

# TIGER DISCRETIONARY GRANTS

## PISCATAQUA RIVER MULTIMODAL TRANSPORTATION IMPROVEMENTS

Between Portsmouth, New Hampshire  
and Kittery, Maine



*Aerial view of all three Portsmouth-Kittery bridges – looking NW  
Memorial Bridge (foreground); Sarah Mildred Long Bridge (center)  
I-95 High Level Bridge (background)*

**Submitted by:**

**NHDOT and MAINEDOT:  
Memorial Bridge and Sarah Mildred Long  
Bridge (Part A)**

**NHDOT:  
Market Street Marine Terminal (Part B)**

**Prepared September 15, 2009**

# Piscataqua River Bi-State Multimodal Transportation Improvements

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## TYPE OF PROJECT:

**PART A: BRIDGE AND HIGHWAY (BI-STATE)**  
**PART B: PORT (NEW HAMPSHIRE)**

## LOCATION OF PROJECT:

Portsmouth, Rockingham County, NH, 1st Congressional District;  
Kittery, York County, ME, 1st Congressional District

## URBAN OR RURAL AREA:

Urban

## AMOUNT OF DOLLARS OF GRANT FUNDS REQUESTED: \$80 million

## DUNS NUMBER (WWW.DNB.COM):

NEW HAMPSHIRE	80-859-1697
MAINE	80-904-5966

Link To NHDOT Web Page For Application

[HTTP://WWW.NH.GOV/DOT/PROJECTS/PORTSMOUTHKITTEY/INDEX.HTM](http://www.nh.gov/dot/projects/portsmouthkittery/index.htm)

# Piscataqua River Bi-State Multimodal Transportation Improvements

## OVERVIEW

The Maine Department of Transportation (MaineDOT) and the New Hampshire Department of Transportation (NHDOT) jointly submit Part A of this application requesting \$70 million through the Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants program. This grant application addresses the critical condition of the Memorial Bridge that carries US Route 1 over the Piscataqua River between New Hampshire and Maine. The application also includes supporting information on the Sarah Mildred Long Bridge that carries the US Route 1 Bypass over the Piscataqua River, which is also in critical need of repair and will be facilitated by the TIGER Grant for the Memorial Bridge. NHDOT submits Part B of this application requesting \$10 million in TIGER Grant funds for the main wharf at the Market Street Marine Terminal on the Piscataqua River. The TIGER Grant total funding request of \$80 million will contribute to the overall area improvements valued at approximately \$160 million. The overall area improvements will:

- Address significant deficiencies in the regional transportation system by addressing two structurally and functionally deficient vertical lift bridges over a crucial transportation waterway.
- Ensure continued economic and cultural vitality of the bi-state seacoast region by addressing these two historic bridge structures located within tourist oriented businesses and downtown areas.
- Provide/create jobs in this region for the entire duration of construction activities (4 to 5 years).
- Enhance national security through improved services to the Portsmouth Naval Shipyard for rail deliveries and marine support activities.
- Serve the long-term mobility needs for pedestrians, bicyclists, vehicles, trucks, rail, and river vessels (private and commercial) in the Portsmouth-Kittery region by providing safe and dependable bridge operation for all users and modes of travel.
- Enhance the livability of these two communities through a reliable and efficient transportation system.

Maine and New Hampshire believe this application meets the criteria for the TIGER Grant program and further, that it represents the type of project envisioned when the ARRA legislation was passed by Congress and signed into law by the President. It is a unique and truly multimodal application, addressing the Memorial Bridge (vehicular, pedestrian, and bicycle traffic). Receipt of TIGER Grant funds will also allow both states to focus near term future funding (2013) toward addressing the needs of the Sarah Mildred Long Bridge (vehicular and rail traffic) that would otherwise not have been possible. Further, NHDOT believes, the Market Street Marine Terminal (river vessels) also meets the TIGER criteria and furthers the Memorial Bridge rehabilitation efforts.

The grant application is structured in two parts in recognition of the jurisdictional boundaries involved, described as follows:

**Part “A” – Rehabilitation of the Memorial Bridge.** (jointly requested and supported by the Maine and New Hampshire Departments of Transportation)

At its opening in 1923, this vertical lift movable bridge was dedicated as the official state memorial to World War I servicemen. At that time, it served as the only local connection between the downtown areas of Portsmouth, NH, and Kittery, ME. It is now structurally deficient and its load capacity was reduced to 10-Tons in August 2009. This application requests TIGER Discretionary Grant program funds for the complete rehabilitation of this structure. The Memorial Bridge still remains as the only river crossing for pedestrians and bicyclists in this region. Contract plans for its rehabilitation based on the 2003 bridge inspection report have already been developed but will require adjusting to be ready to advertise for construction bids.

Also included in Part “A” is a commitment from both states to address the needs of the Sarah Mildred Long Bridge. This vertical lift movable bridge was opened in 1940 as a toll bridge on the US Route 1 Bypass, built to supplement the transportation network that was developing between these seaport communities. Upon completion of the nearby I-95 High-Level Bridge crossing of the Piscataqua River in 1970, the tolls were removed and the Sarah Mildred Long Bridge was retained as a secondary connector for these communities. In addition, it provides a connection for rail service linking the two states and providing rail transport in support of the adjacent Portsmouth Naval Shipyard, located in Kittery, ME. This bridge is also in urgent need of repair and its load capacity was reduced to 20-Tons in July 2009. The Sarah Mildred Long Bridge is also a priority for MaineDOT and NHDOT.

# Piscataqua River Bi-State Multimodal Transportation Improvements

Improvements to the Sarah Mildred Long Bridge and the Memorial Bridge are integral parts of the transportation system in terms of traffic control, constructability, funding, and overall functioning. Both crossings contribute to the economies and prosperity of the two communities and the surrounding seacoast region.

The Memorial Bridge and the Sarah Mildred Long Bridge are eligible for listing in the National Register of Historic Places and contribute greatly to the cultural and historic fabric of the seacoast region. The safe and dependable operation of these complex structures is critical to the efficient movement of marine traffic to and from the active Marine Terminal and other ports along the river, while also providing connectivity for the regional transportation system between the two states and the seacoast communities of Portsmouth, NH, and Kittery, ME. Due to the age and deteriorated condition of both bridges, neither state is able to fund the needed improvements within their respective transportation programs and funds.

**Part “B” – Rehabilitation and expansion of the Market Street Marine Terminal located in Portsmouth, NH.** (requested and supported by the New Hampshire Department of Transportation)

This port facility also has rail service and supports marine vessels delivering cargo to various nearby businesses, in addition to supporting tourist related services. It is truly an important part of the active working port area. Its expansion will facilitate the adjacent bridge reconstruction efforts by providing a staging and assembly area, while also updating its infrastructure to better serve the needs of modern marine transport activities. These improvements also present the opportunity for increased commercial activity, thereby enhancing the economic vitality of the region.

## MEMORIAL BRIDGE AND SARAH MILDRED LONG BRIDGE – PART A INTRODUCTION

Rehabilitation of the Memorial Bridge is required to address the severe deterioration of this historic structure across the Piscataqua River, and continue its use serving vehicle, bicycle, and pedestrian traffic now and into the future. It is the most viable crossing of the river in support of pedestrian traffic. According to the latest detailed bridge inspection, conducted in the summer of 2009, without extensive rehabilitation, the Memorial Bridge will soon (estimated between 1 to 4 years) have to be closed. The planned rehabilitation effort for the Memorial Bridge is considered “shovel ready” with all environmental documents completed and all approvals received, with likely plan revisions necessary based on the recently completed detailed bridge inspection. Design modifications required, based on the recently updated bridge inspection, will be approved and incorporated by working with stakeholders as necessary to assure bid-readiness by February 2010.



*Aerial view of Memorial Bridge  
(looking east with Portsmouth Naval Shipyard in background)*



# Piscataqua River Bi-State Multimodal Transportation Improvements

MaineDOT and NHDOT are committed to addressing the deficiencies of the Sarah Mildred Long Bridge and have agreed to seek funding through their respective Highway/Bridge programs<sup>1</sup> after the Memorial Bridge rehabilitation is completed (summer 2012), pending the outcome of the ME-NH Connections Study (see description below) currently underway. However, investment in the Sarah Mildred Long Bridge must wait for completion of the Memorial Bridge work, as traffic analyses indicate that closure of both bridges simultaneously would result in adverse impacts to transportation. Award of TIGER Grant funds for the Memorial Bridge allows both Maine and New Hampshire to dedicate limited resources to addressing the needs of the Sarah Mildred Long Bridge. For this reason, both bridges are included in the discussion and analysis of this TIGER Grant program application.

## ME-NH Connections Study

Based on a bi-state agreement (See Appendix C for copy), signed in December 2008, the Maine-NH “Connections Study” (<http://www.maine-nhconnections.org/index.php>) has been tasked with identifying the long-term multimodal transportation needs of the area and evaluating the transportation alternatives that best address those needs for crossing between Portsmouth, New Hampshire, and Kittery, Maine. The “Connections Study” is evaluating transportation issues pertaining to the three existing bridges (Memorial Bridge/US Route 1; Sarah Mildred Long Bridge/US Route 1 Bypass; and the I-95 High-Level Bridge) over the Piscataqua River.

## DESCRIPTION

### MEMORIAL BRIDGE

The Memorial Bridge was the first major “vertical lift” bridge in the eastern United States, and for more than 86 years, it has been a sturdy and dramatic landmark for these seacoast communities. Spanning the Piscataqua River, a tidal transportation waterway for ocean going and river vessels, it connects the historic coastal City of Portsmouth, New Hampshire, and the Town of Kittery, Maine. For generations, the bridge has carried automobiles, trucks, and emergency vehicles along coastal US Route 1, and its wood-floored walkways still provide the only pedestrian and cycling link between two communities steeped in history. The bridge walkways provide an opportunity to observe the working waterfront of both NH and ME, and activities involving lobster boats, barges delivering road salt at the Marine Terminal, submarines at the Portsmouth Naval Shipyard, restaurants, historic Prescott Park, recreational and commercial watercraft, and guided tour boats. Many local residents also use this crossing to commute, either on foot, by bicycle, or by private vehicle, to the Portsmouth Naval Shipyard, located in Kittery, Maine.

