

**APPLICATION FOR  
TIGER V DISCRETIONARY GRANT**

**PORT OF JUNEAU, ALASKA  
OVERALL PORT REDEVELOPMENT  
PROJECT, PHASE 10**

**“ALASKA / JUNEAU MARINE  
NAVIGATION MANAGEMENT CENTER:  
A Port of Juneau & Marine Exchange of  
Alaska Public/Private Partnership”**



**Type:** Marine Infrastructure Investments  
**Location:** City & Borough of Juneau, Alaska  
1st Congressional District / Alaska  
Rural Area

**\$3.225 Million Requested**

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**Abstract:** This Tiger V Discretionary Grant application is for \$3.225 million to complete funding for a navigation management facility – a public / private partnership project between the City and Borough of Juneau, Docks and Harbors Department, Port of Juneau, Alaska (Port of Juneau) and the Marine Exchange of Alaska (Marine Exchange). Total cost of the joint navigation management facility will be \$6.025 million. The grant applicant is the Port of Juneau. The Marine Exchange of Alaska is the principal project partner.

The Port of Juneau is one of the busiest cruise ship destinations in the nation, with 554 cruise vessel arrivals scheduled in 2013, bringing more than 1.36 million passengers and crew to Juneau. The port includes 2 public and 2 private cruise ship berths, and can accommodate an additional ship at anchor with lightering facilities. In addition the port area encompasses private terminals for two inter-state barge lines, two marine fueling terminals, major commercial fisheries activities, USCG and NOAA vessel docks, floatplane facilities, and three small boat harbors with a total of 950 vessel slips. The Port is an important intermodal hub between the cruise ships and interstate air carriers, as well as for local ground and air transport of visitor traffic. Based in Juneau, the Marine Exchange is a private non-profit organization that provides vessel tracking and navigational analysis capabilities for the entire State of Alaska and adjacent high seas. Its activities are crucial to a wide variety of safety and navigational management issues of State, national and international importance.

For the Port of Juneau the proposed A/J MNMC facility represents the final, 10<sup>th</sup> phase of a large-scale, multi-year project to entirely revamp its port facilities, including construction of two new Panamax- class floating berths, re-purposing of the old timber and steel docks, reconstruction of upland staging areas, and redesign of lightering and commercial fisheries docks. The entire cost of this effort is \$88.325 million. The requested \$3.225 million in federal TIGER V grant funds represents <3.7% of the Overall Port Re-Development effort, but is nonetheless of great importance as it represents some 52.5% of the \$6.025 million Phase 10 budget. For the Marine Exchange this joint project represents the opportunity to leverage its limited available funds to construct facilities adequate to its growing role as a crucial actor in navigation management in Alaska, the entire North Pacific ocean, the Bering Sea and the Arctic Ocean.



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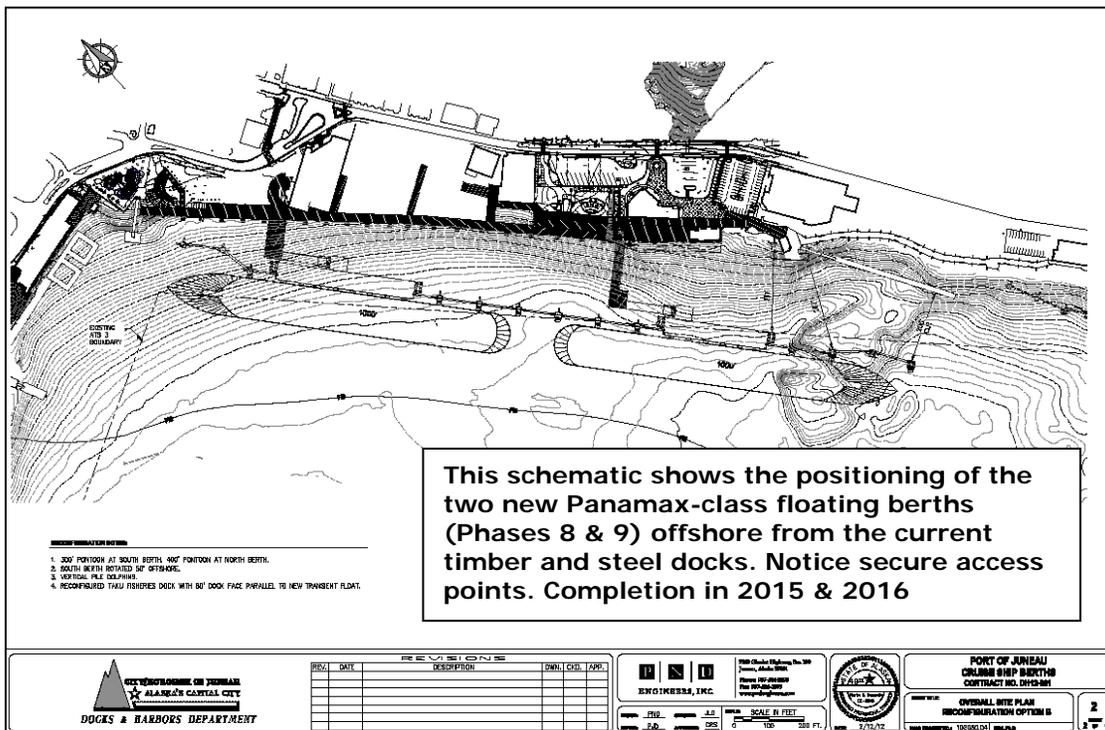
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# PROJECT INTRODUCTION & BACKGROUND

The Port of Juneau (the "Port" or POJ) is the applicant for this TIGER V grant, which will complete funding for the Alaska / Juneau Marine Navigation Management Center ( the "Navigation Management Center" or A/J MNMC) to be built in partnership with the Marine Exchange of Alaska (the "Marine Exchange" or MXAK). The Port is managed by the Docks & Harbors Department of the City and Borough of Juneau (CBJ).<sup>1</sup> The Marine Exchange is a private non-profit maritime organization established in 2000 to serve the Alaska maritime community by providing information, communications and services to ensure safe, secure, efficient and environmentally responsible maritime operations.

The Port and Marine Exchange have worked cooperatively on a number of projects, most significantly the December, 2008 Port Navigation Study that facilitated planning and permitting of the Port of Juneau's Overall Port Re-Development Project, often referred to as "Concept 16B" This massive, multi-phase, multi-year project is vital to the Port of Juneau's ability to handle its growing load of cruise ship traffic. At its core are two new public Post-Panamax class vessel berths (in addition to the two private docks of similar capability) and extensive uplands improvements for the movement of passengers.



