

MAINE INTERMODAL PORT PRODUCTIVITY PROJECT

Project Name	Maine Intermodal Port Productivity Project
<i>Previously Incurred Project Cost</i>	\$
<i>Future Eligible Project Cost</i>	\$ 15,438,347
Total Project Cost	\$ 15,438,347
NSFHP Request	\$ 7,719,173
Total Federal Funding (including NSFHP)	\$ 10,445,780
Are matching funds restricted to a specific project component? If so, which one?	Yes, \$537,000 in FHWA Rail-Highway funding restricted to grade crossing safety upgrades. \$4,500,000 of State of Maine funding to cover the costs of the mobile harbor crane.
Is the project or a portion of the project currently located on National Highway Freight Network?	No
Is the project or a portion of the project located on the National Highway System, <ul style="list-style-type: none"> <li>• Does the project add capacity to the Interstate system?</li> <li>• Is the project in a national scenic area?</li> </ul>	Yes, through current and future truck traffic to rail and barge No
Do the project components include a railway-highway grade crossing or grade separation?	Yes, project upgrades and signalizes a grade crossing
Do the project components include an intermodal or freight rail project, or freight project within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?	Yes, project includes Port improvements (water), intermodal and Freight rail improvements
If answered yes to either of the two component questions above, how much of requested NSFHP funds will be spend on each of these project components?	Port (water) - \$12,019,811 Freight Rail - \$ 1,463,826 Intermodal - \$ 1,954,710
State(s) in which the project is located	Maine
Small or large project	Small
Also submitting an application to TIGER for this project?	No
Urbanized Area in which project is located, if applicable	Portland
Population of Urbanized Area	202,600
Is the project currently programmed in the: <ul style="list-style-type: none"> <li>• TIP</li> <li>• STIP</li> <li>• MPO Long Range Transportation Plan</li> <li>• State Long Range Transportation</li> <li>• State Freight Plan?</li> </ul>	Yes (amendment requested) Yes (amendment requested) Yes Yes Yes

**U.S. Department of Transportation**

**FOSTERING ADVANCEMENTS IN SHIPPING AND TRANSPORTATION  
FOR THE LONG-TERM ACHIEVMENT OF NATIONAL EFFICIENCIES  
“FASTLANE”  
GRANT APPLICATION**

Project Name: Maine Regional Railways Project  
Project Type: Port and Freight Rail  
Project Location: Urban, Maine 1<sup>st</sup> Congressional District  
Funds Requested: \$7,719,173 - (50%)  
Other Federal Funds Matched: \$2,726,607 - (18%)  
Non-Federal Funds Matched: \$4,992,567 - (32%)  
Total Project cost: \$15,438,347  
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MAINE INTERMODAL PORT PRODUCTIVITY PROJECT



## **Project Summary**

Maine Department of Transportation (“MaineDOT”) is seeking \$7,719,173 from a U.S. Department of Transportation (“USDOT”) Fostering Advancement in Shipping and Transportation for the Long-term Achievement of National Efficiencies (“FASTLANE”) grant. The total cost of the project is \$15,438,347, fifty percent (\$7,719,173) of which will be matched by MaineDOT (\$4,500,000), other federal dollars (\$2,726,607) and private regional railroad Pan Am Railways (\$492,567).

The *Maine Intermodal Port Productivity Project* will:

- a) Build on the improvements made at the Port of Portland while doubling the output capacity for this key northeastern intermodal seaport critical to capturing trade with Canada, Scandinavia, and Northern Europe.
- b) Repurpose the existing footprint, invest in the technology required to improve utilization and efficiency in a space-constrained port, and procure state of the art equipment necessary to minimize highway traffic and improving the overall freight network in this region.
- c) Further leverage the long-term partnership between the state of Maine and a private regional railroad to improve access for the region to the national rail network and reduce highway congestion in the upper northeast corridor.
- d) Improve the accessibility and long-term prospects for the economy and the environment in a challenged region by improving the efficiency of the freight transportation network that is vital to industry and global competitiveness.

The *Maine Intermodal Port Productivity Project* (“Project”) will provide for physical improvements and equipment and technology investments for the Port of Portland (“Port” or “Portland”), Maine, at the International Marine Terminal (“IMT”) as well as track and crossing upgrades to the railroad serving the Port enabling it to more safely and efficiently connect with the national rail network. These improvements will allow for significant growth at the Port which will add to railroad and seaborne cargo and minimize highway traffic in the northeast US from New York/New Jersey up throughout New England and the State of Maine. Container volumes through the Port will grow from additional vessel calls from a current customer, future calls from a committed new customer and through rail and seaborne growth primarily with yet another key Maine-based customer. Because of the increased utilization realized through the Project and the resultant greater capacity, by 2020, the Port will increase throughput by more than 500% over 2015 numbers, more than 40,000 additional containers, greatly aiding the economic vitality of the region. Containers will land in Portland rather than discharging in Canada at ports such as Halifax and Montreal. This additional cargo through Portland in lieu of the Canadian landings in North America will minimize US interstate highway miles and reduce border crossings. Funds from this FASTLANE grant will leverage recent public and private investment at the Port and in the rail transportation infrastructure in Maine and continue to create solid and sustainable distribution corridors. This project also continues to leverage the Tiger I investments made by MaineDOT and USDOT that was the original catalyst for development of the Port and now would fully realize the long-term vision and plans.

The project will be ready to proceed immediately upon receiving an award and contracts being

let. The work to be completed is within the boundaries of the Port’s property that was previously permitted for a similar footprint modification, thus there is great confidence that additional permitting will be achieved. The railroad upgrades will occur on existing railroad right-of-way; therefore, a Categorical Exclusion is expected. MaineDOT anticipates the project to be completed by summer of 2018. The parties to this grant application have successfully completed projects with USDOT funding in the past and have demonstrated the ability and commitment to complete those projects early or on-time.

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**Standard Form 424, Application for Federal Assistance**

**Project Narrative**

**I. Project Description**

a) PROJECT DETAILS AND BACKGROUND

Maine is unique in that it borders only one other state but has a 611-mile border with Canada. The Port of Portland, Maine, is the largest container seaport in the state closest to Europe. Future growth into and out of the region can have a profound effect on transportation in the northeast. The State of Maine has long pursued its Three-Port Strategy for preserving the resources of the coastal Maine while encouraging industrial port development. A tremendous catalyst for growth of that strategy was a successful TIGER I grant receipt in 2009. A key component of that grant was the development of a container port at the International Marine Terminal in Portland. That initial \$5M funding has since been parlayed into over \$25M of additional state and private investment at the port allowing it to handle some 17,000 containers of freight over the last 3 years (2013-2015).

The Port is now poised to enter a phase of exponential but clearly and carefully targeted growth. And as the initial USDOT grant was the spark to begin the redevelopment of the Port, a FASTLANE grant is being sought to again provide the catalyst for investment and this time for a new phase of growth and improvements. This growth will be driven to rail and vessels and will minimize the use of the US Highway System and other roadways as well as key border crossings.

The Maine Intermodal Port Productivity Project will make key investments at the Port of Portland allowing this space constrained facility to fully realize its potential through efficiency

gains and utilization of all of its transportation assets. Changes to the existing dockfront will allow for more vessel callings and the realization of the Marine Highway Program Project that was designated in 2010 to shift Interstate 95 (“I-95”) traffic to a seabarge. Movement of the existing port maintenance facility and technology investments will create greater access, speed and safety through the port for trucks delivering and removing far greater numbers of containers. Investments to the railroad that serves the port will allow for the establishment of a new rail container service flowing goods to NY and southern New England, again keeping them from utilizing I-95 by truck.

The key component to the TIGER I project at the wharf was the filling in of 12,000 square feet of wharf to create usable waterfront ship access and to allow for a mobile harbor crane to more efficiently work container ships. In this Project, an additional 12,000 square feet of wharf will be infilled to create space for marine equipment to unload vessels utilizing two cranes simultaneously with more locations along the ship to be worked. To allow for this, the Project will move the Port’s existing outdated maintenance facility from along the wharf to the opposite end of the property. There the new facility will be a multi-purpose building that will include the maintenance and repair shed but also will house the check-in and security systems and personnel as well as a crew room for the Port labor. Included in the Project is state of the art Port check in technology that will allow for multiple trucks to enter and exit the facility simultaneously as well as manage inventory at the Port. Capacity improvements for the railroad at the Port will allow for increased railcar and loading capacity in the Port intermodal yard, including a second loading track along with an 1,100-foot runaround track, and at the railhead for the Port, new rails, ties and switches will be installed to return that area to a state of good repair. A key rail/highway grade crossing which currently only has cross bucks will be upgraded with fully automated and gated crossing protection to provide the necessary safety required for the coming growth and radio-controlled railroad power switches will be installed to minimize time and delays, both railroad and motorist, at that crossing. The Project will also include two key pieces of equipment to make the kinds of utilization gains required to allow for this growth on the physical footprint afforded the port. The first, and of primary importance, is the purchase of an additional mobile harbor crane for lifting containers to and from vessels, for which the Maine state match has been earmarked. This second crane at the Port will allow vessels to be fully loaded and unloaded in nearly half the time almost doubling berth capacity. This is the lynchpin to the utilization gains that are anticipated but truly achievable. The second is for a new rail packer to load and unload containers to railcars. Without this piece of equipment the necessary intermodal efficiency gains will not be realized.

