

New Hampshire Department of Transportation

Memorial Bridge Replacement

US Route 1 over the Piscataqua River



Congressional and State Delegation Briefing

November 21, 2011

Agenda

- 1. Introductions**
- 2. Project History**
 - **Connection/ Bi-State Funding Study**
 - **Agreement for Project Leads for Memorial and Sarah Long Bridges**
- 3. Design-Build Procurement/Selection Process**
- 4. Project Replacement Approach/Proposed Design**
 - **Design Team's Efforts to Keep the Feel of the Original Structure**
- 5. Project Schedule**
- 6. Project Funding**
 - **Hiring Residents of the Two States for the Construction Project**
- 7. Impacts of Construction on Community**
 - **Plan for Implementing a Shuttle Service During Construction**
- 8. Public Outreach Approach**

Portsmouth/Kittery Harbor



Piscataqua River

Memorial Bridge



Opened in 1923

Length of Lift Span [302.5 ft.]

Open Vertical Clearance [150 ft.]

Closed Vertical Clearance [19 ft]

Yearly Lifts (2008) [4023]

12,100 vehicles per day

900 +/- pedestrians/cyclists per day

#1 NHDOT BRIDGE Priority (Red) Listing

Closed to vehicle traffic on 7/27/11

Sarah Mildred Long Bridge



Opened in 1940

Length of Lift Span [243 ft.]

**Open Vertical Clearance
[135 ft.]**

**Closed Vertical Clearance
[10 ft] {36 feet at RR trestle}**

Yearly Lifts (2008) – [3178]

14,500 vehicles per day

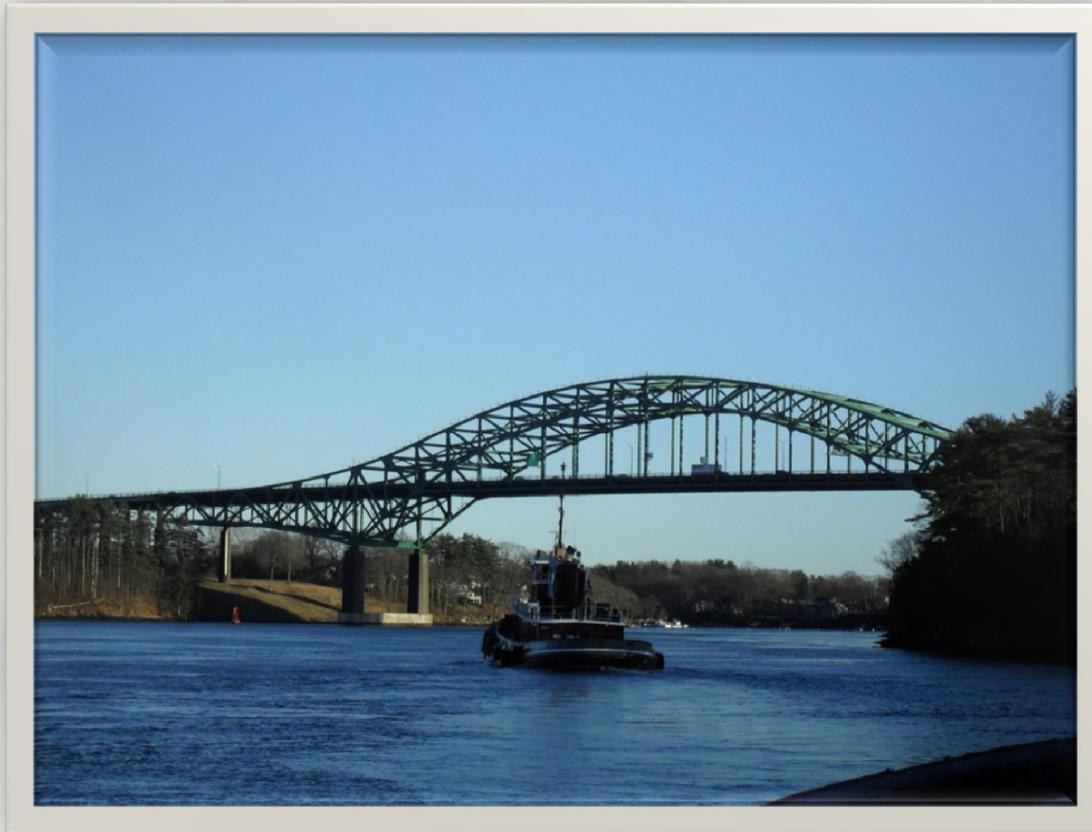
**Restricted to pedestrians &
cyclists**

