

truss design, which will be visually similar to the existing bridge and consistent with the surrounding historic structures. The truss design, or any alternative design, must meet the project's objectives, while also meeting the Secretary of the Interior Standards for the Rehabilitation of Historic Buildings. The Memorial Bridge lift span will be designed to remotely operate other movable bridges, or to be remotely operated from another bridge or location.



NHDOT, with the help of experts from HDR Engineering, reviewed potential modern bridge superstructure options for the replacement of

the Memorial Bridge including:

- Concrete superstructure replacement (too heavy for the existing deepwater piers;) and
- Steel superstructure options with through-plate deck girders or tub girders (added depth of superstructure, more quantity of steel, and reduced navigational clearance)



Based on this review, NHDOT determined that the high truss-vertical lift bridge is the most economical superstructure replacement option. In

the RFP process, Design-Build teams can submit Alternative Technical Concepts (ATC) for review and concurrence by NHDOT. This process may confirm the Department's findings that the truss superstructure is the most economical superstructure replacement option that meets the historic requirements of the U. S. Secretary of the Interior Standards for the Rehabilitation of Historic Buildings.

The existing five-span Scott Avenue Bridge is to be completely replaced with a new two-span, modern design structure and will include drainage, utility, and roadway improvements to the local streets in Portsmouth. It has been determined that a steel superstructure maybe the most economical structure for the tight vertical clearance requirements for Daniels / State Street that passes under the Scott Avenue Bridge.

The existing Kittery Approach Structure consists of ten short spans (each 30 feet in length) and is to be replaced with a low maintenance structure of no more than four-spans, thus eliminating several existing piers. It is expected that a concrete superstructure maybe the most economical structure. Under the current project, the RFP leaves the determination of the best superstructure option for the approach span replacement.

NHDOT and Maine DOT have expended a significant amount of money in the past to inspect, evaluate, and design improvements to keep the existing Memorial Bridge safe and operational. It should be noted that almost \$10-million has been expended on the bridge for studies, rehabilitation, design and repairs. From these past efforts a wealth of knowledge was obtained in understanding the issues and determining practical solutions for the project.

The construction schedule is highly dependent upon the Design-Build team's proposal to be submitted late this summer. Due to the limited in-river access, as outlined in the environmental commitments, NHDOT anticipates the schedule will require construction work to start in the fall of 2012 with initial closure of the Memorial Bridge. The anticipated construction schedule is shown below:

November 15, 2011 - Notice to Proceed

March 2012 - Bridge design accepted for fabrication plan

July 2012 - Fabrication Plans Accepted

July 2012 - Jan. 2014 - Memorial Structures Fabricated Off-Site

July 1, 2012 - Turn over Operation of Memorial Lift Structure

Oct. 2012 - Nov. 2012 - Demo of existing bridge superstructure(s)

Nov. 2012 - Mar 2013 - Substructure demo and Pier reconstruction

Nov. 2012 - June 2013- Construct Scott Avenue Bridge and Daniel Street reconstruction

Mar 2013 - Sept. 2013 - Kittery Approach Span Superstructure Construction

Sept. 2013 - Nov. 2013 - Float in Fixed Span Superstructures

January 2014 - Float in Lift Superstructure, adjust mechanical and electrical

January 31, 2014 - Open Bridge

Jan. 2014 - May 2014 - Acceptance testing and project cleanup.

May 2014 - Project completion.



Portsmouth-Kittery Project Update

The Memorial Bridge provides one of the three crossings over the Piscataqua River between Portsmouth, New Hampshire and Kittery, Maine. The bridge provides a multi-modal transportation component that impacts trade and commerce, tourism, community life, and the historic and aesthetic character of Kittery and Portsmouth. The bridge has been determined to be structurally deficient by both Maine and New Hampshire. NHDOT has the Memorial Bridge rated as Number 1 on its Bridge Priority List. In 2008 the two states went out to bid for a major rehabilitation of the Memorial Bridge. The final bid cost was 30 percent (\$15 million) greater than the estimated \$44 million construction cost and was not accepted.

In late 2008 New Hampshire and Maine joined in a Memorandum of Agreement to conduct detailed bridge inspections and prepare a bi-state planning study. The Maine-New Hampshire Connections Study evaluated the Sarah Mildred Long Bridge and the I-95 High Level Bridge as well. It also assessed the transportation needs of the host communities and of the region and determined the best long-term solution for connecting the two states. The study's recommendations concluded that 10 lanes crossing the Piscataqua River between Portsmouth and Kittery were required and that all three bridges were needed since each provided different aspects of the transportation need.