The Memorial Bridge is eligible for listing on the National Register of Historic Places and has been cited by the National Trust for Historic Preservation (<http://www.preservationnation.org/travel-and-sites/sites/northeast-region/memorial-bridge.html>) as one of its America’s “11 Most Endangered Historic Places for 2009.” The Memorial Bridge contributes significantly to the historic character of downtown Portsmouth and Kittery.

As previously noted, the Memorial Bridge is the only existing crossing of the Piscataqua River for pedestrians and bicyclists in the greater seacoast region. If this crossing was not available, the closest alternate route for pedestrians and bicyclists is more than 22 miles in length (assuming bicycle and pedestrian facilities are not added to the 2,798 foot long Sarah Mildred Long Bridge). Even if either of the other two crossings (Sarah Mildred Long Bridge or the I-95 High-Level Bridge) were outfitted with sidewalks, pedestrian traffic would be all but eliminated due to the additional distance pedestrians would traverse to reach either of these bridges. The ME-NH Connections Study completed a bike/pedestrian origin and destination survey, and counted over 600 pedestrians and 300 bicyclists used this crossing on a recent summer day.

The Memorial Bridge, the first major vertical lift bridge in the eastern United States, was designed by J. A. L. Waddell (1854-1938), one of the world’s preeminent bridge designers, the developer of vertical lift bridges in the United States, and the holder of patents on most aspects on the operation of lift bridges. At its dedication in 1923, it had the longest lift span in the country (297 feet), making it the direct prototype for later vertical lift bridges with clear spans of over 300 feet. Today, the Memorial Bridge is one of the oldest operational lift bridges in the United States, but its continued safe operation is at risk.

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<sup>1</sup>FFY 2012-2013 funding cycle

## Piscataqua River Bi-State Multimodal Transportation Improvements

The bridge consists of three steel through-truss spans which total 900 feet in length, including the main channel vertical lift span. The lift span consists of a steel through-truss span and two steel truss towers that extend 200 feet above the river channel. The bridge operator's house, located on the lift span, rises with the bridge and contains most of the operating machinery and equipment. The gate tenders' booths are adjacent to either end of the lift span on the west side of the roadway. The curb-to-curb width on the bridge is 28 feet, with one 14-foot travel lane in each direction and 6-foot sidewalks cantilevered on both sides of the bridge. The existing open steel grating that provides the deck surface for the vertical lift span requires cyclists to walk their bicycles over the bridge on the sidewalks, for safety reasons.

The Memorial Bridge is the NHDOT's # 1 bridge priority. It is structurally deficient and functionally obsolete, has a Federal Sufficiency Rating of 6 (of 100), and currently has a weight limit restriction of 10-tons. The superstructure of the Memorial Bridge is currently in *Serious Condition*, as defined in the FHWA condition rating guidelines, due to severe corrosion and loss of steel section in the floor system and trusses. The floor system has also sustained significant section loss at downspout locations, at areas adjacent to floorbeam end connections, and where the sidewalk cantilever supports are connected to the floor system. Bottom chord gusset plates on all spans, lift tower gusset plates on both lift towers, and the bottom chord members of the lift span have all sustained severe section loss. (See Appendix E for more bridge inspection photos.)

The Memorial Bridge provides a timber sidewalk for pedestrian use, a steel grid deck for vehicular traffic on the lift span, and reinforced concrete decks for vehicular traffic on the fixed approach truss spans. The concrete decks are in generally poor condition and need complete replacement.

The substructure is currently in *Satisfactory Condition* and will be retained/rehabilitated as part of this project. Timber cribbing around the piers is in poor condition, and will need to be replaced.

Between 2005 and 2008, the DOTs of Maine and NH, with much public input, jointly developed contract plans and documents for a major rehabilitation of the Memorial Bridge. This process ultimately resulted in the decision to completely replace the lift span and all mechanical and electrical components associated with its operation, in addition to the extensive rehabilitation of the fixed approach truss spans and the lift towers. The project also included replacement of the Scott Avenue Bridge, a Portsmouth city-owned structure that provides the southern approach to the bridge, and work on the Kittery northern approach bridge.

Upon completion of the required federal environmental documents, construction plans and specifications, and the development of a Memorandum of Agreement between the two states, the project was advertised for construction bids on July 29, 2008. Project bids were more than \$15 million over the construction estimate of \$44 million, with the "A" Bidder at \$59 million and the "B" Bidder at \$70 million. Due to the financial constraints of the two DOTs, the contract was not awarded. After the bids were rejected, both States signed a Cooperative Agreement to complete a Connections Study to further evaluate the transportation needs and connections between Portsmouth and Kittery.



**Corrosion of Steel Members on lift span**

As part of the cooperative agreement and in support of the ME-NH Connections Study, inspection of the Memorial Bridge was completed during the summer of 2009 to determine the current load capacity of the bridge for vehicular traffic and whether the plans developed for the previously advertised project (based on 2003 inspection data) were still valid. Continued deterioration of the structural members was identified, resulting in the weight limit reduction from

## Piscataqua River Bi-State Multimodal Transportation Improvements

20-Tons to 10-Tons. The Maine and New Hampshire DOTs, both state FHWA Divisions, and both State Historic Preservation Offices (SHPOs) will review the 2009 detailed inspection results, expected in late September, to determine the extent of additional deterioration and the level of plan modification and rehabilitation required. This data will be compared with the prior rehabilitation plans, with the goal of retaining as much of the existing historic structure as is prudent and feasible. Changes to the plan set to address additional deterioration will be evaluated and corresponding National Environmental Policy Act (NEPA) documentation will be revised and processed as needed. Throughout this process, coordination with the SHPOs and other cultural resource partners will continue. The additional work required to address newly identified deterioration is anticipated to increase the cost of the previously planned rehabilitation to approximately \$80 million. This re-evaluation effort will be undertaken by the two States and affected partners concurrently with USDOT's review of this TIGER Grant application to ensure that, if selected, the project documents will be ready for advertisement in February 2010.

### SARAH MILDRED LONG BRIDGE

The Sarah Mildred Long Bridge, like the Memorial Bridge, is an important part of the regional transportation system. Built in 1940, it provides for both vehicular and railroad traffic crossing the Piscataqua River between Portsmouth and Kittery, and is a critical link for workers commuting between these two communities and to the Portsmouth Naval Shipyard. In addition, this bridge is part of an important transportation corridor for the transport of heavy freight between Maine and New Hampshire, and for servicing heavy trucks at commercial service stations along the US Route 1 Bypass. This bridge also serves as the crossing point of the Piscataqua River for emergency evacuations from the Portsmouth Naval Shipyard and for emergency response vehicles between Kittery, Maine, the Portsmouth Naval Shipyard, and Portsmouth, NH, through their mutual aid system.



*Sarah Mildred Long Bridge  
(looking south with Market Street Marine Terminal facility visible through bridge opening)  
(Note the rail line located within the deck truss of the bridge)*

The Sarah Mildred Long Bridge also supports an important national defense role by providing the necessary rail crossing of the Piscataqua River for deliveries to the Portsmouth Naval Shipyard. The Shipyard performs overhaul, repair, and modernization of LOS ANGELES Class nuclear submarines for the US Navy and is the future repair site of the new VIRGINIA Class submarine. The rail line on the Sarah Mildred Long Bridge is used to transport nuclear fuel and related components to and from the Portsmouth Naval Shipyard.



## Piscataqua River Bi-State Multimodal Transportation Improvements

An inspection of the Sarah Mildred Long Bridge was also completed during the summer of 2009. This inspection identified the extent of deterioration of the structural members and was the basis for the current 20-Ton weight limit.



The two DOTs are currently studying options under the ME-NH Connections Study to address the Sarah Mildred Long Bridge. Once this effort is completed, a preferred alternative will be determined and the contract documents will be developed. Both DOTs are committed to seeking funding for this effort in the next funding cycle (Federal Fiscal Year 2012-2013). Eliminating the Sarah Mildred Long Bridge and Memorial Bridge crossings concurrently for any reason could have a severe adverse impact on the local traffic and economy. For that reason, the improvements to the Sarah Mildred Long Bridge would be scheduled to be undertaken only after the Memorial Bridge work has been completed and opened to traffic.

### ***Deteriorated connection detail***

The Sarah Mildred Long Bridge is in poor condition, is structurally deficient and functionally obsolete, and has a Federal Sufficiency Rating of 5 (of 100). The structure has considerable deterioration and loss of steel section in isolated areas in the truss and approach spans, including members located beneath downspouts and deck joints. The increase in section loss since the previous inspection necessitated the recent 20-Tons load restriction on the Sarah Mildred Long Bridge. There is also significant spalling from the underside of the reinforced concrete deck, which presents a hazard to marine traffic passing underneath. The bridge railing is severely deteriorated, with loss of section, heavy rust, and corrosion, and does not meet current criteria for bridge rail.



### ***Deteriorated bridge rail***

The reduced capacity of the railing and the formation of sharp edges due to corrosion are a potential hazard to the gate tenders and maintenance crews that maintain the bridge.

Being faced with two major bridge projects at essentially the same time, presents a significant financial challenge for the Transportation Departments of the two states. Applying TIGER funds to the Memorial Bridge rehabilitation will enable New Hampshire and Maine to jointly focus limited resources and as a result, accomplish the improvements to the Sarah Mildred Long Bridge. Essentially, receipt of TIGER Grant funds will have a great impact on the states' transportation programs, and thereby facilitate the timely investment to the Sarah Mildred Long Bridge that is not currently possible without this funding source.

## **CURRENT TRAFFIC**

There are three bridges that span the Piscataqua River in the Portsmouth-Kittery area and accommodate vehicular traffic: the Memorial Bridge for US Route 1; the Sarah Mildred Long Bridge for the US Route 1 Bypass; and, the I-95 High-Level Bridge for the Interstate highway system.

