These types of cruises are known as ‘turn’ cruises. Cruise trains carrying disembarking passengers depart Seward at 7:00am on cruise ship days, while cruise trains carrying embarking passengers arrive in Seward at 5:00pm.



Figure III-2.4: Passenger Movements - Cruise Ship Embark/Disembark

Cruise trains stage and load passengers adjacent to the tracks leading to the terminal. This area is paved and striped to visually separate it from automotive traffic. Although tracks extend onto the passenger dock, they are not in use due to weight restrictions on the dock. The limited space between the terminal and the at-grade crossing on Port Avenue poses a constraint on the length of the cruise train to avoid blocking the road during loading and unloading.

Passengers embarking or disembarking at the dock may travel by foot or wheelchair between the dock and terminal building. From the terminal, cruise trains travel between Seward and Anchorage. From Anchorage, cruise passengers may connect with commercial air services, transfer to other cruise trains or travel modes, or remain in Anchorage and transfer to hotels and other destinations. The cruise train service is very popular and is almost always fully booked.

For those unable to secure bookings on the cruise train and for independent travelers not purchasing a train package, cruise passengers may elect to connect via the regularly scheduled Coastal Classic service arriving and departing from the depot.

- **Coastal Classic**

The Coastal Classic train operates regularly scheduled services between mid-May and mid-September each year, departing Anchorage at 6:45am and arriving into Seward at 11:15am, before returning to Anchorage with a 6:00pm departure from Seward and at 10:15pm arrival at the Anchorage depot. The trip between Seward and Anchorage is 114 rail miles and typically takes 4.5 hours. The Coastal Classic operates independently of cruise ship operations, but a large number of passengers using the service are also connecting to cruise ships. Disembarking cruise passengers must spend the day in Seward before departing on the Coastal Classic. Many choose to visit the small boat harbor or downtown Seward as described above in the port of call discussion.

A small number of seats on the Coastal Classic are sometimes booked by cruise companies to provide train transfers when seats on the Grandview Cruise Train are not available. A larger number of seats are booked by local tour companies to provide transfers between Anchorage and Seward.

Since 2013, the busiest day on the Coastal Classic is Friday, which also coincides with the largest cruise ships that visit Seward and cater for higher numbers of independent travelers. The second busiest day is Saturday. Passenger numbers are not able to be quantified as bookings are handled independently or through tour companies, rather than directly with the cruise lines. Observations on Friday May 20, 2016, suggest that of a 356-person Coastal Classic train load, at least two-thirds were cruise ship passengers arriving in Seward to join a cruise. Of these passengers, approximately two-thirds secured bus shuttles between the depot and terminal and the remaining third walked along Port Avenue. Information on travel options is provided to passengers on the train prior to their arrival in Seward.

Parking and traffic staging at the depot is very restricted. Vehicles must access the depot via a one-way drive aisle that enters from Leirer Road northeast of the depot and exits south to Port Avenue. Overflow parking occurs on the south side of Port Avenue at The Train Wreck.

Cruise passengers must arrange travel between the depot and passenger terminal using one of the following three primary modes.

- **Transit**

The free City of Seward shuttle completes a 30-minute loop daily. The passenger terminal and train depot are the first two stops.

- **Chartered Services**

Local taxi services provide pick up and drop off services at the passenger terminal and train depot. Multiple hotels also offer shuttle service for guests staying overnight in Seward before embarking on the Coastal Classic or renting private vehicles for their onward travel.

- **Walking/Wheelchair**

Passengers may elect to travel between the passenger terminal and train depot by foot or wheelchair. The route is approximately 0.6 mile in length, and is owned by the City of Seward. After traversing the west side of the traffic staging area (approximately 0.2 mile in length), passengers must cross Port Avenue at a striped crosswalk and travel along the north side of Port Avenue (approximately 0.3 mile in length). Just before the Fourth Avenue intersection, passengers reach the train depot parking area to the north. As described previously in the port-of-call section, primary challenges with this mode include a lack of directional signage, conflicts with adjacent industrial users, and multiple ADA deficiencies. Discussions have been held with the City of Seward around improvements along the Port Avenue corridor.

Seward Highway

- **Rental Vehicles**

Passengers may rent a vehicle if they desire to drive themselves between Anchorage and Seward. Hertz operates a rental vehicle office approximately 0.1 mile east of the train depot on Port Avenue.

The drive from Anchorage to Seward is approximately 125 highway miles on the Seward Highway, which is classified as a principal arterial, is part of the National Highway System, and is owned and maintained by DOT&PF. The road is classified as a National Scenic Byway. Trip duration is typically 2.5 hours, depending on speeds and traffic levels. One way to assess traffic demand is using the average annual daily traffic (AADT) concept, which equals the total number of vehicles using a roadway during a year divided by 365. In 2015, DOT&PF reported AADT volumes on the Seward Highway ranging from 10,141 at Potter Marsh (Milepoint [MP] 117.17) south of Anchorage to 1,611 at Moose Pass (MP 31.398) north of Seward. AADT volumes on the Seward Highway immediately north of Port Avenue (MP 1.47 to 3.26) were 8,292.

Seasonal fluctuations in traffic on the Seward Highway are dramatic. The Seward Highway Moose Pass permanent traffic recorder (PTR) station at MP 31.398 recorded July 2013 traffic volumes at 238 percent of the annual average and December volumes at 39 percent of the annual average. Similarly, the PTR at Placer River (MP 77.220) recorded a high of 250 percent in July and 46 percent in December. Daily fluctuations are more modest, with Fridays and Saturdays recording the highest volumes ranging from 116 to 125 percent of average day volumes at the two PTR locations.

Given the high summertime weekend traffic volumes, ARRC customers can expect periodic delays and stop-and-go conditions on the road trip from Anchorage to Seward. The high crash rate on the Seward Highway at weekends can lead to extended delays.

- **Motor Coaches**

The cruise companies and other chartered operations transport cruise ship passengers to and from Seward using motor coaches. For the embarkation of passengers, motor coaches collect passengers in either downtown Anchorage, or the Airport and transport them to Seward via the Seward Highway. Transfers are either direct, taking approximately two-and-a-half hours in duration, or provide a half-day sight-seeing tour including a stop at the Portage Wildlife Center. The same options are offered to disembarking passengers, who load onto the motor coaches at Seward. Motor coaches that are chartered directly by the cruise companies load directly from the passenger dock, and private chartered motor coaches load from outside the passenger terminal.

- **Chartered Services**

As well as motor coaches, a wide variety of smaller chartered vehicles may be commissioned to provide transportation between Anchorage and Seward.

Trip Demand

Cruise ship passenger landings (arriving at Seward) have increased from approximately 64,400 to 88,600 passengers from 2005 to 2016, while embarking passengers (departing Seward) have increased by similar volumes (65,400 to 89,400 passengers) over the same time frame (Table III-2.1). The total number of passengers arriving in Seward or departing from Seward in 2016 was nearly 178,000.

Table III-2.1: Embarking/Disembarking Passenger Volumes

Year	Arriving at Seward (Disembarking)	Departing Seward (Embarking)	Total (Arriving & Departing)
2005	64,387	65,418	129,805
2006	65,704	67,290	132,994
2007	74,143	70,390	144,533
2008	71,062	61,219	132,281
2008	69,267	68,028	137,295
2010	64,455	54,053	118,508
2011	62,294	44,481	106,775
2012	62,064	63,603	125,667
2013	59,483	57,332	116,815
2014	70,634	64,953	135,587
2015	84,643	83,223	167,866
2016	88,562	89,389	177,951
Annual Average 2005-2016	69,725	65,782	135,506

(Source: ARRC, 2016)

The Coastal Classic provides regularly scheduled connecting train service to Seward. Annual ridership from 2013 to 2016 is presented in Table III-2.2.

Table III-2.2: Total Ridership on Coastal Classic

Year	Total Ridership
2013	51,287
2014	51,999
2015	58,619
2016	63,839

(Source: ARRC, 2016)

The total ridership of the Coastal Classic is increasing each year with a substantial increase observed between 2014 and 2015. July historically has the highest ridership over the course of the month, and May and September are the quietest months. Throughout July, the number of passengers riding the Coastal Classic is more consistent than in other months with the train providing a popular summer attraction. Since 2013, the busiest day on the Coastal Classic is Friday, which coincides with the largest cruise ships that visit Seward and cater to higher numbers of independent travelers. The second busiest Coastal Classic day is Saturday, which is not a cruise ship day.

Based on daily fluctuations in Coastal Classic ridership and observed correlations with cruise ship operations, the project team estimates approximately one-third of Coastal Classic customers are connecting to a cruise ship offering, as presented in Table III-2.3.

Table III-2.3: Cruise Ship Passenger Percentages on Coastal Classic Trains

Day of Week	Cruise Ship Activity	Approximate Daily Cruise Passenger Percentage ^a	Approximate Weekly/Monthly Cruise Passenger Percentage
Monday	Bi-weekly cruise ships	60%	33%
Tuesday	No cruise ships	0%	
Wednesday	Bi-weekly cruise ships (served by cruise train)	0%	
Thursday	Bi-weekly cruise ships (served by cruise train)	0%	
Friday	Weekly cruise ships catering to independent travelers	60%	
Saturday	No cruise ships	0%	
Sunday	Weekly cruise ships with ground service	30%	

(Source: ARRC, 2017)

^aApproximate percentage based on observations of pedestrian movements at depot.

The project team was unable to secure data on the passenger ridership of the Grandview Cruise Train. However, the passenger capacity can be used to estimate the annual ridership of the cruise train. The current maximum loading capacity for the Grandview Cruise Train includes one dining car and seven 76-passenger cars (532 passengers)¹⁶. Both the cruise companies and ARRC have advised that the cruise train is consistently fully booked. Therefore, assuming a normal loading of 532 passengers and 62 ‘turn cruise’ calls in 2016, the total number of passengers disembarking to the cruise train would be 32,984, and the total number of passengers embarking from a cruise train would be 32,984. This assumes that the total ridership of the cruise train in 2016 is 65,968. Table III-2.4 extends these assumptions to calculate mode splits for cruise ship passengers.

Table III-2.4: Assumed Mode Splits for Cruise Passenger Transport

Year	Total Number of Cruise Ships	Total Cruise Passenger Landings	Total Coastal Classic Ridership ¹⁷			Total Assumed Grandview Cruise Train Ridership		Other Modes of Transport	
			Total Ridership Number	Cruise Number	Cruise Percentage (Assuming 33% of Coastal Classic Customers are Cruise Ship Passengers) ^a	Cruise Number	Cruise Percentage (Exclusively Cruise Ship Passengers) ^b	Cruise Number	Cruise Percentage
2013	50	116,815	51,287	17,079	14.6%	65,968	56.5%	33,768	28.9%
2014	49	135,587	51,999	17,316	12.8%	65,968	48.7%	52,303	38.6%
2015	64	167,866	58,619	19,520	11.6%	65,968	39.3%	82,378	49.1%
2016	67	177,951	63,839	21,258	11.9%	65,968	37.1%	90,725	51.0%

(Source: ARRC 2017)

^a Assumed percentage based on daily fluctuations in Coastal Classic ridership and observed correlations with cruise ship operations. Actual percentage likely varies depending on day of the week, month, and other factors.

^b Grandview ridership data unavailable for 2013-2015. Table approximates these years based on known 2016 ridership.

Under these assumptions, in 2016 approximately 12 percent of cruise passengers relied on Coastal Classic for transport, 37 percent traveled via the Grandview cruise train, and 51 percent used another mode of transport (such as chartered motorcoach or rental car).

¹⁶Hanson Alaska, LLC, Email correspondence dated 2/21/2017

¹⁷ARRC Coastal Classic Data

Passenger Movements - Non-cruise Coastal Classic Customers

Route

ARRC offers regularly scheduled rail service for passengers departing from or arriving in Seward. Non-cruise passengers use this service to travel between Seward, Anchorage, and other locations to the north without relying on ground transportation on the Seward Highway. Figure III-2.5 illustrates these movements.

Mode Description

Similar to cruise ship embark/disembark movements, ARRC passengers arriving at the depot from locations north may access the small boat harbor and downtown Seward via walking/wheelchair, the free City shuttle, or chartered vehicles such as tour company transfers or local taxi services.

Non-cruise Coastal Classic customers may also transport bicycles on the train for a fee of \$25. ARRC estimates approximately two to ten bicycles are transported daily by train service. Upon arrival in Seward, customers may collect their bicycles from the luggage car and ride them on surface streets or multi-modal trails to the small boat harbor, downtown Seward, or other destinations. Bicyclists departing or arriving at the depot face potential conflicts with pedestrians, motorized vehicles transporting passengers, and commercial/industrial movements in the immediate vicinity.

Trip Demand

The majority of Coastal Classic customers (approximately two-thirds) travel between Seward and locations north without embarking or disembarking from a cruise ship (refer to Table III-2.4). From 2013 to 2016, the assumed number of non-cruise passengers ranged from 34,000 to 42,500 annually.



Figure III-2.5: Passenger Movements - Non-cruise Coastal Classic Customers

Container/Break Bulk Movements

Figure III-2.6 illustrates container movements associated with ARRC freight customers.



Figure III-2.6: Container and Break Bulk Movements

Route and Mode Description

After barges and container ships berth at the freight dock, container cargo is directly unloaded onto truck or rail transport at the dock.

Alaska Railroad

Freight customers are served by two parallel tracks extending to the end of the freight dock. The two tracks traverse the permit area and provide a constraint to space that can be made available for laydown. The tracks converge onto Track #1 and Upper Track #6 before joining the Jesse Lee Main headed north, as illustrated previously in Figure III-1.11.

Seward Highway

Ships berthing at the freight dock unload container and break bulk products directly onto commercial trucks. For freight stored temporarily, trucks may access permit and laydown areas onsite via unpaved, unnamed access roads within the gated and ungated areas.

For freight destined immediately northward, trucks travel from the dock on access roads through the permit and laydown area across two at-grade rail crossings located directly north of the freight dock and immediately before the unnamed access road

transitions to paved roadway at Port Avenue. The at-grade crossings have a high grade differential on both sides, making it difficult for forklifts, trucks, and other equipment to cross.

For container and break bulk freight destined northwards, vehicles are provided a right-turn acceleration lane to access the Seward Highway at the Port Avenue intersection with the highway. The geometric configuration of the acceleration lane requires vehicles merging onto the Seward Highway to look nearly backward to safely enter the northward traffic flow.

Trucks must also contend with competing industrial movements within the permit area and along Port Avenue, which is classified as a major collector roadway and is owned and maintained by the City of Seward. In 2015, DOT&PF estimated AADT volumes of 1,501 along the majority of Port Avenue and 3,165 between Forth Avenue and the Seward Highway. During the peak summertime season, seasonal traffic volumes are substantially higher.

Although Port Avenue experiences the highest traffic volumes, two alternate connections are available to access the Seward Highway. One is an intersection at the northeast end of Leirer Road onto the Seward Highway, which is also known as Aspen Lane (refer to Figure III-2.7). This requires an at-grade rail crossing immediately followed by a ninety degree right turn, and a long truck may extend back onto the parallel tracks while waiting to turn.

For trucks entering the industrial area, a turn from Seward Highway east onto the Leirer Road intersection may leave some longer trucks extending onto Seward Highway when trains are blocking the at-grade crossing. In addition, the condition of Leirer Road is relatively poor due to frequent potholes in the gravel surfacing, and the right of way is narrow. The road crossing from the railroad onto Seward Highway (Aspen Lane) is also narrow and has a compulsory stop located before and after the railroad tracks, which could be challenging for truck movements. Trucks must also be aware of non-motorized users on the multi-use trail located immediately adjacent to the Seward Highway. However, sight lines at this intersection are good.



Figure III-2.7: Road Connections Between the Seward Marine Terminal and the Seward Highway

The second alternate connection to the Seward Highway is an informal route through the railyard that connects first to Airport Road, which then accesses the Seward Highway. Airport Road is owned and operated by DOT&PF and recorded AADT volumes of 171 in 2015. Like the turn from Leirer, waiting to turn right onto Seward Highway can leave some longer trucks stopped on the tracks. Also like Leirer Road, an east turn onto Airport Road from the Seward Highway can leave longer trucks extending onto the highway while trains are using the tracks. This turn movement also has poor visibility, particularly for vehicles turning left. The informal road access is gated and access is discouraged except by arrangement due to limited separation from the tracks.

Trip Demand

For 2015 and 2016, ARRC recorded approximately 360 train cars per year of containerized freight departing Seward. The majority of this was associated with Spenard Building Supplies (SBS) freight on two scheduled SeaTac Marine barges. The port typically receives one to three SBS barges per year, depending on ice conditions at the Port of Anchorage.

Sourdough comprises approximately 90 percent of trucks transporting freight from the freight dock. In 2016, Sourdough reported 2,754 freight trucks, 1,026 barge and project trucks, and 432 heavy haul trucks. Carlile comprises the remaining 10 percent of trucks transporting freight from the freight dock. In 2016, Carlile reported 306 freight trucks, 114 barge and project trucks, and 48 heavy haul trucks. Carlile's 2015 truck numbers were approximately 12 percent higher than 2016.

Petroleum Movements

Figure III-2.8 illustrates petroleum movements associated with ARRC freight customers.



Figure III-2.8: Petroleum Movements

Route and Mode Description

Petroleum may be unloaded and stored at the Shoreside Petroleum facility or shipped to locations north via the Seward Highway. As described above for container and break bulk movements destined northward, heavy commercial vehicles carrying petroleum may access the Seward Highway via Port Avenue, Leirer Road, or Airport Road. Competing industrial movements on Port Avenue and the geometric configuration of the right turn acceleration lane onto Seward Highway create challenges for this movement, while the close spacing of the railroad tracks with the highway poses challenges at Leirer and Airport Roads.

Trip Demand

The project team was unable to secure data on truck volumes from Shoreside Petroleum.

Fish Product Movements

Figure III-2.9 illustrates fish product movements associated with ARRC freight customers.

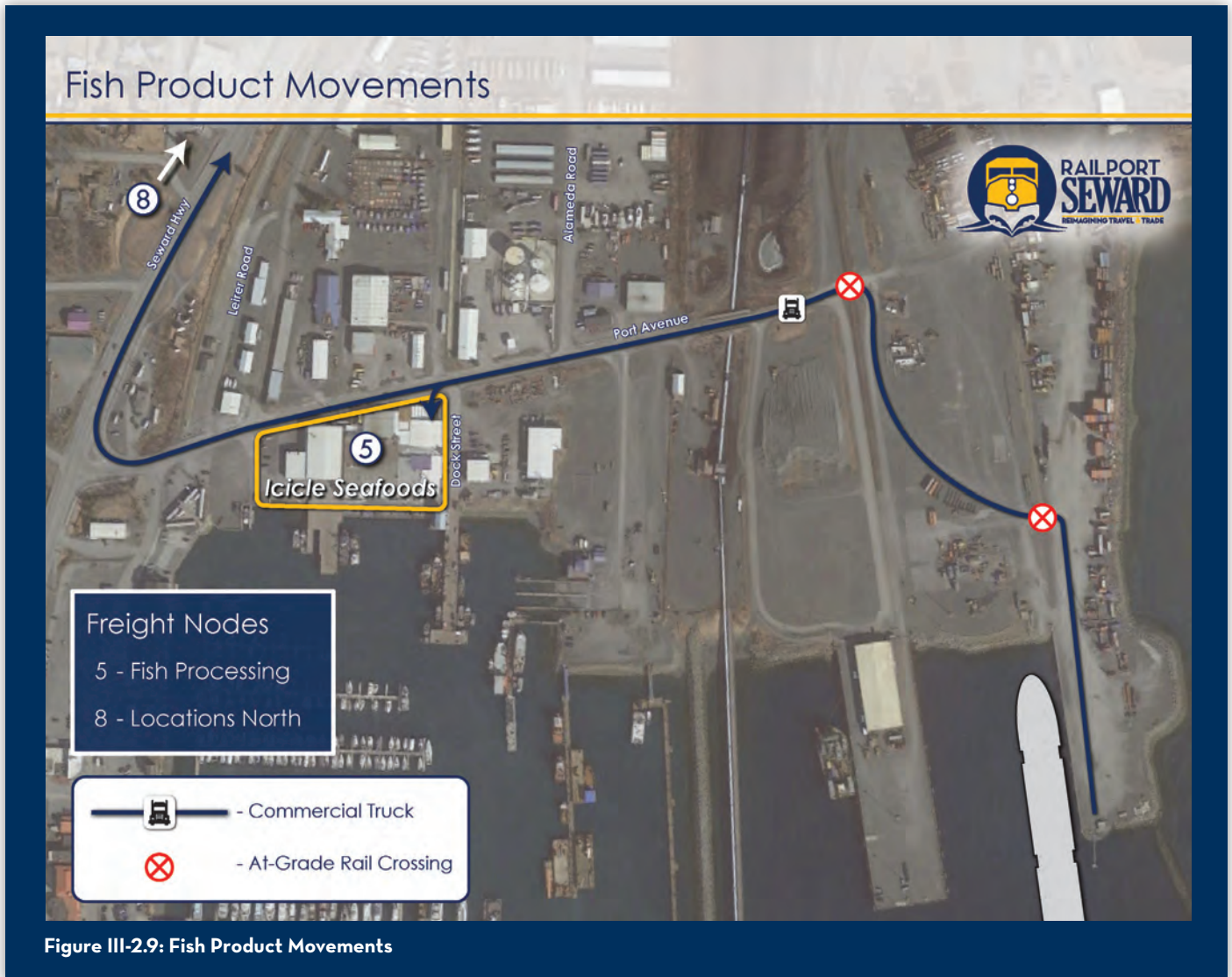


Figure III-2.9: Fish Product Movements

Route and Mode Description

The seafood industry is a major economic driver for Seward's economy. Seward is one of the top commercial fishing ports in Southcentral Alaska and one of the largest ports in the United States (as ranked by landed value). In 2014, Seward processors bought 52.4 million pounds of seafood worth \$52.7 million, making it the 21st largest port in the United States by value out of 128 commercial fishery landings.

In 2016, ARRC added a 7,000 square-foot concrete slab, electrical power, and water service to the south end of the freight dock to accommodate fish unloading operations. Fish products arriving at the freight dock are unloaded and transported to fish processing facilities by truck. The trucks exit the freight dock and traverse the permit and laydown areas to access Port Avenue. Fish products are unloaded and processed at the Icicle Seafoods facility at the north end of the small boat harbor (Freight Node 5). After processing, seafood products are transported by truck to northern locations via the Seward Highway.

As described before for container and break bulk movements destined northward, heavy commercial vehicles carrying fish products may access the Seward Highway via Port Avenue, Leirer Road, or Airport Road. Competing industrial movements on Port Avenue and the geometric configuration of the right-turn acceleration lane onto the Seward Highway create challenges for this movement, while the close spacing of the railroad tracks with the highway poses challenges at Leirer and Airport Roads.

Trip Demand

In an average year, Samson Tug and Barge transports approximately 350 truckloads of fish products to Icicle Seafoods for processing. A number of other Port of Seward tenants (i.e. permit holders) also transport fish products from the freight dock.

Marine Maintenance

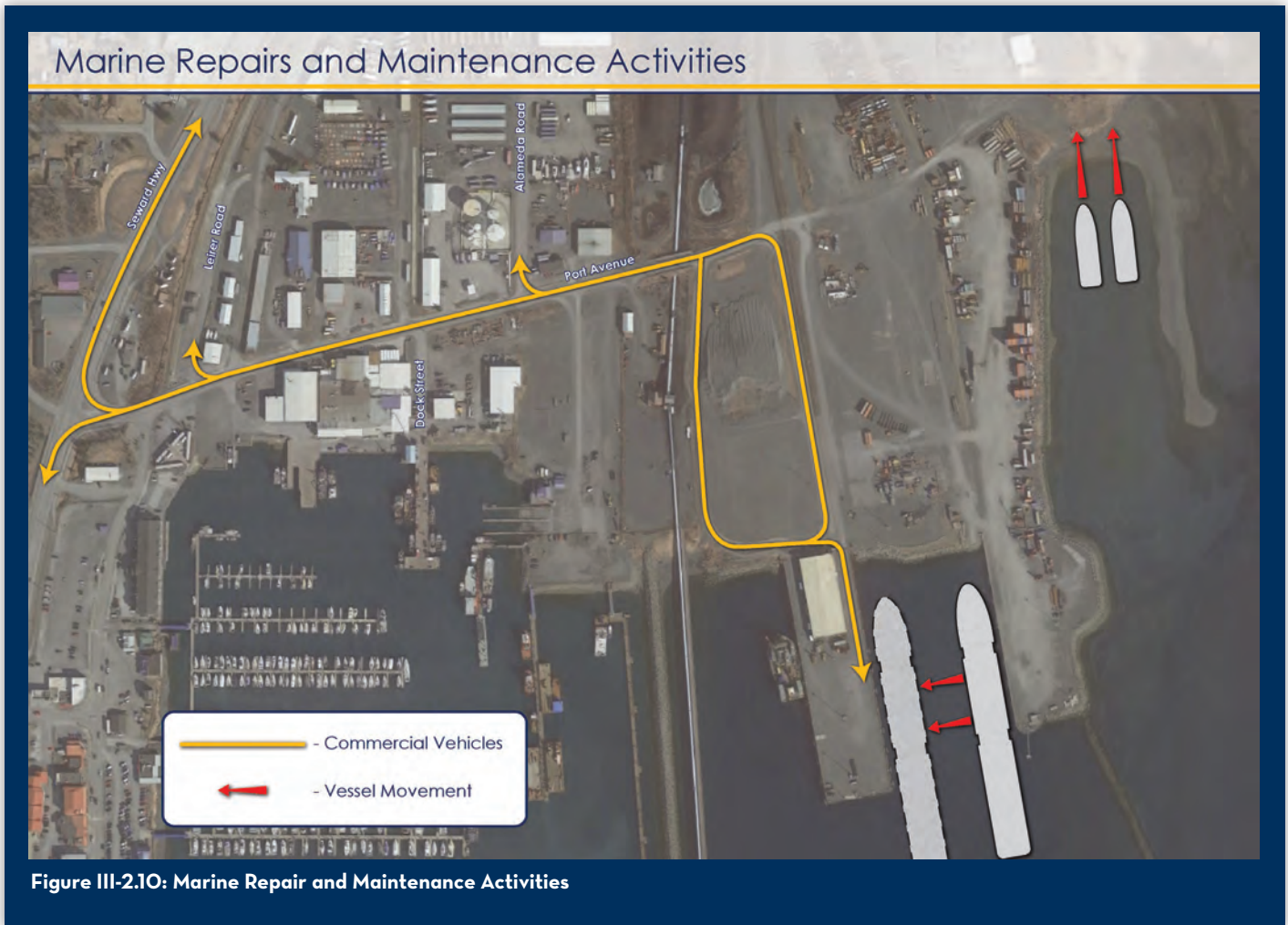


Figure III-2.10: Marine Repair and Maintenance Activities

A number of companies and organizations, including Kirby Offshore Marine (Kirby), Crowley Marine Services (Crowley), Vigor Alaska Seward (based at the SMIC)(Vigor), and the USCG utilize the Seward Marine Terminal as a base for marine repair and maintenance activities of their vessels.

For freight companies such as Kirby and Crowley, vessels will typically visit for freight offloading and loading, and then will stay longer to complete their vessel maintenance and repairs. Work will either be scheduled in advance or in response to adverse weather conditions at sea when vessels will remain at the dock and undertake deferred maintenance using local services. In 2016, Kirby undertook maintenance activities on their vessels approximately 12 times, and Crowley approximately four times. Following the offload of freight at the freight dock, vessels typically move over to the passenger dock for marine repair and maintenance work to be undertaken. The majority of marine repair and maintenance work is undertaken during the offseason (i.e. when passenger activities are not being conducted at the site) and therefore, the passenger dock is available for use. However, if urgent maintenance is required during the busy season and vessels are close to Seward, they will call and use the dock for convenience and proximity to a range of marine support businesses that are based at Seward.

The USCG schedules specific dockings for maintenance and repair works to its vessels. These boats typically land at the passenger dock. These scheduled stops also provide the opportunity for onboard crew to have land-based time off while docked at the Seward Marine Terminal, which is advantageous owing to the connection to the road network.

Vigor typically uses the Seward Marine Terminal between two and four times a year for finishing work on its vessels or for preparatory work prior to vessels being shifted over to SMIC for drydock. The City of Seward (who owns SMIC) is currently in the process of constructing a new breakwater to protect the water around SMIC from tidal surges, which may reduce the need for Vigor to use the Seward Marine Terminal. In addition to marine repair and maintenance activities undertaken at the passenger and freight docks, Catalyst Marine Engineering is a permit holder that undertakes marine repair and maintenance activities in the barge uplands. Vessels are typically hauled to shore in the barge uplands using marine pillows and are stored on land while maintenance and repair works are undertaken. Two to four vessels are typically kept on the site during the off-season (September through April), while repair and maintenance activities are completed.

Figure III-2.10 illustrates vessel and vehicle movements associated with marine repair and maintenance activities undertaken at the Seward Marine Terminal.

Route and Mode Description

For commercial freight companies, vessels dock at the freight dock for load and unload operations. Commodities movement is described under containers and break bulk movements above. Vessels are then typically moved to the passenger dock for marine repair and maintenance operations to occur. Vehicles servicing marine repair and maintenance activities enter and exit the passenger dock through the security controlled gate on the east side of the dock.

Trip Demand

Truck volume and light motor vehicle data was not available.

3. Market Analysis & Context

The information contained in this section of the report is primarily drawn from the Economic Analysis report. Where additional information has been gathered or updates to the information have been made, this has been referenced throughout the section.

3.1 - Passenger Business

The ARRC’s passenger business at Seward is comprised of train operations and passengers arriving and departing on cruise ships.

3.1.1 Existing Business at Seward

Trains

Coastal Classic

The Coastal Classic train operates between mid-May and mid-September each year, departing Anchorage at 6:45am and arriving into Seward at 11:05am, before returning to Anchorage with a 6:00pm departure from Seward and a 10:15pm arrival at the Anchorage depot. The Coastal Classic operates independently of cruise ship operations, but a large number of passengers using the service are also connecting to cruise ships. The annual ridership of the Coastal Classic is shown in Table III-3.1.

Table III-3.1: Total Ridership Numbers on the Coastal Classic Train

Year	Total Ridership
2013	51,287
2014	51,999
2015	58,619
2016	63,839 ¹⁸

¹⁸ARRC Coastal Classic Data

The total ridership of the Coastal Classic is increasing each year with a substantial increase observed between 2014 and 2015. July historically has the highest ridership over the course of the month, and May and September are the quietest months. Since 2013, the busiest day on the Coastal Classic is a Friday, which also coincides with the largest cruise ships that visit Seward and cater for higher volumes of independent travelers. The second busiest day is Saturday. Throughout July, the number of passengers riding the Coastal Classic is more consistent than in other months with the train providing a popular summer attraction.

The ARRC has noted that although the Coastal Classic rarely sells out, there have been a number of occasions where the GoldStar cars are sold out. Throughout July when ridership is highest, the GoldStar cars are almost always close to fully booked, and this has been a lost revenue opportunity for ARRC. Passengers who are unable to secure a seat in GoldStar class will generally book a lower cost Discovery Class seat.

A small number of seats on the Coastal Classic are sometimes booked by cruise companies to provide train transfers when seats on the Grandview Cruise Train are not available. A larger number of seats are booked by local tour companies to provide transfers between Anchorage and Seward.

Grandview Cruise Train

The Grandview Cruise Train is made available for cruise companies to transport passengers from Seward to Anchorage. The majority of operators making calls to Seward to disembark existing passengers ending their cruise and embark new passengers about to start their cruise offer the cruise train. These types of cruises are known as 'turn cruises.'