**Federal Sufficiency Rating
(FSR) = 5.0/100**

Rail Crossing on lower truss

**Will soon be #1 NHDOT Bridge Priority
(Red) List Structure**

Interstate I-95 Bridge



**I-95 Horizontal
Clearance [440 ft]**

**I-95 Vertical Clearance
[135 ft]**

Built in 1972

**Average Daily Traffic
89,900**

**Federal Sufficiency
Rating 78/100**

Memorial Bridge Structural Conditions



Prior 2007 Memorial Bridge Rehabilitation Project

In 2007, Maine and NH DOT agreed to pursue a rehab for the Memorial Bridge Due to the Structural Condition. As a result:

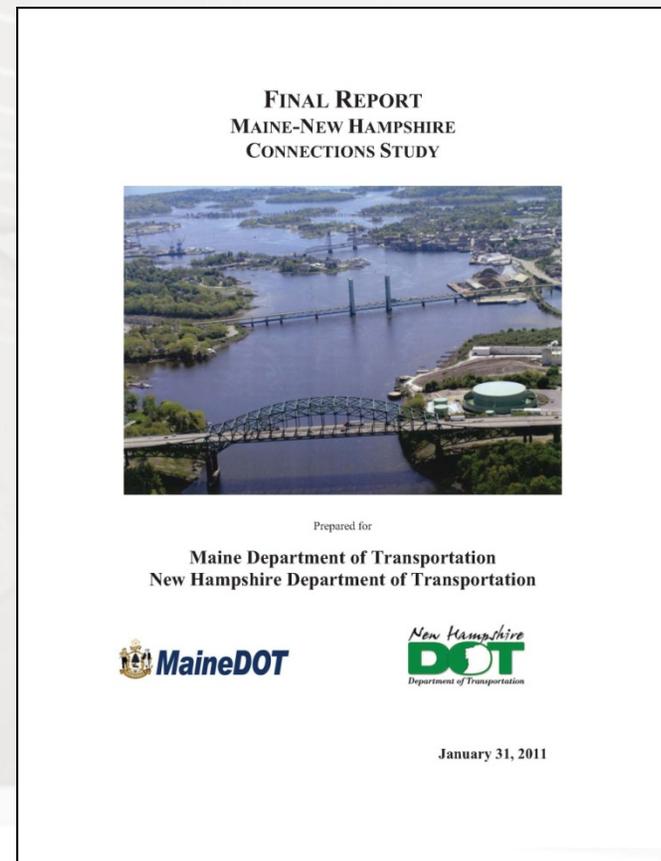
- NHDOT lead design and NEPA documentation;
- NEPA input process determines the rehab of the historic structure may be reasonable alternative;
- NHDOT developed contract plans for the rehab alternative with assistance from HNTB
- Advertised bids on the project in 2008;
- Prices from bidding contractors exceed the engineer's estimate and available funding available;
- NHDOT entered into discussion with MaineDOT for replacement .