<sup>1</sup> The Docks & Harbors Department is overseen by a Board of Directors appointed by the CBJ Assembly. The department is an enterprise of the CBJ, charged with being operationally self-supporting based on revenues generated. In this sense it operates much like a port authority, save that it does not have independent taxing powers. In addition to the Port of Juneau, which services large vessels, the department manages four small boat harbors with slips for more than 1150 vessels; six recreational boat launch facilities; a leased small vessel haulout and maintenance yard; and two significant fisheries support docks; and a combination fisheries / regional freight facility. The latter, the Auke Bay Loading facility, received a \$3.64 million TIGER I grant in in 2009 to complete Phase 2 of the overall \$14.8 million project. The board also manages dozens of tidelands leases for the CBJ.

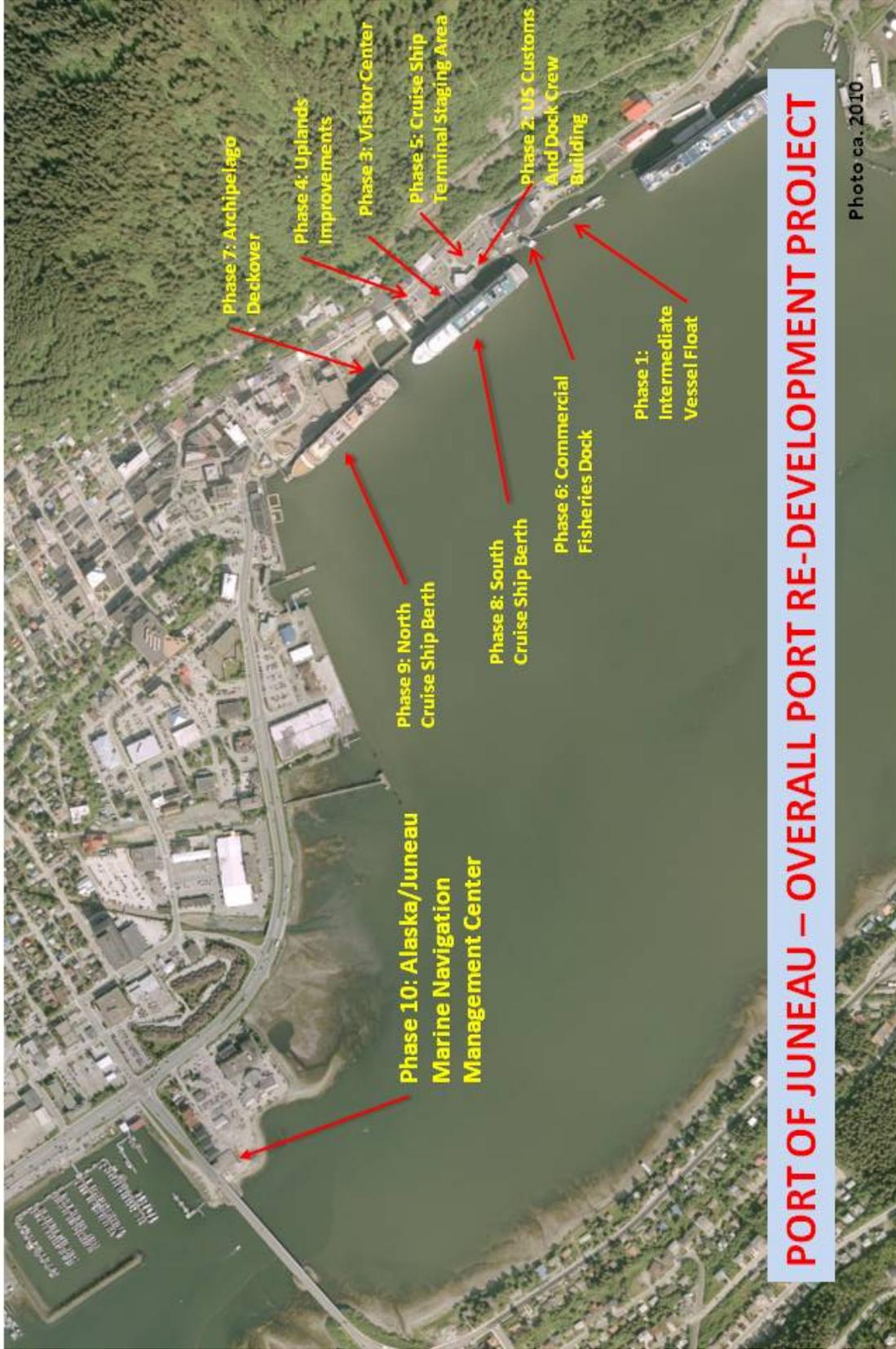


Photo ca. 2010

The Marine Exchange's unique capability to track all of the cruise ship vessels' paths through the port area for a number of years, correlating that data with wind and current data, was crucial to the development of the Overall Port Re-Development Project. This past collaboration led the Port of Juneau and Marine Exchange to begin exploring the possibility of co-locating their management facilities in a joint navigation management center.



For the Port of Juneau, the proposed Navigation Management Center represents the final element (Phase 10) of the multi-year rebuild of its entire port infrastructure, centered around the two new Post-Panamax berths. A total of \$82.3 million has been already spent or committed to date. Table 2 on page 5 details the various project phases. The last element of this massive effort is to adequately house the Port's management

center, including the functions of the Port Director, facilities planning, engineering and project management, port administration, and Emergency Operations Center (EOC). For the Marine Exchange the proposed facility means finally having adequate space to house their growing staff and electronic infrastructure. Neither party has resources to build separate facilities, but working together can construct excellent facilities to meet their long-term requirements and achieve significant co-location mission synergies. Both organizations are currently housed in spaces that are sub-standard, costly and inadequate to both current and long-term needs. The proposed project gelled when the City and Borough of Juneau decided to relocate the old city public works maintenance facility from near the Juneau-Douglas bridge to a new location elsewhere. This led to a great deal of discussion on how best to re-purpose the site. In the end a dual use proposal incorporating both major public recreational amenities and the Port of Juneau / Marine Exchange facility won approval by the Juneau Assembly.

### **Transportation Challenges Addressed**

The following is a generalized list. Each item is addressed in detail in other sections of the application:

- Safety of major cruise ship vessel facilities;
- Passenger and vessel security while in port;
- Improved intermodal links between large vessel visitor traffic and local land, sea, and air transport providers, as well as inter-state air carriers
- Facilitation of regional and high seas ocean commerce;
- Provision of Emergency Operations Center (EOC) facilities for the Port of Juneau, and for MXAK state-wide; and
- Assistance to USCG SAR operations.