All of these plant improvements and equipment purchases will drive utilization gains that allow the Port to process over 50,000 containers by 2020. But if not for these improvements, this traffic would still find its way to businesses throughout the northeast. However it would come through Canada at either Halifax or Montreal and then into the US at various border crossings. Each time it would be a far greater truck haul on US roads and interstates. Or there would be additional landings in US ports such as NY, or Boston adding to port congestion at those locations as well as truck traffic on I-95.

While a primary beneficiary of these far more efficient transport patterns is the highway system, lower supply chain costs will be realized for customers in Maine, the other New

England states and NY/NJ. This ultimately translates into more efficient US businesses better able to produce goods and compete. Iceland based oceanic shipper Eimskip was the first to realize the value and potential of Portland and has been serving the Port since 2013. Last year it was announced that the largest cold storage company in the US, Americold, had won the concession to occupy the majority of remaining land at the Port and will be developing their new refrigerated warehouse at the Port which is expected to be in service by 2017.

Additionally a large Maine-based manufacturer and distributor is working through the planning and logistics of shifting their transportation from one of solely truck to the additional use of rail and sea barge. The majority of their products ship down I-95 so all shifts would be relieving congestion on the major thoroughfare in the northeast.

The Project enjoys significant support at many and varied levels. Locally, development of the Port has always been important to the city. The Port has made extensive efforts to continue that by properly fencing the facility and signaling intersections to minimize traffic disruptions. The union that provides labor at the Port, the ILA, has long supported improvements at the Port and the jobs they generate. The growth coming from this project and the customers described above expects to yield additional hours of work to the existing workforce as well as generate over 15 new permanent middle class wage jobs. The State has a multi-decade history of support for the Port through its Three-Port Strategy and improvements to the facility are a key component to the *Maine Integrated Freight Strategy* written in 2014. The Project continues the USDOT Marine Highways Program which designated the M-95 Marine Highway Corridor as part of the Program in 2010. And the US Department of Commerce Investing in Manufacturing Communities Partnership (IMCP) named the Portland area one of 12 original national designees and has specifically recognized the importance of investments at the Port to their mission of developing manufacturing communities.

The Project is led by MaineDOT, which has successfully prosecuted multiple grants from USDOT. MaineDOT is again partnering with Pan Am Railways who has consistently shown to be a fine steward of public investments in their railroad to support the public good of taking trucks off the highway. The Project is expected to be completed by 2018 and the region will begin realizing the benefits from the Project prior to full completion, as components of the project will begin yielding gains as they are completed.

### **Quantitative and Other Facts**

#### **Project Name: Maine Intermodal Port Productivity Project<sup>1</sup>**

- The \$15,438,347 in freight port and rail infrastructure investment will yield \$46,315,041 in economic output for this region.<sup>2</sup>
- The project has a total Net Present Value (NPV) benefit of at least \$304.9 million and a benefit-cost ratio of at least 3.7 to 1. For the purposes of this FASTLANE grant

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<sup>1</sup> See Appendix A, Benefit-Cost Analysis.

<sup>2</sup> Association of American Railroads studies indicate that every dollar invested in freight-rail infrastructure created by investment tax incentives generates more than three dollars in total economic output due to investment, purchases and employment occurring among upstream suppliers. See ASSOCIATION OF AMERICAN RAILROADS, INFRASTRUCTURE INVESTMENT, <http://www.aar.org/incongress/infrastructuretaxincentive/infrastructuretaxincentive.aspx>.

MAINE INTERMODAL PORT PRODUCTIVITY PROJECT

application, the Benefit Cost Analysis is extremely conservative, as it assumes no growth after 2022

- A private company match of \$492,567 (3.2%) has been committed by Pan Am Railways<sup>3</sup> and Maine State bonding will contribute \$4,500,000 (29.2%) to the Project cost.
- The project is in Cumberland County.
- The project is in the Maine’s First Congressional District represented by Chellie Pingree. The state is represented by U.S. Senators Susan Collins and Angus King.<sup>4</sup>
- Total Cost of the Project: \$15,438,347
- Over a twenty-year period, the fuel savings is valued up to \$148.8 million using a seven percent discount value.
- The NPV of the reduction in carbon emissions is at minimum \$2.56 million over twenty years.
- The NPV of the savings on highway maintenance costs is \$75.7 million over twenty years.

b) Current and Future Conditions

Project Item	Before	After	Impact
Wharf Infill/Remove Existing Maint. Facility	48,000 sqft of 1000 psf wharf	60,000 sqft of 1000 psf wharf	Create working area for a 2nd crane. Double the speed of ship unloading time
Replace Fender Panels Along Wharf	Current some fenders at the wharf failing	Ten new fenders in state of good repair	Ship and dock personnel safety
Purchase New Mobile Harbor Crane	One crane on site	Second crane on site	Double the speed of ship unloading time, redundancy in operations
Rail Terminal Capacity Improvements	One 750' intermodal ramp track, short 750' runaround yard track	Second 750' intermodal track at the ramp, 1100' runaround track extension with 3 new crossovers	Double the intermodal ramp capacity for rail cars for loading and unloading. More storage and runaround space enhancing capacity in rail yard.
Highway/Rail Crossing Safety Improvements	Crossing protected only with cross bucks	New automated, signaled and gated crossing, power switch at RR wye	Increased public safety required for pending growth, with radio controlled power switch train will no longer stop and block highway crossing
IMT to Mainline Wye Rail Improvements	Light, worn rail, ties and turnouts, hand throw switches	Modern 115lb rail and power switches	Reduction in derailments, more efficient/reliable railroad service to the IMT and adjacent customers, modern rail components designed for longer intermodal cars.
Purchase New Rail Packer	One piece of old, failing equipment	State of the art rail packer with increased capacity	Allows for containers to be loaded and unloaded to railcars on second track at intermodal ramp expanding efficiency of intermodal service
Construct New Terminal Operations and Maintenance Center	At dockside, and portions more than 100 years old	Multipurpose facility with modern technology at terminal gate	Improved utilization, capacity, labor safety, security, and comfort
Terminal Grading/Paving/Striping	Flow of containers often challenged by poor drainage on site	New striping for truck access and container placement and drainage	Improved safety, efficiency and state of good repair

All of the infrastructure improvements are integrated throughout the Port complex to provide for the utilization, efficiency and safety improvements necessary to handle the coming growth in container traffic. Each of the portions of the Project has independent utility but the whole is far greater than the sum of the parts because of the designed interaction of each improvement to the overall operation at the port.

The result of the project will be the northern most intermodal container port on the east coast of the US, better able to compete with Canadian ports and improve traffic flows into the entire region. Containers that would otherwise land in Halifax and Montreal will land in Portland

<sup>3</sup> See Appendix (E), Match Letters.

<sup>4</sup> See Appendix (D), Support Letters.

greatly reducing US highway miles. And a new seaborne service will further minimize the impact to I-95 between Maine and NY. Prior to the receipt of a TIGER I grant, the catalyst for executing the new vision for the Port of Portland, there was no alternative for container traffic coming or going to this region other than further south in the US which put more trucks on I-95 for greater distances or in Canada which added pressures to international border crossings at Calais and Port of Highgate Springs, VT. Boxes both landed in the port and highway capacity-constrained NY/NJ area, or in Halifax, Montreal or other Canadian points and then were trucked into New England. Now Portland is a viable and thriving alternative for customers both importing and exporting product by vessel. From only 227 containers shipped in all of 2012, the Port has grown to just shy of 7,000 containers in 2015 with line-of-sight growth targets to exceed 50,000 containers by 2020. This is through growth primarily with existing customer Eimskip, near-term future customer Americold and a new customer where service could begin as early as 2016. But much as the original TIGER grant was the spark that generated significant subsequent investment at the Port, now a FASTLANE grant can be the next spark that takes the Port to a new level of utilization, efficiency and production and positively impacts intermodal mobility and economic vitality in the region.

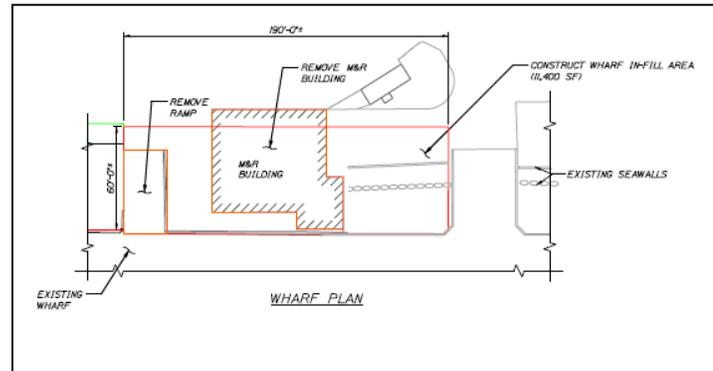
The improvements at the Port that drive these efficiency gains can be grouped into the following three major categories.

### **1. Dockside**

Three aspects of the project directly dockside will allow for larger ships and faster loading and unloading of containers onto the vessels in addition to creating backup and redundancy in service. These improvements collectively contribute to the greater whole but all have independent utility. Commencement of the barge service will necessitate greater efficiency and productivity through the terminal to get ship and barges unloaded and loaded quickly, freeing up capacity for additional vessels.

