



Stakeholder Meeting SARAH MILDRED LONG Bridge Replacement *The Regional River Crossing* Linking Kittery, Maine & Portsmouth, New Hampshire

in cooperation with the

New Hampshire

State of

U.S. Department of Transportation Federal Highway Administration

November 20, 2013



Welcome & Introductions





State of New Hampshire

CFHWA

Design Team

FIGG | Hardesty&Hanover Joint Venture Lead Agency

Supporting Agency

Supporting Agency

Bridge Design

Roadway Design



-RAG

Construction Team



Construction Manager / General Contractor (CM/GC)

Geotechnical, Hydraulics

Project Team



Agenda

Project Overview Update

Summary of Preferences Previously Selected and Review of Bridge Features for Selection Today

Tower Discussion

Bridge Aesthetic Lighting

Review Selections, Next Steps and Schedule

MaineDOT O Stote of New Hompshire

STAKEHOLDER MEETING SARAH MILDRED LONG Bridge Replacement The Regional River Crossing NOVEMBER 20, 2013

AGENDA

2:00 pm	Welcome and Introductions
	Public Involvement Process - Goals and Objectives
	Stakeholder Meeting and Workshop Schedules
2:10 pm	Project Overview Update
	Review of Selected Alignment
	Final Bridge Layout
	Portsmouth and Kittery Connections
2:25 pm	Summary of Preferences Previously Selected and
	Review of Bridge Features for Selection Today
2:35 pm	Tower Discussion
	Technical Review of How the Tower Elements and
	Lift Span Works – Details of Design
	Presentation of Tower Options
	Open Discussion
	Vote on Tower Preferences
4:00 pm	Bridge Aesthetic Lighting
	Presentation of Bridge Aesthetic Lighting Concepts
	Open Discussion
4:50 pm	Review Selections, Next Steps and Schedule
5:00 pm	Adjourn

SARAH MILDRED LONG Bridge Replacement *The Regional River Crossing* Public Involvement Process Goals & Objectives



Public Involvement Process Goals & Objectives

GOALS

Gain input from the community through open communications throughout design.

Through the Design Workshops, participants come together to select key aesthetic features for the new bridge.

Bridge

BRIDGE TEAM

DESIGN WORKSHOPS

Public Involvement Process Goals & Objectives

Create a bridge that is beautiful and functional Compliment the landscape with context sensitive design

Utilize efficient structural forms that are economical

Capture the community vision for a signature bridge



Community Involvement

NOW

Design Workshops



Bridge Website



www.mainedot.gov/mdot/sml/ index.shtml Link to Sarah Mildred Long Bridge

DURING CONSTRUCTION Beginning in Fall 2014 Newsletters Education for Kids





Sidewalk Community Talks During Construction





Bridge Box for Teachers

to any end of each monotonic present and in the rest of the and and

Stakeholder Meeting and Workshop Schedules			
Stakeholder Meeting	January 24, 2013		
Design Workshop	April 26, 2013		
Stakeholder Meeting	May 2013		
Design Workshop	June 2013		
Stakeholder Workshop / Meeting	November 20, 2013		

* Stakeholder Meetings are for input and information

 $\ast\,$ Design Workshops are cross section of the community to work with design team on selecting bridge features for final aesthetics

Stakeholder Meetings January 24, 2013 and May 30, 2013







Design Workshops -April 26, 2013, July 11, 2013; 9 am to 3 pm



Reviewed Design Criteria and Geometry Discussed Bridge Aesthetic Principals Selected Theme - Focus on Simplicity for Aesthetics

Public Meeting – May 30, 2013 Over 50 Community Participants





Kittery Block Party - June 15, 2013 80% Chose to Keep the Current Bridge Name







*Please note that renaming the bridge will require legislative or congressional action.

rename the Sarah Mildred Long Bridge*?

Originally named the US1 Bypass over the Piscataqua River, the bridge was renamed in 1987 by both the Maine and New Hampshire Legislatures to honor Long's work and dedication to the Maine-New Hampshire Interstate Bridge Authority.

