

# Seward Marine Terminal Expansion Planning



*Transportation  
Connectivity Study*

June 2017

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# Seward Marine Terminal Expansion Planning TRANSPORTATION CONNECTIVITY STUDY

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# Acronyms

|          |  |
|----------|--|
| AADT     | Average Annual Daily Traffic                                       |
| ADA      | The Americans With Disabilities Act of 1990                        |
| AGDC     | Alaska Gasline Development Corporation                             |
| ARRC     | Alaska Railroad Corporation  |
| Catalyst | Catalyst Marine Engineering  |
| Crowley  | Crowley Marine Services  |
| DOT&PF   | Alaska Department of Transportation and Public Facilities          |
| FAA      | Federal Aviation Administration                                    |
| HAP      | Holland America Princess   |
| Kirby    | Kirby Offshore Marine  |
| LNG      | liquefied natural gas  |
| MARAD    | United States Department of Transportation Maritime Administration |
| MPI      | mile(s)Milepoint   |
| PTC      | positive train control   |
| PTR      | permanent traffic recorder   |
| SLF      | Seward Loading Facility  |
| SMIC     | Seward Marine Industrial Center                                    |
| TIGER    | Transportation Investment Generating Economic Recovery             |
| TSA      | Transportation Security Administration                             |
| TWLTL    | Two way left turn lane   |
| USACE    | United States Army Corps of Engineers                              |
| USCG     | United States Coast Guard  |
| USDOT    | United States Department of Transportation                         |
| USFWS    | United States Fish and Wildlife Service                            |
| Vigor    | Vigor AK Seward  |

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# Executive Summary

## Introduction

The Alaska Railroad Corporation (ARRC) provides scheduled passenger train services between Anchorage and Seward, and accommodates more than 40 freight customers at the Port of Seward. Though the amount of passenger and freight traffic ARRC has handled to and from Seward over the past two decades has remained substantial, it has been subject to periodic shifts as major intermodal partners including cruise lines and Alaska Department of Transportation and Public Facilities ferries have shifted their ports of call to other regional locations and as regional and global economic influences have affected demand for freight.

The Transportation Connectivity Study leverages data collection and direction provided by the project visioning process to assess existing ARRC passenger and freight movements in relation to current and future demands. Where conflicts, barriers, and inefficiencies are identified for existing movements, options have been identified to address the needs. These options have been vetted to evaluate their feasibility as part of the overall planning effort. The Seward Marine Terminal site is shown in Figure ES-1.



Figure ES-1: Seward Marine Terminal Site

The Transportation Connectivity Study forms one component of the Seward Marine Terminal Expansion Planning effort, which is guided by the following vision statement:

Other components of the planning effort are detailed below.

- The **Passenger Traffic Study** considers ARRC passenger facilities and activities at the Seward Marine Terminal.
- The **Transportation Connectivity Study** considers the intermodal connections that occur at the site (i.e. passenger and freight) and the various connections within the site and from the site to other significant transportation facilities to get to Seward and Southcentral Alaska.
- The **Project Visioning Report** summarizes the stakeholder outreach and public involvement activities undertaken for the project.
- The **Economic Analysis Report** details the baseline for economic activities influencing business at the Seward Marine Terminal, looking at local, regional, state, national and global trends.

All of these studies and reports will inform the development of the Seward Marine Terminal Expansion Master Plan, which will set out a 20-year plan for the development of the Seward Marine Terminal.

**“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.”**

## Background and Issues

The Seward Marine Terminal is owned and operated by ARRC. It was established at its current location at the head of Resurrection Bay in 1964, following the Good Friday earthquake. The first asset constructed at the site was the dock now referred to as the passenger dock, and the associated building known as the Dale R. Lindsey Intermodal Terminal building. The passenger dock and terminal building now primarily provide facilities for a range of cruise lines that land at Seward during the summer cruise season. Since the 1960s activities have grown at the site with the addition of the Seward Loading Facility in 1984, which provides for the loading of coal; the freight dock, which was constructed in 2000; and a range of other buildings and facilities that cater to passenger, freight, and real estate activities at the site.

In 2014, ARRC applied 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 site. ARRC was fortunate to receive a generous award in 2014 and this Transportation Connectivity Study is part of that planning effort. A comprehensive analysis of ARRC's facilities, customer base, and services at the Seward Marine Terminal was undertaken to understand existing conditions, current and future needs, and what improvements were required.

Extensive community involvement and engagement was undertaken to understand current deficiencies and concerns around passenger and freight movements at the Seward Marine Terminal. Input was gathered from people and businesses that use and have a relationship with the facilities, including internal stakeholders from across ARRC departments and external stakeholders comprised of current ARRC customers, local elected officials, Seward citizen planning commissions, and commercial property owners and leaseholders near the Seward Marine Terminal. Over the course of more than 60 stakeholder meetings, extensive information was gathered about the use of the site and facilities and improvements that could occur. A market analysis was also conducted to understand ARRC's passenger and freight market, both in terms of port and rail operations. This analysis indicates positive growth for rail passenger service and cruise ship operations, offset by anticipated declining future freight operations. These changing conditions pose substantial challenges to maintaining and diversifying activities at the site.

In drawing these analyses together, a number of key issues were identified, and the major highlights are as follows.

- **Accessibility Barriers and Other Pedestrian Hazards:** Pedestrians walking or using a wheelchair to travel between the Dale R. Lindsay Alaska Railroad Intermodal Terminal and the Seward Depot face accessibility barriers such as tripping hazards, excessive grades, and narrow widths. They also encounter potential hazards associated with heavy vehicle movements from adjacent commercial and industrial uses at driveways, intersecting roadways, and crosswalks along Port Avenue. A lack of directional signage also creates confusion for visiting passengers unfamiliar with Seward.
- **Parking/Staging Conflicts:** Vehicular traffic and pedestrian conflicts occur at the terminal and depot during embark/disembark activities. Parking/staging areas at these two facilities lack adequate demarcation for short-term parking and loading/unloading of buses, taxis, and shuttles.
- **Indirect Connections and Challenging Roadway Geometry:** Port Avenue serves as an indirect route from the freight dock to the Seward Highway for trucks headed north. The challenging turn movement at the Port Avenue/Seward Highway intersection impedes access and efficient travel northward. Freight trucks are also hindered by relatively poor alternative connections to the Seward Highway via Airport Road (through the northern part of the Seward Marine Terminal Site) and Leirer Road.
- **At-grade Rail Conflicts:** The two at-grade rail crossings within the permit/laydown area create conflicts between rail and freight truck modes during periods of activity. The at-grade crossings also have a high grade differential, making it difficult for forklifts, trucks, and other equipment to cross. Additionally, conflicts occur at the Port Avenue rail crossing when chartered cruise trains stage and load passengers on the tracks leading to the terminal.

## Approach

To address passenger and freight connectivity issues and needs at the Seward Marine Terminal, 41 individual options were identified. Through an iterative screening process, a total of 11 options were identified for further consideration. A comprehensive screening process was conducted to evaluate the options, involving multiple iterations of matrix-based screening, workshops, and presentations to ARRC executives.

## Improvement Options

### Freight Connectivity

- **Option C-FC1 - Extend Port Avenue to Connect With Airport Road:** Extend Port Avenue to connect with Airport Road. 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 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 Transportation Workers Identification Credentials card 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 the Leirer Industrial Park.

### Passenger Connectivity

- **Option C-PC1 - Depot Improvements:** Improve the railroad depot to enhance passenger experience.
- **Option C-PC2 - Outdoor Amenities at Terminal:** Provide outdoor amenities at the terminal such as paving, parking organization and landscaping.

- **Option C-PC3 – Terminal and Depot Consolidated Facility:** Combine the depot and terminal near the current terminal location using either a fully lined 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 C-PC4 – Port Avenue Improvements:** Improve the pedestrian route along Port Avenue between the terminal and Seward Highway.

## Railroad Operations Supporting Connections

- **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.

## Next Steps

The information presented in the Transportation Connectivity Study has been prepared to inform the development of the Seward Marine Terminal Expansion Master Plan. Further information on recommended approaches to site development, potential funding arrangements, and prioritization of projects will be addressed as part of the Master Plan.

# 1. Introduction

## 1.1 Seward Marine Terminal Expansion Planning Effort Structure

The Transportation Connectivity Study is one of three major study reports that inform the Seward Marine Terminal Expansion Master Plan, which focuses on the intermodal connections that occur at the site for both passenger and freight operations. It examines the various connections within the site and from the site to other significant transportation facilities to get people and goods to Seward and other locations across Southcentral Alaska. The study characterizes the existing connections, analyzes gaps, and proposes improvements, with a particular focus on addressing conflicts between passenger and freight traffic movements within and from the site. Two other studies complete the planning effort.

- The **Passenger Traffic Study** considers the Alaska Railroad Corporation (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 (terminal), where cruise ships land and passengers transfer to other modes of transportation. The Passenger Traffic Study primarily focuses on the function and level of service provided by each passenger facility.
- The **Freight Traffic Study** considers ARRC freight facilities and activities at the Seward Marine Terminal. The freight facilities are generally focused around the freight dock and uplands area, where a range of freight permit holders use land 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, but this has currently ceased and the facility has been shut down. The Freight Traffic Study primarily focuses on the function and level of service provided by each freight facility.

In addition to these studies, the following additional reports have been prepared in support of the Seward Marine Terminal Expansion Master Plan.

- The **Project Visioning Report** summarizes the stakeholder outreach and public involvement activities undertaken for the project. It details the process for the development of the project's vision, together with the feedback received from stakeholders and how this will be incorporated into the Master Plan.
- The **Economic Analysis Report** details the baseline for economic activities influencing business at the Seward Marine Terminal looking at local, regional, state, and national trends. It considers how economic stimulus projects could make the best use of available real estate at the site. The analysis will support project recommendations in the Passenger and Freight Traffic Studies and also support site layout and staging in the Master Plan.

The Master Plan will set out the selected options from the Passenger, Freight, and Connectivity Studies and present them as a 20-year development plan, inclusive of concepts, designs, and recommendations.

The analysis will guide the assimilation of the projects into ARRC's existing terminal operations and consider constructability to enable operations to continue, costs, and the balancing of short- and long-term infrastructure needs with modal demands and space availability. The Master Plan will also focus on ensuring integration as much as practicable into the local Seward community and transportation network.

## 1.2 Project Vision

In response to stakeholder input, the project team crafted a vision statement to guide the project studies. The statement is a guide for the planning process. It takes into account stakeholder input, the ARRC's core values, economic forecasting, and the requirements of the project's Transportation Investment Generating Economic Recovery (TIGER) grant funding. The vision statement for the Seward Marine Terminal Expansion Master Plan project is as follows.

The vision statement provides a concise purpose for prospective design alternatives, and assists planners in considering the best uses of the ARRC's assets in Seward. The statement will continue to evolve and serve ARRC through planning and beyond to ensure this nationally- and regionally-significant port continues to meet current and future demand.

The Transportation Connectivity Study assesses existing ARRC passenger and freight customer movements between primary points of ARRC service and other origins, destinations, and mid-point attractions. Where conflicts, barriers, and inefficiencies are identified for existing movements, options have been identified to address the needs. This report documents the existing study area characteristics, key customer movements, and trip deficiencies. Options have been developed and evaluated with respect to these needs, and the preferred options are set out as recommendations to be taken forward in the Master Plan.

Seward Marine Terminal Expansion Master Plan Vision Statement:

***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.***

## 1.3 Background Information

### 1.3.1 Project Funding

The Seward Marine Terminal Expansion Planning project – also known as Railport Seward – is funded by a generous TIGER VI (National Infrastructure Investments) grant from the United States Department of Transportation (USDOT) Maritime Administration (MARAD). The MARAD-administered grant is in the amount of \$2.5 million. ARRC is providing \$500,000 in required total matching funds. The total project cost is \$3 million.

The TIGER Discretionary Grant program provides a unique opportunity for the USDOT to invest in road, rail, transit, and port projects that promise to achieve national objectives. Since 2009, Congress has dedicated nearly \$4.6 billion for seven rounds of TIGER to fund projects that have a significant impact on the nation, a region, or a metropolitan area.

The TIGER grant program is highly sought after and USDOT examines all applications on their merits to ensure that taxpayers are getting the highest value for every dollar invested through TIGER. Applicants must detail the benefits their project would deliver for five long-term outcomes: safety, economic competitiveness, state of good repair, quality of life, and environmental sustainability. USDOT also evaluates projects on innovation, partnerships, project readiness, benefit cost analysis, and cost share. As part of the TIGER VI, 41 capital projects and 31 planning projects were awarded grant funding.

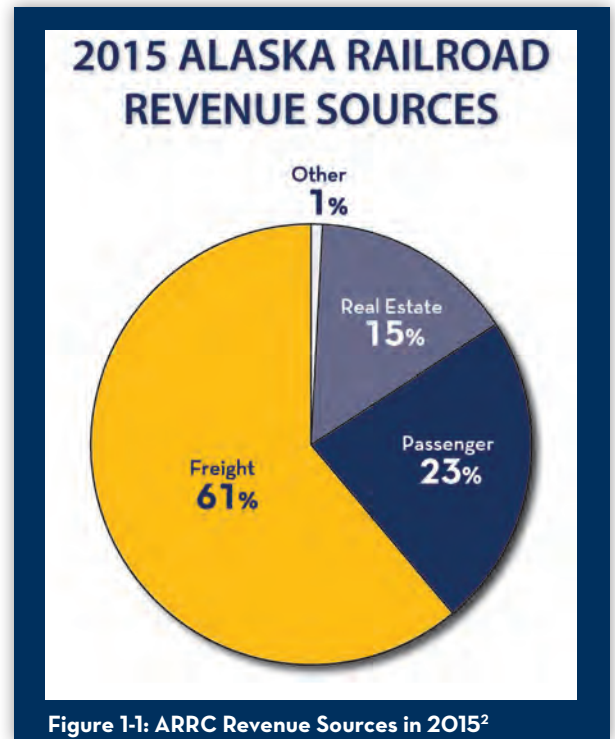


### 1.3.2 Alaska Railroad Corporation

The Alaska Central Railway (later renamed “The Alaska Railroad”) built the first railroad in Alaska in 1903. It started in Seward and extended 50 miles to the north. Over the years, the railroad grew and expanded until 1985, when the State of Alaska purchased the railroad and incorporated it as a self-supporting, state-owned entity responsible for the operation and maintenance of this important mode of transportation. ARRC currently provides regularly-scheduled passenger and freight services along 580 miles of track. 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 primary business lines: passenger services, freight services, and real estate holdings. Figure 1-1 shows what percentage of revenue ARRC received from each of its business lines in 2015<sup>1</sup>. All three business lines will be affected by the Seward Marine Terminal Expansion Master Plan, although passenger and freight movements form the particular emphasis of the Transportation Connectivity Study.

ARRC’s Board has identified five strategies for its current focus in order to successfully deliver the mission. The recommendations made as part of this Transportation Connectivity Study will be most successful in assisting ARRC to achieve its mission if they support the following strategies.



- **Revenue growth/diversification:** ARRC will grow by aggressively courting new business and taking bold steps to introduce new sources of revenue, all while providing superior customer service to its customers. It will be innovative and use the current economic environment as an opportunity to evolve and reinvent itself.
- **Cost structure:** ARRC recognizes that revenue growth alone is not enough, and it will continue to drive costs down through greater efficiency, better use of technology, a team effort to change habits, and generally finding leaner ways to operate.
- **Capital investment:** ARRC will invest wisely in capital maintenance and projects/initiatives that provide a return on capital dollars and that enable it to provide exemplary customer service. It will maintain existing assets and invest in projects that improve safety and profitability.
- **Safety/Engagement:** ARRC will drive employee engagement and safety improvements by addressing shortcomings in its company culture and training employees so they have the tools to do the job well.
- **Relationships:** ARRC will foster and expand working relationships with key stakeholders and groups.