Alternative Review 2010 Connection Study

**Selection Of Best
Alternatives To Address
Long Term Transportation
Needs**

**To Identify Feasible River
Crossing Options For All
Three Bridges**

www.mainenhconnections.org



2010 Connection Study Recommended Action

**11 TOTAL ALTERNATIVES WERE EVALUATED TO MEET 2032
TRAFFIC NEEDS**

THREE ALTERNATIVES RECOMMENDED:

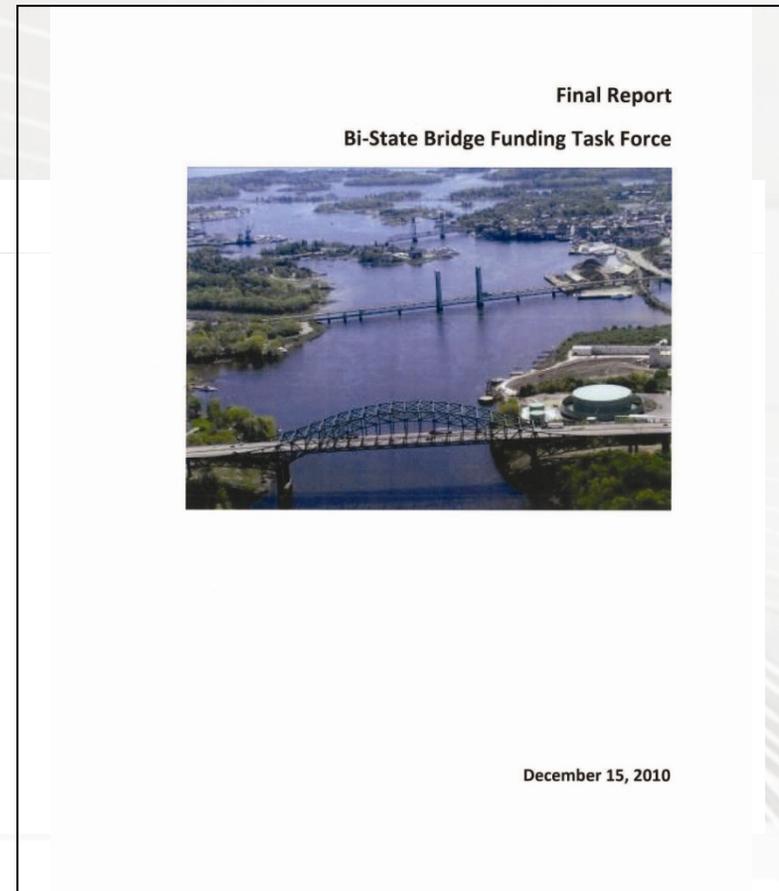
- **Memorial Bridge Replacement With Sarah Long Rehab**
- **Memorial Bridge Replacement With Sarah Long Replacement Upstream**
- **Memorial Bridge Replacement With Sarah Long 6% Hybrid Replacement Upstream**

2010 Bi-State Bridge Funding Task Force

Governors Of ME
And NH Issued Executive
Orders Creating Task
Force (Oct. 5, 2010)

To Identify Extra Ordinary
Funding Measures To
Address River Crossing
Needs

[www.nh.gov/dot/projects/portsmouthkittery
13678f/bi-state-funding-report.pdf](http://www.nh.gov/dot/projects/portsmouthkittery13678f/bi-state-funding-report.pdf)



TIGER II Awarded on October 20, 2010

2010 Bi-State Bridge Funding Task Force

RECOMMENDED ACTIONS

Construct Memorial Bridge Replacement Beginning In 2011 Using Combination Of The Following Funds:

- **TIGER II GRANT FUNDS, FHWA FUNDS, MAINE, NH and CITY OF PORTSMOUTH FUNDS**

Construct The Recommended Sarah Long Option Beginning In 2016 Using Combination Of The Following Funds:

- **FHWA FUNDS, NH TURNPIKE FUNDS, MAINE TURNPIKE FUNDS, MAINE AND NH BRIDGE FUNDS, DEPARTMENT OF DEFENSE FUNDS**

2010 Bi-State Bridge Funding Task Force

RECOMMENDED ADMINISTRATIVE ACTIONS

Revitalize The Interstate Bridge Authority (IBA) To Serve As Fund Administrators (State Legislation Required)

Alter IBA Charter To Include Authority For Memorial Bridge And I-95 High Level Bridge

