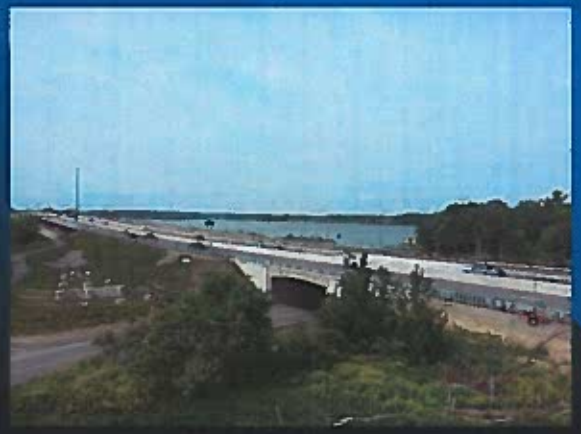
NEWINGTON-DOVER

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

TENANTS ASSOCIATION AT PEASE

ONE NEW HAMPSHIRE AVE, PEASE

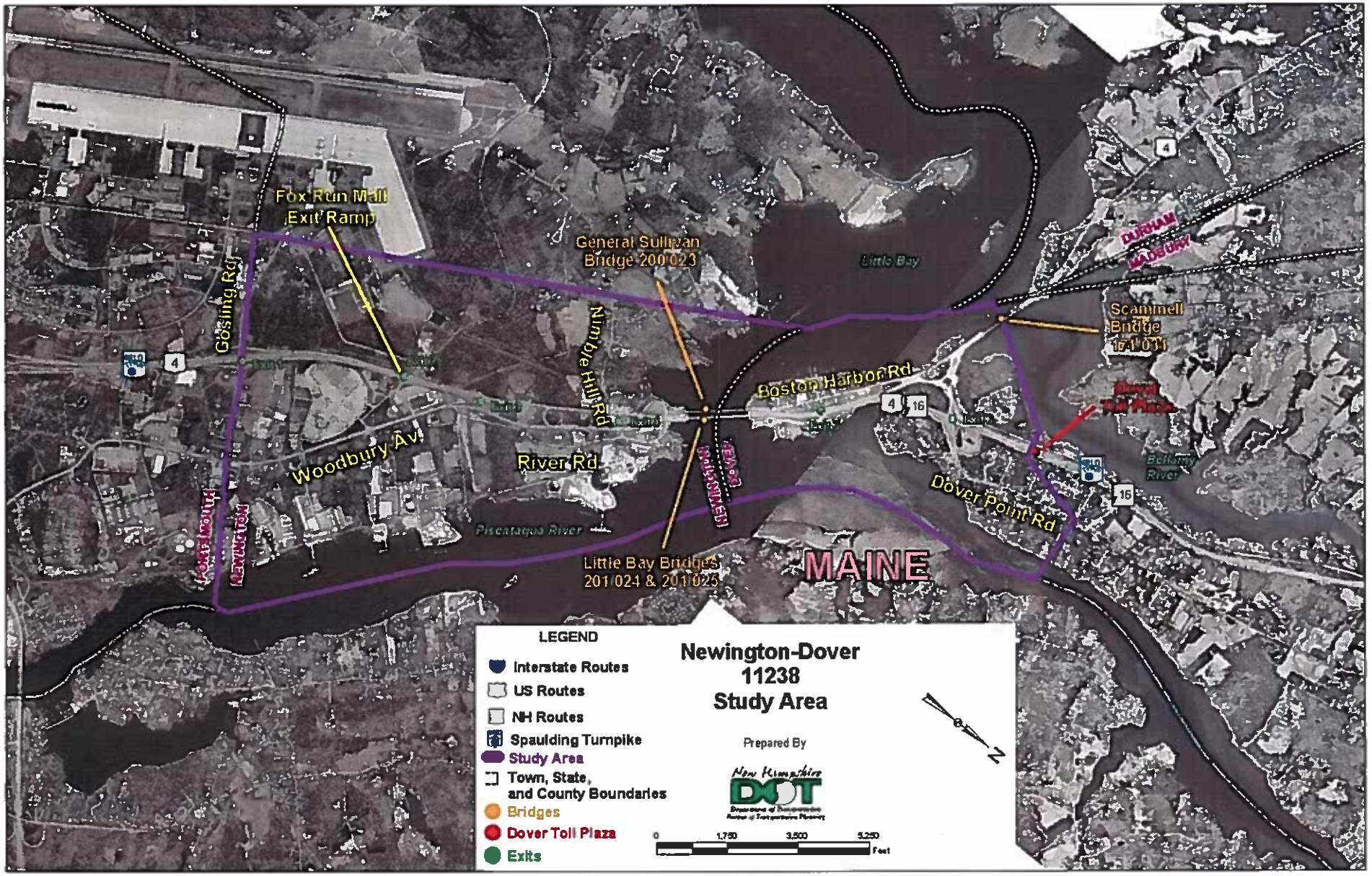
APRIL 4, 2017



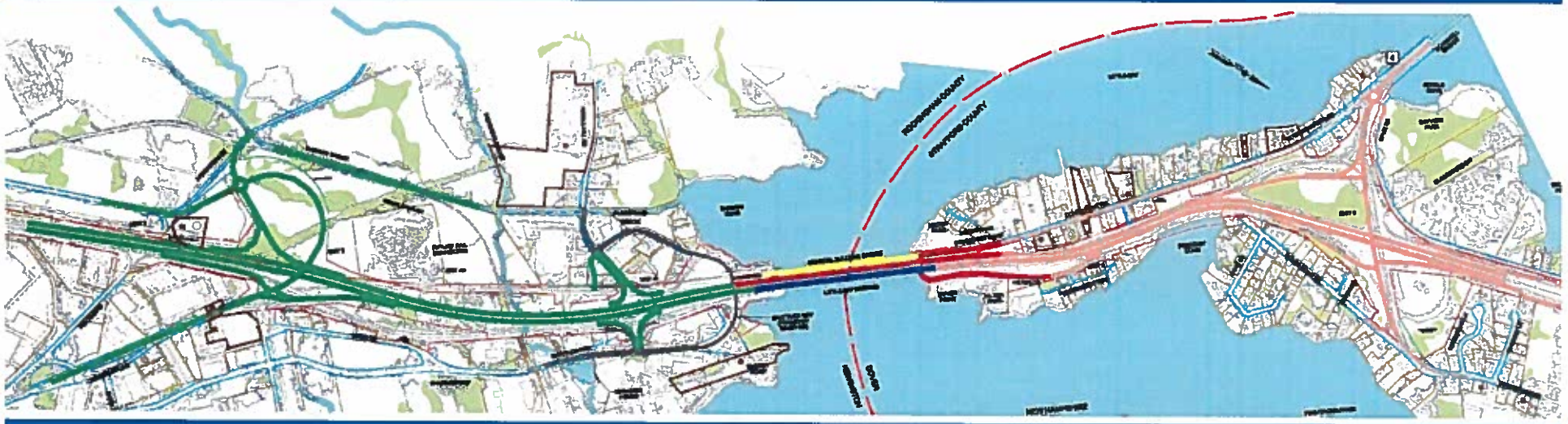
Meeting Agenda

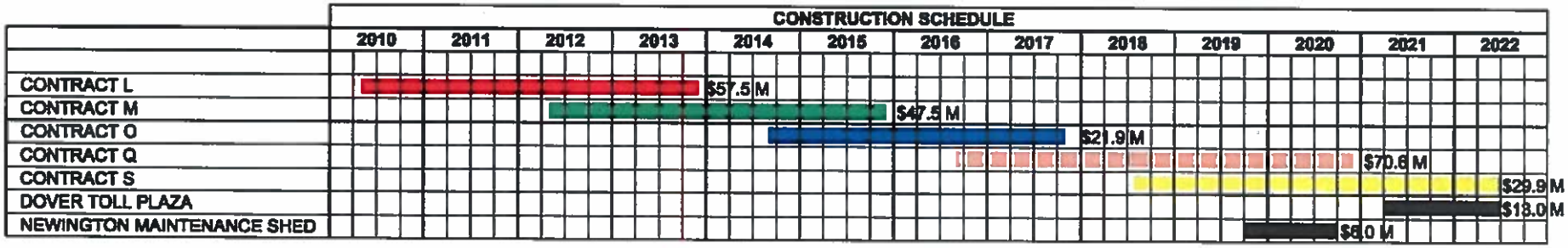
- Project Overview
  - Contract L – New Little Bay Bridge SB
  - Contract M – Newington
  - Contract O – Little Bay Bridge NB Rehabilitation
  - Contract Q – Dover
  - Contract S – General Sullivan Bridge Rehabilitation

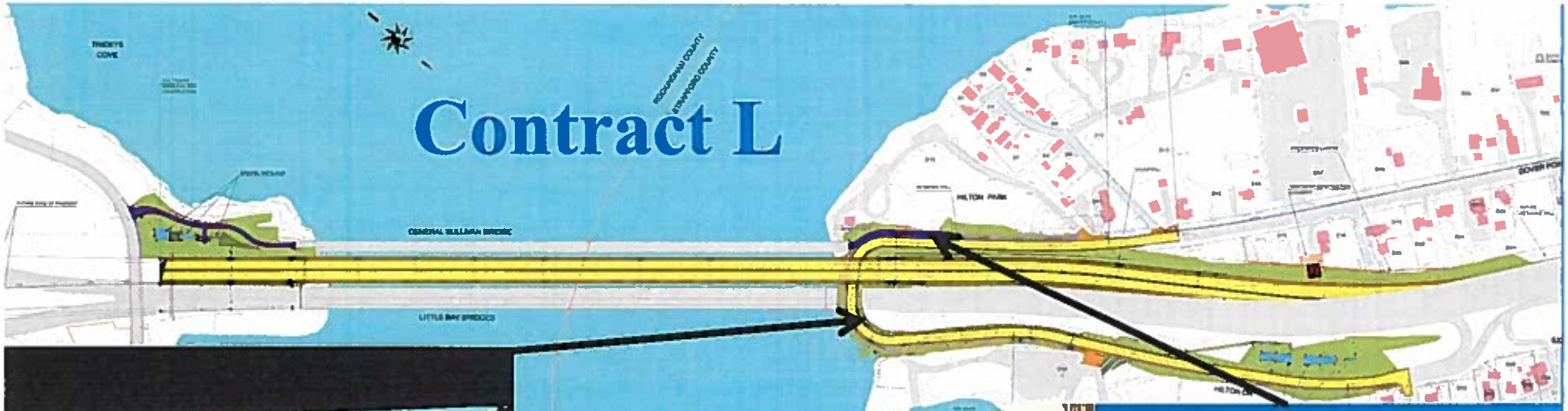