<sup>1</sup> [https://www.alaskarailroad.com/sites/default/files/Communications/2016\\_ARRC\\_Facts-Figures\\_or.pdf](https://www.alaskarailroad.com/sites/default/files/Communications/2016_ARRC_Facts-Figures_or.pdf)

<sup>2</sup> Ibid.

### 1.3.3 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 1-2<sup>3</sup>), four of which have railyards, including Seward.

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.

### 1.3.4 Seward Marine Terminal

The Alaska Railroad land reserve at Seward encompasses about 328 acres. Much of this land is used for train operations. This includes the rail yard where train maintenance and maneuvering occurs, as well as the passenger depot and terminal facilities. The facilities also include two docks, a loading facility, and adjacent uplands, which support intermodal operations for both passenger and freight operations. The facilities at the site are detailed in Section 2.1 of this report. An aerial photograph showing the Seward Marine Terminal site is provided in Figure 1-3.

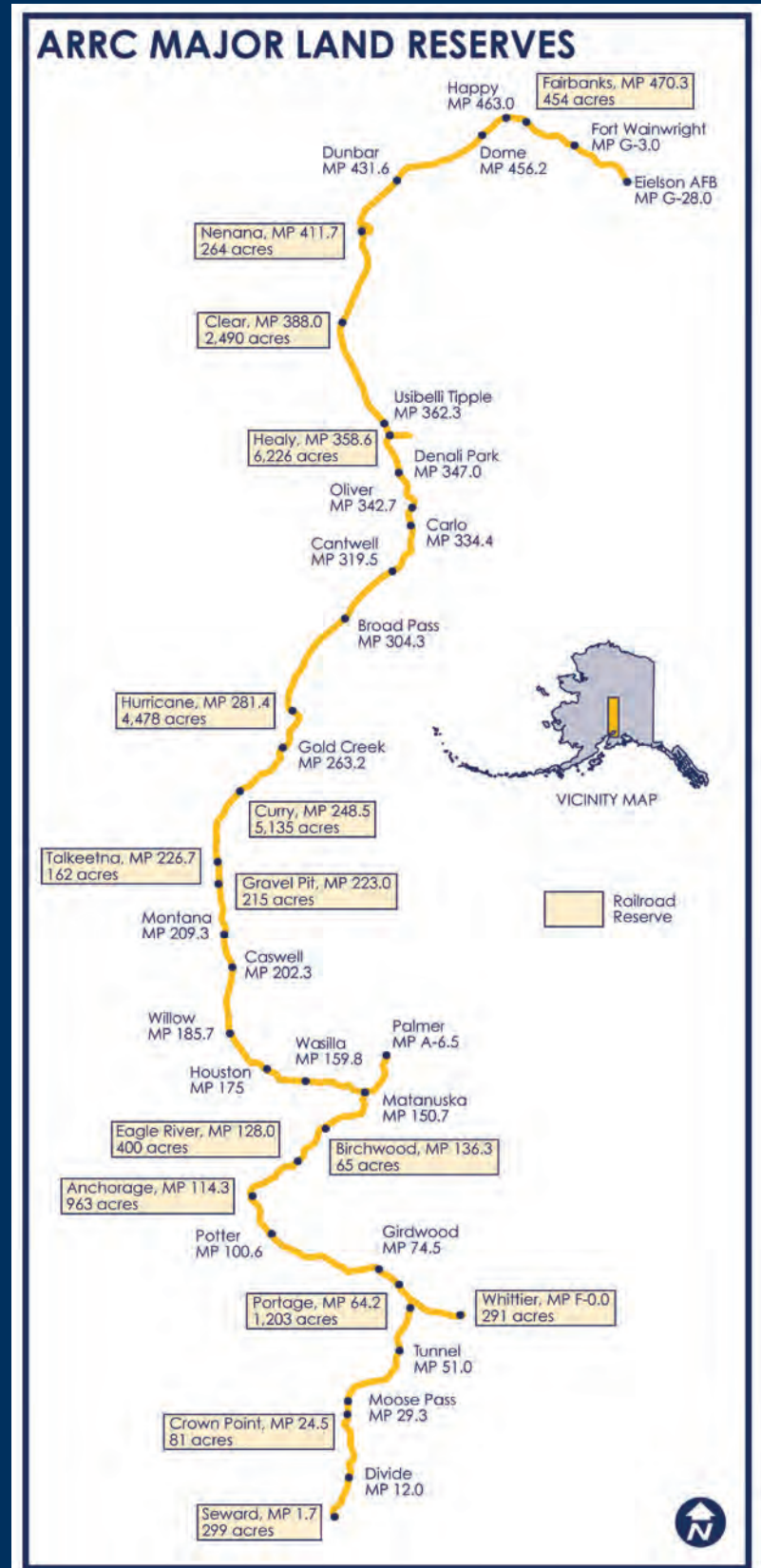


Figure 1-2: Alaska Railroad Network and Land Holdings<sup>4</sup>

<sup>3</sup>[https://www.alaskarailroad.com/sites/default/files/akrr\\_pdfs/2015\\_O2\\_19\\_Real\\_Estate\\_Business\\_FS\\_PR.pdf](https://www.alaskarailroad.com/sites/default/files/akrr_pdfs/2015_O2_19_Real_Estate_Business_FS_PR.pdf)

<sup>4</sup>Alaska Railroad Corporation (2016) Business Facts: Real Estate and Facilities

# 1.4 Study Objectives

The planning-level objectives of the Transportation Connectivity Study are as follows.

- **Set a baseline of information relating to freight facilities and users.** The Seward Marine Terminal is comprised of a range of passenger and freight facilities, including the Seward Depot, the Dale R. Lindsey Intermodal Terminal building, the passenger dock, the freight dock, and permit and laydown areas. Train and cruise ship passengers and freight customers move within the terminal site and beyond to reach desired destinations in Seward and locations north. A discussion of these movements is explored in Section 2.4 of this report.
- **Identify deficiencies in the existing facilities and services.** The facilities at the Seward Marine Terminal provide a range of functions, services, and connections. In some cases, connections are not as efficient as desired and conflicts between passenger and freight traffic movements and adjacent industrial uses have occurred within and in the area surrounding the site. A discussion of existing connectivity deficiencies is included in Section 4 of this report.
- **Identify options to address deficiencies.** A range of options have been developed to address the identified connectivity issues and deficiencies. These options have been through an iterative evaluation process, which has enabled refinement of the options and responses to a range of stakeholder inputs. A discussion of the options and evaluation process is included in Section 6 of this report.
- **Refine options to generate preferred approach.** As part of the identification of options, a comprehensive economic analysis has been conducted to understand the existing market, needs, trends, and growth over the next 20 years. The relative advantages of the Seward Marine Terminal have been explored to identify a preferred approach, with a range of options available to improve passenger and freight connections within and beyond the Seward Marine Terminal over the next 20 years.



Figure 1-3: Seward Marine Terminal Site

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# 2. Existing Conditions

## 2.1 What is Connectivity?

Connectivity describes the ability of a transportation user to complete a desired trip using multiple travel modes and routes. Rather than considering each travel mode as independent or parallel means of transport, the concept of connectivity aims to provide a unified, interconnected transportation network to enable efficient, continuous trips.

The transportation network can be considered as a group of interconnected links and nodes. For the purposes of this report:

- a **node** represents an origin, destination, or intermediate stopping point for a passenger or freight trip; and
- a **link** represents the route connecting one or multiple nodes in a passenger or freight trip.

Starting from an origin point, a passenger or freight operator may use marine travel, transit or charter services, rail, and surface roadways to reach an intended destination. The most efficient trips provide direct routes, accessibility, and seamless infrastructure and services.

In some cases, conflicts and barriers may impede the efficient function of a fully connected transportation network. Barriers may include excessive trip durations and distances, long wait times, high costs, and physical obstacles within the traveled way, while conflicts may exist between modes or users.

The following sections of the Transportation Connectivity Study explore study area characteristics and the nodes, links, barriers, and conflict points for ARRC passenger and freight customers within and adjacent to the Seward Marine Terminal.

## 2.2 Connectivity Study Area

Although the Seward Marine Terminal expansion planning effort is primarily focused on operations within the Seward Marine Terminal land reserves, the Transportation Connectivity Study considers passenger and freight travel connections within the immediate Seward vicinity as well as destinations to the north.

Figure 2-1 illustrates the Connectivity Study area. Travel connections outside the jurisdiction of ARRC and the Seward Marine Terminal site (such as cruise ship schedules and chartered air service), or connections not anticipated to serve Seward within the planning horizon (such as the Alaska Marine Highway System ferry service or scheduled air services to the Seward Airport) are not addressed in the Transportation Connectivity Study. Cruise schedules are outlined in detail in the Passenger Traffic Study.



Figure 2-1: Connectivity Study Area

## 2.2.1 Study Area Land Use

Planning and land use regulations contained in the City of Seward code divide the city into a range of land use districts. District boundaries are defined in the City’s official land use map, and appropriate land uses to occur within the districts are defined in section 15.05.025 of the code.

The Seward Marine Terminal, Seward Airport, and areas located between the Seward Highway and the ARRC site are zoned within the Industrial district. According to the city code, the principal use of this land is for business and activities that “may create some nuisance” not complimentary to other land uses. Land users are expected to mitigate visual impacts to make the area compatible with adjoining districts.

The land bordering the small boat harbor is zoned as a Harbor Commercial district for water-dependent or related businesses. The stated emphasis is on activities that derive economic or social benefit from being located on the harbor and can include business and recreational interests. Recreational users access the Small Boat Harbor boat ramp and boat lift along Port Avenue and also transport boats to storage facilities located north of Port Avenue in the Industrial zone.

Downtown Seward is comprised of multiple zoning designations including Auto Commercial (which provides areas to accommodate highway oriented commercial activities), the Central Business District (which provides an area for concentrated commercial development primarily within enclosed structures), as well as multiple residential zones. The area immediately bordering Resurrection Bay east of Downtown Seward is zoned as a Parks district to facilitate recreational activities.

Industrial, commercial, and recreational uses within the study area but outside of the ARRC land reserve include fish processing, petroleum storage and loading, marine repair and maintenance, boat storage, and a wide range of businesses catering to visitors such as lodging, retail, dining, recreating, and other activities. Relevant uses are described in more detail in the following sections.

## 2.3 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).

### 2.3.1 Passenger Nodes

The ARRC owns a range of passenger facilities in Seward which collectively accommodate over 280,000 passengers from cruise ships and trains every year. Figure 2-2 shows the location of ARRC's passenger-related facilities and nearby attractions.



Figure 2-2: Passenger Nodes

### 2.3.1.1 Passenger Node 1: Passenger Dock

Cruise ship passengers arrive and depart from Seward at the Seward Passenger Dock from mid-May to mid-September each year. The dock is a pile-supported pier dock with a concrete deck, a length of 736 feet and a width of 200 feet. As outlined in detail in the Passenger Traffic Study, the passenger dock has reached its 50 year design life. Photo 2-1 illustrates the passenger dock, a primary point of ARRC service.



Photo 2-1: Passenger Dock (Source: lukedavisphotography.smugmug.com, 2017)

### 2.3.1.2 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 to move north along the dock approximately 500 feet to the Dale R. Lindsey Alaska Railroad Intermodal Terminal (terminal). Disembarking passenger access is located at the south end of the terminal building. Embarking passengers enter the building from the north and are processed through the terminal. 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 majority of the internal building area comprises an open space with a polished and heated concrete floor and a 25-foot ceiling. The area has flexibility to accommodate a range of layouts, and cruise lines use different internal layouts for cruise ship disembark and embark operations. The area has capacity to accommodate up to 1,675 people at one time. Public restrooms are located in the northeastern corner of the ground floor. Photo 2-2 illustrates the terminal, a primary point of ARRC service.





Photo 2-2: Terminal (Source: Judy Patrick Photography, 2012)

### 2.3.1.3 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 area includes a paved perimeter road surrounding an unmarked, gravel-surfaced area.

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. Farther 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 to reflect the plan illustrated in Figure 2-3. ARRC staff members must coordinate staging of the traffic area on cruise ship days to facilitate efficient passenger loading/unloading and traffic movements.

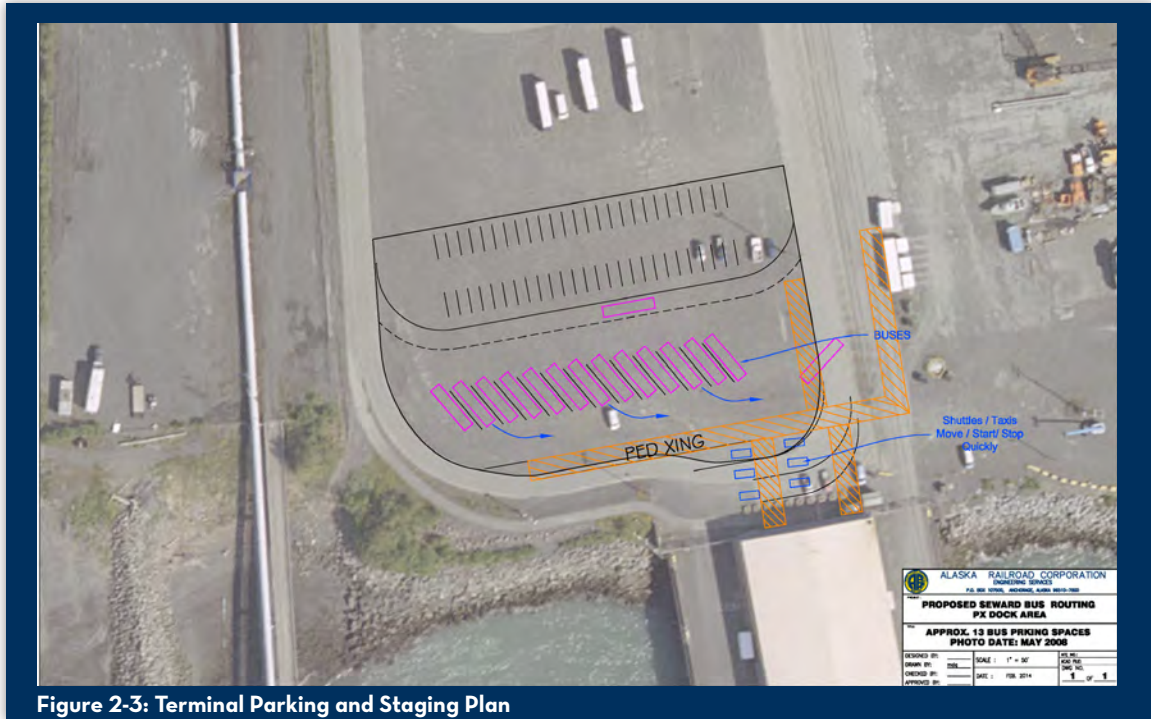


Figure 2-3: Terminal Parking and Staging Plan

Photo 2-3 illustrates the terminal staging/parking area, a primary point of ARRC service.



Photo 2-3: Terminal Staging/Parking Area (Source: Judy Patrick Photography, 2012)

#### 2.3.1.4 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. Passengers may access a waiting area, a single restroom, and a reception/ticketing counter area. Additional restrooms are provided in a small, separate building located immediately north of the depot building. Luggage handling occurs in a steel-framed tent located north of the restroom building. Both the depot and restroom building are equipped with access points that meet current ADA requirements.