The *Maine-New Hampshire Connections Study* identified many combinations of alternatives for the Sarah Mildred Long Bridge and the Memorial Bridge. The options considered for maintaining the Memorial Bridge included rehabilitation of the existing bridge, a new bridge on a new alignment, a new bridge on the existing alignment, and a new high-level bridge (no lift).

A detailed inspection of the Memorial Bridge in 2010 determined that the existing bridge had deteriorated further and that the capital cost to rehabilitate had increased to \$140 million. Also, the 100-year life cycle costs of rehabilitation was anticipated to exceed \$510 million. The life cycle costs are due to the riveted gusset plates to connect members, which have proven susceptible to pack rust and prone to deterioration. In addition, major rehabilitation projects would be required every 25 years, due to the continued deterioration of the gusseted connections.

It was therefore determined that the Memorial Bridge should be replaced. The capital cost to replace Memorial Bridge is estimated at \$90 million. Modern materials and connections would be used to reduce the potential for corrosion. The new materials would be of higher strength and have coatings to protect the members from corrosion. The connections would use new details and methods to avoid the pack rust that has plagued the existing structure. The life expectancy of a replacement bridge is anticipated to be at least 100 years.

Based on the condition of both the Memorial Bridge and Sarah Mildred Long Bridge and the fact that the transportation network in the area could not function with both bridges closed at the same time, the Design-Build (DB) method of project delivery was determined to be the best procurement method for replacement of the Memorial Bridge with NHDOT taking the lead.

On February 8, 2011, NHDOT initiated the first phase for the selection of a Design-Build team through the issuance of a Request for Qualifications (RFQ) for Design-Build teams. On March 18, 2011 six Design-Build teams

June 17, 2011

Portsmouth, NH – Kittery, Maine
Fed Number: A000 (911)
State Number: 13678F

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www.nh.gov/dot/projects/portsmouthkittery13678f/index.htm

submitted a Statement of Qualifications (SOQ) for NHDOT consideration. Based upon an evaluation of the SOQ's by members from NHDOT, Maine DOT and City of Portsmouth, four Design-Build teams were recommended for "short-list" and have been invited to submit on the Request for Proposal (RFP).

SHORT LIST OF DESIGN BUILD TEAMS

April 12, 2011

Design Builder: American Bridge Company.
Major Participants: Hardesty and Hanover, AECOM

Design Builder: Archer Western
Major Participants: HNTB

Design Builder: Cianbro Corporation
Major Participants: T.Y. Lin International, Modjeski and Masters, Inc., Normandeau Associates

Design Builder: The Middlesex Corporation
Major Participants: STV Inc., Fay Spoffard & Thorndike, LLC

On April 27, 2011, NHDOT issued an industry level RFP to the short-listed Design-Build teams. The industry level RFP is intended to obtain feedback from the Design-Build teams on the two-volume RFQ. Volume I of the RFP consist of the "Instructions to the Proposers", which outlines for the Design-Build teams the procurement process, the procedure for submitting "Alternative Technical Concepts" (ATC) and the evaluation process to be taken for rating of the technical and cost proposals. Volume II consist of a three part documents. Book 1 of Volume II is the Design-Build contract. This document outlines the contractual requirements for the project. Book 2 of Volume II is the Technical Provisions and outlines the requirements of the project for the overall improvements, the design criteria, the environmental constraints, and the basis for the project management plan, quality management plan and safety plan. Book 3 of Volume II provides the Special Provisions and outlines the specific mechanical and electrical equipment for the lift structure, the architect requirements for the machine room and operators house.

On June 10, 2011, NHDOT issued the formal RFP to the short-listed Design-Build teams. The final RFP incorporated input from the Design-Build teams and other federal and state partners (FHWA and Maine DOT). The

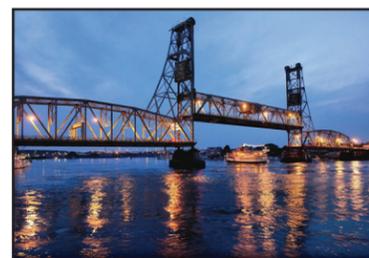
Design-Build procurement schedule is outlined below :

- Issue Final Request for Proposals June 10, 2011
- One-on-one Meetings with Proposers (2nd Round) to discuss Technical Provisions and ATCs June 29-30, 2011
- Deadline for Submittal of ATCs July 6, 2011
- One-on-one Meetings with Proposers (3rd Round) to discuss RFP July 27-28, 2011
- One-on-one Meetings with Proposers (4th Round) to discuss RFP August 10-11, 2011
- Proposer Submittal of Final Questions Regarding the RFP August 18, 2011
- Proposal Due Date September 14, 2011
- Public Bid Opening October 20, 2011

Environment

In accordance with the National Environmental Policy Act of 1969 (42 USC 4332(2)(c) as implemented at 23 CFR 771.117(d)(3), the Categorical Exclusion (CE) addresses the replacement of the bridge that carries US Route 1 over the Piscataqua River (Memorial Bridge Facility), and as been prepared using a systematic, interdisciplinary approach to assess the engineering considerations and environmental effect of this undertaking.