Project Area

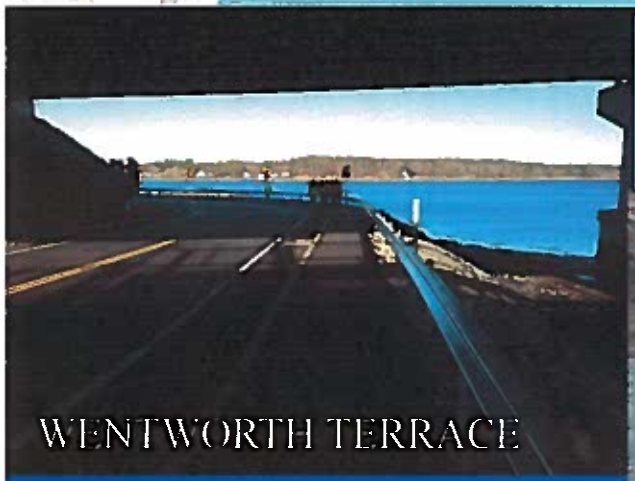


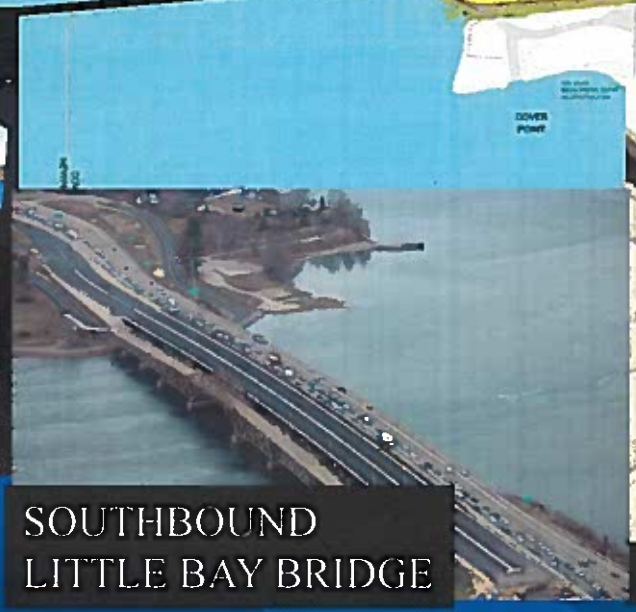
Current Contract Breakout & Schedule

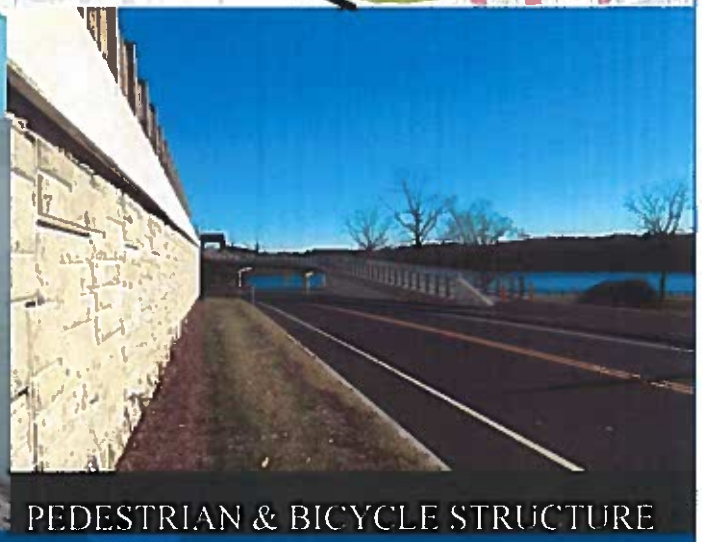







WENTWORTH TERRACE

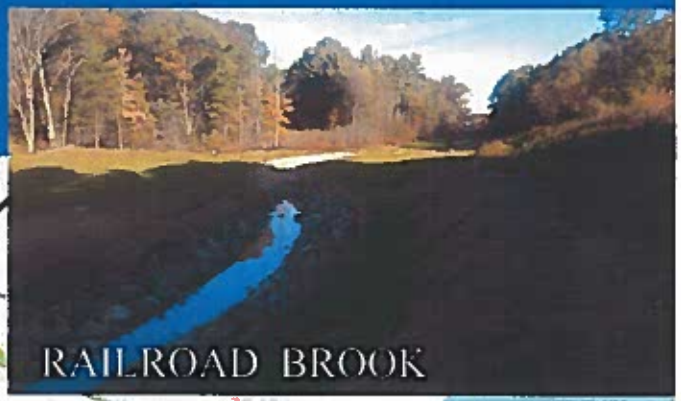

SOUTHBOUND
LITTLE BAY BRIDGE


PEDESTRIAN & BICYCLE STRUCTURE

Contract L - SB New Little Bay Bridge Construction

- Project completed by Cianbro Contractors of Maine at cost of $54.1M
- Construction Initiated in 2010 Completed in Fall 2013

Contract M


RAILROAD BROOK

EXIT 3 INTERCHANGE WITH WOODBURY RD.