The building has insufficient space for embarking passengers assembling between the 5:00 pm check-in time and 6:00 pm boarding of the Coastal Classic train. ARRC has commenced early boarding in these instances to ensure passengers remain sheltered and comfortable during the embarking process.

Access to the depot and parking is by a one-way drive that enters northeast of the depot from Leirer Road and exits south to Port Avenue. Buses stage and temporarily park north of the depot alongside the tracks, creating congested conditions due to the narrow space available for maneuver. Photo 2-4 illustrates the train depot, a primary point of ARRC service.



Photo 2-4: Seward Depot (Source: Judy Patrick Photography, 2012)

#### 2.3.1.5 Passenger Node 5: Small Boat Harbor

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 was formerly the Seward Yacht Club. Multiple private companies offer day cruises for wildlife and glacier viewing, kayaking tours, fishing charters, and a range of other activities. The small boat harbor is located approximately 0.6 mile from the Seward Terminal, and provides a hub for tourist activities in Seward.

Photo 2-5 illustrates the small boat harbor, typically a destination or intermediate attraction between primary points of ARRC service.



### 2.3.1.6 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 2-6 illustrates downtown Seward, typically a destination or intermediate attraction between primary points of ARRC service.



### 2.3.1.7 Passenger Node 7: Locations North

The Municipality of Anchorage is located approximately 125 highway miles and 114 rail miles north of Seward. Many cruise ship passengers fly into or out of the 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 study, and typically serve as origins/ destinations or intermediate attractions between primary points of ARRC service.

## 2.3.2 Freight Nodes

ARRC customers move between multiple freight nodes, depending on the shipping commodity and mode of travel. Figure 2-4 shows the location of ARRC's freight-related facilities and destinations.



Figure 2-4: Freight Nodes

### 2.3.2.1 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. The most significant vendors using the facility include Samson Tug and Barge, Alaska Logistics, Crowley Marine Services, SeaTac Marine Services and Shoreside Petroleum. The facility services barges, container ships, break bulk, fishing, and military vessels. The freight dock is 620 feet in length and has a width varying between 200 feet to 320 feet, and an approximate area of 145,000 square feet. The approximate usable freight laydown area is 75,000 square feet. 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. Photo 2-7 illustrates the freight dock, a primary point of ARRC service.



Photo 2-7: Freight Dock (Source: lukedavisphotography.smugmug.com, 2017)

### 2.3.2.2 Freight Node 2: Permit and Laydown Areas

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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 bordered on the east and south side by water and is fenced on the north and west borders 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 cantilevered gate at the north fence control access to the permit area and freight dock.

The freight dock tracks traverse the permit area and provide a constraint to space that can be made available for laydown. There is a small building located near the northwestern corner of the area that is a shelter for the communications facilities operated by ARRC. Currently, three permit holders use designated spaces in the permit area.

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 around the freight building has been used for marine maintenance activities by a range of permit holders and is 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 undertaken.

Utilities are currently not distributed throughout the area, with grid power being the only distributed system to the freight building. There is no other built space available and permit holders are required to provide their own portable office facilities and services.

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. On completion of the filling, compaction, and leveling work, the area will be available for lease. Overhead electrical and communication lines cross the northern end of the laydown area. 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. Photo 2-8 illustrates the permit and laydown areas within the freight dock fence, and Photo 2-9 illustrates the permit and laydown areas outside the freight dock fence. These areas are a primary point of ARRC service.



Photo 2-8: Permit and Laydown Areas Inside Freight Dock Fence  
(Source: lukedavisphotography.smugmug.com, 2017)



Photo 2-9: Permit and Laydown Areas Outside Freight Dock Fence (Source: DOWL, 2016)

### 2.3.2.3 Freight Node 3: Railyard

The railyard consists of rail tracks between the Jesse Lee Main at the Airport Road grade crossing and Track #1 to the freight dock. 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 rail cars and equipment until needed, rail car inspection and repair, unloading coal, turning trains via the wye, and accessing the freight dock tracks. Tracks located on the passenger dock are not used due to weight restrictions on the dock. Figure 2-5 illustrates the railyard configuration, a primary point of ARRC service.

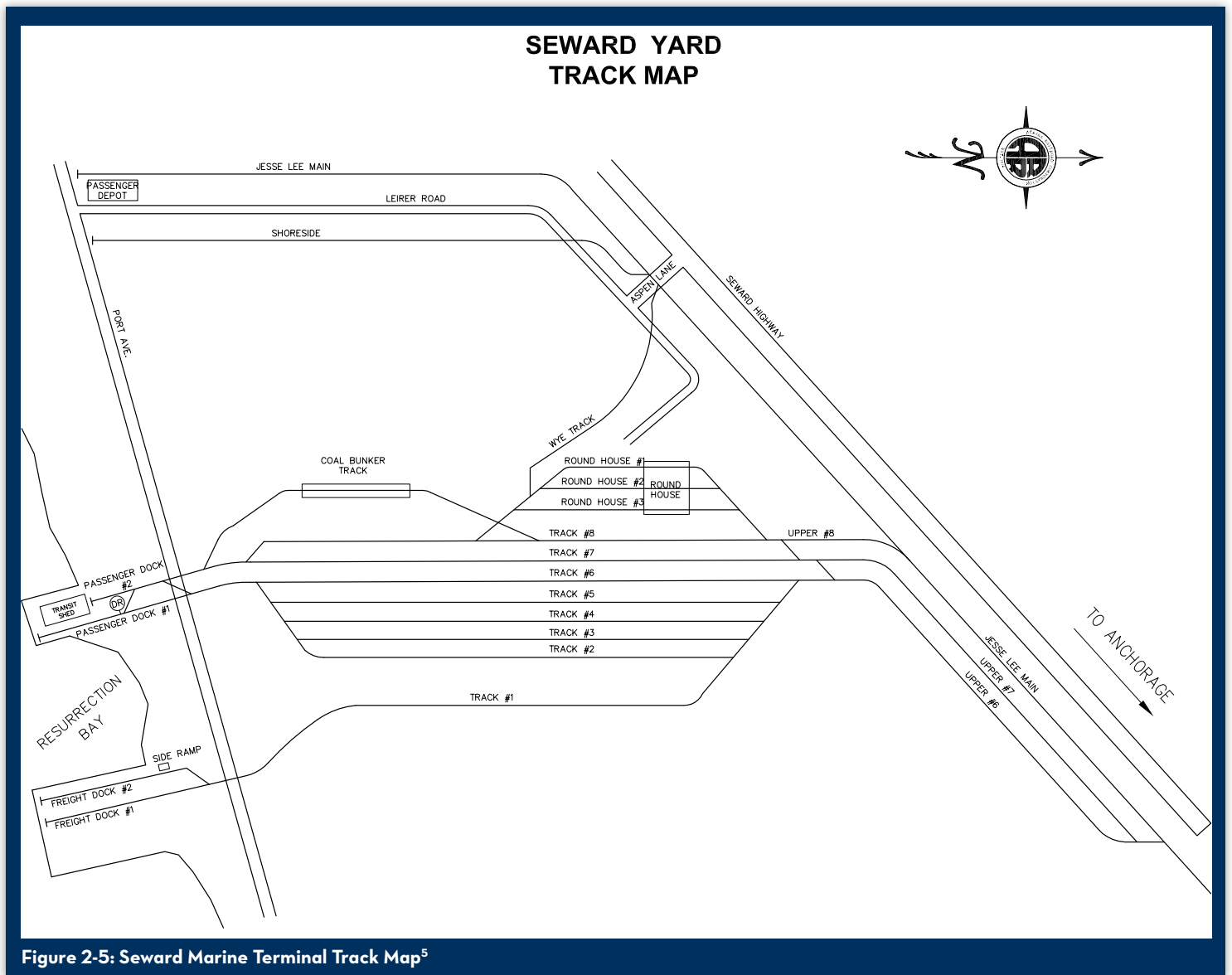


Figure 2-5: Seward Marine Terminal Track Map<sup>5</sup>

<sup>5</sup><http://www.alaskarails.org/maps/Seward-2008.jpg>



### 2.3.2.4 Freight Node 4: 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 is currently leased to Aurora Energy Services, LLC, a subsidiary of Usibelli Coal Mine, Inc.

The SLF consists of a conveyer, vehicle access, stationary ship loader, and a coal bunker for unloading coal directly from rail cars. The entire SLF facility is located on a site measuring 33.91 acres in area, which includes the SLF itself and associated administrative buildings, as well as capacity to stockpile 130,000 tons of material for loading. The SLF has been used to transfer bulk materials such as coal and gravel from railcars, stockpiles 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.

Demand for coal from Alaska has all but ceased globally and the future demand analysis appears bleak, with limited demand for coal and a significant oversupply worldwide over the next several years. In 2016 only one shipment of coal was processed through the SLF. No coal shipments are scheduled for 2017. Due to the diminishing demand for coal, the facility has been taken out of service and currently serves as a temporary mooring location for vessels awaiting berth at the passenger or freight docks. Although no freight movements are anticipated to or from the SLF in the near term, this node is included in the Connectivity Study while a decision on its future is pending. ARRC is currently considering alternative uses for the SLF land including providing short-term permit space for storage on vacant land close to the small boat harbor. Photograph 2-10 illustrates the SLF, a primary point of ARRC service.



Photo 2-10: Seward Loading Facility (Source: Judy Patrick Photography, 2012)

### 2.3.2.5 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. Photograph 2-11 illustrates fish processing facilities, considered an origin or destination between primary points of ARRC service.



Photo 2-11: Fish Processing Facilities (Source: DOWL, 2017)

### 2.3.2.6 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. Photograph 2-12 illustrates petroleum facilities, considered an origin or destination between primary points of ARRC service.



Photo 2-12: Petroleum Facilities (Source: DOWL, 2017)

### 2.3.2.7 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 utilizes permits 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.

### 2.3.2.8 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. As the state's most populated city, Anchorage generates strong demand for goods. Other northern destinations such as the Kenai Peninsula and 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.

## 2.4 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.

### 2.4.1 Passenger Links

#### 2.4.1.1 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 other than an origin or destination point. During a port of call, cruise ship passengers are often afforded an opportunity to disembark for a day or more 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 2-6 illustrates these movements.



Figure 2-6: Passenger Movements - Cruise Ship Port of Call

## 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 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 10:00 am to 7:00 pm and from 8:00 am to 7:00 pm on cruise ship days from May through September. Starting at the passenger terminal, the shuttle completes a 30-minute loop with fifteen stops including 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. An example (although not exhaustive) listing is provided below.

- **Kenai Fjords Tours** provides a shuttle service to their facility at the small boat harbor. Kenai Fjords Tours offers day cruises and tours of Resurrection Bay.
- **Local taxi services** provide pick up and drop off services at the Seward Marine Terminal.
- **Major Marine Tours** provides a shuttle service to their facility at the small boat harbor. Major Marine Tours offers day cruises and tours of Resurrection Bay.
- **Premier Alaska Tours** is a wholesale company that provides services exclusively to tour operators, cruise lines, and wholesale agencies.
- **Seavey's Iditaride** provides a shuttle to a range of tours including glacier dog sled tours, the real Alaska day tour, and wilderness dog sled ride and tour.
- **Hertz** offers cars for rent and is located on Port Avenue. Hertz provides a shuttle from the terminal to their rental facility or customers can walk the short distance to the rental car office (approximately 0.3 mile).

- **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 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 current accessibility standards under the ADA of 1990. 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 conflicts 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 conflicts from the Iclicle 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.

The boardwalk may be accessed beginning on the south side of Port Avenue behind "The Train Wreck," a local café and site of interest, 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 the 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, continue along the west side of the street, then transition to the east side of the street at Madison Street, and extend again on both sides of Fourth Avenue beginning at Jefferson Street. The core tourist-oriented portion of downtown extends from Jefferson Street to Railway Avenue, terminating at the head of Resurrection Bay. Passengers may also access downtown Seward via the scenic Coastal Walkway while enjoying views of Resurrection Bay. The walkway 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 the Passenger Traffic Study. This includes the total number of passengers starting or ending their cruise trip in Seward, and also 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.

### Route

The Seward Marine Terminal 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 Ted Stevens Anchorage International Airport. Figure 2-7 illustrates these movements.



Figure 2-7: Passenger Movements - Cruise Ship Embark/Disembark

### Mode Description

The two primary means of travel between Seward and Anchorage for passengers are via surface transportation on the Alaska Railroad or by the Seward Highway.

- **Alaska Railroad**

Many cruise passengers purchase transfer excursions on the Grandview Cruise Train, arriving at or departing directly from the terminal.

- **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 embark existing passengers who are ending their cruise, and disembark new passengers about to start their cruise, choose to offer the cruise train. These types of cruises are known as 'turn' cruises. Cruise trains carrying disembarking passengers depart Seward at 7:00 am on cruise ship days, while cruise trains carrying embarking passengers arrive in Seward at 5:00 pm.

Cruise trains stage and load passengers adjacent 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 the road being blocked by the train 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 trains or travel modes, or remain in Anchorage and transfer to hotels or 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 6:45 am and arriving into Seward at 11:15 am, before returning to Anchorage with a 6:00 pm departure from Seward and a 10:15 pm 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 also connect 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 volumes of independent travelers. The second busiest day is Saturday.

As bookings are handled independently or through tour companies, rather than directly with the cruise lines, passenger numbers are not able to be quantified. 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 loop drive that enters northeast of the depot from Leirer Road and exits south to Port Avenue. Overflow parking occurs on the south side of Port Avenue at The Train Wreck.

Cruise passengers must also arrange travel between the depot and passenger terminal using 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. 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.

- **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 the Alaska Department of Transportation and Public Facilities (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 high summertime weekend traffic volumes, ARRC customers can expect periodic delays and stop-and-go conditions on the road trip from Anchorage to Seward.

- **Chartered Services**

A wide variety of chartered vehicles may be commissioned to provide transportation between Anchorage and Seward. The following provides a non-exhaustive list of example services.

- **Alaska Park Connection** is a scheduled summer bus line service that operates between Anchorage, Denali National Park, Talkeetna, Whittier, and Seward.
- **Alaska Cruise Transfers and Tours** offers transfers between Seward and Anchorage by motorcoach, with some options including a visit to the Portage Wildlife Park or visiting tourist attractions along the way.
- **Alaska Toby Motorcoach** offers motorcoach transfers and tours.
- **Bear Paw Transportation** offers private and shared shuttle transportation options by shuttle bus, van, motorcoach, or limousine.
- **BAC Transportation** offers private shuttle transportation options by shuttle bus, van, or limousine.
- **Hertz Rental Car** provides a shuttle service to their rental car office and facility on Port Avenue.
- **Magic Bus** offers daily cruise ship transfers including limo buses, sedans, vans, and motorcoaches.
- **Shuttleman Transportation** provides an airport shuttle and private van service between Seward and Ted Stevens Anchorage International Airport.



## 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 2-1). The total number of passengers arriving in Seward or departing from Seward in 2016 was nearly 178,000.

**Table 2-1: Embarking/Disembarking Cruise Ship Passenger Volumes**

| Year                     | Arriving at Seward (Disembarking) | Departing Seward (Embarking) | Total Cruise Ship Passengers (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   |
| 2009                     | 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   |
| Yearly Average 2005-2016 | 69,725                            | 65,782                       | 135,506   |

(Source: ARRC 2016)

The Coastal Classic provides regularly scheduled train service to Seward. Annual ridership from 2013 to 2016 is presented in Table 2-2.

