

NEWINGTON-DOVER

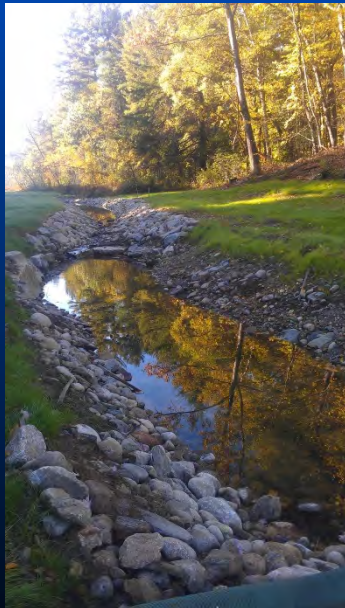
Improvements to NH Rte. 16 / Spaulding Turnpike / Little Bay Bridges

Tenants Association at Pease

AT

Great Bay Community College

May 16, 2016

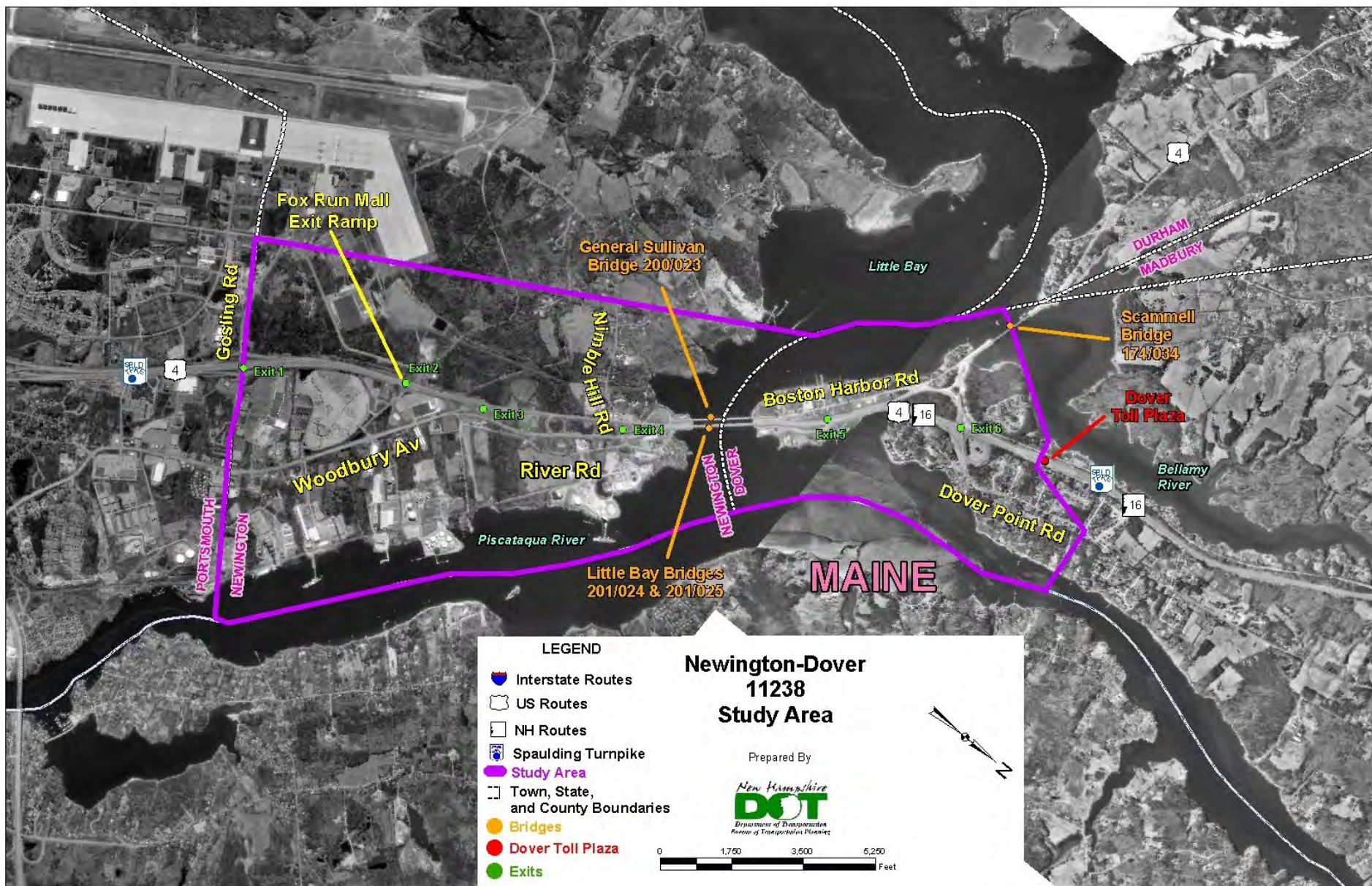


Meeting Agenda

- **Project Overview**
- **Status of Newington-Dover, 11238 Contracts**
 - **Contract L – New Little Bay Bridge SB**
 - **Contract M – Newington**
 - **Contract O – Little Bay Bridge NB Rehabilitation**
 - **Contract Q – Dover**
 - **Contract S – General Sullivan Bridge Rehabilitation**
 - **Condition & Status - General Sullivan Bridge**



Project Area



Project Need



Project Need



Project Funding & Estimated Cost



- Total Estimated Project Cost - \$269.7M
 - Engineering - \$20.4M
 - ROW - \$8.9M
 - Environmental Mitigation & TDM (Bus, Park'n'Rides) - \$20.9M (2010 Dollars)
 - ❖ \$12.66M federal CMAQ & Advanced ROW funding
 - Construction - \$207.2M (2010 Dollars)
 - \$219.5M (w/ inflation)

- Project Primarily Funded with Turnpike Toll Revenue & Bond Proceeds
 - \$31.4M dedicated Federal Earmarked Funds & Grants
 - CMAQ/Federal Funding for TDM Elements (P&R)
 - Final two contracts to be paid through combination of toll revenue and bonding, and is on schedule as approved through the State Ten Year Transportation Improvement Plan (STIP-2014).

Environmental Mitigation

Components



- Environmental Mitigation - \$4.37M (224 acres)
 - 120-acre Preservation of Tuttle Farm (Joint Effort w/ City, SRC, DOT) – (\$1.34M)
 - 40-acre Preservation of Day Property in Blackwater Brook Watershed – (\$0.23M)
 - 64 acres of Preservation in Knight Brook Watershed – (\$2.0M)

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Park 'n' Ride

- Park'n'Ride at Exit 9 in Dover – completed (\$3.49M)
- Park'n'Ride at Exit 13 in Rochester - completed (\$1.35M)
- Multi-use Park'n'Ride in Lee – CMAQ Location under review (est. \$85k)



NEWINGTON-DOVER 11238

Improved Downeaster Rail Service

- CMAQ Investment of \$2.0 M with N-D Turnpike Match



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Expanded Transit Service

- ❖ NH – Boston Bus Service (C&J)
- ❖ Express Coast Bus Service from Rochester, Dover, Somersworth/Berwick to Portsmouth Naval Shipyard
- ❖ Direct Bus Service – COAST Bus Service from Rochester to Pease



NEWINGTON-DOVER 11238

Transportation Demand Management

- ❖ Commute SMART Seacoast – a new Transportation Management Association (TMA) to promote:
 - Carpooling/vanpooling
 - Ride mass transit
 - Bicycle/walk
 - Telecommuting
 - Compressed work schedules
- ❖ Focus is employers and employees at Pease and within the Greater Seacoast
- ❖ More information at www.commuteSMART.org



NEWINGTON-DOVER 11238



Post Construction

Pre-Construction

NEWINGTON
SOUTHERLY
RENDERING



NEWINGTON-DOVER 11238



Post Construction

Pre-Construction



DOVER
NORTHERLY
RENDERING

Little Bay Bridges Contracts L, O, & S

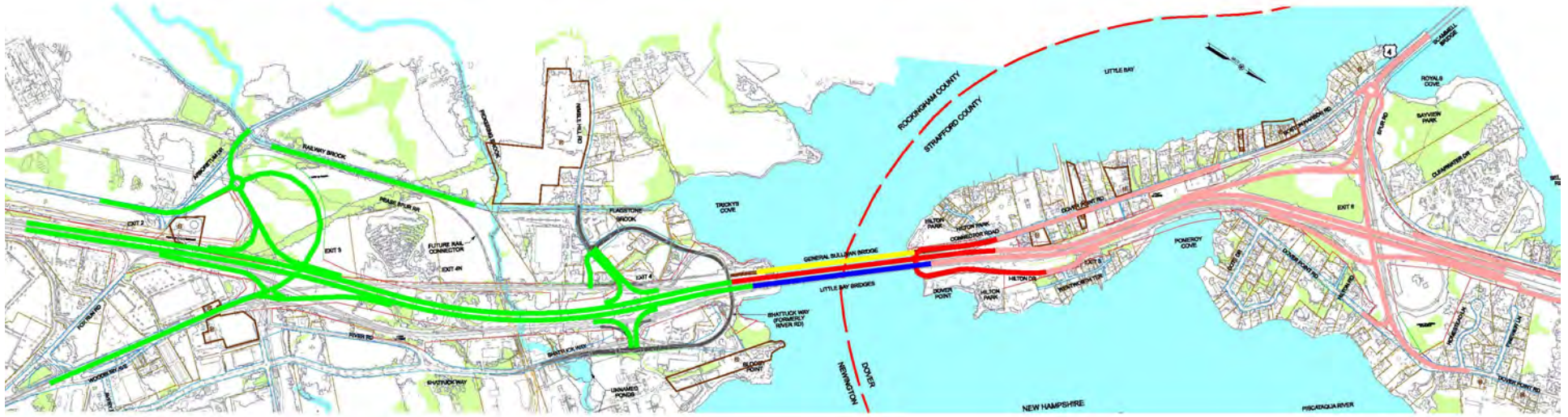


**General
Sullivan Bridge
Rehabilitation
*Contract S***

**New Little Bay Bridge
*Contract L***

**Existing Little
Bay Bridges
Rehabilitation
*Contract O***

Current Contract Breakout & Schedule



CONSTRUCTION SCHEDULE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
CONTRACT L	[Red bar from 2010 to 2013]				\$54.1 M							
CONTRACT M			[Green bar from 2012 to 2015]			\$48.8 M						
CONTRACT O					[Blue bar from 2014 to 2017]			\$34.0 M*				
CONTRACT Q							[Red bar from 2016 to 2021]					\$49.2 M*
CONTRACT S									[Yellow bar from 2018 to 2021]			\$31.7 M*