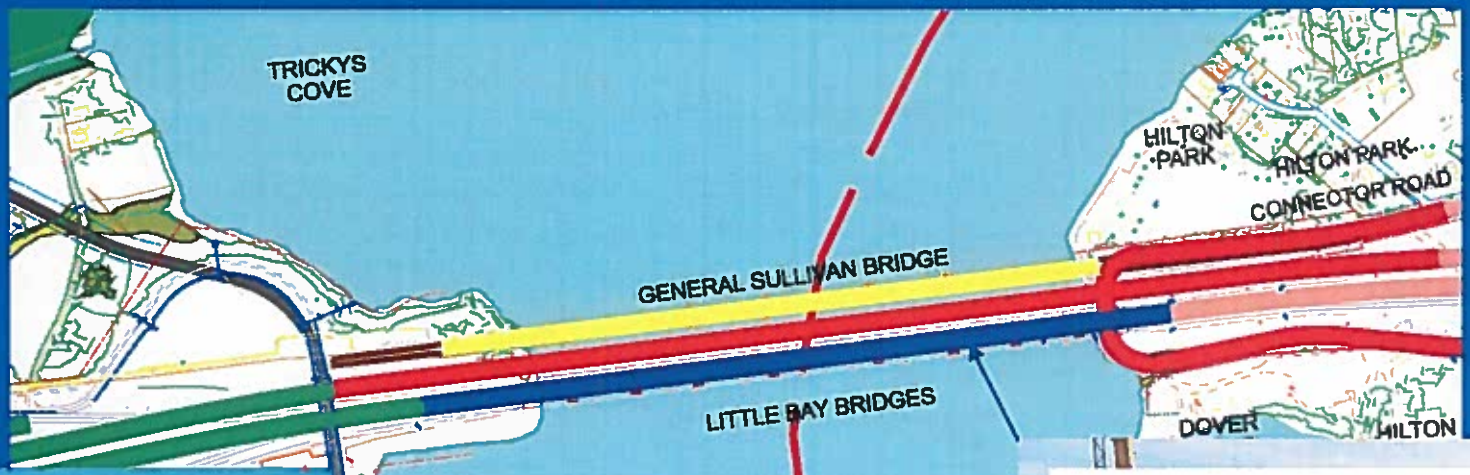
EXIT 4 INTERCHANGE

Contract M - NEWINGTON CONSTRUCTION

- Contractor: A. J. Coleman
- Construction Cost: $47.5M
- Construction Duration: 2012 – 2016