Sarah Mildred Long was born on August 18, 1916 in Portsmouth and was a lifelong resident, attending Portsmouth schools. She worked for more than 50 years for the Maine-New Hampshire Interstate Bridge Authority, beginning at its inception in 1937 as a bookkeeper and secretary, until her retirement as Executive Secretary. She continued to work for the Authority as a consultant well past her retirement. Sarah Mildred Lona died in 2004 in Portsmouth at the age of 87.

SARAH MILDRED LONG Bridge Replacement The Regional River Crossing

MANY IN







PISCATAQUA CONSTRUCTION + COMMUNITY

Discover Portsmouth Academy Gallery June 7, 2013 - October 13, 2013





Discover Portsmouth Academy Gallery June 7, 2013 - October 13, 2013





Discover Portsmouth Academy Gallery June 7, 2013 - October 13, 2013







Bridge Design in Progress Bridge Rendering Coming In August 2013

Public Meeting – Kittery Planning Board

September 19, 2013 - 6:00 pm

- Project Update
- Kittery Approach Roadway Alternates
 - 1. Maintain Existing Traffic Movements
 - 2.Signal Intersection / Oak Terrace
 - 3.Roundabout
- Received Public Comments

Solution - Enhanced design inspired by public comments

Plan View of Kittery Intersection



Today's Workshop Key Steps/Procedures

- Follow a set agenda
- **Present options**
- Encourage open discussion
- Always use microphones
- Provide handouts on information presented
- **Record preferences**





SARAH MILDRED LONG Bridge Replacement *The Regional River Crossing* Project Overview Update



Looking Southeast

Current Alignment





Studied new alignments to provide a practical and efficient solution for the new bridge



Selected Alignment

- Most cost effective design.
- Larger horizontal clearance & better approach angle for marine traffic.
- Best constructability by moving away from existing foundations and obstructions.
- No impact to Albacore Park.
- **Optimized space at Port.**
- Optimizes and improves connections on Kittery and Portsmouth sides



SARAH MILDRED LONG Bridge Replacement *The Regional River Crossing* Final Bridge Layout

Bridge Terminology



Schematic bridge for illustration of terms

Bridge Terminology



Schematic bridge for illustration of terms

Existing Cross-Section



Proposed Cross-Section



Vehicle traffic is on bridge above the train



Span Arrangement and Structure Type

Proposed Span Arrangement



Proposed Bridge



Portsmouth Side Span Arrangement Comparison



Kittery Side Span Arrangement Comparison



Reduce Number of Bridge Openings





Proposed Typical Clearances



Lift Span in typical configuration



Proposed Typical Clearances



Lift Span in highest configuration for tall vessels to pass under


Proposed Typical Clearances



Lift Span lowered to railroad crossing configuration

Horizontal clearance is the clear and **unobstructed** navigational portion of the Piscataqua River that provides safe passage

Horizontal clearance is measured perpendicular to the channel

Existing Clearance

T

175'

Horizontal Clearance



Proposed Clearance for New Bridge

Lift Bridge



Structure Type - Concrete Segmental Box Girder

Vehicular Approach Superstructure Concrete Box Girder

> Railroad Approach Superstructure Concrete Box Girder



Typical Vehicle Spans Box Girder Shape at Mid-Span in Cross Section

Box Girder Shape in Cross Section - Lift Spans with Vehicles

田田

Structural Steel

Metalized Coating for Highest Protection from Corrosion

42' - 7"

5'-7"





Portsmouth Connection



Portsmouth Connection





of side was long and ind our line is in fact

Rendering of New Bridge Spanning Over Market Street

Kittery Connection – Signalized Intersection and 1-Way Oak Terrace



BENEFITS Of Proposed Design

- **Retains Same Primary Traffic Movements.**
- Maintains Important Emergency Vehicle Access.
- No Oak Terrace Dead End.
- Least Utility Relocation Impacts.
- Maintain Park Setting Under Bridge.
- Approval Of Adjacent Property Owner With Improved Safety For Pedestrian Access From Oak Terrace To Downtown Kittery.
- Addresses All Adjacent Property Owner Considerations.
- Less Through Traffic Improves Quite Neighborhood Setting.
- **Best Overall Costs.**
- Minimal Retaining Walls.

