HAMPTON HARBOR BRIDGE

Public Information Meeting

Seabrook-Hampton Bridge Project
Project No. 15904

September 26, 2018

New Hampshire DOT Department of Transportation

HDR

Innovative Planning BETTER COMMUNITIES

Agenda

HAMPTON HARBOR BRIDGE

- Welcome and Introductions
- Project Background
- Project Purpose and Need
- Project Process
- Environmental Resources on Site
- Rehabilitation Alternative
- Next Steps

Vital Transportation Link

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- NH Route 1A over Hampton Harbor
- Carries up to 18,000 vehicle per day during peak periods
- Recreational bicycle and pedestrian use
- Opens approximately 800 times per year for vessel movement in and out of Hampton Harbor

West Elevation

Bridge History

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- Constructed in 1949
- Replaced "Mile-Long" Bridge at the crossing
- Named for Neil R. Underwood, Hampton resident killed in World War II
- One of two remaining bascule bridges in New Hampshire

"Mile-Long" Bridge

A Bascule Bridge

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- Bascule span opens to allow vessels to pass through
- Mechanical system lifts bridge, using counterweights to “balance” the span
- “Bascule” is French for “seesaw”
- Bridge type rare in NH because of limited shoreline and navigable rivers

Bascule span (open) looking South

Existing Bridge

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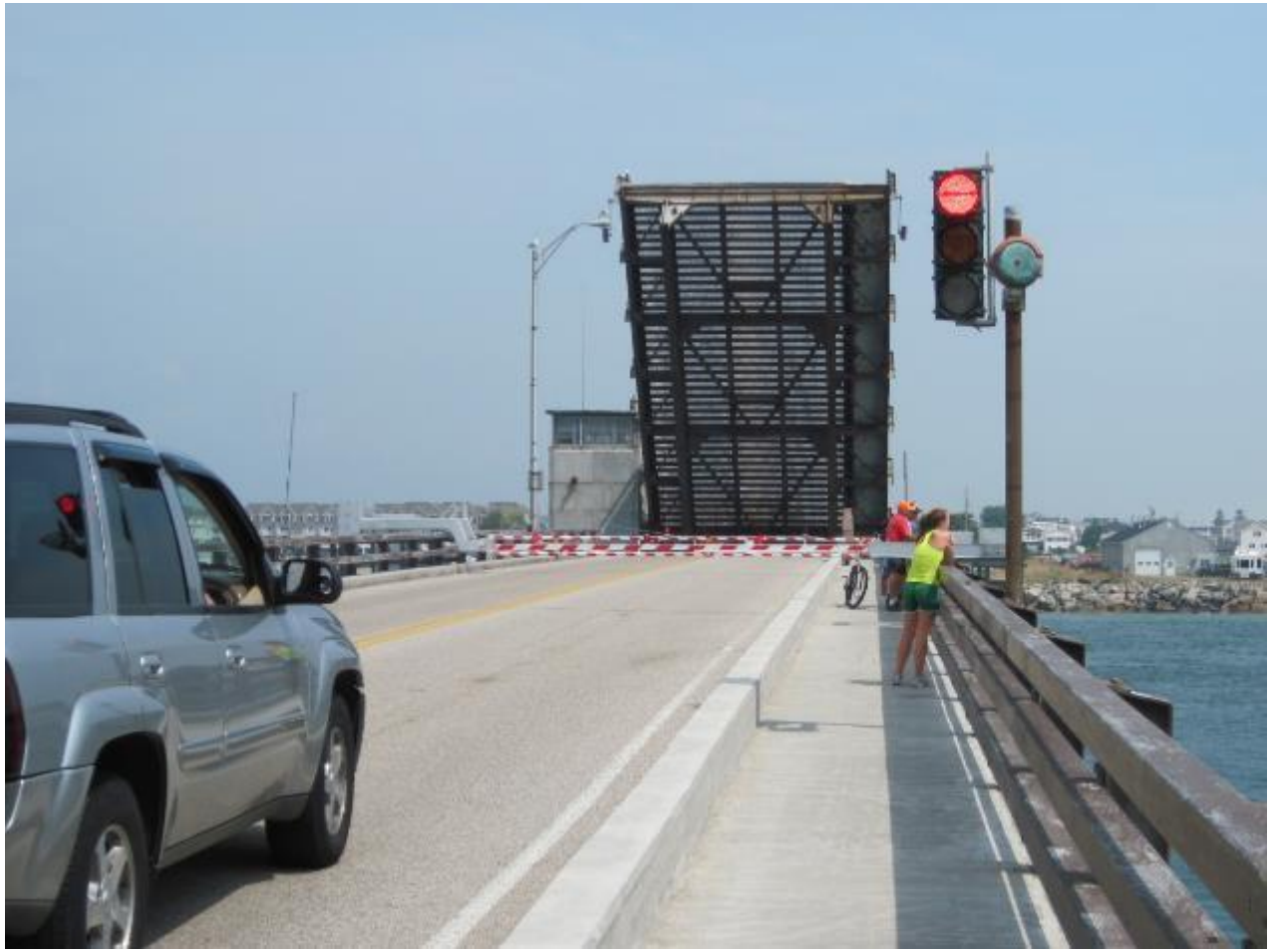
- Overall Length: 1199'-0"
- Span Lengths: 12 fixed spans at 94 feet each and the 65-foot bascule span