- **Contracts Q & S estimate and schedule subject to change**

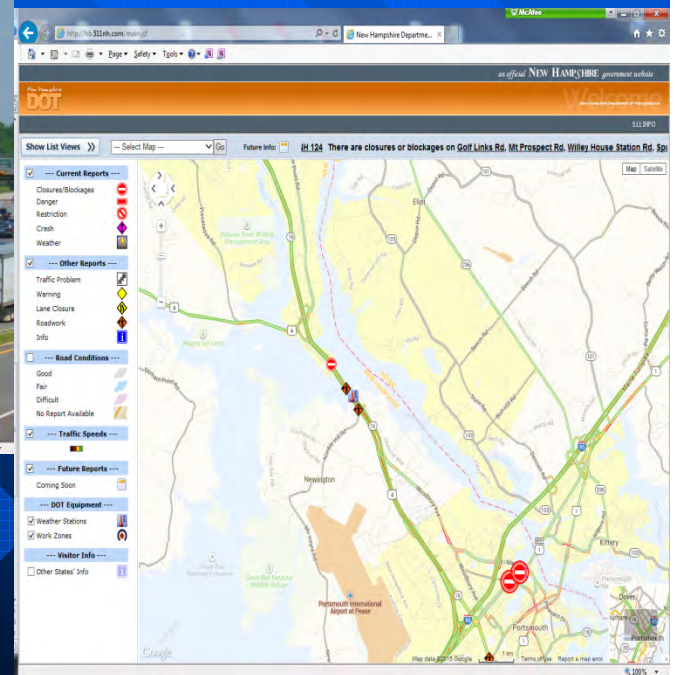
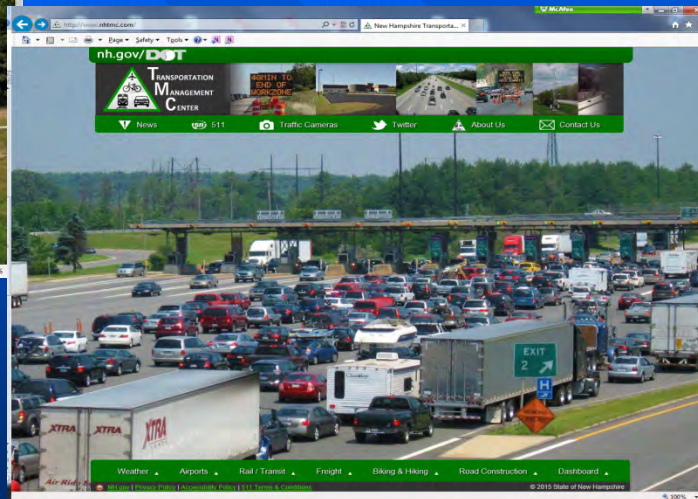
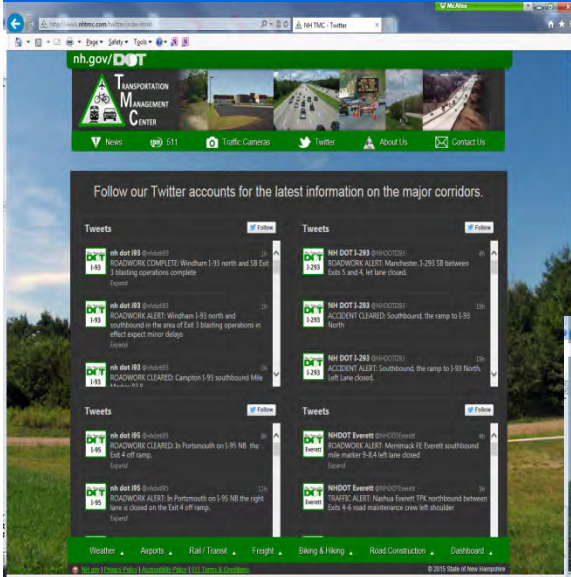
CONSTRUCTION OUTREACH



The screenshot shows a web browser window displaying the official New Hampshire Department of Transportation website for the Spaulding Turnpike Newington-Dover project. The browser's address bar shows the URL <http://www.newington-dover.com>. The website features a green header with the New Hampshire DOT logo and navigation tabs for Air, Rail, Highway, Bike/Ped, and Public Transit. A left sidebar contains a menu with items such as Home, Project History, Project Information, Project Process, Details/Maps, Selected Alternatives, Schedule, Project Documents, Final Environmental Impact Statement, Roundabouts, Meetings, FAQs, Contact Us, Feedback/Mailing List, Newsletters/Fact Sheets, Construction Updates and Alerts, and Webpage Listing. The main content area is titled "Welcome to Spaulding Turnpike Newington-Dover Project Website" and includes an aerial photograph of the project site. Below the photo, there is a "Construction Updates and Traffic Alerts" section with an orange traffic cone icon. A "What's New..." section lists several updates, including "NEW: Northbound Traffic Shift onto New Little Bay Bridge - Major Traffic Impacts Anticipated on June 3 and 4" (posted May 26, 2015), "Planned Northbound Lane Closure on Little Bay Bridge - Pavement Repairs Scheduled" (posted 04/03/2015), "NIGHT WORK NEAR EXIT 4 - Lane closures for installation of overhead sign structure" (posted 03/31/15), and "CLOSING OF EXIT 5 NORTHBOUND RAMPS - Detour for several months to allow for construction work" (posted 03/31/15). There are also links for "VIDEO: Unitt's Gas Line Directional Drill Video Beneath Little Bay" and "PAST NEWS:" which includes "2014 Updated Financial Plan" (posted 10/09/2014), "October 8, 2014 Work Update", "Tenants Association at Pease Presentation - April 9, 2014" (posted 04/09/14), and "January 2014 Work Update" (posted 1/14/14). At the bottom of the page, there are logos for NHRECOVERY and the New Hampshire Department of Transportation, along with a circular logo featuring a star and a gear. The browser's status bar at the bottom indicates a 100% zoom level.

WEB SITE: www.newington-dover.com

CONSTRUCTION OUTREACH



■ For traveler/real-time information, please visit www.nhtmc.com.

TRAFFIC CAMERAS

Contract L (Completed)

New Little Bay Bridge

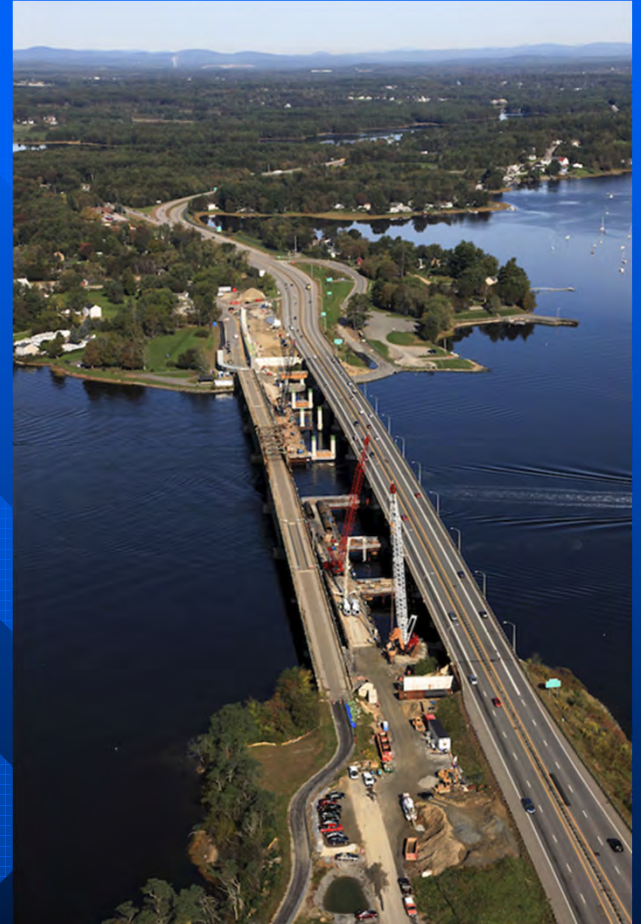




Contract L - SB New Little Bay Bridge Construction

- Project completed by Cainbro Contractors of Maine at cost of \$54.1M
- Construction Initiated in 2010 Completed in Fall 2013
- Spaulding Turnpike Dover Approach Work
- Spaulding Turnpike Newington Roadway Approach
- Wentworth Terrace - Now Opened for Two-way Traffic
- Pedestrian & Bicycle Structure (Approach to GSB)

Construction – Contract L Little Bay Bridge



**Temporary Trestle to Construct Phase I - Cost
\$5 Million (2010-12)**

Construction – Contract L Little Bay Bridge

FOUR YEARS IN
SIX PHOTOS



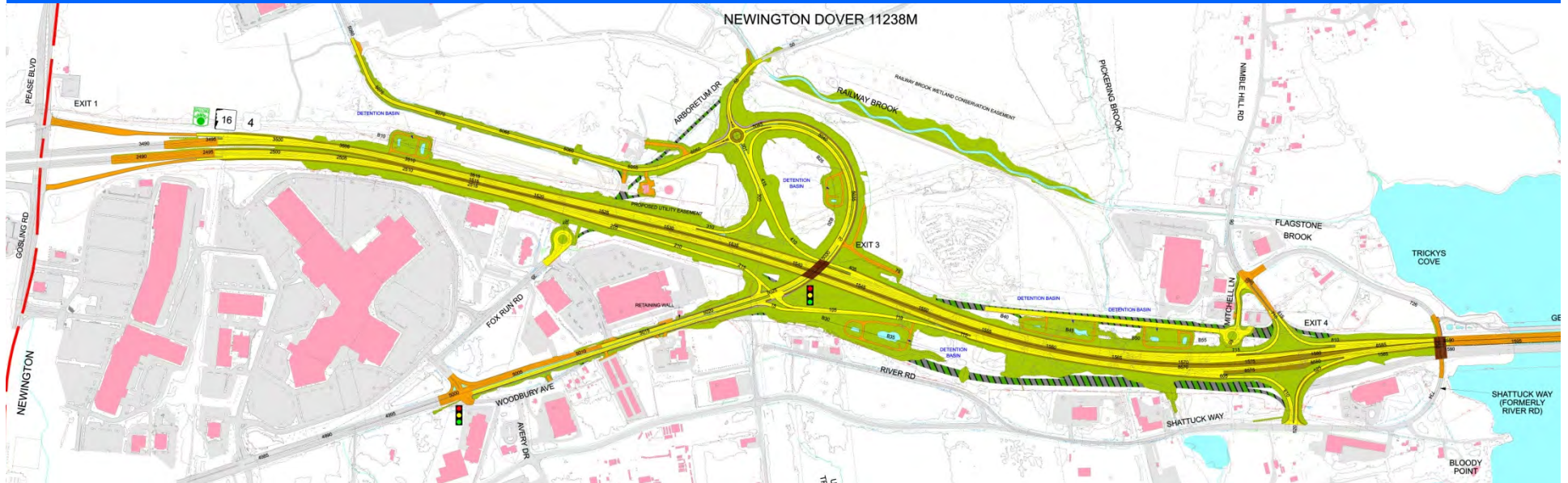
Construction – Contract L

Ped and Bikeway

- Pedestrian, Bicycle Access to GSB
- Wentworth Terrance/Hilton Park Access Under LBB's



Contract M



Contract M Construction

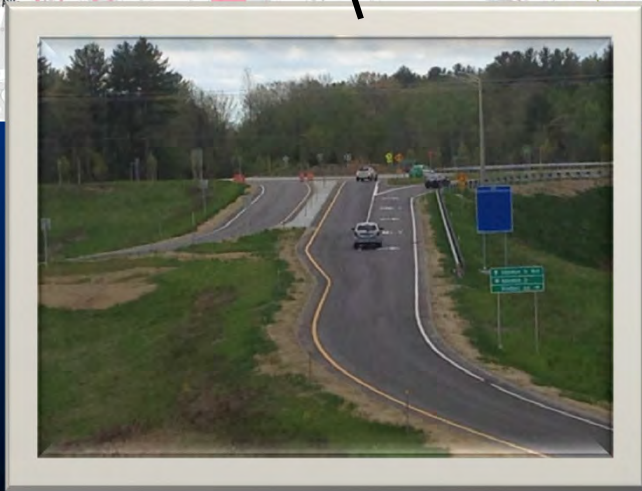
- Contractor: A. J. Coleman
- Construction Cost: \$48.7M
- Construction Duration: 2012 – 2016
 - Completion May 20, 2016