# PROJECT PARTIES

## About the Port of Juneau

The Port of Juneau is the busiest port in Alaska as measured by the number of large vessel port calls and the number of passengers and crew members landed. In 2013, 478 large (>500' LOA) cruise vessel arrivals are scheduled for Juneau, with an additional 76 arrivals by smaller cruise vessels generally under 200' in length. A total of 1,362,539 persons are projected to arrive in the Port of Juneau on cruise ships in 2013, consisting of 932,772 passengers and 429,767 crew. Based on 2010 comparative data, only Seattle had more passengers among US Pacific coast ports. Juneau was well ahead of Los Angeles, San Diego, Honolulu, and San Francisco.<sup>2</sup> (Also see the graph of passenger visitation numbers, page 11)

**Table 1 – 2013 Scheduled Large Cruise Ship Landings in Juneau**

Length	Number	Percent
500' – 699' LOA	37	8%
700' – 899' LOA	96	20%
900' – 1,000+' LOA	345	72%
Total	478	100%

As cruise ship tourism began to grow in the late 1980's, so did the size of the vessels. In 1991 the Port of Juneau undertook a major improvement of its existing timber docks, installing 27 large steel mooring dolphins along the face of the dock. These were sized to accommodate the vessels of the day and somewhat larger. The famous *M/V Pacific Princess*, of "Love Boat" fame was typical of the cruise vessels of that era. At 19,900 GRT and 550' LOA, she could carry 626 passengers. Today's *Star Princess* is 951' LOA, but really more than 5 ½ times as large, at 109,000 GRT, and carries 2,590 passengers and 1,150 crew! The *Star Princess* is typical of the larger class of vessel now visiting Juneau, but certainly not the largest currently in service, let alone planned. A major facilities condition report completed in 2006 clearly showed that the existing docks were inadequate and potentially subject to extreme damage because of the larger ships.<sup>3</sup> Further, the passenger loads were overwhelming the uplands facilities for passenger staging and transfers.

Accordingly the Port undertook a complete re-design and rebuild of the port facilities and related infrastructure. This was a very involved process, with extensive public and industry outreach, detailed navigational analyses, and difficult financial and facilities planning. The overall project is now commonly referred to as "Concept 16b" which gives some idea of the number of ideas that underwent serious analysis. In fact "16b" only refers to the new floating vessel berths, and really does not include all the other projects such as uplands improvements, and mitigation items to reduce the impact on other waterfront users. The two new floating berths themselves constitute \$63 million of the overall \$82.3 million already spent or authorized.

<sup>2</sup> From Cruise Industry News, provided by Alaska Cruise Assoc. - 2010 passenger numbers: Seattle 931,000; Juneau 862,382, Los Angeles 731,952; San Diego 505,427; Honolulu 431,735; San Francisco 112,175

<sup>3</sup> "Port Condition Assessment" PND Engineers, Inc., June, 2006

<b>Table 2 – Port of Juneau: Overall Port Re-Development Project</b>				
Project Phases	Cost	Status	Notes	Lead Agency
Phase 1 - Intermediate Vessel Float	\$1,000,000	Completed 2010	Rehab flotation, cathodic protection, water, electrical & gangway	Port of Juneau
Phase 2 - US Customs / Dock Crew Building	\$5,500,000	Completed 2011	Major deck-over to existing timber docks / building construction	Port of Juneau
Phase 3 - Visitor Center & Tour Vendor Facilities	\$3,400,000	Completed 2012	Major deck-over to existing timber docks, visitor center building, vendor sales areas, access to ground transport staging	Port of Juneau
Phase 4 - Add. Uplands Improvements – Visitor Center Area	\$2,200,000	Completed 2013	Remove old ferry transfer bridge, additional deck-over, further work on transport staging areas	Port of Juneau
Phase 5 - Cruise Ship Terminal Staging Area	\$4,000,000	Designed & Bid Completion early 2014	Complete reorganization, ground stabilization, passenger amenities, and street access improvements	Port of Juneau
Phase 6 - CBJ Commercial Fisheries Dock	\$1,200,000	Designed & Bid Completion early 2014	Re-align and re-deck dock leased to Taku Fisheries to fit with new cruise ship berths	Port of Juneau
Phase 7 - Archipelago Area Deck-Over	\$2,000,000	In Design Completion 2015	Expand timber dock & integrate w/ Seawalk segments, USS Juneau memorial	Port of Juneau
Phase 8 - New Post-Panamax Floating Cruise Ship Berth – South Unit	\$33,000,000	95% Design / Completion early 2015	300' floating berth, drive-down access ramp, mooring dolphins, secure passenger access point, services, etc.	Port of Juneau
Phase 9 - New Post-Panamax Floating Cruise Ship Berth – North Unit	\$30,000,000	95% Design / Completion early 2016	400' floating berth, drive-down access ramp, mooring dolphins, secure passenger access point, services, etc.	Port of Juneau
<b>SUB-TOTAL (Funded Project Phases)</b>	<b>\$82,300,000</b>			
Phase 10 – Alaska/Juneau Marine Navigation Mgmt. Center	\$6,025,000	Concept Design Site Committed Partial Funding Completion subject to full funding	Co-location of Port of Juneau & Marine Exchange & primary Emergency Operations Center (EOC)	Port of Juneau public / private partnership w/ Marine Exchange of Alaska
<b>TOTAL (All Project Phases)</b>	<b>\$88,325,000</b>			

### About the Marine Exchange of Alaska

The Marine Exchange of Alaska (MXAK) is a non-profit maritime organization established in Juneau in 2000. It has built and operates one of the largest vessel traffic monitoring systems in the world. The system is relied on by the Coast Guard, State of Alaska agencies and the maritime industry to aid safe, secure, efficient and environmentally sound maritime operations. Through the use of more than 100 Automatic Identification System (AIS) receivers in Alaska and the utilization of satellite communications systems, the organization maintains a continuous 24/7 watch on vessels throughout the North Pacific. MXAK initiates

the response to Ship Security Alarm alerts, vessels entering off limit areas, the presence of high mast cruise ships in the flight path of inbound planes, monitors vessel speeds within Glacier Bay National Park, and locates vessels in distress as well as tracking vessels responding to maritime incidents. The MXAK real time vessel tracking network covers coastal areas of Alaska and extends into neighboring Russian and Canadian waters.

The organization was awarded the prestigious Coast Guard's Meritorious Public Service Award, which stated in part "Since 2000, the Marine Exchange of Alaska has played a key and leading role for Maritime Domain Awareness throughout Alaska by adapting available, and in some cases leading edge, technology to provide critical maritime information to both commercial and government users at unprecedented levels. The Marine Exchange of Alaska's expertise helped streamline and enhance the execution of Coast Guard operations."

MXAK's operations center, computer server room, electronics workshop and administrative offices are all located in an old, cramped building that is inadequate for the organization's needs. The top floor of the Alaska / Juneau Marine Navigation Management Center will at last provide suitable space to accommodate the organization. The ground floor space will be designed for Emergency Operation Center (EOC) needs of both the MXAK and Port of Juneau, but will also serve several needs of the community in which MXAK is active. Acting as a Maritime Education and Interpretative Center when not in EOC mode, and fitted with vessel tracking monitor displays and communications, the area will provide an excellent venue for holding maritime meetings and training. The shortage of qualified mariners is well documented. The Center will showcase the various segments of the maritime community and their vital role in Alaska's economy (ferries, tugs, tankers, oil support vessels, passenger vessels, containerhips and fishing vessels) - highlighting job opportunities and training avenues for today's youth.