Bridge Looking West

Existing Bridge

HAMPTON HARBOR BRIDGE

- Overall Bridge Width: 33’-4”
- Roadway Width: 26’-0”
  (2 – 12’-0” Travel Lanes with 1’-0” shoulders)
- No shoulders for bicyclists
- 5-foot minimum shoulder width recommended for safe passage of bicyclists



Looking North

Narrow Sidewalk

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- 1 – 4’-7” Sidewalk on east side (narrows to under 4 feet at barrier gates)
- 5’-6” minimum sidewalk needed to meet ADA requirements

Existing sidewalk at barrier gate

Navigational Clearance

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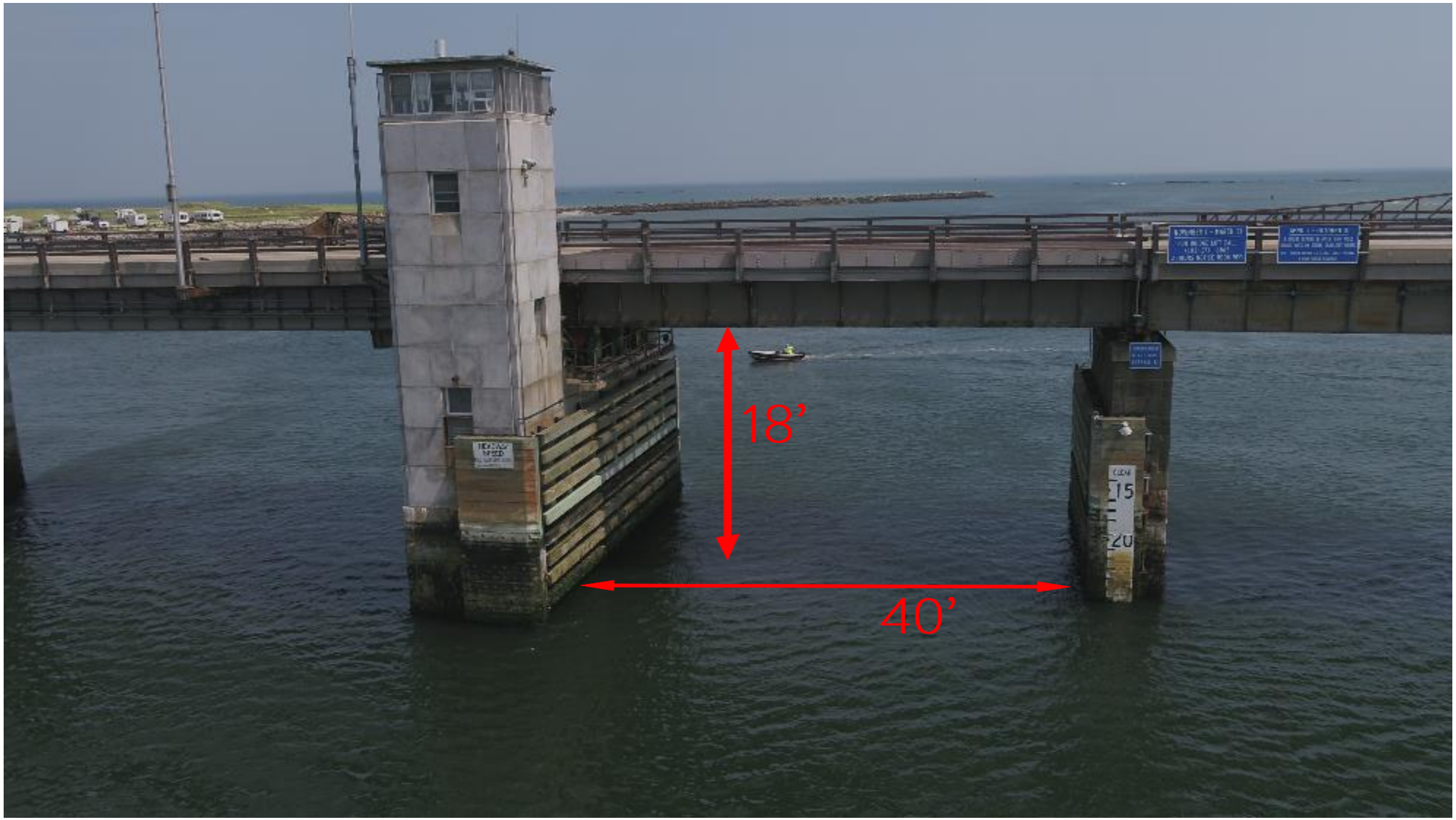