#### **1. Remove Existing Maintenance Facility and Infill the Wharf (\$4,282,400)**

The existing maintenance and repair building is currently located adjacent to the wharf along the waterfront and includes sections that are more than 100-years old. Removal of this building is necessary in order to construct the wharf infill area and provide efficient operations from ship to shore. As such, the building will be removed to make way for new wharf infill construction. Removing the building will require demolition of the structural components, electrical connections (including the three-phase service), water, gas, sewer, and telecommunication services. The wharf cannot be expanded without removal of the building.



This new area will complete an open space between two concrete travel ramps of approximately 190-ft by 60-ft and create a robust wharf which will span over the existing seawalls. The wharf will be constructed of steel pipe piles and a concrete superstructure designed to provide an industrial strength deck of 1,000 per square foot (“psf”) live load capacity and a continuous working surface of 450 linear feet along the waterfront; an increase of over 40 percent. This work will also include removal of remnant steel and timber piles along the waterfront, removal of one concrete ramp (of limited 450 psf live load capacity), and rehabilitation of the existing seawall in select locations. The wharf infill area will improve the functionality of the waterfront by increasing the square foot area of the deck by approximately 11,400 square feet and result in a continuous shoreline structure.

**Before**

**After**



**2. Remove Old and Install New Fenders (\$500,000)**

The existing fender system at the Port comprises 16 individual fender panels spaced at 48-ft on center along the edge of the wharf; six fender panels were replaced in 2015 as part of an investment by the Maine Port Authority. The remaining ten fender panels are approximately 25 years old and also in need of prompt replacement. The old fender panels consist of steel H-pile pieces welded together to form a berthing surface which have since become damaged or corroded and pose a threat to vessel hulls. The new fender panels will be 7-ft wide by 23-ft high and manufactured of steel closed-box construction completely seal welded and fronted with a UHMW wearing surface. The steel plates will be a minimum of 3/8-inch thickness and the entire assembly will be painted with a 16-mil marine-grade epoxy coating to give them a longer and safer lifespan. Anodes will be attached to the backside of the fender panels to provide additional corrosion protection. New shear chains, weight chains, and tension chains will be installed, while the existing rubber arch fenders will remain in service. The end result

will be a modern protection system with increased safety and long-term durability at the wharf. (Location of the fender replacement at the Port depicted in the diagram at the bottom of page 9.)

3. New Mobile Harbor Crane (\$4,500,000)

The MaineDOT match for the Project of \$4.5M is earmarked for the entire cost of a new mobile harbor crane. No federal funds will be used for the purchase of the crane. A key enabler to the utilization improvements that are required to realize the capacity increases at the Port without expanding the overall footprint is the purchase of a second mobile harbor crane. The crane will increase safety and reliability during unloading and loading of vessels at the Port. The additional crane allows for simultaneous unloading at each end nearly doubling the speed to unload and reload a vessel. Decreasing the turn time allows for vessels to make additional port calls and thus creates greater capacity at the Port. Specifications of the new modern crane include 359 tons in gross weight, 124 metric ton lift capacity and 48-ft turning radius. The new crane is electrically driven; therefore, is more environmentally friendly than the older cranes powered by fuel. It will be a state of the art piece of equipment ideally suited for a port unloading ships and sea barges of the size that will call on Portland.



Each aspect of the project provides for new independent utility if it were the only work completed. The infill alone would allow for movement flexibility of the existing harbor crane and some minor efficiency gains could be realized. The new fenders would have the safety benefits if they were the only aspect of the Project. And the mobile harbor crane would also generate efficiency gains but they too would be minimal without the footprint expansion. True efficiency improvements come when these are completed in tandem, as the additional square footage on the wharf will be created allowing the new crane room to work in great coordination with the existing crane.

**2. Rail**

Four key improvements will be made to the rail aspect of the project that focus on capacity gains, returning to a state of good repair and safety upgrades. Similar to the dockside improvements, these also have independent utility.

1. Terminal Capacity Improvements (\$1,169,710)

Despite the fact that the Portland IMT recently constructed over 4,100 linear feet of railroad track including a new 750-ft siding along an industrial concrete loading slab and a new 750-ft runaround track the rail support yard to the Port remains small with little capacity to handle containers of a substantial volume through the Port. Prior those modifications rail traffic did

not move through the IMT. Those movements began in January of this year. This Project will construct a second 750-ft track so containers can be loaded and unloaded on each track and built into a full train, alleviating congestion. Again targeting the greatest efficiency possible, this siding will be built along the concrete loading slab which will allow the building of multiple trains during one mobilization of the reach stacker. Initially shorter blocks of traffic are expected and to maintain the high utilization required in all aspects of the Port, one track will be for empty containers returning to the Port and the other for loaded containers going outbound from the Port. A 1,100-foot “run-around” track will be constructed so a train can be pulled straight into the Port in lieu of being shoved in. This provides for greater efficiency and greater safety as a trainman no longer has to ride the leading end of a shoving movement on a railcar as the protection for the move will now be provided by the engineer in the cab of the locomotive. Three total crossovers will be installed to again realize the greatest efficiency gains possible. New track components will be designed to the latest AREMA standards complete with free-draining subbase gravels, sub-ballast, stone ballast, hardwood ties, and jointed 115-lb rail. Five new turnouts will be included in the design to link the new track with the existing track and allow greater flexibility when building trains. The port authority has recently acquired a new trackmobile to facilitate these movements.



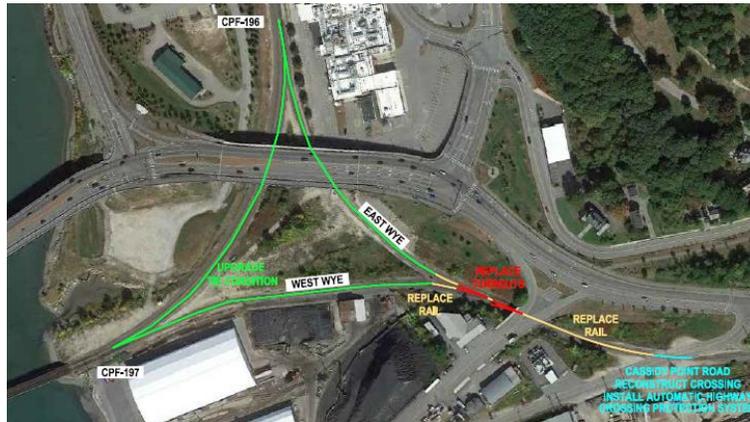
## 2. Highway Crossing Upgrade (\$596,688)

Cassidy Point Drive crosses the railroad tracks that enter the far western end of the rail support yard for the Port. It is the main vehicular entry point to Merrill’s Marine Terminal, a busy bulk and breakbulk terminal adjacent to the IMT and a daily customer of Pan Am Railways. Today when a Pan Am train enters the Port, prior to reaching the Port tracks, the train must stop and a trainman must manually line the switch from the preceding wye track (switch for wye labeled below). The train then crosses Cassidy Point Drive, which today only has cross buck protection. The operation is similar when a train is leaving the Port or is switching Merrill Marine Terminal except that the train actually blocks Cassidy Point Drive when it is pulled up to the closest point without fouling the switch. This Project will significantly improve the safety and efficiency of this entire process by installing a power switch at the wye and a signaled and gated crossing for the street. Trains entering and exiting the Port will no longer stop and wait while a trainman dismounts and throws a hand-throw switch. Instead the switch will be radio controlled by the engineer in the cab of the locomotive and trains will proceed fluidly into and out of the Port with no slowdown or start up period to a stop minimizing the train time occupying the crossing, which will now be fully protected to the public. FHWA Section-130 dollars will be directed to this specific aspect of the Project.



**3. Terminal to Mainline Improvements (\$867,138)**

Conditions of the rail infrastructure between the Port and the mainline connection with Pan Am Railways need improvement. Today, the rail, ties and turnouts in the plant around the entrance to the Port are worn and often require slow speeds to maintain safety. This Project will replace the ties in the large wye that allows for both northward and southward entrance to the Port in addition to the rails and turnouts at the east end of the wye as a train approaches the Port. These upgrades will allow the railroad to be brought to a state of good repair, improving both safety and reliability for rail service to the Port. This need for reliability becomes further exaggerated once the number of ship calls grows and weekly container volumes through the Port approach 1,000.



**4. New Rail Packer (\$785,000)**

As the new mobile harbor crane will make the loading and unloading of ships most efficient, a new modern rail packer (a reach stacker specifically designed for loading railcars) will be purchased to load and unload containers from railroad flat cars. A rail packer has special counter weights to allow for it to reach out further with more weight (specifically to load two rail cars side by side) again improving the efficiency of the processes. The targeted unit has 45 metric-ton lift capacity in the first row and 30.8 metric ton lift capacity in the third row.