The project team was unable to secure data on the passenger ridership of the Grandview Cruise Train. However, the passenger capacity can be used to estimate the annual ridership of the cruise train. The current maximum loading capacity for the Grandview Cruise Train includes one dining car and seven 76-seater passenger cars (532 passengers). Both the cruise companies and ARRC have advised that the cruise train is consistently fully booked. Therefore, assuming a normal load of 532 passengers and 62 of a total of 66 calls being for 'turn cruises' (excluding one visit from the Sun Princess and three visits from Le Soleal), the total number of passengers disembarking to the cruise train would be 32,984, and the total number of passengers embarking from a cruise train would be 32,984. This assumes that the total ridership of the cruise train in 2016 is 65,968.

Cruise Ships

There are four departure ports that most Alaska cruises use: Seattle, Vancouver, Seward, and Whittier. Other ports such as San Francisco, Los Angeles, and Juneau are used less frequently for cruise ship departures to and from Seward. In 2015, 11 separate ships made 64 calls at Seward, and in 2016, 11 ships made 67 calls at Seward. In 2015, these ships ranged from 338 to 965 feet in length and, depending on the vessel, were capable of carrying between 128 and 2,801 passengers per ship.

Princess Cruises added one port of call for Seward in 2016 and is planning the same for 2017. These calls are part of a 75-day cruise trip, referred to as the "Circle Pacific". Princess Cruises had a similar trip called the "World Cruise" in 2012. Seabourn's MS Soujourn, with a passenger capacity of 450, is planning to add four ports of call to Seward in 2017¹⁹.

In 2005, a total of 146,900 cruise passenger landings occurred in Seward, and by 2015 landings had increased to 176,050. Overall, there has been a 1.7 percent average annual increase in the number of cruise ship passengers using the Seward passenger dock over the 2005 to 2015 period. Table III-3.2 presents cruise ship statistics for landings at Seward.

¹⁹Cruise Line Agencies of Alaska, Preliminary 2017 Schedules.

Table III-3.2: Seward Cruise Ship Statistics

Cruise Line	Ship	Length (ft)	Draft (ft)	Beam (ft)	Passenger Capacity	Trip Frequency		
						2015	2016	2017
Celebrity Cruises	Celebrity Millennium	965	27	106	2,138	8	8	7
Compagnie de Ponant	L'Austral	466	15.4	59	264	2	-	-
	Le Soleal	466	16.1	59	264	-	3	-
Crystal Cruises	Crystal Symphony	781	24.9	99	922	1	-	-
	Crystal Serenity	820	24.9	106	1,070	-	2	1
Holland America Line	Oosterdam	951	25.9	106	1,848	9	9	9
	Zaandam	778	25.9	106	1,432	9	9	9
	Noordam	948	25.6	106	1,916	-	1	-
Princess Cruises	Sun Princess	857	27	105	2,010	-	1	-
	Golden Princess	951	29	118	2,600	-	-	1
Nippon Yusen Kaisha	Asuka II	791	25.6	97	960	1	-	-
Norwegian Cruise Line	Norwegian Sun	847	26	108	2,002	8	8	7
Regent Seven Seas Cruises	Seven Seas Navigator	560	24	81	490	7	-	-
	Seven Seas Mariner	709	21	93	700	-	7	6
Royal Caribbean	Radiance of the Seas	961	27	106	2,501	8	8	8
Seabourn	Seabourn Soujourn	649	21	84	450	-	-	4
Silversea Cruises	Silver Shadow	610	19.7	81.3	382	9	9	9
	Silver Discoverer	338	13.5	51	128	2	2	2
Total						64	67	63

The existing Seward Passenger Terminal has been in operation since 1966. Cruise ship passenger landings at Seward have increased from approximately 64,000 to 88,000 passengers from 2005 to 2016, while embarking passengers have increased by similar volumes (65,400 to 89,400 passengers) over the same time frame. The volume of round-trip passengers (i.e., port-of-call passengers) has fluctuated widely, with the peak number of round-trip passengers occurring in 2011 (23,400 passengers). Overall, there has been a 1.9 percent average annual increase in the number of cruise ship passengers using the terminal over the 2005 to 2016 period. Table III-3.3 presents the passenger numbers arriving, departing, and visiting Seward on port-of-call excursions.

Table III-3.3: Total Cruise Ship Passengers to Seward

Year	Arriving at Seward	Port-of-Call at Seward	Departing Seward	Total
2005	64,387	17,128	65,418	146,933
2006	65,704	2,208	67,290	135,202
2007	74,143	7,356	70,390	151,889
2008	71,062	22,979	61,219	155,260
2009	69,267	17,020	68,028	154,315
2010	64,455	12,365	54,053	130,873
2011	62,294	23,366	44,481	130,141
2012	62,064	4,255	63,603	129,922
2013	59,483	5,418	57,332	122,233
2014	70,634	2,929	64,953	138,516
2015	84,643	8,184	83,223	176,050
2016	88,562	6,794	89,389	184,745
Total	836,698	130,002	789,379	1,756,079

3.1.2 Future of Passenger Services at Seward

The Alaska cruise market is dominated by Inside Passage cruises that traverse the coast of Southeast Alaska running from the Canadian border in the south to the start of the Gulf of Alaska in the north, just above the Juneau/Haines/Skagway area. Owing to the geographic characteristics of the Inside Passage, cruise ships are relatively protected from rough waters. The length of the cruise trip also enables cruise companies to offer cruises of between 5-7 nights duration as a roundtrip. The market for cruises through the Inside Passage provides capacity for over one million passengers per year, and is growing by approximately two to four percent per year.

A number of Inside Passage cruises cross the Gulf of Alaska to Seward and other Southcentral Alaska ports. In 2017, 35 percent of the total number of ships cruising the Inside Passage, and 31 percent of the total passenger capacity is scheduled to cross the Gulf of Alaska. The reasons for this appear to be twofold: a roundtrip sailing crossing the Gulf of Alaska takes a minimum of 14 days, which is twice the length of the average cruise; and all shorter cruises are point-to-point trips, which are less popular for passengers. Seward is the most popular landing point for cruises crossing the Inside Passage, providing a landing point for 57 percent of the total number of trips and 49 percent of the total passenger capacity for cruise ships crossing the Gulf of Alaska. The amount of cruise ships and capacity visiting Seward varies year-on-year, but overall is showing approximately two percent growth. Seward's primary competition as a landing port is Whittier. A substantially smaller number of cruise ships land at the Port of Anchorage.

The ARRC maintains a range of passenger facilities at the Seward Marine Terminal. These include facilities for cruise ships and trains and intermodal facilities to facilitate passenger connections between cruise ships, trains and other land based transportation (charter buses, coach transfers, tours, taxis, rental and private vehicles, and walking). Of most critical concern is the passenger dock, which was constructed in 1965 and has exceeded its design life. The foundation has experienced significant corrosion, which has limited the remaining useful life of the dock and has resulted in weight restrictions being implemented. Although the passenger dock works well for cruise ship landings, without significant maintenance work or replacement it will continue to deteriorate to a point where it is no longer useable. As the terminal building is located on the passenger dock, its need for replacement will depend on what future decisions are made about the passenger dock. Both the passenger dock and terminal will cost a significant amount to salvage or replace. As of early 2017, the passenger dock has between five and seven years of useful life left. A replacement dock project is likely to take approximately five years to complete, and therefore ARRC is at an urgent decision point around the future of the passenger dock.

The implications of not making a decision around the future of the passenger dock are significant. Without the continued provision of a passenger dock, the cruise business will leave Seward and go elsewhere, with the majority likely to relocate to Whittier and a smaller amount to Anchorage. This will have a direct impact on revenues generated by ARRC. All direct and indirect revenue from cruise ship landings in Seward will no longer be received, as the cruise ship docks in Whittier and Anchorage are not owned by ARRC. The loss of the cruise business will also negatively impact existing train services to Seward, as revenue associated with cruise ship customers using the Coastal Classic will be lost. Most of the revenue associated with providing for the cruise train could be retained however, as the trains will be diverted to Whittier. In addition to the effects on ARRC, the loss of the cruise ship business is also likely to be significant for the City of Seward. In 2016, nearly 185,000 people arrived to or departed from Seward on a cruise ship, and the loss of this business will be a significant detriment to the tourism industry in Seward.

The decision around the future of the passenger dock is the highest priority for ARRC at the Seward Marine Terminal. A number of options to replace the passenger dock have been considered, and are set out in Part IV of this Master Plan.

3.2 - Freight Business

3.2.1 Existing Business at Seward

Freight Operations

As provided in Table III-3.4, most of the inbound freight tonnage in 2013 consisted of forest products (primarily lumber) followed by lime, cement, and glass. In 2013, these categories of freight were approximately 30 percent of Seward's total inbound freight tonnage. Between the years 2004 and 2013, the total volume of inbound freight increased by 84.6 percent, but this has fluctuated seasonally year-on-year and has shown three distinct trends: between 2004 and 2007 volumes remained substantially similar prior to a drop of 50 percent between 2008 and 2010, and then a substantial increase between 2011 and 2013. Coal accounted for almost 99 percent of the outgoing freight tonnage from Seward during 2004-2013 (refer to Table III-3.5). However, coal exports from Alaska have reduced significantly and in 2015 export volumes were 165,350 tons (150,000 MT), or approximately 29 percent of the 2013 coal export volume. In 2016 only one shipment of coal was processed through the SLF; no coal shipments are scheduled for 2017.

Between the years 2004 and 2011, the outbound freight exports remained almost the same. In 2013, there was a sudden increase in exports, which was manufactured equipment, machinery and products. Excluding coal exports, Seward's largest export in 2013 by weight was manufactured equipment, machinery and products.

Table III-3.4: Port of Seward Inbound Freight (thousands of tons)

Commodities	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total	26.0	17.9	25.9	24.6	12.1	13.6	10.6	40.6	71.5	48.1
Forest Products	5.7	7.0	8.9	9.9	5.7	4.5	2.7	7.8	13.3	8.5
Lime, Cement, and Glass	6.7	5.2	8.7	7.1	3.9	4.8	4.2	8.3	13.8	7.6
Manufactured Equipment	1.7	1.4	2.0	1.8	0.9	1.5	2.1	8.8	10.8	7.4
Petroleum Products	0.0	0.1	0.0	0.0	0.0	1.4	0.0	3.7	7.2	5.5
Primary Iron and Steel Products	3.5	2.4	3.9	3.2	0.0	0.0	0.0	3.0	5.1	5.4
Primary Non-Ferrous Metal Products	0.1	0.0	0.0	0.0	0.0	0.0	0.5	3.3	9.5	4.4
Primary Wood Products	1.4	1.9	2.4	2.6	1.6	1.5	0.8	1.3	5.1	3.3
Other Chemical and Related Products	1.2	0.0	0.0	0.0	0.0	0.0	0.2	0.4	1.5	2.9
Processed Grain and Animal Feed; Other Agricultural Products; Fish	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.1	4.0	2.2
Soil, Sand, Gravel, Rock and Stone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.0	0.8
Paper Products	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.1
Subtotal Unknown or Not Elsewhere Classified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table III-3.5: Port of Seward Outbound Freight (thousands of tons)

Commodities	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total	572.9	505.2	403.5	266.6	579.6	889.9	948.8	1072.6	893.0	670.5
Coal	570.3	505.2	403.2	266.3	578.6	886.4	948.7	1070.7	890.4	641.3
Manufactured Equipment, Machinery, and Products	1.1	0.0	0.3	0.2	0.0	3.5	0.0	1.1	0.9	23.7
Fish	0.7	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	4.7
Iron Ore and Scrap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5
Primary Manufactured Goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Processed Grain and Animal Feed; Other Agricultural Products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Pulp and Waste Paper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1
Other Chemical and Related Products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forest Products, Wood, and Chips	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Petroleum Products	0.0	0.0	0.0	0.0	1.0	0.1	0.1	0.0	0.6	0.0
Other Non-Metal Minerals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Unknown or Not Elsewhere Classified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Origin and Destination of Freight

Coal from Usibelli has historically accounted for virtually all export tonnage through the Port of Seward. Coal exports have gone to a number of Pacific Rim countries with the bulk of exports going to Chile, South Korea, and Japan.

Freight Businesses

Freight Dock Customers

More than 60 organizations and individuals have been customers to ARRC for the use of the freight dock between 2013 and 2016. Many of the customers have used the dock every year to load, unload and/or store freight at the dock. Others have landed at the freight dock for marine repair and maintenance operations. The top ten freight customers at the Seward Marine Terminal (by value) are listed below²⁰. These customers combined account for more than 80 percent of the total business at the freight dock between 2013 and 2016.

- Samson Tug and Barge, an intermodal freight carrier, makes the most frequent calls at the freight dock and accounts for approximately 32 percent of the total business at the freight dock.
- Alaska Logistics, LLC, a marine transportation company, accounts for approximately 10 percent of the total business at the freight dock.
- Crowley Marine Services, a transportation and logistics company, also accounts for approximately 10 percent of the total business at the freight dock.
- SeaTac Marine Services transports two barges of goods each year to Seward and accounts for approximately 9.5 percent of the total business at the freight dock.
- Northland Services accounts for approximately 4.5 percent of the total business at the freight dock between 2013 and 2016. It is noted however, that Northland Services did not use the dock in 2015 and 2016.
- Shoreside Petroleum Inc. uses fuel pipes on the freight dock to transfer fuel to and from its local facility at Seward from Kirby Offshore Marine Barges. Shoreside Petroleum accounts for approximately 4.4 percent of the total business at the freight dock.
- Kirby Offshore Marine operates tank barges for the transportation of petroleum and other oil based products, and accounts for approximately 4.3 percent of the total business at the freight dock.

²⁰ARRC, 2017, Seward Freight Invoices 2013-2016.

- Delta Western Inc. distributes and markets petroleum products throughout Southeast Alaska and accounts for approximately three percent of the total business at the freight dock. Delta Western Inc. also markets its products under the name North Star Petroleum.
- The USCG uses the freight dock for landing goods and also for marine repair and maintenance activities. It accounts for approximately 2.5 percent of the total business at the freight dock.
- Nautical Ventures used the freight dock in 2013 and 2015, and accounted for approximately 2.2 percent of the total business at the freight dock between 2013 and 2016.

Permit Holders at Seward Marine Terminal

Seward Marine Terminal tenants (permit holders) include the following (although the list is not comprehensive).

- Alaska Logistics, a marine transportation company, operates from the Seward Freight Dock and maintains equipment and freight handling capabilities.
- Carlile Transportation provides services in the Port of Seward and leases the Freight Building.
- Colaska/QAP, a manufacturing company that provides various aggregate, emulsion, binders, asphalt, and concrete mixes for road construction projects, uses its permit area for laydown capacity and has historically received freight at the freight dock.
- Orion Marine Contractors, a marine-related construction company, primarily uses its permit area for equipment laydown space and logistical staging area.
- Pacific Pile and Marine, a civil and marine contractor, leases laydown space.
- Samson Tug and Barge, an intermodal freight carrier, transports via barge, rail and truck; leases land; and has an office in the Dale R. Lindsey Intermodal Terminal.
- Shoreside Petroleum Inc. holds a land permit for their fuel headers at the freight dock.

Seasonality of Freight Activity

An analysis of the freight invoices between 2013 and 2016²¹ at the Seward Marine Terminal has been undertaken to determine which months are the busiest (on the basis of value of invoices). Table III-3.6 sets out the value of each month's business, as a percentage of the total year's invoice value.

Table III-3.6: Percentage of Total Year Freight Invoice Value by Month 2013-2016

Percentage of Total Year Freight Invoice Value by Month						
Month	2013	2014	2015	2016	Average 2013-2016	Rank
January	12%	6%	5%	7%	8%	8
February	9%	10%	12%	10%	10%	3
March	27%	16%	16%	6%	16%	1
April	6%	20%	11%	10%	12%	2
May	7%	8%	7%	8%	8%	6
June	7%	6%	10%	12%	9%	4
July	6%	9%	6%	14%	9%	5
August	4%	6%	10%	11%	8%	7
September	6%	3%	9%	9%	7%	10
October	5%	7%	8%	6%	7%	11
November	6%	3%	3%	5%	4%	12
December	22%	4%	3%	2%	8%	9
Total	100%	100%	100%	100%		

The analysis confirms that the busiest month for freight at Seward in 2013 to 2016 is March, followed by April and then February. Approximately 38 percent of the total freight business across the dock in any one year comes to or departs Seward during these months. The freight business for the remainder of the year is relatively evenly split, with the winter months, particularly November, on the lower end of the spectrum.

²¹ARRC, 2017, Seward Freight Invoices 2013 - 2016.

3.2.2 Future of Freight Services at Seward

The Port of Seward's primary competition comes from the Ports of Anchorage and Whittier. The Port of Anchorage is the largest port in Alaska by trade volume, with an estimated 84 percent of non-petroleum, non-coal freight volume passing through the port²². Additionally, Anchorage is one of only 19 commercial ports in the United States designated as a Department of Defense Strategic Seaport. The Port of Whittier is the second largest port in Alaska by trade volume, with an estimated 11 percent of non-petroleum, non-coal freight passing through the port²³. By comparison, the Port of Seward accounts for three percent of the state's non-petroleum, non-coal freight²⁴.

Anchorage is also Alaska's population center, with 41 percent of the state's population being within the Municipality of Anchorage, and 54 percent of the population being located close to the port in both Anchorage and the Matanuska-Susitna Borough²⁵. This means the majority of the demand for goods and services comes from Anchorage and nearby communities.

Seward's distance from the main centers of population and distribution and the cost of transporting freight loads over the road and rail grades that separate Seward from Anchorage result in the ton-mile cost of transportation using all modes being relatively higher than for freight originating from both Whittier and Anchorage. Figure III-3.1 sets out a comparison of the Ports of Seward, Anchorage and Whittier.

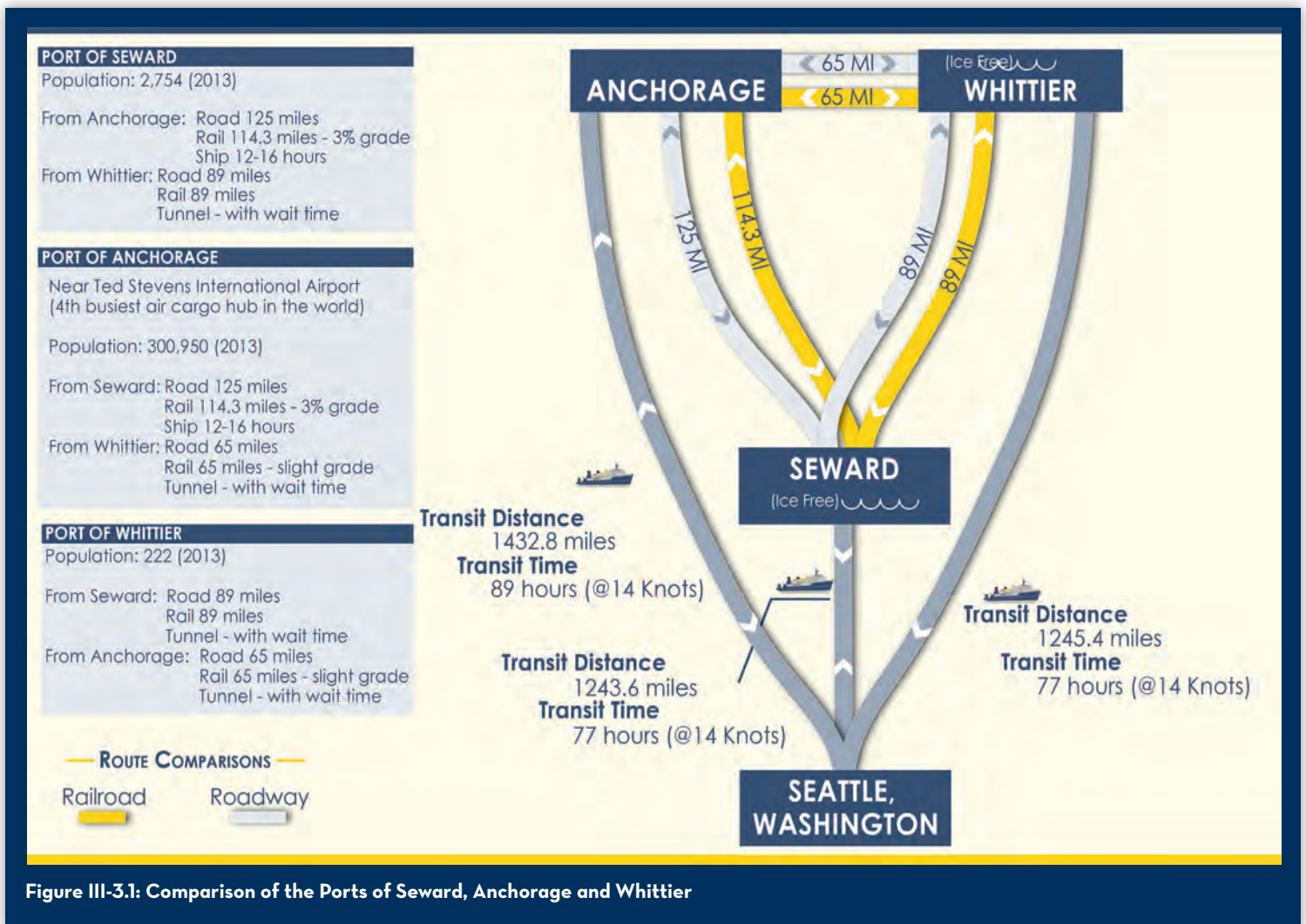


Figure III-3.1: Comparison of the Ports of Seward, Anchorage and Whittier

²²Competitive Market Analysis and Long Range Planning for the Port of Valdez (September 2015) prepared for the City of Valdez by McDowell Group.

²³Ibid.

²⁴Ibid.

²⁵United States Census Bureau.

Seward’s share of the freight market in Alaska is very small when compared to Anchorage and Whittier. The market analysis in this chapter indicates that the market for freight in Seward has declined primarily as a consequence of the downturn in international demand for coal. Without diversification, there is limited future growth in freight forecast for Seward.

Potential opportunities exist for diversifying the types of freight activities currently carried out at the Seward Marine Terminal. These include capitalizing on seafood industry growth and the sustained market for petroleum products. In the event that LNG projects proceed in the state, there will be a significant, but short-term upturn in demand for port facilities.

Whittier is the closest comparable port to Seward and is also owned by ARRC. Between 2003 and 2013, Seward received an average of 3 percent of inbound freight processed through Southcentral ports analyzed, as compared with Whittier receiving 11 percent (Table III-3.7).

Table III-3.7: Total Inbound Freight to Southcentral Alaska Ports (tons)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Seward	26.0	17.9	25.9	24.6	12.1	13.6	10.6	40.6	71.5	48.1
Whittier	208.1	247.7	264.3	251.4	266.1	316.4	259.5	247.0	253.1	280.6
Anchorage	2129.8	2535.6	2298.6	2005.6	1989.5	1862.2	2452.4	2465.3	2520.7	2286.6
Valdez	4.4	29.7	1.0	4.3	186.2	134.0	35.6	52.7	20.5	7.8
Homer	34.4	71.2	265.9	418.9	144.7	73.2	100.6	274.7	136.2	165.4
Kodiak	93.5	106.6	106.9	96.2	36.8	85.6	65.1	92.3	102.0	176.7
Total	2496.2	3008.7	2962.6	2801.0	2635.4	2485.0	2923.8	3172.6	3104.0	2496.2

The picture for outbound freight is less clear given the scale of petroleum exports through Southcentral ports, which dominates Alaska’s exports. Seward has historically held a strong position as an export port, but the vast majority of exports were comprised of coal. As the coal market has diminished, Seward’s role as an exporter has also reduced. Table III-3.8 sets out the total freight volumes from the Southcentral ports analyzed, excluding coal and petroleum exports. This allows a clearer comparison across ports, and shows that Seward contributes 1.5 percent of the annual average exports between 2004 and 2013. By comparison, Whittier contributes 6.9 percent.

Table III-3.8: Total Outbound Freight in tons From Southcentral Alaska Ports (Excluding Coal and Petroleum)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Seward	2.6	0	0.3	0.3	0	3.4	0	1.9	2.0	29.3
Whittier	47.1	24.9	32.2	18.3	10.0	11.9	11.5	10.4	8.5	11.7
Anchorage	122.1	180.9	138.6	141.6	156.7	129.6	148.0	164.2	152.8	151.0
Valdez	3.0	1.0	0	0	0	0	9.0	1.0	11.0	10.0
Homer	62.7	43.8	0	0	16.5	0	6.6	0.8	0	0
Kodiak	48.8	76.7	64.8	57.9	70.7	45.7	127.8	70.1	111.7	168.1
Total	286.3	327.3	235.9	218.1	253.9	190.6	302.9	248.4	286.0	370.1

Notwithstanding Seward’s minor role as a freight port, its strategic position is important when considering the network of port facilities in the state. This is particularly the case given the aged infrastructure at the Port of Anchorage and the limited uplands reserve available at the Port of Whittier. Its importance as a contingency port has been recognized by a range of operators. The ARRC is aware of Seward Marine Terminal’s advantages as a port for freight recognizes the need to address challenges to cement its strategic position.

3.3 - Seward's Economic Advantages and Challenges

3.3.1 Seward's Economic Advantages

- A natural, ice-free year round deep water port.
- Provides efficient access directly to rail on the freight dock and out of Seward Marine Terminal to the Alaska Railbelt.
- Provides efficient road access directly to the Seward Highway.
- Large laydown areas are available and extensive uplands provide a range of opportunities for freight leases and permits.
- Close proximity to the City of Seward, while still being physically separated from the city's major attractions.
- Marine freight destined for Seward and north can save 12 to 16 hours on the water by landing at Seward as compared to Anchorage.
- Port facilities and freight dock are in generally good condition.
- Seward has an established commercial fishing fleet and processors, which provide opportunities to capitalize on seafood freight.
- Although Seward is much smaller than the Port of Anchorage, its competitive position is strengthened by the area of land available at the port, the SMIC being located nearby, and companies like TOTE Maritime recognizing Seward as a contingency port.

3.3.2 Seward's Economic Challenges

- Shippers are time and cost sensitive. It is generally less expensive to transport goods directly to the main center of demand at Anchorage, notwithstanding the additional time it takes. This is owing to the costs of water transport being lower than rail or road transport.
- Seward is located 125 miles by road and 114 miles by rail from Anchorage, where the majority of the population and demand for materials is located.
- The railroad has a relatively steep (three percent) grade transition through mountain passes between Seward and Anchorage, which requires additional locomotives to successfully transport freight loads.
- The Seward Highway experiences high traffic volumes, particularly during the summer months, which can generate delays for freight traffic by truck.
- Logistical factors describe above result in the ton-mile cost of transportation using all modes being relatively higher than for freight originating from both Whittier and Anchorage.
- Some improvements to the facility are needed to enhance its attractiveness, including improving the surface of the freight dock, addressing safety issues with the fendering, and ensuring consistent provision of support infrastructure such as cranes.
- Dockage and wharfage rates for Seward are about the same as Anchorage and Whittier; therefore, no cost advantage can be gained in bringing goods to Seward.
- The size of the military operation at JBER, coupled with the special designation of the Port of Anchorage as having strategic importance to the Department of Defense, results in Anchorage serving as the primary port for military shipments.

3.4 - Future Business Opportunities at Seward Marine Terminal

The Economic Analysis Report presents the results of a market analysis for a range of industries that have, or could potentially have implications for the Port of Seward. The analysis highlights industry background, major competition, historical trends, and the future outlook for the industry. Consideration was then given to implications for Seward. The analysis is summarized below.

3.4.1 Tourism

The Alaska cruise market is dominated by Inside Passage cruises that traverse the coast of Southeast Alaska to just above the Juneau/Haines/Skagway area. The market for cruises through the Inside Passage provides capacity for over one million passengers per year, and is growing by approximately two to four percent per year. A number of Inside Passage cruises across the Gulf of Alaska to Seward and other Southcentral Alaska ports. Seward is the most popular landing point for cruises crossing the Inside Passage, providing a landing point for 57 percent of the total number of trips and 49 percent of the total passenger capacity for cruise ships crossing the Gulf of Alaska. The amount of cruise ships and capacity visiting Seward varies year-on-year, but overall is showing approximately two percent growth.

The Coastal Classic is ARRC's most popular scheduled passenger service, and it has had an average annual growth rate in the number of passengers using the service of 6.8 percent between 2013 and 2016. The Gold Star service offered on the train consistently sells out, and the train is consistently close to capacity on its most popular days (Fridays and Saturdays) during the tourism peak season (June and July). It is anticipated that the level of demand for the Coastal Classic will continue to grow consistent with the historical trend. The key factor that has the potential to limit this growth trajectory is the capacity of the service.

3.4.2 Coal

Coal has historically dominated Seward freight traffic. Exports of coal from the Port of Seward averaged approximately 648,000 metric tons (MT) per year over the 2008 to 2015 period. However, in 2015, a meager 150,000 MT of coal was exported by Usibelli. Low export volumes in 2015 required SLF operations to be idled until export markets become more favorable, and in 2016 ARRC placed the SLF into a cold shutdown.

Owing to changing global conditions, over the next 20 years demand for coal is projected to increase by 0.8 percent a year, exhibiting the slowest growing demand for any fossil fuel. This is attributed to three factors: moderating and less energy intensive growth in China; the impact of regulation and policy on the use of coal in both the United States and China; and plentiful supplies of natural gas increasingly replacing coal from power generation. Without expansion into new markets or a shift in the current and projected economic conditions in the global market, it is expected that Alaska coal exports through the SLF would be less than 150,000 MT per year for the foreseeable future, if at all.

3.4.3 Oil and Gas

The oil and gas industry dominates Alaska's economy, and it is estimated that 50 percent of jobs in Alaska are related to the oil industry. Alaska has a very small manufacturing sector and virtually all producer and consumer goods must be imported into the state. As such, the oil and gas industry in Alaska has historically accounted for a significant proportion of imports (and exports of crude oil). However, the price of Alaska North Slope crude oil most recently peaked in June of 2014 at \$113 a barrel and has since fallen. As at July 18, 2017 the price per barrel is \$48.96 (2017 dollars)²⁶. The falling crude oil price has had a significant impact on oil and gas development in Alaska, with a number of projects being discontinued and production slowing from existing sites. The World Bank projects oil as being in the \$36 to \$70 per barrel range over the 2016 to 2025 period. The low price of oil will continue to have implications for oil company investment in Alaska. However, Seward's existing businesses are not as reliant on the oil and gas sectors as other Southcentral ports.

The proposed Alaska LNG project would require significant imports of materials during construction if it proceeds. Preliminary studies for the Alaska LNG Project identify eight Alaska ports as being potentially affected by the project's transportation requirements - Anchorage, Seward, Whittier, Port MacKenzie, Nikiski, Valdez, Dutch Harbor, and Prudhoe Bay. The likelihood of this project proceeding in the near term however is uncertain.

3.4.4 Mining

The port of Seward does not currently provide significant support to the mining industry in Alaska. It is not anticipated that Seward will see a significant increase in freight activity from existing mining operations or from the development of proposed metal or mineral mines.