Stated Navigational Clearances per Coast Surveys at MHW

History of Repairs & Rehabilitation

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- Harsh saltwater environment and movable components increases need for maintenance
- Rehabilitated multiple times, including in 1963, 1978, 1983, 1990, 2002 and 2010
- Emergency repairs to the bascule span mechanical system undertaken in 2018

East elevation

Project Purpose and Need

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Purpose

- Provide a safe, reliable, and structurally sound crossing
- Improve mobility for the travelling public (vehicles, bicyclist, and pedestrians) and marine users

Need

- Structurally deficient and functionally obsolete bridge
- Many original mechanical components and outdated electrical system
- Substandard shoulder and sidewalk widths

Alternatives to be Studied

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- Major Alternatives
  - Rehabilitation
  - Replacement with Fixed Bridge
  - Replacement with Movable Bridge
- Alignments east and west of the bridge will be considered for replacement structures and temporary bridge structures (if required)

Key Considerations

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- Vessel traffic and required clearance
- Right-of-way
- Driving public
- Pedestrians
- Bicyclists
- Historic resources
- Environmental resources
- Constructability
- Construction impacts and Traffic Control
- Utilities

Looking North

Alternative Selection Process

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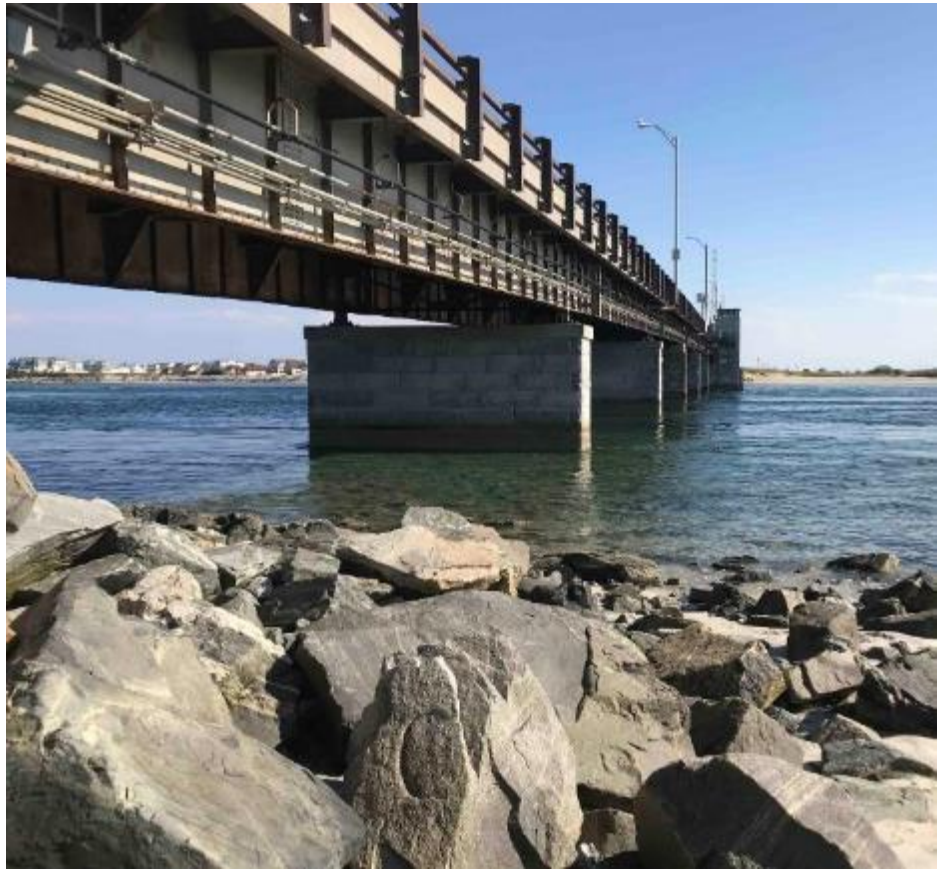
- Evaluate existing condition of bridge
- Develop range of reasonable alternatives and associated costs
- Prepare Type, Size and Location Study (engineering evaluation of alternatives)
- Evaluate impacts/effects of all alternatives on range of natural and man-made resources
- Identify Preferred Alternative to carry into preliminary and final design phases