Construction – Contract M



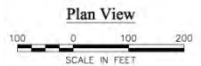
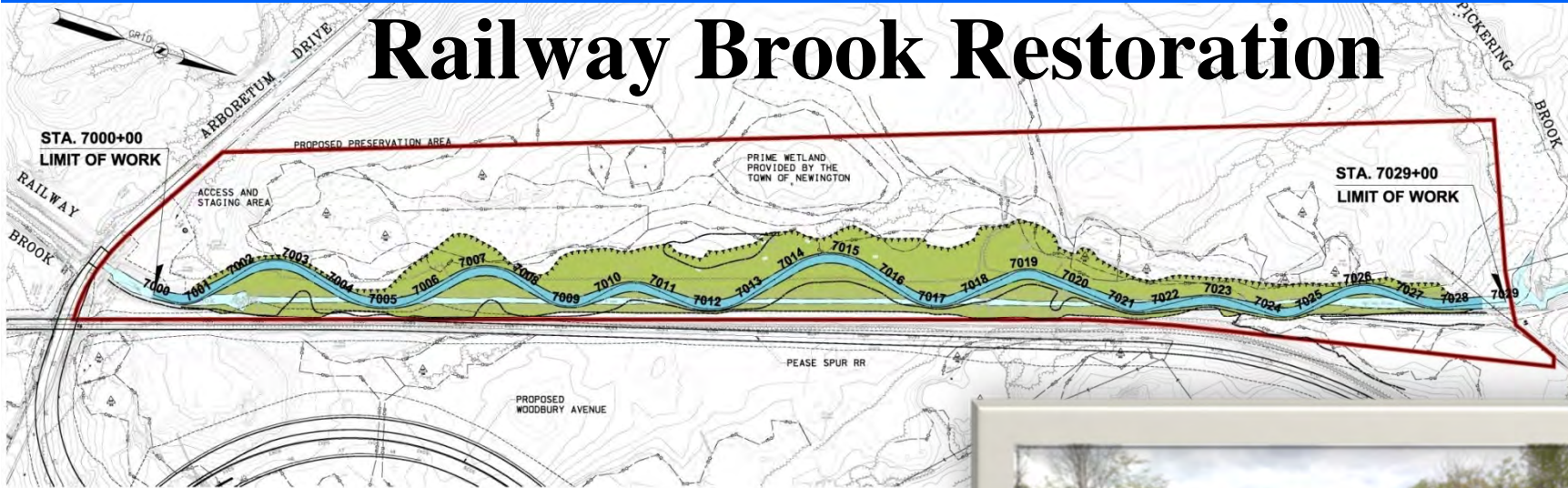
Contract M

ROADWAY CONSTRUCTION

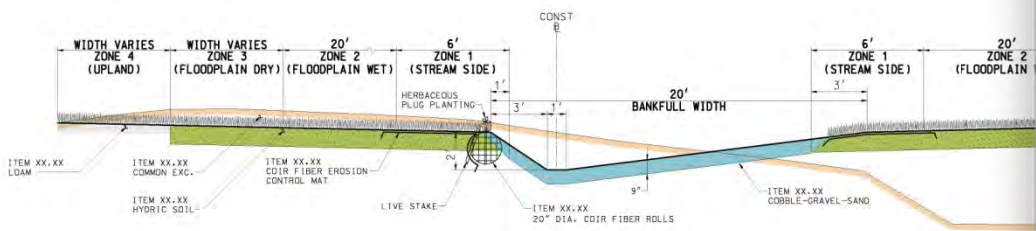


Construction – Contract M

Railway Brook Restoration



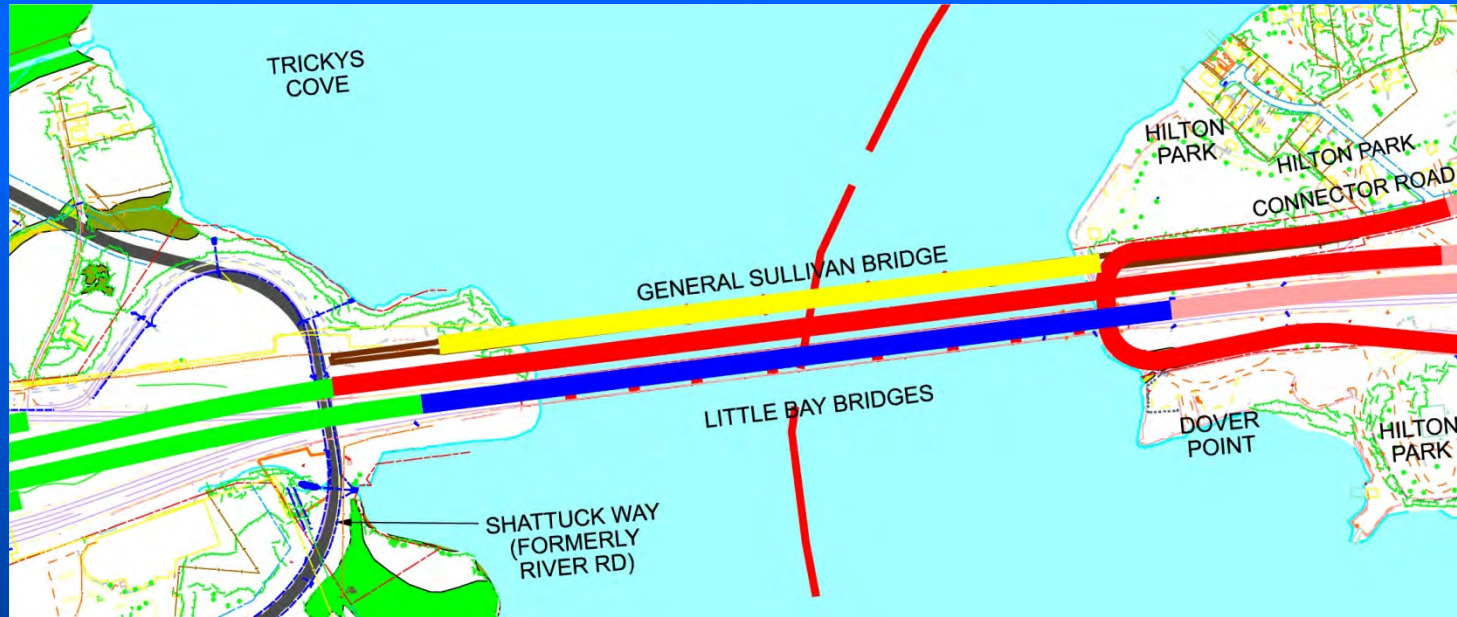
CONCEPTUAL DESIGN



TYPICAL SECTION @ APEX OF MEANDER (LEFT)
NOT TO SCALE



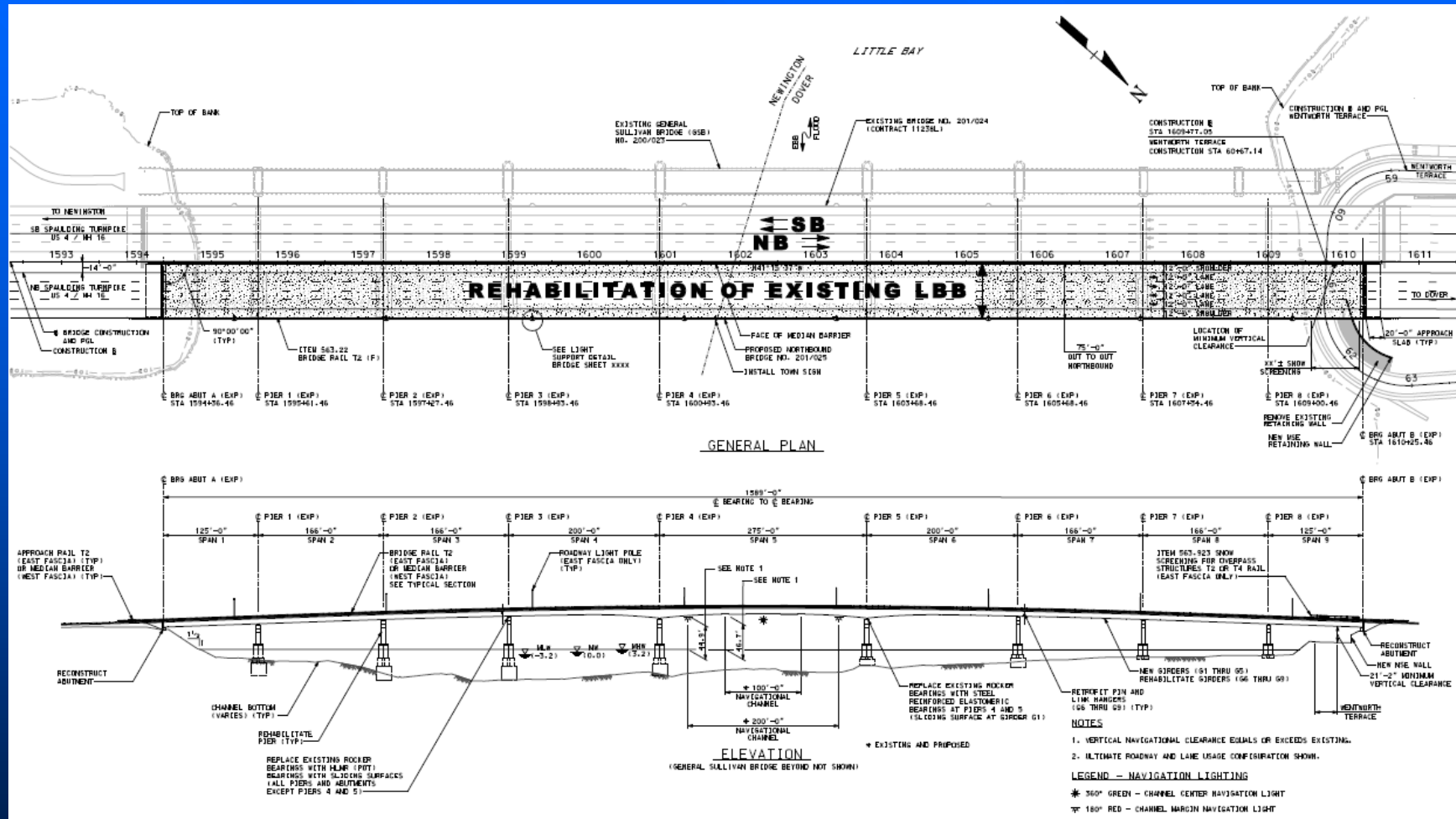
Construction - Contract O



Contract O – Existing Little Bay Bridges Rehabilitation

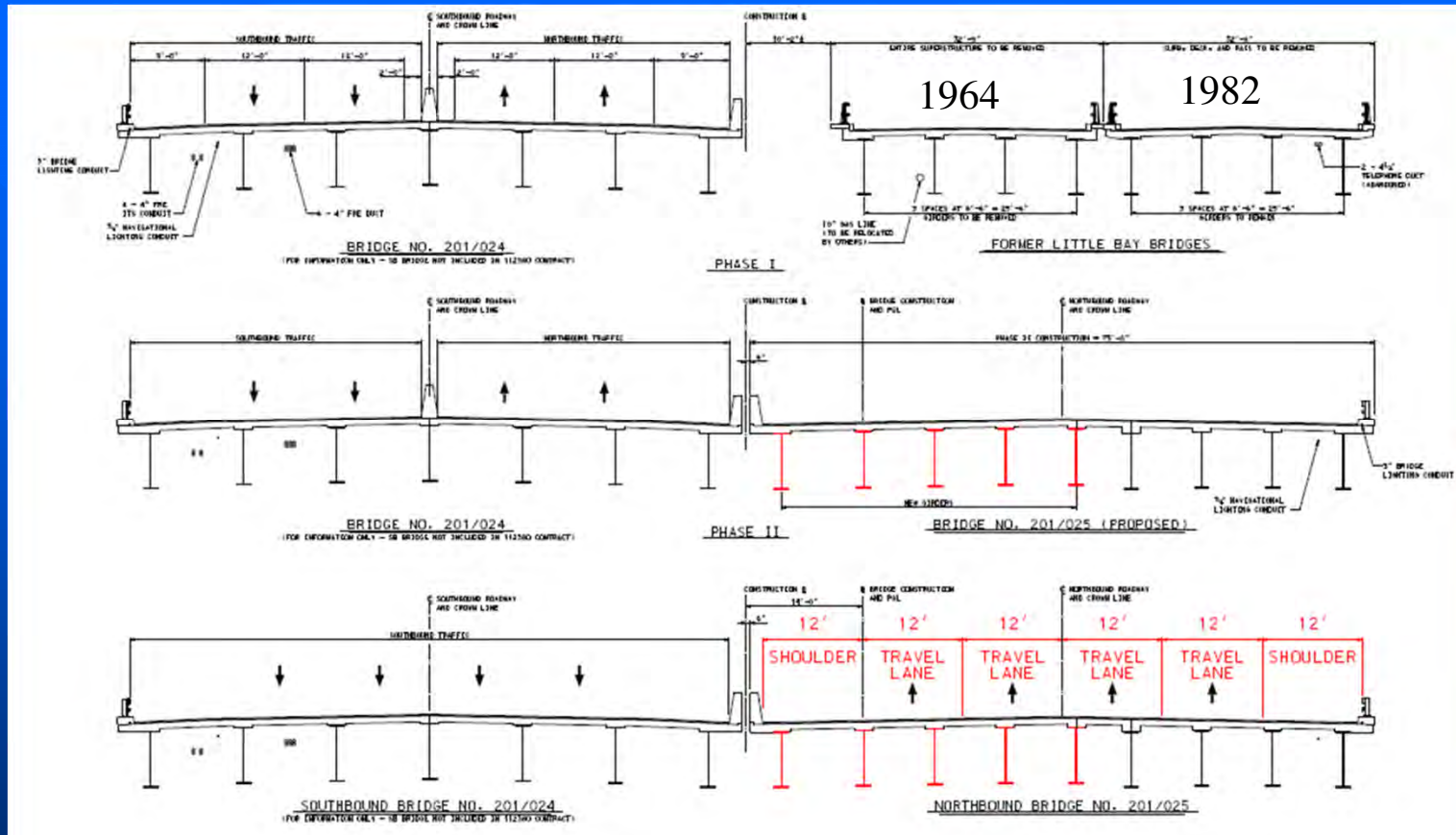
- Opened Bids on October 23, 2014 (\$20,444,479.01)
- Contractor: A. R. S. Audley, Inc.
- Construction Duration: 2015 – 2017
- Concurrent Construction with Contracts M and Q