Re-establish Bi-State Membership On IBA

2010 Connection / Bi-State Study

Bi-State Task Force To Identify Funding Mechanisms For All Three River Bridges

NHDOT To Lead On Memorial Bridge as First Priority Action

RECOMMENDED ACTIONS



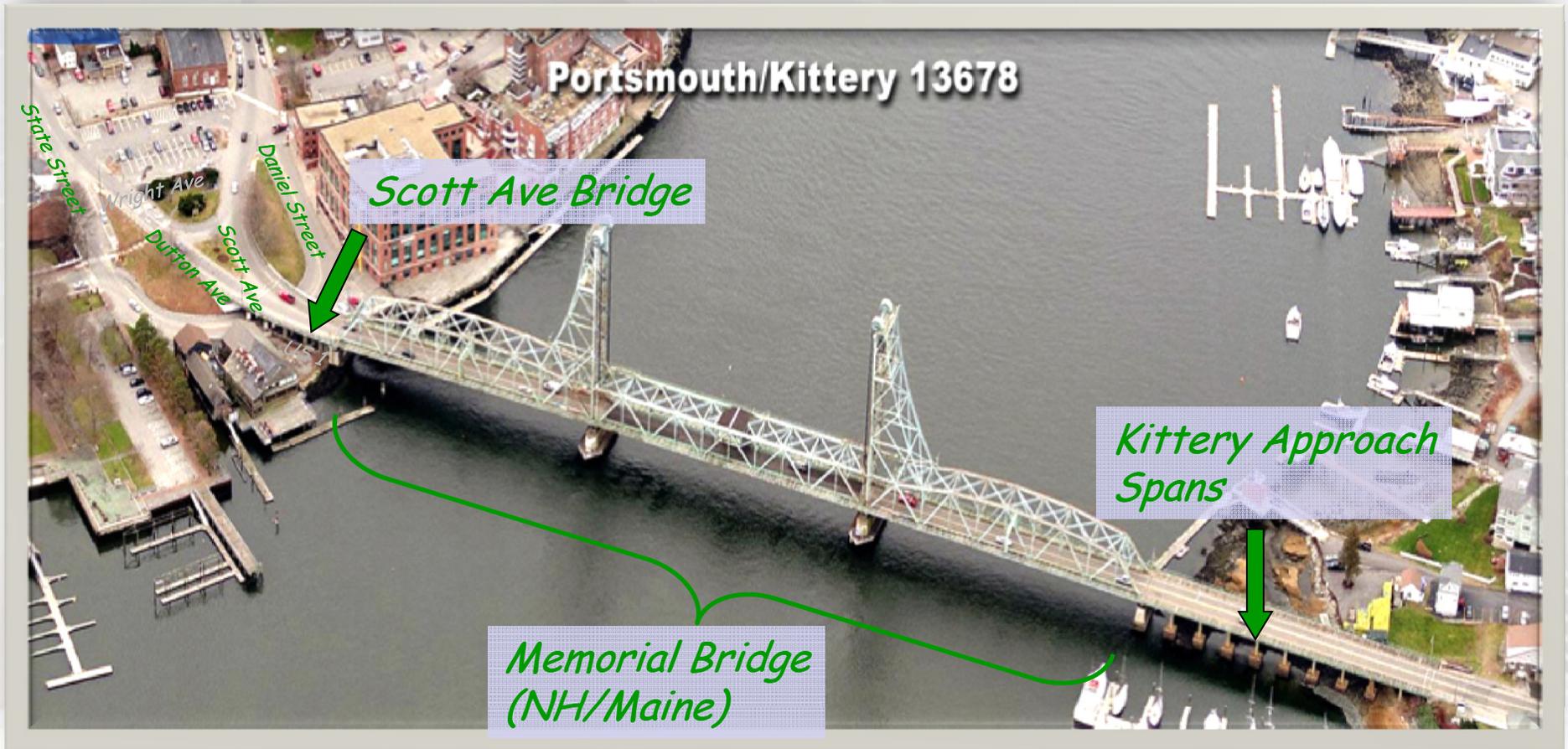
Maine DOT To Lead On Sarah Long Bridge as Second Priority Action