Currently, the average summer weekday daily traffic volume on the Memorial Bridge is approximately 12,100 vehicles per day. Cars account for 11,750 (97%) of the vehicles, and the remainder is light trucks only, due to the 10 Ton weight limit. Approximately 6% of the people crossing the Memorial Bridge on a weekday are pedestrians or cyclists.<sup>2</sup> The Memorial Bridge "opened" 4,023 times in calendar year 2008. Of these, 4% (161 lifts) were for maintenance, testing, or training purposes, and 77% (3,098 lifts) were required to provide a vertical clearance of 50 ft. or less, i.e., a partial lift of the movable span. The remaining lifts were required to accommodate large ocean-going delivery vessels. The time required completing a lift and reopening the bridge to traffic averaged 8.9 minutes.

<sup>2</sup> ME-NH Connection Study Traffic Volumes Summary Bullets



## Piscataqua River Bi-State Multimodal Transportation Improvements

The Sarah Mildred Long Bridge average summer weekday daily traffic volume is approximately 14,440 vehicles per day. Automobiles represent 13,100 (91%) of these vehicles, with the remainder being single and multi-unit trucks. Pedestrians and cyclists are prohibited from the Sarah Mildred Long Bridge as there are no sidewalks and access is limited to vehicular uses only on the bridge. The Sarah Mildred Long Bridge “opened” 3,178 times in calendar year 2008. Of these, 17% (540 lifts) were for maintenance, testing, or training purposes, and 68% (2,161 lifts) were required to provide a vertical clearance of 50 ft. or less, i.e., a partial lift of the movable span. The remaining lifts were required to accommodate large ocean-going delivery vessels. The time required completing a lift and reopening the bridge to traffic averaged 9.5 minutes.

The I-95 High-Level Bridge is a fixed span structure that provides 135 feet of vertical clearance over the navigational channel below. (The Memorial Bridge and Sarah Mildred Long Bridge are movable structures that have limited navigational clearance in their seated positions.) Average summer weekday daily traffic volume on the I-95 High-Level Bridge is approximately 89,870 vehicles per day. Pedestrians and bicyclists are prohibited from I-95 as it is a limited access facility and therefore, there are no sidewalks or any other means to accommodate non-vehicular uses of the bridge.

Non-vehicular traffic on the Memorial Bridge on a recent summer weekday, between 6:00 am and 8:00 pm, involved approximately 635 pedestrians and 335 bicyclists. The ME-NH Connections Study suggests that 37 percent of pedestrians and bicyclists who use the bridge on a weekday are commuting to and from work. If this bridge were closed, it is likely that these users would drive to work, since alternative routes for crossing the Piscataqua River (i.e., I-95 and Sarah Mildred Long) are not available for non-vehicular traffic, as noted above.

### GRANT FUNDS AND ADDITIONAL PROJECT FUNDS

This project addresses the deficiencies of the Memorial Bridge and the Sarah Mildred Long Bridge to provide long-term viability and reliability for the local transportation system. Although the critical need for TIGER Grant funds cannot be over-stated, it is important to note the funds already committed to this effort by both Maine and New Hampshire. Upon completion of the ME-NH Connections Study, NHDOT and MaineDOT together will have invested more than \$10 million in engineering services to determine the most prudent and feasible solution for addressing the current and future transportation needs of these two communities.

### COST ESTIMATE AND APPLICATION FUNDING

The Memorial Bridge rehabilitation, the goal of this TIGER Grant application, is estimated to cost \$80 million. Of this total, \$70 million is funded through the TIGER Grant, \$9.3 million is funded by New Hampshire state funds, and \$0.7 million is provided by the City of Portsmouth. These funds are combined to complete Part “A” of this overall transportation improvement project.

The Sarah Mildred Long Bridge project, if the rehabilitation option is selected, is estimated to cost \$70 million with funding provided through the Maine and New Hampshire state transportation programs. (See Appendix F for more discussion of the possible options associated with the Sarah Mildred Long Bridge project; for purposes of benefit cost analysis, the rehabilitation provides the most conservative benefit.) Receipt of TIGER Grant funds will support and facilitate pursuit of state program funds. The overall estimated costs to address the bridges are summarized below.

**Table 1 – Application Funding by Source and Category in Millions of Dollars**

<b>PART “A” (NH &amp; ME)</b>	<b>TIGER *</b>	<b>FHWA Funds</b>	<b>State of ME</b>	<b>State of NH</b>	<b>City of Portsmouth</b>	<b>Total</b>
<b>Memorial Bridge</b>	\$70			\$9.3	\$0.7	\$80
<b>Sarah Mildred Long Bridge</b>		\$56	\$7 (state match of FHWA funds)	\$7 (state match of FHWA funds)		\$70**
<b>Total Project Costs</b>	\$70	\$56	\$7	\$16.3	\$0.7	\$150

\*Total TIGER amount requested is \$70 million for Part A and \$10 million for Part B (NH only).

\*\* Included here for reference only

Because the two states have committed to seek future funding for the Sarah Mildred Long Bridge, the TIGER Grant funding request of \$70 million represents less than half (47%) of the funding necessary to complete Part A.

# Piscataqua River Bi-State Multimodal Transportation Improvements

## JOB CREATION AND ECONOMIC STIMULUS

Investment in the bridges' infrastructure improvements is anticipated to produce significant near-term economic stimulus and job creation benefits in the Portsmouth-Kittery region. The construction activity will provide a variety of construction, manufacturing, and other job opportunities supporting industry and labor income with most, if not all, project expenditures supplied domestically.

Rehabilitating the Memorial Bridge, including the New Hampshire and Maine approach spans, is estimated at \$80 million. Improvements to the Sarah Mildred Long Bridge, estimated at \$70 million for a rehabilitation scope and using non-TIGER Grant funds, will also provide additional jobs in this region after completion of the Memorial Bridge efforts, thereby extending the economic stimulus of this region that was made possible by the TIGER funds.

### JOB CREATION

The Council of Economic Advisors provides an estimate of one job created or saved per \$92,136 of government spending from ARRA. Using the CEA method and assuming an overall project expenditure of \$150 million, it is estimated that 1,628 jobs will be created, directly or indirectly, by the construction investment in the bridges rehabilitated by this project.

Direct on-site labor associated with the Memorial Bridge is projected to total 198 employees. The following table breaks down these labor requirements by construction element. Most of these employees are directly related to the construction work of the bridge or are involved in the engineering services. Additional direct off-site jobs to subcontractors and suppliers of steel, concrete, and electrical and mechanical equipment for the lift bridges are estimated to add another 61 jobs over the course of the project with significant potential for indirect and induced multiplier effects.

<b>Memorial Bridge</b>	<b>Direct Jobs</b>
Scott Avenue Bridge	7
Fixed Truss Deck Replacement	7
Kittery Approach Spans	7
Fixed Span Structural Repairs	16
Control and Plaques	16
Float-Out Prep and Float-Out	16
Lift Span Mechanical Work	16
Tower Rehabilitation	16
Fabricate and Assemble Lift Span Offsite	20
Paint Fixed Spans	9
Paint Towers	9
Float-In	16
Electrical Work	6
Road Work	37
<b>Total</b>	<b>198</b>

Similarly, direct labor associated with the Sarah Mildred Long Bridge totals 160 jobs. These jobs are directly related to the construction work of the bridge or are involved in the engineering services.

Although creation of these jobs will be delayed until the Memorial Bridge rehabilitation is completed, it is important to note that the jobs created for the Sarah Mildred Long Bridge investment will extend the economic recovery of the region that was initiated by the TIGER Grant funds for the Memorial Bridge. A total of 358 jobs will be created directly as a result of these two bridge projects.

Most of the jobs directly associated with these projects will be in construction-related industries. Higher paying jobs are often more desirable for communities as they generate a greater amount of additional taxes and consumption of local goods and services. At the same time, lower paying wages may be beneficial for communities with a greater proportion of unemployed or non-professional workers. Construction employment may benefit many individuals in these more economically disadvantaged populations, with secondary benefits to the local businesses and communities.

# Piscataqua River Bi-State Multimodal Transportation Improvements

## ECONOMIC DISTRESS AND OPPORTUNITIES

The study region has been reshaped considerably in the past few decades. It has transitioned from a region with a strong military presence to a more civilian-oriented area. In 1990, when Pease Air Force Base closed, nearly 20 percent of the local population lived on the base and its closure resulted in their transfer. In addition, the Portsmouth Naval Shipyard employed 25,000 civilian men and women during World War II at the height of its operation. Since then, employment at the shipyard has continued to decrease to the current level of 4,200 people. The changes in local employment opportunities were difficult for Portsmouth and Kittery to absorb. The existence of a strong transportation infrastructure linking communities, states, local businesses, and the world in general, has helped facilitate this transformation.

The federal Economically Distressed Area designation criteria are not met at the county-level for the Portsmouth, New Hampshire-Kittery, Maine, region. The area, however, has been undergoing a significant economic transition in the past few decades as noted above. Below are some indicators of local economic distress:

- The City of Portsmouth experienced slower employment growth from 1998 to 2008 than the United States. The U.S. employment growth rate for that period was 10.6%. For Portsmouth, employment growth was 4.6%, half the national rate.
- Portsmouth's population has decreased 1.8% over the past eight years. During this same period, the U.S. population has grown nearly 8% (see Figure 1).