Construction - Contract O



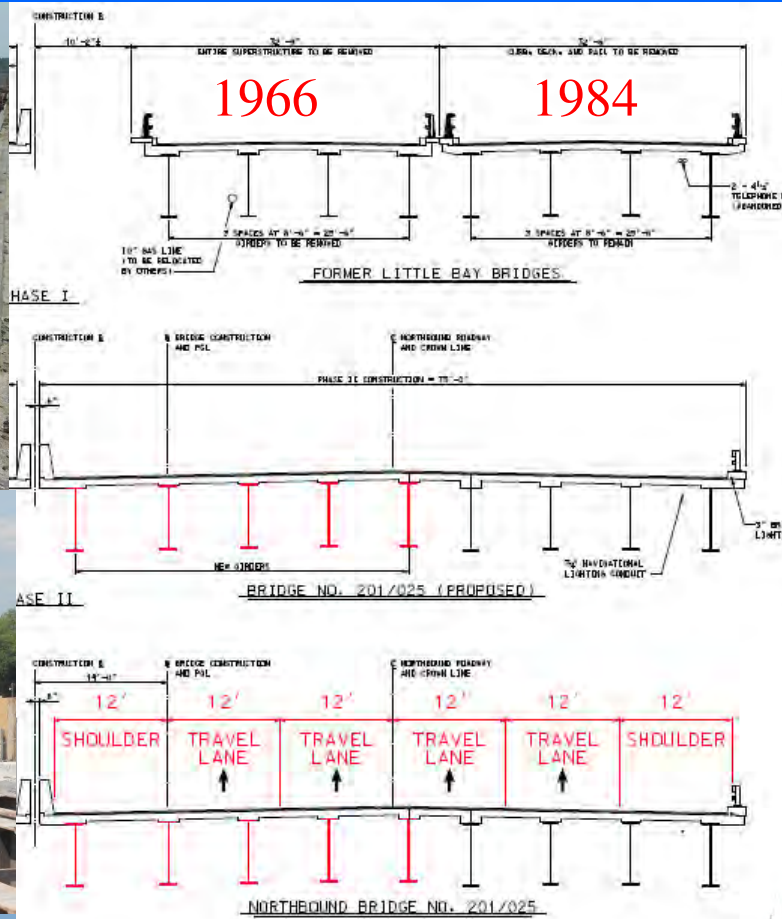
- Rehabilitates Existing 9 Span 1,589' Little Bay Bridges to provide Four Lanes of NB Traffic

Construction - Contract O



- Original Bridge Opened to NB Traffic in 1964 for NB Traffic with SB Traffic on General Sullivan Bridge
- Easterly Half of Bridge Opened to NB Traffic in 1982, SB Shifted to 1964 Bridge and General Sullivan Bridge Closed to Vehicular Traffic

Construction – Contract 0



Contract Q



Contract Q - Dover

- Advertising Date: May 24, 2016
- Estimated Costs: \$60.5 Million
- Construction: 2016 - 2020
- Completes and Opens All Spaulding Turnpike Improvements
- Concurrent Construction with Contracts O and S

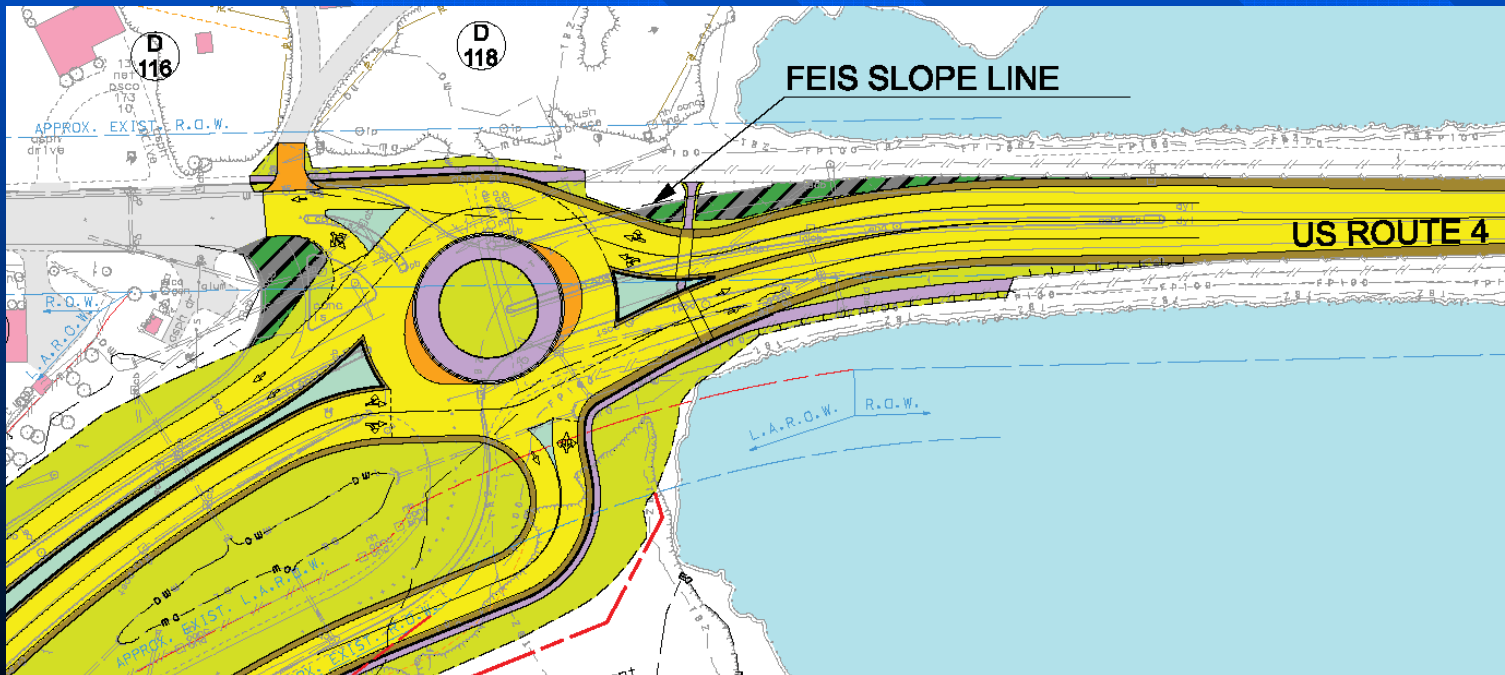
Contract Q (continued)



- Provides a Full Service Interchange at Exit 6
- Eliminates Exit 5
- Introduces 2 Signalized Intersections for Exit 6 Ramps
- Roundabout Replaces Signalized Intersection at Boston Harbor Rd.
- Constructs 4 Sections of Soundwall – North and South of Exit 6 and Dover Toll Plaza

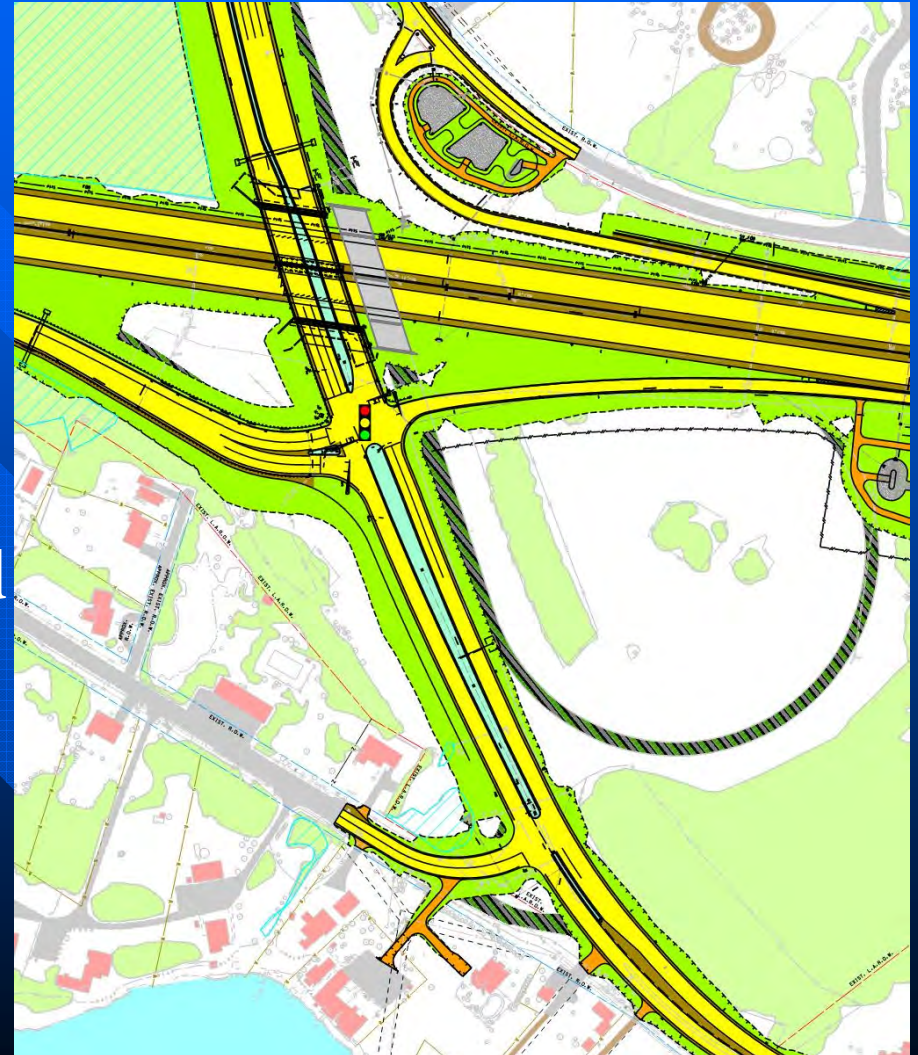
Contract Q – Boston Harbor Rd.