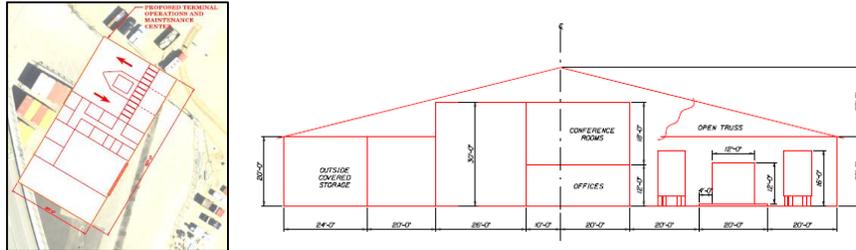
**3. Port Facilities**

As previously mentioned, to allow for the infill needed at the wharf to position an additional mobile crane, the existing and antiquated maintenance and repair facility is being removed and replaced. Further improvements will also be made to the existing port footprint improving efficiency, utilization and safety. All again have independent utility from the other improvements targeted by the Project.

**1. New Terminal Operations and Maintenance Center (\$2,321,400)**

Presently at the Port, facilities focused on direct port operations are only the old maintenance and repair facility at the wharf and a small check in area of the port headquarters. Integral to

the Project is the establishment of a new multi-purpose facility at the entrance to the Port complex that will house a new fully functional preventive maintenance facility, a hot room for port labor and a new double entry/egress system for allowing containers to be delivered and removed from the Port. Also included will be updated check-in/check-out and inventory control technology that will be needed to manage the flow of the additional containers. This new facility will improve utilization and flow through the Port increasing capacity and improve the safety, security and comfort for port labor.



**2. Terminal Grading, Paving, Striping and Drainage Improvements (\$416,011)**

The location of the new Terminal Operations and Maintenance Center lies adjacent to an area of the terminal which currently exhibits grade differentials that will need to be remedied to allow for efficient use of internal truck traffic. Approximately half an acre within the terminal will be rehabilitated; a process which will require removal of the existing pavement, placement of free-draining gravels, and placement of a durable 9-inch bituminous pavement section comprised of 6 inches of subbase pavement topped with 3 inches of finish pavement surface. Upon completion of the grading and paving, the terminal will receive striping to designate container storage areas and improve internal circulation with designated lanes and chassis storage areas. The grading and pavement is necessary due to the equilibrium tolerances of the crane and reach stacker equipment while under operation. Paint striping will be accomplished with a highway-grade reflective paint to improve visibility at night and in inclement weather.

**Breakdown of Project Cost Components**

<b>Project Item</b>	<b>Cost</b>
Wharf Infill/Remove Existing Maintenance Facility	\$4,282,400
Replace Fender Panels Along Wharf	\$500,000
Purchase New Mobile Harbor Crane	\$4,500,000
Rail Terminal Capacity Improvements	\$1,169,710
Highway/Rail Crossing Safety Improvements	\$596,688
IMT to Mainline Wye Rail Improvements	\$867,138
Purchase New Rail Packer	\$785,000
Construct New Terminal Operations and Maintenance Center	\$2,321,400
Terminal Grading/Paving/Striping	\$416,011
<b>PROJECT TOTAL</b>	<b>\$15,438,347</b>

**II. Project Location and Parties**

a) Location - Maps, geo-spatial information<sup>5</sup>

Portland, Maine – 43.648774 -70.258542

The *Maine Intermodal Port Productivity Project* will improve the facilities, infrastructure, efficiency and safety at the International Marine Terminal at the Port of Portland, Maine. The

<sup>5</sup> See Appendix B, Map and Photos.

Port is in an Urban Area as defined by the US Census Bureau and it is in the US 1<sup>st</sup> Congressional District. Population and employment data reflect the importance of Portland's economic viability to the entire region. As such, the Portland Community Chamber of Commerce publishes an annual Economic Scorecard, highlighting opportunities and successes for the region.<sup>6</sup> The 2015 Scorecard emphasized a 3.4% increase in employment in the MSA versus a 1.9% gain state-wide.<sup>7</sup> The region however fell below the national employment growth rate of 6.1% for the same time period, as well as for the 2005-2014 timeframe, with regional growth of 1.4% versus 3.0% at the national level.<sup>8</sup> Keeping this area vibrant is important to the country as Maine has over 600 miles of border with Canada and more miles of shoreline than California (3<sup>rd</sup> most of any state). Exports to Canada via surface transportation and overseas via ports is crucial to the national economy as well as the region. Imports through Portland versus Canadian ports and subsequent highway routing relieves pressure on US roads and at border crossings.

b) Project Parties

1. Maine DOT

The Maine Department of Transportation (MaineDOT) is a cabinet-level state agency with primary responsibility for statewide transportation by all modes of travel. MaineDOT employs approximately 1,900 people and expends or disburses more than \$600 million per year, including federal, state, and local funds. State bond funding will be the primary source of the non-federal match for the Project. In Maine it comes from State bonds approved by the legislature and taxpayers in 2015 for use on multimodal (non-highway) projects. The primary source of transportation funding in Maine is gas tax revenue, which by statute gas can be used for highways and bridges only. As such the only significant source of capital for multimodal projects is State bonds. Each year there are more capital needs in the passenger and freight multimodal community than there is funding available and competition for these funds is fierce within MaineDOT. Due to its significant economic and transportation impact on the entire State and region, this project has been prioritized by MaineDOT. The Maine Integrated Freight Strategy written in 2014 clearly identified several aspects of the Project as a priority for Maine and the Maine Port Authority.<sup>9</sup>

“The Maine Port Authority should continue to respond to market forces and opportunities in their quest to develop projects with potential for a strong return on investment:

- Continue to invest in maintenance and upgrades of Maine's three ports.
- Upgrade containerized cargo capacity to capitalize on opportunities of a growing market in Portland and direct connection to Europe.
- Program incremental capital improvements to the ports to enhance intermodal connections, such as rail to Portland...

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<sup>6</sup> PORTLAND COMMUNITY CHAMBER OF COMMERCE, *Portland's Economic Scorecard 2015* (Sept. 2015) <http://www.portlandregion.com/> (last visited March 31 2016).

<sup>7</sup> U.S. BUREAU OF LABOR STATISTICS, Portland-South Portland, ME - May 2015 OES Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates, May 2015 (last visited March 31, 2016).

<sup>8</sup> *See id.*

<sup>9</sup> MAINE DEP'T OF TRANSPORTATION, *Maine Integrated Freight Strategy*, June 2014 - <http://www.maine.gov/mdot/ofbs/docs/FreightStrat.pdf>.

- Continue to upgrade rail connections to Portland.”

The significant growth of international traffic via steam ship and intermodal traffic at the rail ramp at the IMT as well as the near term opportunities for container traffic to increase fivefold through the facility if the infrastructure exists to support the increased demand has made this project a top priority at MaineDOT and the Department has prioritized funds accordingly.

### 2. Maine Port Authority and International Marine Terminal

The Maine Port Authority is a body both corporate and politic in the State established for the general purpose of acquiring, constructing and operating any kind of port terminal facility and railroad facility within the State of Maine. The Authority consists of a seven member Board of Directors, 5 of whom are appointed by the Governor. The President of the Maine International Trade Center serves as an ex-officio member of the Board, as does the Maine Commissioner of Transportation, who shall act as chairman and president. The Maine Port Authority and MaineDOT may enter into such agreements as the Directors and Commissioner determine to be in the best interests of the State for the department to acquire, construct, maintain and operate any or all facilities funded from bonds such as those used for the Project match.

### 3. Pan Am Railways

The portion of the Project on Pan Am Railway is \$1.46 million and they are committed to a \$0.49 million private match. PAR has a strong commitment to and history with public-private partnerships. The state of Massachusetts was the recipient of a grant award as part of the American Recovery and Reinvestment Act (ARRA) High-Speed and Intercity Passenger Rail program. U.S. Department of Transportation awarded \$70 million for final design and construction of the "Knowledge Corridor" along the Connecticut River rail line in western Massachusetts and with Pan Am as a partner; the project was completed at the end of 2014 and has resulted in the reroute of the Vermonter Amtrak train and the savings of more than thirty minutes of transit time. In the seventh round of TIGER, PAR was part of a unique partnership with MDOT and 3 other private shortline railroads that were awarded a grant to improve their railroads to a state of good repair. That award is being consummated and Pan Am will begin their portion of the project this summer laying new rail from Waterville, ME to Northern Maine Junction, points north and east of this Project. Additionally PAR hosts the Downeaster on its line from Brunswick, ME, to Massachusetts and has successfully completed numerous track improvement projects that benefit that service. PAR is one of the larger private employers in Maine with over 400 on the payroll there and 800 employees overall.

These three project parties have been working together for many years for the benefit of the IMT and are natural partners to further develop the exponential growth at the Port. They have long demonstrated the ability to plan, develop and execute projects including projects utilizing both state and federal funds and to complete those projects on time and within budget. The project schedule anticipates completion by mid-2018 and sees no obstacles to achieving that.