## PROJECT SCHEDULE

With approval of this application, the project schedule is planned as follows (See Appendix B for additional details):

### MEMORIAL BRIDGE – CONTRACT SCHEDULE

- January 2010 – Receive notification of approval of TIGER funds
- February 9, 2010 – Advertise Memorial Bridge rehabilitation contract for construction bids
- May 2010 – Award contract; order mechanical, electrical, and structural components
- June 2010 – Remove lift span; begin fabrication, delivery, and assembly of new lift span (at contractor option may be assembled at nearby Market Street Marine Terminal main wharf)
- June 2010 – October 2010 – Rehabilitate fixed approach span trusses, Kittery approach spans, and replace the Portsmouth Scott Avenue approach bridge
- November 2010 – February 2011 – Winter shutdown (assumed - contractor option)
- March 2011 – October 2011 - Resume work and continue all rehabilitation activities
- November 2011 – February 2012 – Winter shutdown (assumed - contractor option) (\$72 million of the \$80 million contracted will be expended by February 2012)
- March 2012 – July 2012 - Resume work and continue all rehabilitation activities; install/test new lift span
- July 2012 – Project complete, Memorial Bridge re-opened

### SARAH MILDRED LONG BRIDGE – ESTIMATED CONTRACT SCHEDULE

- January 2013 (or later) – Advertise Sarah Mildred Long Bridge contract for construction bids
- April 2013 – October 2013 - Award contract, order necessary materials, begin all work on main spans and NH & ME approach spans
- November 2013 – February 2014 – Winter shutdown (assumed - contractor option)
- March 2014 – October 2014 - Resume work and continue contracted activities
- November 2014 – Project complete, Sarah Mildred Long Bridge re-opened

# Piscataqua River Bi-State Multimodal Transportation Improvements

## LONG TERM OUTCOMES

A strong multimodal transportation system promotes economic viability and ultimately results in more livable communities utilizing that system. Transportation projects have the dual benefit of directly supporting jobs during construction, in addition to supporting the regional and local economics through improved movement of goods, services, and people. Deficient links in transportation system infrastructure restrict travel and can significantly impact a region's economic growth and safety. Ensuring that transportation infrastructure is in a state of good repair is a critical element in providing opportunities for economic competitiveness and viable economic growth. The proposed rehabilitation of the Memorial Bridge, and improvement efforts for the Sarah Mildred Long Bridge, help restore the ability of these communities to remain competitive, and promotes sustainable economic growth for the region.

## STATE OF GOOD REPAIR

### Current Condition

As previously stated, the Memorial and Sarah Mildred Long Bridges are in desperate need of investment if they are to maintain the level of service for transportation that is available to this region. Both bridges are structurally deficient and functionally obsolete, have nearly reached the end of their effective service lives, and currently have weight restrictions of 10-Tons and 20-Tons for the Memorial Bridge and the Sarah Mildred Long Bridge, respectively, due to their severely deteriorated condition. Significant investment is needed to address their deficiencies, if they are to continue to provide safe and dependable service to the public. However, the costs associated with the needed improvements are beyond the current financial resources available to the two states through standard transportation funding programs.

### Operating and Maintenance Costs

The Memorial Bridge will need to be closed in the near future (1 to 4 years estimated with 2012 used for analysis), if necessary work is not completed. If the bridge is closed, and the lift span will be placed in the raised position, then the US Coast Guard will eventually require the lift span to be removed as a safety measure for shipping. This, obviously, has a detrimental effect on all local traffic, be it pedestrians, bicyclists, passenger vehicles, trucks, or emergency response vehicles. If the bridge is fully rehabilitated as proposed, annual operating and maintenance costs are estimated to be \$1.05 million (2009 dollars). This estimate is derived from past and present operating and maintenance costs for the Memorial Bridge, with a significant portion of these costs associated with labor expenses required to keep the bridge operational and reliable.

The Sarah Mildred Long Bridge, unlike the Memorial Bridge, presents an opportunity to perform interim repairs that would potentially slow the structural deterioration and keep the bridge functioning at its current 20-Ton posting for a few more years. It is estimated that \$3 million is required in the near term to complete necessary repairs to the structural components to keep the Sarah Mildred Long Bridge fully functional, and thereby avoid a more severe weight restriction, until the preferred alternative can be implemented. Contracted maintenance activities will also be necessary, at an estimated cost of \$300,000 annually (2009 dollars). This cost is estimated to escalate at a rate of 15% each year between subsequent contracted maintenance repairs, which will be required every five years. By 2017, the contracted repairs will cost \$5 million, and will increase \$1 million dollars every five years through the 50-year life of the bridge. However, once the bridge is improved, it is anticipated that the bridge will require \$100,000 annually in maintenance costs, considerably less than those estimated for the bridge in its current condition.

## ECONOMIC COMPETITIVENESS

The Memorial Bridge and US Route 1 connect the commercial hearts of Portsmouth and Kittery. In addition to numerous commercial and retail establishments, historic Strawberry Banke, Prescott Park, and numerous other historic and cultural attractions in both states are located in close proximity to the bridge, which attract tourists and local residents alike. Closing the Memorial Bridge will negatively impact both residents and visitors in the area who are now able to walk between Portsmouth and Kittery, and who support the merchants and attractions in both states. Studies show that heritage tourism and other cultural attractions create a \$38.18 million industry in the Portsmouth seacoast area, one that supports 1,161 full-time jobs and generates \$4.38 million in local and state government revenue [http://www.art-speak.org/uploads/PortsmouthSeacoastArea\\_PamphletInsert.pdf](http://www.art-speak.org/uploads/PortsmouthSeacoastArea_PamphletInsert.pdf)

According to the ME-NH Connections Study, 37% of pedestrians and bicyclists crossing the Memorial Bridge on a weekday are commuting to or from work. Again, closure of the Memorial Bridge would have a substantial impact to these bridge users forcing them to drive to work over much longer distances and at greater cost.



# Piscataqua River Bi-State Multimodal Transportation Improvements

The continued weight restrictions on the Sarah Mildred Long Bridge will reduce the number of trucks using the US Route 1 Bypass to accomplish their deliveries. Businesses located along US Route 1 Bypass that provide services and products in support of the trucking industry are also adversely impacted by the current weight restrictions to this bridge and further restrictions will become increasingly difficult for these businesses.

## LIVABILITY

### Portsmouth and Kittery Connectivity

Livability and community cohesion go hand in hand. The quality of relationships among people in a community, as indicated by the frequency of positive interactions, the number of neighborhood friends and acquaintances, and one's sense of community connection, is a significant indicator of a region's livability. The City of Portsmouth and the Town of Kittery both have vibrant downtown areas and well-established neighborhoods. The Memorial and Sarah Mildred Long Bridges connect these communities and contribute to their overall livability by linking the downtown areas, businesses, organizations, civic groups, and individuals. In addition to numerous restaurants and retail establishments, considerable historic character is present within these communities. Strawberry Banke, Prescott Park, and many other historical sites, are all located in close proximity to the bridge. These cultural elements, of which the Memorial and Sarah Mildred Long Bridges are part, all combine to form the historic fabric of these seacoast communities. Should the Memorial Bridge be closed, residents and visitors in the area who are now able to walk, bike, or drive between Portsmouth and Kittery will be severely impacted, and ultimately the livability and the economies of these two communities and the region will be diminished dramatically.

### Community Health and Safety

Memorial Bridge is the only crossing of the Piscataqua River that accommodates pedestrians and bicyclists, whether traveling for work, recreation, or entertainment. Both New Hampshire and Maine designate the Memorial Bridge as part of their State Bicycle Routes, and it is the Maine-New Hampshire link in the 2,500 mile East Coast Greenway. Closure of the Memorial Bridge due to its continued deterioration would result in a 22-mile detour for bicyclists trying to cross between Maine and New Hampshire. Furthermore, according to the ME-NH Connections Study, 37% of pedestrians and bicyclists who use Memorial Bridge during the week do so to get to work. Closure of the bridge would eliminate the opportunity to walk or bike, instead of drive, thereby reducing the transportation options available to the residents and businesses in the Portsmouth-Kittery area.

The proposed bridge rehabilitation project will maintain the current level of pedestrian and bicycle traffic, and likely increase it with improvements to the pathways for bicyclists and pedestrians on the bridge. Currently, bicyclists are required to walk their bikes on the sidewalk, due to the open steel grate bridge deck, instead of riding across the lift span. Some bicyclists do not heed this warning, which increases danger to themselves and the motorists with whom they share the roadway. One of the proposed safety improvements to the Memorial Bridge is a solid deck on the lift span, which will enhance bicyclist and motorist safety whenever they share the bridge.

The Sarah Mildred Long Bridge provides critical service for workers commuting to the Portsmouth Naval Shipyard, one of four remaining naval shipyards in the nation. The shipyard employs approximately 4,200 civilians in addition to the 89 naval officers and enlisted personnel assigned to the Portsmouth Naval Shipyard.

### Travel Time

Easy access to work, recreational activities, and local businesses contributes to the livability of a community. While travel time for vehicle drivers is likely to increase temporarily while the bridges are being improved, it will be reduced after construction of the Memorial Bridge and Sarah Mildred Long Bridge is complete.

## SUSTAINABILITY

Promoting a more environmentally sustainable transportation system is an important goal in any infrastructure improvement program. Investment in these bridges, as opposed to potentially closing the bridges, will provide measurable reductions in vehicle emissions, improve energy efficiency, and provide other environmental benefits to the Portsmouth-Kittery region.

# Piscataqua River Bi-State Multimodal Transportation Improvements

## Vehicle Traffic Congestion

The Memorial Bridge and Sarah Mildred Long Bridge provide alternatives to I-95 for those individuals traveling more locally between Portsmouth and Kittery. Closure of either bridge would increase vehicular traffic on I-95, a transportation corridor that serves nearly 90,000 vehicles per day and is already congested.

Due to the recently imposed weight restrictions on the Memorial and Sarah Mildred Long Bridges, truck traffic is being detoured onto I-95. Improvement of these two structures to carry full legal loads and to eliminate the weight restrictions would restore a more balanced flow of traffic, thereby helping to reduce travel time, emissions, and overall congestion in the region.

## Pedestrian and Bicycle Traffic

The Memorial Bridge offers a healthy alternative to vehicle travel by providing pedestrians and bicyclists a local crossing of the Piscataqua River between Portsmouth and Kittery. In the absence of this alternative, those travelers would likely have to drive, as alternative routes are significantly longer. Some bicyclists and pedestrians would no longer cross the river.