- Roundabout Replaces Signalized Intersection at Boston Harbor Rd.
- Two-Lane Hybrid Roundabout



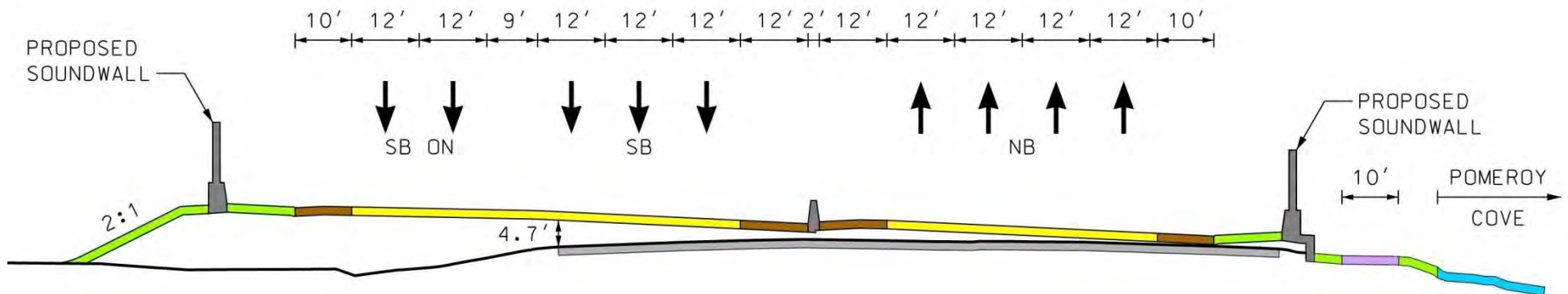
Contract Q - Exit 6

- **New Bridge South of Existing**
- **Signalized Intersection at Exit 6 NB Ramps**
- **New Eastbound Access Along Dover Point Road**



Contract Q

Spaulding Turnpike

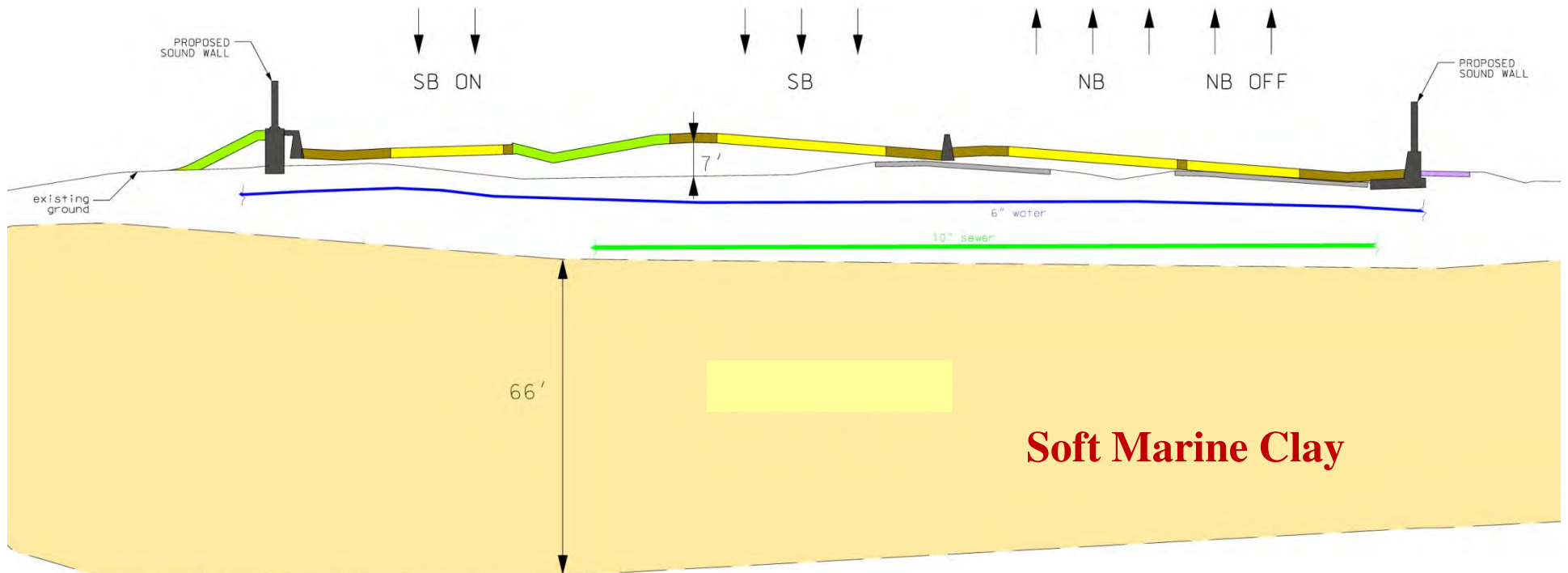


- 40' of Spaulding Turnpike Widening
- SB Raise in Elevation
- Soundwalls along NB and SB
- Pomeroy Cove Bike and Pedestrian Paved Pathway (10' wide) is maintained

Engineering Challenges

Cross Section

Just North of Pomeroy Cove



Settlement Platform Constructed under Contract M



Initial Construction Phase

- Exit 5 Test Embankment Area
- Settlement Testing
- UNH Study

Settlement Platform

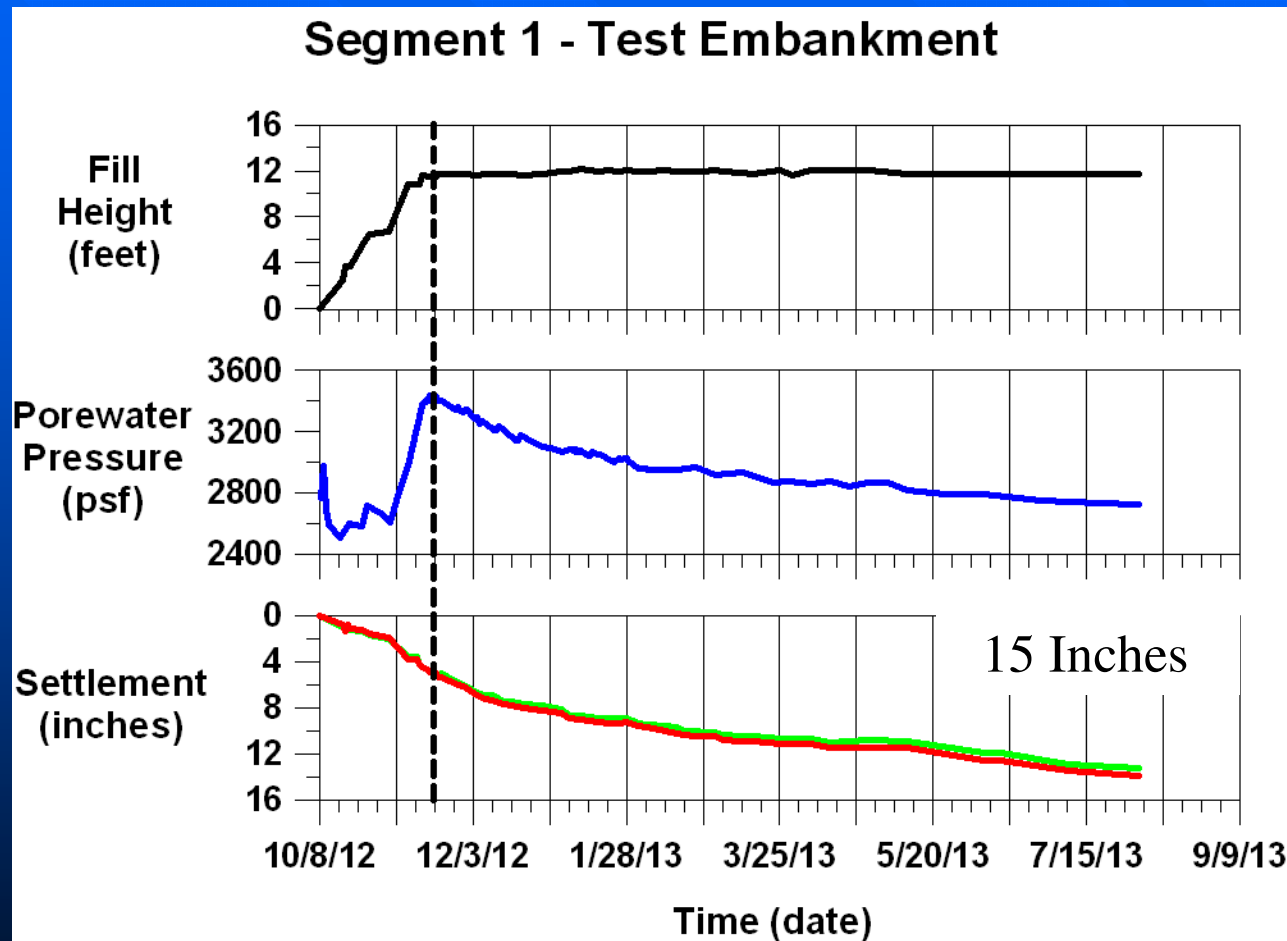
Embankment Area

- Installation of Sand Drains



Contract Q

Soft Soil Settlement Predictions



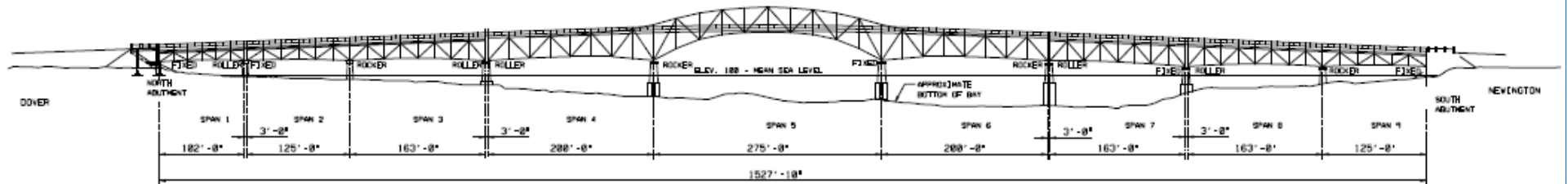
- Over eight months, have seen over 15 inches of settlement
- Anticipate settlement periods of 45 days to be included in each construction phase

Contract S – General Sullivan Bridge Rehabilitation

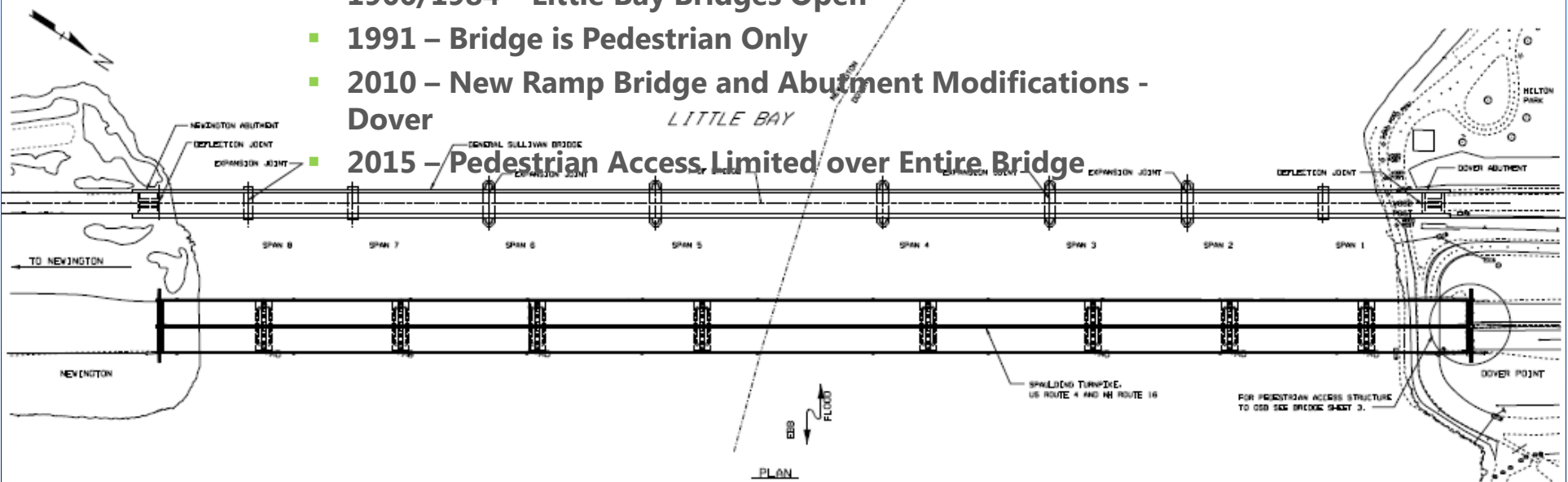


- **Tentative Advertising Date: Late 2018**
- **Tentative Construction: 2018 – 2021**
- **Concurrent Construction with Contract Q**

Contract S - General Sullivan Bridge



- 1935 – Original Bridge Opened
- 1966/1984 – Little Bay Bridges Open
- 1991 – Bridge is Pedestrian Only
- 2010 – New Ramp Bridge and Abutment Modifications - Dover
- 2015 – Pedestrian Access Limited over Entire Bridge