## **III. Grant Fund Sources/Uses**

- a) Table showing sources and uses of project funds

MAINE INTERMODAL PORT PRODUCTIVITY PROJECT

Fund Source and Use	Project Amount	Project Percentage
FASTLANE Grant Funds	\$7,719,173	50.0%
Maine DOT State Bond Funding	\$4,500,000	29.1%
Congestion Mitigation Air Quality Funding	\$2,189,607	14.1%
FHWA Section 130 Grade Crossing Program	\$537,000	3.5%
Pan Am Railways	\$492,567	3.2%
TOTAL	\$15,438,347	100%

b) State Matching Funds

The State of Maine matching portion of the Project, \$4,500,000, comes from State bonds approved by the legislature and taxpayers in 2015 for use on multimodal (non-highway) projects. The Commissioner of the Maine Department of Transportation has signed a commitment letter to the Secretary of Transportation and MaineDOT is prepared to begin the Project immediately upon awarding of a grant. Maine has successfully completed numerous projects with USDOT funding and is able to fund, manage and complete the Project.

c) Other Federal Matching Funds

MaineDOT has prioritized \$2,189,607 in Congestion Mitigation Air Quality (“CMAQ”) funding for this project due to the significant impact the Project will have in removing a large amount truck traffic from highways within Maine and throughout the northeast region. The Project will also utilize \$537,000 in funds from the FHWA Railway-Highway Crossing Program, also known as the Section 130 Program for the improved crossing aspect of the Project. Overall, other federal non-FASTLANE funds will be some 18.6% of the total cost of the Project, and below the maximum match from other federal sources in the NOFO.

d) Private Matching Funds

For their portion of the Project, Pan Am Railways is contributing \$492,567 of the \$1,463,826 spent on their property, over 33%. Pan Am has signed a commitment letter to the Secretary of Transportation and can begin the project upon receipt of the award.<sup>10</sup> They have received USDOT grant funding in the past and they are able to fund, manage and complete their portion of the project.

**IV. Cost Effectiveness**

Benefits are discussed in narrative form in the application and are, when possible, quantified in the attached benefit cost analysis Excel worksheet.<sup>11</sup> A summary is below.

7% NPV Summary		
	COSTS	BENEFITS
CAPEX	\$14,428,362	
MAINTENANCE		\$482,972
PRE BUILD OUT TRUCK TRAFFIC		\$401,341,796
POST BUILD OUT TRUCK TRAFFIC	\$18,180,612	

<sup>10</sup> See Appendix E, Match Commitment Letters.

<sup>11</sup> See Appendix A, Benefit Cost Analysis.

MAINE INTERMODAL PORT PRODUCTIVITY PROJECT

POST BUILD OUT BARGE	\$54,555,803	
POST BUILD OUT RAIL	\$22,985,585	
CO2 SAVINGS		\$2,556,879
TOTAL	\$110,150,361	\$404,381,647
<b>BENEFIT COST RATIO</b>		<b>3.67</b>

3% NPV Summary		
	COSTS	BENEFITS
CAPEX	\$14,988,686	
MAINTENANCE		\$695,330
PRE BUILD OUT TRUCK TRAFFIC		\$596,362,647
POST BUILD OUT TRUCK TRAFFIC	\$24,425,929	
POST BUILD OUT BARGE	\$82,876,733	
POST BUILD OUT RAIL	\$34,334,367	
CO2 SAVINGS		\$2,556,879
TOTAL	\$156,625,715	\$599,614,856
<b>BENEFIT COST RATIO</b>		<b>3.83</b>

In addition to the quantifiable benefits, this project will greatly expand the capacity and reliability of freight movements via barge, rail and truck throughout the Northeast.

ASCE’s 2013 Report Card for America’s Infrastructure notes that despite \$91B in Federal, State and Local capital investments annually, road infrastructure is still projected to decline.<sup>12</sup> Congestion on major urban highways “cost the economy an estimated \$101 billion in wasted time and fuel annually.”<sup>13</sup> The breakdown by State located in the I-95 Northeast Corridor, is as follows<sup>14</sup>:

State	% Major Roads in Poor Condition	% of Bridges considered Functionally Obsolete	Cost per year in extra Vehicle costs per Motorists due to condition of Roads
Rhode Island	41%	35%	\$661.94
Connecticut	41%	25%	\$661.26
New Jersey	35%	26%	\$604.88
New York	23%	27%	\$504.90
Massachusetts	19%	43%	\$478.01
Maine	7%	18%	\$450.86
New Hampshire	17%	18%	\$404.43

Spending only the federal portion of investment for the Project would only alternatively pay for four miles of rural Maine roads.

## V. Project Readiness

All aspects of the Project will be on existing Port of Portland IMT property or on existing railroad right of way. As such, nearly all required filings for the National Environmental Policy Act (“NEPA”) process will be through Categorical Exclusions (“CE”). There are two known

<sup>12</sup> American Society of Civil Engineers, Roads, *ASCE: 2013 Report Card for America’s Infrastructure* 2013, <http://www.infrastructurereportcard.org/a/#p/grade-sheet/americas-infrastructure-investment-needs> (last visited April 3, 2016).

<sup>13</sup> See id.

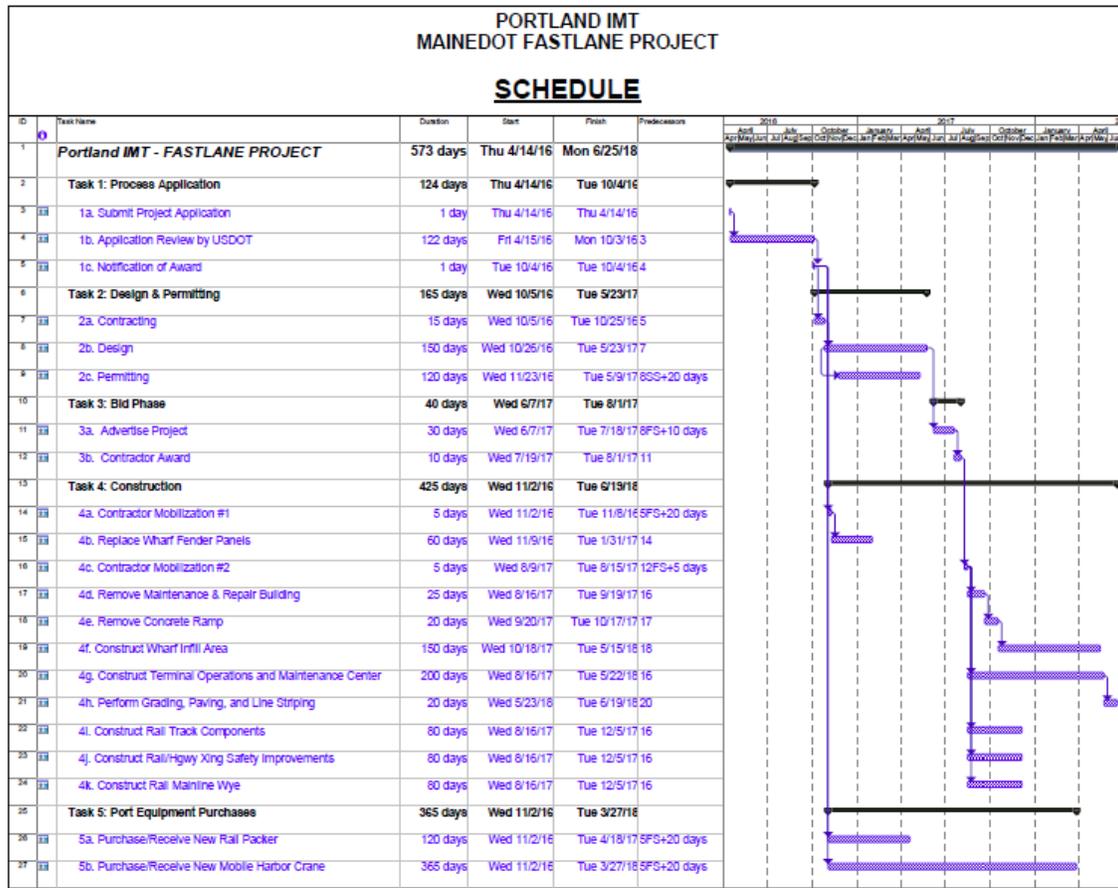
<sup>14</sup> See id. at States.

MAINE INTERMODAL PORT PRODUCTIVITY PROJECT

modest exceptions and each are not expected to face obstacles nor delay commencement of the project in any way.

The first exception is the permitting required to infill the wharf area by some 12,000 square feet. As part of the TIGER I project, in 2010 the Port acquired permitting from the U.S. Army Corps of Engineers (“USACE”) to infill a greater area at the wharf than was completed including the area now part of this Project. As such, the Port expects to administratively update the USACE and acquire a new permit. The second exception is for City of Portland permitting required for the new Terminal Operations and Maintenance Center to be built. The Port expects no obstacles to construction of the new facility on existing Port property. The project completion schedule depicted in the Gantt Chart further below reflects the time required for both of these aspects to be achieved.

Gantt Chart for the Project schedule<sup>15</sup>



All of the project participants are committed to a quick start and timely completion. All matching funds, both state and private, are committed. Project cost estimates were developed after extensive design and study of options by industry renowned infrastructure solutions firm HNTB. There are no pending agreements or legislative approvals required. The project focuses on a facility whose improvement is already a stated goal in the Maine Integrated Freight Strategy

<sup>15</sup> See Appendix C, Cost Estimate, Budget and Gantt Chart.