## SAFETY AND SECURITY

### Portsmouth Naval Shipyard

The Portsmouth Naval Shipyard, located in Kittery, is one of four remaining shipyards in the US, occupying the 297 acres of federally owned Seavey Island. The Portsmouth Naval Shipyard performs overhaul, repair, and modernization of LOS ANGELES Class nuclear submarines for the US Navy and is the future repair site of the new VIRGINIA Class submarine. The Memorial and Sarah Mildred Long Bridges together provide pedestrian, bicycle, vehicular, and rail access between the Shipyard in Kittery and the City of Portsmouth.

In terms of national defense, the Sarah Mildred Long Bridge is utilized for rail freight deliveries to the Portsmouth Naval Shipyard via the rail line located under the roadway of the bridge. This is the only route to this critical national defense facility via rail. Heavy freight, including spent nuclear fuel, is transported across this bridge by rail to and from the Portsmouth Naval Shipyard. Temporary repairs and speed restrictions are in place on the Sarah Mildred Long rail line to temporarily accommodate these rail shipments.

### Evacuation and Emergency Routes

The Memorial and Sarah Mildred Long Bridges enhance the delivery of important safety services to the region. They are both key elements of planned evacuation routes for the State of Maine Emergency Management Administration and for the Seabrook Nuclear Power Plant, located in Seabrook, NH. Additionally, Emergency Response Services for Kittery and Portsmouth currently use both bridges when responding to emergency situations.

The Sarah Mildred Long Bridge also provides an important alternative route for I-95 traffic whenever an incident occurs on the I-95 High-Level Bridge that necessitates traffic restrictions or complete closure. If the Sarah Mildred Long Bridge and, less desirably, the Memorial Bridge, were to be unavailable, due to closure or weight restrictions, I-95 bridge traffic would be rerouted more than 20 miles to provide a detour that is capable of supporting legal traffic loads and anticipated Interstate traffic volume.

### Bridge Safety

The current Memorial Bridge lift span has an open steel grid deck as the roadway surface. This type of deck surface is an older design that is no longer specified for new construction due to safety hazards for both bicycle and vehicular traffic, and presents significant maintenance concerns. Currently, due to the open grate bridge deck, cyclists are required to walk their bicycles across the Memorial Bridge on the pedestrian sidewalk. The proposed rehabilitation would provide a new solid riding surface, thereby improving overall safety for bicyclists and the motorists with which they travel.

In addition, the Memorial and Sarah Mildred Long Bridges are both structurally deficient and functionally obsolete and each has severe weight restrictions, due to the significant structural deterioration that has occurred in both structures. This obviously creates a safety concern regarding their ability to provide continued service to bridge users while the deterioration continues. Without timely action to address all deficiencies, the Sarah Mildred Long Bridge will likely have further weight restrictions imposed, and the Memorial Bridge will likely be closed to vehicular traffic and eventually the lift span removed.

# Piscataqua River Bi-State Multimodal Transportation Improvements

## EVALUATION OF EXPECTED PROJECT COSTS AND BENEFITS

HDR Engineering and HLB Decision Economics, using methods and parameters consistent with US Department of Transportation guidelines, conducted the benefit/cost analysis. All benefits and costs in the analysis are estimated in 2009 dollars. The valuation of benefits uses a number of assumptions that are required to produce monetized values for non-pecuniary benefits. The different components of time, for instance, are monetized by using a “value of time” that is assumed to be equivalent to the user’s willingness to pay for “time savings” in transit. These, as with all other values used in the analysis, are taken from the United States Department of Transportation (USDOT) guidance on the preparation of TIGER applications. Where USDOT has not provided valuation guidance or a reference to guidance, standard industry practice has been applied. (See Appendix D for complete summary and backup information.)

### Benefit/Cost Results

**Project Benefits:** Six categories of benefits were measured for this analysis: 1) accident reductions; 2) emission reductions; 3) vehicle operating cost savings; 4) travel time savings; 5) pavement maintenance benefits; and; 6) walking/biking health benefits.

**Project Costs:** Costs include the initial capital construction costs as well as the operating and maintenance (O&M) costs for both the Memorial Bridge and Sarah Mildred Long Bridge.

The following principles guided the estimation of benefits and costs:

- Only incremental benefits and costs are measured.
  - Users include pedestrians, bicyclists, motorcyclists, automobile drivers, and truck drivers. In addition, the health benefits to those individuals who choose to walk or bike, instead of drive, were incorporated.
  - The incremental costs of implementation of the project include initial and recurring costs. Initial costs refer to the capital costs incurred for design and construction of the bridge work. Recurring costs include annual operating costs in addition to incremental maintenance expenses. Only additions in costs to the current operations and planned investments are considered in this analysis.
- Benefits and costs are valued at their opportunity costs.
  - The benefits stemming from the implementation of the transportation improvement are those above and beyond the benefits that could be obtained from the best transportation alternative.

Annual costs and benefits are computed over a long-run planning horizon and summarized through a lifecycle cost analysis. The bridge projects have a minimum useful life of 50 years.

The opportunity cost associated with the delayed consumption of benefits and the alternative uses of the capital for the implementation of the project is measured by the discount rate. All benefits and costs are discounted to reflect the opportunity costs of committing resources to the project. Calculated real discount rates are applied to all future costs and benefits as a representation of how the public sector evaluates investments. A 7% real discount rate is used in the analysis, with a sensitivity test at 3%.

Using the discount rate recommended in the TIGER Grant program guidance (7%), rehabilitation of the Memorial Bridge and investment in the Sarah Mildred Long Bridge, will result in:

- Total benefits of \$185 million in present value terms
- Total costs of \$123 million in present value terms
- Total net present value of \$62 million, with a benefit-cost ratio of 1.5.

For comparison purposes, the BCR was also calculated at a 3% discount rate, resulting in a BCR of 2.9 versus the 7% discount rate of 1.5.

## CAPITAL AND OPERATING COSTS

Capital construction costs for rehabilitation of the Memorial Bridge, estimated at \$80 million, will be encumbered in FFY 2010, FFY 2011, and FFY 2012, construction will be completed in July 2012, and the bridge reopened in summer 2012. If this project is unable to move forward due to the unavailability of funds, it is assumed for the cost analysis that the Memorial Bridge will close permanently in 2012 due to continued and increased structural deterioration. If this were to occur, the Bridge Operators/Gate Operators for the Memorial Bridge would be unemployed, resulting in the loss of 12 jobs.

# Piscataqua River Bi-State Multimodal Transportation Improvements

Work on the Sarah Mildred Long Bridge is anticipated to begin in FFY 2013, as determined by the recommendations of the ME-NH Connections Study and the success of both states in securing the required funding<sup>3</sup> for this project. The Sarah Mildred Long Bridge efforts will start only after the Memorial Bridge rehabilitation is complete and the bridge is reopened to traffic.

Current operating and maintenance costs for the bridges were compiled and then compared to the expected costs associated with operating and maintaining the bridges after construction. Standard maintenance, such as painting, steel repair, minor rehabilitation of electrical and mechanical work, and deck replacement, as well as annual maintenance costs, were incorporated into the benefit cost analysis.

## EVALUATION OF PROJECT PERFORMANCE

### Bridge Inspections

Once investments are complete, inspection of these bridge structures will be performed on a bi-annual basis as required for compliance with the National Bridge Inspection Standards. Bridge inspection reports will be evaluated to gauge project longevity and will be used to coordinate future maintenance and preservation efforts as needed. The success of the investment will be evaluated as part of this inspection process. In addition, maintenance personnel engaged in day-to-day operations of these lift bridges will also provide key input into this process. Their constant contact with and operation of these structures will provide keen insight into the success and performance of the bridge improvement efforts.

### Reporting

Both Maine and New Hampshire Departments of Transportation have successfully implemented significant American Recovery and Reinvestment Act programs since the ARRA legislation was approved in February of 2009. Monthly reporting of individual ARRA projects that detail project status and employment data, including payroll, number of employees on each project, and hours worked, are currently being collected and posted on respective state ARRA web pages. Similar information would be collected and reported for this project to document and evaluate economic and job creation performance.

### Labor Compliance Tracking

Labor compliance personnel are currently employed to communicate and prescribe practices and procedures required to effectuate the Equal Employment Opportunity (EEO) provisions for all federally funded contracts, in accordance with the Federal Highway Administration's Contractor Compliance requirements outlined in 23 CFR 230, Appendix A of Subpart C, Part I.

## ENVIRONMENTAL CONSIDERATIONS

On June 26, 2008, the Federal Highway Administration classified this "modified-replacement in-kind" construction project for the Memorial Bridge as Class II (Categorical Exclusion), pursuant to the National Environmental Policy Act (NEPA) of 1969. On July 18, 2008, the Advisory Council on Historic Preservation determined, with a fully executed Memorandum of Agreement among all parties, that the Section 106 process was completed. On July 31, 2008, the Federal Highway Administration approved the Section 4(f) evaluation and determined the project to be legally sufficient, pursuant to the US Department of Transportation Act of 1966, 49 USC 303(c), and Section 18(a) of the Federal-Aid Highway Act of 1968, 23 USC 138 (as amended by the Federal-Aid Highway Act of 1983). Please see Appendix G for existing documents related to environmental considerations.

This project was fully permitted through the NH Department of Environmental Services-Wetlands Bureau on July 7, 2008. In addition, the proposed work qualified for a Maine Natural Resources Protection Act Permit by Rule for bridges, which due to time restrictions of the permit-by-rule process had not been requested. As there are no impacts to either the Piscataqua River or to jurisdictional wetlands, the Army Corps of Engineers determined on May 16, 2007 that the project would not need an ACOE permit, pursuant to Section 404 of the Clean Water Act. The US Coast Guard determined that a bridge permit pursuant to the Rivers and Harbors Act of 1899 would not be required, but construction approvals would be necessary.