- Rehabilitation of Existing 9-Span (1527 ft.) General Sullivan Bridge for Pedestrian and Bicycle Use

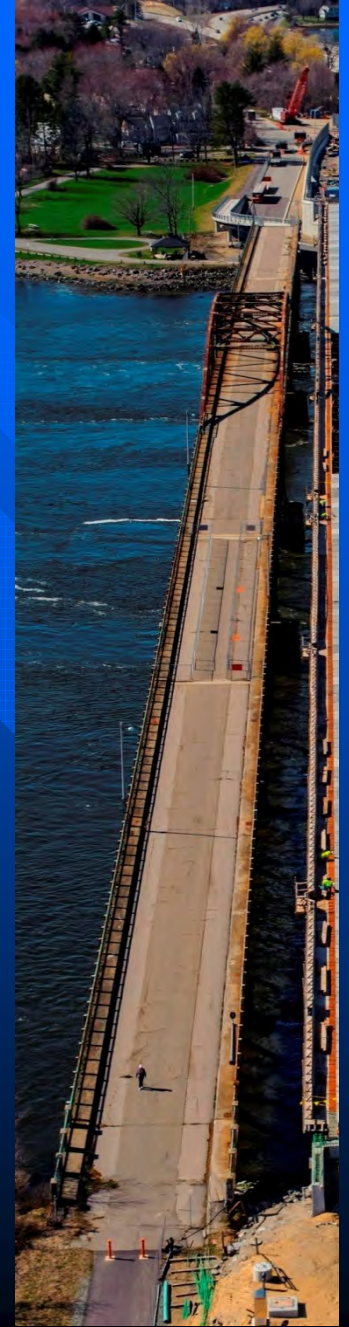
General Sullivan Bridge - Work To Date



- **First Detailed Inspection Completed in 2009**
- **Underwater Inspection Completed in 2011**
- **New Dover Approach Bridge Constructed in 2013 (Contract L)**
- **Dover Abutment Rehabilitated 2013 (Contract L)**
- **In-Depth, Hands-On Inspection Completed in May 2014**
- **Capacity Load Rating Completed Sept. 2014**



General Sullivan Bridge – Preliminary Results from 2014 Inspection



- Deterioration Continues - Worse than 5 Years Ago
- Deck Concrete Significantly Spalled on Underside
- Outside Stringers Critically Deteriorated
- Interior Three Stringers in Fair to Good Condition
- Floor Beams Fair to Poor
- Span 7 (previously fenced) Span - Truss Limited Capacity
- Lattice Trusses for All Other Spans Fair to Poor

General Sullivan Bridge - Overview



Spans 1-2-3 (Dover)



Spans 7-8-9 (Newington)

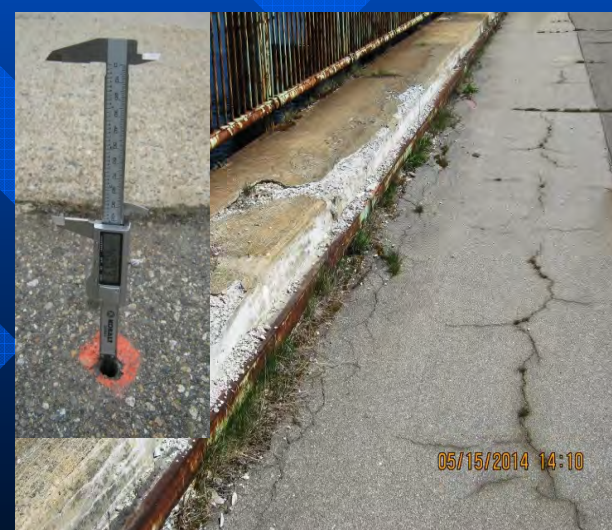
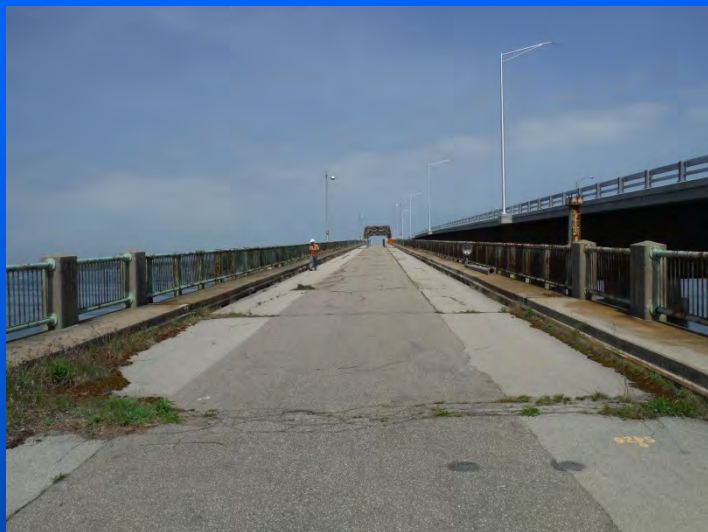


Spans 4-5-6 (Center Spans)

General Sullivan Bridge 2014 Inspection Overview

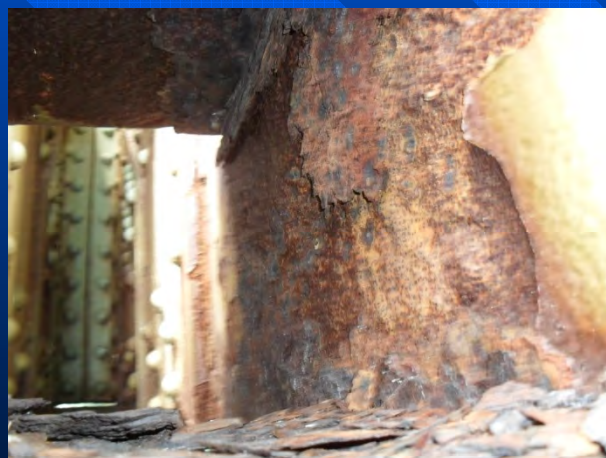
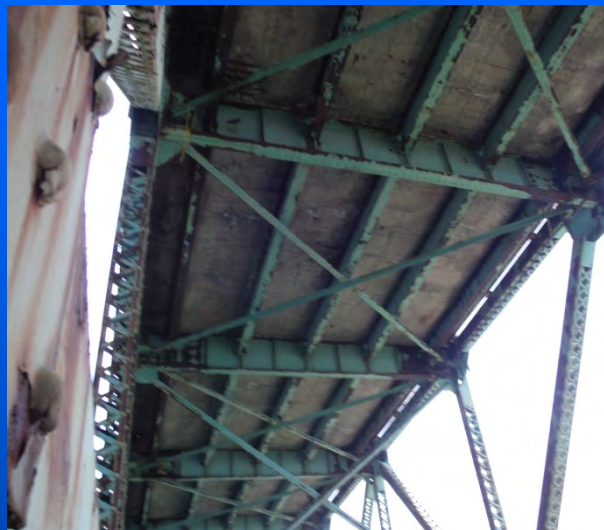