Contract M

Construction - Contract O

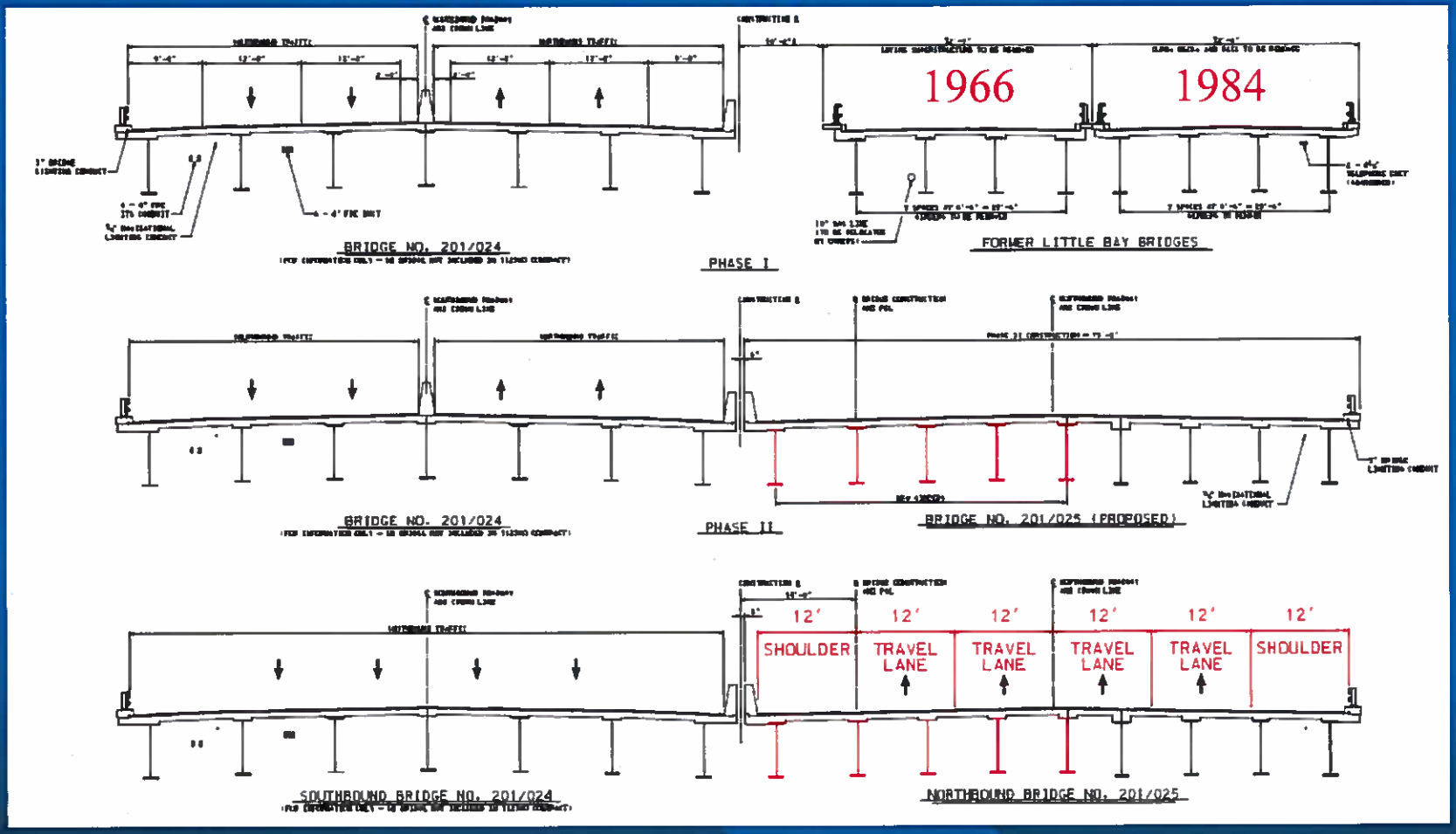


1960'S STEEL STRINGERS REMOVAL

Contract O – Little Bay Bridges Rehabilitation

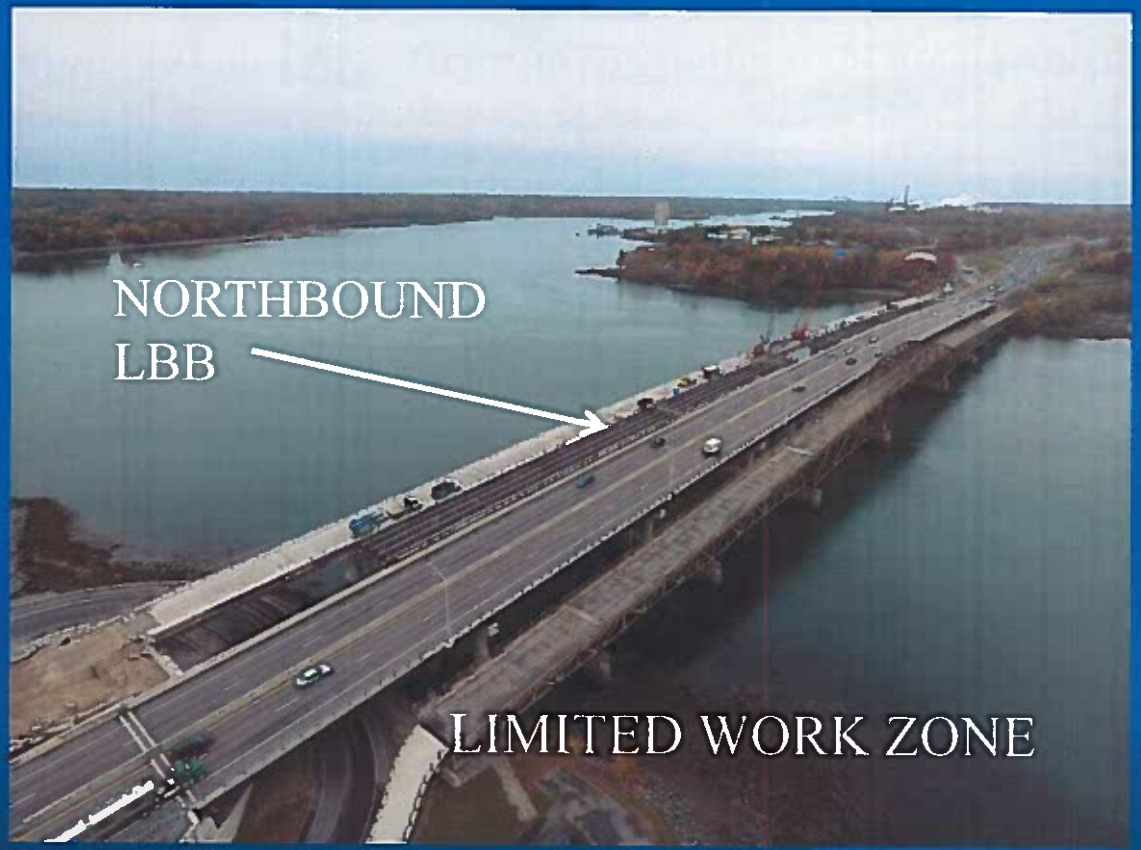
- Opened Bids on October 23, 2014 ($20.4M)
- Contractor: R. S. Audley, Inc.
- Construction Duration: 2015 – 2017

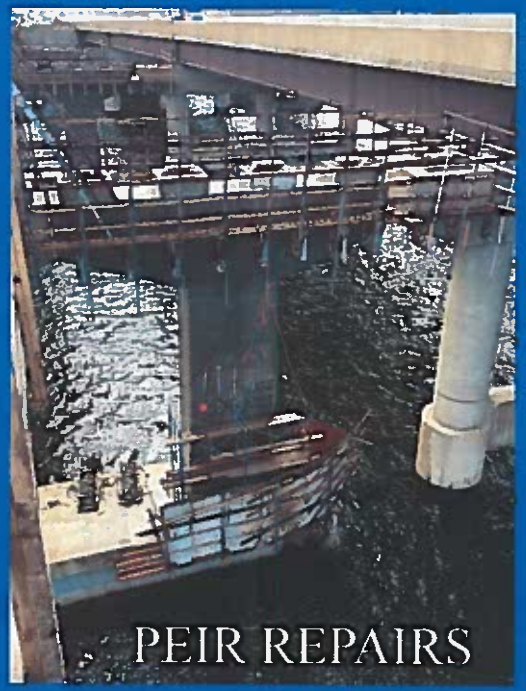
Construction – Contract O



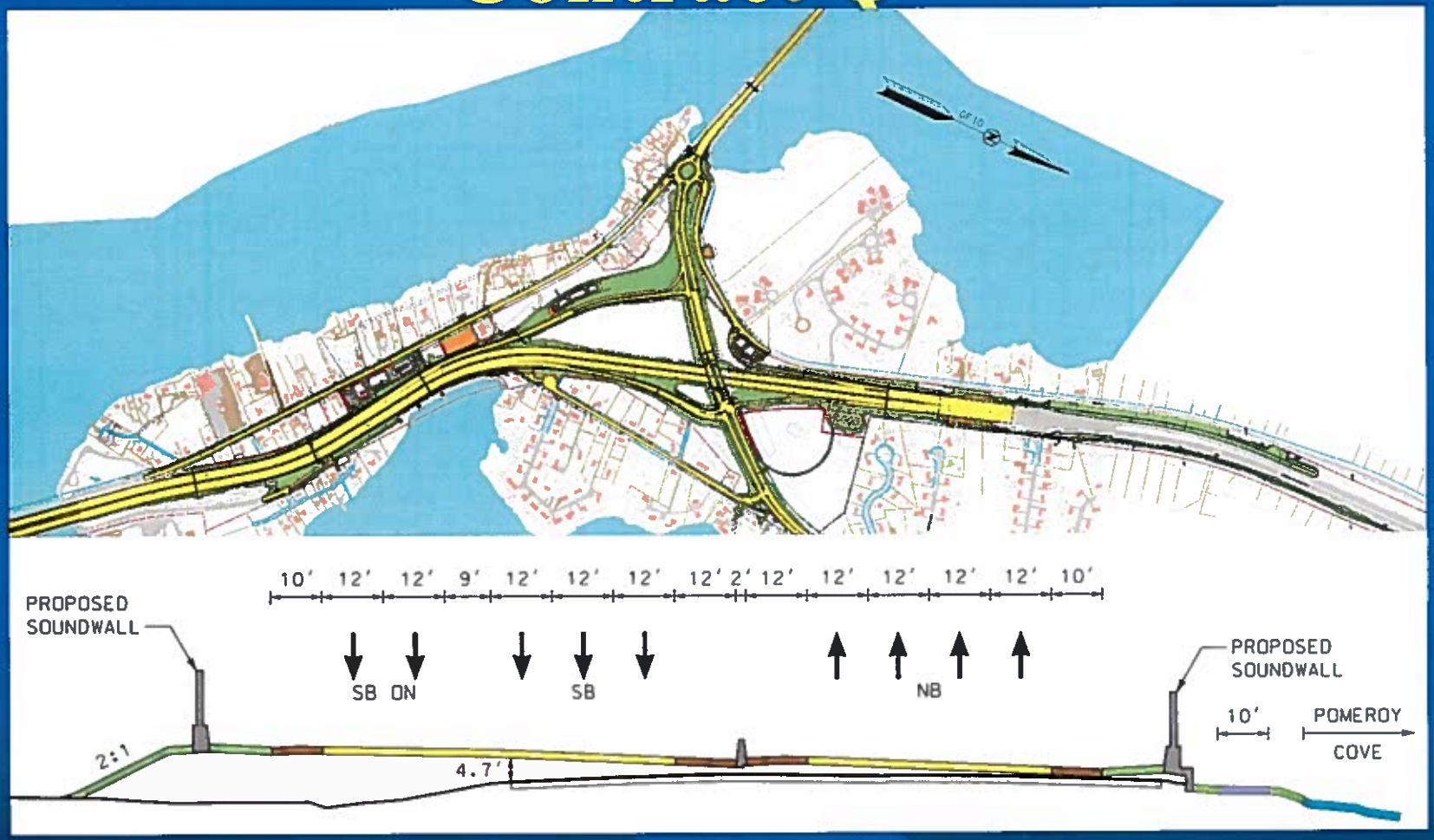
- Older Structural Steel Beams being Replaced to Meet Current Standards
- Use 1966 Beams/Deck to Replace 1984 Deck
- Use 1984 Beams/New Deck to Replace 1966 Deck and Beams