## **PROJECT DESCRIPTION**

For the applicant, the Port of Juneau, the Alaska / Juneau Marine Navigation Management Center (A/J MNMC) is the final phase of the much larger, multi-phase, multi-year project of entirely reconfiguring Juneau's port infrastructure, previously described (See Table 2).

- Phases I through 4 of the overall project are completed (\$12.1 million);
- Phases 5 and 6 are designed, funded and in the bid process, and will be completed in early 2014 (\$5.2 million);
- Phase 7 is still in design, but funds are committed and completion is slated for early 2015 (\$2.0 million);
- Phases 8 and 9 are the two new Panamax-class floating berths – the core of the overall project. These are bid ready, and the funding for these two phases is fully committed. They are staged for completion in 2015 and 2016, as both cannot be completed in a single year due to the massive size of the berth and piling installations (\$63.0 million);
- Phase 10 is the proposed A/J MNMC project under the TIGER V grant program (\$6.025 million total / \$3.225 million in TIGER V funding);

### **Functions of the Alaska / Juneau Marine Navigation Management Center**

The Alaska / Juneau Marine Navigation Management Center will perform two principal functions:

- It will be the co-location “nerve center” for both local Port of Juneau port management functions, and the regional, state and international navigation management support functions of the Marine Exchange of Alaska.
- It will be the primary Emergency Operations Center (EOC) for the Port of Juneau, and can serve in that capacity for regional and even statewide emergency responses, including as a key component in statewide USCG search and rescue (SAR) efforts for all classes of vessels, including thousands of fishing vessels in Alaska waters.

A secondary function will be that, when not in use as the EOC, much of the ground floor space of the Center will serve as a Maritime Education and Interpretive Center open to the public.

## PROJECT ELIGIBILITY

Per the NOFA (Federal Register / Vol. 78 No. 81) of April 26, 2013 [Notice of Funding Availability for the Department of Transportation’s National Infrastructure Investments Under the Consolidated and Further Continuing Appropriations Act, 2013] projects that are eligible for TIGER Discretionary Grants include “(4) marine port infrastructure investments”.

The proposed Alaska / Juneau Marine Navigation Management Center meets this requirement by providing Port of Juneau central management facilities and housing the Marine Exchange vessel tracking and navigation analysis facilities. Both functions provide vital transportation benefits of local, regional, inter-state and international importance. The Center will be entirely ready for its intended use upon completion of project construction.

As a “Rural Project” no match is required. However, the requested \$3.225 million in TIGER V grant funding for the Phase 10 Alaska / Juneau Marine Navigation Management Center project will be matched 47.47% with local, state and private funds. Moreover, the requested TIGER V grant represents just 3.65% of the Overall Port Re-Development Project.

### **Intermodal Implications**

The Overall Port Re-Development Project will improve the Port’s fundamental facilities, which already are linked to other transport modes. The most immediate of these are passenger ground transportation staging / transfer facilities that are part of the Port infrastructure. Disembarking cruise ship passengers board bus and taxi operations in order to visit a wide variety of venues around the City and Borough of Juneau. The largest single attraction is the Mendenhall Glacier, some 13 miles from the port. Hundreds of thousands of visitors also are bused to other transport modes, such as charter fishing boats, whale watching and small local tour boats, and to both fixed wing and helicopter flight-seeing operations. One interesting example has passengers stepping off a large modern cruise ship, getting bused 9 miles to the airport area, taking a helicopter onto the Juneau Icefield, and then taking a dog sled tour. Now, that’s truly intermodal! There is also connectivity between the port and Juneau’s international airport, which has 7 north-bound and 7 south-bound 737 jet flights daily during the summer months.

Many other passengers use Juneau’s pedestrian ways. In addition to its port investments, the City and Borough is heavily invested in pedestrian amenities, the most ambitious of which is the Waterfront Seawalk mandated in the CBJ’s Downtown Waterfront Plan.

The operations of the Marine Exchange have far reaching intermodal implications as a key part of the national and international ocean navigation network. Container ships and bulk carriers operating between the Orient and US West Coast all use MXAK's AIS system, and, of course, that traffic is directly connected to a vast network of highway and rail transport throughout North America.

**SOURCES & USES OF PROJECT FUNDS**

**Sources of Funds**

For the Overall Port Re-Development Project, and for Phase 10 of that project, the Alaska / Juneau Marine Navigation Management Center, funding is a combination of local, state, private and federal sources.

**Table 3 – Aggregate Funding By Source**

Funding Source	Overall Port Re-Development Project (All 10 Phases)		Alaska / Juneau Marine Navigation Management Center(Phase 10)	
Local Gov't Funds	\$54,500,000	61.71%	\$800,000	13.27%
State Funds	\$28,600,000	32.38%	\$0	0.00%
Private Funds	\$2,000,000	2.26%	\$2,000,000	33.19%
Federal Funds	\$3,225,000	3.65%	\$3,225,000	52.53%
Total	\$88,325,000	100.00%	\$6,025,000	100.00%

City & Borough of Juneau Local Funds

CBJ Marine Passenger Fees (MPF)	\$5,300,000
CBJ Port Development Fees (PDF)	15,000,000
CBJ Dock Fund	4,400,000
Site Contrib. (Phase 10)	800,000
CBJ Revenue Bonds	<u>29,000,000</u>
Sub-total Local Funds	\$54,500,000

Local government funding includes allocations from the CBJ's Marine Passenger Fee (MPF), which is assessed on paying passengers arriving by cruise vessels. Much of the MPF is spent on the additional costs to local government in dealing with the 1.3 million+ visitors and crew arriving in a small city of just 32,000 residents– things like policing, hospital service, street maintenance, etc., etc. However, some – including the \$5.3 million cited - is allocated to capital projects directly related to the vessel traffic and related uplands and passenger transit issues.<sup>4</sup> The City, through the Port of Juneau, also assesses a per passenger Port Development Fee (PDF), which is dedicated to immediate port capital needs. The Port also collects a major / emergency maintenance increment through its Dock Fund, all of which has been dedicated to the port re-development effort because of the deteriorating condition of the existing docks. Also shown as a contribution is the \$800,000 valuation of the land dedicated to the Phase 10 A/J MNMC project. Normally the city does not value lands and tidelands it owns that underlie city projects. However, in this case the allowance is made

<sup>4</sup> In this regard it should be noted that the CBJ is spending a great deal of this money on needed pedestrian improvements designed to eliminate great congestion near the docks and improve mobility and amenity in the city. Some \$19 million in city funds is being spent on the Waterfront Seawalk Project through the CBJ Engineering Department. This project will provide high quality pedestrian walkway along the entire downtown waterfront, from the Douglas Island Bridge to the southernmost cruiseship berths. This is in addition to the \$88.325 million Port of Juneau Overall Port Re-Development Project.

because this particular area is being dedicated to a joint ownership, public / private partnership and thus constitutes at least a partial alienation. The other major CBJ contribution is revenue bonds required to complete the Overall Port Re-Development Project funding and assure its completion in a timely manner. Ongoing MPF and PDF collections, and expected S-MPF (see below) will pay for the revenue bonds.