Pursue Each Bridge Alternatives In A Separate, Independent Evaluation Under Section 4f & 106 And NEPA

Memorial Bridge Replacement

Portsmouth, NH (south)

Kittery, Maine (north)



NEPA / Section 4(F) Historic NEPA (CE) Approval on March 17, 2011

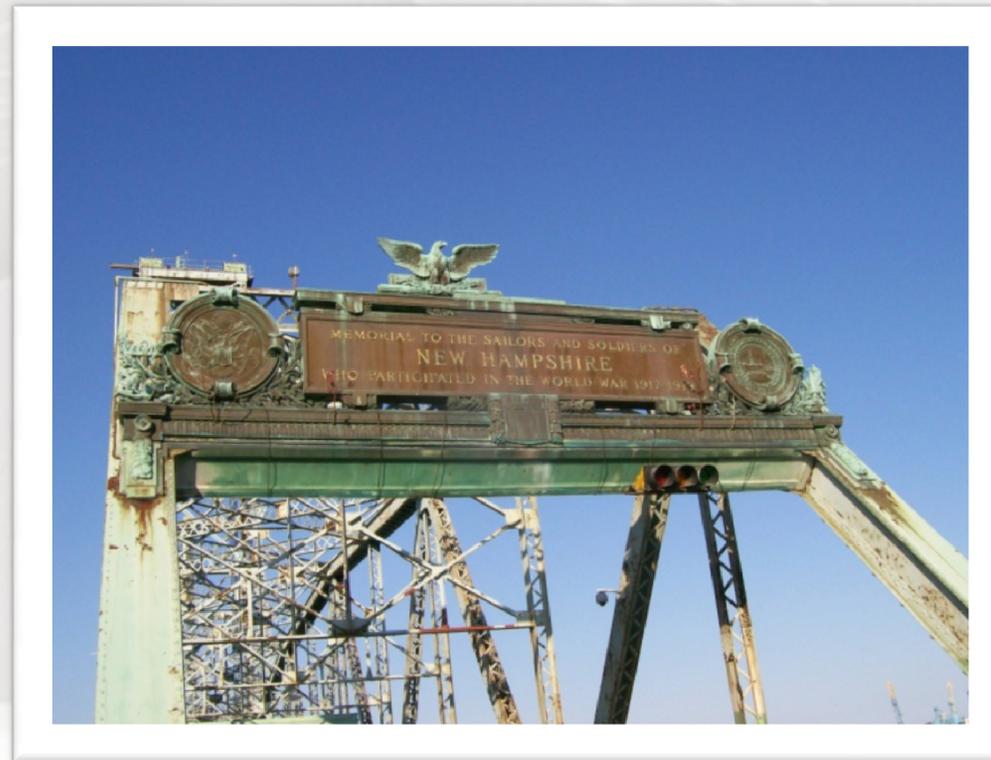
Cultural Resources

- Removal of Historic Bridge
- Archeological sites
- Visual impact to historic districts
- Construction Impacts on historic sites (vibrations)
- Business & Community Impacts (duration of bridge closure)
- Preservation of Historic Bridge Plaques