Construction - Contract O





Contract Q



Contract Q - Dover

- Contractor: Severino Trucking Co, Inc. – Candia, NH
- Construction: 2016 – 2020 ($70.6M)
- Completes and Opens All Spaulding Turnpike Improvements

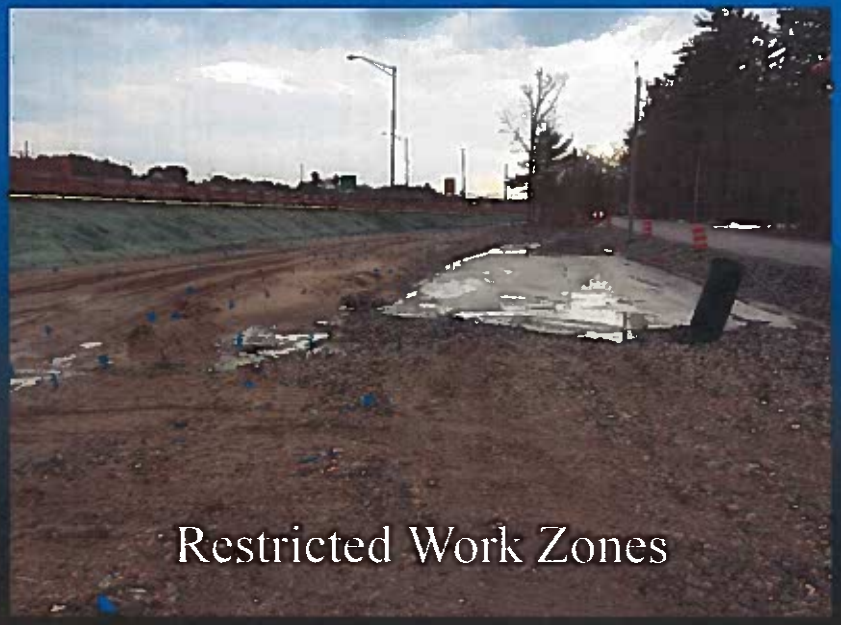
Contract Q

- Construction of New Road Over Existing
- Stage Construction Through Nine Traffic Shifts
- Incorporation of ITS and Incident Management Strategies

Contract Q Challenges

Managing Traffic Through Work Zone

Temporary Treatment Settlement Basins

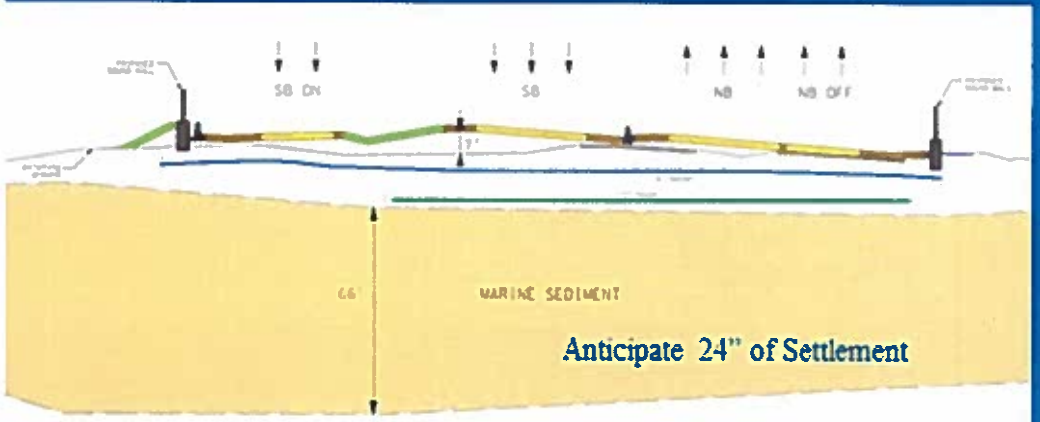


Restricted Work Zones

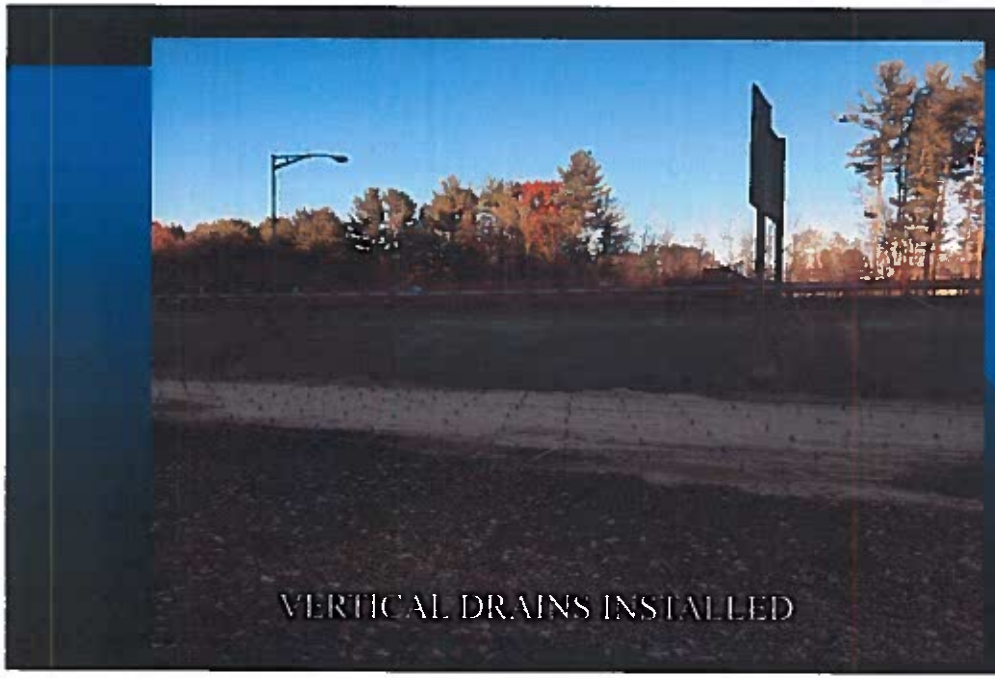
Extending Mixing Zones (Flux Tanks)