²⁶<http://www.tax.alaska.gov/programs/oil/dailyoil/dailyoil.aspx>

3.4.5 Seafood

The seafood industry is a major economic driver for Seward's economy. The community is one of the top commercial fishing ports in Southcentral Alaska and one of the largest ports in the United States (as ranked by landed value). The Seward Marine Terminal currently provides very limited support to the seafood industry, and modifications were made to the freight dock in 2016 to provide facilities for landing fishing tenders. It is anticipated the seafood industry will continue to offer future growth opportunities for Seward. Global demand for seafood is projected to increase by 27 percent over the 2010 to 2030 period. Further, increasing household incomes in China and Brazil are likely to bolster seafood exports from Seward. Pink salmon constitutes a large proportion of seafood processed through Seward, and the potential to support processing of other fish species such as pollock could provide year-round fishing opportunities in Seward. Seward is however in competition with other locations within the state for seafood processing, such as Kodiak and Valdez. Any additional opportunities for Seward will most likely be created by the consolidation of existing business activities, rather than new competition.

4. Environmental Considerations

This section outlines specific environmental concerns related to the Seward Marine Terminal site and summarizes the more in-depth analysis of environmental considerations contained in Appendix B. After project selection, these issues will need further evaluation to determine potential project impacts and mitigation. For the purposes of this environmental analysis, it is assumed funding would include federal sources, specifically the TIGER Discretionary Grants administered by the U.S. Department of Transportation, thus necessitating environmental documentation required under the National Environmental Policy Act (NEPA).

4.1 - Floodplains and Flood Hazards

Floods occur when water inundates normally dry land from precipitation that exceeds the capacity of rivers or lakes, and coastal flooding occurs when seawater extends landward, typically as a result of tidal surges. Floodplains are land areas susceptible to being inundated by floodwaters and are generally low-lying areas adjacent to streams or coastlines. Floodplains provide valuable hydrological and ecological functions, including stormwater storage, erosion and sediment control, and wildlife habitat.

Activities in floodplains are subject to federal regulatory oversight through the Federal Emergency Management Agency (FEMA) floodplain management program, which can be administered at the state or local level. The City of Seward administers this program at the Seward Marine Terminal, and requires a permit for development within FEMA-designated flood zones (100-year floodplain or coastal flood zone).

Flood Insurance Rate Maps (FIRM), published by FEMA, show the extent of flood zones as Special Flood Hazard Areas (SFHAs). Placement of fill or structures in FEMA-designated flood zones have the potential to be affected by and alter flooding within the Seward Marine Terminal. Future projects would therefore need to be designed and permitted to ensure that new developments would be protected from future base floods and would not cause increased flooding elsewhere.

4.2 - Wetlands and Waters

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions (33 Code of Federal Regulations [CFR] 328.3(b)). Section 404 of the Clean Water Act (33 U.S. Code [USC] 1344) and Section 10 of the Rivers and Harbors Appropriation Act (33 USC 403) establish programs to regulate the discharge of dredged or fill material into Waters of the U.S., which include navigable waters and adjacent wetlands. Regulatory protection of wetlands focuses first on avoidance of impacts, followed by minimization of impacts, and finally may require compensatory mitigation for unavoidable impacts to wetlands and waters. Along with riverine habitat, wetland habitats mapped within the Seward Marine Terminal include freshwater wetlands, intertidal and subtidal wetlands, and ponds.

Of the 166 acres mapped in the Seward Marine Terminal, 92% of wetland habitats are not rare or unique and their overall productivity and species diversity is low, with the remaining eight percent having a typically higher value. Placement of fill or structures during construction and excavation during dredging has the potential to affect wetland and riverine habitats within the Seward Marine Terminal. Future projects would need to be designed and permitted to ensure that new developments would avoid or minimize fill in wetlands and waterbodies to the extent practicable. Compensatory mitigation may be required for unavoidable impacts.

4.3 - Essential Fish Habitat

Essential Fish Habitat (EFH) describes all waters and substrate needed to sustain fish spawning, breeding, feeding, or growth to maturity. Although many fish species exist in Alaska waters, EFH is identified only for species managed under a federal Fishery Management Plan (FMP). In Alaska, all anadromous streams are considered to be EFH for Pacific salmon and groundfish, as well as certain other marine species. Dock construction can affect EFH through impact vibrations, such as from pile and sheet driving. Vessel operations at docks within the Seward Marine Terminal have the potential to affect EFH and EFH species. Future projects would need to be designed, permitted, and operated to ensure that new developments would minimize impacts to EFH and EFH species.

4.4 - Marine Mammals

Marine mammals are protected under the Marine Mammal Protection Act (MMPA), which prohibits “take” of marine mammals; however, certain exceptions are available. In the Resurrection Bay region, the USFWS is responsible for the conservation and management of northern sea otters (*Enhydra lutris kenyoni*) and the National Marine Fisheries Service (NMFS) is responsible for management of seals, sea lions, whales, dolphins, and porpoises.

To comply with the MMPA, an Incidental Harassment Authorization (IHA) application is submitted to NMFS to determine if an activity will result in a “take” of a marine mammal. Any activity with the potential to impact marine mammals requires consultation with the NMFS and the USFWS to determine if a permit is needed. This includes demolition of existing structures or installation of new structures within the marine environment. An IHA only authorizes harassment (injury or disturbance) of species; it does not apply toward serious injury, mortality, or on-going, long-term harassment.

4.5 - Threatened and Endangered Species

The ESA requires federal agencies to consult with NMFS and/or USFWS anytime they authorize or fund projects that could jeopardize the continued existence of any endangered, threatened, or proposed species or that result in the destruction or adverse modification of critical habitat. Consultation is generally initiated by the federal action agency or its designated non-federal representative after the action agency determines that a threatened or endangered species, or its critical habitat, may be affected. The results of the consultation are presented in a biological opinion by NMFS or USFWS if there is a potential to adversely affect a listed species.

Noise generated during construction and vessel traffic during operations has the potential to impact marine mammals, especially activities such as impact and vibratory pile and sheet driving. Future projects would need to be designed, constructed, and operated to ensure that new developments would avoid and minimize impacts to ESA-protected marine mammals. Early consultation and coordination with NMFS would be initiated during the initial stages of any project that requires in-water work.

4.6 - Cultural Resources and Historic Properties

Cultural resources are generally the physical evidence or place of human activity. Types of cultural resources that could be expected or near the Seward Marine Terminal may include sites and materials of pre-contact Alaska Native origin such as stone quarries, game lookouts, fish processing sites, tool manufacturing sites, house and cache pits, camp sites, and villages. Historic-era sites with Russian, European, Euro-American, and Native origin could include traditional cabin sites, camp sites, trap lines, burial grounds, traditional subsistence harvest sites, other traditional land use areas, landscapes, and place names.

4.6.1 Documented Cultural and Historic Properties in the Seward Marine Terminal

The Alaska Department of Natural Resources, Office of History and Archaeology (OHA) maintains the Alaska Heritage Resources Survey (AHRs) data repository. Eight sites have been recorded in the Seward Marine Terminal; however, four are not eligible for listing in the NRHP and therefore do not require further consideration of potential impacts.

If future projects cannot avoid the Dale R. Lindsey Alaska Railroad Intermodal Terminal, the Roundhouse, and the Jesse Lee Main railroad track, then an assessment of NRHP eligibility will be required. Tasks may include determinations of eligibility for the unevaluated sites and mitigation and treatment plans for adverse effects to the resources.

4.7 - Contaminated Sites

The regulatory framework for the management of hazardous materials, hazardous wastes, and contamination is complex, with both federal and state jurisdictions. Part of the due diligence for any construction project is to identify potentially-contaminated sites in order to avoid excavating where soil disturbance is prohibited or to avoid unknowingly subjecting a contractor to hazardous materials. To understand these risks, a search of the Alaska Department of Environmental Conservation (ADEC) contaminated sites database was conducted to determine the types of contamination documented within 500 feet of the Seward Marine Terminal.

According to the State of Alaska Contaminated Sites database, there are seven contaminated sites within the Seward Marine Terminal and nine within 500 feet of the Seward Marine Terminal. While all sites have a status of “Cleanup Complete,” four of the sites are also categorized as having Institutional Controls (IC) assigned. An IC is instituted when contamination remains above the established cleanup levels without an unacceptable risk to human health or the environment. Sites with ICs usually require coordination with ADEC if construction is on or immediately adjacent to the site boundary. With ICs, ADEC is able to manage land use decisions and require a number of different conditions, such as notification requirements for certain actions and further remediation in the future. All contaminated sites are listed and described in detail in the Environmental Considerations Chapter.

5. Land Use Planning Considerations

5.1 - Kenai Peninsula Borough

The Kenai Peninsula Borough, as a second class borough, exercises planning, zoning and platting powers on an area-wide basis within the portions of the district designated as rural district unless a city has, by resolution of the council, requested the assembly to delegate the power to the city. As a first class city within the Kenai Peninsula Borough, Seward has authority over planning, zoning, and platting decisions within the city boundaries. The Kenai Peninsula Borough maintains approval power over subdivisions within the municipal area. A subdivision that is approved by a city council must also be submitted to the Kenai Peninsula Borough for review and a public hearing.

5.2 - Seward Code of Ordinances: Title 15 Planning and Land Use Regulations

The Seward Marine Terminal is generally bounded to the south by Resurrection Bay, to the east by Seward Airport, to the north and northwest by the Seward Highway right-of-way (ROW), and to the west by Leirer Industrial Subdivision and the Marine Subdivision. ARRC properties also include the rail line adjacent to the Seward Highway ROW, the Seward Depot, and several parcels adjacent to the small boat harbor. This land is comprised in two zoning districts - the Industrial District and Harbor Commercial District. Developments within these zoning districts are subject to the Seward Code of Ordinances, Title 15, Planning and Land Use Regulations (Title 15).

5.2.1 Industrial District

The majority of the land at the Seward Marine Terminal, including the docks, railyard, and the Seward Depot are zoned Industrial District. The principal use of land is for business, manufacturing, processing, fabricating, repair, assembly, storage, wholesaling, and distributing operations, which may create some nuisance and which are not properly associated or compatible with residential land uses. It is intended to provide environmental safeguards for people employed in or visiting the district. Some visual amenity is expected in this district to make it compatible with adjoining residential and business districts.

The Industrial District generally permits a range of industrial and industrial-related commercial uses. Industrial uses generally include manufacturing, storage, and automobile uses. Permitted commercial uses include industrial retail business, professional and office type uses, equipment repair facilities, and restaurants.

Conditional uses in the Industrial District include bunkhouses, heavy manufacturing, bulk fuel storage and sales, bulk materials storage, campgrounds, automobile wrecking and salvage, sawmill, seafood processing, and solid waste transfer facilities.

5.2.2 Harbor Commercial District

The ARRC properties adjacent to the small boat harbor are zoned Harbor Commercial District and are developed with visitor accommodations, restaurants, and commercial uses. The Harbor Commercial District provides an area for water-dependent or water-related uses with particular emphasis on transportation, tourist, recreational, commercial, or industrial enterprises which derive major economic or social benefit from a harbor location.

The Harbor Commercial District generally permits all commercial uses such as retail, restaurant, offices, parking, and storage uses. Conditional uses in the Harbor Commercial District include railroad uses, seafood processing, industrial craft shops, hotels/lodging, drinking establishments, and multifamily dwelling unit uses. Uses that are typically not permitted or conditional uses are single family dwelling units, heavy industrial uses, and institutional uses.

5.2.3 Floodplain Permits

Chapter 15.25, Floodplain Management, applies to areas of special flood hazard identified by the Federal Insurance Administration including floodplain areas and coastal high hazard areas. Coastal high hazard areas are subject to high velocity waters due to wind, tidal action, storm, tsunami, or any similar force resulting in a similar force and designated on the FIRM as Zone VI-V3O, VE or V.

Portions of the Seward Marine Terminal are within the coastal high hazard area designated as V on the FIRM. Development in these areas would require a development permit prior to construction, including fill and other activities. A development permit shall be submitted to an administrative official and include plans drawn to scale showing the nature, location, dimensions, and elevations of the area, as well as existing and proposed structures, fill, storage materials, and drainage facilities.

Structures built within the coastal hazard area must be located landward of the mean high tide line, and new construction must be elevated on adequately anchored pilings or columns. The use of fill for structural support is prohibited. All new construction must have space below the lowest floor free of obstructions or constructed with breakaway walls. Additional standards for anchoring, construction materials and methods, and utilities would apply.

5.2.4 City of Seward 2020 Comprehensive Plan

Additionally, portions of the site adjacent to the airport boundary are within the floodplain designated AE. These areas are also subject to standards for anchoring, construction materials and methods, and utilities. For non-residential construction, all structures within the floodplain area must be flood-proofed so that below the base flood level the structure is watertight and have components capable of resisting hydrostatic and hydrodynamic loads.

The Seward Comprehensive Plan establishes goals, objectives, and implementation items that are meant to guide development decisions. Several goals of the plan support development of the Seward Marine Terminal, including Economic Development, Land Use, Transportation, and Port and Harbor Development.

5.2.5 1999 City of Seward Strategic Plan

The 1999 Strategic Plan was created to identify and address the major issues of the future. The plan established vision elements, goals and objectives for the community. The Economic Base Vision Element acknowledges that Seward is a community that promotes economic diversity and seeks jobs that create a higher standard of living. It includes such goals as 'Attract new industry' and 'Improve and expand maritime facilities'. One of the objectives of these goals is to "continue working with the Alaska Railroad, Alaska Marine Highway System, shipping, and cruise ship industries to ensure the expansion and modernization of the freight and cruise ship port facilities." This objective is generally supportive to the Master Plan.

6. Needs Summary

The following is a summary of the needs to be addressed by improvement options. These needs have been distilled from the issues identified in the Passenger Traffic Study, Freight Traffic Study and Transportation Connectivity Study, and also from the projected future activities at the site identified as part of the market analysis and context. The list of needs identified below has informed the recommended prioritization of improvement options set out in Part IV of the Master Plan.

6.1 - Train Services

The following needs were identified with train services.

- The Coastal Classic is ARRC's fastest growing passenger service, and on its busiest days (Fridays and Saturdays during June and July), the train is either sold out or close to fully booked. The Gold Star cars are the most popular, and are frequently fully booked, which results in customers being accommodated in the Adventure Class cars. The average annual growth rate for passengers during 2013 - 2016 has been 6.8 percent, and this trend is anticipated to continue. The train has a maximum size, however, and once this is reached no further growth can be accommodated. ARRC needs to consider how to accommodate future growth on the Coastal Classic beyond the existing capacity.
- The cruise train service is consistently sold out, resulting in overflows to the Coastal Classic. Consider how to accommodate demand for the cruise train together with the future capacity of the Coastal Classic.

6.2 - Seward Passenger Facilities

The following needs were identified with passenger facilities at Seward.

- Capacity issues occur while accommodating passengers at the Seward Depot between the 5:00pm check-in and 6:00pm departure of the Coastal Classic, which has been particularly evident on wet days. Address how to provide additional shelter for passengers at the existing facility or to relocate the facility to a site where a larger capacity can be accommodated (i.e. through combining the depot and terminal in a new building).
- Traffic and pedestrian management at the Seward Depot is very constrained and results in conflicts immediately following the disembarkation of trains and when passengers are arriving in preparation to embark on the outbound train. Improve traffic management and staging at the depot.
- The passenger terminal is located on the passenger dock, which impacts decisions around its future. Dependent on which dock option is selected, the terminal may need to be demolished and a new facility constructed, or refurbished to meet current code requirements.

- The existing terminal building is undersized to meet future demand for days when two large ships are docked at Seward. Dependent on whether the terminal is replaced to the existing building is refurbished, provide additional space to accommodate anticipated future passenger demand.
- A 2013 assessment of the Seward Passenger Dock found significant corrosion and deterioration of the structural supports. It is characterized as being at the end of its serviceable life and must be reconstructed. With recent maintenance, the remaining life of the passenger dock is projected to be seven years from 2015. The passenger dock needs to be replaced with a new passenger dock facility to provide future accommodations for cruise ships landing at Seward.
- ARRC staff members coordinate the traffic staging outside the terminal. Improve traffic staging to ensure more effective management without the need for staff to marshal traffic movements.

6.3 - Seward Freight Facilities

The following needs were identified with freight facilities at Seward.

- The offset between the existing ladders and vessels is challenging. The ladders are regularly damaged by vessel impact due to their current location. Improve the existing ladder configuration.
- The SLF is currently in cold shut down owing to no demand for coal in 2017, and the future demand forecast is bleak. Given the age of the facility, ongoing maintenance costs, no existing demand for coal and a very poor future demand forecast, it is recommended that the SLF be removed and the land repurposed for other profitable uses.

6.4 - Transportation Connections

The following needs were identified with transportation connections between the Seward Marine Terminal site and other attractions.

- Port Avenue provides an important link between the terminal building (where cruise ship passengers embark or disembark their ships), the Seward Depot, small boat harbor, and downtown Seward. The only sidewalk facilities are located on the north side of the road. Both the small boat harbor and terminal are located on the south side of the road and tourists frequently attempt to walk along the south side of the road, which exposes them to safety hazards from the Iclicle Seafoods plant, the entrance road to the small boat harbor public boat ramp, and other heavy vehicle movements. Pedestrians along the north side are also exposed to conflicts from adjacent commercial and industrial uses at driveways, intersecting roadways, and crosswalks along Port Avenue. Maintenance is not prioritized for Port Avenue is, and it lacks directional signage. Improve existing facilities along Port Avenue.
- Conflicts occur between passenger and freight activities in and around the Seward Marine Terminal site, particularly along Port Avenue and where freight vehicles are seeking to access the freight dock. Separate passenger and freight activities and vehicle movements as far as practicable.

7. Options Development and Screening

7.1 - Project Identification

The development of projects was informed by the existing facility analysis, public outreach, and market analysis presented in previous sections of this Master Plan, and also in the Passenger Traffic Study, Freight Traffic Study, and Transportation Connectivity Study. Through this analysis, needs were identified by the project team and projects were recommended to address these needs. Projects identified were captured in a “long list” that included a unique project number, the area on the site where the project was located, the relative project size, the priority of the project, why it was needed, potential challenges, and relation to other projects. The project team commenced populating the “long list” of projects in December 2015, with the aim of capturing as many projects as possible for screening during March 2016. The “long list” of projects has remained a living document, with additional projects added following workshops and feedback from ARRC. Summary tables of all the projects considered are attached as appendices to the Passenger, Freight, and Connectivity studies.

7.2 - Preliminary Project Screening

Project screening was informed by the use of a project screening workshop. Each project was screened using a matrix to evaluate the effectiveness of the project contributing to the overall Master Plan vision, identified needs, and ARRC's need for the Seward site.

The project screening considered the impact the project would have on the following evaluation criteria:

- economics,
- environment,
- regulatory,
- security,
- safety, and
- stakeholder support.

As outlined in Figure III-71, a number of questions were asked under each criteria to consider impacts resulting from each project. Based on the answers, a decision was made on whether the project would have a positive, neutral, or negative impact relative to the criteria. This helped to screen the projects and determine whether they should progress forward for further consideration as part of the studies and eventual Master Plan. In preparation for a project evaluation workshop, the project screening matrix was populated with a preliminary screening by two project staff to guide and assist discussions during the workshop.

Evaluation Criteria	Negative	Neutral	Positive	Notes		
Economics						
<i>Economic impacts</i>	How does the project affect local, regional, and state economies?					
<i>Indirect economic impacts</i>	Does the project provide infrastructure that supports other projects?					
Environmental						
<i>Resource impacts</i>	How does the project impact natural resources?					
<i>Ease of mitigation</i>	If negative impacts are likely, which resources are most affected and are mitigation options readily available?					
Regulatory						
<i>Compliance requirements</i>	Does the project comply with the legal requirements among existing contracts?					
Security						
<i>Legal requirements</i>	Is the project necessary for ARRC to meet legal Federal Railroad Association, Department of Homeland Security and local security requirements?					
Safety						
<i>ARRC safety culture</i>	Does the project promote ARRC's culture of safety?					
Stakeholder Support						
<i>Stakeholder support</i>	Is the project expected to have support from elected officials, vendors, and the community of Seward?					
<i>Grants</i>	Does the project qualify for grants?					
<i>Outside investment</i>	Is the project expected to be attractive to outside investment?					

Figure III-71: Project Screening Matrix

7.3 - Project Evaluation Workshop

A project evaluation workshop was held over two full days in March 2016. The purpose of this workshop was to work through the "long list" of projects chronologically, confirm the project screening matrix, and determine whether on the basis of this preliminary assessment the project should move forward for further consideration or be "screened out" and not considered further in the planning process.

The workshop was attended by:

- ARRC Project Manager,
- Transportation Planning Lead,
- Stakeholder Engagement Lead,
- Economic Assessment Lead,
- Environmental Lead,
- Transportation Engineer, and
- Project Administrator (Recorder).

Of the 186 projects originally identified, this workshop reduced the number of projects moving forward for further consideration to 105. This included the 14 “economic stimulus” projects being screened separately as part of the Economic Analysis Report. These projects were presented to ARRC executives and key staff as part of the project selection workshop.

7.4 - Project Selection Workshop

On March 29, 2016, a workshop was held with ARRC executives and other key staff to consider the potential projects for improvement at Seward. Three tables each included seven staff members, one facilitator, and one reporter. The workshop took place over three hours.

Each group was asked to focus on the various assets and provided with project options for improvement. In this way, the groups had to consider where compromises would need to be made, which options were preferred, and how the various assets and the site interacted with each other.

The groups used an aerial photograph and were tasked with placing either a symbol or an object on the site to represent the project they were selecting.

Following placement of the preferred projects on the project map, a participant was selected to report back on what preferred projects were selected and the reasons for their selection.

The project team considered workshop feedback and in particular the consistencies and differences between the projects selected. This process enabled the project team to reduce the number of projects moving forward for further consideration down to 64.

7.5 - Economic Analysis – Real Estate Stimulus Projects

Concurrent with the project identification and screening process, the Economic Analysis Report considered 14 projects to increase the use, value, and return on investment of the existing real estate at the Seward Marine Terminal. The projects considered by the Economic Analysis were:

- retail space,
- seafood processor,
- office space,
- dedicated laydown area,
- loading facility,
- day-trip passenger services,
- refined fuel distributor,
- off-season moorage,
- marine repair and maintenance,
- vessel storage,
- cannabis grow operation and warehouse,
- seafood cold storage and freezer space,
- hotel operation, and
- housing development.

These projects were considered in detail in the Economic Analysis report. Following project screening, seven projects were recommended for further consideration.

7.6 - Project Refinement

Following the project selection workshop and the results of the Economic Analysis, further analysis was undertaken to refine the projects being considered. This included considering what improvements could occur to projects and whether some smaller projects could be combined as optional additions to larger projects. An example of this is the addition of water service to both the passenger and freight dock. This further reduced the number of projects down to 38, which were presented at the Cornerstone Review Workshop.

7.7 - Cornerstone Review Workshop

A cornerstone review workshop was held on July 20, 2016, and comprised a presentation of projects to the ARRC Executive Group. Projects were presented as a four-part workshop, comprising of passenger projects, freight projects, real estate projects, and infrastructure projects.

It became immediately apparent during the workshop that the costs of the passenger dock and terminal replacement were the most significant items for consideration. ARRC executives provided feedback that the costs of the passenger dock replacement in particular were substantially higher than what was expected, and that further work would be required to identify lower cost options. The project team was asked to focus on passenger dock and terminal replacement options, and to hold a further workshop to consider these at the conclusion of option development.

7.8 - Terminal and Dock Option Presentation

The revised terminal and passenger dock replacement options were presented to ARRC executives on October 3, 2016. Feedback was received during this presentation that the costs of the replacement options were still a significant barrier. A revised approach was taken regarding replacement of the passenger dock, whereby a range of dock options has been developed and ARRC can select the preferred option at the time the improvement is required, dependent on identified need, cost, and availability of funding to undertake the improvement option.

7.9 - Board Request for Floating Dock Option to be Added Following Passenger Traffic Study

The proposed dock options as detailed in the Passenger Traffic Study, were presented to the ARRC Board meeting on Wednesday, May 3, 2017, where feedback raised concerns that the suite of options did not provide for at least one floating passenger dock option, as requested by the cruise industry. In response, additional wave analysis has been carried out to determine whether a floating dock would be feasible at the Seward Marine Terminal. The results of this analysis are presented in Appendix C. The analysis confirmed that a floating dock option was feasible, and three dock options were developed to provide alternatives. The full suite of dock options is included in Appendix D. One floating dock option is recommended for further consideration in this Master Plan.

7.10 - Improvement Project Options

A total of 47 improvement project options are recommended for consideration as part of the Master Plan. The majority of these are summarized in the Passenger Traffic Study, Freight Traffic Study, and Transportation Connectivity Study, although some options have been added or removed since the completion of these studies. A brief description of the improvement options follows:

7.10.1 Passenger Dock

- **Option P-PD1: Multi-Purpose Sheet Pile Dock:** Replace the existing passenger dock with a multi-purpose sheet pile dock with a concrete slab surface, designed for freight and passenger operations.
- **Option P-PD6: Minimal Pile Supported Dock:** Replace the existing passenger dock with a pile supported dock that meets the minimum needs of cruise ships.
- **Option P-PD14: Pile Supported Dock with Floating Platforms and Armor Rock Head:** Construct a pile-supported platform dock connected to a floating dock with drive-down ramps and an armor rock wave barrier at the seaward end of the dock.

7.10.2 Freight Dock

- **Option P-FD1: Freight Dock Mooring Structures to Accommodate Cruise Ships:** Install breasting and mooring dolphins connected by a catwalk at the seaward (southern) end to enable the accommodation of cruise ships measuring up to 1000 feet in length temporarily while the replacement passenger dock is constructed.

- **Option P-FD2: Add Floating Platforms to Freight Dock:** Add floating platforms to the south end of the existing freight dock to provide a landing location for cruise ships.
- **Option F-FD1: Freight Dock Extension and Expansion:** Widen the freight dock to the edge of the 'bump out' on the east side, extend the bulkhead north and dredge the east side of the freight dock. Move the sediment groin eastward and lengthen to provide shelter for the barge basin area. Install a notch in the freight dock for barge ramps.
- **Option F-FD2: Extend Freight Dock Double Track:** Extend double track from the freight dock into the uplands area inside and outside the freight dock gate.
- **Option F-FD3: Freight Dock Rail Improvements:** Replace subgrade beneath freight dock rail with a material that has a lower fines content to reduce frost heaving of tracks; and increase weight capacity of freight dock tracks.
- **Option F-FD4: Freight Dock and Area Identity Cards:** Provide frequent freight customers with identity cards (such as Transportation Worker Identification Credential (TWIC) cards or similar) that they can use to access the fenced area. Ideally, the cards could provide access to multiple ports.

7.10.3 Seward Loading Facility

- **Option F-SL1: Water Line - SLF Dock:** Install a fresh water line on the dock.
- **Option F-SL2: Fuel Lines - SLF Dock:** Install fuel lines on the dock (in and out).
- **Option F-SL3: SLF Removal:** Remove the SLF coal bunker, conveyer, and buildings and repurpose the site.
- **Option F-SL4: Redevelop SLF Land:** Install roads, infrastructure and identify lease areas for redevelopment into land uses consistent with or complementary to other activities at the Seward Marine Terminal.

7.10.4 Dale R. Lindsey Alaska Railroad Intermodal Terminal

- **Option P-TE1: New Railroad Terminal Building:** Combine the depot and terminal near the current terminal location using either an all-season building construction or providing for sections of the building to have a lightweight glass construction where they are only used in the summer season; relocate new fencing; and consider level platform loading.
- **Option P-TE3: Independent Luggage Handling Facilities:** Provide improved luggage handling drop-off for independent travelers or day visitors switching between trains and cruises that are not accommodated by package options.
- **Option P-TE4: Terminal Electronic Signage:** Install electronic signage at the terminal to provide public service announcements and also use as a potential revenue generator (e.g. for advertisers, community activities, tours).
- **Option P-TE5: Luggage Sorting Area in Terminal:** Create a dedicated area for sorting luggage in the terminal prior to loading it onto cruise ships.
- **Option P-TE6: Pre-Fabricated Terminal Building:** Construct a pre-fabricated terminal building to cater for cruise ship operations at the passenger dock.

7.10.5 Traffic Staging

- **Option P-TS1: Traffic Staging at New Terminal:** Provide outdoor amenities at the new terminal building, such as paving, parking organization and landscaping, and staging area for limited vehicle loading, with remainder of vehicle loading occurring directly from passenger dock.

7.10.6 Permit Area Inside Freight Dock Fence

- **Option F-PI1: Eliminate Blind Spots and Widen Gates on Freight Dock:** Re-arrange permit holder areas to ensure clear way-finding and eliminate existing blind spots, particularly where there are heavy lifting maneuvers. Widen the gates to the freight area to eliminate the need to lift pipe and conex boxes over gate openings.

7.10.7 Permit Area Outside Freight Dock Fence

- **Option F-PO1: Vessel Haul-Out Area:** Provide an area adjacent to the barge basin (east side of freight dock) for vessels to be hauled out and stored for marine maintenance purposes. Area should be sufficiently sized and graded to provide for the use of marine air bags.
- **Option F-PO2: Freight Dock At-Grade Rail Crossing:** Improve the Port Avenue at-grade rail crossing located near the freight dock.
- **Option F-PO3: Barge Basin Jetty:** Improve the jetty on the eastern side of the barge basin to reduce the migration of sediment from the adjacent braid of the Resurrection River.

7.10.8 New Laydown Area

- **Option F-NL1: Track #1 Alignment and Switches:** Evaluate the alignment and switch locations of Track #1 to optimize the use of surrounding uplands.

7.10.9 Passenger Dock Tracks

- **Option P-PT1: Track Modifications to Accommodate Port Avenue Train Accommodations:** Reconfigure Port Avenue to accommodate the full length of the Coastal Classic train (14 cars) to the south of the road carriageway.

7.10.10 Railyard

- **Option F-RY1: Increase Rail Weight Limits:** Replace 70-pound rail with 115-pound rail in sections of the ladder track, where it is required, to increase weight limits and flexibility of use of the yard.

7.10.11 Freight Building

- **Option F-FB1: Freight Building Restrooms:** Renovate the freight building to provide separate access to the restrooms for general permit holder use. The restrooms will need to be separate to the lease arrangements for the remainder of the building and have separate metering, etc.
- **Option F-FB2: Combined Freight Building and Communications Shelter:** Construct a new freight building co-located with a communications shelter. Includes offices, bathroom facilities, and workshop space, with garage doors on the ground floor level, etc. Locate the building on or near the existing communications building on the site.

7.10.12 Seward Depot

- **Option P-DE2: Improve Existing Railroad Depot:** Improve the railroad depot to enhance passenger experience.
- **Option P-DE3: Depot Expansion and Traffic Reconfiguration:** Acquire physical possession of the land between the depot and Leirer Road to expand depot and reconfigure traffic circulation.

7.10.13 Port Avenue

- **Option P-PA1: Port Avenue Improvements:** Improve the pedestrian route along Port Avenue between the terminal and Seward Highway.
- **Option P-PA2: Port Avenue Improvements on Railroad Land:** Improve the aesthetics along Port Avenue north of the terminal to enhance the area's appeal to potential leaseholders.

7.10.14 Real Estate Enhancements with a Passenger Focus

- **Option P-RE1: Business Facilities:** Provide leaseholder opportunity to construct a facility for tourism-related businesses, such as a car rental facility.

- **Option P-RE2: Big Box Retail Outlet:** Provide leaseholder opportunity to construct a big box retail outlet on railroad land to provide goods for purchase by residents of Seward, passengers, and other visitors to the city.
- **Option P-RE3: Hotel:** Provide leaseholder opportunity to construct a hotel on railroad land to provide accommodation to passengers and visitors to the city.