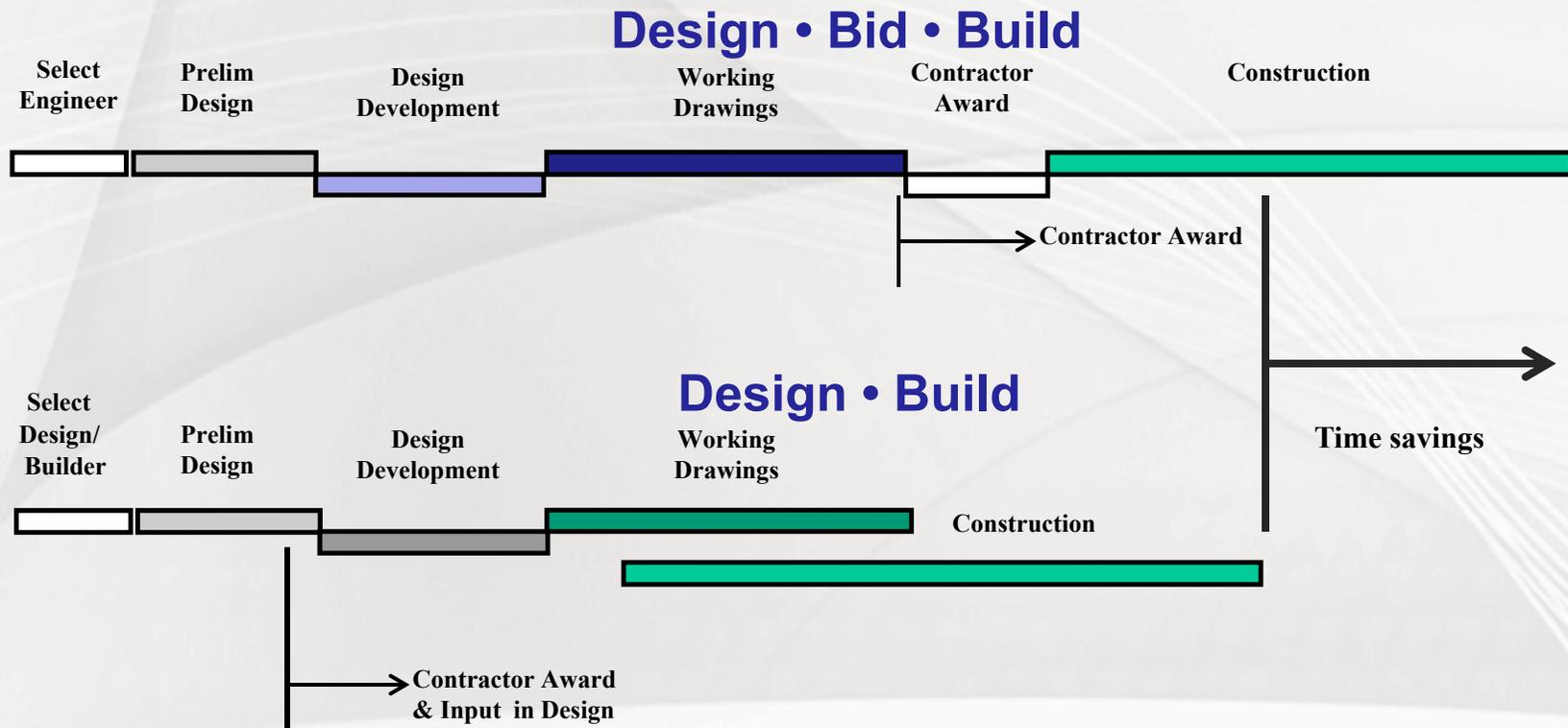
Wildlife

- Essential Fish Habitat
- Migratory Fish (rainbow smelt, alewife, blueback herring)
- Shellfish (lobster, rock crab, oysters, soft-shelled clams)
- Endangered Species [NOAA] (Atlantic and short-nosed sturgeon)

Preservation and Reuse Of Historic Bridge Plaques



NHDOT Design – Build Procurement



NHDOT Design – Build Two Part Process

Request for Qualifications (RFQ)

- **Identification of qualified teams**

Request for Proposals (RFP)

- **Technical proposal and determination of best value award**

Design – Build RFQ Procurement

Request for Qualifications (RFQ)
February 8, 2011

Statement of Qualifications (SOQ)
March 18, 2011

Selection of Short Listed Design Build Teams
April 12, 2011

Design – Build Procurement SOQ – Short Listed Teams

Statement of Qualifications Received from Six D-B teams

American Bridge Company, Hardesty and Hanover, AECOM;

Archer Western, HNTB;

Cianbro Corporation, T.Y. Lin International, Modjeski and Masters, Inc.,
Normandeau Associates;

Memorial Bridge Constructors – Dragados, USA Inc., Barletta Heavy Division, Inc.,
Vanasse Hangen & Brustlin, Inc., TransSystems Corporation;

Middlesex Team – The Middlesex Corporation, STV Inc., Fay, Spoffard &
Thorndike, LLC; and

Reed & Reed, Inc., PB Americas, Inc., Harrington & Cortelyou (HC)/BMcD, Inc.