**Table 2-2: Total Ridership on Coastal Classic Train**

| Year | Total Ridership     |
|------|---------------------|
| 2013 | 51,287              |
| 2014 | 51,999              |
| 2015 | 58,619              |
| 2016 | 63,839 <sup>6</sup> |

(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 also coincides with the largest cruise ships that visit Seward and cater to higher volumes 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 2-3.

<sup>6</sup>ARRC Coastal Classic Data

**Table 2-3: Cruise Ship Passenger Percentages on Coastal Classic Trains**

| Day of Week | Cruise Ship Activity                                  | Approximate Daily Cruise Passenger Percentage <sup>a</sup> | 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)

<sup>a</sup> Approximate 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. This information is not kept by ARRC, as the train is hired by cruise ship companies. 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)<sup>7</sup>. 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 2-4 extends these assumptions to calculate mode splits for cruise ship passengers.

**Table 2-4: Assumed Mode Splits for Cruise Passenger Transport**

| Year | Total Cruise Landings | Total Coastal Classic Ridership <sup>8</sup> |               |   | 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) <sup>a</sup> | Cruise Number                                  | Cruise Percentage (Exclusively Cruise Ship Passengers) <sup>b</sup> | Cruise Number            | Cruise Percentage |
| 2013 | 116,815               | 51,287                                       | 17,079        | 14.6%   | 65,968   | 56.5%   | 33,768                   | 28.9%             |
| 2014 | 135,587               | 51,999                                       | 17,316        | 12.8%   | 65,968   | 48.7%   | 52,303                   | 38.6%             |
| 2015 | 167,866               | 58,619                                       | 19,520        | 11.6%   | 65,968   | 39.3%   | 82,378                   | 49.1%             |
| 2016 | 177,951               | 63,839                                       | 21,258        | 11.9%   | 65,968   | 37.1%   | 90,725                   | 51.0%             |

(Source: ARRC 2017)

<sup>a</sup> 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.

<sup>b</sup> 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 Classic cruise train, and 51 percent used another mode of transport (such as chartered motorcoach or rental car).

<sup>7</sup> Hanson Alaska, LLC, Email correspondence dated 2/21/2017.

<sup>8</sup> ARRC Coastal Classic Data

### 2.4.1.3 Passenger Movements - Non-cruise Coastal Classic Customers

#### Route

ARRC offers regularly scheduled rail service on the Coastal Classic for passengers departing from or arriving in Seward. Non-cruise passengers use this service to travel between Seward and Anchorage without relying on ground transportation on the Seward Highway. Figure 2-8 illustrates these movements.



Figure 2-8: Passenger Movements - Non-cruise Coastal Classic Customers

#### 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 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 2-3). From 2013 to 2016, the assumed number of non-cruise passengers ranged from 34,000 to 42,500 annually.

## /2.4.2 Freight Links

### //2.4.2.1 Container/Break Bulk Movements

Figure 2-9 illustrates container movements associated with ARRC freight customers.



Figure 2-9: 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 #6 before joining the Jesse Lee Main headed north, as illustrated in Figure 2-5.

#### 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, making it difficult for forklifts, trucks, and other equipment to cross.

For container and break bulk freight destined northward, heavy commercial vehicles must turn to access the Seward Highway at the Port Avenue intersection with the highway. The skewed geometric configuration of the Port Avenue and Seward Highway intersection requires vehicles merging onto the Seward Highway to look nearly backward to safely enter the northward traffic flow from a dedicated right turn lane onto the highway.

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 recorded AADT volumes of 1,501 along the majority of Port Avenue and 3,165 between Fourth 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. This turn requires a ninety degree right turn, and a long truck may extend back onto the parallel tracks while waiting to turn. A turn from Seward Highway east onto the Leirer Road intersection may leave some longer trucks extending onto Seward Highway when trains are using the tracks. 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 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. Sight lines at this intersection are good, however.

An informal route through the railyard connects to Airport Road, which 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 Road, traffic turning right onto the Seward Highway can result in some longer trucks extending over the tracks. Also like Leirer Road, a right turn onto Airport Road from the Seward Highway could leave a longer truck extending onto the highway while trains are using the tracks. This turn movement also has poor visibility, particularly for vehicles turning left due to the intersection being located close to bridges over the Resurrection River. The informal road access is gated and access is discouraged except by arrangement, due to poor separation from the railroad 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 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.

Figure 2-10 illustrates petroleum movements associated with ARRC freight customers.



Figure 2-10: Petroleum Movements

**Route and Mode Description**

Petroleum may be unloaded and stored at the Shoreside Petroleum facility or shipped to locations north of Seward 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 skewed geometric intersection configuration at the turn onto the Seward Highway create challenges for this movement, while the track configuration poses challenges at Leirer and Airport Roads.

**Trip Demand**

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

### 2.4.2.3 Fish Product Movements

Figure 2-11 illustrates fish product movements associated with ARRC freight customers.

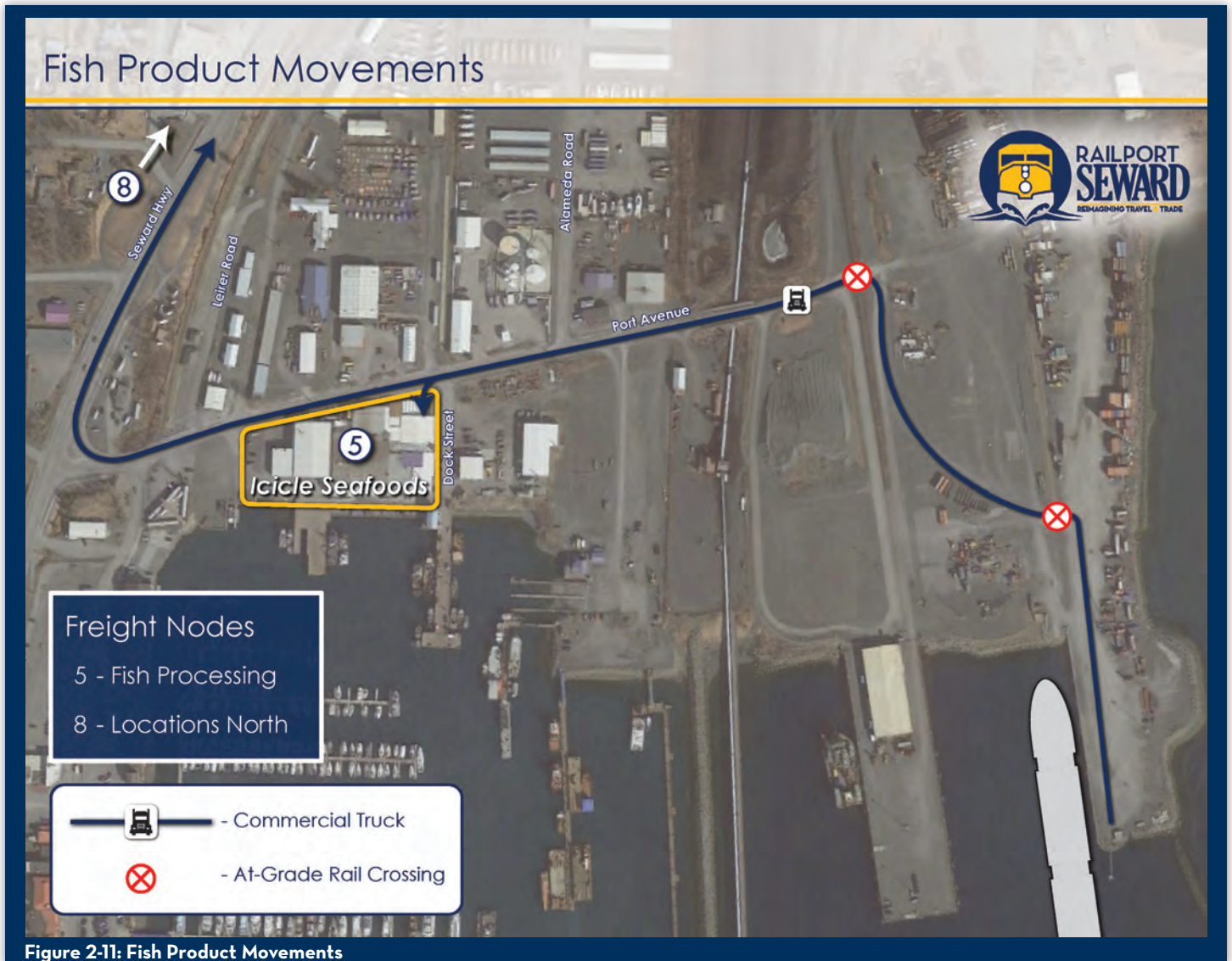


Figure 2-11: Fish Product Movements

#### 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 above 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 skewed geometric intersection configuration at the turn onto the Seward Highway create challenges for this movement, while the track configuration 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 Icycle Seafoods. A number of other Port of Seward tenants (i.e., permit holders) also transport fish products from the freight dock.

#### *2.4.2.4 Marine Maintenance*

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A number of companies and organizations, including Kirby Offshore Marine (Kirby), Crowley Marine Services (Crowley), Vigor Alaska Seward (based at the Seward Marine Industrial Center [SMIC]) (Vigor), and the United State Coast Guard (USCG) use 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 or 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, remaining at the dock and undertaking 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, the 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 there is an emergency 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 at Seward for maintenance and repair works to its vessels. Boats typically land at the passenger dock. These scheduled stops also provide the opportunity for onboard crew to have land-based time off whilst 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 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 waters around SMIC from tidal surges, which may reduce the need for Vigor to use the Seward Marine Terminal for its activities. 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 2-12 illustrates vessel and vehicle movements associated with marine repair and maintenance activities undertaken at the Seward Marine Terminal.



## Marine Repairs and Maintenance Activities



Figure 2-12: Marine Repair and Maintenance Movements

### 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 would enter and exit the passenger dock through the security controlled gate on the east side of the dock.

### Trip Demand

The project team was unable to secure data on truck volumes associated with marine repair and maintenance activities at the site. Other on-site vehicle movements would consist of light motor vehicles and the project team has not been able to secure this data.

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# 3. Community Involvement and Engagement

To identify current deficiencies and concerns around passenger and freight connectivity at the Seward Marine Terminal, the project team gathered input from people and businesses that use or have a relationship with the facilities. Two types of stakeholders were identified: internal stakeholders across ARRC departments and external stakeholders comprised of current ARRC customers, local elected officials, Seward citizen planning commissions, and commercial property owners and leaseholders near the Seward Marine 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.

## 3.1 Visioning Process

Public and stakeholder outreach sought to identify common goals between the ARRC and the local community in an effort to prioritize local infrastructure investment needs. 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 and when 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 existing and desired passenger and freight connections within the ARRC Seward landholding and throughout Southcentral Alaska, and gathered ideas on how to improve ARRC's facilities and real estate to serve the region and the 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.

## 3.2 Stakeholder Outreach

### 3.2.1 Internal and External Stakeholder Meetings

To ensure consistent and appropriate qualitative stakeholder data, 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 stakeholders in hard copy format at each meeting and also emailed as a fillable form. A total of seven internal and 53 external stakeholder visioning meetings occurred in October 2015 through July 2016 in person or via teleconference. Copies of meeting materials and presentations are included as part of the Stakeholder Visioning Report.

All stakeholder meetings were documented with meeting minutes and aerial map notes. Survey questionnaires allowed for follow-up comments or comments in lieu of meeting participation. Stakeholders 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 and 19 external stakeholder survey questionnaires were returned. Additional emailed comments, meeting minutes, and returned surveys are included in an appendix to the Stakeholder Visioning Report. In addition to the stakeholder meetings, the project team traveled to Seward on November 16, 2015, to meet with ARRC on-site staff for a three-day work session. The purpose was to view and discuss the operation of the facilities, conduct a site walk-over, and inventory existing facilities.

### 3.2.2 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 Stakeholder Visioning Report.



Photo 3-1: ARRC Marketing Division participating in an Internal Stakeholder Meeting, October 2015 (Source: E3 Environmental, 2015)

### 3.2.3 Additional Stakeholder Outreach Efforts

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



Photo 3-2: External Stakeholder Meeting at Seward Passenger Terminal, October 2015 (Source: E3 Environmental, 2015)

## 3.3 Key Issues

A summary of comments received during the visioning process is provided below in Table 3-1. These comments seek to identify common goals between the ARRC and the local community:

**Table 3-1: Internal and External Stakeholder Comments**

| Topic          | Internal Stakeholder Comments  | External Stakeholder Comments  |
|----------------|--|--|
| Passenger Dock | <ul style="list-style-type: none"> <li>Cruise ships are getting larger and require accommodations for different luggage and gangway configurations.</li> <li>Shoreside Petroleum has a fuel line on the dock, but still takes trucks out to fuel vessels.</li> <li>Current weight restrictions prevent heavy freight use.</li> <li>Making the dock dual purpose would allow year-round use.</li> </ul>   | <ul style="list-style-type: none"> <li>Tour companies would like to continue to drive motor coaches onto the dock and/or have rail on the dock for passenger loading. They also mentioned separating passengers from luggage vehicles for better safety.</li> <li>Cruise ships would like hard data lines on both sides of the dock, accommodations for larger ships and configurations, and fresh water.</li> <li>Freight companies said securing dock landing times 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.</li> <li>Moorage during winter is useful, but the dock is exposed to weather.</li> </ul>  |
| Freight Dock   | <ul style="list-style-type: none"> <li>Current fendering is dangerous and needs improvement.</li> <li>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 or offloading.</li> <li>Roll on/roll off ramps would make moving freight easier.</li> <li>Ability to load directly from ship to railcars would be ideal for pipe and containers.</li> <li>The freight dock gets muddy which makes it hard to move equipment and requires constant cleaning of the tracks.</li> <li>Put the track all the way to the end of the freight dock extension.</li> </ul> | <ul style="list-style-type: none"> <li>Current fendering is dangerous and needs to be improved.</li> <li>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 current draft. Weather and tide conditions can prevent loading or offloading and delays are expensive.</li> <li>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.</li> <li>Freight operators want mooring dolphins at the current barge ramp, paving to support heavy equipment, better lighting, fresh water for vessels, restrooms for freight workers, and a wider gate in the fence surrounding the freight dock uplands area.</li> <li>Independent barge operators prefer the option for facilities to be not be shared with other operators or reliant on ARRC staff for support.</li> <li>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.</li> </ul> |

| Topic                         | Internal Stakeholder Comments   | External Stakeholder Comments   |
|-------------------------------|---|---|
| Terminal                      | <ul style="list-style-type: none"> <li>• Upgrade technology (i.e. electronic signs and free Wi-Fi).</li> <li>• Keep terminal rates competitive to retain current customers.</li> <li>• Seward's current terminal layout allows passengers to transition in and out quickly, giving Seward a high rating with cruise operators.</li> <li>• The community appreciates space large enough to hold events and use in an emergency situation.</li> <li>• Maintaining and operating the building during winter is costly due to its design characteristics and age.</li> <li>• Upgrade technology for freight office spaces.</li> </ul> | <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• The community appreciates a space large enough to hold events.</li> <li>• Other customers want upgraded technology in office spaces and the ability to use it to stage sensitive freight during the off season.</li> </ul> |
| Depot                         | <ul style="list-style-type: none"> <li>• Wayfinding signage to and from the Depot needs to be clearer and traffic flow needs to be improved.</li> <li>• Improve aesthetics and modernize.</li> <li>• A better luggage system and additional space to shelter waiting passengers are needed.</li> <li>• The location of the depot is important to downtown Seward businesses.</li> <li>• Moving the depot closer to the terminal might alleviate pedestrian vs. freight conflicts on Port Avenue.</li> </ul>   | <ul style="list-style-type: none"> <li>• The depot requires improved aesthetics and modernization, primarily with luggage handling and shelter for waiting passengers.</li> <li>• Alleviating pedestrian 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.</li> <li>• Proximity to downtown is important to Seward businesses.</li> </ul>   |
| Seward Loading Facility (SLF) | <ul style="list-style-type: none"> <li>• Run a fuel line down SLF Dock to keep fuel vessels out of the way of other vessels at the freight dock.</li> <li>• Repurposing the SLF for aggregate loading, wood chips, sand, gravel, limestone, and gypsum were suggested.</li> <li>• Use SLF Dock for mooring when it is not running coal.</li> <li>• The height of the dock limits its purpose for other things.</li> </ul>   | <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• If the SLF is repurposed, the dock piles need to be improved including the ladders and catwalks. The dock height currently limits other uses.</li> </ul>  |