7.10.15 Real Estate Enhancements with a Freight Focus

- **Option F-RE1: Uplands Utility Upgrades:** Bury existing overhead utilities including phone, fiber-optic, and power. Extend phone, fiber-optic and power infrastructure to leaseholder area for leaseholder extension. Provide city sewer to the freight building, roundhouse, and SLF buildings. Provide water and sewer to upland areas to create leasing and development opportunities. Combine these utility improvements with road projects to leverage mobilization and bidding costs. Repair potholes and improve drainage throughout the area. Provide better lighting throughout the uplands area. Project may be staged on an area-by-area basis, dependent on need and demand.
- **Option F-RE2: Freight Uplands Improvements:** Improve road width and structure to accommodate Liquefied Natural Gas (LNG) modules (22 feet wide plus other metrics on weight and design vehicle) along internal roads between the freight dock, permit areas, and the new laydown area. Build a road to the barge uplands area to access pull-out equipment. Level and prepare uplands areas throughout the site. Create additional container storage in the northeast area. Top all working surfaces with asphalt concrete to eliminate potholes and reduce dust issues. Develop a landscaping plan for the area and create natural buffers between wetlands and natural areas to the east and northeast of the site. Provide a fence or concrete barriers to differentiate lease lots and provide secured areas. Project may be staged on an area-by-area basis or as need arises.
- **Option F-RE3: Laydown Area:** Establish large continuous laydown areas for large projects.
- **Option F-RE4: Refined Fuel Distributor:** Build a depot and facilities for a refined fuel distributor.
- **Option F-RE5: Marine Repair and Maintenance Facility:** Provide a marine repair and maintenance facility, including boat storage.
- **Option F-RE6: Seafood Processing:** Provide a seafood processing facility including new dedicated plant, dedicated dock, and accommodations for 100 people.

7.10.16 Freight Connectivity

- **Option C-FC1: Extend Port Avenue to Connect with Airport Road:** Extend Port Avenue to connect with Airport Road and configure road layout to offset impacts to wetlands. Design road with appropriate curve radii to minimize impact on existing railroad track, provide traffic calming/speed mitigation, and allow appropriate access to the Seward Highway.
- **Option C-FC2: Freight Area Access Control:** Contingent upon extension of Port Avenue to Airport Road, install a security camera, and/or gate and TWIC reader to manage access. Post signage to keep out non-heavy vehicle traffic.
- **Option C-FC3: Freight Corridor:** Develop a freight corridor connecting the Seward Marine Terminal to the Seward Highway through Leirer Industrial Park.

7.10.17 Railroad Operations Supporting Connections

- **Option C-RO1: Roundhouse Upgrade:** Upgrade the interior of the roundhouse to improve existing storage of goods, including office space, etc. If needed, install an oil/water separator system at the roundhouse. Undertake lighting upgrades to the roundhouse building. Paint the exterior of the building and consider adding a passenger car wash.
- **Option C-RO2: Replace Communications Building:** Replace the existing communications building with a larger, purpose-built structure with demarcated sections to restrict vendor access to their designated areas.
- **Option C-RO3: Rail Crossing Repair, Replacement and Upgrades:** Replace wood-tie at-grade rail crossings within the yard with concrete panels; include other upgrades to all at-grade rail crossings.



Part IV: Strategic Priorities



Credit: Judy Patrick Photography, 2012

Part IV - Strategic Priorities

1. Operational Objectives

Part II, Section 5 of the Master Plan sets out the strategic objectives of the Seward Marine Terminal Expansion Planning effort. These objectives were identified as the planning team has sought to understand the most viable future for the terminal over the next 20 to 25 years, as informed by the analysis undertaken in the Passenger Traffic Study, Freight Traffic Study, Transportation Connectivity Study, and importantly, the associated economic analysis. They represent the highest priority improvements at the Seward Marine Terminal, as follows.

- Prioritize replacement of the passenger dock, and provide clear options for its replacement with associated costs to enable decisions to be made about which option is the most feasible, balancing the needs of users with funding constraints.
- Replace the passenger terminal, which is located on the passenger dock and will need to be demolished when the dock is replaced.
- Provide associated infrastructure such as traffic staging and loading areas at the replacement passenger dock and terminal.
- Remove the SLF and repurpose the site for alternative uses.
- Extend Port Avenue through the Seward Marine Terminal site and connect it with Airport Road.

The prioritization focuses on improvements that will deliver the objectives, ensure that appropriate infrastructure is provided to support the right connections between the site and marine operations, minimize conflicts between uses and provide clear connections to transportation corridors and centers of demand beyond the site.

2. Prioritization of Improvements

The following priorities have been identified for facilities at the Seward Marine Terminal:

- **Improvement Priority 1:** Passenger Dock Replacement
- **Improvement Priority 1A:** Freight Dock Improvements to Accommodate Cruise Ships While Replacement Passenger Dock is Constructed
- **Improvement Priority 2:** Passenger Terminal Replacement
- **Improvement Priority 3:** Traffic Staging at Terminal
- **Improvement Priority 4:** Seward Loading Facility
- **Improvement Priority 5:** Extend Port Avenue through Seward Marine Terminal Site to Connect with Airport Road

These improvement priorities are shown in Figure IV-2.1, and are discussed in further detail in the following sections. In addition to the improvement priorities identified before, a number of improvement options that are dependent on opportunities being secured have been identified. These have been termed “Opportunity-Dependent Improvements” and are also described in further detail in the following sections.

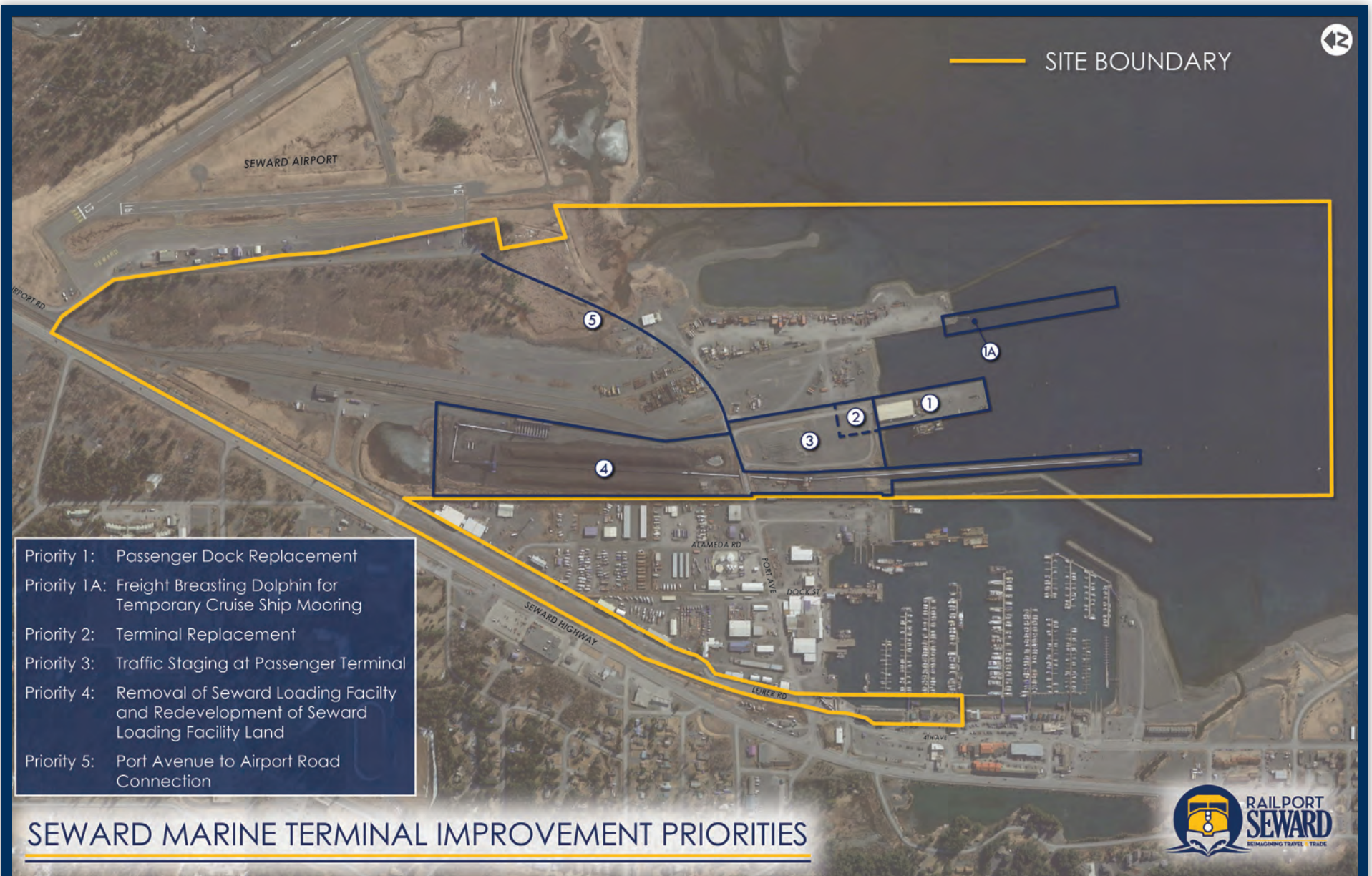


Figure IV-2.1: Seward Marine Terminal Improvement Priorities

Improvement Priority 1:

Passenger Dock Replacement

3. Recommended Improvement Options

3.1 - Improvement Priority 1: Passenger Dock Replacement

The highest improvement priority is the replacement of the Seward Passenger Dock. The location of the passenger dock is shown in Figure IV-3.1.

The reasons why this improvement has been identified as the highest priority are summarized below.

WHAT	Replacement of the existing Seward Passenger Dock
WHY	The existing passenger dock is at the end of its serviceable life, and is in need of replacement.
WHEN	By 2022
WHERE	Waterfront location
HOW	Three different replacement options dependent on the dock type desired, cost, and need (Options P-PD1, P-PD6 and P-PD14).

Four different options have been identified for the replacement of the passenger dock. These are:

- **Option P-PD1: Multi-purpose Sheet Pile Dock:** Replace the existing passenger dock with a multi-purpose sheet pile dock with a concrete slab surface, designed for freight and passenger operations.
- **Option P-PD6: Minimal Pile Supported Dock:** Replace the existing passenger dock with a pile supported dock that meets the minimum needs of cruise ships.
- **Option P-PD14: Pile Supported Dock with Floating Platforms and Armor Rock Head:** Construct a pile-supported platform dock connected to a floating dock with drive-down ramps and an armor rock wave barrier at the seaward end of the dock.
- **Option P-FD2: Add Floating Platforms to Freight Dock:** Add floating platforms to the south end of the existing freight dock to provide a landing location for cruise ships.

These options are described in further detail in the following sections.



Three replacement dock options.
*Optional Project P-PD9

IMPROVEMENT PRIORITY 1: PASSENGER DOCK REPLACEMENT



Figure IV-3.1: Improvement Priority 1: Seward Passenger Dock Replacement

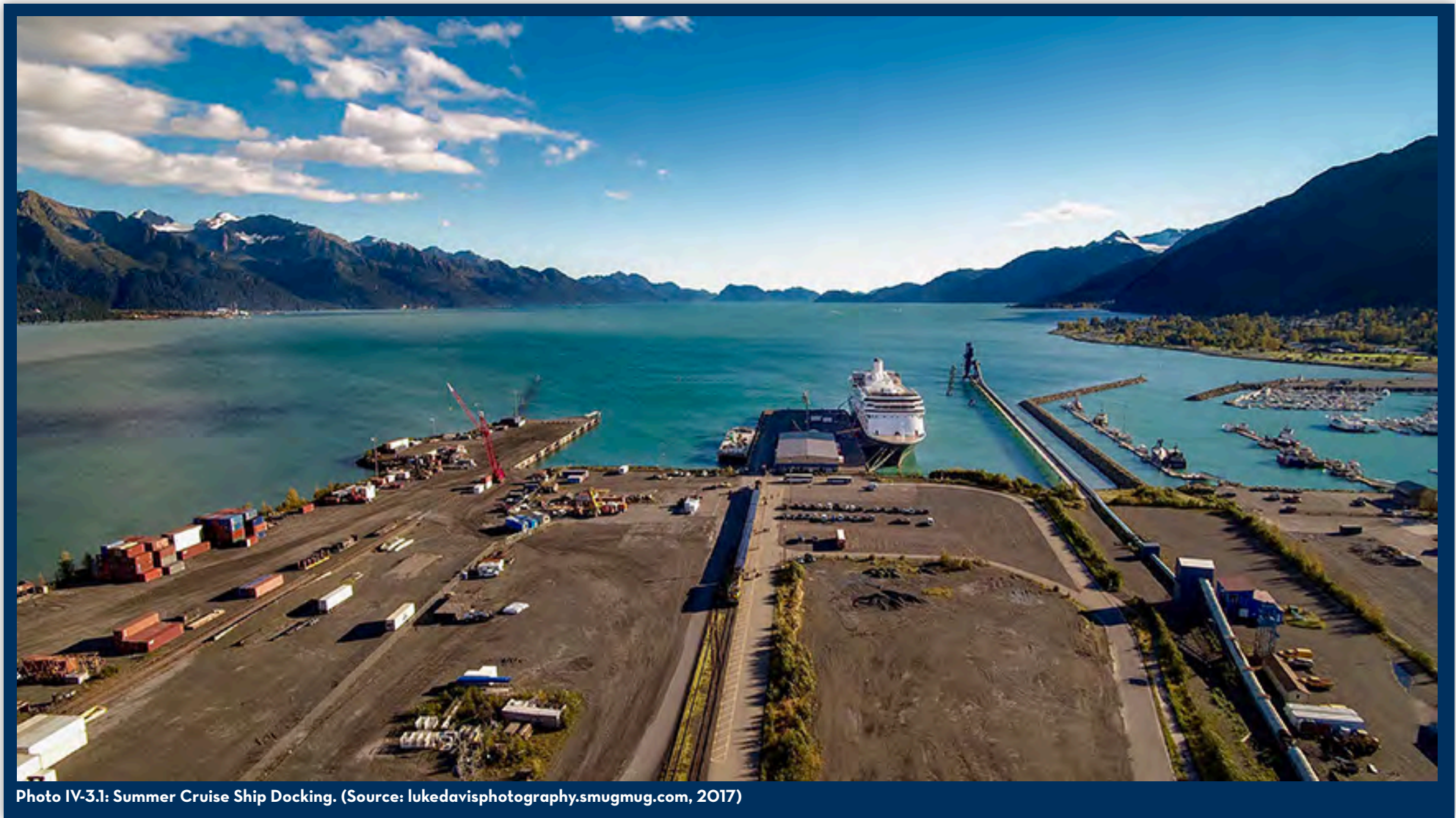


Photo IV-3.1: Summer Cruise Ship Docking. (Source: lokedavisphotography.smugmug.com, 2017)

3.1.1 Option P-PD1: Multi-Purpose Sheet Pile Bulkhead Dock

Description

Option P-PD1 replaces the existing dock with a full size sheet pile bulkhead dock measuring approximately 970 feet in length and 200 feet in width. The heavy-duty dock provides flexibility for rail freight activities, which are easily accommodated by installing ties and rails as necessary. Other components include salvaging two existing mooring dolphins and installing one new mooring dolphin to provide mooring for vessels over 1,000 feet in length. The dock is finished with a concrete surface, and fenders and bollards line the east and west face for berthing on both sides (Figure IV-3.2).

Cost Estimate and Schedule

Cost estimates and approximate completion timeframes for Option P-PD1 are presented in Table IV-3.1, with major components broken out in itemized bullet points. Most activities occur concurrently, meaning that multiple crews will be working on multiple tasks simultaneously.

Table IV-3.1: Cost Estimate for Passenger Dock Option P-PD1

Option P-PD1: Full Size Sheet Pile Bulkhead Dock (\$77.3M and 2 Years Construction Time)		
Construction Activity	Cost	Duration
• Mobilization and Demobilization	\$4.5M	4 months
• Demolition	\$6.8M	1 month
• Sheet pile dock (includes sheet pile installation, deep compaction, layer compacted fill)	\$27.1M	1 year and 6 months
• Fender system	\$4.8M	2 weeks
• Dock utilities (includes water service, fuel system)	\$0.4M	1 month
• Dock appurtenances (includes face beam, bullrail, mooring bollards, safety ladders)	\$4.5M	5.5 months
• Dock surfacing	\$6.4M	5 months
• Mooring dolphins	\$0.45M	2 weeks
• Catwalks	\$0.4M	1 week
• Rail tracks	\$0.4M	2 weeks
• Cathodic protection (material and install)	\$0.4M	3 weeks
• Engineering, contract administration, project management, permitting)	\$6.6M	Throughout project
• Contingency (20%)	\$14.5M	N/A
Total	\$77.3M	3 years

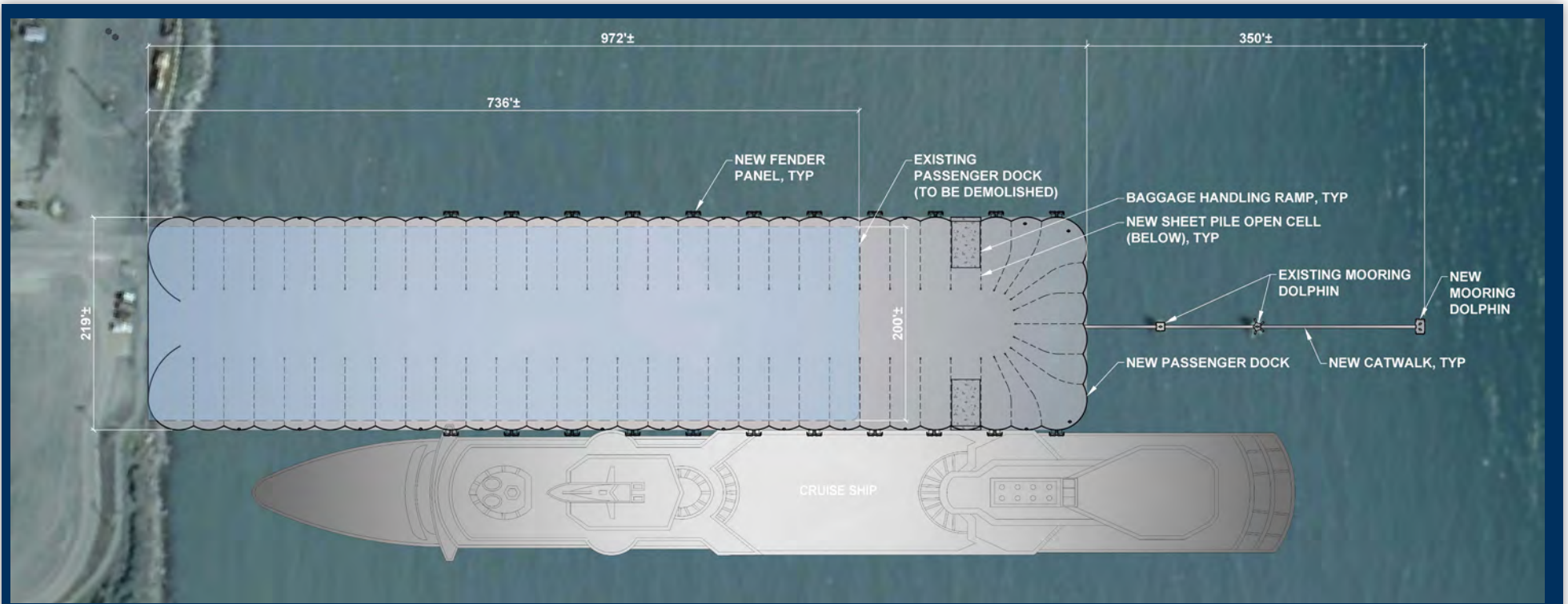


Figure IV-3.2: Option P-PD1: Full Size Sheet Pile Bulkhead Dock

3.1.2 Option P-PD6: Minimal Pile Supported Dock

Description

Option P-PD6 is a minimal pile supported dock replacement option (Figure IV-3.3). The platform is approximately 400 feet in length and 120 feet in width, with access provided by a 475 feet long and 45 feet wide trestle. The dock surface area is reduced by approximately 100,000 square feet relative to the existing passenger dock. Four new breasting dolphins are installed at the platform corners. Two existing mooring dolphins are retained beyond the end of the platform, and one new mooring dolphin is installed, which would be accessed using catwalks. Vessels over 1,000 feet in length are able to berth at the facility with fenders and bollards provided along the east and west face of the platform. The dock is not able to be used for freight activities due to the weight loading proposed for the dock surface.

Cost Estimate and Schedule

Cost estimates and approximate completion timeframes for Option P-PD6 are presented in Table IV-3.2, with major components broken out in itemized bullet points. Most activities occur concurrently, meaning that multiple crews will be working on multiple tasks simultaneously.

Table IV-3.2: Cost Estimate for Passenger Dock Option P-PD6

Option P-PD6: Minimal Pile-Supported Dock (\$58.1M and 2 Years Construction Time)		
Construction Activity	Cost	Duration
• Mobilization and Demobilization	\$5.6M	2.5 months
• Demolition	\$6.8M	1 month
• Breasting Dolphins	\$2.7M	1 month
• Catwalks	\$0.1M	10 days
• Pile supported dock (includes pile material and install, concrete pile caps, concrete deck panels, fendering and appurtenances)	\$19.8M	1 year, 3 months
• Breasting/mooring dolphins	\$3.3M	2.5 months
• Dock fender system	\$3.0M	2 weeks
• Dock utilities (includes water service, fuel system)	\$0.4M	1 month
• Engineering, contract administration, project management, permitting)	\$6.5M	Throughout project
• Contingency (20%)	\$9.9M	N/A
Total	\$58.1M	2 Years

Expected Life of Facility

The design life of the passenger dock is 50 years. It is expected that the dock would last at least 50 years before any significant repairs or replacement would be required.

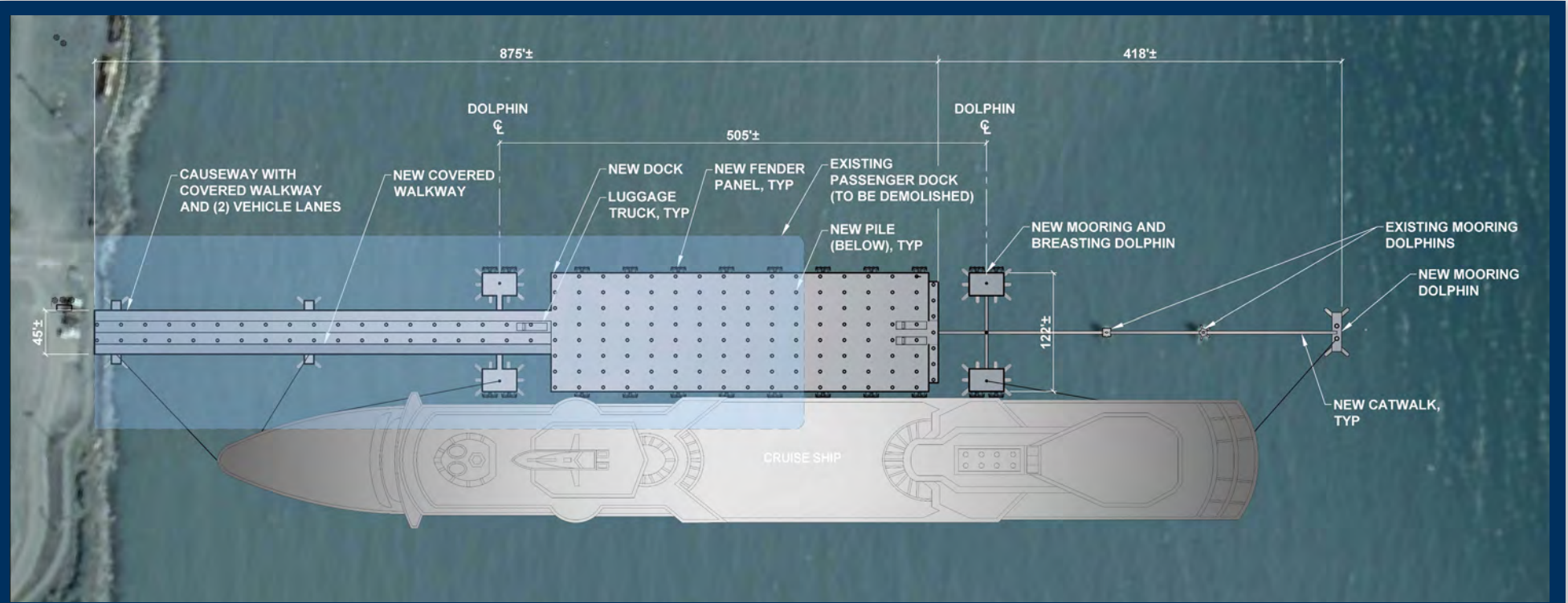


Figure IV-3.3: Option P-PD6: Minimal Pile Supported Dock

3.1.3 Option P-PD14: Pile Supported Dock with Floating Platforms and Armor Rock Head

Description

Option P-PD14 incorporates a pile supported platform access that extends approximately 280 feet seaward. Four drive-down ramps connect the fixed platform approach to the floating portion of the dock, which provide vehicle and pedestrian access. The middle of the dock is comprised of four 322-foot long by 60-foot wide floating concrete platforms, which can accommodate two vessels moored at one time (one on the east side of the dock and one on the west side of the dock). A 276-foot wide wave barrier is located south (seaward) of the floating platforms, which consists of a closed cell sheet pile retaining structure faced with armor rock on the south end to absorb and deflect incoming waves during storm events. A mooring dolphin is added seaward of the existing mooring dolphins, and additional mooring/breasting dolphins are added shoreward of the floating platforms to provide sufficient mooring capabilities for larger vessels.

Cost Estimate and Schedule

Cost estimates and approximate completion timeframes for Option P-PD14 are presented in Table IV-3.3, with major components broken out in itemized bullet points. Most activities occur concurrently, meaning that multiple crews will be working on separate tasks simultaneously.

Table IV-3.3: Cost Estimate for Passenger Dock Option P-PD14

Option P-PD14: Pile Supported Dock With Floating Platforms (\$89.1M and Two Years to Complete)		
Construction Activity	Cost	Duration
• Mobilization and Demobilization	\$5.6M	3 months
• Demolition	\$6.8M	4 months
• Pile Supported Approach Dock	\$5.6M	6 months
• Sheet Pile with Armor	\$8.8M	2 months
• Floating Platform Docks	\$38.1M	2 months
• Breasting Dolphins	\$1.5M	1 month
• Mooring Dolphin	\$0.5M	2 weeks
• Catwalks	\$1.0M	1 week
• Dock Utilities	\$0.5M	1 month
• Engineering, Contract Administration, Project Management, Permitting	\$5.9M	Throughout project
• Contingency (20%)	\$14.8M	N/A
Total	\$89.1M	2 Years

Expected Life of Facility

The design life of the passenger dock is 50 years. It is expected that the dock would last at least 50 years before any significant repairs or replacement would be required.

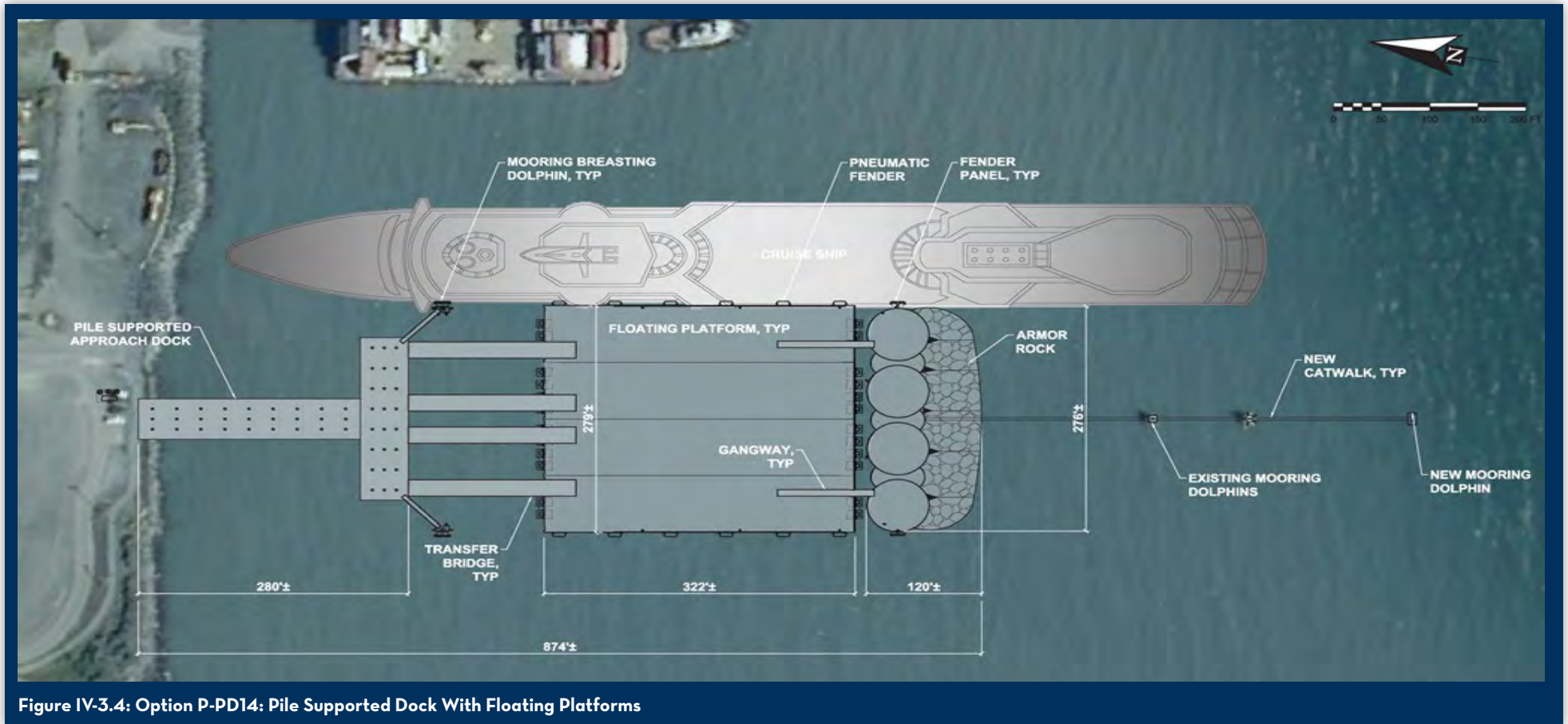


Figure IV-3.4: Option P-PD14: Pile Supported Dock With Floating Platforms

3.1.4 Option P-FD2: Add Floating Platforms to Freight Dock

Description

Option P-FD2 provides for the addition of two floating platforms at the south end of the existing 600 foot long open cell sheet pile freight dock. The additional floating platforms will enable cruise ships to berth at the freight dock, rather than use the existing, aging passenger dock or the existing freight dock with its fixed deck elevation and limited length.

The option provides for the addition of two floating platforms measuring 322 feet long by 60 feet wide at the south (seaward) end of the freight dock to provide for the loading and offloading of passengers and luggage. One mooring dolphin is installed at the south end of the new floating platforms to provide adequate berthing for vessels up to 1000 feet in length, and catwalks are installed to provide access to all dolphins while vessels are moored at the dock. A closed cell wave barrier with armor rock is installed south of the floating platforms to reduce wave energy impacting the platforms. The existing freight dock is surfaced with heavy-duty block pavers to ensure a clean surface that still provides the necessary capacity for freight operators.

Cost Estimate and Schedule

Cost estimates and approximate completion timeframes for Option P-FD2 are presented in Table IV-3.4, with major components broken out in itemized bullet points. Most activities occur concurrently, meaning that multiple crews will be working on multiple tasks simultaneously.