General Sullivan Bridge 2014 Inspection Deck



General Sullivan Bridge 2014 Inspection

Stringers



General Sullivan Bridge 2014 Inspection

Truss Members



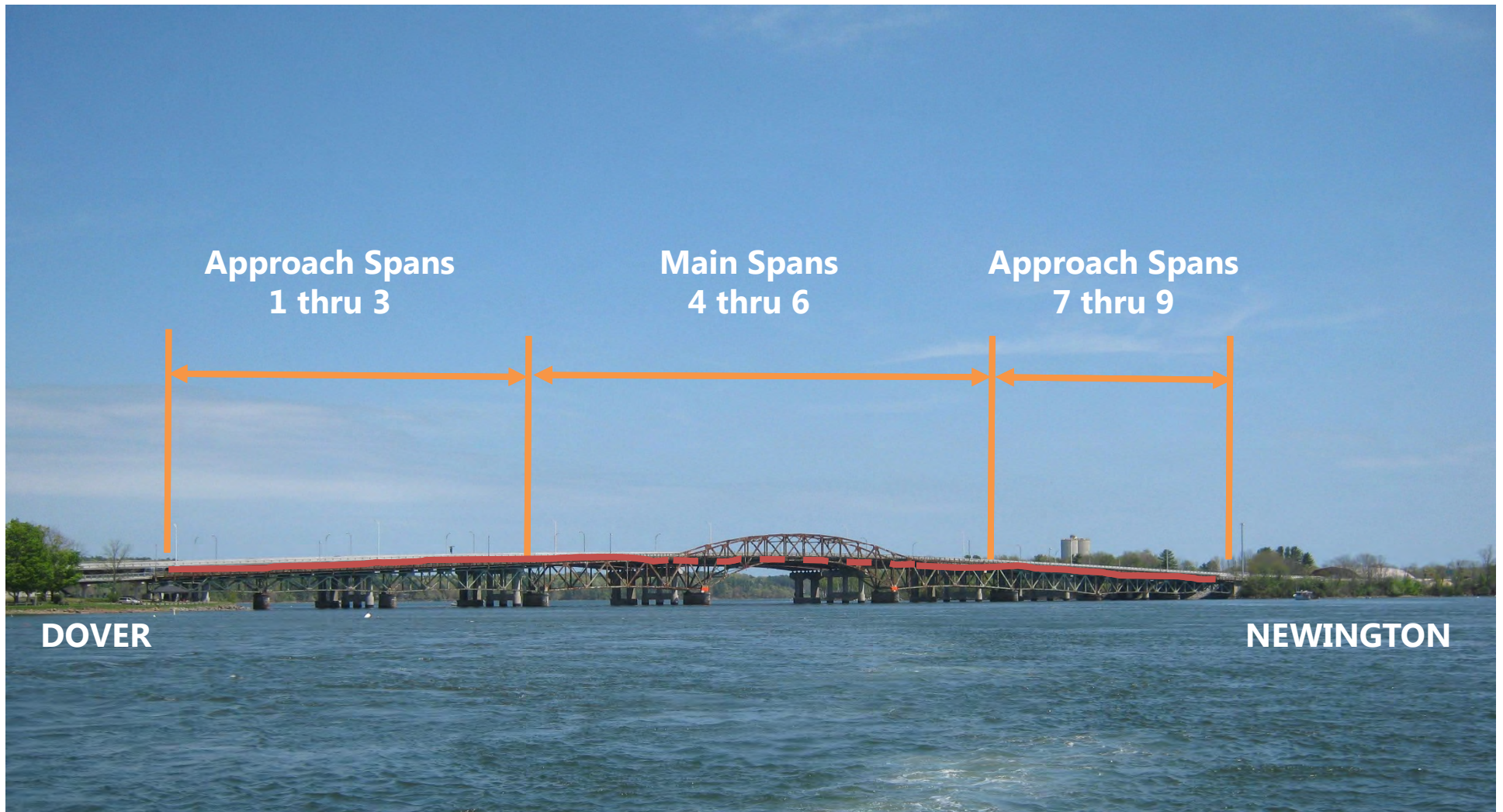
General Sullivan Bridge - Next Steps

TS&L Study Alternatives

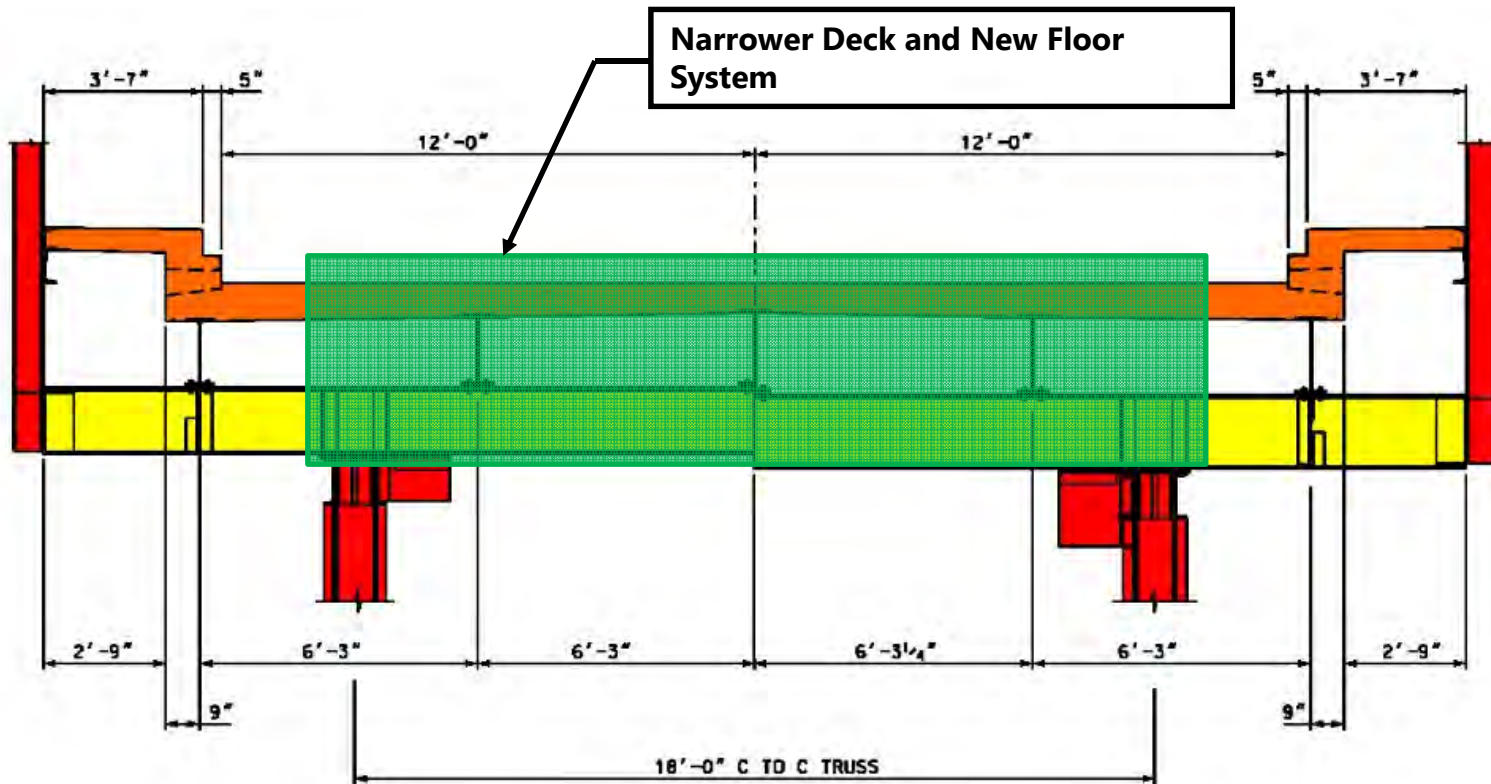


■ Assess Rehabilitation & Replacement Options

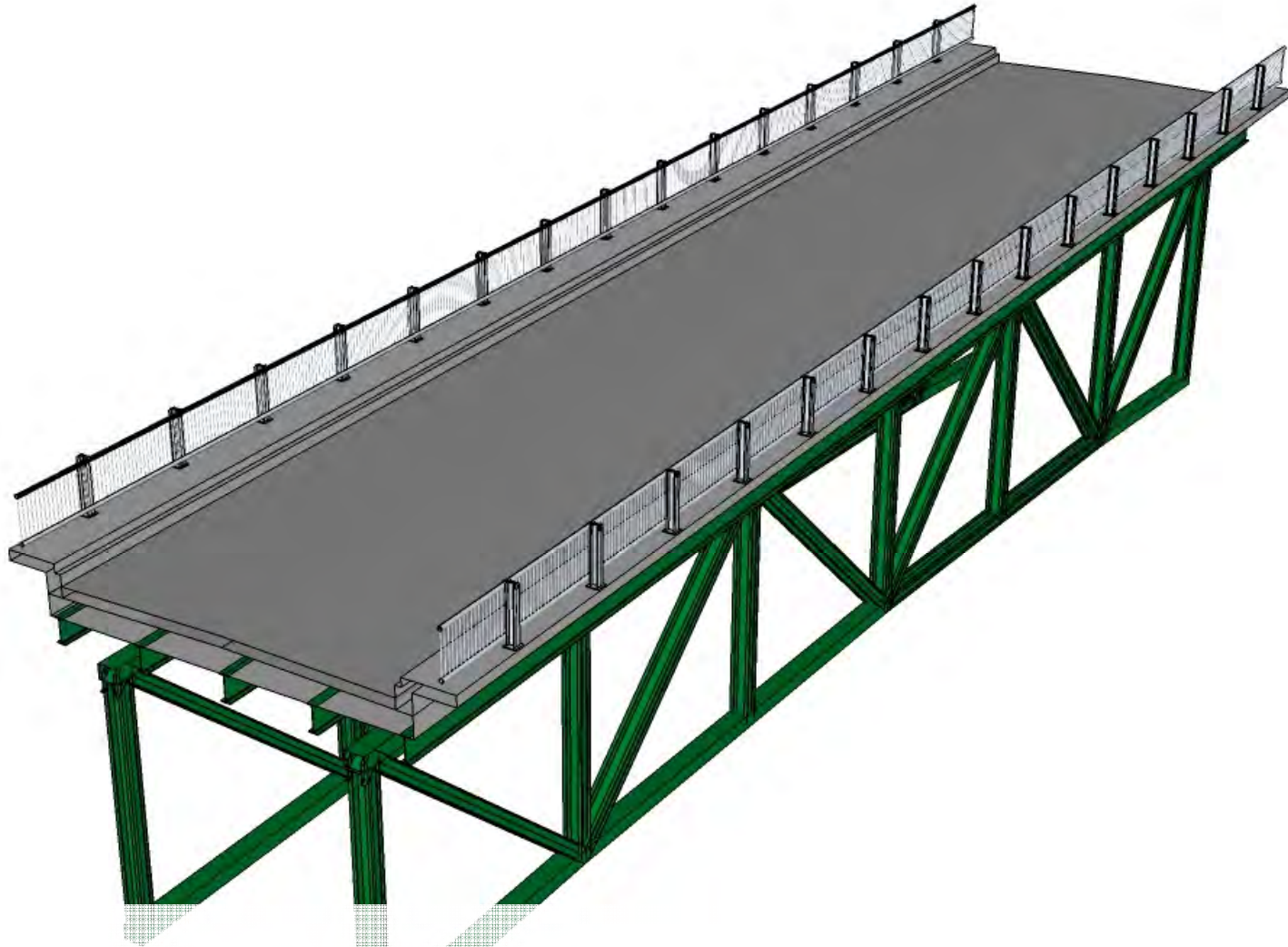
- Alternative #1 - Rehabilitation (including new floor system, deck, and railings)
 - ❖ 1A = 21' wide deck; 1B = 16' wide deck
- Alternative #2 - Complete Superstructure Replacement, Retain Substructure
 - ❖ 2A = Steel Girder; 2B = Concrete Girder; 2C = Metalized Truss
- Alternative #3 - Rehabilitation of Spans 4 thru 6, Replacement of Spans 1 thru 3 and 7 thru 9 with new metalized trusses (simple spans), Retain Substructure
- Alternative #4 - Complete Bridge Replacement (for broad cost comparison only)