| Topic   | Internal Stakeholder Comments  | External Stakeholder Comments   |
|---------|--|---|
| Uplands | <ul style="list-style-type: none"> <li>• More laydown area is needed. There are few ports on Alaska’s road system with area like this.</li> <li>• Office space with utilities would be great, or at least a commercial user spot with RV hookups to water, sewer, and electricity.</li> <li>• Bring utilities into the uplands with capacity and redundancy to support commercial businesses.</li> <li>• Create an area for explosives laydown. If the mining industry picks up there will be a need.</li> <li>• Build a new communications shelter with fenced-off areas for vendors.</li> <li>• Everyone around the terminal uses radio now and it causes interference. Put wireless telecommunication towers on railroad property to increase revenue and benefit community.</li> </ul> | <ul style="list-style-type: none"> <li>• Many stakeholders remarked on the lack of long-term lease options in Seward.</li> <li>• 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.</li> <li>• Some freight operators who set up mobile offices requested a place for RV hookups to water, sewer, and electricity.</li> <li>• Future considerations for improvement include incorporating better lighting through the uplands for laydown and installing buried utilities to prevent accidents while moving tall freight.</li> </ul> |
| Rail    | <ul style="list-style-type: none"> <li>• Include rail on the new passenger dock.</li> <li>• Put track all the way to the end of the freight dock extension.</li> <li>• Current marine/rail interface requires extra handling of freight to move it off the dock. More ideal to load directly to rail.</li> <li>• Rail is the best way to move freight from Seward to Fairbanks.</li> <li>• Tunnels and highway overpass outside Seward preclude double stacking.</li> <li>• Seward has a lot of 70 lb rail which is outdated for freight.</li> <li>• The amount of horsepower (in terms of number of locomotives) required to haul items to or from Seward renders most commodities not cost-effective.</li> </ul>   | <ul style="list-style-type: none"> <li>• 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.</li> <li>• Freight operators also want rail switching closer to the freight dock to alleviate delays in moving railcars.</li> <li>• In general, rail is the best way to move freight from Seward to Fairbanks. Tour companies also prefer passenger rail to motor coaches.</li> <li>• There is a general consensus that coal is on the downturn and tourism is not sufficient to support the ongoing long-term operation of the Railroad.</li> </ul>   |

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



## 3.4 Ongoing Community Engagement

The project team continued visioning activities and community outreach throughout the duration of the project and will do so until the completion of the Master Plan in 2017. Activities to date include workshops, presentations, newsletters, and a website.

### 3.4.1 Internal Stakeholder Workshop

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 Stakeholder Visioning Report.

### 3.4.2 External Stakeholder 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 Stakeholder Visioning Report.

### 3.4.3 Seward Public Meeting No. 1

A public meeting was held on October 11, 2016 at the Dale R. Lindsey 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. Stakeholders 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 on planning for the passenger dock and passenger terminal alternatives. A slide presentation was shown, and informational stations with posters and team subject matter experts were available to answer questions.



Photo 3-3: Attendees Listening to the Presentation at the first Seward Public Meeting, October 2016 (Source: DOWL, 2016)

### **3.4.4 Agencies and Other Governmental Outreach**

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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:

- USCG
- U.S. Fish and Wildlife Service (USFWS)
- 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 Stakeholder Visioning Report.

### **3.4.5 Additional Outreach**

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The project team has also provided other media for interested parties to hear about the project as well as meetings and workshops.

- A project website, [railportseward.com](http://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.

# 4. What are the Issues?

Following the review of existing passenger and freight movements and public/stakeholder outreach, user conflicts, barriers, and inefficiencies were identified for ARRC customers, which are discussed below. Transport to and from ARRC facilities remains the primary focus, although this section also considers potential conflicts introduced by adjacent uses. Figure 4-1 illustrates locations where conflicts occur between passengers and freight customers at ARRC facilities and supporting infrastructure. The figure also illustrates locations where travel inefficiencies and barriers have been identified.



Figure 4-1: User Conflicts, Barriers, and Inefficiencies

## 4.1 Depot

- Traffic and pedestrian management at the depot is very constrained and results in conflicts immediately following the disembarkation of the trains and when passengers are arriving to board the outbound train. There are no clearly demarcated loading and unloading zones.
- Vehicles at the depot do not always respect directional signs or the one-way system currently used to manage traffic.
- Passengers and forklifts handling luggage movements between the train and the luggage tent are not currently separated at the north end of the train.
- The train depot does not have adequate covered areas for passengers while they wait to board the train.

## 4.2 Terminal

- Similar to conditions at the depot, vehicle conflicts occur during passenger embark/disembark activities. ARRC staff members are required to coordinate staging of the traffic area, which may be able to be reduced with more effective management and demarcation of the staging area.
- Chartered cruise trains stage and load passengers on the tracks leading to the terminal. Due to the location of the at grade crossing of Port Avenue, train lengths are currently constrained to avoid them blocking Port Avenue.

## 4.3 Permit/Laydown Area and Railyard

- The two at-grade rail crossings within the permit/laydown area create conflicts between rail and freight truck movements during periods of activity. The at-grade crossings also have a high grade differential, making it difficult for forklifts, trucks and other equipment to cross.
- Freight trucks are impeded by relatively poor alternative connections to the Seward Highway via Airport Road (through the northern part of the Seward Marine Terminal site) and Leirer Road.

## 4.4 Port Avenue

- Port Avenue only provides sidewalk facilities 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 conflicts from the Icycle Seafoods plant, entrance road to the small boat harbor boat ramp, and other heavy vehicle movements. Pedestrians walking along the north side are also exposed to conflicts from adjacent commercial and industrial uses at driveways, intersecting roadways, and crosswalks along Port Avenue.
- Accessibility barriers occur along Port Avenue and headed toward the small boat harbor and downtown Seward. Specifically, tripping hazards, excessive grades, and narrow widths limit access to people with disabilities.
- Street maintenance is not prioritized, resulting in a dirty, unattractive environment, and street furniture is largely absent or poorly maintained.
- Port Avenue lacks directional signage between the depot, terminal, and small boat harbor. Instructions are issued to passengers at the depot and terminal prior to arrival at Seward, but on arrival, minimal signage assists passengers with navigating the area.
- The travel distance between the depot and terminal and the poor environment provided by Port Avenue were raised as a concern. A combined depot and terminal facility was suggested to overcome this issue.
- Port Avenue serves as an indirect route from the freight dock to the Seward Highway for trucks headed north. The challenging turn movement at the Port Avenue/Seward Highway intersection also impedes access and efficient travel northward for freight trucks.

# 5. Project Development

## 5.1 Project Identification

The development of improvement projects is intended to address the barriers, conflicts, and inefficiencies in passengers and freight customer movements (i.e., links) between ARRC points of service and other origins, destinations, and attractions (i.e., nodes). Improvements were informed primarily by the analysis of existing passenger and freight movements and public outreach. By contrast, the Passenger and Freight Traffic Studies focus more intently on specific land uses and broadly considers market analysis of Seward offerings in the context of regional and global economic influences. All improvement projects identified for the three studies were captured in a “long list” of projects, which included a unique project number, the area on the site where the project was located, relative size, priority, 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. A summary table of connectivity projects is attached to this study as Appendix A.

## 5.2 Preliminary Screening

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

The criteria outlined in the project screening matrix considered the impact that the project would have on the following evaluation criteria:

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

As outlined in Figure 5-1, a number of questions were asked under each criteria to consider the likely impacts of 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 assisted to screen the projects and determine whether they should progress forward for further consideration as part of the studies and eventual Master Plan.

| Evaluation Criteria              | Negative   | Neutral | Positive | Notes |  |  |
|----------------------------------|--|---------|----------|-------|--|--|
| <b>Economics</b>                 |  |         |          |       |  |  |
| <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?  |         |          |       |  |  |
| <b>Environmental</b>             |  |         |          |       |  |  |
| <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?                                |         |          |       |  |  |
| <b>Regulatory</b>                |  |         |          |       |  |  |
| <i>Compliance requirements</i>   | Does the project comply with the legal requirements among existing contracts?  |         |          |       |  |  |
| <b>Security</b>                  |  |         |          |       |  |  |
| <i>Legal requirements</i>        | Is the project necessary for ARRC to meet legal Federal Railroad Association, Department of Homeland Security and local security requirements? |         |          |       |  |  |
| <b>Safety</b>                    |  |         |          |       |  |  |
| <i>ARRC safety culture</i>       | Does the project promote ARRC's culture of safety?   |         |          |       |  |  |
| <b>Stakeholder Support</b>       |  |         |          |       |  |  |
| <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 5-1: Project Screening Matrix

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.

## 5.3 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 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.

## 5.4 Project Selection Workshop and Economic Analysis of Real Estate Stimulus Projects

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 object on the site to represent the project they were selecting. Photograph 5-1 shows one of the group’s selections.



Photo 5-1: Project Selection Workshop Table of Recommended Projects (Source: DOWL, 2016)

Following the 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. The Economic Analysis Report also considered 14 real estate stimulus projects. Following screening, 10 projects were recommended for further consideration.

## 5.6 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 refinements could occur to projects, and also 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.

## 5.6 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. The presentation set out either one or two recommended options for each of the main assets and infrastructure, together with rough-order costs for each of the 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.

## 5.7 Terminal 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, and the team was again asked to consider whether there were further options available to decrease the costs of the projects.

As part of the presentation a discussion was held on the project approach. It was intended that the cornerstone review workshop and terminal and dock option presentation would result in a single preferred option being selected for advancement as part of the Master Plan. However, as the costs of the projects were considerably higher than intended and funding to support advancing the projects was not currently available, ARRC requested that a revised approach be taken to the presentation of projects in the Master Plan.

The revised approach involves identifying improvements that are required, and a range of options to enable the improvements. In this way, 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 project. This is the approach that has been taken in the identification of transportation connectivity project options, as set out in Section 6. The connectivity projects provide support to and linkages to the existing facilities and options identified in the Passenger and Freight Traffic Studies, and their implementation will therefore be dependent on the project options selected for advancement.

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# 6. Transportation Connectivity Improvement Options

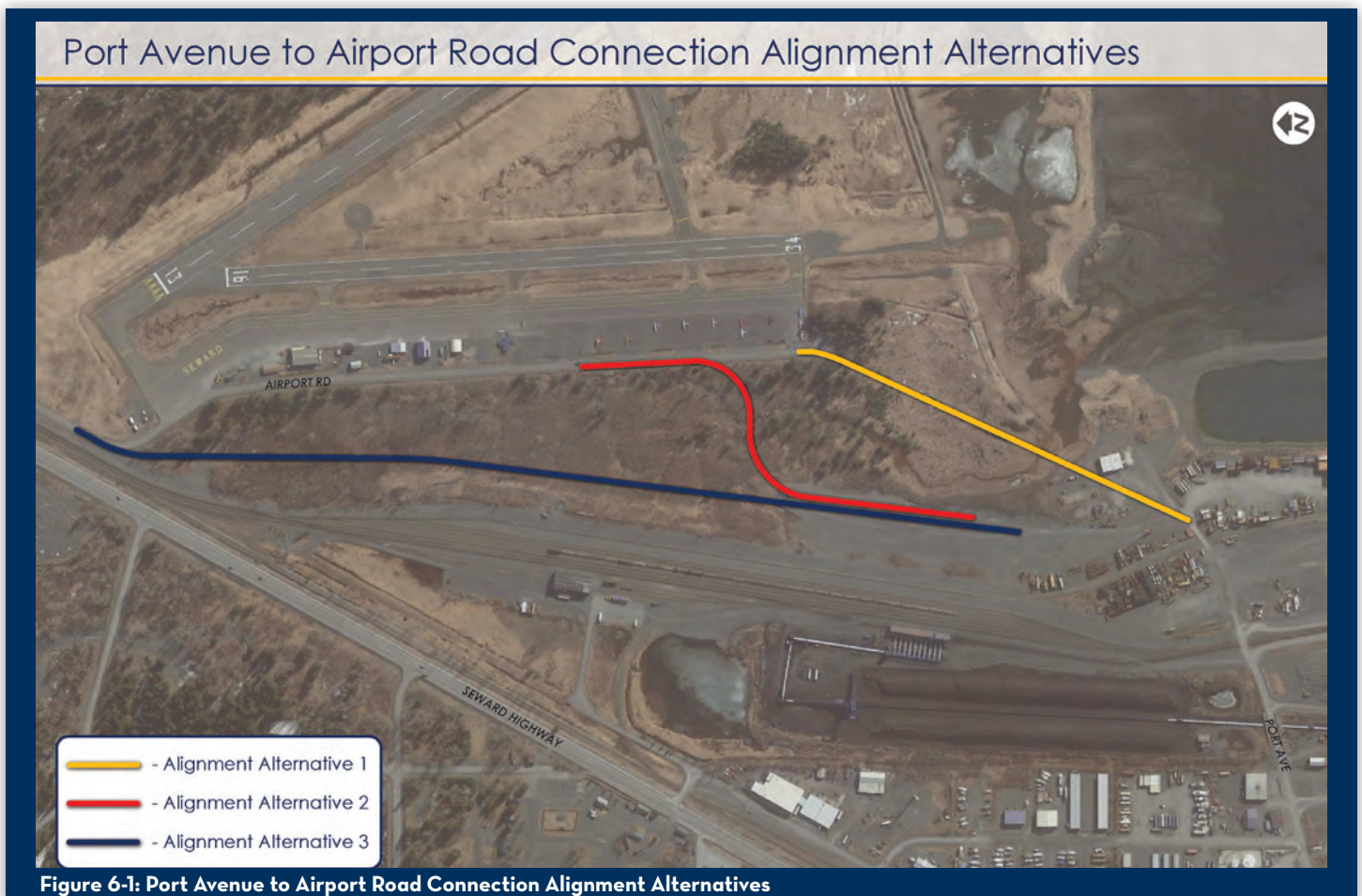
## 6.1 Freight Connectivity Improvement Options

Improvement options are detailed in the following sections. At this stage, cost estimates have only been developed for projects that have a significant cost element, as this has supported decision making on whether a project option will continue to be recommended. All cost estimates are in 2016 dollars.

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

#### Description

This project provides for the extension of 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 6-1 shows the range of options considered as part of project feasibility for the road alignment.