SARAH MILDRED LONG Bridge Replacement *The Regional River Crossing* Summary of Preferences Previously Selected and Review of Bridge Features for Selection Today

Theme: Local Simplicity of the Working Waterway. Ecology and Maritime.

Community Direction On Bridge Aesthetic Design:

Reflect technology of our time

- Be factual (no artificial mimicry)
- Be humble, simple and deliberate
- Be authentic and have purity of materials
- Have nothing that is fake
- Keep it simple
- **Magnificent Maritime**
- Simple, functional, efficient, pleasing
- Relate to rock, water

Keeping with the idea of sails and curves of wind-blown sails

Design Workshop Community Input

Selected Open Bridge Railing

- **Selected Pier Shape**
- **Evolved Preferences for Tower Concepts & Bridge Lighting**



PIER CONCEPT

OPEN BRIDGE RAILING



SARAH MILDRED LONG Bridge Replacement *The Regional River Crossing* Tower Discussion

Technical Review of How the Tower Elements and Lift Span Works - Details of Design

Lift Span Tower Drive Components



Lift Span Tower Components



Close Up

Full View

Lift Span Tower Components



Close Up

Full View



Steel Orthotropic Box Lift Span

Actual Steel Box Span from Bordeaux Bridge in France



Operating Machinery







Operating Machinery

Motors and Primary Reducers

Secondary Reducer







Operating Drum

Operating Ropes4 ropes per drum (2 uphaul, 2 downhaul)Drums with opposite hand groovesDownhaul Ropes (Green) From Drum to Bottom of CounterweightUphaul Ropes (Yellow) From Drum to Upper Deflector Sheave
to Counterweight



Color to show up and down rope movement

Modified Tower Drive – Uphaul Counterweight Connection



Operating Drum Attachment to Counterweight

Span Guide System

95

500

275

278

50

ROLLER ASSEMBL

2-

Selected System:

Fully Equalized Roller Guides for Transverse and Longitudinal Forces



Presentation of Tower Options



Theme: Local Simplicity of the Working Waterway. Ecology and Maritime.

Community Direction On Bridge Aesthetic Design:

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Tower Tops, Shape, Texture







Albacore Park, Portsmouth











View from Container Ship Courtesy of NHDOT



Schooner American Eagle


The Local Language of Simple Lines in the Natural and Built Environment are Inspiration for the Tower Texture



Kittery Shoreline



The Local Language of Simple Lines in the Natural and Built Environment are Inspiration for the Tower Texture



Rice Public Library - Kittery

Tower Top Concept A



Tower Top Concept B



Tower Top Concept C



Tower Comparison





Angular Tower

Curved Tower

Glass In Tower Provides Natural Light for Tower Stairwell

Type of glass selection will be based on low maintenance and cost



Angular Tower



Drivers' Perspective





Drivers' Perspective

Counterweight Access Stairs

Tower Cross-Section Below Window Openings



View From The Water



Tower - Driver's Perspective

Angular Tower

Curved Tower









Tower Texture 2



Tower Texture 3



Open Discussion - Tower Tops, Shape, Texture





Tower Shape and Tower Top Concept Preference Form

Using the black pens provided, please fill in completely one red box for each pier to give your preferences. If no box is filled then a 5 will be recorded as Neutral.

NOTE: 1 = Lowest Score (Dislike); 5 = Neutral; 10 = Highest Score (Like).

Angular Tower



1 Disli	2 ke	3	4	5 Neu	6 itral	7	8	9	10 Like	
Comments:										
			_							
1 Disli	2	3	4	5	6	7	8	9	10 Liko	

Curved Tower

Angular Tower

Tower Shape and Tower Top

Concept Preference Form



1 2 3 4 5 6 7 8 9 10

Dislike Neutral Like

Comments: _____



Tower Top Concept A





Dislike Neutral Like Comments:

Tower Top Concept B





1 2 3 4 5 6 7 8 9 10 Dislike Neutral Like Comments: ____



Tower Texture Preference Form

Using the black pens provided, please fill in completely one red box for each pier to give your preferences. If no box is filled then a 5 will be recorded as Neutral. NOTE: 1 = Lowest Score (Dislike); 5 = Neutral; 10 = Highest Score (Like).