State of Alaska Funds

Legislative Grants	\$20,500,000
State Marine Passenger Fees (S-MPF)	<u>8,100,000</u>
Sub-Total State Funds	\$28,600,000

Juneau has also received significant help from the State of Alaska. The state also collects a per person fee on cruise ship arrivals (S-MPF). This is subject to annual legislative appropriation. Juneau expects to receive additional funding from this source to help pay down its revenue bonds. The amount shown has already been received. The state has also provided very substantial direct legislative grants.

The funds cited above, with the exception of the \$800,000 value of the site for the A/J MNMC, are all dedicated to Phases 1 through 9 of the Overall Port Re-Development Project, and comprise a total of \$82.3 million.

MXAK Private Funds

State Grant Receipts (2013)	\$1,000,000
Long-term Financing	<u>1,000,000</u>
Sub-Total Private Funds	\$2,000,000

Phase 10 – the Alaska / Juneau Marine Navigation Management Center – is projected at \$6.025 million, and is heavily dependent on the Port of Juneau’s development partner, the Marine Exchange of Alaska. MXAK received a direct State of Alaska legislative grant of \$1 million this year expressly for construction of this project.<sup>5</sup> That \$1 million is treated in this application as private funds, as it was made directly and solely to MXAK for its purposes. But, the state was well aware of the Port of Juneau’s ongoing efforts to partner this project with MXAK, so it demonstrates the State of Alaska’s support for this Phase 10 project because of its importance across Alaska and its adjacent seas.

Federal Funds

TIGER V Discretionary Grant	\$3,225,000
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Federal funds for this final phase of Juneau’s Overall Port Re-Development Project represent a small proportion of the entire budget – about 3.65 percent. However, they are crucial to completion of the final Phase 10. The \$3.225 million in requested TIGER V funding will constitute slightly 52.5 percent of the Alaska / Juneau Marine Navigation Management Center’s projected \$6.025 million cost.

Total overall port development project cost is \$88,325,000, of which 96.35% is local, state and private funding.

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<sup>5</sup> Since its inception in 2000 MXAK has also received operational assistance from the state to maintain and expand its AIS stations and other programs .

## Uses of Funds

The following table outlines the allocation of funds by major expenditure category. The per square foot construction cost estimate is based on recent public project experience in Juneau. The valuation of the site is shown to illustrate overall “real world” costs for this project. The site “cost” will be offset by a city grant of the property. The value of the granted property is based on assessed value of adjacent private property. Inclusion of the property in this calculation does not affect the amount of the TIGER V grant request.

<b>ITEM</b>	<b>ESTIMATE</b>
Construction - 10,500 sf @ \$375 / sf	\$3,937,500
Design, Engineering & Construction Mgmt. @ 10%	\$393,750
Site - 20,000 sf @ \$40.00 / sf.	\$800,000
Parking & Landscaping	\$500,000
Contingency @ 10% of construction	393,750
<b>TOTAL</b>	<b>\$6,025,000</b>

## Why TIGER Grant Funding Is Vital

TIGER V Discretionary Grant Funding is needed to complete funding for the A/J MNMC. The Port of Juneau has committed all its available funding to complete the other 9 phases of the Overall Port Re-Development Project. It has commitment from the City Assembly to provide the site, valued at \$800,000, but does not have an identifiable source of funds to match the \$1 million in debt financing and \$1 million in State of Alaska legislative grant that its project partner, the Marine Exchange of Alaska, has to dedicate to this project. Without the requested \$3.225 million in TIGER V grant funding the Port of Juneau will not be able to proceed in partnership with the MXAK. The MXAK will have to proceed with a smaller project on its own, and the needed Port of Juneau facilities would be on hold indefinitely. The undoubted values of co-location will be lost. These include being able to fund better facilities jointly. But the greatest loss would be in having to make do with diminished and less effective Emergency Operations Center (EOC) facilities.

## **ADDRESSING TIGER V GRANT SELECTION CRITERIA**

Because the requested TIGER V funds will support the final Phase of a much larger multi-phase, multi-year project, in addressing each of the primary and secondary grant selection criteria set forth in the NOFA, we have, for clarity, broken out comments to cover both the overall project and the final phase for which grant funds are requested.

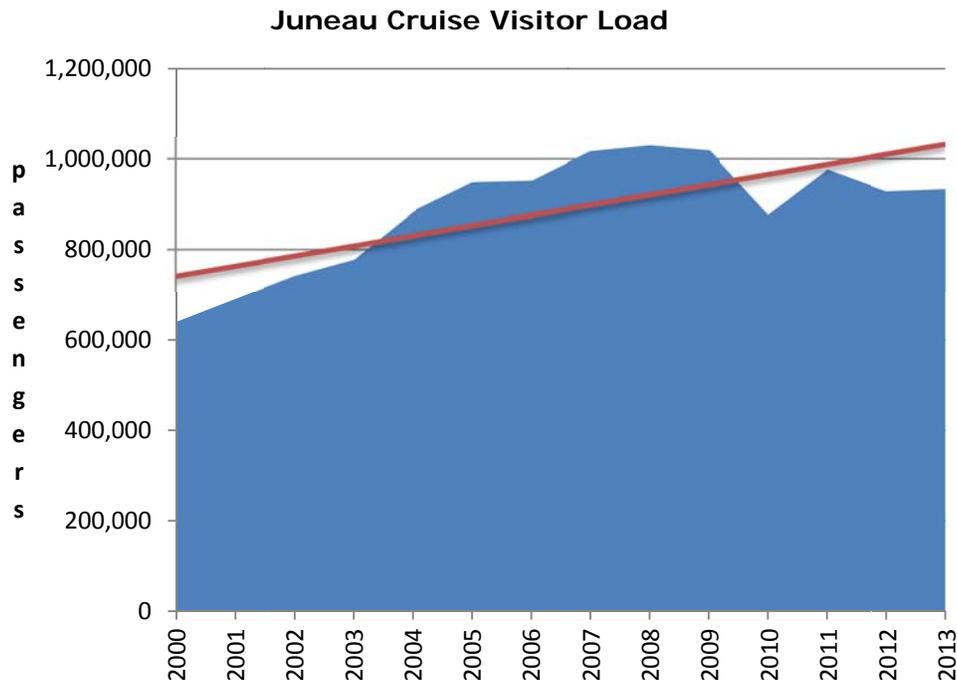
### Primary Selection Criteria

State Of Good Repair - The Overall Port Re-Development Project was predicated on maintaining Juneau’s vital port infrastructure in a state of good repair. The 2006 Condition Report by PND Engineers detailed numerous shortcomings in the port infrastructure. Most significant was the structural inadequacy of the existing timber docks, even with the much strengthened steel mooring dolphins installed in 1991. Those docks, which are still in use today, were designed to handle the ships of the day, and with a comfortable built-in capacity margin, are adequate for vessels of up to 50,000 GRT. However, many of the vessels arriving in Juneau now are in the 100,000 ton class. Left as they are, the existing