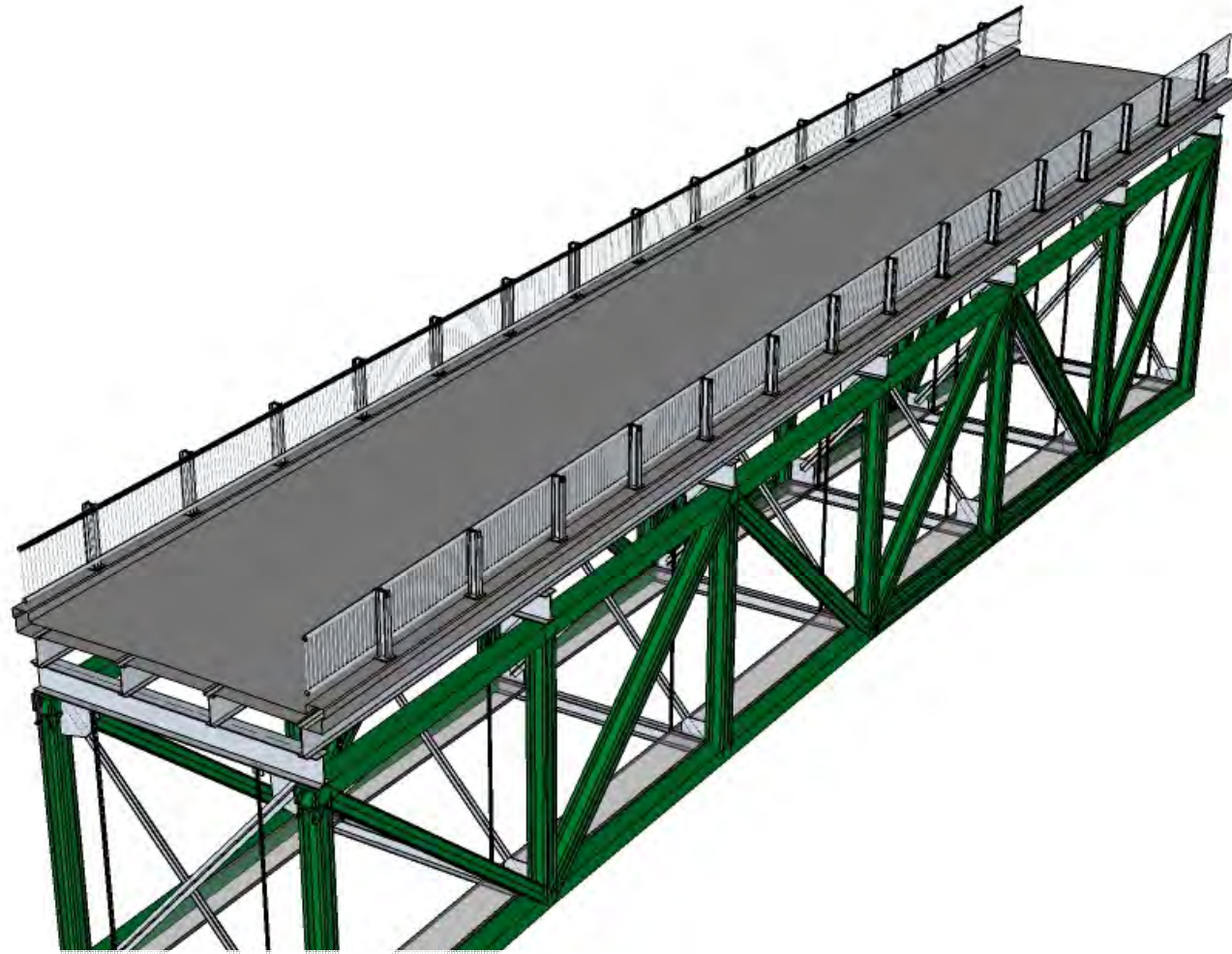
Alt. #1 - Rehabilitation



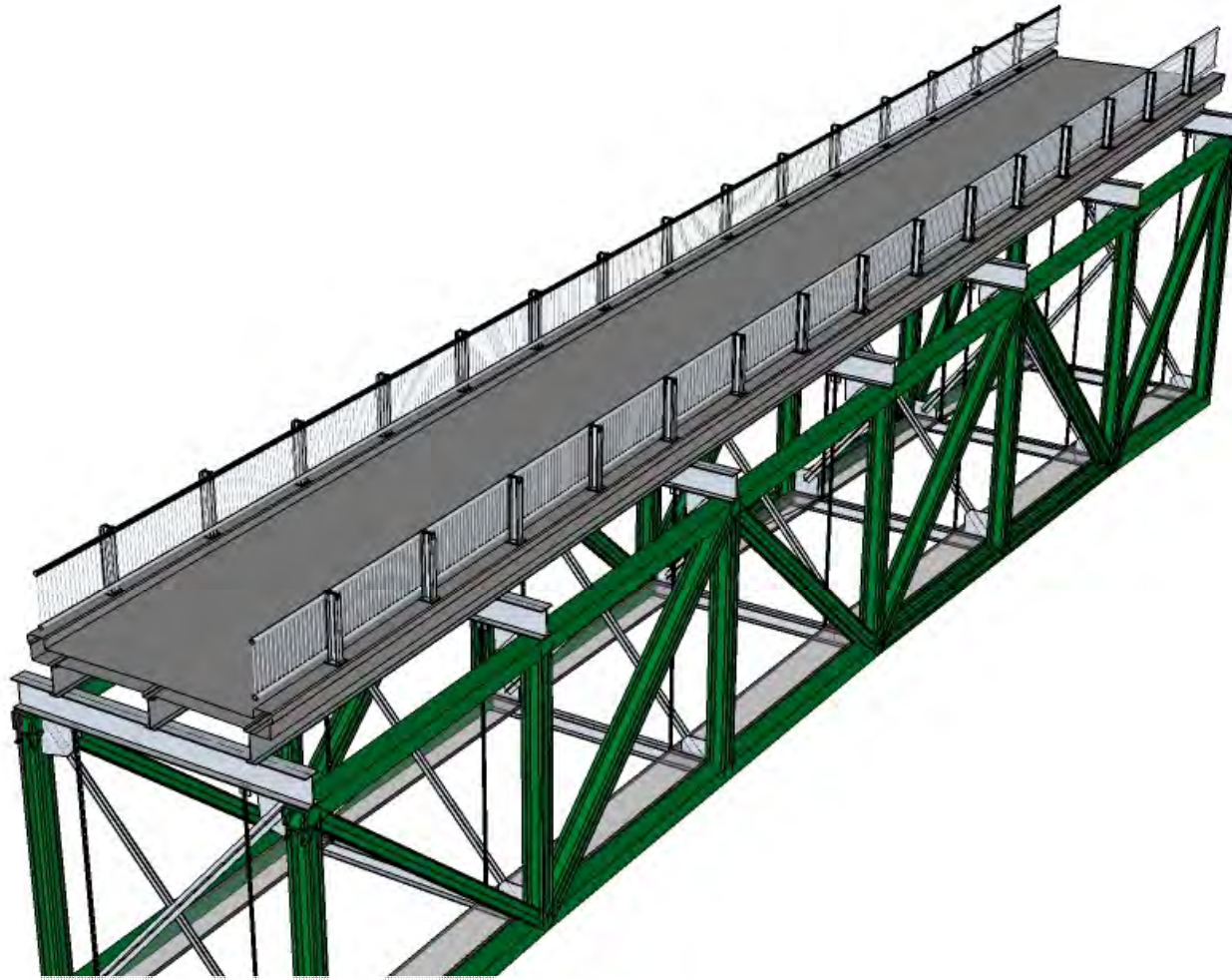
Alt. #1 – Rehabilitation Section
 (Approach Spans shown)



Partial Span 3 – Existing Bridge (Bracing Not Shown)



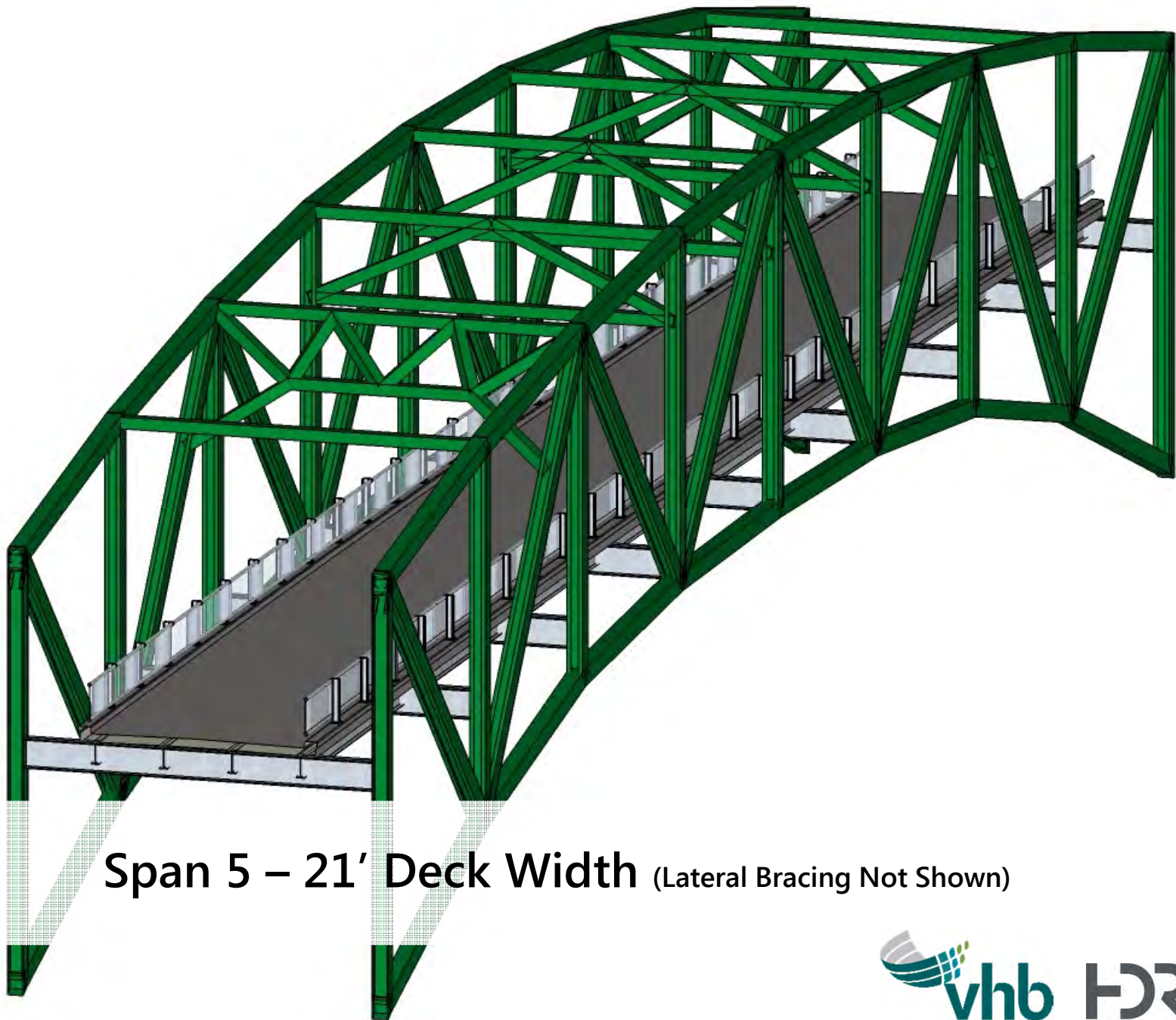
Partial Span 3 – 21' Deck Width (Lateral Bracing Not Shown)



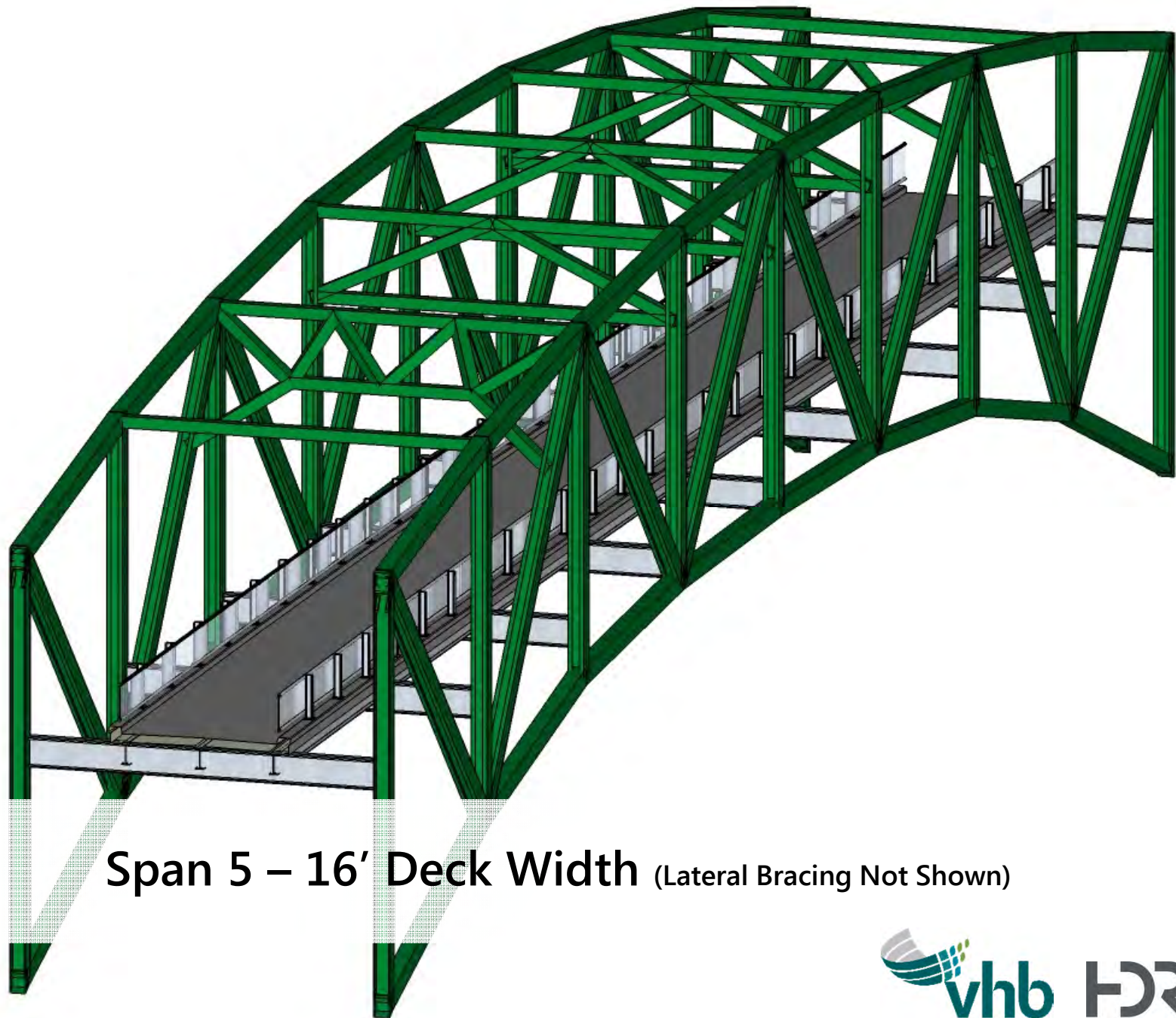
Partial Span 3 – 16' Deck Width (Lateral Bracing Not Shown)



Span 5 – Existing Bridge (Lateral Bracing Not Shown)



Span 5 – 21' Deck Width (Lateral Bracing Not Shown)



Span 5 – 16' Deck Width (Lateral Bracing Not Shown)



Alt. #2 – Complete Superstructure Replacement



Alt. #3 – Span 4 thru 6 Rehabilitation w/ New Approach Spans



Alternatives Evaluation Considerations

- Capital Cost
 - Construction Cost including Construction Engineering (CE)
- Life-Cycle Cost / Maintenance
 - 75-year planning horizon. Residual value credit for full replacement
 - Considers routine maintenance and rehabilitation required to maintain service and state of good repair
- Constructability
 - Difficulty and duration of construction. Swift tidal currents and limited overburden
 - Existing Pier age and modifications to support higher loads
 - Existing superstructure age and complexities of rehabilitating built-up elements
 - Water access primarily limited to the west (SB Little Bay Bridge is along east side)
- Historic Resource Impacts
 - Compliance with MOA conditions or degree of departure from the original rehabilitation scope

General Sullivan Bridge - Next Steps

TS&L Study Alternatives



- **Coordinate Alternative Designs through FHWA and SHPO**
- **Seek Public Input Through Public Informational Meeting, Summer 2016**
 - **Need for Ped and Bike Detour and/or Shuttle Service**
- **Proceed with Final Design**
- **Advertise, Fall 2018**
- **Completion, Fall 2021 (or Earlier)**

Contact Information

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<http://www.newington-dover.com/>



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THANK YOU

Questions/Comments