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<sup>3</sup> Estimated at \$70 million, based on the 2009 detailed bridge inspection for Sarah Mildred Long Bridge, see Appendix F



# Piscataqua River Bi-State Multimodal Transportation Improvements

The Memorial Bridge project was advertised for bids on July 29, 2008, however, the bids were rejected and the contract was not awarded due to unanticipated high bids. Therefore, the project was not advanced to construction and as a result, the Memorial Bridge was re-inspected to evaluate its current condition. This inspection report will be complete by September 30, 2009. Early indications show that continued deterioration of the structure will require additional rehabilitation. This issue has been discussed with appropriate resource agencies in both NH and Maine, along with the Federal Highway Administration in both states. Consultation will continue as the final plans are completed. Given the extensive coordination that has occurred to date, all parties feel strongly that any revisions to the plans and standing permits or approvals that come about as the result of the newest inspection, could be resolved in a timely manner.

## STATE AND LOCAL PLANNING

Projects to address the Memorial and Sarah Mildred Long bridges are included in the New Hampshire Department of Transportation's (NHDOT) current "Ten Year Transportation Improvement Plan." The Ten Year Plan places strong emphasis on addressing Red List bridges and the Memorial Bridge and Sarah Mildred Long Bridge are two of NH's highest priority bridges. The Ten Year Plan is revised every two years based on input from the Regional Planning Commissions, numerous public meetings throughout the State, and approval by the State Legislature. NH Governor Lynch signed the current Ten Year Plan into law on June 25, 2008. Both bridges are also included in NHDOT's current "Statewide Transportation Improvement Program" (STIP), which was approved on August 7, 2009.

Maine's portion of the Memorial Bridge rehabilitation project was included in the 2008-2009 biennial Capital Work Plan. When the bids were rejected, funds were reallocated to the ME-NH Connections Study and other high-priority bridge work in Maine. The goal of the ME-NH Connections Study is to identify appropriate solutions for both bridges, at which point funding would be sought to conduct needed work. Should this TIGER Grant application be successful, the scope of the Connections Study will be adjusted as needed.

A project to address the Sarah Mildred Long Bridge is included in the Maine Department of Transportation's current "Multimodal Six-Year Transportation Capital Improvement Plan State Fiscal Years 2010-2015". The Six Year Plan is a published document providing an opportunity for public comment on its content. Most capital projects funded by MaineDOT are drawn from the Six-Year Plan.

## PARTNERSHIP

One of the most telling signs of the importance of this project to the Portsmouth-Kittery region is the funding partnership that has been developed to enable the bridges to be repaired. Public and private organizations have committed their support to this project.

First, the States of Maine and New Hampshire are both committing significant funding towards this effort, with the Federal Highway Fund providing \$70 million of the project cost. Second, the State of NH is providing \$9.3 million in state funds. Third, the City of Portsmouth is providing \$0.7 million in funding. And fourth, other organizations have been created with the sole purpose of supporting the project and ensuring that it goes forward. To date, both states together have invested more than \$10 million in design and inspection work for these bridges.

This application enjoys widespread support from many stakeholders in these communities and among a great number of elected officials at all levels of state and local government. (See Appendix A for a complete list of support letters.) As has already been described, these bridges are critical to the region's economy, to maintaining an efficient transportation network between the two states, and to ensuring that the connectivity of the region is not diminished. Like many states in the country, the recent economic downturn has forced Maine and New Hampshire to significantly tighten their financial belts, and to make very difficult financial decisions. For this reason, these Federal Discretionary TIGER funds are vital to perform the necessary work on the bridges and the terminal.

It is for this reason the application enjoys such a broad array of support within the communities. They understand that the investment in this infrastructure is critically necessary and that neither state can afford to move forward with these projects without Federal assistance. Maine and New Hampshire believe this application meets the criteria for the TIGER grant program and that it also represents the kind of application that was envisioned, regarding jobs creation and economic stimulus, when ARRA was passed by the U.S. Congress and signed into law by the President.

# Piscataqua River Bi-State Multimodal Transportation Improvements

## MARKET STREET MARINE TERMINAL – PART B

### INTRODUCTION

NHDOT and the Pease Development Authority, Division of Ports and Harbors are requesting the second part of this grant application to be used for rehabilitation and expansion of the Market Street Marine Terminal main wharf located in Portsmouth, NH. The Marine Terminal's main wharf project is an integral part of the planned area improvements that will serve the transportation needs of the region. Of critical importance, the reconstruction of this marine terminal will also facilitate completion of the two bridge projects described in Part "A" by providing a staging location and construction access to the Piscataqua River and to the Memorial Bridge and Sarah Mildred Long Bridge sites. The Market Street Marine Terminal is located entirely within New Hampshire, but supports all marine services and activities in the area. Maine is submitting a separate application for TIGER funding for its ports.

Rehabilitation and expansion of the Marine Terminal main wharf is designed to increase operational opportunities and extend the useful working life of the berth at the terminal. The 29,000 sq. ft. expansion of the main wharf will replace the current wharf access bridges by decking the area between the existing shoreline sheeting and the back of the current main wharf. This will provide direct and easy access for the entire length of the main wharf, greatly enhancing its functionality. In addition, the project improves the structural integrity of the existing main wharf.

The bridge and wharf projects provide significant long-term benefits to the region. This work enhances the connectivity between the states, provides safe and reliable multimodal transportation infrastructure, and improves the economic competitiveness and vitality of this seacoast region. The Benefit-Cost Analysis (BCA) concludes that the total project benefits exceed the costs and clearly demonstrates that the project is justifiable and supportable from an economic perspective (See Appendix D). Rehabilitation of the Memorial Bridge and the rehabilitation and expansion of the Market Street Marine Terminal are both scheduled for completion in accordance with the TIGER Grant program time/calendar requirements. Further, this overall application and these individual project efforts will generate a significant number of jobs for the region during the next 4 to 5 years.

### DESCRIPTION

#### MARKET STREET MARINE TERMINAL

The rehabilitation and expansion of the main wharf is critical to ensure that the Portsmouth and Kittery economies continue to grow. The current length of the port's longest wharf at 582 feet is insufficient for providing full service for all cargo hatches of bulk carriers, thus creating inefficient operations. This operational deficiency presents a disincentive for ships currently calling on the port and for other potential transport vessels when considering the Market Street Marine Terminal for their berth. Rehabilitation and expansion of the wharf will enhance economic opportunities of these seacoast communities and help ensure that the local economy remains strong.



*Aerial view of Market Street Marine Terminal facilities  
(looking north, main wharf on right side of bridge)*

## Piscataqua River Bi-State Multimodal Transportation Improvements

The State of New Hampshire, Pease Development Authority, Division of Ports and Harbors, oversees harbor management, port development, port marketing, trade development, and the Foreign Trade Zone operation (Foreign Trade Zone #81 Facilities). It also provides marine support service to the vessels carrying approximately 5 million tons of cargo in and out of the harbor annually. The Market Street Marine Terminal alone handled 247,437 tons of cargo in 2008. Much of the tonnage not handled by the terminal was associated with upstream businesses that rely heavily on the proper functioning of the bridges and the wharf. Commercial, non-industrial users of the port include tour boat operators, military vessels, environmental research vessels, and charter boats.

### CURRENT MARINE TRAFFIC

Efficient marine and highway access to the Market Street Marine Terminal and other upstream destinations is dependent on both the Memorial Bridge and Sarah Mildred Long Bridge. The reliability, safety, and efficiency of these bridges directly impacts the river vessels and ocean traffic that the terminal is able to accommodate. The terminal receives shipments via land, rail, and sea, and in 2008, a total of 274 individual transport vessels entered the harbor with many stopping at the Market Street Marine Terminal. Local industrial activities, such as PSNH Power Plants, SEA-3 (LPG terminal), Georgia Pacific, EL Poer Plant, United Industrial, Westinghouse Electric, International Salt, and Grimm Industries, all rely heavily on the bridges and wharf to provide the services they need to initiate or complete their deliveries of goods and services.

## GRANT FUNDS AND SOURCES AND USES OF PROJECT FUNDS

### APPLICATION FUNDING AND COST ESTIMATE

The Market Street Marine Terminal main wharf rehabilitation and expansion project is estimated at \$12 million. If funding is awarded for this project, TIGER Grant funds will represent \$10 million, and NH State funds will provide the remaining \$2 million.

Table 2 – Total Application Funding by Source and Category in Millions of Dollars

	ARRA	FHWA Funds	State of ME	State of NH	City of Portsmouth	Total
<b>PART “A” (NH &amp; ME)</b>						
Memorial Bridge	\$70			\$9.3	\$0.7	\$80
Sarah Mildred Long Bridge		\$56	\$7 (state match of FHWA funds)	\$7 (state match of FHWA funds)		\$70*
<b>PART “B” (NH only)</b>						
Main Wharf Project	\$10			\$2		\$12
<b>TOTAL PROJECT COST</b>	<b>\$80</b>	<b>\$56</b>	<b>\$7</b>	<b>\$18.3</b>	<b>\$0.7</b>	<b>\$162</b>

The proposed funding provides \$12 million in non-federal sources. The TIGER Grant funding request of \$80 million represents less than half (49%) of the total funding (\$162 million) necessary to complete this overall application.

### PROJECT SCHEDULE

With approval of this grant application, the Market Street Marine Terminal main wharf rehabilitation and expansion will advertised in February 2010, with a contract award date in April 2010. The project will be completed by October 2011 if not sooner. (See Appendix B for detailed Construction schedule.)

# Piscataqua River Bi-State Multimodal Transportation Improvements

## JOB CREATION AND ECONOMIC STIMULUS

Investment in the Market Street Marine Terminal main wharf infrastructure rehabilitation and expansion is anticipated to produce significant near-term economic stimulus and job creation benefits in the Portsmouth-Kittery region. The short-term construction activity will provide a variety of construction, manufacturing, and supporting industry job opportunities and labor income, with most, if not all, project expenditures supplied domestically.

### JOB CREATION

Based on the project schedule and capital budget for the main wharf improvement, the Market Street Marine Terminal project is estimated to involve 67 direct on-site employees for the construction. The following table breaks down these labor requirements by construction element.