docks are at risk of serious damage from vessel approaches that could be considered at the high end of normal speed. Such damage would seriously disrupt ongoing industry activity and the local / regional economy which is heavily tourism dependent. Further, the condition report noted cathodic protection issues with some of the steel dolphins and structural deterioration in some of the timber dock structure. While these latter problems have been addressed in maintenance programs, the required long-term solution is the replacement of the existing docks with new, modern structures capable of handling the loads now encountered. [It should be noted that the existing timber dock structures have many, many years of useful life remaining at lower loadings. They will remain in place, and will serve pedestrian and passenger staging functions as an integral part of the city's Waterfront Seawalk System.]

The A/J MNMC (Phase 10) will be a new facility, so maintenance in a "state of good repair" is not really applicable.

**Economic Competitiveness** – The Overall Port Re-Development Project is vital to maintaining Juneau's economic competitiveness as one of the most important visitor destinations in Alaska. Juneau is the No. 1 port in Alaska for number of large vessel and total passenger arrivals, and ranks No. 2 in cruise ship arrivals for all US Pacific Ocean ports. Tourism employment (2,171) in Juneau ranks third behind State government (4,272), and Healthcare & Social Services (2,202), and comprises 12% of all employment in the city. Of the 1,243,500 total all-mode visitor arrivals in Juneau in 2011, fully 70% arrived via cruise ships in the port.<sup>6</sup>



The chart above indicates the strong growth in passenger numbers over time up to the onset of the "Great Recession".<sup>7</sup> Numbers remained high in 2009, largely due to pre-bookings, but dropped sharply in 2010 at the depths of the economic downturn. They have

<sup>6</sup> "Juneau Economic Indicators", Juneau Economic Development Council, August 2012

<sup>7</sup> Although not plotted here, passenger numbers had also doubled during the Nineties's from a starting point of about 300,000 visitors in 1990.

recovered somewhat since, and the projection from industry sources is for renewed growth in the coming years, if at a more modest pace than previously. An important factor in future growth will be a gradual phase-out of 700' to 900' vessels and conversion to Post-Panamax vessels in the 1,000 and even 1,100 range. The current Port of Juneau docks can handle only one Panamax and One 750' vessel simultaneously. Thus the construction of the two new Panamax berths is seen as crucial to maintaining Juneau's pre-eminent position among Pacific Northwest / Alaska cruise destinations.

The A/J MNMC (Phase 10) will improve the competitiveness of the Port of Juneau by adequately housing overall planning and management functions key to the ongoing growth and development of the port. Further, the facility will provide room for the continued growth of the Marine Exchange of Alaska. MXAK is a "cutting edge" technology applications enterprise of national significance. Having such a firm in a small, remotely located community like Juneau is quite unusual, and is a significant boost to the diversity and technological competitiveness of our economy.

Livability – As noted in the following section on Environmental Sustainability, the Overall Port Re-Development Project will provide facilities at the new cruise ship berths to extend shoreside power to cruise ships as additional, interruptible hydro generated power becomes available. This will have the effect of lowering fossil fuel consumption (oil dependency), lowering greenhouse gas emissions, and improving air quality. The latter is of considerable concern in Juneau. Progress has been made in recent years by the requirement to burn only ultra low sulphur diesel (ULSD) for electrical generation while in port (bunker fuels are now banned). But, even ULSD generation still results in considerable air pollution and a noticeable smog layer, particularly on low wind days with an air inversion layer. Lowering overall diesel engine pollution has been demonstrated to have positive public health benefits, particularly for people with respiratory problems like asthma.

The port's two new floating cruise ship berths will also return the existing timber docks to full public access. They are now partially closed with security barriers, and there has been a threat that they might be completely off-limits to the general public if there was ever any sort of security incident. This has been a sore point with much of the Juneau public. With the new berths completed the timber docks will become part of the Waterfront Seawalk System, restoring full pedestrian access. This will provide improved alternatives for both visitors and residents to move about the city and will promote healthful physical activity.

The A/J MNMC itself will also promote livability goals in Juneau. It will service as an anchor for other public facilities planned in the area by the Juneau-Douglas Bridge, as explained in the following section.

Environmental Sustainability – The two new floating cruise ship berths that are the heart of Overall Port Re-Development Project include vessel service capabilities with important environmental implications. First, the docks will have connections for offloading vessel waste water into the local water treatment system. This will significantly reduce the discharge of waste water into the waters of the United States and international waters. Second, the new docks will have provision for future shore-side electrical power (which is hydro generated) that will eliminate or greatly reduce the need for vessels to generate their own power with diesel generators while in port. This will reduce overall fossil fuel consumption and contribute to improved local air quality.

The A/J MNMC will adhere to LEED (*"Leadership in Energy and Environmental Design"*) principals to the degree possible within the project budget. The goal is to construct the greenest, most economical facility that we can. The new facility will be built on the site of

the former city maintenance building and yard. While not technically classified as a brownfield, the site did require considerable clean-up by the city. The A/J MNMC will be built on only part of the site, but is deemed by city planners to be fully compatible with the planned use of the remainder of the area as a public park and terminus of the city's Waterfront Seawalk System.



Indeed, the ability to use the ground floor of the A/J MNMC as a maritime transportation interpretive center when it is not in use for EOC purposes is seen as a large plus for the park uses. Further, the 24 / 7 presence of the MXAK is seen by city planners as a key contributor to keeping the adjacent park areas free from indigents and trouble-makers during off hours.

Safety – *Safety benefits are some of the most important impacts of the proposed project.*

As cited under “State of Good Repair” above, the Overall Port Re-Development Project will contribute to public transportation safety by greatly reducing the risk of potentially serious transportation accidents by providing vessel berths sized to handle the Post-Panamax cruise vessels which now dominate the vessel traffic in the Port of Juneau. However, the new floating berths will offer a host of other very important safety benefits. First, by moving the berths offshore from the current timber docks, immediate access to the moored vessels is reduced, thus reducing the risk of attack on the vessels. All passenger, personnel and service access will be via a single control access portal for each berth. Improved security was a primary concern during the design process. Further, the fact the berths are floating, and move with the tide (Juneau has a high tidal range of up to 24’) means that passenger ramps from / to the vessels will be much safer than existing gangways that require constant tending. Passenger accessibility and safety will be much improved. The many uplands improvements have also been designed with improved safety and access to ground transportation as foremost project goals.