Table IV-3.4: Cost Estimate for Passenger Dock Option P-FD2

Option P-FD2: Add Floating Platforms to Freight Dock (\$47.0M and 1 Year Construction Time)		
Construction Activity	Cost	Duration
• Mobilization and demobilization	\$12.5M	3 months
• East side open cell bulkhead dock	\$3.4M	3 months
• Demolition of mooring dolphin	\$0.1M	1 week
• Sheet pile breakwater with armor	\$8.8M	2 months
• Floating platform docks	\$37.1M	2 month
• Mooring dolphins	0.9M	1 month
• Catwalks	1.0M	1 week
• Dock utilities (includes water service, fuel system)	\$0.8M	1 month
• Dock surfacing (block pavement)	\$3.2M	2 months
• Dredging	\$14.4M	2 months
• Engineering, contract administration, project management, permitting)	\$4.1M	Throughout project
• Contingency (20%)	\$17.3M	N/A
Total	\$103.6M	1 Year

Expected Life of Facility

The design life of the floating dock extension to the freight dock to accommodate passenger cruise ship landings is 35 years. This is because the existing freight dock is 15 years old, and it has a design life of 50 years. It is expected that the dock would last at least 35 years before any significant repairs or replacement would be required.

3.1.5 Optional Improvements Related to Passenger Dock

One additional, optional improvement has also been identified for the replacement passenger dock:

- **Option P-PD9: Cruise Ship Passenger Covered Walkway:** Construct a covered walkway from the passenger dock to the passenger terminal to make the initial disembarkation process more inviting.

This project can be added to either dock replacement option, if required.

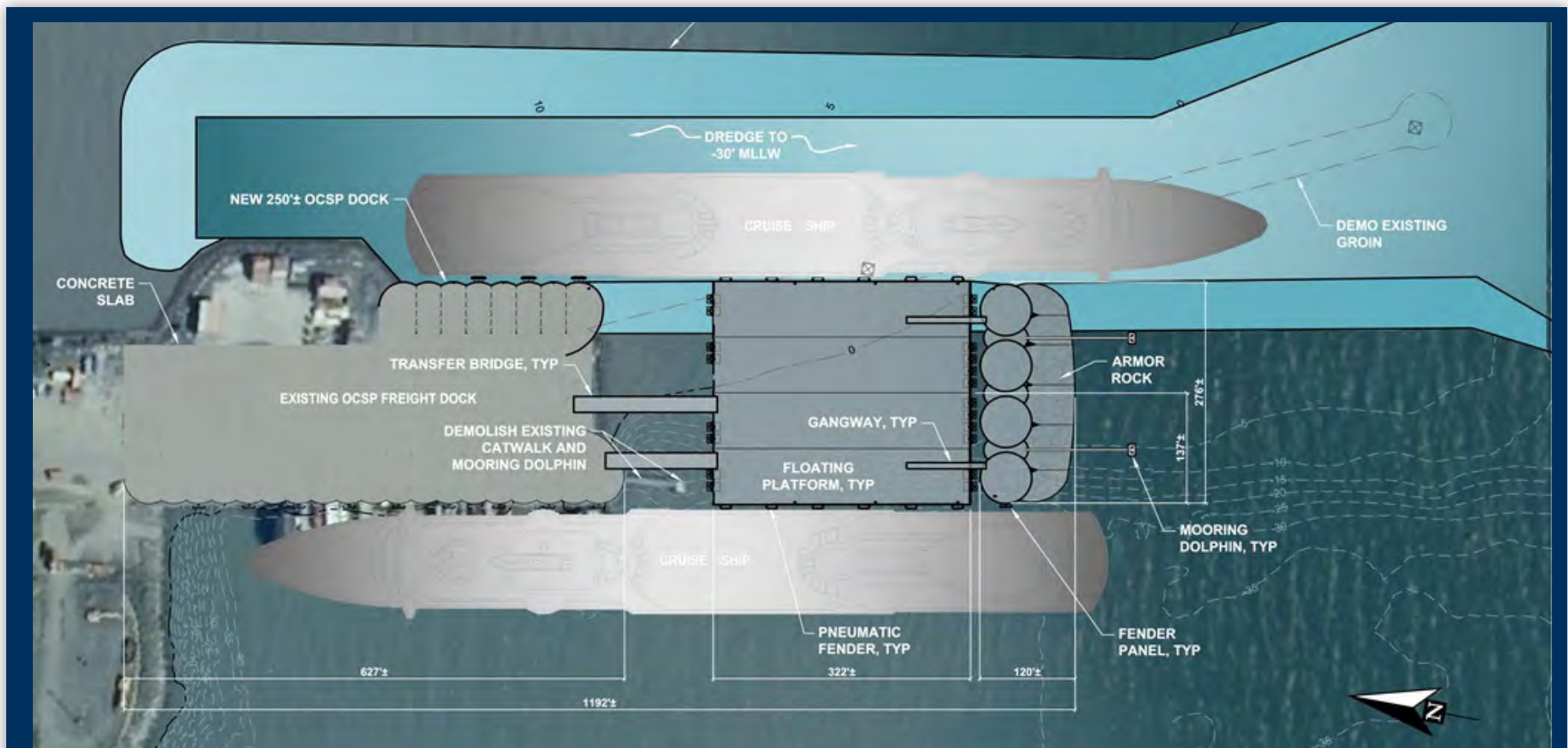


Figure IV-3.5: Option P-FD2: Add Floating Platforms to Freight Dock

Improvement Priority 1A:

**Freight Dock Improvements to Accommodate
Cruise Ships while Replacement Passenger
Dock is Constructed**

3.2 - Improvement Priority 1A: Freight Dock Improvements to Accommodate Cruise Ships While Replacement Passenger Dock is Constructed

Concurrent with Improvement Priority 1 is the need to provide the ability for cruise ships to moor temporarily at the freight dock while the new passenger dock is under construction. The location of improvements to the freight dock to enable cruise ships to land temporarily is shown in Figure IV-3.6.

The reasons why this improvement has been identified as the concurrent highest priority are summarized below.

WHAT	Install breasting dolphin and mooring dolphins at the seaward end of the Seward Freight Dock
WHY	To accommodate cruise ships and passengers while the passenger dock is reconstructed (if needed)
WHEN	Dependent on need, but will be prior to 2022
WHERE	Seaward (southern) end of the freight dock, to enable cruise ships to land along the west face of the dock.
HOW	One option available (Option P-FD1)

One option has been identified to enable cruise ships to land at the freight dock temporarily while the passenger dock is reconstructed. The option is detailed below.

- **Option P-FD1: Install Breasting Dolphin at End of Freight Dock:** Install a breasting dolphin at the southwestern end of the freight dock to provide a temporary landing point for cruise ships while the replacement passenger dock is being constructed.

This option is described in further in the following section.



One option available (P-FD1) to provide temporary cruise ship landing facilities.



IMPROVEMENT PRIORITY 1A: TEMPORARY CRUISE SHIP LANDING AT FREIGHT DOCK



Figure IV-3.6: Improvement Priority 1A: Temporary Cruise Ship Landing at Freight Dock



Photo IV-3.2: Winter Freight Docks (Source: lukedavisphotography.smugmug.com, 2017)

3.2.1 Option P-FD1: Install Breasting Dolphin at End of Freight Dock

Description

Option P-FD1 provides additional infrastructure to the existing 600 feet long freight dock. The additional infrastructure allows cruise ships to use the facility while the passenger dock is being demolished and a new dock is constructed. To provide adequate berthing for some of the larger cruise ships, three mooring and breasting dolphins are required on the south end of the freight dock. Catwalks are installed to provide access to all dolphins while vessels are moored at the dock. The additional mooring and breasting dolphins allow ships up to 1000 feet in length to safely operate while the new passenger dock is constructed. The proposed mooring and breasting dolphin additions are shown in Figure IV-3.7.

Cost Estimate

Cost estimates and approximate completion timeframes for Option P-FD1 are presented in Table IV-3.4, with major components broken out in itemized bullet points. The overall project timeline is approximately 8 months from design through construction (excluding environmental permitting).

Table IV-3.5: Cost Estimate for Option P-FD1: Mooring and Breasting Dolphins on Freight Dock to Enable Temporary Cruise Ship Landings

Cost Estimate for Option P-FD1: Mooring and Breasting Dolphins on Freight Dock to Enable Temporary Cruise Ship Landings (\$3.9M and 8 Months to Complete)		
Construction Activity	Cost	Duration
<ul style="list-style-type: none"> • Mobilization and demobilization • Breasting dolphins (bid/fabricate/install) • Catwalks • Engineering, contract administration, project management, permitting • Contingency (20%) 	<ul style="list-style-type: none"> \$350K \$1.7M \$950M \$250K \$650K 	<ul style="list-style-type: none"> 2 months 2.5 months - Throughout project N/A
Total	\$3.9M	8 Months

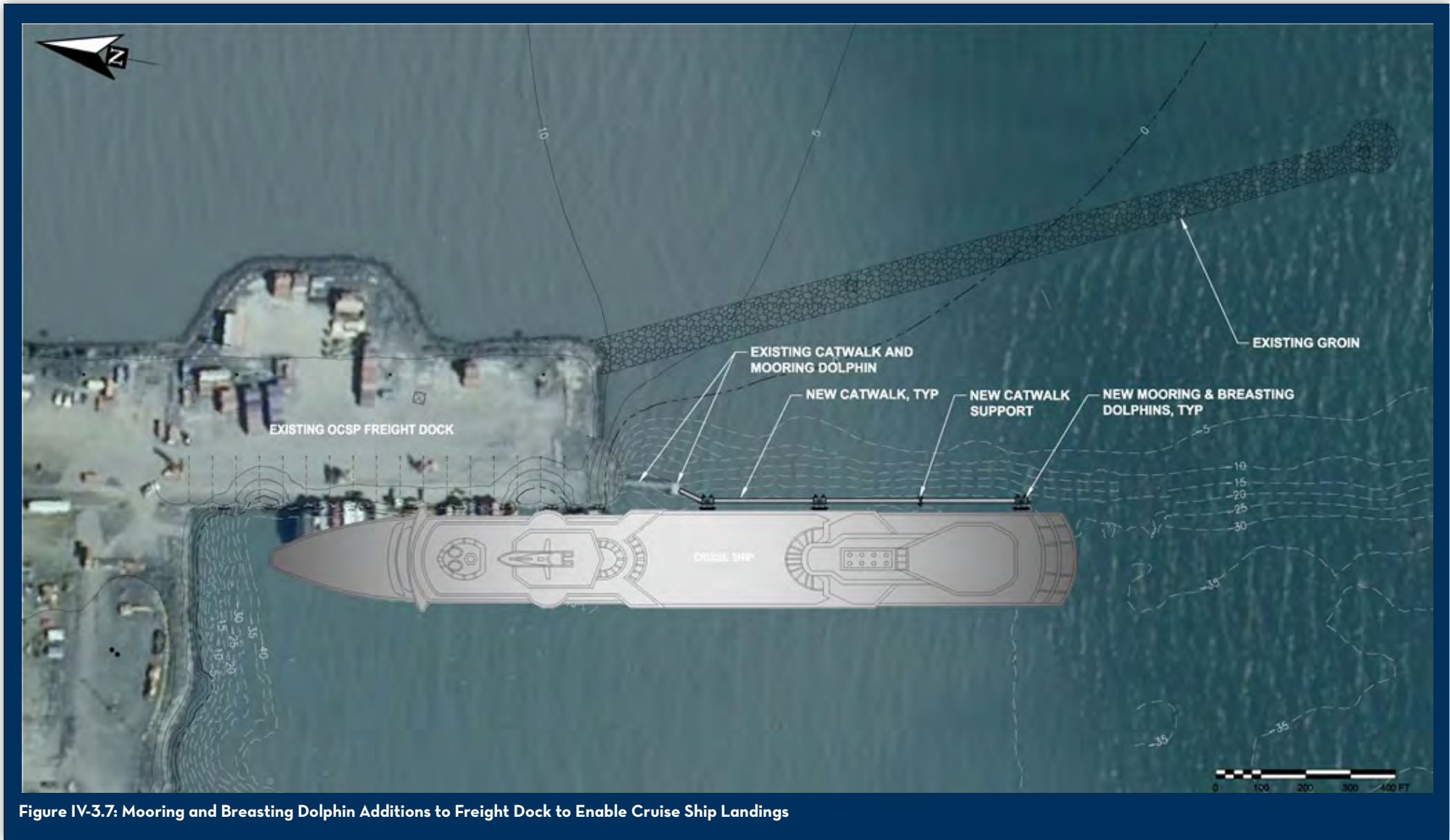


Figure IV-3.7: Mooring and Breasting Dolphin Additions to Freight Dock to Enable Cruise Ship Landings

Improvement Priority 2:

Passenger Terminal Replacement

3.3 - Improvement Priority 2: Passenger Terminal Replacement

The second highest improvement priority is to construct a new passenger terminal on land to replace the terminal building that will be lost when the existing passenger dock is demolished. Two options are available for the replacement of the terminal building, dependent on the standard of finish desired for the new terminal building. The location for the new passenger terminal is shown in Figure IV-3.8.

The reasons why this improvement has been identified as the second highest priority are summarized below.

WHAT	Replace existing Dale R. Lindsey Alaska Railroad terminal building
WHY	The terminal building is currently located on the passenger dock, which is in need of replacement. Therefore, the terminal building will be lost when the passenger dock is demolished.
WHEN	By 2022
WHERE	On land immediately adjacent to the new passenger dock
HOW	Two options are available (Options P-TE1 and P-TE6), dependent on the level of finish desired for the replacement terminal building

Two different options have been identified for the terminal. These are:

- **Option P-TE1: New Railroad Terminal Building:** Combine the depot and terminal near the current terminal location using either an all-season building construction or providing for sections of the building to have a lightweight glass construction where they are only used in the summer season; relocate new fencing; and consider level platform loading.
- **Option P-TE6: Pre-Fabricated Terminal Building:** Construct a pre-fabricated terminal building to cater for cruise ship operations at the passenger dock.

These options are outlined in further the following sections.



Two options available for replacement of terminal building.

*Optional Projects P-TE3, P-TE4, and P-TE5 part of terminal improvements

IMPROVEMENT PRIORITY 2: TERMINAL REPLACEMENT



Figure IV-3.8: Improvement Priority 2: Dale R. Lindsey Alaska Railroad Terminal Replacement

3.3.1 Option P-TE1: New Railroad Terminal Building

Description

Option P-TE1 razes the existing terminal building and constructs a new terminal building on land immediately adjacent to the replacement passenger dock. As the new terminal building will need to provide level loading facilities for train embarkation, it is recommended that the train depot be consolidated at the site to take advantage of the level of loading platform. The reasons why this is recommended is as follows:

- The two train facilities (terminal and depot) are located approximately 0.6 mile apart from each other along Port Avenue, which is a city-owned public street. Frequently, passengers arriving at the depot walk along Port Avenue, and the quality of the street environment is poor owing to it being located in an industrial area.
- The existing depot is constrained due to the small land area and undersized facilities available.
- Any addition to or construction of new facilities triggers the requirement to provide level platform loading along the entire length of the train, and associated transitions are required between the building and the platform. Co-locating the depot and terminal in a single location would mean that only one level platform would need to be provided to cater for both the Coastal Classic and the Grandview cruise trains.
- Providing a co-located terminal and depot would mean that ARRC would need to maintain only one facility for all its passenger services, rather than two separate facilities.
- Relocating the depot to the terminal potentially frees up the land currently occupied by the depot for redevelopment.

Table IV-3.6 sets out the floor areas needed to support cruise ships, the railroad depot, and combined/shared facilities. If the railroad depot is the stay in its existing location, then the floor area for dedicated railroad depot activities (approximately 6,000 square feet) would not be needed. The level loading platform and transition ramps would still be required to service the Grandview cruise train.

If the depot is relocated, the level loading platform would need to extend across Port Avenue to support loading of the Coastal Classic train (a total length of 1,300 feet). In this scenario, the construction of the Port Avenue to Airport Road connection (Priority 5) would be of increased importance to enable unobstructed access to the freight part of the Seward Marine Terminal site, and opportunity dependent rail track improvement P-PT1 (Track Modifications to Accommodate Longer Trains at Terminal) would become a priority. This is further described in Part IV, section 4.1.1 of the Master Plan.

Table IV-3.6: Estimated Square Footage of Spaces in Terminal

Estimated Square Footage of Spaces in Terminal	
Space Type	Square Footage
• Dedicated Space for Railroad Depot Activities	6,000
• Dedicated Space for Cruise Ship Activities	18,500
• Shared Space (includes vendor space, restrooms, storage, port offices, mechanical and electrical spaces, walls and circulation space)	18,700
Total	43,200

The combined terminal and depot building is 43,200 square feet to allow sufficient rooms and spaces, with an indicative floor plan shown in Figure IV-3.9. The building is divided into two main functions, with the east part of the building serving all train or depot functions and the west part of the building serving all cruise ship operations. The west part of the building could use either an all-season construction or be built using a lightweight glass construction owing to its seasonal use. Shared services such as office space, restrooms, storage, a gift shop, mechanical and electrical spaces are also located on the east side of the building.

All-Season Option

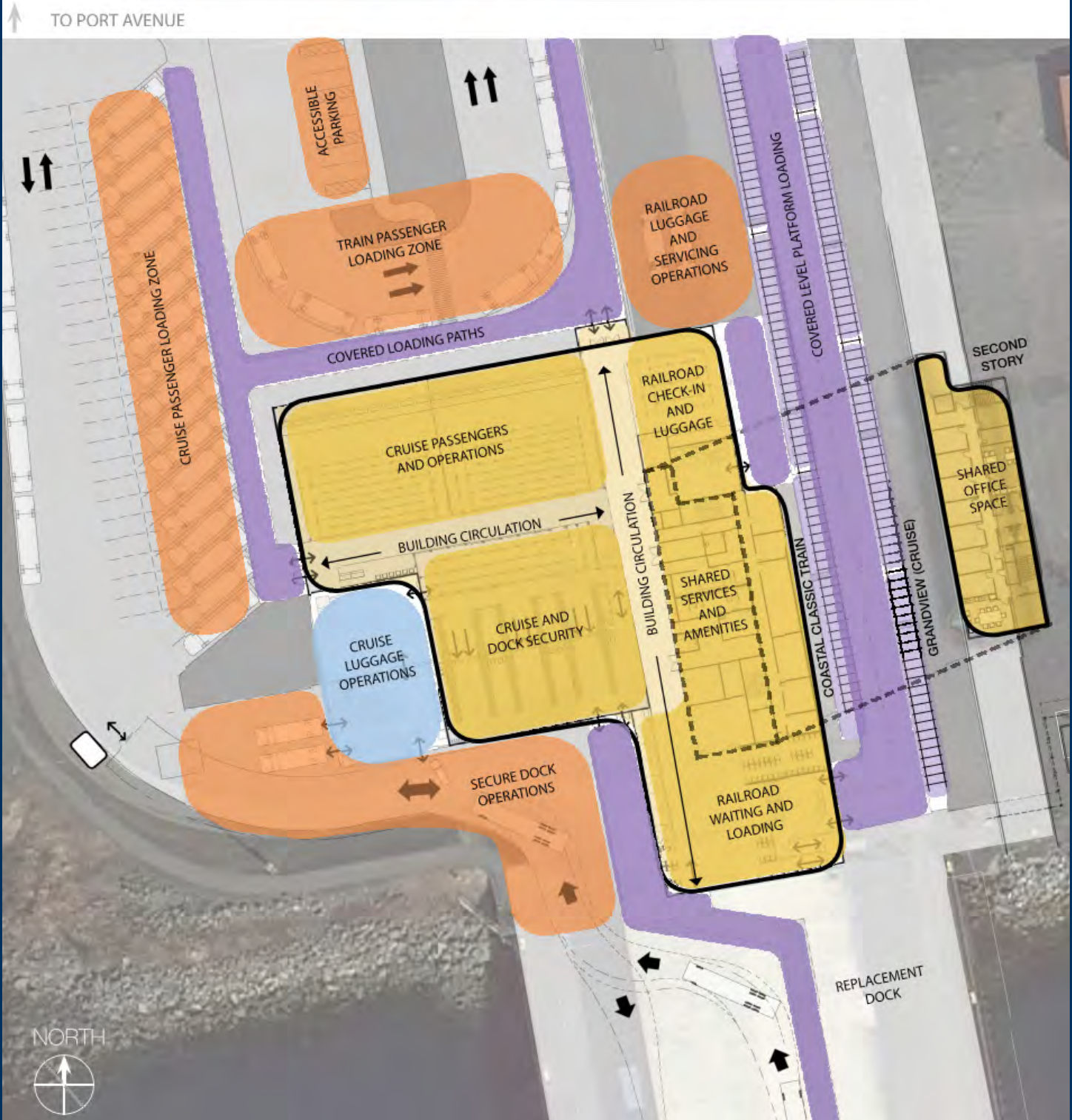


Figure IV-3.9: Proposed Internal Layout for Combined Terminal and Depot Building



Southwest Perspective

Figure IV-3.10: Possible Southwest (Oceanside) Elevation for New Combined Terminal and Depot Building



Northwest Perspective

Figure IV-3.11: Possible Northwest (Landside) Elevation for New Combined Terminal and Depot Building

Several options have been considered for the external appearance and massing of the building.

Cost Estimate

Estimates for the replacement terminal cost are presented in Table IV-3.7, with major components broken out in itemized bullet points.

Table IV-3.7: Cost Estimate for Option P-TE1: ARRC Standard Terminal Building

Cost Estimate for Terminal Replacement Option P-TE1			
Construction Item	Square Footage	Cost Per Square Foot	Total
• All-year construction (includes site work)	43,223	\$500	\$21,611,500
• Pavilion (includes site work)	0	\$275	\$0
• Secure Shelter	4,073	\$175	\$712,775
• Shelter Only	11,418	\$150	\$1,712,700
• Level Platform Loading Canopy (assumed 1,300 feet long)	29,204	\$125	\$3,650,500
• Pedestrian Dock Tent	6,240	\$100	\$624,000
• Construction Subtotal			\$28,311,475
• Contingency (20%)			\$5,662,295
• Total Construction Cost			\$33,973,770
• Project Cost (Contract Administration, Project Management, Permitting)			\$10,202,333
Total Terminal and Site Project Cost			\$44,176,103

The above cost estimate provides for the entire building to be an all-season construction with a combined depot and terminal serving all passenger train operations.

If the building was to be constructed with the west side being a lightweight glass construction owing to its seasonal use (pavilion style), the total building cost would lower to approximately \$35 million.

If the depot was to be retained at the current site, the total building cost would lower to approximately \$38.5 million.

3.3.2 Option P-TE6: Pre-Fabricated Terminal Building

Description

Option P-TE6 razes the terminal building and constructs a new terminal building and consolidated train depot on land immediately adjacent to the replacement passenger dock. As with Option P-TE1, it is considered desirable to co-locate all train facilities in a single location.

The combined terminal and depot building in this option is 35,000 square feet and utilizes pre-engineered metal construction. The building will be functional on a year-round basis. Once complete, the building will have a similar appearance to the building in Figure IV-3.12.



Figure IV-3.12: Example Pre-Engineered Metal Terminal Building

Cost Estimate

The cost estimate for retaining and renovating the existing terminal is presented in Table IV-3.8, with major components broken out in itemized bullet points.

Table IV-3.8: Cost Estimate for Option P-TE6: Pre-Engineered Metal Terminal Building

Cost Estimate for Terminal Replacement Option P-TE6			
Construction Item	Square Footage	Cost Per Square Foot	Total
• Pre-Engineered Metal Building - all year functional (includes site work)	35,000	\$360	\$12,600,000
• Secure Shelter	4,073	\$175	\$712,775
• Shelter Only	11,418	\$150	\$1,712,700
• Level Platform Loading Canopy (assumed 1,300 feet long)	29,204	\$125	\$3,650,500
• Pedestrian Dock Tent	6,240	\$100	\$624,000
• Construction Subtotal			\$17,758,475
• Contingency (20%)			\$3,551,695
• Total Construction Cost			\$21,310,710
• Project Cost (Contract Administration, Project Management, Permitting)			\$6,490,603
Total Terminal and Site Project Cost			\$27,801,313

3.3.3 Optional Improvements Related to the Terminal

Three additional, optional improvements have also been identified for the passenger terminal:

- **Option P-TE3: Independent Luggage Handling Facilities:** Provide improved luggage handling drop-off for independent travelers or day visitors switching between trains and cruises that are not accommodated by package plans.
- **Option P-TE4: Terminal Electronic Signage:** Install electronic signage at the terminal to provide public service announcements and also use as a potential revenue generator (e.g., for advertisers, community activities, tours).
- **Option P-TE5: Luggage Sorting Area in Terminal:** Create a dedicated area for sorting luggage in the terminal prior to loading it onto cruise ships.

These options can be incorporated into the terminal replacement or rehabilitation option selection, if required.

Improvement Priority 3:

Traffic Staging at Terminal

3.4 - Improvement Priority 3: Traffic Staging at Terminal

The third highest improvement priority is to provide adequate space for efficient and effective traffic staging and management at the passenger terminal. The location of the traffic staging area is shown in Figure IV-3.13.



Figure IV-3.13: Improvement Priority 3: Traffic Staging at the Passenger Terminal

The reasons why this improvement has been identified as the third highest priority are summarized below.

- WHAT** Improve the traffic staging area to effectively manage passenger traffic
- WHY** Traffic staging currently requires a marshal during busy periods and the replacement of the terminal to land provides the opportunity to reconfigure traffic staging to provide for more effective traffic management during embarkation and disembarkation operations
- WHEN** By 2022 (concurrent with passenger dock and terminal)
- WHERE** Immediately adjacent to the passenger dock and terminal
- HOW** One option available (Options P-TS1)

One option has been identified for improving the traffic staging at the terminal:

- **Option P-TS1: Traffic Staging at New Terminal:** Provide outdoor amenities at the new terminal building, such as paving, parking organization and landscaping, and staging area for limited vehicle loading, with remainder of vehicle loading occurring directly from passenger dock.

This option is outlined in further in the following section.

3.4.1 Option P-TS1: Traffic Staging at New Terminal

Description

This option revises and enhances the traffic staging arrangements for the new terminal. Key elements of the proposed design are the provision of a separate route to enable bus and box truck parking and loading on the dock; angled parking for bus loading immediately adjacent to the terminal; and a circulation route for chartered vehicles, tour shuttles, taxis, and private vehicles immediately adjacent to the terminal. Provide for extended bus parking, and for staff and visitor parking in close proximity to the terminal.

This traffic staging arrangement is designed to cater to a combined depot and terminal facility; therefore, provision is made to separate vehicle and luggage movements associated with trains from the vehicle and luggage movements associated with cruise ships. The design is compliant with ADA requirements and includes the provision of a level platform for train passengers to embark and disembark the trains, which is separated from vehicle movements. An indicative layout for these improvements is shown in Figure IV-3.14.

Cost Estimate

The cost estimate for the completion of site works for the traffic staging area at the new terminal is shown in Table IV-3.9. The cost estimate has been completed in 2017 dollars.

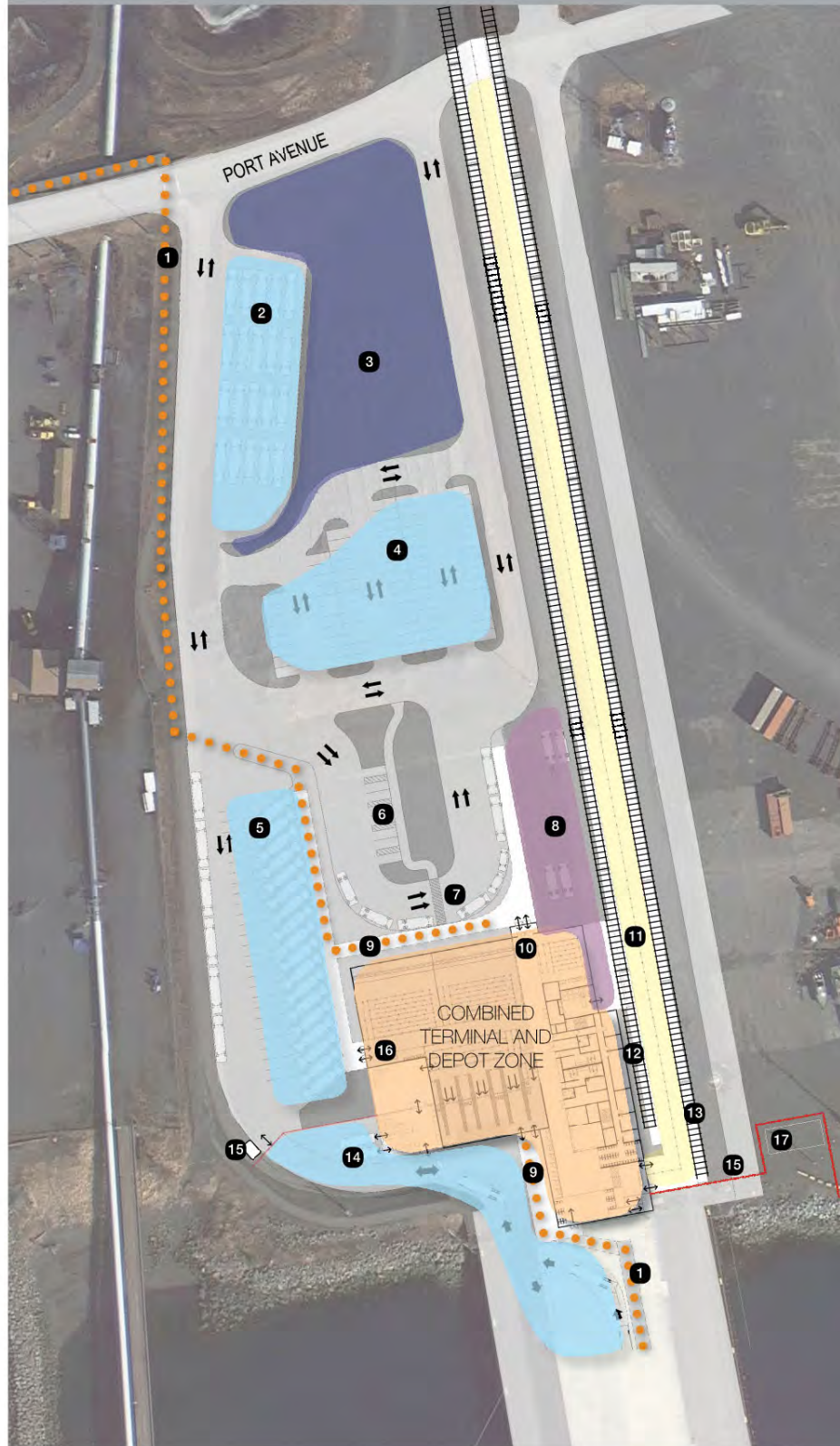
Table IV-3.9: Cost Estimate for Option P-TS1: Traffic Staging Area at New Terminal

Cost Estimate for Option P-TS1: Traffic Staging Area at New Terminal (\$1.8M)	
• Construction	\$1.4M
• Contingency	\$280K
• Construction Engineering and Administration	\$280K
Total	\$1.96M

Concept Site Plan

SITE KEY:

1. PEDESTRIAN PATH
2. COACH STAGING
3. LEASABLE AREA
4. STAFF AND PUBLIC PARKING
5. CRUISE TRAFFIC LOADING
6. ACCESSIBLE PARKING
7. TRAIN TRAFFIC LOADING
8. ARRC LUGGAGE OPERATIONS
9. COVERED WALKWAY
10. NORTH ENTRY
11. SHARED COVERED LEVEL PLATFORM BOARDING
12. COASTAL CLASSIC TRAIN
13. GRAND VIEW (CRUISE TRAIN)
14. CRUISE LUGGAGE OPERATIONS
15. SECURITY GATE
16. WEST ENTRY
17. LONGSHORE-MEN TRAILER



September 19, 2016

Figure IV-3.14: Concept Layout for Traffic Staging at the New Terminal

Improvement Priority 4:

Seward Loading Facility

3.5 - Improvement Priority 4: Seward Loading Facility

The fourth highest improvement priority relates to the SLF, and provides for the removal of the SLF and associated infrastructure, followed by repurposing the land for alternative uses to generate a return on economic investment. The location of the SLF is shown in Figure IV-3.15.