CONTRACT Q CHALLENGES

MARINE SEDIMENT



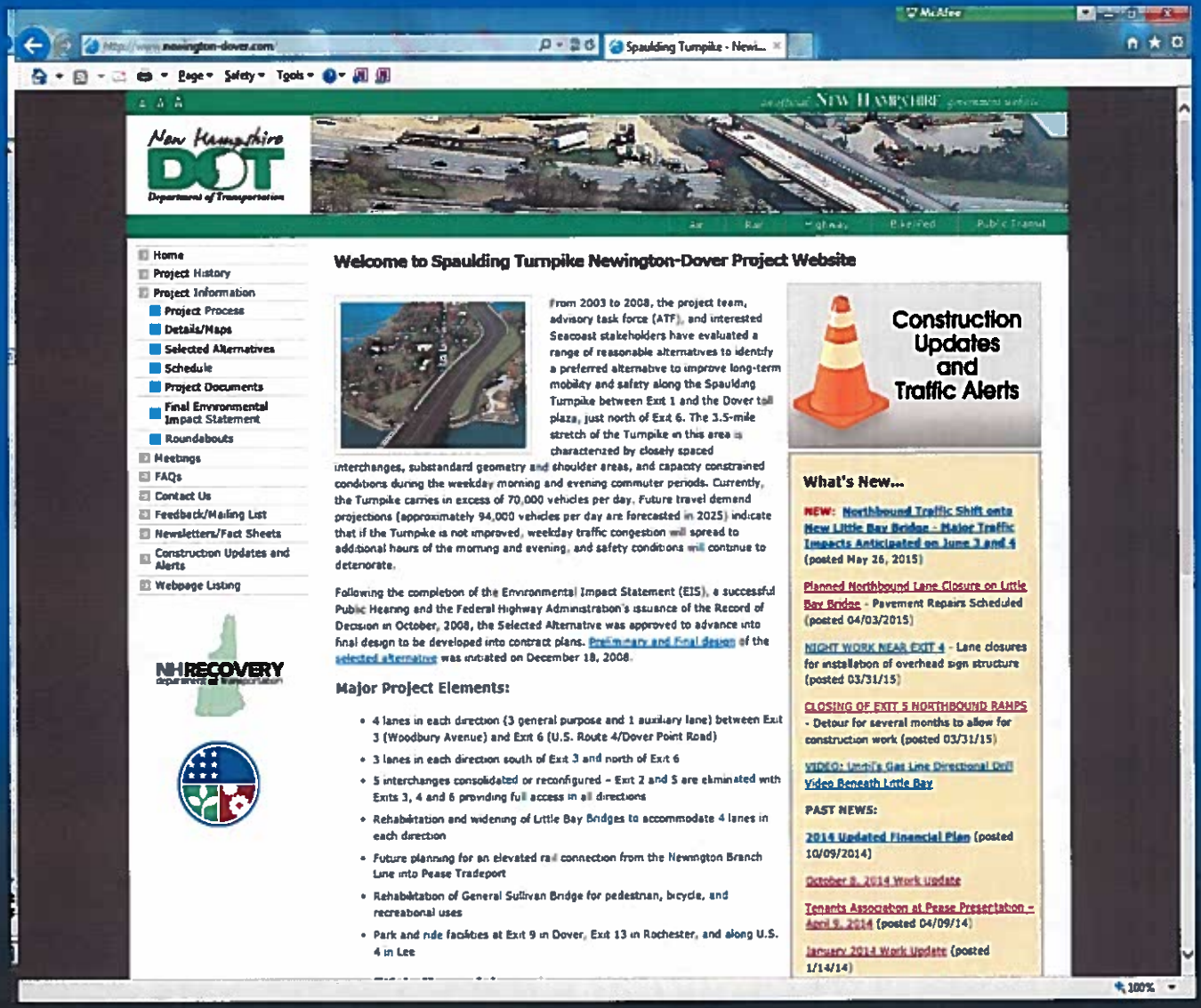

INSTALLATION OF PREFABRICATED VERTICAL DRAINS (PV)


VERTICAL DRAINS INSTALLED

Compressible Marine Deposits

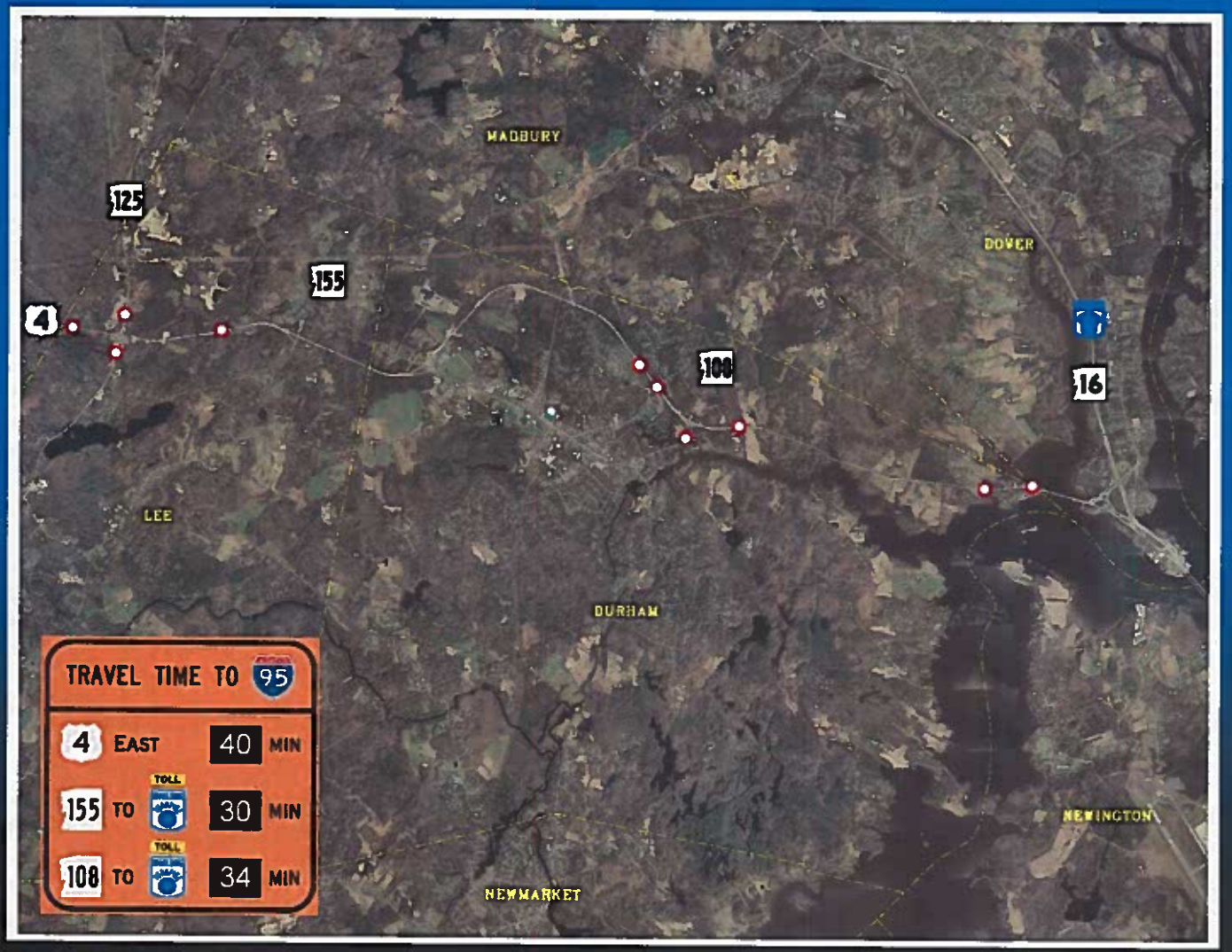
- Embankment Placement
- 30 to 60 day settlement period