MAINE INTERMODAL PORT PRODUCTIVITY PROJECT

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(written for MaineDOT in June-2014) and all work in the project will be done on existing railroad right of way with no change of purpose for use. Pursuit of a Categorical Exclusion for each line under NEPA can be completed quickly upon award. MaineDOT expects full completion and receipt of environmental approvals by Spring-2017. With expectations of awards in the summer of 2016, work “turning dirt” could not take place in Maine until April-2017 at the earliest due to the winter months. Work to the fender system however will begin immediately upon grant receipt. After a grant agreement is reached, but during the expected six or more months until construction can commence, materials and contractors will be ordered to fully take advantage of the entire work season and force account construction agreements will be reached with participating railroads.

Project Item	NEPA Requirement
Wharf Infill/Remove Existing Maint. Facility	NEPA work completed in 2010 and USACE permit previously acquired, this has since expired but expect to be able to administratively update USACE and acquire a new permit
Replace Fender Panels Along Wharf	NEPA complete 100% designed and permitted
Purchase New Mobile Harbor Crane	NA
Rail Terminal Capacity Improvements	CE will be completed by MaineDOT
Highway/Rail Crossing Safety Improvements	CE will be completed by Pan Am Railways and MaineDOT
IMT to Mainline Wye Rail Improvements	CE will be completed by Pan Am Railways and MaineDOT
Purchase New Rail Packer	NA
Construct New Terminal Operations and Maintenance Center	CE will be completed by MaineDOT along with City of Portland permitting. No obstacles anticipated
Terminal Grading/Paving/Striping	CE will be completed by MaineDOT

Community involvement in preparation for the Project to date has been significant. In addition to hosting city, mayoral, gubernatorial, state and federal delegations, the local community has been kept well apprised of plans for the Project. Frequent presentations have been made to the Portland Waterfront Alliance, a monthly meeting of property owners, terminal operators, community groups, environmental organizations, federal, state, and city officials, and members of the community interested in Portland harbor. There have been repeated presentations to the Propeller Club of Portland, the Portland Longshoreman’s Benevolent Society, the Maine/New Hampshire Port Safety Port Safety Forum and the Northeast Regional Ocean Council on Ocean Planning (as it relates to traffic coming to and from the terminal). Local neighborhoods have been kept apprised at Planning Board review meetings and there is an on-going education program at schools on transportation through the terminal with the City of South Portland. In addition, input on the design for the Terminal Operations and Maintenance Center was sought and received from Port labor local 861. The Project has been well vetted and is well supported as evidenced by numerous and strong letters of support appended to this application.

Risks for the Project are few. Customers for the facility are existing and well established putting little risk to future volumes through the Port. Every container going through the Port yields benefits to the highway system. Environmental challenges are minimal due to Categorical Exclusions and prior received permitting. Execution risk is low as all participants are past USDOT grant awardees that have completed projects on time and within project budget. Funding for the Project has the backing of the State of Maine at the highest levels and a commitment letter from the private participant with a history of meeting federal grant commitments. The construction aspects to the Project are all well designed, straight forward and similar projects have previously been completed by the project parties. In Maine the potential for brevity to the construction season always exists due to weather and the duration of frozen ground but even that only has potential to delay the Project whose schedule has completion well in advance of statutory timelines for fund obligations. It is difficult to see where risks are a threat to Project completion, fund expenditures and benefit realization.

**VI. Federal Selection Criteria**

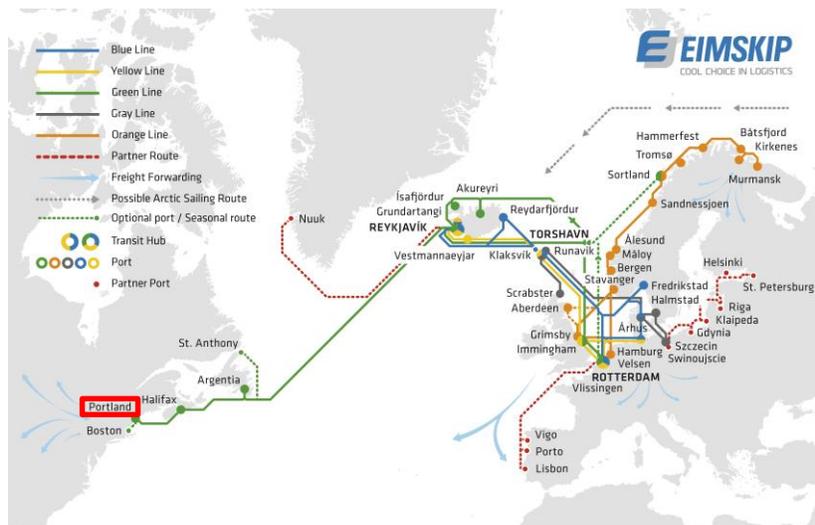
a) Introduction

A truly multimodal project, the Maine Intermodal Port Productivity Project has myriad benefits to the transportation and mobility of the northeast region in the US. Focused on putting greater and growing numbers of containers on rail cars and sea barges, this Project aids the economy of the region, will reduce spending on the interstate highway system, reduce traffic at US/Canada border crossings, increases container exports from businesses in the region and has environmental benefits that accrue when containers are kept to a minimum on trucks and in more eco-friendly modes of transportation for greater travel distances. The Project puts key port and rail infrastructure into a state of good repair and increases the capacity of an existing facility without placing undo harm to the environment.

b) Merit Criteria

1) Economic Outcomes

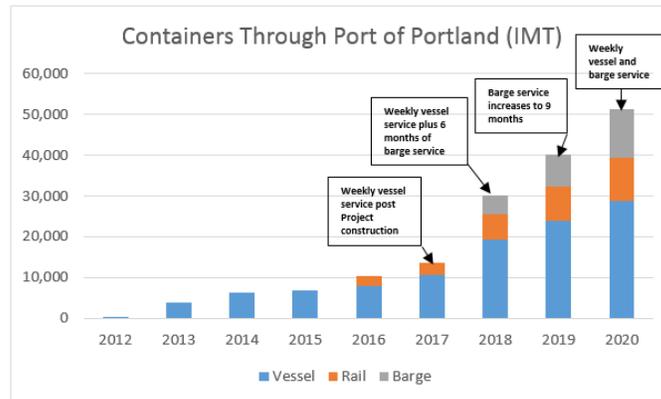
When the Port of Portland was awarded a TIGER I grant in 2009, it was the spark that ignited the growth potential at the Port. That potential today is being realized and in the near term future will require far greater capacity at the Port. Having landed the Icelandic shipping company Eimskip to both locate its North American headquarters but more importantly to make the Port of Portland its US transportation port of call for the region, container growth which has already reached 7,000 units annually is poised to grow exponentially. Eimskip primarily ships frozen fish from various parts of the North Atlantic to Portland for US distribution and backhauls containers of potato products, frozen processed lobster, blueberries, cranberries, other fruits and chocolate. Additionally, Iceland has been importing significant volumes of consumer goods from automobiles to household items through the port. The extension of shipping from Halifax to Portland saves cargo landing at the prior port of call in Halifax, NS, and ultimately being trucked into the US through various border crossings with Canada. The investments made by this Project will allow the pending growth that Eimskip sees to continue to land at Portland and either be railed or truck a shorter distance, with either mode benefitting the lengthier land route via Canada.



At the end of 2015, Atlanta-based temperature controlled supply chain company, Americold, the

largest refrigerated warehouse provider, in both North America and globally<sup>16,17</sup> won a bid to develop 6.3 acres, leased to them by the Maine Port Authority, adjacent to the International Marine Terminal. The 150,000 sq. ft. modern cold storage warehouse will be designed, constructed and funded by Americold and will hold up to 15,000 pallets of goods. The modern facility will use Freon to cool the warehouse, versus currently outdated ammonia based cooling systems to be more efficient and environmentally friendly. Additionally, the new facility will utilize robotics and specify cooler temperatures in separate areas to accommodate a variety of products.<sup>18</sup> Construction is set to start in the fourth quarter of 2016 and scheduled to be completed by the third quarter in 2017.<sup>4</sup> Eimskip has partnered with Americold which will open the market for local Maine processors to handle the food product and then it will be shipped directly to customers via rail, truck or ocean vessel.<sup>19</sup> This partnership is the next driver of growth through the Port.

The New England Marine Highway Project (“NEMHP”) was created by the Maine Port Authority with the support of a wide variety of public and private sector partners in 2010. The NEMHP was designated as a project in the federal Marine Highway Program by then Secretary of Transportation LaHood in August of that year. The purpose of the NEMHP is to create a sustainable, cost-competitive waterborne freight service between the Port of Portland and the Port of New York/New Jersey with the objective of getting trucks off the road to reduce highway congestion, emissions, and highway maintenance costs. The International Marine Terminal (IMT) is the northern terminus for the NEMHP service. In 2016, one of the major customers of the IMT began moving freight in containers south from the terminal by rail. Planning for the growth at the Port reflects the confidence that this customer also will be a significant customer on the NEMHP service.



If the capacity at the Port can be increased to allow for it, 50,000 annual containers can be a reality by the end of the decade saving over 35 million US truck miles between 2017-2020 and over 14 million miles per-year thereafter.<sup>20</sup> The Project creates the largest intermodal logistics hub north of Boston giving customers in the region the optionality to ship by vessel, rail or truck.