The A/J MNMC will have very important safety and security functions at local, regional, state and even international levels. The Center will be the primary EOC (Emergency Response Center) for the Port of Juneau, and the requirements of the EOC will be “designed in” to the facility. Now, EOC functions are somewhat ad hoc, with USCG, Port of Juneau and MXAK all dependent on non-purpose-built facilities. The Marine Exchange navigation safety monitoring and coordination systems provide services across the Gulf of Alaska, Bering Sea, and now into the Arctic Ocean – an emerging area of commerce and navigation. It is not generally appreciated that the “Great Circle” sea lanes between the US west coast and the Orient pass through Alaskan waters. In fact a great deal of the enormous shipping traffic between great container ports like Seattle, San Francisco and Los Angeles / Long Beach and their counterparts in Japan, China and Korea actually passes through Aleutian Islands and into / out of the Bering Sea through narrow lanes like Unimak Pass. The loss of the Panamax-class bulk carrier *Selendang Ayu* on Unalaska Island (2004) and the recent grounding of the Shell Oil drill platform *Kulluk* near Kodiak have highlighted the importance of MXAK’s AIS vessel tracking system in coordinating shipping casualty responses. These systems also contribute directly and very significantly to USCG search and rescue (SAR) missions of vital importance to the thousands of vessels active in Alaska’s fisheries, which comprise more than 50% of all US fisheries activities. Accordingly the A/J MNMC will truly be the navigation “nerve center” for both the local Port of Juneau and the region and state.

Project Readiness - As previously described Phases 1 through 9 of the Overall Port Re-Development Project are well underway, with all necessary funds committed. Phases 1 through 4 are completed; Phases 5 and 6 are designed, funded and in the bid process, and will be completed in early 2014; Phase 7 is still in design, but funds are committed and completion is slated for early 2015. The two new Post-Panamax floating berths – Phases 8 and 9 - are bid ready, fully funded, and slated for completion in 2015 and 2016, respectively.<sup>8</sup> Both cannot be completed in a single year due to the massive size of the berths and piling installations. All of the project phases have been conceived and developed by the Port of Juneau's professional design and engineering staff, with most of detailed construction engineering handled by the well-known marine infrastructure firm PND Engineering, Inc.

Phase 10 - the proposed A/J MNMC project for which TIGER V grant funding is sought - has proceeded through programming, planning, and conceptual design phases. Working together, the Port of Juneau and Marine Exchange have scoped the project, and have been aided in the conceptual design by NorthWind Architects, LLC. The project has received general approval of the City and Borough of Juneau Assembly and MXAK funds are in place to commence detailed design and engineering of the facility immediately. No in-water work will be required thus no federal or state permits are anticipated for the A/J MNMC. A local building permit will be required prior to construction. The A/J MNMC project will be fairly standard construction thus does not face any technical feasibility issues. The financial feasibility is also not in doubt. Cost estimates are based on recent experience with similar construction. The \$1 million in long-term private debt financing will not pose any problems for the financial viability of either the Port or MXAK. Servicing that debt will cost approximately \$60,000 annually.<sup>9</sup> Annual costs for utilities, services (janitorial, etc.) and routine maintenance are projected at \$36,000 (\$3,000 / mo.). Together the Port of Juneau and MXAK pay \$103,000 annually in rent for their current, inadequate spaces. The new Center is thus expected to cost the parties less than their current rent outlays, with a surplus available for long-term major maintenance reserves.

## **Secondary Selection Criteria**

Innovation - The Overall Port Re-Development Project and the Phase 10 A/J Marine Navigation Management Center incorporate numerous innovative features. Some of these include:

- Spin-Fin Piles – The large structures securing the floating berth pontoons and mooring dolphins feature many very long piles that are subject to high loads from the large vessels. Spin-fin piles actually screw into the substrate as they are driven, and provide substantially higher tension loads than conventional piles, reducing the need for expensive rock anchors.
- Transfer Bridge Slide Bearings – The transfer bridges from shore to the floating berth pontoons are designed to land on large, cantilevered steel platforms rather than directly onto the pontoons. Unlike typical transfer bridges, these will be anchor pinned at the platform, with the sliding bridge bearing at the top, shore-side end of

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<sup>8</sup> The scheduling for the installations of the Phase 8 and 9 berths is also being affected by the availability of graving yard capacity on the West Coast. Yard capacity to build 300' to 400' floating concrete structures is limited and much is currently dedicated to the large I-90 floating bridge project in Washington State.

<sup>9</sup> \$1,000,000 @ 4.25 % with a 30 year amortization = \$59,598 annually.

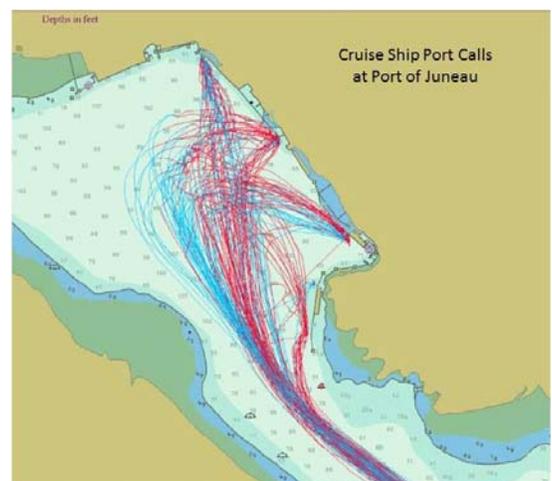
the bridge. With the very high tidal range in Juneau, this will ensure a uniform and easy vehicle landing, safer transitions for pedestrians, and reduced structural wear.

- Wastewater System – The system for offloading wastewater from the cruise ships into the city sewer / treatment system joins lines from each new berth into a single pipeline, which passes through a monitoring station. Volume is measured and the effluent is tested to accurately gauge biological oxygen demand (BOD) loads. This is crucial to ensure that the effluent loads do not overwhelm the city treatment plant. Each ship can be separately monitored.
- Long-life Pontoons – The massive pontoons for the floating berths are constructed of concrete. This, in itself is not new, but the selection of concrete rather than less costly steel was done only after extensive, 50-year life cycle analysis that took into account the unique conditions of the Juneau environment. Innovative testing and analysis demonstrated that concrete structures would have lower life-cycle costs.
- Uplands Improvements Organization – Simply increasing the overall foot print of the available uplands to handle growing passenger and vehicular loads is not possible because of the very limited areas available. Steep mountainsides come right down almost to the water's edge. Accordingly, several deck-overs have been used to expand pedestrian space adjacent to the timber docks, and weather shelters, buildings, landscape elements and the layout of bus staging areas have all been very carefully integrated to redirect pedestrian flows and maximize access to tour vehicles without any increase in the overall size of the staging areas.