Concept 1

Tower Texture Preference Form







1	2	3	4	5	6	7	8	9	10
Dislike			Neu				Like		

Comments:





SARAH MILDRED LONG Bridge Replacement *The Regional River Crossing* Bridge Aesthetic Lighting

Bridge Lighting

Pier Lighting

Tower Lighting

Design Workshop SARAH MILDRED LONG Bridge Replacement The Regional River Crossing April 26, 2013

1a. Pier Lighting



1b. Tower Lighting

1	2	3	4	5	6	7	8	9	10
Dislike			Neutral					Like	



SUPERSTRUCTURE LIGHTING (Please provide a preference for each nem)

2. Superstructure Lighting



COLORED LIGHTING (Please provide a preference for one item only)

3. Subtle color in the lighting of Piers, Towers or Superstructure



Colored Lighting

Superstructure Lighting

Existing Sarah Mildred Long Bridge



Existing bridge has roadway lighting

New bridge will also have roadway lighting using today's technology of Light Emitting Diodes (LED)

Energy Efficient Low Maintenance Lights



First use of LED's on major highway. Opened in 2008







Solid State – Light Emitting Diodes (LED)

Operates well in extreme cold

Excellent optical control choices

Excellent intensity control through dimming and step-switching

Excellent maintenance and operational profile



Example Fixture - Not Actual

Safety Lighting On Sheave And Behind Tower Glass

Safety Lighting On Sheave And Behind Tower Glass



Safety Lighting On Sheave And Behind Tower Glass - Can Vary Intensity And Color

17

Safety Lighting On Sheave And Behind Tower Glass - Can Vary Intensity And Color



Safety Lighting On Sheave And Behind Tower Glass

Safety Lighting On Sheave And Behind Tower Glass





Market Street Gateway Improvement Project Limits

ALC: NOTE OF THE OWNER OWNE

Possible Aesthetic Lighting For Bridge Over Market Street

Sarah Mildred Long Bridge can be provided with wiring and junction boxes for future lighting over Market Street to be added by Portsmouth with the Gateway Improvement Project

Surface Mounted white-light LED accent light to illuminate pier

Possible white-light LED uplight on underside of deck projected from flanking piers



Open Discussion







SARAH MILDRED LONG Bridge Replacement *The Regional River Crossing* Review Selections, Next Steps and Schedule









Vistas – View Sheds



Vista 1 - Looking From Four Tree Island


Vista 1 - Looking From Four Tree Island



Vista 2 - Looking From Near Memorial Bridge





Vista 3 - Looking from Ceres Street



Vista 3 - Looking from Ceres Street





Vista 4 - Looking from Badger's Island



Vista 4 - Looking from Badger's Island

ANALTS -



Vista 5 - Looking from Walker Avenue



Vista 5 - Looking from Walker Avenue



Vista 6 - From Bridgeview Terrace



Vista 6 - From Bridgeview Terrace



Vista 7 - From I-95 Bridge



Vista 7 - From I-95 Bridge



Vista 8 - Looking from Cole Street



Vista 8 - Looking from Cole Street



Vista 9 - Looking from Market Street



Vista 9 - Looking from Market Street



Vista 10 - Looking from Market Street



Vista 10 - Looking from Market Street

SHPO - Christian Shore HD Rendering with Proposed Bridge



Vista 11 - Looking from Marsh Lane

SHPO - Christian Shore HD Rendering with Proposed Bridge



Existing Sarah Mildred Long Bridge

SHPO - USS Albacore Rendering with Proposed Bridge



Vista 12-15 - Looking from Northwest Street

MARAINE Sola

SHPO - USS Albacore Rendering with Proposed Bridge



Vista 12-15 - Looking from Northwest Street



Vista 16,17 - Looking From Michael Succi Drive



Vista 16,17 - Looking From Michael Succi Drive



Vista 18 - Looking From Oak Terrace



Vista 18 - Looking From Oak Terrace



Vista 19 - Looking From Rt.1 Bypass in Maine



Vista 19 - Looking From Rt.1 Bypass in Maine



Vista 20 - Looking From Bridge Street



Vista 20 - Looking From Bridge Street

THANK YOU

for Participating in Creating Your Bridge Design!