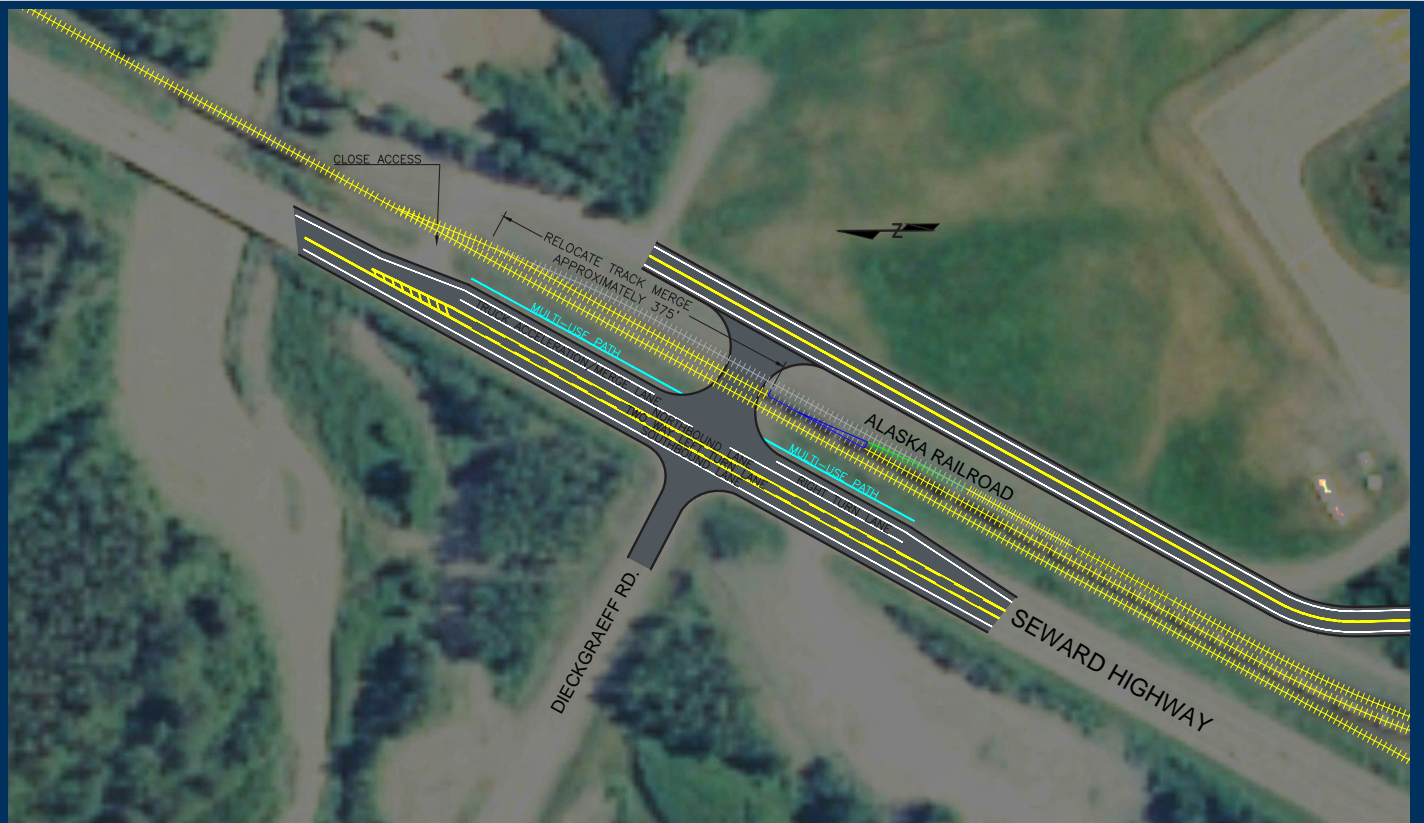


The proposed roadway will include two 12 foot lanes with a minimum of four foot shoulders. The road design for the purposes of project feasibility was a WB-67 truck, and the road also sought to accommodate a WB-109D truck in accordance with the DOT Division of Measurement Standards Chapter 25 Operations, 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, located approximately 400 feet south of the current intersection has been recommended to address these issues. To accommodate the relocation of the intersection Airport Road would also need to be raised to enable the crossing of 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 will have 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 will mitigate stopping on the tracks, and reduce the speed differential between merging and highway vehicles.
- **Railroad track crossings:** a track merge location has been 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 approximately 400 feet south creates a four-legged intersection with Dieckgraff Road. The proposed location would also simplify signaling the intersection and expansion in the future if required.

The proposed intersection design is shown in Figure 6-2.



**Figure 6-2: Proposed Intersection Improvement – Airport Road Intersection With Seward Highway**

**Cost Estimate**

A cost estimate has been developed for Port Avenue to Airport Road connection, and also for the proposed intersection improvement at Airport Road and the Seward Highway. Cost estimates are set out in Tables 6-1 and 6-2.

**Table 6-1: Cost Estimate for Port Avenue to Airport Road Connection**  
**Port Avenue to Airport Road Connection Road Construction Cost Estimate**

| 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          |
| <b>Total</b>                                      | <b>\$6,310,440</b> |

**Table 6-2: Cost Estimate for Airport Road/Seward Highway Intersection Upgrade**  
**Airport Road/Seward Highway Intersection Upgrade Cost Estimate**

| 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           |
| <b>Total</b>                                      | <b>\$1,562,127</b> |

## 6.1.2 Option C-FC2: Freight Area Access Control

### Description

Contingent on the extension of Port Avenue to connect with Airport Road, this option 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.

There are a variety of options and locations to construct access controls associated with the Port Avenue to Airport Road extension. Key elements of the project would include the construction of a security fence along the eastern boundary of the site, provision of a 30 foot cantilevered security gate across the road, 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 6-3.



Figure 6-3: Possible Locations for Access Control to Freight Area

### 6.1.3 Option C-FC3: Freight Corridor

#### Description

This option provides for the construction of a freight corridor through land currently occupied by the SLF. The development of the road assumes that the SLF has been demolished and the site has been leveled ready for development. The removal of the SLF is addressed as Option F-SL3 in the Freight Traffic Study.

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. The redevelopment of the SLF land, including the construction of a road is addressed as Option F-SL4 in the Freight Traffic Study. Figure 6-4 shows the land area available for redevelopment, and the location of a potential road. The option includes a cost estimate for the construction of a road to a standard appropriate to provide for passenger/tourism-related businesses. The costs associated with constructing the road to a standard appropriate for freight will be lower as the road will not be paved and curb and channel will not be installed.



Figure 6-4: Potential Freight Corridor Through Seward Loading Facility Site

## 6.2 Passenger Connectivity Options

### 6.2.1 Option C-PC1: Depot Upgrades

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#### **Description**

This option provides for a range of improvements to the existing railroad depot. This project would only proceed if ARRC chooses not to proceed with consolidating the terminal and depot into a single facility (refer to Option C-PC3). Improvements would be limited to what could be accommodated within the existing building footprint owing to site constraints, and the installation of a temporary tent for shelter purposes. This option is described in the Passenger Traffic Study as Option P-DE2. From a connectivity perspective, this project would provide for improved parking and striping arrangements to assist with traffic flow, as illustrated on Figure 6-5.

The Seward depot manager recently advised that he is considering some vegetation clearance at the northern end of the parking and staging area, which could provide additional room for buses staging at the depot in the near term. An additional, associated improvement also being considered in the longer term is the widening of the entrance from Leirer Road and paving of the area to enable buses to exit on to Leirer Road. This would eliminate the need for buses to drive through the site and out to Port Avenue, and thereby assist to reduce traffic congestion at the site.

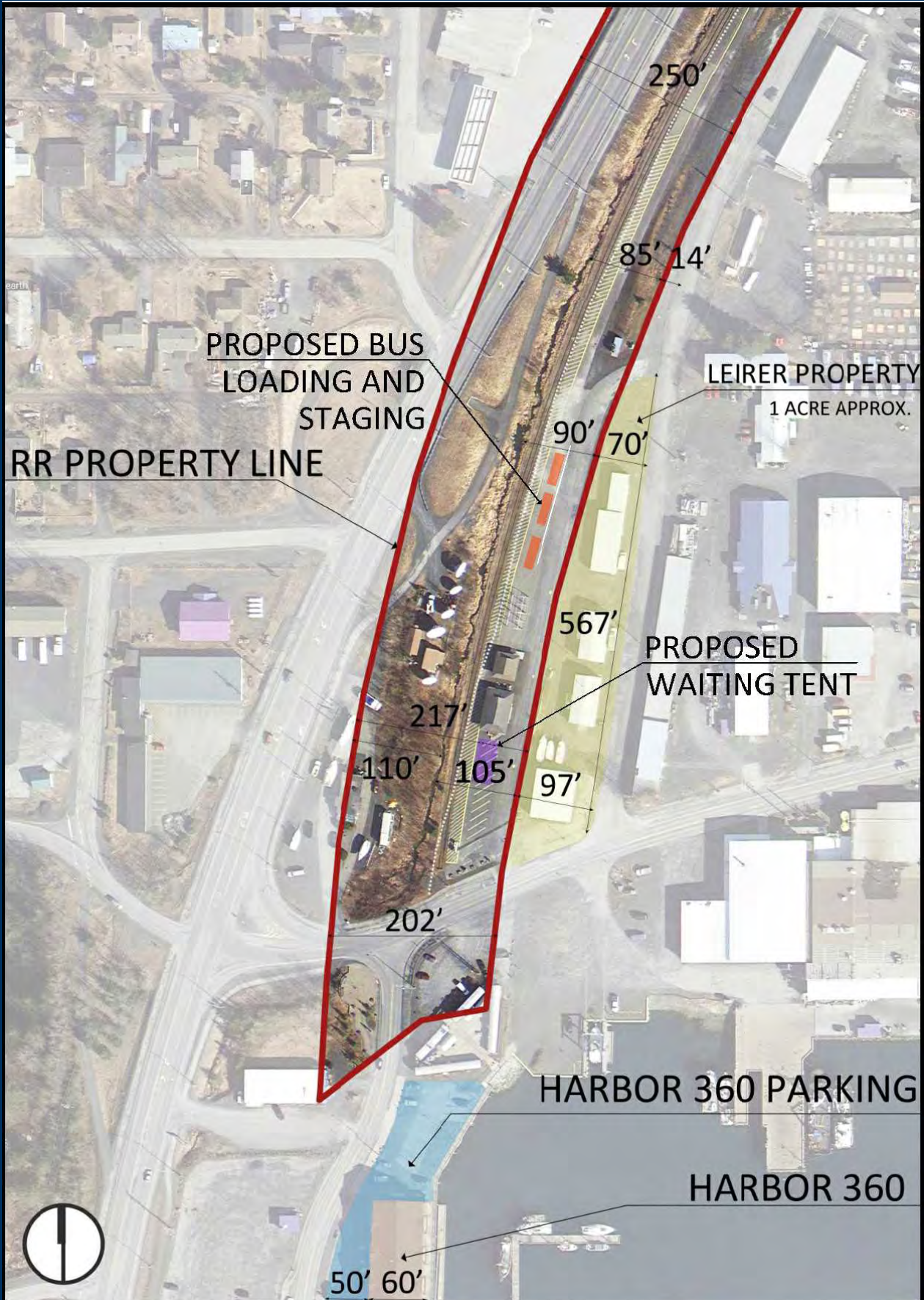


Figure 6-5: Potential Improvements to Striping and Staging at the Seward Depot

## 6.2.2 Option C-PC2: Outdoor Amenities at Terminal

### Description

This project provides for revisions and improvements to the traffic staging arrangements at the terminal. Two different approaches could be taken, dependent on whether the existing terminal is retained, or a new terminal is constructed. These options are described in the Passenger Traffic Study as:

- **Option P-TS1:** Create New Traffic Staging Arrangements Associated with New Terminal
- **Option P-TS2:** Upgrade Traffic Staging Arrangement at Existing Passenger Terminal

The staging arrangements have been designed to cater to the layout and operations of the respective facilities, to separate conflicting movements and enhance the safety of operations. Traffic staging arrangements for the new terminal could follow the indicative layout in Figure 6-6. Improvements to the traffic staging for the existing terminal could follow the indicative layout in Figure 6-7.





**SITE KEY:**

1. PEDESTRIAN PATH
2. COACH STAGING
3. LEASABLE AREA
4. STAFF AND PUBLIC PARKING
5. ACCESSIBLE PARKING
6. POTENTIAL COVERED WALKWAY/BUS LOADING AREA
7. EXISTING FERRY TERMINAL
8. SHUTTLE/TAXI PICK UP/DROP OFF LANE
9. BUS PICK UP/DROP OFF LANE



Figure 6-7: Concept Layout for Improved Traffic Staging at the Existing Passenger Terminal

### 6.2.3 Option C-PC3: Terminal and Depot Consolidated Facility

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#### **Description**

The passenger dock is at the end of its serviceable life. As the existing terminal is located on the passenger dock, this option proposes to demolish the terminal and construct a new building on land immediately adjacent to the replacement passenger dock. The location of the terminal will be dependent on which replacement passenger dock is selected. This option is described in the Passenger Traffic Study as Option P-TE1, which also includes an estimated cost of construction. A proposed internal layout for the new combined facility is shown in Figure 6-8.

This option provides an important option to enhance connectivity for passengers at the site. This is because 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 street. Frequently, passengers arriving at the depot on the train walk along Port Avenue to connect with their cruise ship. The quality of the street environment is poor owing to it being located in an industrial area, and the uses of the road create conflicts and an uncomfortable environment for pedestrians. By combining the terminal and depot facility, the need for pedestrian movements along Port Avenue is significantly reduced, and the option facilitates easy connection between passenger trains and cruise ships.

# All-Season Option

- ALL-YEAR BUILDING
- PAVILION
- SECURE SHELTER
- SHELTER ONLY
- SITE

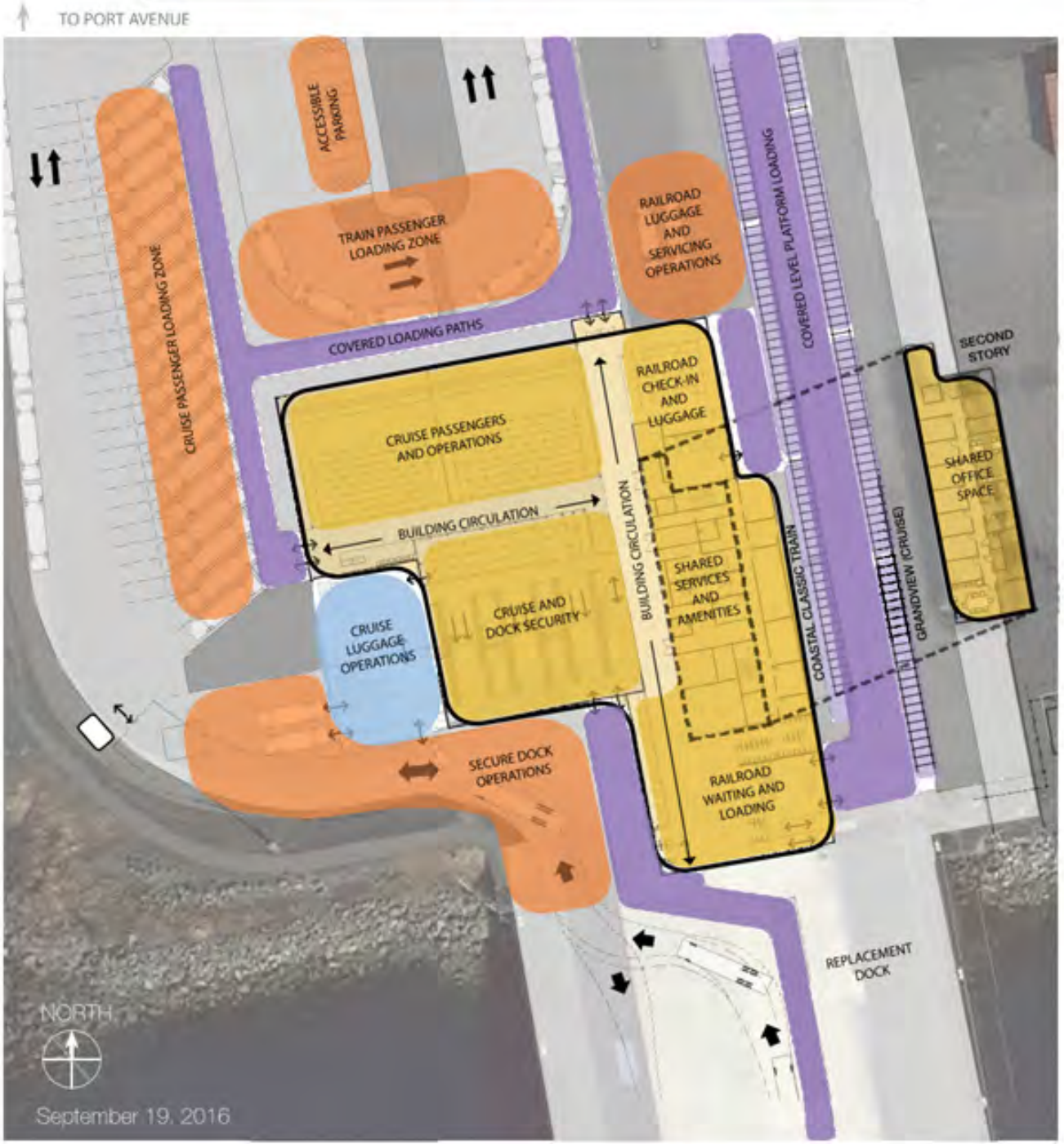


Figure 6-8: Proposed Internal Layout for Combined Terminal and Depot Building

## 6.2.4 Option C-PC4: Port Avenue Improvements

### Description

Improvements have been recommended to Port Avenue to assist with wayfinding, pedestrian comfort and safety, and to enhance the experience of the connection between the terminal and the depot, small boat harbor, and City of Seward. This option is described in the Passenger Traffic Study as Option P-PA1. Figure 6-9 sets out potential improvements that could be considered.