Looking South

What the Team Has Done so Far

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- Study initiated in May 2018
- Formed a Public Advisory Committee (PAC)
- Began coordination with Natural Resource Agencies
- Conducted site walk with regulatory agencies
- Undertook wetland delineation
- Identified key Natural Resources
- Identified existing utilities in the Project Area
- Initiated consultation with NH State Historic Preservation Office and Consulting Parties
- Conducted fieldwork to identify historic and archaeological resources
- Collected traffic count data
- Began engineering review of Rehabilitation Alternatives

Regulatory Processes

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Seabrook approach

Project Team will evaluate impacts/effects of action through:

- Agency coordination
- Environmental Assessment, prepared in accordance with National Environmental Policy Act (NEPA)
- Endangered Species Act Section 7 coordination
- Section 106 consultation
- Section 4(f) Evaluation
- Section 6(f) compliance
- Supporting studies

What Agency Coordination has Occurred?

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- NH Natural Heritage Bureau
- NH Fish and Game
- National Oceanic and Atmospheric Administration (NOAA)
- US Fish and Wildlife Service
- US Army Corps of Engineers
- NH Division of Historical Resources
- Seabrook and Hampton Harbormasters
- US Coast Guard

An Environmentally Rich Area

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- Range of habitats including dune, shrubland, and sand/mud flat
- Field survey and agency coordination identified threatened and endangered species that could occur in project area
- 26 designated Essential Fish Habitat species
- NOAA-Trust resources such as American lobster and shellfish

From Seabrook looking North

Habitats and Resources

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Resource

- Sand/Mud Flat
- Dune Habitat
- Beach Habitat
- Ruderal Habitat
- Shrub Habitat
- Rocky Shore
- Blue Mussel
- Approximate location of Piping Plover enclosure

Listed Land-based Species

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- Several state threatened and endangered plant species in dune habitat south of bridge
- Piping plover (federal threatened and state endangered)
- Least tern (state endangered)
- Red knot (federal threatened)
- Northern long-eared bat (federal threatened)

Listed Aquatic Species

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- Northwest Atlantic Ocean Distinct Population Segment of loggerhead sea turtle (federal threatened)
- North Atlantic Distinct Population Segment of green sea turtle (federal threatened)
- Kemp's ridley sea turtle (federal endangered)
- Leatherback sea turtle (federal endangered)
- New York Bight, Chesapeake Bay, South Atlantic and Carolina Distinct Population Segments of Atlantic sturgeon (endangered); and Gulf of Maine DPS (federal threatened)
- Shortnose sturgeon (federal endangered)

Initial Cultural Resources Review

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- Defined Direct and Visual Areas of Potential Effect (APEs)
- Submitted Request for Project Review Form
- Attended first Cultural Resources Coordination meeting
- Identifying Section 106 Consulting Parties