<b>Market Street Marine Terminal</b>	<b>Direct Jobs</b>
Pile Drivers	13
Operating Engineers	10
Carpenters	8
Laborers	12
Ironworkers	5
Electricians	3
Superintendents	4
Field Engineers	4
Surveyors	3
Project Managers	3
Coffee Wagon	2
<b>TOTAL</b>	<b>67</b>

These direct on-site jobs are only those associated specifically with the construction elements of the main wharf improvements. They do not include the jobs that are created when funds are spent on non-labor items, such as materials and equipment and other sub-contractors, which are estimated to provide another 61 direct jobs nationally for a total of 128 direct jobs for the port improvement project.

Based on the capital budget and using the IMPLAN economic impact modeling system, the total short-term job creation, including multiplier effects, is estimated to be 307 jobs in 2010 nationwide. IMPLAN is a nationally recognized economic model –it was selected by the US Department of Agriculture to estimate job creation due to ARRA investments. The economic impact analysis includes estimates of multiplier and total job impacts based on direct, indirect, and induced impacts.

The Council of Economic Advisors (CEA) also offers guidance on estimating the number of jobs associated with a government funded transportation project. This guidance provides an estimate of one job created or saved per \$92,136 of government spending from ARRA. Using the CEA method and assuming an overall main wharf expenditure of \$12 million, nearly 130 jobs will be directly created by the investment.

Most of the jobs directly associated with these projects will be in construction-related industries. Higher paying jobs are often more desirable for communities, as they generate a greater amount of additional taxes and consumption. At the same time, lower paying wages may be beneficial for communities with a greater proportion of unemployed or low-skilled workers. Construction employment may benefit many individuals in these more economically disadvantaged populations, with secondary benefits to the local businesses and communities.



# Piscataqua River Bi-State Multimodal Transportation Improvements

## LONG TERM OUTCOMES

As stated in Part “A”, a strong multimodal transportation system promotes economic viability, vitality, and ultimately more livable communities that utilize that system. Transportation projects have the dual benefit of directly supporting jobs during construction, in addition to supporting the regional and local economics through improved movement of goods, services, and people. Deficient links in a transportation system infrastructure restrict travel and can significantly impact a region’s economic growth and safety. Ensuring that transportation infrastructure is in a state of good repair is a critical element in providing opportunities for economic competitiveness and viable economic growth. Rehabilitation and expansion of the Market Street Marine Terminal helps restore the ability of these communities to remain competitive, and promotes sustainable economic growth for the region.

## STATE OF GOOD REPAIR

### Current Condition

The main wharf at the Market Street Marine Terminal is overall in fair condition, but critical repairs need to be completed, along with replacement of wharf access bridges. The deterioration of the wharf generally ranges from minor to moderate deterioration. However, localized areas of advanced deterioration include the failed deck topping on the 1977 structure, the deck underside, the superstructure framing elements, and corrosion of the steel caisson shells. A preliminary structural analysis evaluating the caissons and superstructure framing components was performed for the 1964 and 1977 wharf structures, and recommended reductions in its live load capacity, along with other restrictions and operational limitations.

The proposed expansion of the wharf will extend it by 125 linear feet, and will include a 24 sq. ft. offshore mooring dolphin, thus providing safer vessel mooring and berthing operations. The additional wharf deck area (approximately 29,000 sq. ft.) will provide a much larger area for material lay down and assembly area at the facility. The expanded wharf will have an increased loading capacity than the existing structures, which will allow larger cranes and vehicles to operate at the site. These additions and improvements will provide a more efficient and operational marine facility that is better able to provide the marine support services needed by this busy seacoast port.

### Operating and Maintenance Costs

The rehabilitation and expansion of the Market Street Marine Terminal main wharf is estimated to cost \$12 million, of which \$1 million is for repairs only. If these repairs are not made in the near term, the cost of these repairs will increase by 50% within four years to \$1.5 million. Expenditures of \$100,000 annually will be required to address operational maintenance needs.

## ECONOMIC COMPETITIVENESS

The Market Street Marine Terminal receives regular shipments of scrap metal and highway deicing salt. In addition, other cargo enters and exits the facility, including oversized industrial machinery. The Market Street Marine Terminal handled 129,316 tons of scrap metal and 112,357 tons of highway deicing salt in 2008.

Currently, eight individuals are employed full time at the Market Street Marine Terminal by the Port Authority. The base tenants of Grimmell Industries and International Salt employ two and one half and one and one half full time equivalent employees at the port, respectively. The security company at the marine terminal maintains one and one half full time equivalent employees for a total of 13.5 full-time direct jobs at the port. The proposed capital investments are critical to retain and expand upon current and long-term job opportunities in this area.

### Economic Growth Opportunities

Expansion of the main wharf will result in increased economic opportunities and activities at the Market Street Marine Terminal. A current base tenant has indicated that the proposed wharf expansion would enable them to consider shipping forest products and prefabricated structural steel through the port, in addition to their current cargo. A windmill company has approached the port to determine whether it could be utilized for the transport of wind towers, blades, and generators. Currently, this cargo cannot be accommodated because of the main wharf’s deteriorated condition and limited load capacity. With a rehabilitated and expanded wharf, however, the Pease Development Authority estimates that the port will experience a significant increase in cargo moving through the port.

## Piscataqua River Bi-State Multimodal Transportation Improvements

The Pease Development Authority has indicated that the expansion and repair of the main wharf is likely to result in a 15% increase in cargo that is processed through the port.

The viability of a proposal for ferry service between Portsmouth, NH, and Yarmouth, Nova Scotia, would also be enhanced with main wharf rehabilitation and expansion. The current wharf configuration is inadequate for the ferry service at the present time. Wharf improvements would move the Market Street Marine Terminal one step closer to establishing a ferry service between these two countries. The business plan prepared by the ferry service operator estimated that 150,000 passengers per year would utilize a new ferry service at this location. In addition, 30 to 35 tractor-trailers per day would likely travel each way on a ferry between these two ports.

Short Sea Shipping is an alternative form of commercial transportation that utilizes inland and coastal waterways to move commercial freight from major domestic ports to its destination. With increased road congestion and increases in trade volumes, US ports and businesses are seeking alternatives to move cargo via port facilities and closer to their final destinations. Short Sea Shipping provides an alternative to truck and rail transportation by using barges and smaller container vessels (up to 750 feet) for freight shipments. Shipping begins at larger import/export ports, and is then distributed to smaller, strategically located ports for final delivery. The federal government, through the Maritime Administration, is encouraging this form of trade transport.

The US Army Corps of Engineers Piscataqua River Federal Navigation Channel is designed to accept ocean-going vessels 750 feet in length; however, the current wharf cannot accept vessels of that size. The port's strategic location in New England and close proximity to I-95, combined with an improved wharf, would make the Market Street Marine Terminal an excellent candidate for Short Sea Shipping opportunities. This activity would further enhance the economic growth and viability of area businesses, and is likely to create a large number of jobs in support of its operations.

### Shipper Cost Savings

With a rehabilitated and expanded main wharf at the Market Street Marine Terminal, the port will be able to accommodate additional cargo volumes and thereby provide a direct cost savings to shippers. Shipping cost savings are based on estimates of the cargo that will be diverted from truck transport to marine transport, the reduced cost per ton-mile of shipping by water compared to truck, and estimates of average shipping distances. The cost differential to shippers using marine transport versus trucking, assumed to be six cents per ton-mile, results in an estimated \$49 million cost savings to the shipper. Appendix D provides more detail related to this Benefit-Cost Analysis.

## LIVABILITY

### Background

As discussed in Part "A", livability and community cohesion go hand in hand. The quality of relationships among people in a community, as indicated by the frequency of positive interactions, the number of neighborhood friends and acquaintances, and one's sense of community connection, are a significant indicator of a region's livability. A "livable" community can provide indirect benefits as well, including increased safety and health, increased property values, and economic development.

The Market Street Marine Terminal improves the livability of these communities and the surrounding region by providing an international connection to the businesses located in the Portsmouth and Kittery region. Commercial, non-industrial users of the terminal include tour/cruise ship operators, military vessels, environmental research vessels, and charter boats. An improved wharf will help make the harbor operate more efficiently and more safely overall.

In addition, the City of Portsmouth and the Town of Kittery both have vibrant downtown areas and well-established neighborhoods. The expanded Marine Terminal will attract more visitors that will take advantage of its closeness to these downtown areas and the considerable historic character present within these communities. Numerous restaurants, retail establishments, historic sites, Strawberry Banke, John Paul Jones Park, Prescott Park, to name a few, are all located within walking distance from the Marine Terminal. These cultural elements, along with the Memorial and Sarah Mildred Long Bridges, all combine to form the historic fabric of these seacoast communities. The economic support the merchants and tourist attractions of both states would receive from this increased leisure activity would be significant.

# Piscataqua River Bi-State Multimodal Transportation Improvements

## SUSTAINABILITY

Promoting a more environmentally sustainable transportation system is an important goal in infrastructure improvements. Rehabilitating and expanding the wharf will provide measurable emissions reductions, energy efficiency improvements, and other environmental benefits to the Portsmouth-Kittery region.

The Market Street Marine Terminal provides a “green” alternative to commercial trucking. Use of the terminal reduces the number of trips and related emissions created by trucks transporting goods on congested highways by diverting cargo from congested highways to waterways, thereby reducing vehicle emissions, such as VOC (HC), CO, CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and PM.

## SAFETY AND SECURITY

### Portsmouth Naval Shipyard

As previously stated, the Portsmouth Naval Shipyard, located in Kittery, is one of only four remaining active shipyards in the US. When security at Portsmouth Naval Shipyard is elevated, particularly when there is a nuclear submarine docked, the Market Street Marine Terminal is utilized by the Shipyard and other nearby terminals to load and unload cargo from foreign flag vessels. This practice maintains some separation of the foreign vessels from the Shipyard for security reasons. The terminal also assists the Shipyard with marine construction activities by providing a facility for offloading materials and equipment. This service is particularly important because the Shipyard is located on an island and access is limited. As proposed, the main wharf expansion would create additional dock space to accommodate ships associated with port activities as well as the Shipyard.