The Marine Navigation Management Center (Phase 10), for which TIGER V funding is sought, also features much that is innovative, starting with the co-location of the Port of Juneau and Marine Exchange. While public / private partnerships are often touted, not that many are actually achieved. This one provides not only financial benefits to the parties but substantial public benefit that could not otherwise be achieved:

- The construction of the center will follow LEED principals to the extent feasible.
- The ground floor area of the Emergency Operations Center (EOC) will serve as a publicly accessible Maritime Education and Interpretive Center when not in use during an actual emergency situation.
- The existence of the A/J MNMC facility makes other public amenities feasible – the Center's location will anchor the Waterfront Seawalk bridge area terminus and the 24 hour presence of the MXAK activities will be a strong deterrent to vagrancy in the seawalk / park area.
- Marine Exchange itself is a model innovation enterprise, one of the principal IT based ventures in Alaska, and a technology driver in navigation monitoring and vessel safety.

Partnership - The Marine Exchange of Alaska has already been an active partner with the Port of Juneau. As mentioned earlier MXAK's vessel tracking system was a key element in demonstrating the feasibility of the Port's Overall Port Re-Development Project through modeling of vessel approaches to many possible new dock configurations. Known track



lines of vessels using the port clearly showed what was possible and what was not.

Measured by the involvement of non-Federal entities and the use of non-Federal funds, including the scope of involvement and share of total funding, the A/J MNMF demonstrates a very strong partnering role between the City and Borough of Juneau, Port of Juneau (applicant) and the Marine Exchange of Alaska (principal partner). However, the State of Alaska is a hugely important, second level partner in this effort. State funds have provided \$28.6 million (32.4%) of the Port of Juneau's Overall Port Re-Development effort thus far, and the Marine Exchange has received a \$1 million State of Alaska grant for facility construction. MXAK also receives annual support from the State for systems operations.

### Cost Benefit Analysis

Although Economic Stimulus is no longer an explicit criterion as in earlier TIGER rounds, it is worth noting that the project will have important local and regional economic effects. Federal government estimates of the impact of transit investment are based on a multiplier which predicts that \$1 billion in Federal highway and transit investment supports 13,000 job years of employment. Therefore \$88.325 million X 13 jobs per \$1 million expenditure indicates that some 1,148 job years of employment will be generated by the Overall Port Re-Development Project – and we think this is an under-estimate based on local experience. For the \$6.025 million for Phase 10 A/J MNMC project we expect at least 78 construction jobs - or one job for every \$41,000 in federal TIGER V investment.

The long-term economic impacts of the overall project in Juneau are somewhat more difficult to estimate. The most recent Juneau Economic Indicators report showed that tourism employed some 2,171 people in Juneau. Since 70% of all visitors arrive via cruise ship, it is reasonable to posit that at least 70% of those jobs – 1,520 - are cruise tourism related. That equates to 1.7 local jobs per 1,000 passengers. Expectations on increases in passenger load, based on both the larger vessels and on the increased number of vessel visits the Overall Port Re-Development will facilitate, indicate that 20% growth in total visitations over the next decade is probably reasonable. That should, in turn, generate an additional 318 local tourism jobs. Harder to estimate is the impact of the Juneau economy “growing in” to its tourism potential. The rapid growth of the industry over two+ decades has meant that the local economy has been “playing catch-up” in taking advantage of the available opportunities that the large visitor volume represents. The downtown retail sector is quite immature compared to centers that have long catered to large volumes of visitors. And, local businesses like charter fishing, guided walks and hikes, whale watching cruises, kayaking, zip-lines, and others continue to multiply and diversify. There is no doubt that

Commercial Vessels in Alaska in One Day



Port development is a key driver of the Juneau economy.

Also, figuring into cost v. benefit analysis is the unique role that the Marine Exchange of Alaska plays in international navigation with its vessel tracking system. The MXAK system tracks the vast majority of the container ship and bulk carrier traffic between the Orient and the US West Coast, thus helping to facilitate this vast ocean trade through enhanced safety. It is very difficult to put numbers on this benefit. But, as with other advanced aids to navigation like

ARPA systems, MXAK's AIS system certainly enhances the operational environment for seaborne trade throughout the North Pacific, and will be increasingly important as the Arctic Ocean opens more and more to navigation.

Gauged against all the local, state, and national benefits elucidated in this application, the requested \$3.225 million in TIGER V funds seems quite modest and reasonable.

**PERMITTING**

Phases 1 through 9 of the Overall Port Re-Development Project have received all federal, state and local permits. Construction of Phases 1 through 4 is actually completed. Phase 10 (A/J MNMC) is located on a flat site above the velocity flood plane, the site has been cleared of hazardous material, no adverse impacts to historic resources are anticipated, and the project is compliant with the local waterfront commercial zoning district, the Downtown Waterfront Plan, and the Juneau Comprehensive Plan. A local building permit will be sought once final design is completed. The local planning commission and assembly will review the project once final plans are completed. No in-water work is required for the project thus an Army Corps of Engineers permit will not be required.

**PROJECT SCHEDULE**

The following is the expected schedule, with time intervals measured from the date of TIGER V grant award. This schedule will easily accommodate DOT fund obligation deadlines. Assuming announcement of grant awards by July 31, 2013, all permit requirements should be completed December, 2013 – fully six months in advance of the June 30, 2014 deadline stated in the NOFA.

<b>Task</b>	<b>Description / Status</b>	<b>Time to Complete</b>
Design	Programming, Planning and Conceptual Completed / Final Design & Engineering	90 Days from award
Permitting	Local Building Permit	60 Days from Final Design
Bid & Award	Bid prep, 45 day response period, award	60 Days
Construction	Final site prep, building erection, parking and landscape completion	180 Days
Close Out	Contract completion & final review	30 Days
<b>TOTAL</b>	<b>1 year &amp; 2 months from Award to Completion</b>	<b>14 Months</b>

**SUMMARY**

If funded under this TIGER V Discretionary Grant request the Alaska / Juneau Marine Navigation Management Center will have immediate and ongoing positive impacts both in Juneau, the Southeast Alaska region, and across the entire spectrum of ocean navigation in the North Pacific, the Bering Sea and Arctic Ocean off Alaska. The amount already invested by the Port of Juneau, strong partnering with the Marine Exchange, and large-scale funding commitments by the State of Alaska demonstrate a high degree of leverage against the relatively small amount of federal dollars requested.

## APPENDICES