<sup>16</sup> ALLIANCE, G. C. C., IARW global top 25 list of refrigerated warehousing companies. <http://www.gcca.org/resources/industry-topics/cold-chain-market-research-trends/iarw-top-25-list-of-largest-refrigerated-warehousing-and-logistics-companies/iarw-global-top-25-list/> (last visited April 3, 2016).

<sup>17</sup> See id.

<sup>18</sup> Bell, T. Americold wins bid to build cold-storage warehouse on Portland waterfront, The Portland Press Herald /Maine Sunday telegram. <http://www.pressherald.com/2015/08/31/americold-wins-bid-for-waterfront-warehouse/> (last visited April 3, 2016).

<sup>19</sup> See id.

<sup>20</sup> See Appendix A, Benefit Cost Analysis.

That allows their customers to get their goods to market, domestically or internationally by the most efficient transportation mode increasing their cost competitiveness and allowing them to create new jobs. As a result of the growth and Eimskip establishing its headquarters in Portland, the Port itself will see the creation of more than forty new jobs. These are jobs that as three cabinet secretaries recently described are “middle-class jobs that often come with the opportunity to join a union, an important way that workers can bargain for higher wages and better benefits.”<sup>21</sup> That outcome is exactly what is happening at the Port of Portland. With the investments made through this FASTLANE grant, in year 3 of the project an additional 97 million gross ton-miles of freight will be moved as a result of the build out. And over the course of 20 years the port project is projected to move over 12 billion gross ton-miles of freight.

### *Fuel Savings*

Federal investment in this project creates a reduction in truck trips throughout the northeastern United States and crossing the Northern Border by creating more capacity along the rail line and on the port itself. The project also provides the port the infrastructure needed to create a short sea shipping route from the Port of Portland to New York. By Year 3, this new shipping route alone will remove more than 12,000 trucks from the freight highways system. The reduction in truck traffic while increasing capacity will significantly increase the region’s competitiveness on the global market due to the reduction in transportation costs and the increased efficiency.

Lower fuel costs will enable shippers to pass cost savings directly on to the end users. The BCA analysis is conservative because it assumes a no growth scenario in fuel used between 2020 and 2035 even though the number of barge trips and rail carloads will increase year over year. In Year 2 of the project, these benefits translate into saving a minimum of 3.1 million gallons of fuel by moving the freight. This project will see an annual transportation cost savings in Year 2 of \$9,962,370 (using an average price of \$3.123/gallon for diesel fuel anticipated for 2017).<sup>22</sup> Looking at the incremental growth resulting from this reduction in mileage as well as diversion to rail and barge, and using Department of Energy estimates for the cost of diesel fuel each year for the next 20 years, the fuel savings has an NPV of \$148,822,003 using a seven percent discount value.<sup>23</sup> These savings are felt by all and are a significant public benefit to funding this project.

## 2) Mobility Outcomes

This Project improves all modes of freight mobility and relieves highway congestion and increases the ease of mobility for people. It brings the port facilities and rail infrastructure into a state of good repair and improves the efficiency of truck traffic at the Port. Investment in greater efficiency at the Port allows for more cargo to move through the port creating new throughput capacity by making every mode more efficient and safer. The improvements to the wharf create additional space that allows for a new mobile harbor crane to be put to use nearly doubling the speed that a vessel will be unloaded allowing for more vessel calls at this facility. Landings of

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<sup>21</sup> U.S. DEP’T OF TRANSPORTATION, US Ports: Investing in engines of economic development and American competitiveness <https://www.transportation.gov/fastlane/ports-engines-of-economic-development-and-american-competitiveness> (last visited April 10, 2016).

<sup>22</sup> See U.S. ENERGY INFORMATION ADMINISTRATION, GASOLINE AND DIESEL FUEL UPDATE, <http://www.eia.doe.gov/oog/info/gdu/gasdiesel.asp> (last visited April 3, 2016).

<sup>23</sup> See Appendix A, Benefit Cost Analysis.

cargo in Portland reduces traffic landing in Canada and being trucked into the US through already congested border crossings saving highway miles and congestion. The improvements to the capacity and state of good repair for the railroads both at the Port and the rail line serving the Port allow for greater capacity and the expansion of intermodal service by rail. This is service that keeps traffic off I-95, the busiest US interstate east of the Mississippi River, and in the highly congested area between Boston and New York City. Highways in the states of the region most impacted by the Project (NY, NY, ME, NH, VT, CT, RI) are seven of the worst eighteen states in the country in the percentage needing repaving or reconstruction according to an October-2015 report by the American Road & Transportation Builders Association. And bridges in these same states plus Massachusetts are eight of the worst twelve states in the country for percentage of bridges that are classified as deficient or obsolete.<sup>24</sup> Simply put this is a region of the country whose road travelers need the benefit of minimizing truck travel miles more than other regions in the country. Highway congestion is great and the roads and bridges need repairs. Containers on rail cars, seabarges and on trucks for as short a distance as possible helps mitigate the congestion.

An additional benefit of removing heavy trucks from the highway and state system is the reduction in damage to the national highway infrastructure, particularly the aging bridges throughout the region. It is estimated each truck removed from the highway saves \$.01 per truck ton mile of highway maintenance costs.<sup>25</sup> In Year 2 of the project there will be a highway maintenance savings of \$5,479,848. Looking at the future growth that will exist if this project is completed yields, at minimum, \$75 million in highway maintenance savings over 20 years using a seven percent discount rate.<sup>26</sup>

Highway congestion in the United States costs \$87 billion in wasted travel time (4.2 billion total hours or nearly a full week for every traveler) and results in 2.8 billion gallons of wasted fuel per year. The benefit of not having to build additional capacity to accommodate future truck traffic in a no build scenario as well as capacity for automobiles is not fully known and therefore is not quantified in the benefit cost analysis. According to the Federal Highway Administration, the congestion savings per ton mile eliminated from the road system is \$0.009. Therefore, the congestion savings for this project has a in year 2 is \$4.9 million. Future savings will be accrued year over year after completion of this project.

The elimination of trucks miles from the highway decreases travel time for the average highway user thus improving mobility. This travel time benefit has not been quantified, but clearly exists creating efficiencies in the system by removing trucks from these already severely congested state highways and interstate highways. This congestion relief not only improves freight movements but also improves movement of people who share the roads.

### 3) Safety Outcomes

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<sup>24</sup> American Road & Transportation Builders Association, Conditions, [http://www.artba.org/Media/PDFs/6.03.2014\\_ARTBA\\_Conditions.pdf](http://www.artba.org/Media/PDFs/6.03.2014_ARTBA_Conditions.pdf) (last visited April 12, 2016).

<sup>25</sup> See CONGRESSIONAL BUDGET OFFICE, SOCIAL COST PRICING IN FREIGHT TRANSPORTATION, [https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/presentation/49838-socialcost-pricingfreighttransportation\\_0.pdf](https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/presentation/49838-socialcost-pricingfreighttransportation_0.pdf) (last visited April 3, 2016).

Moving freight by rail instead of truck will help address safety issues on the national freight system. In 2008, a Federal Motor Carrier Safety Administration (FMCSA) study stated that the number of large trucks involved in fatal crashes per 100 million vehicle miles traveled was 1.79.<sup>27</sup> This project will result in more than 234 million truck-miles being eliminated from the highway system over 20 years. Using FMCSA data, the dollar value of lives saved by project Year 4 is expected to be more than \$2.1 million. The same FMCSA study stated that in 2008 the number of large trucks involved in crashes that resulted in injuries per 100 million vehicle miles traveled was 29.1. To be conservative, this application assumes that all the injuries would be minor (i.e. Maximum Abbreviated Injury Scale Level 1). The value of preventing injuries is \$120,046 by Year 4.<sup>28</sup> This is a conservative figure since there would be accidents involving large trucks with minor injuries sustained. The economic impact of these crashes is \$4,198 per accident, which also assumes that all the crashes are classified as a MAIS Level 1 accident. The benefit of eliminating these crash impacts by Year 4 has a value of \$18,586.

Containers on railroads and in the ocean on seabarges reduces truck/car interactions and the potential for risk and impact on the roads and highways and there are additional safety benefits. Putting the rail yard and the connection to the Pan Am Railways mainline into a state of good repair reduces the potential for railroad derailments. Powering and adding radio controls to the switches of the wye at the east end of the Port's rail yard reduces the starting and stopping of trains coming and going from the yard also reducing derailments. Because of those new switches, train crews will not need to dismount and mount the locomotive (today this often happens in during Maine's inclement weather and precipitation seasons) thereby reducing the potential for injuries. New active crossing protection with gates and lights replacing the current passive crossbucks makes a congested road and rail intersection safer. In the container yard at the Port, new paving will eliminate drainage challenges that today result in snow and ice buildup and new reflective striping will improve visibility and safety at night and during inclement weather and truck flow through the terminal will be redesigned to minimize the potential for accidents in the yard. Overall, while the focus of the Project is on making the physically constrained facility more productive, it will be made safer in the process.

#### 4) Community and Environmental Outcomes

Community involvement has been widespread as the Port has hosted delegations of city, state and federal officials and the local communities of Portland and South Portland that are most proximate to the Port has been kept well apprised of plans for the Project. The Port has been a frequent presenter at City Planning Board reviews. Outreach has included interaction with neighbors, citizens, labor and civic organizations. An example of recent concern for the community includes the newer fencing and tree plantings that were placed around the container yard at the Port that were upgraded to be more appealing to passersby and the installation of LED lighting designed to prevent light-bleed into adjacent neighborhoods.