These improvements are important for connectivity as they will assist to enhance the attractiveness and safety of Port Avenue for pedestrians, as well as reduce the potential for conflicts. It is noted that until the point where Port Avenue crosses the bridge over the SLF, the road is owned by the City of Seward. Therefore, any improvement projects would need to either be led by or conducted in partnership with the City.



## 6.3 Railroad Operations Supporting Connections Options

### 6.3.1 Option C-RO1: Roundhouse Upgrade

#### **Description**

This option provides for exterior improvements to the roundhouse, 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 attractiveness and durability and adding a passenger car wash. An upgrade to the interior of the roundhouse has also been recommended to improve existing storage of goods, incorporate office space and install an oil and water separator, if required. The location of the roundhouse is shown in Figure 6-10.

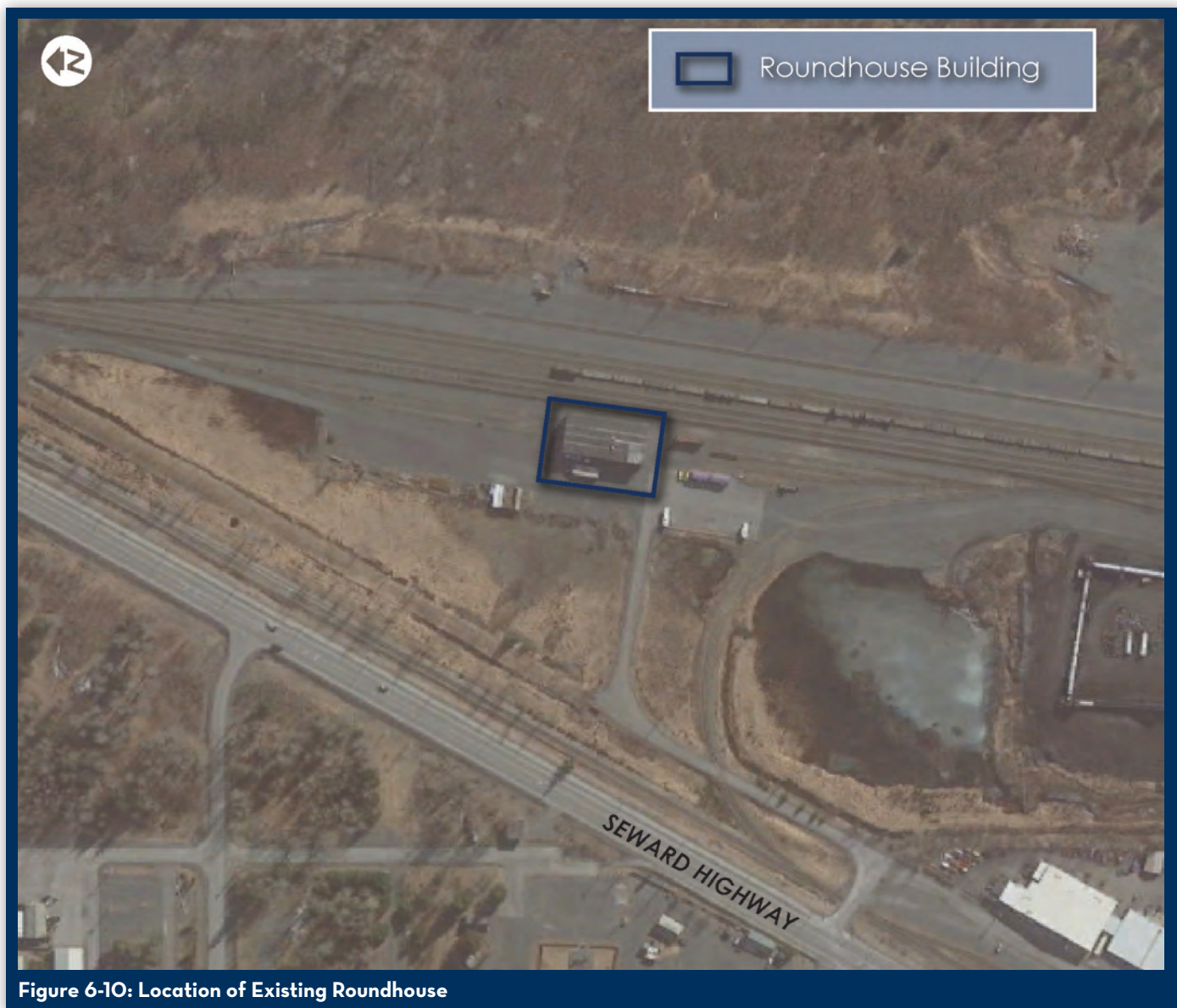


Figure 6-10: Location of Existing Roundhouse

### 6.3.2 Option C-RO2: Replace Communications Building

#### Description

This option provides for the replacement of 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 location of the communications building is shown in Figure 6-11. The effective implementation of PTC is dependent on line-of-sight, and therefore the replacement of the communications building must occur at the same location as the existing building.

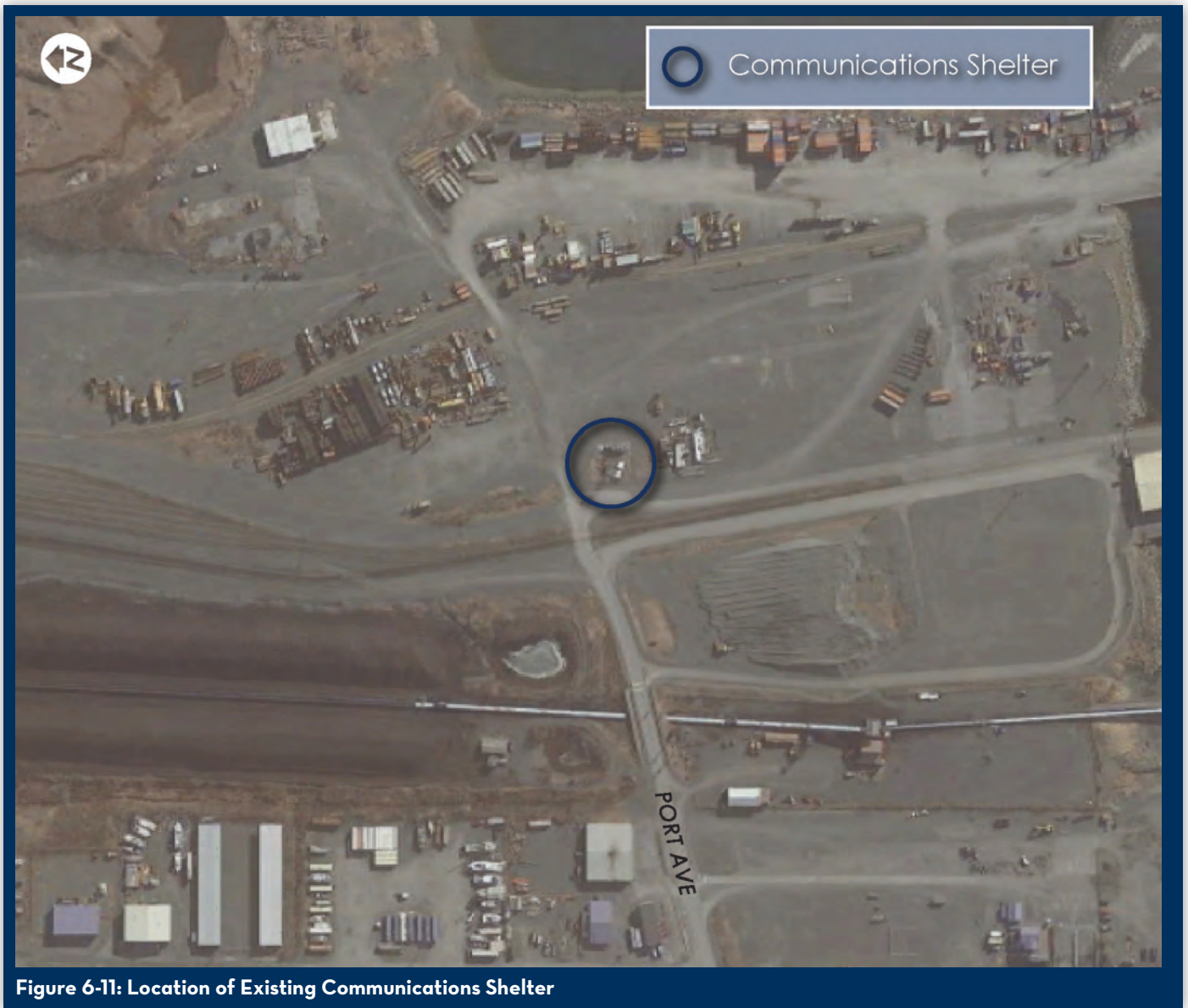


Figure 6-11: Location of Existing Communications Shelter

### 6.3.3 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 would evaluate 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 in the Freight Traffic Study (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 6-12.



Figure 6-12: Existing At-Grade Crossings That Could be Considered for Repair, Replacement or Upgrade

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# 7. Next Steps

This Transportation Connectivity Study, together with the Passenger Traffic Study, Freight Traffic Study, the Project Visioning Report, and the Economic Analysis Report, have been prepared to inform the development of the Seward Marine Terminal Expansion Master Plan.

Further information on recommended approaches to site development, potential funding arrangements, and prioritization of projects will be addressed as part of the Master Plan.

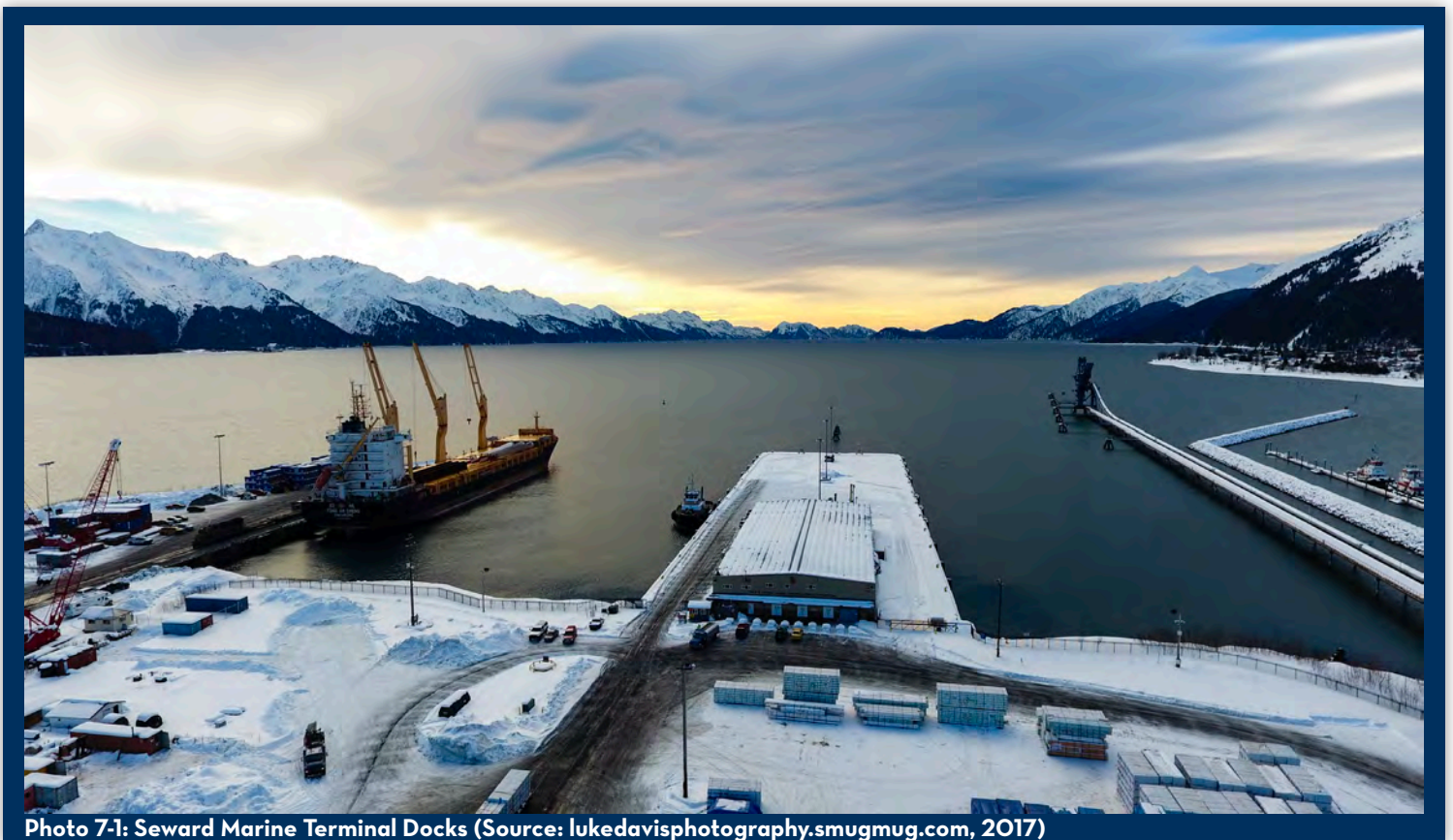


Photo 7-1: Seward Marine Terminal Docks (Source: [lukedavisphotography.smugmug.com](http://lukedavisphotography.smugmug.com), 2017)