Figure IV-3.15: Improvement Priority 4: Seward Loading Facility

The reasons why this improvement has been identified as the fourth highest priority are summarized below.

- WHAT** Remove the Seward Loading Facility and redevelop land for alternative use
- WHY** The SLF has been placed in cold shut down due to lack of coal demand; future demand forecast is bleak
- WHEN** No timeline, but redevelopment will free up land for re-use
- WHERE** The SLF is located along the eastern side of the site
- HOW** Two options are available (Options F-SL3 and F-SL4).

Two options have been identified for the terminal. These are:

- **Option F-SL3: Seward Loading Facility Removal:** Remove the Seward Loading Facility coal bunker, conveyor, and buildings and repurpose the site.
- **Option F-SL4: Redevelop Seward Loading Facility Land:** Install roads and infrastructure, and identify lease areas for redevelopment into land uses consistent with or complementary to other activities at the Seward Marine Terminal.

These options are outlined in further detail in the following sections.

3.5.1 Option F-SL3: Seward Loading Facility Removal

Description

The SLF is currently in a long-term shutdown, which occurred due to coal exports from Alaska diminishing since 2015, with no coal shipments scheduled for 2017. This option provides for the demolition of the SLF, including demolition of the reclaimer/stacker, conveyer system, ship load, dolphins and catwalks, access trestle, control building, pump house and water tank, and all concrete and pile foundation components. It also includes the cleanup of any remaining coal and general grading of the site to infill settling ponds and voids from foundation removal. Photo IV-3.1 shows the stacker/reclaimer to be removed and ground surface at the SLF. Dependent on the scrap market, the equipment/conveyer may have some salvage or scrap value.



Photo IV-3.3: SLF Stacker/Reclaimer and Conveyer (Source: Judy Patrick Photography, 2012)

As the SLF was purchased with federal funding, the federal interest must be appropriately satisfied before the SLF is removed.

As the SLF was purchased with federal funding, the federal interest must be appropriately satisfied before the SLF is removed.

Cost Estimate

The cost estimate for the removal of the SLF is shown in Table IV-3.10. The cost estimate does not provide for the removal of the train car offload structure and the hoppers, or the removal of the conveyer culvert below Port Avenue. The removal of these features can be incorporated into a revised cost estimate at the time ARRC commits to redeveloping the SLF land.

Table IV-3.10: Cost Estimate for Option F-SL3: Demolition of SLF

Cost Estimate for Option F-SL3: Demolition of SLF	
Construction Activity	Cost
• Mobilization and Demobilization	\$860K
• Demolish Stacker/Reclaimer	\$570K
• Demolish Conveyer	\$720K
• Demolish Foundation	\$775K
• Demolish Ship Loader	\$550K
• Demolish Dolphins and Catwalks	\$270K
• Demolish Roadway Trestle Superstructure	\$345K
• Demolish Pump House and Water Tank	\$40K
• Demolish Control Building	\$60K
• Site Grading	\$660K
• Indirect Costs (Billeting, Construction Support, Staff, Equipment)	\$1.0M
• Contingency (25%)	\$1.2M
Total	\$7.9M

3.5.2 Option F-SL4: Redevelop Seward Loading Facility Land

Description

This option provides the road and utility infrastructure necessary for the redevelopment of the land and assumes the SLF has been demolished and the site has been leveled (as provided by Option F-SL3). The redevelopment would either support passenger and tourism-focused businesses or split with passenger-related businesses on land south of Port Avenue and industrial businesses on land north of Port Avenue. As the site is currently zoned for industrial use, a key part of this option includes rezoning any sections of the land that may provide for passenger and tourism commercial-focused activities. These land uses have been recommended to enable the separation of passenger and freight activities on the site. In addition, the economic analysis considered the potential of leasing land for a hotel development and retail opportunity, and concluded that these types of businesses were likely to generate a positive rate of return at the site.

Infrastructure such as a road connection between Port Avenue and Aspen Lane to the Seward Highway is desirable to facilitate development opportunities, and can be placed in several locations through the site, dependent on the needs of future leaseholders. In addition, the installation of utilities would be required to support future site development. Figure IV-3.16 sets out a potential road location to facilitate access to the site.



Figure IV-3.16: SLF Land Area Available for Redevelopment to Alternative Uses

Cost Estimate

A cost estimate has been prepared for the redevelopment of the SLF, including the costs of constructing roads to a paved standard, installing utilities, undertaking required permitting, and acquiring right-of-way as set out in Tables IV-3.11 and IV-3.12. In addition to the on-site costs, there are anticipated costs associated with upgrading the intersection with the Seward Highway, which have been set out as a separate column in the cost estimate.

Table IV-3.11: Cost Estimate to Construct Paved Roads on SLF Land

Road Construction Cost Estimate		
Description	On-Site Works	Intersection
• Construction	\$1.9M	\$1.0M
• Contingency (20%)	\$400K	\$200K
• Construction engineering and administration (20%)	\$400K	\$200K
• Design permitting	\$200K	\$150K
• Utility	\$2.1M	-
• ROW Acquisition	\$200K	\$100K
Total	\$5.2M	\$1.65M

Table IV-3.12: Cost Estimate to Construct Utilities on SLF Land

Utilities Cost Estimate	
Description	On-Site Works
• Provision of water utilities	\$1.0M
• Water Contingency (20%)	\$200K
• Provision of sewer utilities	\$800K
• Sewer Contingency (20%)	\$160K
Total	\$2.16M

3.5.3 Optional Improvements Related to Seward Loading Facility

Two additional, optional improvements have also been identified for the SLF:

- **Option F-SL1: Water Line - Seward Loading Facility Dock:** Install a fresh water line on the dock.
- **Option F-SL2: Fuel Lines - Seward Loading Facility Dock:** Install fuel lines on the dock (in and out).

These options can also be incorporated into any option that retains the SLF dock, if required.

Improvement Priority 5:

Extend Port Avenue through Seward Marine Terminal Site to Connect with Airport Road

3.6 - Improvement Priority 5: Extend Port Avenue through Seward Marine Terminal Site to Connect with Airport Road

The fifth highest improvement priority is the extension of Port Avenue through the Seward Marine Terminal site to connect with Airport Road. The improvement of the intersection of Airport Road and the Seward Highway is required to support this priority. The proposed route of the Port Avenue to Airport Road connection is shown in Figure IV-3.17. If the terminal building is constructed in a manner that combines the existing depot and requires the construction of a level loading platform across Port Avenue, this priority will increase to ensure uninterrupted access to the eastern of the Seward Marine Terminal for freight activities.



Figure IV-3.17: Improvement Priority 5: Port Avenue to Airport Road Connection

The reasons why this improvement has been identified as the fifth highest priority are summarized below.

- WHAT** Extend Port Avenue through the Seward Marine Terminal site to connect with Airport Road
- WHY** Passenger and freight uses on the site currently rely on Port Avenue for connection between the site and other destinations. The alternative route will enable the separation of passenger and freight movements at the site, It will also provide an alternative route for chartered motor coaches to depart Seward and avoid conflicts with pedestrians and other users along Port Avenue.
- WHEN** No timeline, dependent on whether road improvements are able to be funded at the same time as runway improvements and safety areas being considered by DOT&PF at Seward Airport.
- WHERE** Port Avenue provides the main road connection to the site at the western side, and Airport Road forms the north-eastern boundary of the site.
- HOW** One option is available (Option C-FC1).

One option has been identified for the road connection:

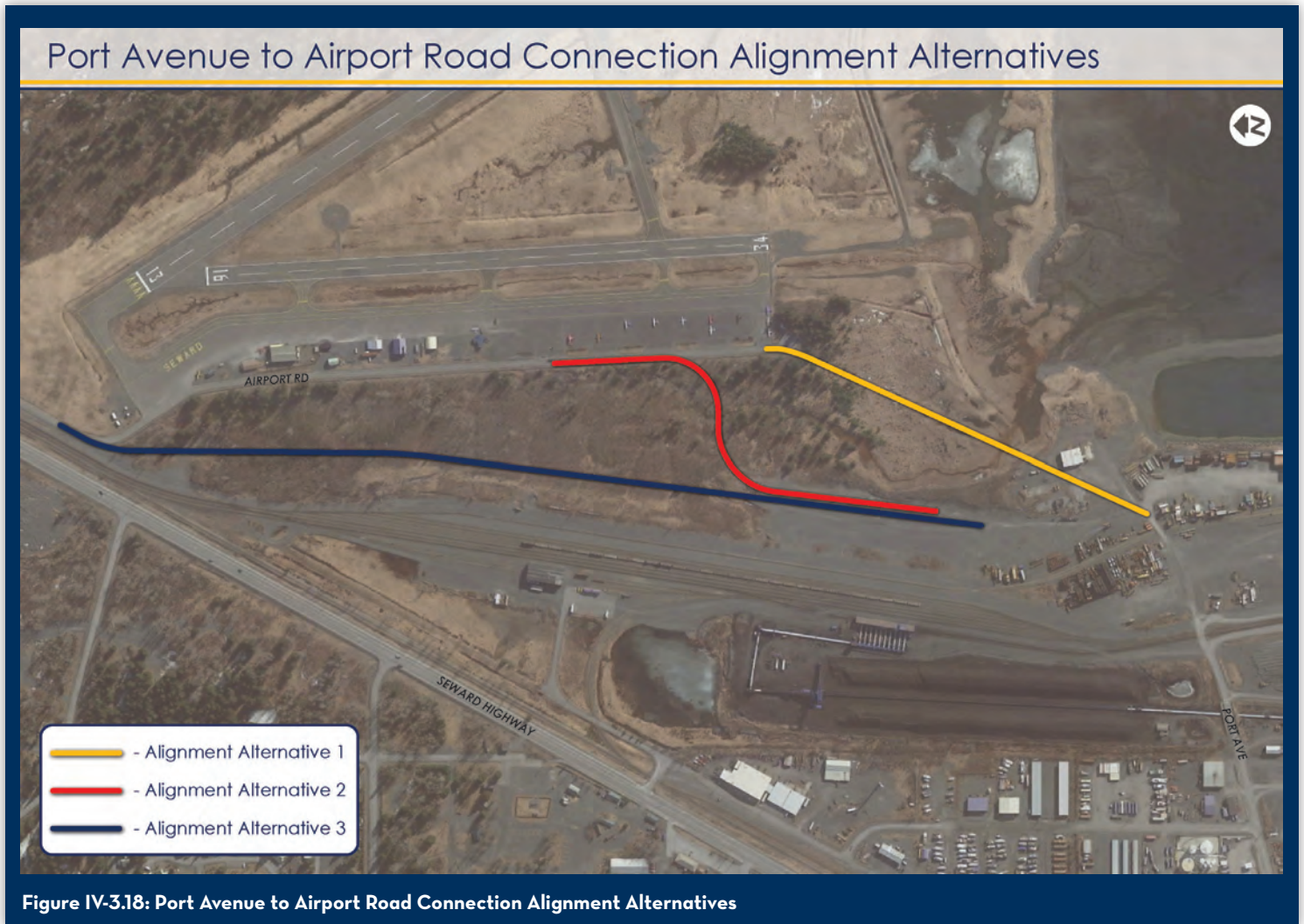
- **Option C-FC1: Extend Port Avenue to Connect With Airport Road:** Extend Port Avenue to connect with Airport Road, and configure road layout to offset impacts to wetlands. Design road with appropriate curve radii to minimize impact on existing railroad track, provide traffic calming/speed mitigation, and allow appropriate access to the Seward Highway.

This option is outlined in further detail in the following section.

3.6.1 Option C-FC1: Extend Port Avenue to Connect With Airport Road

Description

This project extends Port Avenue eastward through the Seward Marine Terminal site to connect with Airport Road. A range of options are available for the proposed road alignment, including traversing through the wetlands at the southern end of Airport Road, or aligning the road through the new laydown area being created at the north end of the Seward Marine Terminal site. The final alignment of the road can be decided dependent on the future uses and needs of the site. Figure IV-3.18 shows the range of options considered as part of project feasibility for the road alignment.



The new roadway includes two 12 foot lanes with a minimum of four foot shoulders. The road design for the purposes of project feasibility was a WB-67 truck, and the road also sought to accommodate a WB-109D truck in accordance with the DOT Division of Measurement Standards Chapter 25 Operations, wheeled vehicles. Curve widening may be necessary on some sections of the proposed road, dependent on the volumes of the WB-109D.

A key element of this option is improving the sight distances and alignment of the existing Airport Road intersection with the Seward Highway. The current alignment results in limited northbound visibility as the intersection is located close to the railroad bridge over the Resurrection River. The alignment of Airport Road near the intersection also has tight curves owing to the need for the road to wrap around the north-western end of the Airport runway and the gradient change to cross the three railroad tracks close to the intersection. A relocated intersection, approximately 400 feet south of the current intersection has been recommended to address these issues. To accommodate the relocation of the intersection, Airport Road also needs to be raised to

enable crossing the railroad tracks, and a track merge is also recommended south of the intersection to reduce the number of tracks crossed at the intersection. The proposed intersection has the following safety benefits:

- **Improved intersection sight distance:** the distance between the bridge and the proposed intersection increases the visibility of traffic on the Seward Highway.
- **Two way left turn lane (TWLTL):** turning traffic onto Airport Road would be removed from the Seward Highway northbound and southbound travel lanes with the extension of the TWLTL and a proposed deceleration/storage lane.
- **Acceleration/storage lane:** for vehicles that turn from Airport Road heading northbound on the Seward Highway from the intersection improvements are recommended with the provision of an acceleration/storage lane for trucks and cars. This lane mitigates stopping on the tracks and reduces the speed differential between merging and highway vehicles.
- **Railroad track crossings:** a track merge location is proposed south of the proposed intersection to reduce the number of tracks to be crossed from three to two.
- **Close existing access:** due to the bridge rails and vegetation, vehicles turning from the existing Airport Road have limited sight distance. Also, vehicles driving south on Seward Highway are currently not able to easily see or anticipate vehicles pulling onto the highway from Airport Road. The relocation of the intersection to the proposed location approximately 400 feet south creates a four-legged intersection with Dieckgraef Road. The proposed location also simplifies signaling the intersection and expanding in the future if required.

The proposed intersection design is shown in Figure IV-3.19.

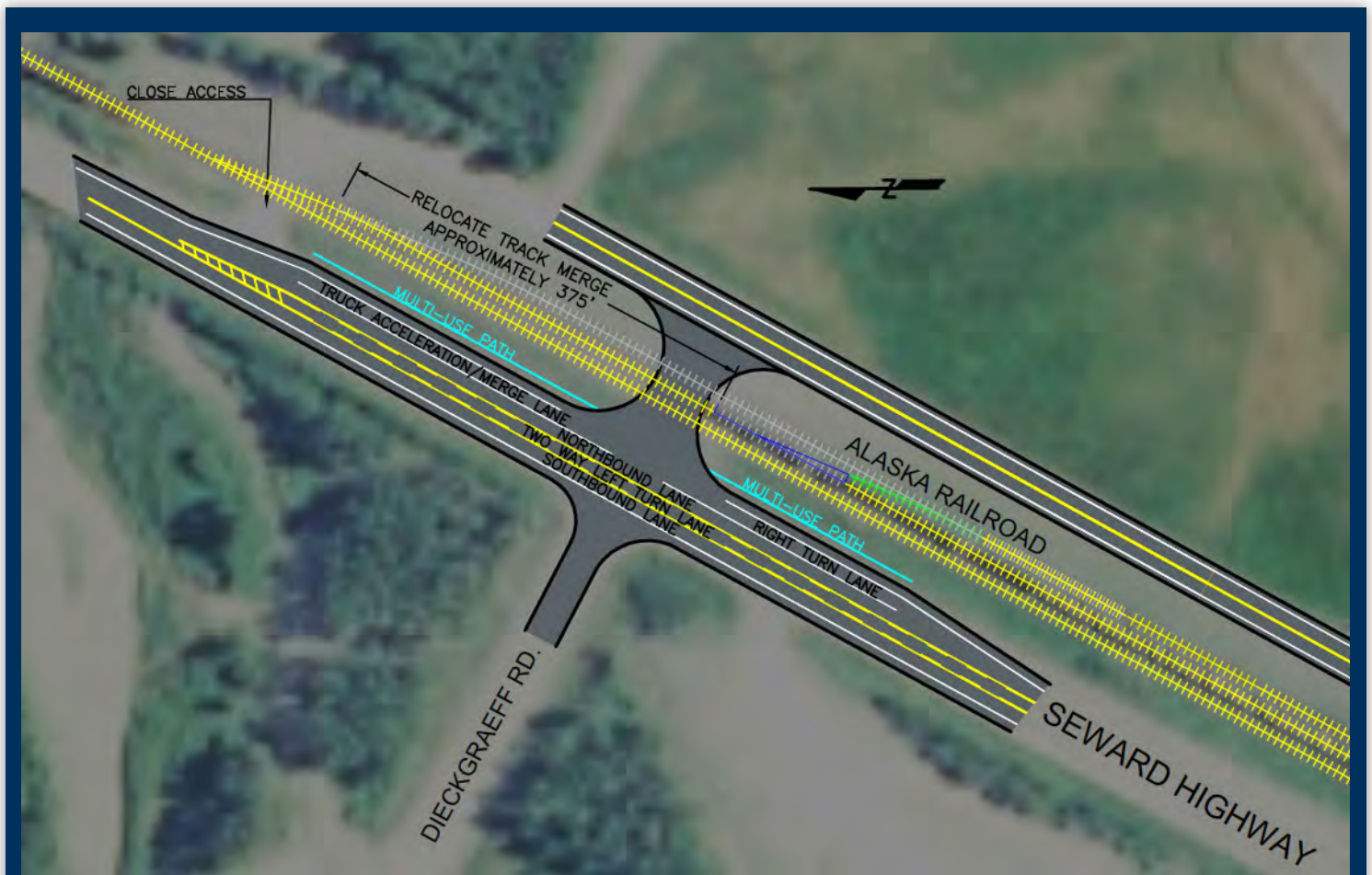


Figure IV-3.19: Proposed Intersection Improvement - Airport Road Connection with Seward Highway

Cost Estimate

A cost estimate has been developed for the Airport Road to Port Avenue connection, and also for the proposed intersection improvement at Airport Road and Seward Highway. Cost estimates are set out in Tables IV-3.13 and IV-3.14.

Table IV-3.13: Cost Estimate for Port Avenue to Airport Road Connection

Description	Cost
• Construction	\$1,991,729
• Contingency (20%)	\$398,345
• Construction Engineering and Administration (20%)	\$398,345
• Design Permitting	\$303,333
• Utility	\$3,019,515
• ROW Acquisition (10%)	\$199,173
Total	\$6,310,440

Table IV-3.14: Cost Estimate for Airport Road/Seward Highway Intersection Upgrade

Description	Cost
• Construction	\$941,388
• Contingency (20%)	\$188,300
• Construction Engineering and Administration (20%)	\$188,300
• Design Permitting	\$150,000
• ROW Acquisition (10%)	\$94,139
Total	\$1,562,127

Opportunity-Dependent Improvements

4. Opportunity-Dependent Improvements

The following options have not been prioritized, but are dependent on future needs and available opportunities. If opportunities become available, these improvements will facilitate a range of enhancements at the Seward Marine Terminal that will improve the overall site, meet potential customer demands, enhance tenant experience, and/or improve the quality or longevity of existing site assets. The improvements have been organized based on the planning effort's cornerstones with which they are most closely associated.

- Passenger
- Freight
- Real Estate
- Railroad Infrastructure

Further detail on the improvements is given in the following sections.

4.1 - Opportunity-Dependent Passenger Improvements

Opportunity-dependent passenger improvements include the following:

- **Option P-PT1: Track Modifications to Accommodate Longer Trains at Terminal:** Reconfigure Port Avenue to accommodate the full length of the Coastal Classic train (14 cars) to the south of the road carriageway.
- **Option P-DE2: Improve Existing Railroad Depot:** Improve the railroad depot to enhance passenger experience.
- **Option P-DE3: Depot Expansion and Traffic Reconfiguration:** Acquire physical possession of the land between the depot and Leirer Road to expand depot and reconfigure traffic circulation.
- **Option P-PA1: Port Avenue Improvements:** Improve the pedestrian route along Port Avenue, between the terminal and Seward Highway.

The location of these projects is shown in Figure IV-4.1, and the projects are described in further detail in the following sections.



- P-PT1: Port Avenue Train Accommodations
- P-DE2: Improve Existing Railroad Depot
- P-DE3: Depot Expansion and Traffic Reconfiguration
- P-PA1: Port Avenue Improvements

OPPORTUNITY-DEPENDENT PROJECTS - PASSENGER

Figure IV-4.1: Opportunity-Dependent Passenger Improvements

4.1.1 Option P-PT1: Track Modifications to Accommodate Longer Trains at Terminal

Description

The existing east and west passenger tracks north of the passenger dock are on 15-foot center spacing, which leaves only 12 feet between the tracks accommodate a 15-foot wide level platform required with a new terminal or if any major upgrades are made to the existing terminal. Track age and condition does not warrant preservation of either alignment for reuse. Therefore, this option realigns both the east and west tracks to optimize site layout and operations.

Figure IV-4.2 shows the existing tracks to be removed, new level loading platform, and new passenger tracks. Also shown are the maximum footprint and clearance envelope that would be occupied by the maximum consist of the Grandview cruise train on the east track, and the maximum consist of the Coastal Classic train on the west track.

The passenger tracks are shifted east as far as possible to maximize the space available to the west for the traffic staging and circulation. The level platform is sited to the south as far as possible to maximize its length while also allowing sufficient space for vehicular access at the northeast corner of the passenger dock. Level platform length is limited on the north end by the resulting changes to track geometry at the south end of the yard. This is due to the requirement that level platforms must be adjacent to tangent track; ADA-compliant level platforms cannot be constructed to accommodate the horizontal offset relative to the track that rail cars experience while traversing a curve.



Given these constraints, the resulting level platform is 1,065 feet long. Allowing 20 feet at the south end for passenger access from the terminal and a 10-foot stopping buffer, barrier and barrier protection, this allows 1,035 feet available loading length. As illustrated in Figure IV-4.2, this is sufficient to accommodate the maximum consist of the Grandview cruise train on the east track; however, the maximum consist of the Coastal Classic train extends past the end of the level platform by 119 feet. This could be addressed in a number of ways including, but not limited to:

- loading the last two passenger cars from the second to last passenger car;
- switching out low capacity passenger cars for higher capacity ones to reduce the length of the maximum consist; or
- constructing a removable section of level platform to access the last car.

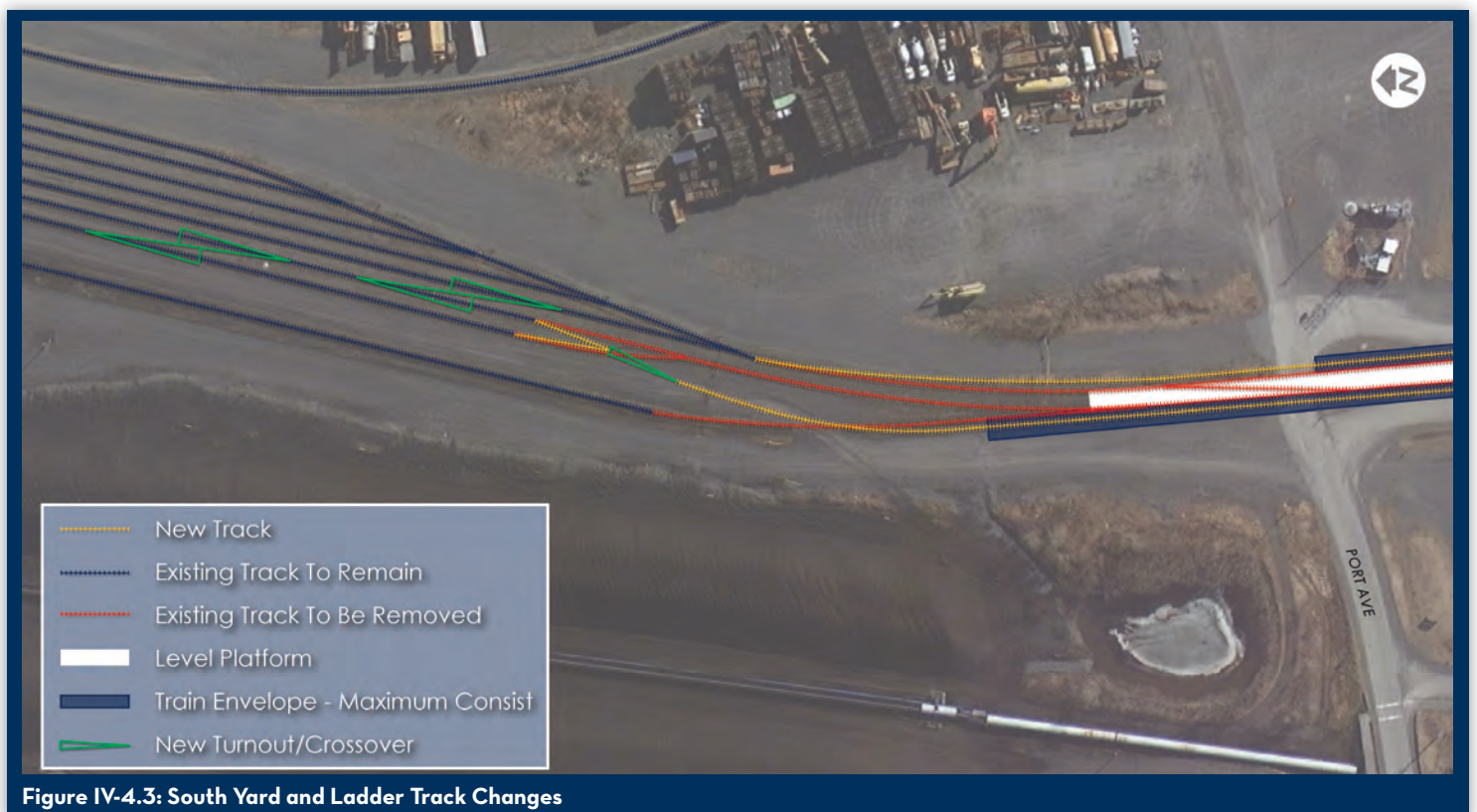
Due to the resulting level platform location, the existing at-grade crossing of Port Avenue is impacted by this option. This could be addressed in a number of ways, depending on the other site development needs.

- Realigning Port Avenue and relocating the at-grade crossing just north of the end of the level platform would allow for continued use of the at-grade crossing at all times other than when passenger trains are traversing the crossing or when the Coastal Classic is at the terminal and the consist includes at least 11 of the maximum 12 cars. Due to constraints on roadway geometry, it is not possible to realign the roadway far enough north to clear the maximum consist of the Coastal Classic.
- Terminating Port Avenue just west of the passenger tracks would remove the at-grade crossing.
- Constructing the level loading platform to include a removable portion would allow the Port Avenue at-grade crossing to remain in its current location. The removable portion could be put in place on a seasonal or daily basis, as required, to enable the continued use of Port Avenue when the portion is removed.

Under existing operations, the Grandview Cruise Train uses the west passenger track, from which it can use the wye track to make turns without having to switch tracks through the upper yard. Under this option, the Grandview Cruise Train would operate from the east passenger track. As a result of the lateral shift and increased spacing between the east and west passenger tracks, the south end of the railyard and ladder tracks are altered and realigned to continue providing access to the wye to perform turning operations without traversing the upper yard and switching tracks. As shown on Figure IV-4.3, these changes include:

- reconfiguring the turnout between Track #8 and Track #9,
- adding a crossover in the south yard between Track #6 and Track #7, and
- adding a second crossover in the south yard between Track #7 and Track #8 (refer to Track Map in Figure III-1.1 for track numbers).

The final change to the existing track layout under this option is to the south end of the coal bunker track, shown in Figure IV-4.3. Depending on future coal operations, the possible realignment of Port Avenue and other site development, this track is either completed or removed and realigned for continued use of the coal bunker facility or for some alternative use.



4.1.2 Option P-DE2: Improve Existing Railroad Depot

Description

This project provides for a range of improvements to the existing railroad depot. This project only proceeds if ARRC chooses not to relocate the depot to a co-located terminal facility (see Option P-TE1). Owing to site constraints, improvements are limited to what is accommodated within the existing building footprint and the installation of a temporary tent for shelter purposes. These include:

- improved shelter for passengers while they wait to load onto the train;
- beautify the depot with a mural;
- separate baggage forklift movement area from passengers;
- modernize the depot such as through the addition of free Wi-Fi and the ability to have food and drink available;
- add electronic signage at the depot; and
- install a trespass buffer between the railroad boundary and Leirer Road to reduce trespass.

Improved parking and striping arrangements could also be considered to assist with traffic flow, as illustrated in Figure IV-4.4.



Cost Estimate

Estimates for the erection of a tent to increase sheltered waiting space at the depot are approximately \$15,000. This is based on a 400-square-foot tent, which would be erected immediately adjacent to the existing depot building, similar to the existing luggage tent on the site (Photo IV-4.1). The tent frame would be erected on site throughout the year, and the skin would be removed and stored during the winter months, similar to the luggage tent.

Table IV-4.1: Cost Estimate for Tent Shelter at Seward Depot

Item	Cost Estimate
• 400 Square Foot Tent	\$15,000.00
Total	\$15,000.00



Photo IV-4.1: Existing Luggage Tent at Seward Depot (Source: Judy Patrick Photography, 2012)

4.1.3 Option P-DE3: Depot Expansion and Traffic Reconfiguration

Description

This option provides for acquiring physical possession of the land between the depot and Leirer Road, demolishing the three existing buildings on that land, and using this area to expand the depot and reconfigure traffic circulation. This option provides additional space to assist in overcoming the constraints identified in Option P-DE2 that preclude any significant improvements at the depot. Improvements that could be considered in this option include the enlargement of the depot building, construction of a level loading platform, and transitions between the level loading platform and enlarged depot building. The area of land that could be acquired is shown shaded in yellow in Figure IV-4.5.

Cost Estimate

Current sales and tax assessment data were researched and reviewed in an effort to determine an anticipated value for acquiring the land highlighted in yellow in Figure IV-4.5. Current commercial sales occurring from 2013 to 2017, and tax assessment data for those same sales, were compared to the subject and surrounding properties. Sales prices for this area are usually higher than tax assessed values. When analyzing the correlation between tax assessed value and sale price, the range of difference between sale price and tax assessed value is from 8 percent to 51 percent more than assessed. From the data analyzed, the location, use, availability, and desirability of the subject site, \$550,000 to \$625,000 is the likely range of value for this property, with \$575,000 as an opinion of value.



Table IV-4.2: Cost Estimate for Land Acquisition

Item	Cost Estimate
• 1 acre parcel adjacent to Depot site	\$575,000.00
Total	\$575,000.00

4.1.4 Option P-PA1: Port Avenue Improvements

Description

This option includes improvements to Port Avenue to assist with pedestrian safety, comfort, and wayfinding, and to enhance the experience of the connection between the terminal and the depot, small boat harbor, and City of Seward. Photo IV-4.2 below was taken near the bridge crossing the SLF and shows a need for improved street maintenance and aesthetics.