Preliminary Historic Findings

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- Identifying historic properties in APE
  - Neil Underwood Bridge listed in NHDOT's Historic Bridge Inventory (likely eligible)
  - Eastern Railroad Historic District (National Register-Eligible)
  - Undertaking fieldwork and analysis to assess potential eligibility of other properties in Visual Area of Potential Effect

East elevation

Preliminary Archaeological Findings

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- Extensive disturbance throughout the Direct Area of Potential Effect
- Relatively low potential for intact Native American archaeological deposits
- Some potential for archaeological deposits related to late 19th/early 20th-century residential development north of bridge
- Remains of the Mile-Long Bridge may be present west of bridge
- Old wooden pilings south of bridge may be related to construction of existing bridge

Near South abutment

Potential Section 4(f) Properties

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- Hampton Beach State Park (Hampton)
- Hampton State Pier (Hampton)
- Hampton-Seabrook Dunes Wildlife Management Area (Hampton and Seabrook)
- Harborside Park (Seabrook)
- Sun Valley Beach (Hampton)
- Neil Underwood Bridge
- Historic neighborhoods

Hampton-Seabrook Dunes Wildlife Management Area

Potential 6(f) Resources

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- Hampton Beach State Park (Hampton)
- Hampton State Pier (Hampton)
- Harborside Park (Seabrook)

Hampton Beach State Park

Bridge and Surrounding Area

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Bascule Components

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2017 Bridge Opening Failure

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- Deteriorated pinion and coupling failed in July 2017 causing the bridge to not operate
- Caused vessel users to modify schedules to get in and out of the harbor
- NHDOT Forces completed Emergency Repairs summer of 2017
- Interim repairs completed in 2018.

Bascule Span Coupler

Study of Rehabilitation Alternative

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- One of three alternatives considered in this project
  - *Rehabilitation;* Replacement with Fixed Bridge; Replacement with Movable Bridge

- First alternative to be evaluated
  - Review existing structure and existing conditions
  - Determine work needed to address structural concerns to remove the bridge from the State's Red List
  - Determine work needed to meet project purpose and need
  - Ensure safe and reliable movable bridge operation
  - Minimize modifications to a potential historic resource
  - Required by Section 106 due to potential historic eligibility and the use of Federal Funds

Study of Rehabilitation Alternative

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- Visual assessment and inspection of existing bridge
  - Movable bridge systems – mechanical and electrical
  - Typical Section of roadway approaches
  - Bridge structure - completed using an Unmanned Aerial Vehicle (UAV), commonly known as a drone

Existing Bridge Condition

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- Bridge is Number #1 on the State's Red List Bridge, as well as the Rehabilitation and Replacement Priority List

South Approach Looking West

Typical Floorbeam/Girder Connection

North Abutment Bearing

Existing Bridge Condition

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North Approach – Looking East

South Approach

Existing Bridge Condition

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Span Drive Machinery

Auxiliary Motor

Study of Rehabilitation Alternative

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- Structural analysis of existing bridge
  - Requires significant modifications to carry current design loads
  - Insufficient capacity for widened roadway
  - Fracture Critical Bridge