# **A p p e n d i x A**

## **Summary Table of Connectivity Projects**

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**Project Development List - Connectivity**

| P# | Zone | Project Size | Priority | Project   | Need   | Challenges   | Related  | Fatal Flaw? | In/Out | Which Study              |
|----|------|--------------|----------|---|--|--|--|-------------|--------|--------------------------|
| 6  | Conn | Large        | High     | <b>Extend Port Avenue to Connect with Airport Road:</b> Extend Port Avenue to connect with Airport Road. 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 appropriate access to the Seward Highway.   | Increased passenger and freight operations safety and efficiency; alleviate traffic congestions, increases ability to handle increases in traffic volumes.   | Potential issues with intersection of Airport Road and Seward Highway, both of which are managed by DOT&PF. Discussion with DOT&PF required. | -  | -           | In     | Connectivity             |
| 10 | Conn | Medium       | -        | <b>Freight Corridor:</b> Develop a freight corridor connecting the Seward Marine Terminal to the Seward Highway through the Leirer Industrial Park.   | Alternative truck route to Port Avenue   | -  | -  | -           | In     | Connectivity             |
| 13 | 8    | Medium       | Low      | <b>Depot Upgrades:</b> 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.   | Enhances passenger safety and comfort, display train schedules, depot passenger amenities, aesthetic upgrade, train passengers waiting outside are exposed to the weather.   |  | This project is only recommended if the project combining terminal and depot in a single location does not proceed (P #17).                  | -           | In     | Passenger & Connectivity |
| 15 | 7B   | Small        | High     | <b>Outdoor Amenities at Terminal:</b> Provide outdoor amenities at the terminal such as paving, parking organization and landscaping.   | Ensure passenger operation safety and efficiency; provide appropriate amenities to facilitate staging and management of passenger activities at the terminal.  | -  | Place in every bundle of activities.   | -           | In     | Passenger & Connectivity |
| 17 | 8    | Large        | High     | <b>Terminal and Depot Consolidated Facility:</b> Combine the depot and terminal near the current terminal location using either a fully lined 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.  | Improve safety and efficiency of passengers and freight operations by consolidating locations of passenger/freight interaction; provides economic opportunity by increasing use of the Coastal Classic by cruise passengers; increased utility and shared facilities.  | -  | Dependent on Airport Road connection to Port Avenue – if this project doesn't proceed then unable to separate passenger and freight traffic. | -           | In     | Passenger & Connectivity |
| 74 | Conn | Medium       | -        | <b>Port Avenue Improvements:</b> Make the pedestrian route along Port Avenue ADA-compliant, including the bridge crossing over the Seward Loading Facility; install wayfinding signage and a boardwalk along the Small Boat Harbor; improve street cleaning/maintenance on Port Avenue for a more functional, cleaner and safer pedestrian experience; provide informational signage and kiosks along Port Avenue (e.g., to identify history and operations in the industrial area, the 1964 earthquake, fishing industry, specific mountains (e.g., Mt Marathon), things to do in town); install a sign directing depot traffic from Port Avenue to Leirer Road. | Improved passenger/pedestrian safety; increased economic benefit by improving passenger access between the depot and the terminal, and to local retail facilities.   | -  | -  | -           | In     | Passenger                |
| 11 | Conn | Large        |          | <b>Mainline Track Realignment Using Existing Wye Track:</b> Realign the Jesse Lee Main between the railyard and turnouts and the existing wye track. Optional: remove Jesse Lee Main south of the Shoreside Spur (if depot functions are combined with and moved to the terminal building). (Note: existing Wye track left in place to service Shoreside Spur).   | Opens up a stretch of highway frontage for vehicle access that would not have a directly adjacent at-grade crossing. Alleviate traffic congestion; increase Port of Seward safety, increase in passenger and freight operations efficiency, provide additional leasing opportunities adjacent to the Seward Highway, separate passenger and freight operations (optional). | -  | -  | -           | Out    | Connectivity             |
| 12 | Conn | Small        |          | <b>Port Avenue Wayfinding:</b> Provide wayfinding signage for pedestrians along Port Avenue and at the Terminal.  | Improve passenger and freight operations safety; increased economic benefit by increasing passenger access to local retail.  | -  | Addressed in Project #74.  | -           | Out    | Passenger & Connectivity |

| P#  | Zone | Project Size | Priority | Project  | Need   | Challenges   | Related           | Fatal Flaw?   | In/Out | Which Study              |
|-----|------|--------------|----------|--|--|--|-------------------|---|--------|--------------------------|
| 14  | Conn | Small        |          | <b>Port Avenue Street Cleaning and Maintenance:</b> Improve street cleaning/maintenance on Port Avenue for a more functional, cleaner and safer pedestrian experience.   | Increase passenger safety and aesthetics.  | Operational, element of discussions with the City of Seward. | Combine with #74. | -   | Out    | Passenger & Connectivity |
| 16  | 8    | Medium       | -        | <b>Depot Relocation:</b> Move the depot closer to the terminal. Assume that the Coastal Classic would share the cruise train track.  | Improve safety and efficiency of passenger and freight operations by consolidating locations of passenger/freight interaction; provides economic opportunity by increasing use of the Coastal Classic by cruise passengers; increased utility of shared facilities.  | -  | See #17, #27      | Projects that combine the terminal and depot are preferred, rather than simply moving the depot.  | Out    | Passenger & Connectivity |
| 40  | Conn | Small        | -        | <b>Golf Cart Transportation:</b> Provide for golf cart transportation for passengers going from the Terminal to the Depot along the existing footpath on the north side of Port Avenue.  | Provides motorized transportation for less mobile passengers to move between the depot and the terminal. May be a business opportunity.  | Park – await discussions with City of Seward.                | -                 | Increases congestion and conflicts with freight operations, potential movement issues associated with non-ADA compliance of existing Port Avenue footpath facilities, potential conflict with pedestrians moving along Port Avenue. | Out    | Passenger & Connectivity |
| 76  | Conn | Medium       | -        | <b>Port Avenue Bridge Repair/Replacement:</b> Repair or replace the Port Avenue bridge.  | Increase the utility; improve freight and passenger/pedestrian safety, increased economic benefit by increasing passenger access to local retail.  | Part of Port Avenue discussions with City of Seward.         | Duplicate of #41  | -   | Out    | Passenger & Connectivity |
| 130 | 1    | Large        | -        | <b>East Side Wye:</b> Add a wye to the east side of the yard.  | Increase efficiency of rail and freight operations, preserve and increase intermodal operations, increase utility of upland areas.   | -  | Combine with #11  | -   | Out    | Connectivity             |
| 131 | Conn | Large        | -        | <b>Remove Existing Wye Track and Relocate Existing Mainline Track:</b> Remove the Jesse Lee Main between the railyard turnouts and the existing wye track. Add a new wye track on the east side of the rail yard and realign Track #1 (Freight Dock Track). Optional: remove Jesse Lee Main south of the Shoreside Spur (if Depot functions are combined with and moved to the Terminal Building). Note: Existing wye track left in place to service Shoreside Spur. | Opens up a stretch of highway frontage for vehicle access that would not have a directly adjacent at-grade crossing. Alleviate traffic congestion and allow for future increases in traffic volume; improve safety and efficiency of freight and passenger operations, increase in passenger and freight operations efficiency, provide additional leasing opportunities adjacent to the Seward Highway, separate passenger and freight operations (optional). | -  | -                 | -   | Out    | Connectivity             |
| 132 | Conn | Small        | -        | <b>Track/Airport Road Signalization:</b> Install traffic signal on Airport Road before train tracks. Intent is to have trucks stop before the train tracks.  | Alleviate traffic congestion and allow for future increases in traffic volumes; improve safety and efficiency of freight operations.   | -  | -                 | Preliminary feasibility associated with P #6 – Port Avenue to Airport Road connection indicates a turn signal is not needed. Additionally, existing and forecast traffic volumes will be insufficient to accommodate turn signal.   | Out    | Connectivity             |

**Project Development List – Operational Projects**

| P#  | Zone    | Project Size | Priority | Project   | Need  | Challenges  | Related  | Fatal Flaw?  | In/Out | Which Study   |
|-----|---------|--------------|----------|---|---|---|--|--|--------|---|
| 28  | 2       | Small        | Low      | <b>RV Hook-Ups:</b> Provide RV hook-ups for campers and job shacks near the Roundhouse.   | Increase upland site utility, provide facilities for railroad staff camping at the site, and potentially increase permit opportunities for temporary placement of job shacks at the site. | -   | -  | -  | In     | Operational Requirement – Covered in Connectivity Study (Staff to support connections)          |
| 42  | 4       | Small        | High     | <b>Roundhouse Upgrade:</b> 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. | Improved use and functionality of the roundhouse building, provides potential opportunity for offices for lease to third party permit holders.  | Status of septic system for this building is not known currently.   | -  | -  | In     | Operational Requirement – Covered in Connectivity Study (Facility to support train connections) |
| 65  | 6       | Medium       | High     | <b>Replace Communications Building:</b> Replace the existing communications building with a larger, purpose-built structure with demarcated sections to restrict vendor access to their designated areas.   | Improve site, building and communications security, increase uplands utility, increase economic benefit by enhancing leasing/permitting opportunities.                                    | -   | -  | -  | In     | Operational Requirement – Covered in Connectivity Study (Facility to support PTC)               |
| 99  | 2       | Medium       | Low      | <b>Rail Crossing Replacement and Upgrades:</b> Replace wood-tie at grade rail crossings within yard with concrete panels; include other upgrades to all at-grade rail crossings.  | Improve freight operations safety.  | Concrete panels not favored by ARRC   | -  | -  | In     | Operational Requirement – Covered in Connectivity Study (Supports train connections)            |
| 125 | Conn    | Small        | High     | <b>Freight Area Access Control:</b> 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.  | Improved security to freight areas. May require land swap or other land acquisition. Real estate and security representatives are proponents of this project.                             | -   | -  | -  | In     | Operational – Covered in Connectivity Study (relates to Connectivity improvement option)        |
| 54  | 2       | Medium       | -        | <b>Roundhouse Utilities:</b> Bring in utilities to roundhouse uplands area.   | Enhance uplands usability; promote economic growth by increasing leasing/permitting opportunities.  | -   | All roundhouse work combined to a single project.            | -  | Out    | Operational   |
| 55  | 2       | Small        | -        | <b>Roundhouse Commercial Use:</b> Make roundhouse and surrounding area available for hire/permit to enable maintenance works to be undertaken on trains not owned by ARRC.  | Promote economic growth, increase upland area usability.  | -   | Facility already available to HAP. No other known interests. | Facility is already available.   | Out    | Operational   |
| 63  | Uplands | Small        | -        | <b>Clean Energy Use:</b> Tie into existing clean energy projects with new facilities.   | Minimize environmental impacts from the provision of facilities and activities at the site.   | -   | -  | -  | Out    | Operational   |
| 82  | Conn    | Small        | -        | <b>Rail Crossing Signage:</b> Improve signage at rail crossings.  | Improve freight, rail and passenger operations safety and efficiency.   | Existing signage meets regulatory need. Concerns that additional signage may invite trespass by the general public. | -  | Existing signage meets legal requirements.   | Out    | Operational   |
| 100 | 2       | Large        | -        | <b>Replace Existing Wye Track:</b> Replace Wye track to optimize layout (reduce degree of curvature) and address maintenance issues. The current high degree of curvature (14-15 degrees) causes an increase in wear on the track, engines and railcars.  | Increase rail and freight operations efficiency and safety.   | -   | -  | Dependent on decision about whether SLF is to be retained on site.                                       | Out    | Operational   |
| 101 |         | Large        | -        | <b>Underground Utilities:</b> Bury overhead utilities throughout the yard.  | Increase uplands site utilization; improve safety and efficiency of freight operations.   | -   | Included in #23. Duplicate of #113                           | Significant cost for small benefit, consider burying isolated portions as part of other larger projects. | Out    | Operational   |
| 113 | Uplands | Medium       | -        | <b>Underground Utilities:</b> Install underground utilities to eliminate power lines crossing the uplands area.   | Increase uplands utilization; improve freight operations safety and security.   | -   | Combine with #23   | -  | Out    | Operational   |
| 114 | Uplands | Medium       | -        | <b>Uplands Lighting:</b> Provide better lighting throughout the uplands area.   | Increase uplands utilization; improve freight operations safety and security.   | -   | -  | -  | Out    | Operational   |

| P#  | Zone    | Project Size | Priority | Project  | Need   | Challenges  | Related  | Fatal Flaw?   | In/Out | Which Study |
|-----|---------|--------------|----------|--|--|---|--|---|--------|-------------|
| 115 | 4       | Medium       | -        | <b>Utility Extension:</b> Provide locations and utilities to support contractor's shops in the uplands area, away from the freight dock.   | Increase uplands utilization, increase efficiency of freight operations, promotes economic growth.   | -   | Combine with #23   | -   | Out    | Operational |
| 118 | 8       | Small        | -        | <b>Trespass Buffer:</b> put a buffer in between the Railroad boundary in Zone 8 and Leirer Road to reduce migration from neighbors and prevent trespass (fence or something similar)                             | Reduce trespass, improve safety and security.  | -   | -  | -   | Out    | Operational |
| 119 | 1       | Small        | -        | <b>Communications for PTC:</b> Use the power poles in the airport area to daisy chain communications to Area 1 so the trains can talk to Positive Train Control (PTC)  | Improve security and safety.   | -   | -  | Not needed for PTC                                  | Out    | Operational |
| 142 | 2       | Medium       | -        | <b>Roundhouse Expansion:</b> Potential expansion of roundhouse if more train activity in winter.   | Increased utility and efficiency of Roundhouse, preserves intermodal operations.   | Needs better scope/context                                    | -  | -   | Out    | Operational |
| 143 | 2       | Small        | -        | <b>PTC Storage:</b> Add storage space to roundhouse for PTC equipment, wheels, materials, etc.   | Increased efficiency and utility of roundhouse, preserves intermodal operations  | Not needed  | -  | No additional space needed                          | Out    | Operational |
| 144 | 2       | Small        | -        | <b>Oil/Water Separator System:</b> Installation of an oil/water separation system at the Roundhouse  | Increase efficiency of roundhouse operations, ensure environmental and regulatory compliance.  | -   | Combine with #42   | Not clear whether this system is already installed. | Out    | Operational |
| 145 | 2       | Small        | -        | <b>Upgrade Roundhouse Lighting:</b> Upgrade Roundhouse lighting.   | Increase efficiency and utility of Roundhouse.   | -   | Combine with #42   | -   | Out    | Operational |
| 146 | 2       | Medium       | -        | <b>Roundhouse Remodel:</b> Remodel Roundhouse office and restroom spaces, create finished break room space.  | Increase efficiency and utility of Roundhouse.   | -   | Combine with #42   | -   | Out    | Operational |
| 147 | 2       | Small        | -        | <b>Camping Accommodations:</b> Address bunking, breakroom, water and sewer at camping area to south of roundhouse.   | Provides economic savings, increases upland area utility.  | -   | Combine with #42#28 provides hook-ups for RVs and campers. | -   | Out    | Operational |
| 154 | Uplands | Medium       | -        | <b>Utility Extension:</b> Providing City sewer to Freight building, roundhouse, SLF buildings as basic infrastructure in uplands areas projected for development of office or permit areas.                      | Increases utility of uplands, promotes economic growth by increasing leasing/permitting opportunities.   | -   | Combine with #23   | -   | Out    | Operational |
| 162 | 2       | 2, 4         | -        | <b>Railyard Grade Repairs:</b> Fix slump in railyard which floods/freezes sometimes to top of rail.  | Improve railyard efficiency and safety.  | More specific location needed, integral to rail modification. | Combine with #100  | -   | Out    | Operational |
| 174 | 11      | Small        | -        | <b>SLF Building Maintenance:</b> Address structural degradation of the corner post of the maintenance shop building, and around windows in the office building (if the Seward Loading Facility remains on site). | Dependent on SLF remaining, addressing identified structural deficiencies will ensure the facility remains workable and address an identified health and safety issue. | -   | -  | -   | Out    | Operational |

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