Improvements that could be considered are illustrated in Figure IV-4.6, and include:

- enhanced way-finding signage;
- making improvements to the street to enhance its accessibility;
- improving street maintenance to make the street environment more attractive;
- providing informational signage/informational kiosks on the area's history, current land uses, and local attractions; and
- creating a connection via a boardwalk or similar linkage along the water frontage to the small boat harbor.

In March 2016, a workshop was held between ARRC representatives and the City of Seward to understand potential improvements that could be made. The City of Seward appropriated \$125,000 for minor improvements along Port Avenue, including creating barriers to dissuade pedestrian traffic from the south side of Port Avenue, improving informational signage along Port Avenue and Fourth Avenue, installing directional and pedestrian control signage at the depot, and installing covered/removable benches along the north side of Port Avenue where appropriate. Some of these improvements were installed during the 2016 cruise season.





Figure IV-4.6: Location and Type of Potential Improvements for Pedestrians Along Port Avenue

4.2 - Opportunity-Dependent Freight Improvements

Opportunity-dependent freight improvements comprise the following:

- **Option F-FD1: Freight Dock Extension and Expansion:** Widen the freight dock to the edge of the 'bump out' on the east side, extend the bulkhead north and dredge the east side of the freight dock. Move the sediment groin eastward and lengthen to provide shelter for the barge basin area. Install a notch in the freight dock for barge ramps.
- **Option F-FD2: Extend Freight Dock Double Track:** Extend double track from freight dock into uplands areas inside and outside of freight dock gate.
- **Option F-FD3: Freight Dock Rail Improvements:** Replace subgrade beneath freight dock rail with a material that has a lower fines content to reduce frost heaving of tracks; and increase weight capacity of freight dock tracks.
- **Option F-FD4: Freight Dock and Area Identity Cards:** Provide frequent freight customers with identity cards (such as TWIC cards or similar) that they can use to access the fenced area. Ideally, the cards could provide access to multiple ports.
- **Option F-P11: Eliminate Blind Spots and Widen Gates on Freight Dock Fence:** Re-arrange permit holder areas to ensure clear way-finding and eliminate existing blind spots, particularly where there are heavy equipment maneuvers. Widen the gates to the freight area to eliminate the need to lift pipe and conex boxes over gate openings.
- **Option F-PO1: Vessel Haul-Out Area:** Provide an area adjacent to the barge basin (east side of freight dock) for vessels to be hauled out and stored for marine maintenance purposes. Area should be sufficiently sized and graded to provide for the use of marine air bags.
- **Option F-PO2: Freight Dock At-Grade Rail Crossings:** Improve the Port Avenue at-grade rail crossing located near the freight dock.
- **Option F-PO3: Barge Basin Jetty:** Improve the jetty on the eastern side of the barge basin to reduce the migration of sediment from the adjacent braid of the Resurrection River.
- **Option F-NL1: Track #1 Alignment and Switches:** Evaluate the alignment and switch locations of Track #1 to optimize the use of the surrounding uplands.
- **Option F-RY1: Increase Rail Weight Limits:** Replace 70-pound rail with 115-pound rail in sections of the ladder track, where it is required, to increase weight limits and flexibility of use of the yard.
- **Option F-FB1: Freight Building Restrooms:** Renovate the freight building to provide separate access to the restrooms for general permit holder use. The restrooms would need to be separate to the lease arrangements for the remainder of the building and have separate metering, etc.
- **Option F-FB2: Combined Freight Building and Communications Shelter:** Construct a new freight building co-located with a communications shelter. Include offices, bathroom facilities, and workshop space, with garage doors on the ground floor level, etc. Locate the building on or near the existing communications building on the site.
- **Option P-PA2: Port Avenue Improvements on Railroad Land:** Improve the aesthetics along Port Avenue to make a street presence in the uplands more appealing to potential leaseholders.
- **Option C-FC2: Freight Area Access Control:** Contingent upon extension of Port Avenue to Airport, Road, install a security camera, and/or gate and Transportation Workers Identification Credentials (TWIC) reader to manage access. Post signage to keep out non-heavy vehicle traffic.
- **Option C-FC3: Freight Corridor:** Develop a freight corridor connecting the Seward Marine Terminal to the Seward Highway through Leirer Industrial Park.

The location of these options is shown in Figure IV-4.7, and the options are described in further detail in the following sections.



Figure IV-4.7: Opportunity-Dependent Improvements - Freight

4.2.1 Option F-FD1: Freight Dock Extension and Expansion

Description

The freight dock extension and expansion option provides for the enlargement of the freight dock. Two different approaches can be taken to achieve this, one of which was developed in the 2014 Dock Facilities Master Plan (R&M Engineering, 2014), and a second option that was developed as part of the current planning effort. Both of these approaches are outlined below:

- **Option F-FD1(a) Dock Facilities Master Plan Freight Dock Extension and Expansion Option**

This option provides for the widening of the existing freight dock to 320 feet from the shore to the end of the existing dock. It also provides for the extension of the existing dock by 400 feet, rehabilitation of support tracks, and extension of tracks and utility services to the end of the expanded dock. A diagram of the proposed extension and expansion is shown in Figure IV-4.8.

- **Option F-FD1(b) Freight Dock Extension and Expansion Option**

This option incorporates varying levels of extension to the dock to accommodate cruise ships and larger freight vessels. Phase I is a minimal approach, extending the west facing bulkhead approximately 600 feet with approximately 120 feet of width. The minimal extension allows for cruise ships over 1,000 feet long to dock on the west side in addition to standard freight and cargo. A more extensive option can be provided by Phase II, which adds a bulkhead face over 600 feet long on the east side of the extension. This makes the extension over 300 feet wide. Dredging is necessary to provide adequate draft on the east bulkhead, and a sediment groin or similar is needed to mitigate infill from sediment migration. This enables larger vessels to berth at the dock and adds approximately 200,000 square feet of additional surface area for use for freight activities. An aerial view of this option is shown in Figure IV-4.9.

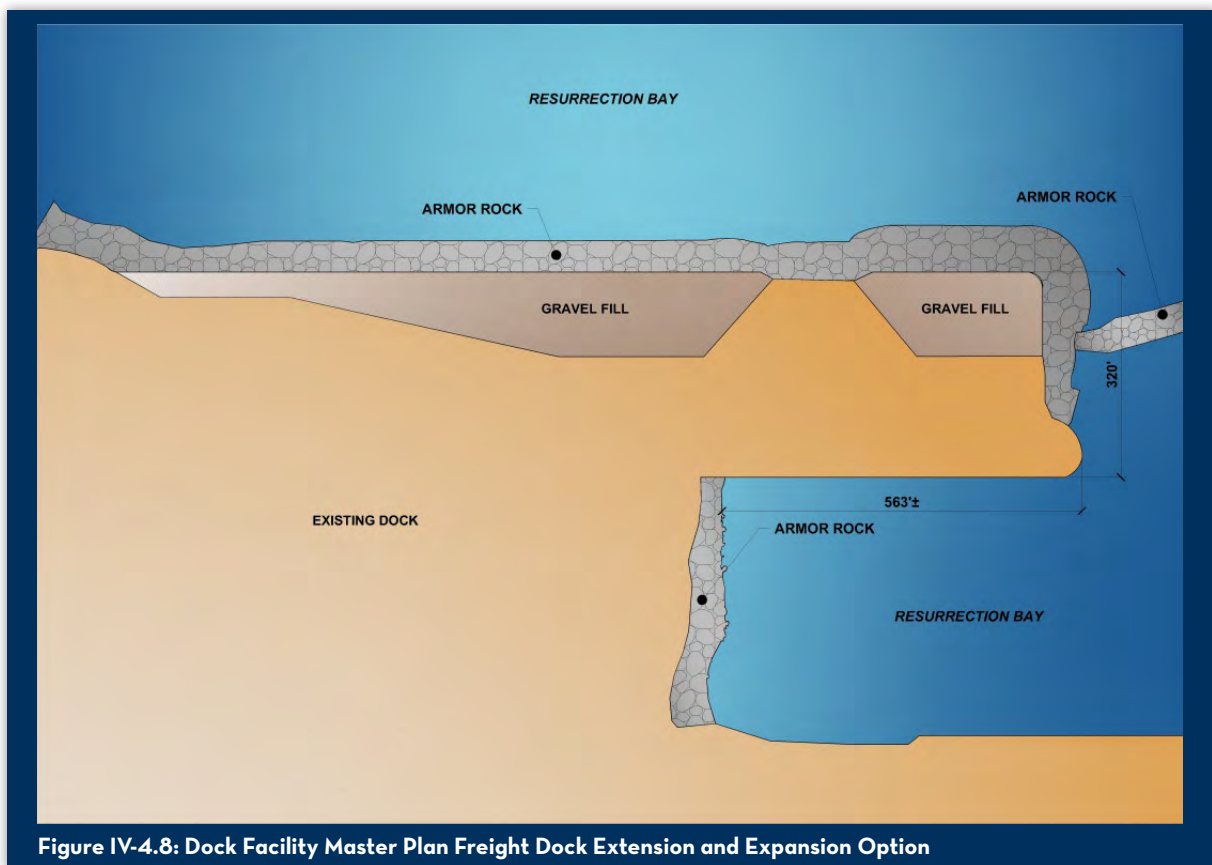
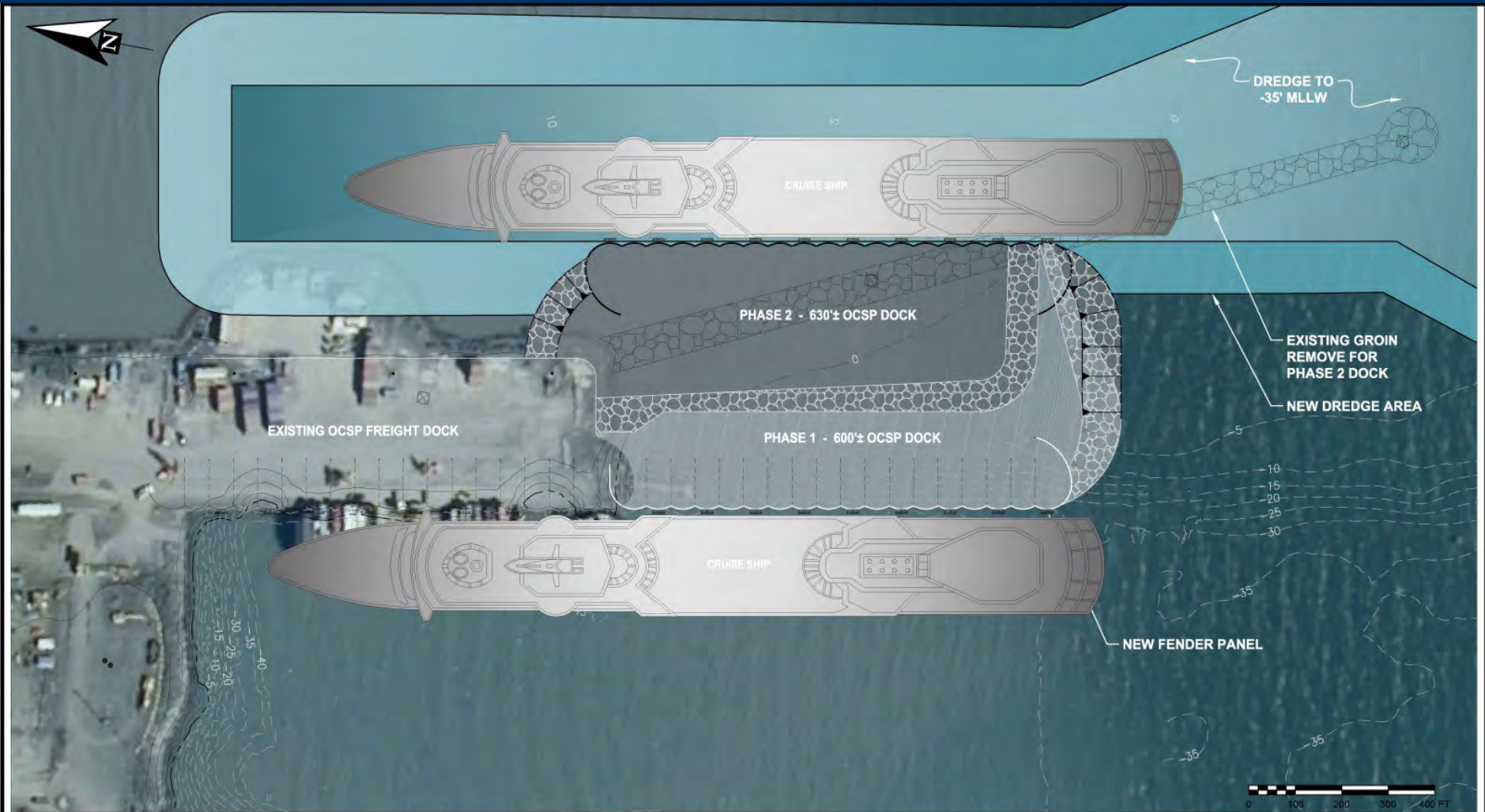


Figure IV-4.8: Dock Facility Master Plan Freight Dock Extension and Expansion Option



CONCEPT
12/27/16

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a statement directly or indirectly to PND.

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ENGINEERS, INC.

ALASKA RAIL ROAD

FREIGHT DOCK - OPEN CELL PHASE I & II

DESIGNED BY: SB DATE: 12/27/16
CHECKED BY: RC PROJECT NO: 151100

1 OF 1

Figure IV-4.9: Freight Dock Extension and Expansion - Phases I & II

Cost Estimate

Option F-FD1(a) Dock Facilities Master Plan Freight Dock Extension and Expansion Option

A cost estimate for the Dock Facilities Master Plan freight dock extension and extension option has been completed; however this was not made available to the project team.

Table IV-4.3: Cost Estimate for Option F-FD1(a) Freight Dock Extension and Expansion (Phase I)

Option F-FD1(b) Freight Dock Extension and Expansion (Phase I) (\$21.3M and One Year, Three Months to Complete)		
Construction Activity	Cost	Duration
• Mobilization and demobilization	\$2.3M	2 months
• Salvage existing armor rock and reinstall	\$0.6M	3 weeks
• Sheet pile dock construction (includes: drive sheet, cut off sheets and weld interlocks, backfill, compact below and above waterline)	\$6.7M	8 months
• Install utilities (includes water service, fuel system)	\$0.4M	1 month
• Dock fender system (materials and install)	\$2.0M	2 weeks
• Dock appurtenances (includes: face beam, bull rail, mooring bollards, safety ladders)	\$1.7M	3 months
• Cathodic protection (materials and install)	\$0.3M	2 weeks
• Engineering, construction administration, project management, permitting	\$3.7M	Throughout project
• Contingency (20%)	\$3.8M	N/A
Total	\$21.3M	1 year, 3 Months

Option F-FD1(b) Freight Dock Extension and Expansion Option

Cost estimates and approximate completion timeframes for this option Phases I and II of this option are presented in Tables IV-4.3 and IV-4.4.

Table IV-4.4: Cost Estimate for Option F-FD1(b) Freight Dock Extension and Expansion (Phase II)

Option F-FD1(b) Freight Dock Extension and Expansion (Phase II) (\$46.8M and One Year Three Months to Complete)		
Construction Activity	Cost	Duration
• Mobilization and demobilization	\$2.3M	2 months
• Sheet pile dock construction (includes: drive sheet, cut off sheets and weld interlocks, back fill, compact below and above water line)	\$7.2M	8 months
• Install utilities (includes water service, fuel system)	\$0.4M	1 month
• Dock fender system (materials and install)	\$2.0M	2 weeks
• Dock appurtenances (includes face beam, bull rail, mooring bollards, safety ladders)	\$1.7M	3 months
• Cathodic protection (materials and install)	\$0.3M	2 weeks
• Engineering, construction administration, project management, permitting	\$3.7M	Throughout project
• Contingency (20%)	\$3.8M	N/A
• Dredging	\$23.8M	1 year, 6 months
Sediment groin	\$1.9M	1 week
Total	\$46.8M	1 Year, 3 Months

4.2.2 Option F-FD2: Extend Freight Dock Double Track

Description

The freight dock extension and expansion option enables the extension and/or addition of several freight dock tracks. Existing freight dock Tracks #1 and #2 could be extended to the new end of the extended freight dock. A third freight dock track could also be added to the east side of the expanded freight dock. These improvements are shown in Figure IV-4.10. In this version of the option shown, the freight dock tracks are accessed by a new switch off the south end of Track #2. These improvements enable the freight dock tracks to be used more easily and flexibly, which speeds up freight operations and potentially makes Seward more attractive for ocean to rail operations.



Figure IV-4.10: Freight Track Improvements

4.2.3 Option F-FD3: Freight Dock Rail Improvements

Description

In conjunction with the freight dock extension and expansion project, several improvements to existing track (see Photo IV-4.3) on the freight dock are implemented. One aspect of this project replaces subgrade beneath the freight dock rail with a material that has lower fines content.

Improved subgrade will reduce maintenance requirements of the freight dock tracks and increase its load capacity, allowing more and heavier freight to be transported from the freight dock and potentially making Seward more attractive as a freight arrival and departure location.

A second option to be undertaken with the freight dock extension and expansion option is to pave the freight dock surface. Frequently, wind-blown dust accumulates along the tracks and requires hand removal prior to use. Paving this area will reduce maintenance and improve operational efficiency and safety conditions on the freight dock.

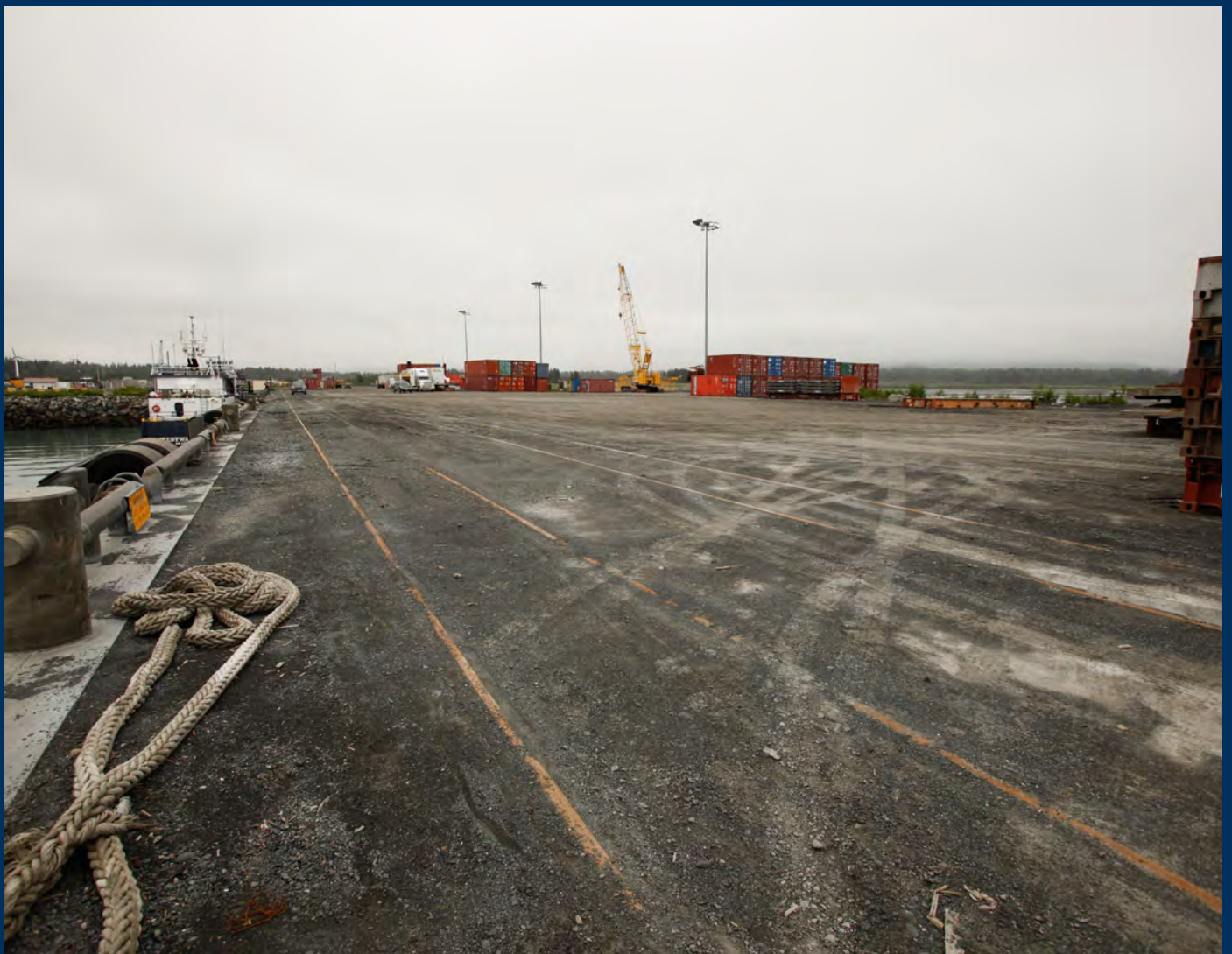


Photo IV-4.3: Existing Freight Dock Tracks (Source: Judy Patrick Photography)

4.2.4 Option F-FD4: Freight Dock and Area Identity Cards

Description

This option provides for direct access to the freight dock using access control that is activated by an ARRC-issued identity card or the TWIC card. Currently, permit holders and operators who wish to access the freight dock and area must first be approved by the security guard (or by the Port Manager when the guard is not present at the guard shack). Direct access control has been sought by a range of stakeholders to speed up the process of gaining access to the freight dock. It has particularly been sought by operators who frequently use the dock.

The access arrangement could include access-controlled gates to the fenced freight dock and permit area. Figure IV-4.11 shows potential locations for the installation of access control.



Figure IV-4.11: Indicative Locations for Freight Dock and Permit Area Access Control

4.2.5 Option P11: Eliminate Blind Spots and Widen Gates on Freight Dock

Description

This option provides for the re-arrangement of permit holder areas to ensure that there is clear way-finding through the permit area inside the freight dock fence and that existing blind spots are eliminated. This is particularly important to overcome sight distance issues where there are heavy vehicle and equipment maneuvers. Three permits have been issued to freight operators for areas within the freight dock fence and in some instances materials are migrating outside of the designated permit areas. This project involves working with existing permit holders to ensure that goods are stored within designated permit areas and making sure traveled ways and intersections have adequate visibility. Figure IV-4.12 shows potential improvements that can be made.



4.2.6 Option PO1: Vessel Haul-Out Area

Description

This option provides for the creation of an area adjacent to the barge basin for vessels to be hauled out and stored for marine maintenance purposes. This area should be sufficiently sized and graded to provide for the use of marine airbags. Figure IV-4.13 shows the location of the proposed vessel haul-out area.



Figure IV-4.13: Proposed Vessel Haul-Out Area

4.2.7 Option PO2: Freight Dock At-Grade Rail Crossings

Description

The existing at-grade rail crossing of Port Avenue by Track #2, shown in Figure IV-4.14 is located just north of the existing turnouts for freight dock Tracks #1 and #2. The crossing is in poor condition and results in operational difficulties, particularly for trucks and other equipment carrying heavy freight. This option repairs or replaces the at-grade crossing. Alternatively, if Port Avenue was to be realigned, the existing at-grade crossing is removed and a new one constructed at the new crossing location. This option results in improvements for freight operations by enhancing the speed, efficiency, and safety of vehicular movements over the existing rail crossing.



Figure IV-4.14: Location of Existing Port Avenue At-Grade Rail Crossing

4.2.8 Option F-PO3: Barge Basin Jetty

Description

This option provides for the improvement of the jetty located on the eastern side of the barge basin. The existing jetty has insufficient height, which results in it being overtopped during high tide events. The jetty is located close to a braid of the Resurrection River, which deposits significant volumes of material and silt into Resurrection Bay. During high tide events, the silt-laden water migrates into the barge basin and silt deposits have resulted in the barge basin depth being reduced to a point where it is not usable by barges on a day-to-day basis. Figure IV-4.15 shows the location of the existing jetty.

This option provides the redevelopment of the jetty, with an improved length and height sufficient to reduce the migration of sediment into the barge basin.



Figure IV-4.15: Location of Existing Barge Basin Jetty

Description

This option realigns Track #1 to improve access to the new laydown area and reevaluates switch locations to optimize the use of the track from both the uplands and freight dock. Existing site users have sought both the reevaluation of switch locations due to inefficiencies associated with loading and unloading on the freight dock, as well as the addition of more double track to provide greater flexibility in rail loading. This option addresses those concerns, which will speed up customer operations and enable faster, more efficient connections.

As the option provides for more efficient loading and unloading to rail, there is the potential to make the site more attractive to a greater range of freight customers as the loading arrangements can be more efficient and enable faster turnaround. Additionally, realigning Track #1 to improve access to the new laydown area provides opportunities for site loading to occur in the uplands, which may reduce vehicle movements within the site.

Without an increase in freight, however, the additional capacity and flexibility provided by these improvements is not economically justified. While the economic analysis does not project a substantial increase in freight volume, a large project such as Alaska LNG or the commencement of operations by a large leaseholder could justify these improvements. Depending on the implementation of other site development projects and the operational needs of such users, the resulting options for track addition or realignment could vary greatly. At such a time, it is recommended that a careful evaluation of new user needs, existing site conditions and inefficiencies, and the interaction of existing and new user operations be undertaken to address the unique project requirements that would result.

One realignment version is shown in Figure IV-4.16. In this version, Track #1 is realigned to the east and a second track is added. This could allow for an additional leaseholder to operate between Track #1 and Track #2 and other users to operate from the uplands side. Additionally, a turnout to an eastern freight dock track has been added.



Figure IV-4.16: Track #1 Realignment

4.2.10 Option F-RY1: Increase Rail Weight Limits

Description

The majority of the rail in the Seward Marine Terminal yard is jointed 155 pounds per yard (115 pound) rail. However, there are some sections of jointed 70 pound rail in discrete areas, including on Tracks #2, #3, #4 and #5 between the ladder turnouts. This lighter gauge rail restricts the weight capacity of those tracks and limits their use. As shown on Figure IV-4.17, this project provides for the replacement of this lighter gauge rail track with heavy gauge rail, consistent with the rest of the track weight throughout the majority of the Seward Marine Terminal yard. The replacement of the rail enables it to be used for a wider range of operations including for heavy freight.

A secondary identified deficiency in this area is a slump in the southern area of these tracks, which causes drainage issues and sometimes results in ponding and freezing up to the top of the rail. Replacement of rail in these areas provides the opportunity to address the sag in the middle of the yard, and therefore, improve site drainage.

The need for this project is contingent on future site development. Current track capacities are able to support existing site needs. Because coal exports are not currently being processed through Seward and market trends are not encouraging, freight projections shown in the economic analysis do not indicate a rebound or increase in freight volume. Therefore, heavy freight is not likely to need the additional capacity and flexibility provided by this project. However, if a large project (such as Alaska LNG) were to occur, it would become necessary at least for a short while. In this case, the upgrade of Tracks #2 and #3 offer the most benefit, followed by either the removal or upgrade of Tracks #4 and #5, depending on operational needs.



4.2.11 Option F-FB1: Freight Building Restrooms

Description

This option provides for the renovation of the freight building to provide separate access to restrooms for general permit holder use. The renovations ensure the restrooms are physically separated from the lease arrangement for the remainder of the building, including separate access and metering.



Photo IV-4.4: Freight Building (Source: DOWL, 2017)

4.2.12 Option F-FB2: Combined Freight Building and Communications Shelter

Description

This option provides for the redevelopment of the existing communications shelter on the site combined with a new freight building that could be made available for lease to permit holders. The current communications shelter on the site is located inside the freight dock fence at the northwestern corner, as shown in Photo IV-4.5. The shelter is in relatively poor condition and is in need of replacement. The communications shelter is unable to be moved to a different location on the site as trains rely on the line-of-sight to establish positive train control (PTC).

A range of permit holders expressed a desire to have access to office space for lease as close as possible to the freight dock. This project provides for an enlarged facility that incorporates the communications shelter and offices that could be made available for lease to permit holders using the freight dock. The facility could also include restroom facilities, which have been sought by a range of freight stakeholders.



Photo IV-4.5: Existing Communications Tower and Equipment in Freight Yard (Source: DOWL, 2017)

4.2.13 Option P-PA2: Port Avenue Improvements on Railroad Land

Description

This project provides for improvements along Port Avenue to the east of the terminal and into the uplands area as shown on Figure IV-4.18. These improvements could enhance the appearance of the entry to the industrial part of the site to improve the attractiveness of the area to future leaseholders.



Figure IV-4.18: Area of Port Avenue That Could Be Aesthetically Improved

4.2.14 Option C-FC2: Freight Area Access Control

Description

Contingent on the extension of Port Avenue to connect with Airport Road, this project provides for the installation of security features such as a security camera and/or gate and access card reader to manage access to the freight area of the Seward Marine Terminal. The intention of the access control would be to restrict non-commercial traffic access to the freight area on the site and thereby enhance safety and security.

A variety of options and locations are available to construct access controls associated with the Port Avenue to Airport Road extension. Key elements of the project include the construction of a security fence along the eastern boundary of the site, provision of a 20 foot cantilevered security gate across the road, and installation of a security camera and access card reader. Underground electrical and communication utilities could be extended from existing facilities within the site. Possible locations for the access control to the freight area are shown in Figure IV-4.19.



Figure IV-4.19: Possible Locations for Access Control to Freight Area

4.2.15 Option C-FC3: Freight Corridor

Description

This option constructs a freight corridor through land currently occupied by the SLF. The development of the road requires the SLF to be demolished and the site leveled and ready for development. The removal of the SLF is addressed as Option F-SL3.

Infrastructure such as a road connection between Port Avenue and Aspen Lane to the Seward Highway is desirable to facilitate development opportunities and can be placed in several locations through the site, dependent on the needs of future leaseholders. Figure IV-4.20 shows the land area available for redevelopment, and the location of a potential road.

Cost Estimate

A cost estimate has been prepared for the redevelopment of the SLF including the costs of constructing roads to an unpaved standard, installing utilities, undertaking required permitting, and right-of-way acquisition costs as set out in Table IV-4.5. In addition to the on-site costs, there are anticipated costs associated with upgrading the intersection with the Seward Highway, which have been set out as a separate column in the cost estimate.