CONSTRUCTION OUTREACH



WEB SITE: www.newington-dover.com

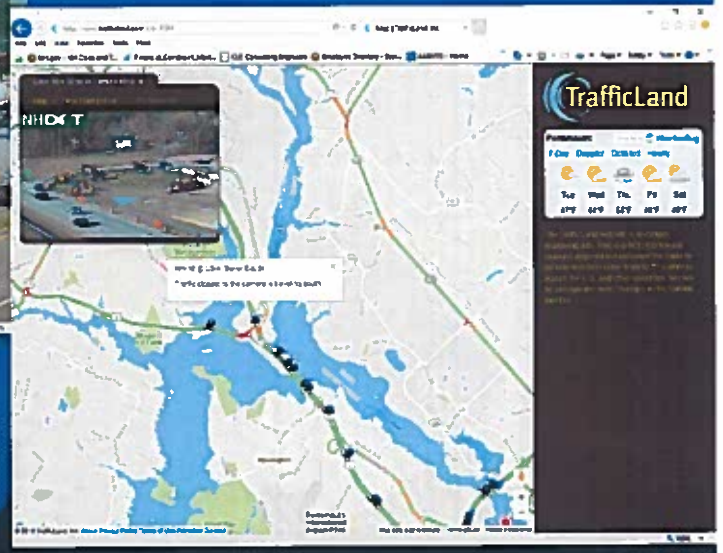
Real-Time Traffic Management System



CONSTRUCTION OUTREACH

TWITTER

TRANSPORTATION MANAGEMENT CENTER
real-time traffic and travel info
www.nhtmc.com



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

TRAFFIC CAMERAS

Contract S

Contract S – General Sullivan Bridge Rehabilitation

- Tentative Advertising Date: 2018/19
- Tentative Construction: 2019 – 2021
- Concurrent Construction with Contract Q

Project Goals

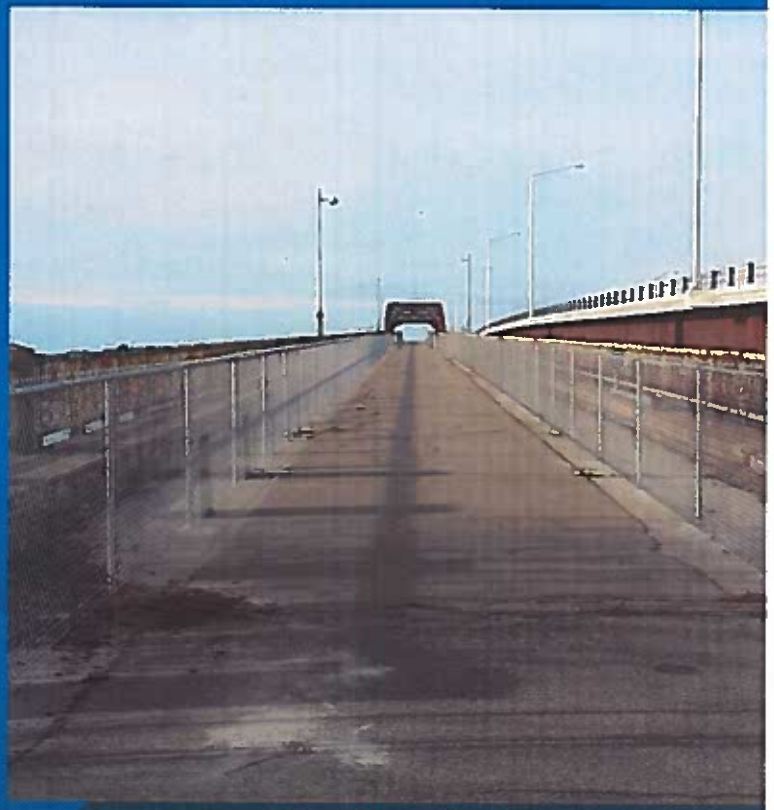
Maintain the existing bridge to provide pedestrian and bicycle access and allow for fishing use.

FHWA/SHPO MOA & NEPA Stipulations

- Rehabilitate the General Sullivan Bridge (GSB) including:
  - Removal and Replacement of the deck and floor system
  - Replacement of rivets with high strength bolts as necessary
  - Removal of the north embankment and portions of the north abutment
- Mitigate impacts by providing large format photographs with supplemental descriptions, key map, and an individual property inventory form (COMPLETED)

Background History and Functional Use

- **1935** – Original Bridge Opened
- **1966/1984** – Little Bay Bridges Open
- **1991** – GSB is Pedestrian and Bicycle Use Only
- **2010** – New Ramp Bridge and Abutment Modifications - Dover
- **2015** – Pedestrian and Bicycle Access Width Limited to 15' max with Chain Link Fencing



Timeline of Recent Engineering Activities

1990/1991	In-depth Inspection & Rehabilitation Study by Kimball Chase Co. Inc.
2009/2010	In-depth Inspection, Load Rating, & Deck Study by Ammann & Whitney
2014/2016	In-depth Inspections & Load Ratings by VHB and HDR
2016	GSB Alternatives Study by VHB and HDR
2017	Final GSB Alternatives Study and Recommendation by VHB and HDR

Condition and Structural Capacity

- Floorsystem and deck in critical condition and must be replaced
- Truss member conditions and capacity vary

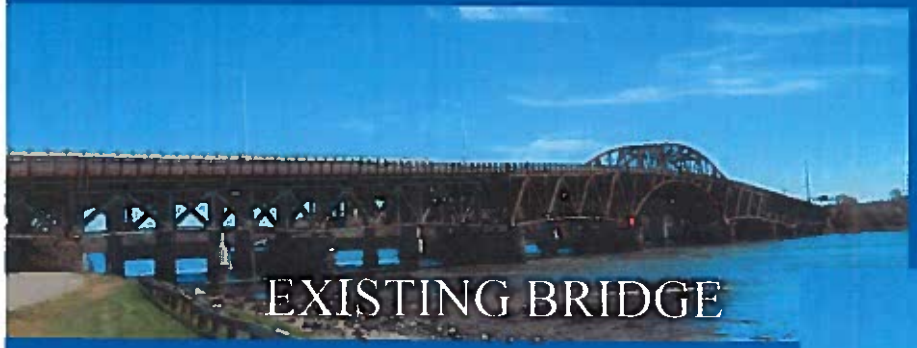
Several truss elements require strengthening or replacement

to support full design loads and maintenance vehicles

Study Alternatives

- #1 - Rehabilitation (including new floor system, deck, and railings) – Consistent with MOA
- #2 - Truss replacement with new trusses; retain and rehabilitate piers and abutments
- #3 - Rehabilitation of truss spans 4 thru 6; replacement of trusses in spans 1 thru 3 and 7 thru 9 with new trusses (simple spans); retain and rehabilitate piers and abutments
- #4 - Bridge replacement with new steel girder superstructure on new concrete piers