Study of Rehabilitation Alternative

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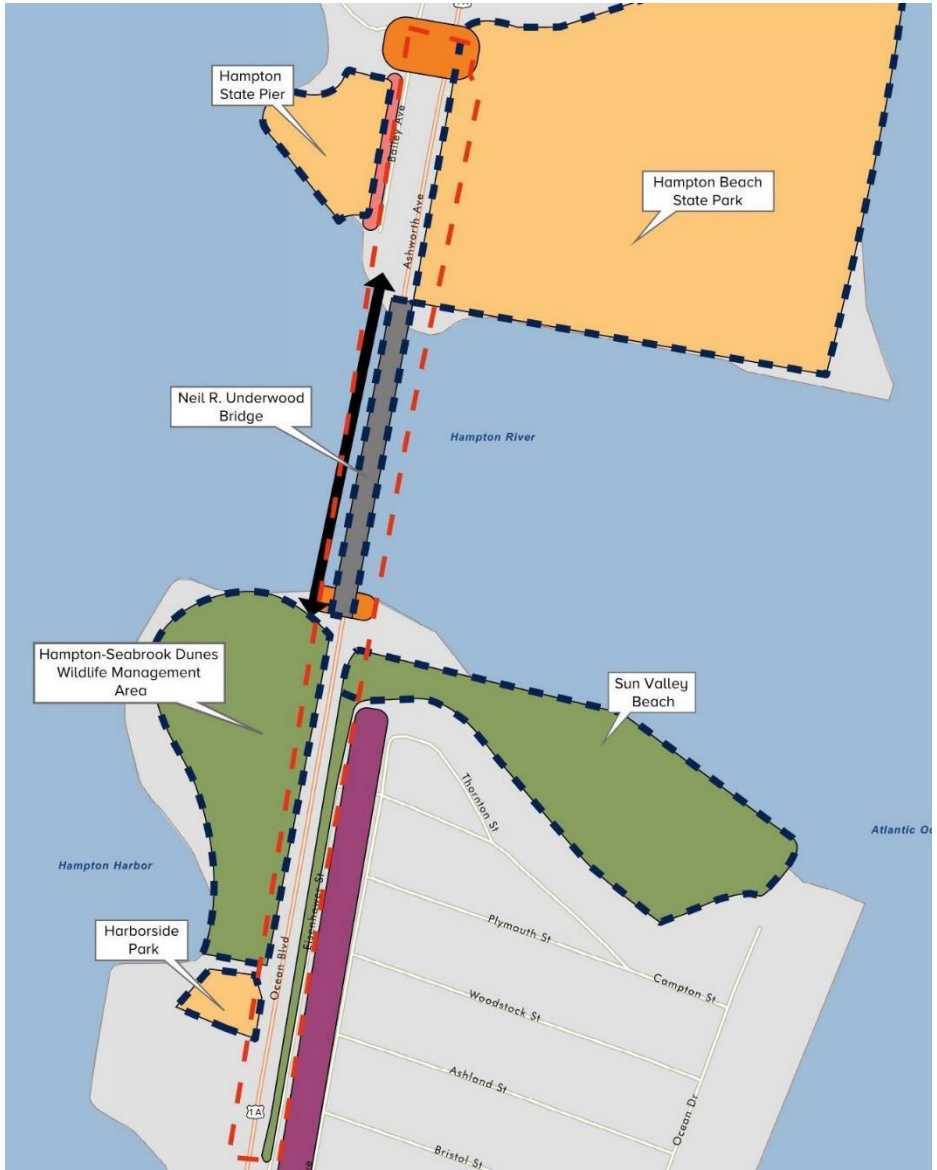
- Rehabilitation alternative evaluation
- Design considerations:
  - Waterway traffic
  - Needs of vehicles, bicyclists and pedestrians for roadway design
  - Temporary impacts due to construction and construction staging, as well as traffic control
  - Natural and cultural resources
  - Impacts to abutters
  - Life cycle and construction costs

Bascule span, looking east

Constrained Site



- Potential Section 4(f) Property
- Project Area
- Utilities
- Potential Archeological Sensitivity
- Potential Section 6(f) Property
- Sensitive Habitat
- Residences
- Commercial Properties
- Historic Property

Next Steps

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- Anticipated completion of Rehabilitation Alternative late fall
- Review of roadway alignments and profiles for replacement alternatives
- Determination of navigational clearance requirements
- Followed by development of replacement alternatives
- Continued coordination with reviewing agencies and PAC

Next Steps

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- Next Public Involvement Meeting in December of 2018.

  Meeting will:

  - Provide updates on Historic Review process
  - Update on Rehabilitation Alternative
  - Update on alignments and profiles for Replacement Alternatives

- Complete study of all alternatives and select a Preferred Alternative Spring 2019
  - Followed by Public Meeting to get input from Towns and Users

Project Development Process

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PRELIMINARY DESIGN PROJECT SCHEDULE

Project Development Process

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- Final Design of Preferred Alternative
  - Detailed design plans
  - Environmental Permitting
  - Secure necessary property rights
- Project is scheduled at Advertise in FFY 2023
- Current programmed construction cost of $28 M
  - (Assumes a fixed structure replacement)
- Construction anticipated to span over several years beginning in 2024

An Open Planning Process

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- Public meetings planned at key project milestones
- Study documents posted on project website - www.nh.gov/dot/projects/seabrookhampton15904
- Community liaison Jill Barrett – jbarrett@fhiplan.com Mobile Phone: 860-539-2038