Figure IV-4.20: Potential Freight Corridor Through Seward Loading Facility Site

Table IV-4.5: Cost Estimate to Construct an Unpaved Freight Road on SLF Land

Road Construction Cost Estimate		
Description	On-Site Works	Intersection
• Construction	\$1.2M	\$900K
• Contingency (20%)	\$240K	\$180K
• Construction engineering and administration (20%)	\$240K	\$180K
• Design permitting	\$210K	\$150K
• Utility	\$2.1M	-
• ROW Acquisition	\$120K	\$90K
Total	\$4.11M	\$1.5M

4.3 Opportunity-Dependent Real Estate Improvements

Opportunity-dependent real estate improvements comprise the following:

- **Option P-RE1: Business Facilities:** Provide leaseholder opportunity to construct a facility for tourism-related businesses, such as a rental car facility.
- **Option P-RE2: Big Box Retail Outlet:** Provide leaseholder opportunity construct a big box retail outlet on railroad land to provide goods for purchase by residents of Seward, passengers, and other visitors to the city.
- **Option P-RE3: Hotel:** Provide leaseholder opportunity to construct a hotel on railroad land to provide accommodation to passengers and visitors to the city.
- **Option F-RE1: Uplands Utility Upgrades:** Bury existing overhead utilities including phone, fiber-optic, and power. Extend phone, fiber-optic, and power infrastructure to leaseholder area for leaseholder extension. Provide city sewer to the freight building, roundhouse, and SLF buildings. Provide water and sewer to upland areas to create leasing and development opportunities. Combine these utility improvements with road projects to leverage mobilization and bidding costs. Repair potholes and improve drainage throughout the area. Provide better lighting throughout the uplands area. Project may be staged on an area-by-area basis, dependent on need and demand.
- **Option F-RE2: Freight Uplands Improvements:** Improve road width and structure to accommodate Liquefied Natural Gas (LNG) modules (22 feet wide plus other metrics on weight and design vehicle) along internal roads between the freight dock, permit areas and the new laydown area. Build a road to the barge uplands area to access pull-out equipment. Level and prepare uplands areas throughout the site. Create additional container storage in the northeast area. Top all working surfaces with asphalt concrete to eliminate potholes and reduce dust issues. Develop a landscaping plan for the area and create natural buffers between wetlands and natural areas to the east and northeast of the site. Provide a fence or concrete barriers to differentiate lease lots and provide secured areas. Project may be staged on an area-by-area basis or as need arises.
- **Option F-RE3: Laydown Area:** Establish large continuous laydown areas for large projects.
- **Option F-RE4: Refined Fuel Distributor:** Build a depot and facilities for a refined fuel distributor.
- **Option F-RE5: Marine Repair and Maintenance Facility:** Provide a marine repair and maintenance facility including boat storage.
- **Option F-RE6: Seafood Processing:** Provide a seafood processing facility including dedicated new plant, dedicated dock, and accommodations for 100 people.

The location of these projects is shown in Figure IV-4.21, and the projects are described in further detail in the following sections.



Figure IV-4.21: Opportunity-Dependent Real Estate Improvements

4.3.1 Option P-RE1: Business Facilities

Description

This option provides a land lease opportunity near the terminal's traffic staging area, for the construction of a passenger or tourism-focused business facility. Suggestions for the type of operation include a car rental business, a souvenir shop, or an operation that provides the opportunity to book and pay for a range of tourism activities in and around Seward.

4.3.2 Option P-RE2: Big Box Retail Outlet

Description

The Economic Analysis Report considered the financial feasibility of providing for a retail outlet at the Seward Marine Terminal on a two-acre site. The analysis assumed ARRC would complete any necessary but likely minimal off-site improvements, with the tenant being responsible for all on-site development costs. It is expected that with the exception of lease revenue, ARRC would not experience any additional revenue from retail operations. The analysis concluded that the provision of a lease to a retail outlet would generate a positive rate of return.

4.3.3 Option P-RE3: Hotel

Description

The Economic Analysis Report considered the financial feasibility of providing for a hotel operation at the Seward Marine Terminal on a five-acre site. The analysis assumes ARRC would complete any necessary but likely minimal off-site improvements, and the tenant would be responsible for all on-site development costs. ARRC is assumed to accrue lease revenue from the hotel, but would not experience any additional revenue from the operation. The analysis concluded that the provision of a lease to a hotel would generate a positive rate of return.

4.3.4 Option F-RE1: Uplands Utility Upgrades

Description

This project provides for a range of utility upgrades throughout the freight uplands including:

- bury existing overhead utilities including phone, fiber-optic, and power;
- extend phone, fiber-optic, and power infrastructure to each permit/lease holding area for leaseholder extension;
- provide city sewer to the freight building, roundhouse, and if they are to be retained, the SLF buildings;
- provide water and sewer to uplands areas to make them available for leasing and development if and when needed;
- repair potholes and improve drainage throughout the Seward Marine Terminal uplands; and
- provide better lighting throughout the uplands area.

To leverage mobilization and bidding costs, these improvements could be combined with road improvement projects. These improvements could also be staged on an area-by-area or as-needed basis, dependent on future site use and demand.

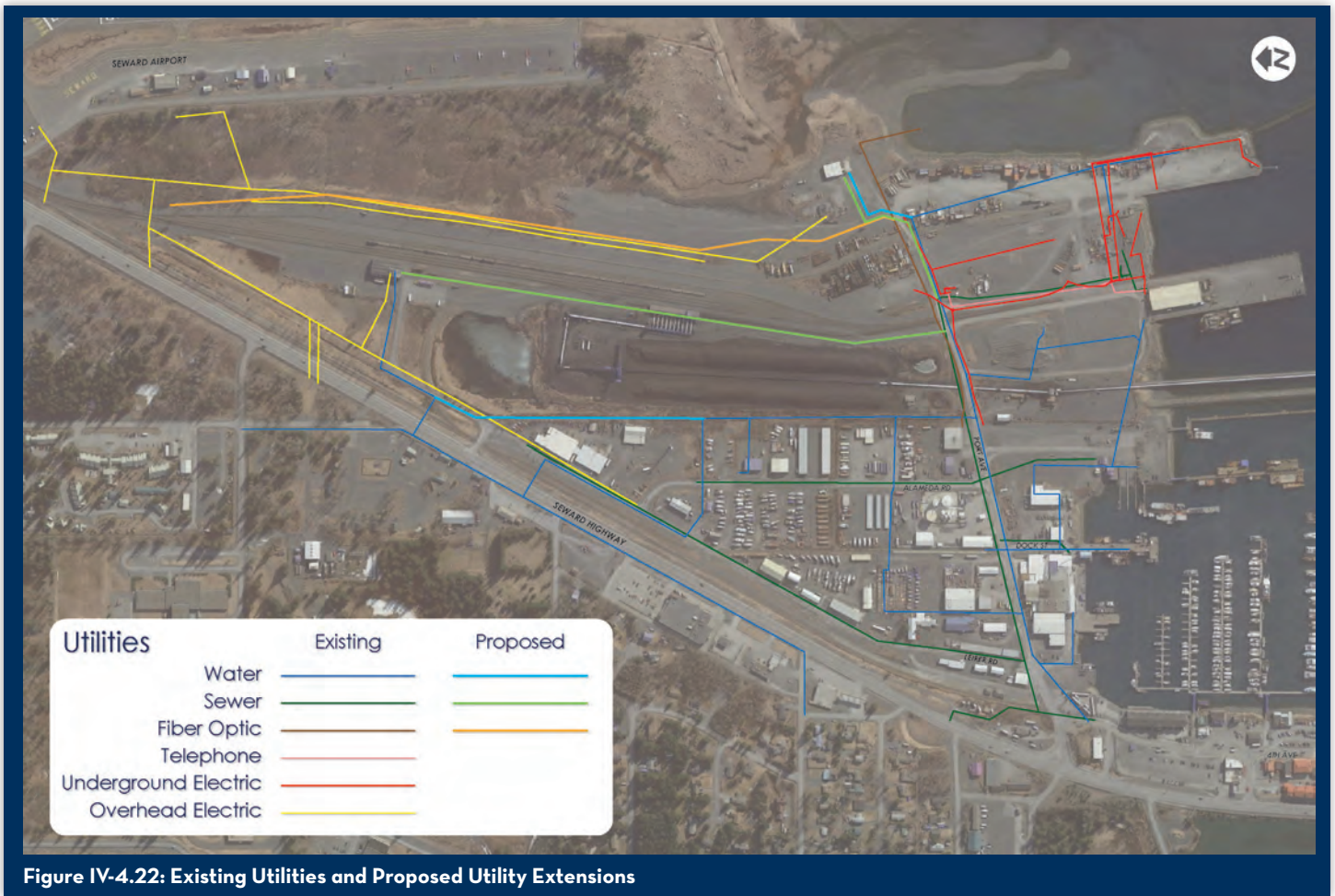


Figure IV-4.22: Existing Utilities and Proposed Utility Extensions

Figure IV-4.22 shows the existing utilities and proposed utility extensions that could occur. The extension and modification of utilities requires coordination with utility owners. The City of Seward runs its own sewer department, water utility, and electric utility. Figure IV-4.22 is provided for preliminary planning purposes only and may change significantly during the design process.

Cost Estimate

In-depth cost estimates have not been prepared for this option owing to the uncertain nature and staging of the improvements proposed. An indicative cost estimate has been prepared for the upgrade of water and sanitary sewer infrastructure through the uplands area located outside the freight dock fence.

Table IV-4.6: Cost Estimate for Water and Sewer Infrastructure Upgrade in Area Outside of Freight Dock Fence

Description	On-Site Works Cost
• Provision of water utilities	\$1.5M
• Water contingency (20%)	\$250K
• Provision of sewer utilities	\$1.1M
• Sewer contingency (20%)	\$240K
Total	\$3.0M

4.3.5 Option F-RE2: Freight Uplands Improvements

Description

This project provides a range of improvements to the freight uplands, including:

- improve road width and structure to accommodate LNG modules along internal road between the freight dock and uplands permit and laydown areas,
- construct a road to the barge uplands to access pull-out equipment,
- level and prepare uplands areas throughout the Seward Marine Terminal including improving drainage,
- create additional container storage in the permit area outside the freight dock fence,
- top all working surfaces with asphalt concrete to eliminate potholes and reduce dust issues,
- develop a landscaping plan for the area,
- create natural buffers between wetlands and natural areas to the east and northeast of the Seward Marine Terminal uplands working areas,
- provide a fence or concrete barriers to differentiate lease lots and permit areas and provide secured areas,
- provide wayfinding along new roadways, and
- provide permit/lease area address numbers during permit negotiations to support emergency services response.

This option could be staged on an area-by-area basis depending on demand and funding, and improvements can be selected dependent on their appropriateness for the area being considered and what improvements have been made in surrounding areas. Figure IV-4.23 shows the area for the improvements.

This option consists of constructing a 24-foot wide paved road with 4-foot shoulders from Port Avenue to the freight building and surrounding uplands as well as a road north through the permit area outside the freight dock fence. The uplands areas are regraded, leveled, and paved. The pavement section consists of 8 to 10 inches of base course material with four to six inches of asphalt, with a thicker section constructed where higher vehicle loading is expected. All paving is graded to a minimum slope of two percent to allow for drainage while still accommodating the potential for various contained handling equipment such as straddle carriers or top picks.

A drainage system is sized to convey the 25 year design storm and consists of inlets, manholes, culverts and ditches directing water to the existing storm drainage outfall. A natural buffer (10-foot minimum width) is maintained between the upland area and the existing wetlands at the eastern edge of the site. Moveable barriers such as concrete barriers with a chain link fence mounted to the top are placed around permit holder areas. There is a range of options for constructing new wayfinding and secure areas and final configuration is dependent on permit holders and uses, which can be determined at a later time as needed. All signage is constructed in accordance with the requirements of DOT&PF and the Manual on Uniform Traffic Control Devices (MUTCD) standards and manuals.

Cost estimates have not been prepared for this option owing to the uncertain nature and staging of the improvements proposed.



Figure IV-4.23: Freight Uplands Improvements Area

4.3.6 Option F-RE3: Laydown Area

Description

The Economic Analysis Report evaluated the use of the 10.7 acre new laydown area to understand its economic return. The analysis assumed that two major LNG projects currently being proposed in the state, the Alaska Stand Alone Pipeline (ASAP) Project and the Alaska LNG Project, proceed and use the Seward Marine Terminal for staging construction pipe. These projects would need to lease land at Seward for between three and five years to receive and stage pipe prior to transporting it to other locations in the state for the construction of facilities.

ARRC revenue estimates for the development of the dedicated laydown area include wharfage, dockage, security, lease, and rail revenue from the hauling of pipe. ARRC costs include those currently being expended to generate the new laydown area, such as vegetation clearance, placement of granular fill, compaction, leveling, and the construction of the embankment to create a buffer for the wetlands. A number of these construction activities have now been completed. The analysis concluded that the provision of land for lease and associated revenue over the three to five years that these projects need to use the Seward Marine Terminal would generate a positive rate of return.

4.3.7 Option F-RE4: Refined Fuel Distributor

Description

The Economic Analysis Report considered the financial feasibility of the development of a refined fuel distribution facility on a 3.5 acre site at the Seward Marine Terminal. This scenario requires the installation of a pipe to facilitate the movement of fuel from the site to a dock for loading onto a ship or barge. A potential refined fuel distributor provides multiple sources of revenue for ARRC. For instance, a vessel delivering fuel to Seward would be charged dockage for tying up at the freight dock and wharfage for any fuel crossing the dock. Revenue would also be generated from security fees when vessels are delivering or receiving fuel in port. Revenue would also be earned from leasing the 3.5 acre site to the refined fuel distributor for operations.

It is anticipated that ARRC would provide for the extension of utilities services to the site. The provision of the fuel pipe would also need to be negotiated between ARRC and the leaseholder, but for the purposes of the economic analysis, it was assumed that the cost was split evenly between ARRC and the site tenant. All site development costs were assumed to be the responsibility of the tenant. The analysis concluded that the provision of land for lease and the associated revenue for a refined fuel distributor at the site would generate a positive rate of return.

4.3.8 Option F-RE5: Marine Repair and Maintenance Facility

Description

The Economic Analysis Report considered the financial feasibility of providing for a marine repair and maintenance facility at the Seward Marine Terminal site. The marine repair and maintenance operation is assumed to be located on a 1.5 acre site. The analysis assumes that ARRC would complete the necessary site improvements by extending utilities services to the site. The analysis assumes that all on-site development costs would be the responsibility of the site tenant. The ARRC is anticipated to accrue revenues from the lease of the land to the marine repair and maintenance operator and also by transporting materials such as steel and aluminum by rail. The analysis concluded that the provision of land for lease and the associated revenue from providing for transportation of materials by rail would generate a positive rate of return.

4.3.9 Option F-RE6: Seafood Processing

Description

The Economic Analysis Report considered the financial feasibility of providing for a seafood processing facility at the Seward Marine Terminal site. The analysis evaluated the provision of a land-based seafood processor on a 2.5 acre site. The analysis assumes that all on-site development costs would be the responsibility of the site tenant. ARRC would be responsible for extending utilities to the site including water, sewer and electric service. ARRC is assumed to accrue revenues from leasing the land and also from wharfage, dockage and providing security. The analysis concluded that the provision of a lease and associated services to a seafood processing operator would generate a positive rate of return.

4.4 - Opportunity-Dependent Railroad Operational Improvements

Opportunity-dependent railroad operational improvements comprise the following:

- **Option C-RO1: Roundhouse Upgrade:** Upgrade interior of the roundhouse to improve existing storage of goods, include office space, etc. If needed, install an oil/water separator system at the roundhouse. Undertake lighting upgrades to the roundhouse building. Paint the exterior of the building and consider adding a passenger car wash.
- **Option C-RO2: Replace Communications Building:** Replace the existing communications building with a larger, purpose-built structure with demarcated sections to restrict vendor access to their designated areas.
- **Option C-RO3: Rail Crossing Repair, Replacement and Upgrades:** Replace wood-tie at-grade panel rail crossings within yard with concrete panels; include other upgrades to all at-grade rail crossings.

The location of these options is shown in Figure IV-4.24, and they are described in further in the following sections.



Figure IV-4.24: Opportunity Dependent Improvements - Railroad

4.4.1 Option C-RO1: Roundhouse Upgrade

Description

This option improves the roundhouse exterior, including upgrading lighting for employee visibility when using the uplands area and tracks around the roundhouse, painting the exterior of the building to enhance its visual attractiveness and durability and adding a passenger car wash. An upgrade to the interior of the roundhouse is also recommended to improve existing storage of goods, incorporate office space and install an oil and water separator, if required.

4.4.2 Option C-RO2: Replace Communications Building

Description

This option replaces the existing communications building with a larger, purpose-built structure with demarcated sections to restrict vendor access to designated areas. The communications building is an aged asset at the Seward Marine Terminal, and is critically important for communications throughout the site and also for the implementation of Positive Train Control (PTC), an advanced system designed to automatically stop a train before certain accidents occur. The effective implementation of PTC is dependent on line-of-sight; therefore, the replacement of the communications building must occur in the same location as the existing building.

4.4.3 Option C-RO3: Rail Crossing Repair, Replacement and Upgrades

Description

During stakeholder engagement, the condition and location of at-grade crossings throughout the site was identified as a concern. Poor crossing condition can result in safety concerns and operational difficulties, particularly for trucks and other equipment carrying heavy freight. Inconvenient crossing locations can lead to inefficient land use, as well as operational inefficiencies. This option evaluates the condition and location of at-grade crossings throughout the site for repair, replacement or relocation. Depending on the implementation of other site development and connectivity projects, as well as the operational needs of users, the optimal implementation of at-grade crossings needing repair, replacement or relocation could vary greatly. One at-grade crossing of Port Avenue and Track #2, located north of the freight dock was identified as a separate option (Option F-PO3).

This option would result in improvements for site connectivity by enhancing the speed, efficiency and safety of vehicular movements over existing rail crossings. Crossings that could be considered for repair, replacement or upgrade are shown in Figure IV-4.25.



5. Implementation

Improvements recommended at the Seward Marine Terminal have been prioritized according to need and the likelihood to generate a positive return on investment. Figure IV-5.1 sets out these priorities and the critical timeframe for their implementation.

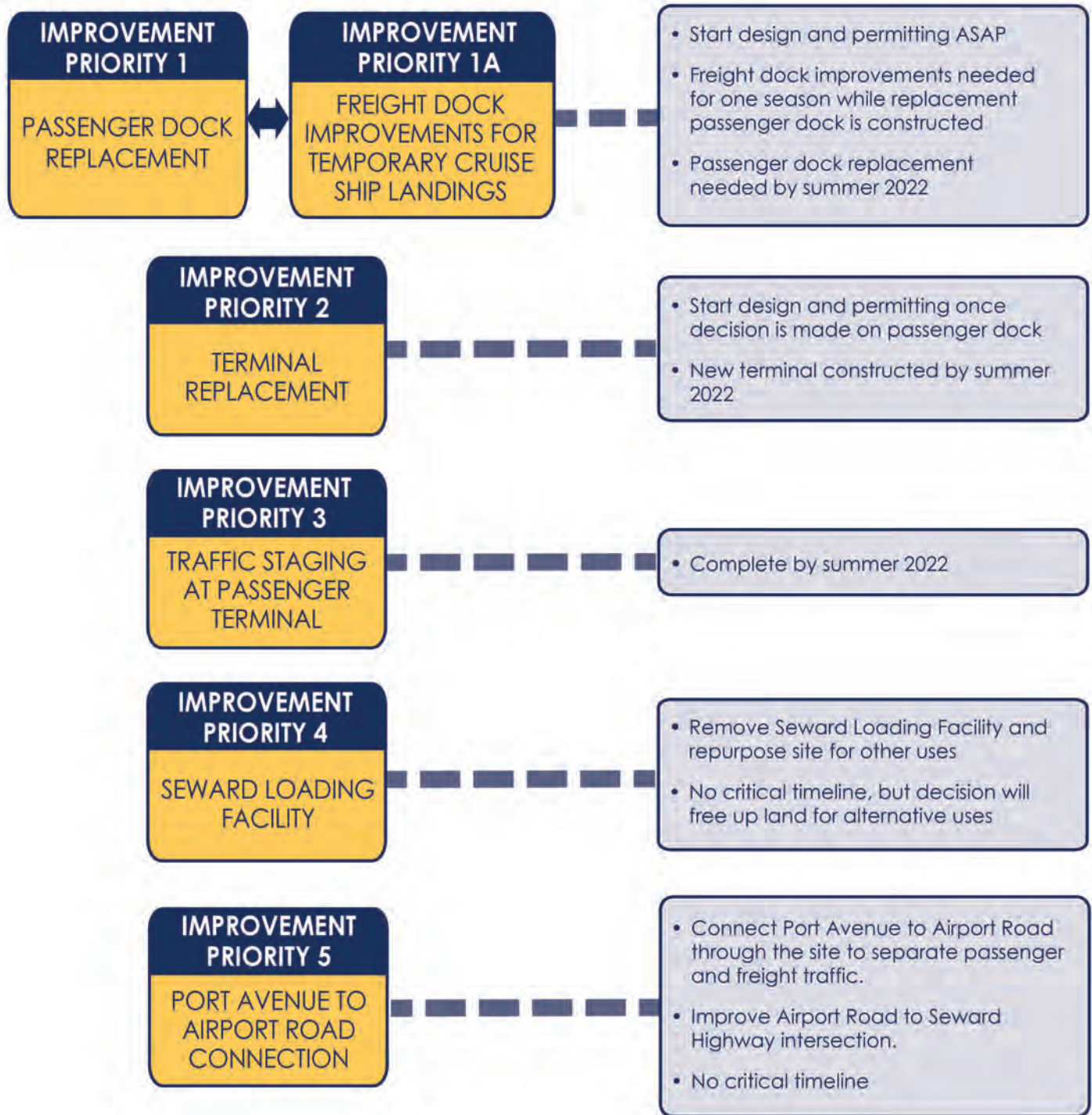


Figure IV-5.1: Improvement Priorities and Required Timing

5.1 - Improvement Priority 1: Passenger Dock Replacement

The passenger dock replacement is the main improvement priority with a clear deadline for implementation. Because the existing passenger dock was assessed in 2015 as having a useable life of seven years a replacement passenger dock needs to be available at the Seward Marine Terminal to receive cruise ships by the summer season of 2022.

ARRC needs to address the following key issues to progress the replacement passenger dock:

1. **Decide on which dock option will proceed.** This decision will be dependent on cost, need, and ability to secure funding to move forward with the passenger dock replacement. Given the time needed for design, permitting and construction, the decision on which dock to build needs to be made as soon as possible.
2. **Design and permitting.** Detailed design work is required for the replacement passenger dock. Environmental permitting will be required, and the types of permit needed will be dependent on the sources of funding and environmental impacts of the dock replacement. At a minimum, an IHA will be required for the replacement passenger dock. It is anticipated that design and permitting work will take at least two years.
3. **Construction.** The construction timeframe for the replacement passenger dock options is approximately two years. Therefore, work needs to commence in demolishing the existing passenger dock and replacing it by no later than the end of summer 2020.

Figure IV-5.2 sets out the timeline for the replacement of the passenger dock.

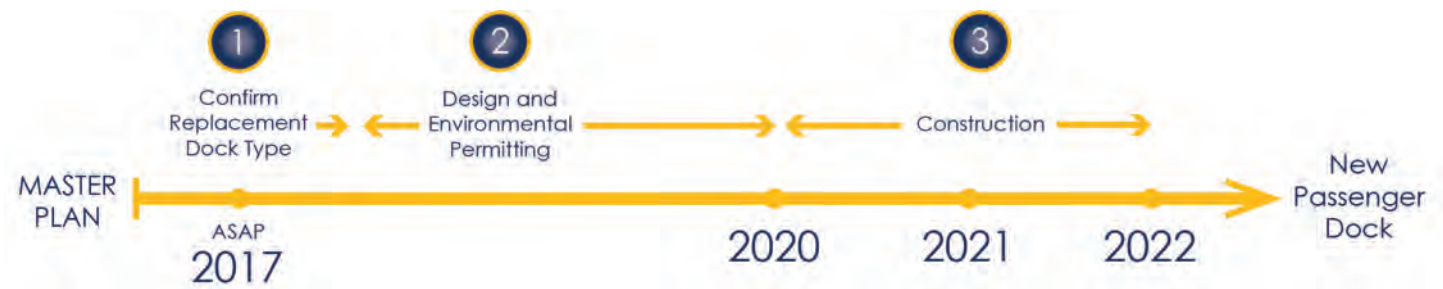


Figure IV-5.2: Replacement of Passenger Dock Timeline

5.2 - Improvement Priority 1A: Freight Dock Improvements to Accommodate Cruise Ships While Replacement Passenger Dock is Constructed

Concurrent with replacement of the passenger dock is the need to improve the mooring capacity at the freight dock to enable cruise ships to land at the dock for one season while construction is carried out on the replacement passenger dock. With the target of constructing the replacement passenger dock between 2020 and 2022, this improvement will be required to be available for the cruise ship season during the summer of 2021. This option will not be required if passenger dock replacement option P-FD2, adding floating platforms to the freight dock to provide for cruise ship landings, is selected.

The following key issues need to be addressed to enable the improvements to proceed:

1. **Design and permitting.** Detailed design work is required for the improvements, which include the installation of additional mooring and breasting dolphins and associated catwalks at the seaward (south) end of the freight dock. Dependent on the work undertaken and methodology, environmental permitting may be required. It is anticipated that design and permitting work will take 18 months to two years.
2. **Construction.** The construction timeframe for freight dock improvements to enable cruise ships to land temporarily is approximately eight months.

Figure IV-5.3 sets out the timeline for improvements to the freight dock to accommodate cruise ships while the replacement passenger dock is constructed.

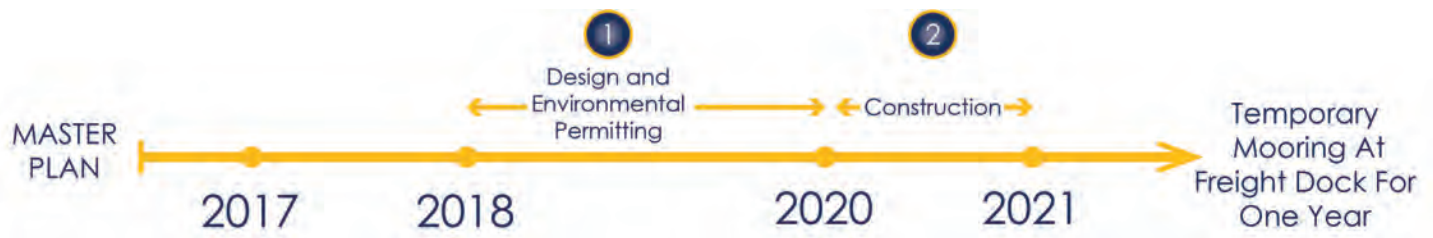


Figure IV-5.3: Freight Dock Improvements for Cruise Ship Landings Timeline

5.3 - Improvement Priority 2: Passenger Terminal Replacement

As the terminal building is located on the passenger dock, it will be demolished at the same time as the dock. Therefore, a new terminal will need to be constructed on land adjacent to the replacement passenger dock. The new terminal building will need to be complete and ready for use at the same time as the new passenger dock, which is expected to be the passenger season in the summer of 2022. If possible, the building should be functional and able to process cruise ship passengers during the summer of 2021. This option is required to enable the effective servicing of the cruise ships at the passenger dock, and is therefore considered to have a dependent relationship with the passenger dock replacement.

The following key issues need to be addressed to enable the improvements to proceed:

1. **Decide on which terminal building will proceed.** This decision will be dependent on cost, need, the ability to secure funding to replace the terminal building, and whether to combine the depot with the passenger terminal. Given the time needed for design, permitting, and construction, it is recommended that the decision on which terminal building type will be constructed should be made as soon as possible.
2. **Design and permitting.** Detailed design work is required for the new terminal building, dependent on whether the building type is an architecturally designed building or a pre-engineered structure. A conditional use permit may also be required from the City of Seward for the replacement of the terminal building. It is anticipated that design and permitting work will take 18 months to two years.
3. **Construction.** The construction timeframe for the new terminal building is anticipated to be approximately one year to 18 months.

Figure IV-5.4 sets out the timeline for the replacement terminal building.



Figure IV-5.4: Terminal Replacement Timeline

5.4 - Improvement Priority 3: Traffic Staging at Terminal

The traffic staging area will require redevelopment as a consequence of the replacement of the passenger dock and terminal. The traffic staging area will need to be reconstructed to support operations at the new terminal and dock commencing in the summer of 2022. This option is required to enable the effective servicing of the cruise ships at the passenger dock, and is therefore considered to have a dependent relationship with the passenger dock replacement.

The following key issues need to be addressed to enable the improvements to proceed:

1. **Design.** Detailed design work is required for the traffic staging area to ensure that it accommodates all potential users and a good traffic flow is established that requires minimal management. It is anticipated that design work will take two to three months.
2. **Construction.** The construction timeframe for the new terminal building is anticipated to be approximately one to two months.

Figure IV-5.5 sets out the timeline for the traffic staging area.



Figure IV-5.5: Traffic Staging Area Timeline

5.5 - Improvement Priority 4: Seward Loading Facility

It is recommended that ARRC remove the SLF and redevelop the land for alternative land uses to improve the return on the land asset. The removal of the SLF will also provide for the complete separation of passenger and freight activities at the site, which should facilitate a range of opportunities to further support the passenger business at the Seward Marine Terminal. No critical timeline has been established for the removal of the SLF, which is considered to be an opportunity-dependent improvement with a strong potential to enhance the return on investment at the site. The removal of the SLF is also not tied with the passenger dock replacement, which can proceed in advance of any decisions on the future of the SLF.

5.6 - Improvement Priority 5: Extending Port Avenue through Seward Marine Terminal Site to Connect with Airport Road

It is recommended that ARRC extend Port Avenue eastward through the Seward Marine Terminal site to connect with Airport Road. This connection provides the ability to separate passenger and freight traffic, provides an alternative access to the site for heavy vehicles, and alleviates existing safety issues associated with traffic volumes and heavy traffic along Port Avenue. No critical timeline has been established for the extension of Port Avenue to connect with Airport Road, but if the depot is combined with the replacement terminal this priority will increase owing to the need to block Port Avenue at times with the Coastal Classic Train and associated level loading platform.

Preliminary discussions have been held with DOT&PF's aviation staff, who are updating the Seward Airport Master Plan. Collaborating may enable DOT&PF to assist with funding improvements to Airport Road and the intersection with the Seward Highway. This opportunity is dependent on when the improvements proceed at the airport and the ability to tie the road improvements together with the needed aviation improvements.

6 Conclusions and Summary

The implementation strategy recommended in Part IV, Section 5 above will enable ARRC to deliver on its vision for the Seward Marine Terminal Expansion Planning effort:

“Reimagining travel and trade to enhance economic vitality and increase opportunities in the region by balancing port, rail, and real estate to meet transportation demands.”

Key to the success of the Master Plan is implementing the recommendations. Time-critical next steps include:

- Deciding on which passenger dock replacement option to pursue.
- Proceeding with design and permitting for the replacement passenger dock.
- Confirming funding to support the passenger dock and terminal replacement.
- Proceeding with design and permitting (as required) for freight dock improvements to support temporary cruise ship landings while the replacement passenger dock is constructed.

In addition to the prioritized improvements, the Master Plan also sets out a range of opportunity-dependent improvements that can be advanced as and when opportunities arise. The implementation of this Master Plan will support ARRC to achieve the following outcomes for the Seward Marine Terminal:

- **Operational and financial:** A clear vision for the future operation of the Seward Marine Terminal will be implemented, with a clear understanding of investment priorities and costs associated with the provision of facilities to support viable future operations. This will increase user confidence in their investments at the site, and should facilitate operational efficiencies.
- **Environmental:** The environmental impacts of operations will be well-understood and managed, with appropriate environmental permits and protections in place to facilitate development and support the operation of a well-managed terminal site.
- **Social:** Residents and visitors to Seward will have a clear understanding of the Seward Marine Terminal and how integral it is to support Seward’s tourism industry. With the improvements, visitors will be provided with an enhanced first impression of the City of Seward and improved connections to the City, and residents will continue to be able to use ARRC’s facilities for community events.
- **Amenity and built form:** The new passenger dock, terminal and associated facilities will provide a modern gateway to the City of Seward for cruise ship passengers. Other improvement priorities, including making decisions around the future of the SLF also have the potential to enhance the amenity and built form at the Seward Marine Terminal site and enable it to be a modern facility that meets the needs of all users for at least the next 20 years.
- **Safety and maritime security:** The planning effort has focused on ensuring that maritime security can continue to be maintained at the site and a range of opportunity-dependent improvements also provide opportunities for improving the safety and security of facilities away from the marine interface provided by the docks. The replacement passenger dock provides the opportunity for a facility that meets modern safety and security requirements, and the replacement passenger terminal will enable comfortable and safe accommodations for passengers and visitors of all ages and abilities.

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