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<sup>27</sup> See U.S. DEP'T. OF TRANSPORTATION FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION, 2015 LARGE TRUCK AND BUS CRASH FACTS 2015 <http://ntl.bts.gov/lib/54000/54800/54849/Large-Truck-and-Bus-Crash-Facts-2013.pdf> (last visited April 10, 2016).

<sup>28</sup> The fraction of the Value of a Statistical Life used for a MAIS Level 1 accident is .003, as per the FASTLANE BCA guidance.



The port authority worked with the Northeast Regional Ocean Council to understand the implications the project, and specifically the New England Marine Highway Project traffic patterns, will have for Ocean Planning. Formed in 2005 by the Governors of the New England states, the council facilitates the development of coordinated and collaborative responses to coastal and ocean management issues that benefit from regional solutions and lists its first mission as “identifying local, state, and regional ecosystem-based environmental issues.”<sup>29</sup> And as is a goal of the three cabinet secretaries, labor has been having “a say in how the port operates and innovates”<sup>30</sup> as their opinion and perspective on the improvements of the Project were sought directly by the Port’s management.

From an overall environmental perspective, railroads and barges and local drays by truck are less impactful to the environment than long-distance truck hauls and that is the intended and expected outcome of the Project. The result is better fuel consumption, fewer emissions, less new geographic footprint impacted and more and better use of an existing footprint, one that mostly requires only Categorical Exclusions from NEPA to complete.

c) Other Review Criteria

1) Partnerships and Innovation

In addition to the funding partners and project parties for the Project there are two key partnerships that make the Project both important and unique. They include the New England Marine Highway Project designated as a Marine Highway Project by USDOT in 2010 and the Investing in Manufacturing Communities Partnership (“IMCP”) where Portland was an initial designee by the US Department of Commerce in 2014.

New England Marine Highway Program

The America’s Marine Highway Program, a USDOT-led program to expand the use of our Nation’s navigable waterways to relieve landside congestion, reduce air emissions, and generate other public benefits by increasing the efficiency of the surface transportation system and providing a convenient transportation alternative alongside congested landside transportation corridors. Selected by USDOT in the first call for projects, The New England Marine Highway Project was created by the Maine Port Authority with the support of a wide variety of public and private sector partners in 2010. The purpose of the New England Marine Highway Project (NEMHP) is to create a sustainable, cost-competitive waterborne freight service between the Port of Portland and the Port of New York/New Jersey with the objective of getting trucks off

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<sup>29</sup> NORTHEAST REGIONAL OCEAN COUNCIL. <http://northeastoceancouncil.org/about/nroc-overview/> (last visited April 10, 2016).

<sup>30</sup> U.S. DEP’T OF TRANSPORTATION, US Ports: Investing in engines of economic development and American competitiveness <https://www.transportation.gov/fastlane/ports-engines-of-economic-development-and-american-competitiveness> (last visited April 10, 2016).

the road to reduce highway congestion, emissions, and highway maintenance costs. Substantial progress has been made over the last several years and this Project will further realization of the NEMHP. McAllister Towing & Transportation of New York City was selected as the private sector partner in May 2013 and later in that year both vessel design and service design for the sea barge service was completed. This past May a Northbound Market Analysis was completed in and showed the potential to make this service a reality. The IMT at the Port of Portland is the northern terminus for the NEMHP service. In 2016, one of the major customers of the IMT began moving freight in containers south from the terminal by rail. It is anticipated that this customer also will be a significant customer on the NEMHP service that will result in nearly 25,000 containers shipped by sea barge and avoiding I-95 between 2018 and 2020, preventing some 7.7 million highway miles.

#### Investing in Manufacturing Communities Partnership

In 2014, the Greater Portland region in Maine led by the Greater Portland Council of Governments (“GPCOG”) was awarded as an initial designee to participate in the Investing in Manufacturing Communities Partnership. Focused on the Greater Portland Sustainable Food Production Cluster Manufacturing Community (the “Cluster”), the community has over 60 businesses and 1,800 jobs, the Portland region accounts for 31% of Maine’s food manufacturing employment as well as countless entrepreneurial home based businesses. A specific mission of the IMCP in Portland is “upgrading its port and improving the transportation and distribution efficiency of its supply chains to grow its lead in sustainable food production.”<sup>31</sup> This goal gels perfectly with the goal of this Project of making transportation in the region more efficient and users more cost competitive. A key component of the strategy is to take advantage of the recent “refrigerated container service to Europe enabling food exports”<sup>32</sup> and to encourage investment and site development at the Port. Catalyst projects for the IMCP include “technical assistance to help Maine food producers become *export ready* to take advantage of international container service.”<sup>33</sup> The Cluster recognizes, however, that “despite rail and air connections, 90% of shipments originating in Maine travel entirely by truck.”<sup>34</sup> The strategy includes using the priority consideration afforded as recipients of the IMCP designation to make “strategic investments for aggregation, cold storage and distribution” including the “expansion of IMT including rail” and a “cold storage facility on Portland waterfront to increase exports.” The GPCOG, the Cluster, the Port and this Project are aligned with the goal to bring the necessary investment and infrastructure to properly support the region’s desire for more efficient transportation options that avoid already congested road and interstates. The future result will be a regional stronger manufacturing base, a more efficient supply chain and additional jobs supported by more environmentally friendly transportation modes.

#### 2) Cost Share

Already-allocated State Bonds designated for freight transportation projects will be the primary non-federal match for the Project. Other federal match dollars currently set aside by MaineDOT

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<sup>31</sup> INVESTING IN MANUFACTURING COMMUNITIES PARTNERSHIPS GREATER PORTLAND SUSTAINABLE FOOD PRODUCTION CLUSTER MANUFACTURING COMMUNITY, <https://www.eda.gov/challenges/imcp/files/1st-round/IMCP-2-Page-Handout-Portland.pdf> (last visited April 10, 2016).

<sup>32</sup> See id.

<sup>33</sup> See Appendix J - Catalyst Projects Greater Portland Sustainable Food Production Cluster

<sup>34</sup> See supra note 31.

will comprise an additional 18.6% of the Project. And previous federal and state grant partner Pan Am Railways has committed to nearly \$500,000 of private investment, over 3% of the Project. Funding sources are committed and stable.

If Maine DOT is a recipient of a FASTLANE grant award, MaineDOT will work to combine the purchasing power and efficiency of the project for participants to complete the project work as swiftly and economically as possible. This may be for materials such as pavement, rail, ties, ballast and crossings but also for contractors who may be employed for the project.

This project will complement other MaineDOT rail program initiatives, including the Industrial Rail Access Program (IRAP) and Freight Rail Improvement Program (FRIP) that provide funding to enhance the free flow of goods via rail throughout Maine. Since 2001, Maine has invested \$11,391,550 in IRAP which leveraged an additional \$16,013,181 in private business matching investment. This project further leverages the nearly 20-year MaineDOT IRAP program that combines public and private funds to build rail access directly to customers. The project makes those connections to the railroad mainlines more valuable as shipping options increase with the reliability that will result. The FRIP in Maine has had \$2.2 million in investment, leveraging another \$2.2 million in private railroad matching funds. Since receipt of the TIGER I grant the Port of Portland has seen over \$25M in private and state investment at the Port not counting pending investment by Americold in their new cold storage facility. As TIGER I was the catalyst for initial container shipment development, the first year of FASTLANE can be the catapult to exponentially increase container shipments through the Port in all transportation modes; vessel, barge, rail and short haul truck.

## **VII. Results of Benefit Cost Analysis**

*See Appendix A.*

## **Grant Request Supporters\***

The Maine DOT's grant request for FASTLANE funds is supported by a diverse group of elected officials, shippers and rail stakeholders due to the significant economic impact the project will have on the region. This list of supporters includes:

### **Members of Congress**

U.S. Senator Susan Collins  
U.S. Senator Angus King  
U.S. Congressman Chellie Pingree  
U.S. Congressman Bruce Poliquin

### **State Elected Officials/Offices**

Governor Paul LePage

### **Government**

Maine Port Authority – Executive Director  
City of Portland – City Manager  
Greater Portland Council of Governments – Executive Director

### **Customers**

Nestle Waters North America  
LL Bean  
Bristol Seafood  
Sazerac  
Pan Am Railways  
Eimskip  
RC Moore  
Palco Air Cargo

### **Local Organizations**

Portland Longshoreman's Benevolent Society  
International Association of Maritime Port Executives  
Maine International Trade Center – President

\* As additional letters of support are submitted, they will be forwarded to USDOT with the Project name clearly labeled.

**APPENDIX**

Benefit-Cost Analysis Worksheet	A
Maps with Project Locations, Geospatial Data, Photos	B
Cost Estimate, Project Budget & Gantt Chart	C
Letters of Support	D
Match Commitment Letters	E
BNSF Carbon Calculator Sample	F
Before and After Engineering Design	G
Catalyst Projects Greater Portland Sustainable Food Production Cluster	H

Link to videos about the Port [www.maineports.com/fastlane](http://www.maineports.com/fastlane)