Design – Build Procurement Request for Proposals (RFP)

- **Request for Proposals (Draft RFP) for Industry Review – April 27, 2011**
- **Request for Proposals (Final RFP) – June 6, 2011**
- **Technical Proposals Due – September 14, 2011**
- **Price Proposal Opened on October 13, 2011 Bid Opening with Technical Proposal score announced and determination of Apparent Best Value Proposal**
- **Best Value Determination on October 13, 2011**
- **Governor and Executive Council Approval – December 14, 2011**

Best Value Award Determination

Scoring Element	Archer Western Contractors (AWC)	Cianbro Corporation (CC)	The Middlesex Corporation (TMC)
Contract Amount	\$81,420,000.00	\$78,884,000.00	\$79,220,000.00
Schedule Adjustment No. of Days (From Dec 16, 2011 (NTP1) to Substantial Completion)	July 3, 2013	712 (Nov. 27, 2013)	715 (Nov. 30, 2013)
Schedule Adjustment Amount	14,125,000.00	17,800,000.00	17,875,000.00
Price Value	95,545,000.00	96,684,000.00	97,095,000.00
Price Score [70% of total score]	70.00	69.18	68.88
TPEC Technical Evaluation Score	74.25	68.50	67.30
Technical Score [30% of total score]	22.28	20.55	20.19
Total Score (Price Score + Technical Score)	92.28	89.73	89.07

Design – Build Team Archer Western & HNTB



Design – Build Team Archer Western & HNTB



Mass And Size

- Proposed bridge meets Section 106 requirements
- Similar in size and mass as original bridge
- Simple truss layout with sleek uniform truss design, less clutter
- Less intrusive, lower tower height

Design – Build Team Archer Western & HNTB

Bridge Design Structural Layout



- Avoids use of gusset plates
- Enhances safety and long-term durability
- Integrated floor systems
- Faster manufacturing (less time)
- Ease of operating and maintaining
- Easier for inspection and future painting

Design – Build Team Archer Western & HNTB



Mechanical

- Greatly improves visibility for operator
- Improves safety for operators
- Reduces the number of operators
- Machine room below deck instead on top of truss
- Reduces delay due to faster lift bridge cycle time

Design – Build Team Archer Western & HNTB



Pedestrian & Bicycle Access

- Provides eleven-foot travel lanes with five-foot shared use shoulders for bicycle use;
- Greatly improves pedestrian access with six-foot, clear width solid deck;
- Deters vertical access due to rolled steel truss design with pedestrian railing versus lattice truss;
- Includes full camera monitoring from control house

Design – Build Team Archer Western & HNTB Schedule

TENTATIVE DEMO SCHEDULE

November 2011	Begin of Design Submissions
December 16, 2011	Notice to Proceed (NTP1)
January 2012	Begin Demo Preparation for Memorial Bridge, Shuttle, Float out Existing Lift Span
February 2012	Begin Demo Preparation for Kittery Approach spans
March 2012	Begin Demo Preparation for Scott Avenue

Design – Build Team Archer Western & HNTB

TENTATIVE BRIDGE CONSTRUCTION SCHEDULE

February 2012	Memorial Bridge Shop Drawings / Fabrication Plans
March 2012	River Substructure & Foundation Preparations
September 2012	Set Scott Avenue Structural Steel
October 2012	Set Kittery Approach Span NEXT beams
October 2012	Pave Scott Avenue Bridge and Daniel Street
November 2012	Pave Kittery Approach Span
December 2012	Memorial Bridge Structures Delivered to Site
February 2013	Begin Float in Preparation
May 2013	Float in for Memorial Bridge