The CE addresses the cultural and natural environmental resources within the project limits and evaluates the impacts to these resources to the alternatives studied



for the proposed undertaking. The impacts can be generally broken into several categories consisting of social, economic, natural and cultural resources.

The social and economic impacts are directly related to the humanistic impacts on safety, land use, recreation, air quality, noise, hazardous

materials, businesses, river navigation, utilities, etc. Two notable impact concerns to the social and economic

resources was the loss of pedestrian and bicycle access across the bridge during the construction closure and the potential impact for businesses. These impacts will be addressed through contract requirements for the provision of temporary public shuttle service across the river between the two communities and the impacts to business will be offset by the hiring of a Public Outreach Coordinator to provide the conduit for communication and interface between the public agency (owner), contractor, businesses and general public.

Natural impacts consist of, but not limited to, wildlife impacts, floodways, wetlands endangered species, fish habitat, and coastal zone and water quality. Based upon these resources the endangered species and fish habitat resulted in project level considerations that may limit time of year access within the river. To protect managed fish species such as winter flounder, no in-water work will be permitted between March 16 and November 14 of any year. Any silt producing construction activity within the river shall also be done within cofferdams or similar silt-containment structures provided the structures are installed outside the time period noted above.

Cultural impacts consist of general aesthetics, historic properties and archaeological sites. Coordination with state and local officials determined that there would be no recreation areas, or wildlife or waterfowl refuges of national, state, or local significance impacted by the proposed project. Memorial Park, a publicly owned park, will be impacted under Section 4(f) because of its inclusion within two historic districts.

NHDOT coordinated with the NH State Historic Preservation Officer (NHSPO), the Maine Department of Transportation (MaineDOT), the Maine State Historic Preservation Officer (MESHPO), and the Federal Highway Administration (FHWA) to locate and identify National Register of Historic Places listed or eligible properties within the area, and determined how these resources would be affected by the proposed project. In addition, the National Trust for Historic Preservation (NTHP), USS Albacore, Historic Bridge Foundation, and Portsmouth Historical Society also became consulting parties to the historic properties preservation review process mandated under Section 106 of the National Historic Preservation Act of 1966. A Memorandum of "Adverse Effect" was signed on March 3, 2011 for the project.

The Section 4(f) Evaluation provides the required documentation to demonstrate that there is no prudent and feasible alternative to the use of land from Section 4(f) historic resources.

Measures to mitigate for the proposed impacts are detailed in a Memorandum of Agreement (MOA) submitted to the Advisory Council on Historic Preservation, and signed by NHSPO, the MESHPO, NHDOT, MaineDOT, and by the New Hampshire and Maine Divisions of the FHWA. Briefly, mitigation would include measures to ensure that the bridge design is historically appropriate, that public outreach and education efforts would be implemented, that archaeological protocols would be followed, and that economic impacts to Portsmouth Historic District would be abated. The existing memorial plaques on each end of the Memorial Bridge would be conserved and reinstalled on the replacement bridge. The agreement includes measures to limit impacts from vibrations to historic resources. A summary of the overall environmental commitments is listed within the environmental document located on the Project's web site.

Design

The existing structure was completed in 1923, is almost 90 years old, has outlived its useful life, and is in need of replacement. The Memorial Bridge has an overall length of approximately 902 feet that consists of two flanking fixed span trusses and one movable span truss. The primary elements of the project include:

1. Replacement of the fixed spans, movable span, towers, and abutments;
2. Increase the overall bridge cross-section width to 32 feet rail to rail (existing width is 28-foot rail to rail) to provide for a typical section of two 11-foot travel lanes, two 5-foot shoulders, and clear 6-foot sidewalks on each side;
3. Maintain or improve the current navigational clearances in both the closed and open positions;
4. Rehabilitate of the main span deepwater piers (pier #2 and #3) and replace the existing fender system that protects them;
5. Replacement of the Scott Avenue Bridge, including piers, abutments, and superstructure;
6. Replacement of the Kittery Approach Structure, including piers, abutments and superstructure;
7. Relocation of utility services for the Memorial Bridge lift structure; and
8. Other miscellaneous Civil, Highway, and drainage improvements.

A major design goal of the new structure will be to include modern elements that minimize corrosion and reduce long-term costs. It is anticipated that the new fixed spans and the movable span will consist of a steel