### Fire and Oil Spill Safety and Security

The port facility is part of the overall emergency planning for the harbor and Piscataqua River areas. It provides dock space for the Portsmouth Fire Department’s fireboat, making it a focus of emergency response. If there is an emergency situation on board a ship, the pilot brings that ship to the marine terminal for a couple of reasons. First, it would be illogical and extremely dangerous to take a shipboard fire to the nearby oil/propane terminal, which is a private pier option on the Piscataqua River. Second, it is difficult, if not impossible, to get emergency assets to the ship’s side at other terminals located along the river.

The Portsmouth Fire Department staff has received advanced shipboard fire fighting training, but some communities have not. The Market Street Marine Terminal hosts shipboard training for the seacoast region, the last of which involved 18 communities. With the Portsmouth Fire Department as the lead, the terminal facilitated the training by providing the venue and the ship. Providing this training will be extremely difficult if the main wharf improvements do not occur.

The Piscataqua River Oil Spill Response Cooperative, in cooperation with the New Hampshire Department of Environmental Services and other agencies, uses the terminal for training drills and in the unlikely event of a spill, for staging response equipment. The terminal provided berthing for a large oil response vessel that was brought in specifically for a training exercise. A rehabilitated and expanded main wharf will provide a safer and more suitable area from which to stage these training activities.

The safety and security services provided by the Market Street Marine Terminal give significant justification for ensuring that the main wharf is safe, sufficient, and appropriate for these important efforts. The project would expand the wharf’s length and eliminate the wharf access bridges by decking the area between the existing sheeting at the shoreline and the edge of the current wharf. This provides direct access to the wharf along its entire length, increasing access and maneuverability for multiple emergency vehicles. These operational improvements significantly increase the emergency response and safety capabilities of the port. Failure to rehabilitate and expand the main wharf would reduce the efficiency of the wharf and thereby reduce the ability of first responders to effectively provide their services.

# Piscataqua River Bi-State Multimodal Transportation Improvements

## EVALUATION OF EXPECTED PROJECT COSTS AND BENEFITS

HDR Engineering and HLB Decision Economics, using methods and parameters consistent with US Department of Transportation guidelines, conducted the benefit/cost analysis. All benefits and costs in the analysis are estimated in 2009 dollars. The valuation of benefits uses a number of assumptions that are required to produce monetized values for non-pecuniary benefits. The different components of time, for instance, are monetized by using a “value of time” that is assumed to be equivalent to the user’s willingness to pay for “time savings” in transit. These, as with all other values used in the analysis, are taken from the United States Department of Transportation (USDOT) guidance on the preparation of TIGER applications. Where USDOT has not provided valuation guidance or a reference to guidance, standard industry practice has been applied. (See Appendix D for complete summary and backup information.)

### Benefit-Cost Results

**Project Benefits:** Five categories of benefits were measured for this analysis: 1) accident reductions; 2) emission reductions; 3) vehicle operating cost savings; 4) pavement maintenance savings; and 5) shipper cost savings.

**Project Costs:** Costs include the initial capital construction costs as well as operating and maintenance (O&M) costs of the Market Street Marine Terminal main wharf. The results for the main wharf are provided using the TIGER Grant recommended discount rate of 7%, as well as a discount rate of 3%. The benefit-cost ratio (BCR) at the 7% discount rate is 2.3 and an impressive 4.1 with a 3% discount rate. A complete discussion of the Benefit-Cost Analysis methodology is provided in Appendix D.

The results for the entire application are provided using the TIGER Grant recommended discount rate of 7%, as well as a discount rate of 3%. The benefit-cost ratio (BCR) at the 7% discount rate is 1.6 and an impressive 3.0 with a 3% discount rate. A complete discussion of the Benefit-Cost Analysis methodology is provided in Appendix D.

## EVALUATION OF PROJECT PERFORMANCE

### Wharf Inspections

Once rehabilitation is complete, inspection of the wharf structures will be performed on a periodic basis in accordance with industry standards and the American Society of Civil Engineers Practice manual No. 101. Wharf inspection reports will be evaluated to gauge project longevity and will be used to coordinate future preservation efforts as needed. The success of the rehabilitation effort will be evaluated as part of this inspection process. In addition, division personnel engaged in day-to-day operations of the wharf will also provide key input into this process. Their constant contact with and operation of the wharf facilities provides keen insight into the success and performance of the wharf rehabilitation.

### Reporting

The New Hampshire Department of Transportation has successfully implemented significant American Recovery and Re-investment Act programs since the ARRA legislation was approved in February of 2009. Monthly reporting for individual ARRA projects that detail project status and employment data, including payroll, number of employees on each project and hours worked, are currently being collected and posted on respective state ARRA web pages. Similar information would be collected and used for the main wharf rehabilitation and expansion to document and evaluate its performance.

### Labor Compliance Tracking

Labor compliance personnel are currently employed to communicate and prescribe practices and procedures required to effectuate the Equal Employment Opportunity (EEO) provisions for all federally funded contracts in accordance with the Federal Highway Administration’s Contractor Compliance requirements outlined in 23 CFR 230, Appendix A of Subpart C, Part I.



# Piscataqua River Bi-State Multimodal Transportation Improvements

## ENVIRONMENTAL CONSIDERATIONS

The environmental approvals for the Market Street Marine Terminal main wharf rehabilitation and expansion project will be received prior to February 2010. In October 2008, a Dredge and Fill Application was filed with the New Hampshire Department of Environmental Services (DES). The application has received verbal approval and has been sent to the State of New Hampshire DES office in Concord, NH, for signature. Once the public notice and appeal period has passed, the document will be sent to the NH Governor and Executive Council for final approval. Concurrently, the US Army Corps of Engineers is reviewing the permit and has indicated that there are no issues of concern. It is anticipated that the final approvals will be received in September 2009.

## STATE AND LOCAL PLANNING

The Market Street Marine Terminal main wharf rehabilitation and expansion was initially approved by the New Hampshire Legislature under Chapter 351:5 of the Laws of 1991 and has been continually approved by the Pease Development Authority Board of directors with concurrence by the New Hampshire General Court's Capitol Budget Overview Committee. In June 2007, the Pease Development Authority obtained approval for design, engineering, permitting, construction documents, and hydrographic survey. In 2008, approval for submission of NH-DES Standard Dredge and Fill Application was obtained. The legislation will remain in effect until the completion of the project.

## PARTNERSHIP

The importance of the main wharf rehabilitation and expansion to the Portsmouth-Kittery region can be determined by the number of parties that have work cooperatively to develop this planned improvement. The New Hampshire Legislature enacted and continually approved legislation in support of this project. The Pease Development Authority took the lead in developing the design, engineering, permitting, and contract plans necessary for this work to proceed once funds were obtained. The New Hampshire Department of Environmental Services issued permits approving this work. And, recognizing the benefits that the improved port and wharf would provide to the investment efforts for the Memorial and Sarah Mildred Long Bridges, the New Hampshire Department of Transportation incorporated the marine terminal project into its vision for transportation improvements to the region. New Hampshire is providing \$2 million of state funds in support of this project.

In addition, the Portsmouth Naval Shipyard, community members, shipping operators, local businesses, and elected officials, all strongly support these improvements to the main wharf. They can easily recognize the benefits from improved safety, operation, and functionality of the rehabilitated and expanded Marine Terminal. This effort will truly enhance the connectivity of the region and could provide an international link to the outside world as well.

The result is an area-wide multi-modal transportation improvement project that addresses the needs of many individuals, businesses, organizations, and tourists traveling in the Portsmouth-Kittery area. For this reason, these overall transportation initiatives were combined to present a comprehensive vision for greatly improving this portion of the seacoast transportation network well into the future.

New Hampshire believes this application meet the criteria for the TIGER Grant program and that it also represents the kind of application that was envisioned, regarding jobs creation and economic stimulus, when ARRA was passed by the U.S. Congress and signed into law by the President. This is an investment that will reward the communities of Portsmouth and Kittery many times over in the years to come.

# Piscataqua River Bi-State Multimodal Transportation Improvements

## APPENDIX TABLE OF CONTENTS

NHDOT Web site <http://www.nh.gov/dot/projects/portsmouthkittery/index.htm>

<b>Project:</b>	Portsmouth-Kittery
<b>Scope of Work:</b>	TIGER Discretionary Grant Application for Memorial Bridge, Sarah Mildred Long Bridge, and Market Street Marine Terminal.
<b>Contact:</b>	<a href="#">Robert Landry, P.E.</a> Telephone: (603) 271-3725
<b>TIGER Discretionary Grant Application</b>	<ul style="list-style-type: none"><li>• Cover Letters<ul style="list-style-type: none"><li>◦ <a href="#">Commissioner Cole</a></li><li>◦ <a href="#">Commissioner Campbell</a></li></ul></li><li>• <a href="#">Application</a></li><li>• Appendix A - <a href="#">Letters of Support</a></li><li>• Appendix B - <a href="#">Jobs and Construction Schedule</a></li><li>• Appendix C - <a href="#">Bi-State Agreement</a></li><li>• Appendix D - <a href="#">Benefit Cost Analysis Backup Data</a></li><li>• Appendix E - Area Photos and Inspection Photos<ul style="list-style-type: none"><li>◦ <a href="#">Memorial Bridge</a></li><li>◦ <a href="#">Sarah Mildred Long Bridge</a></li><li>◦ <a href="#">Market Street Marine Terminal</a></li></ul></li><li>• Appendix F - <a href="#">Sarah Mildred Long Bridge Improvements</a></li><li>• Appendix G - Environmental Documents<ul style="list-style-type: none"><li>◦ <a href="#">Historic Preservation MOA</a></li><li>◦ <a href="#">FHWA Categorical Exclusion</a></li><li>◦ <a href="#">Historic Structures Report</a></li><li>◦ <a href="#">NTHP 11-Most Endangered Nomination</a></li><li>◦ <a href="#">Marine Terminal Environmental Document</a></li></ul></li></ul>
<b>Regulations:</b>	<ul style="list-style-type: none"><li>• <a href="#">US Coast Guard Regulations of Lifts for Memorial Bridge</a></li></ul>