Design – Build Team Archer Western & HNTB

TENTATIVE FINAL SCHEDULE OF WORK

June 2013 **Complete Pavement Markings & Signage**

June 2013 **Complete Testing of Lift Bridge**

July 2013 **Open Bridge to Vehicles, Bicycles and Pedestrians**

August 2013 **Complete Final Site work and Landscaping**

November 2013 **Final Acceptance (As-Built)**

Portsmouth-Kittery 13678F Project Cost



Preliminary Engineering & ROW
\$1,662,000



Construction Engineering
\$ 5,000,000



**Project Mitigation (Public Outreach, Historic
Documentation, Etc)**
\$700,000



A-W Bid Construction
\$81,420,000



Total Project Costs \$88,782,000

Price Proposal Construction Cost



Memorial Bridge [50% Maine/50% NH]
\$73,838,950



Kittery Approach Span [Maine]
\$3,597,800



Scott Avenue Approach [NH]
\$3,983,250



TOTAL COST \$81,420,000

Federal, State, and Local Construction Cost Breakdown

NH Federal Aid	\$ 47,606,079.15*
NH Betterment	\$ 2,500,000.00
Maine DOT	\$ 30,517,269.75
City Of Portsmouth	<u>\$ 796,651.10</u>
Construction Total	\$81,420,000.00

* Includes \$20 Million TIGER II Grant

Portsmouth-Kittery 13678F Community and Seacoast Impacts

- **Employment Opportunities**
- **Community Impact (Mitigation)**
- **Shuttle Service**
- **Public Outreach**

Employment Opportunities Under Design-Build

- Bridge Fabrication (NH)
- Marine Engineering (NH)
- Survey (NH)
- Sculpture Preservation (MA)
- Public Outreach (ME, NH, MA)
- Archaeology (NH)
- Historic Preservation (NH)
- Field testing (NH)
- Shuttle Service (NH)
- Local labor to supplement work force (NH, MA, ME)

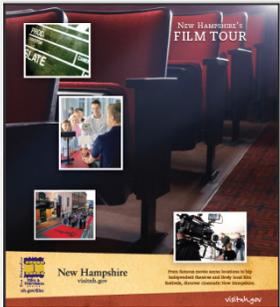
Impact of Construction on Community

- **Detour Access**
 - **Vehicle Detour And Signage Via I-95**
 - **Pedestrian And Bicycle Access Via Shuttle**
- **Noise (7:00 Am To 7:00 Pm, except during nav closures)**
- **Navigational Closures (Limited To Max. of 8-days)**
- **Vibration Monitoring (Historic Sites By Contractor)**
- **Business Interruption (Public Outreach)**
- **Staging Area And Construction Access (Coordination With City & Town)**
- **Event Disruption (Public Outreach)**

Shuttle Service During Construction

- 12-passenger ADA/Lift Equipped Van
- 6-bicycle Capacity Carrier
- Bus Stops
 - Prescott Park, Portsmouth
 - Intersection Of Newmarch & Water Streets, Kittery
- Fully Licensed & Insured Operators
- Shuttle Operation
 - 7-days a Week
 - 5:00 am To 1:00 am
 - Hourly Schedule
- **Free!!**

Public Outreach & Marketing Objectives



1. Community Input and Public Relations
2. Business Marketing And Art Promotion
3. Public Educational Outreach
4. Generate A Lasting Physical Product (Book or DVD)

Public Outreach Advisory Committee

Advisory Committee Representation

1. **Business representatives in Portsmouth and Kittery**
2. **City and Town Representatives**
3. **Historical Societies and Commissions**
4. **Museums**
5. **Historic House Museums**
6. **The Arts Community**
7. **Public Parks and Land Trustees**
8. **Other parties as determined**



Let's Move Toward Success!

Question/Comments

Commissioner Christopher Clements, Sr.

NHDOT (603) 271-1484

Email: CClements@dot.state.nh.us



Chief Project Manager Keith Cota

NHDOT (603) 271-1615

Email: kcota@dot.state.nh.us



Sr. Project Manager Stephen DelGrosso

Archer Western (781) 793-9988

Email: sdelgrosso@walshgroup.com