TS&L ALTERNATIVES



EXISTING BRIDGE

Full Rehabilitation

ALTERNATIVE 1

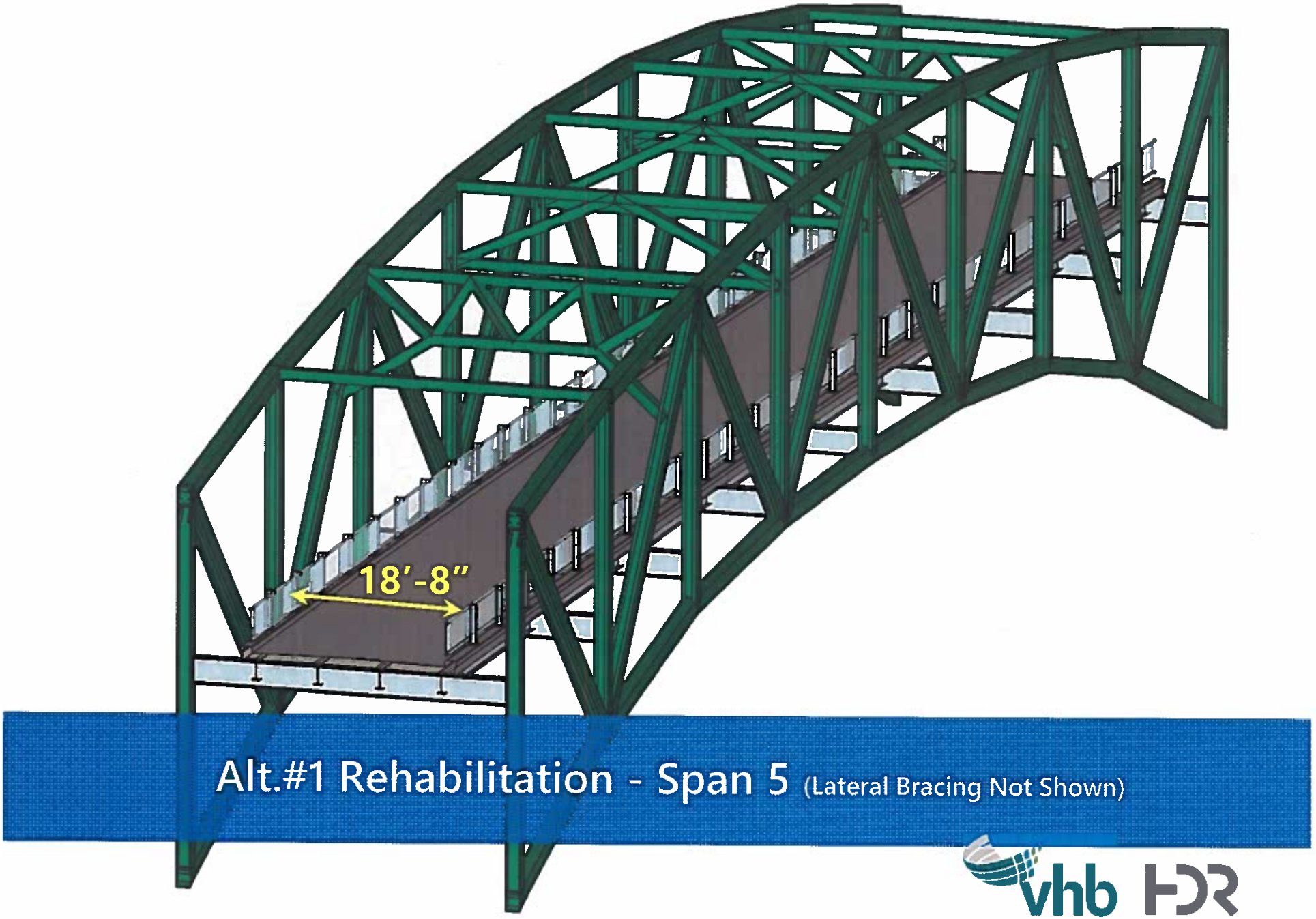
Replace Superstructure on Existing Piers

ALTERNATIVE 2

Rehab Center Arch. and Replace Approach

ALTERNATIVE 3

Alt.#1 Rehabilitation - Partial Span 3 (Lateral Bracing Not Shown)

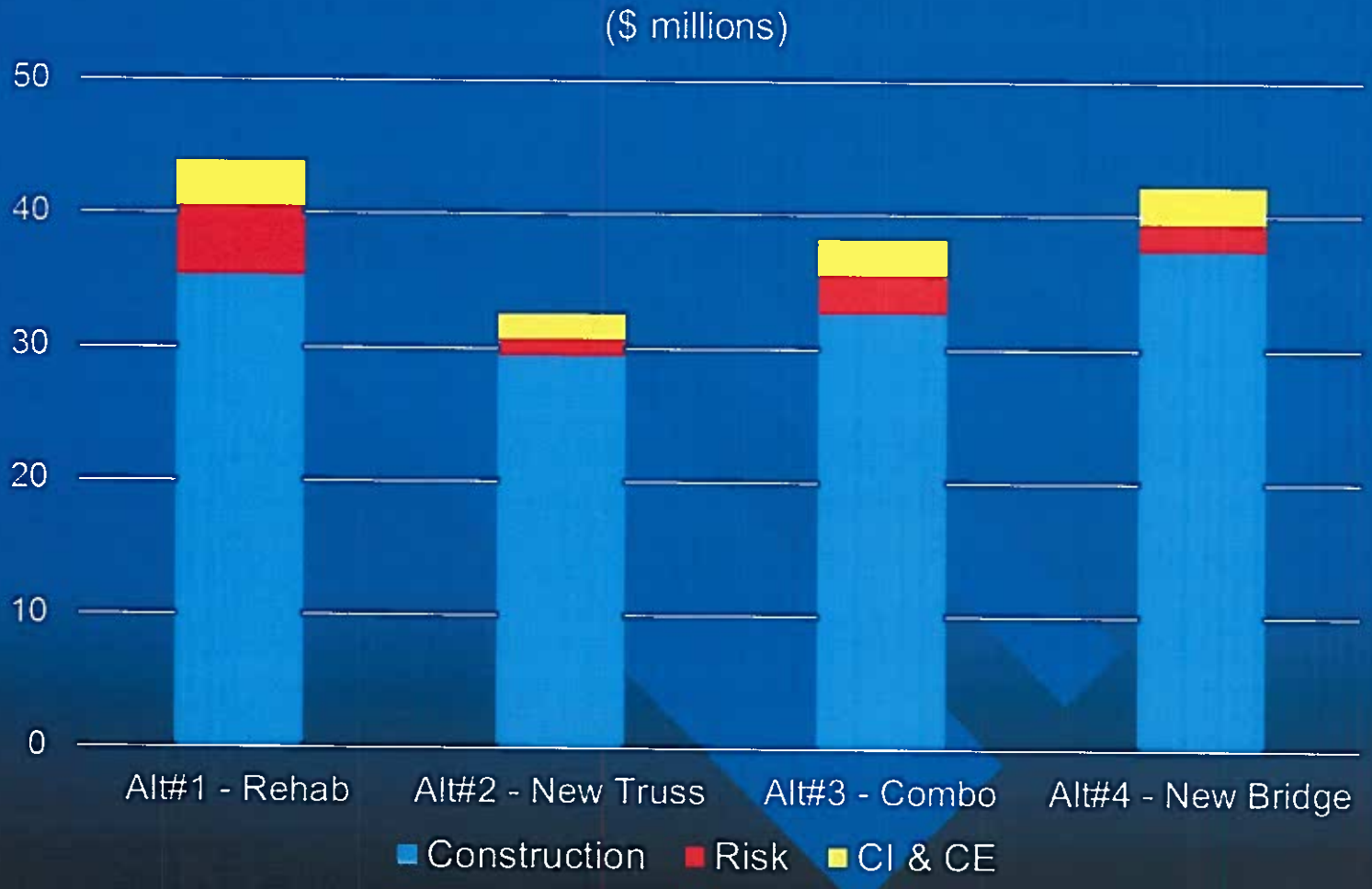


Alt.#1 Rehabilitation - Span 5 (Lateral Bracing Not Shown)

Section 106 and TS&L Evaluation

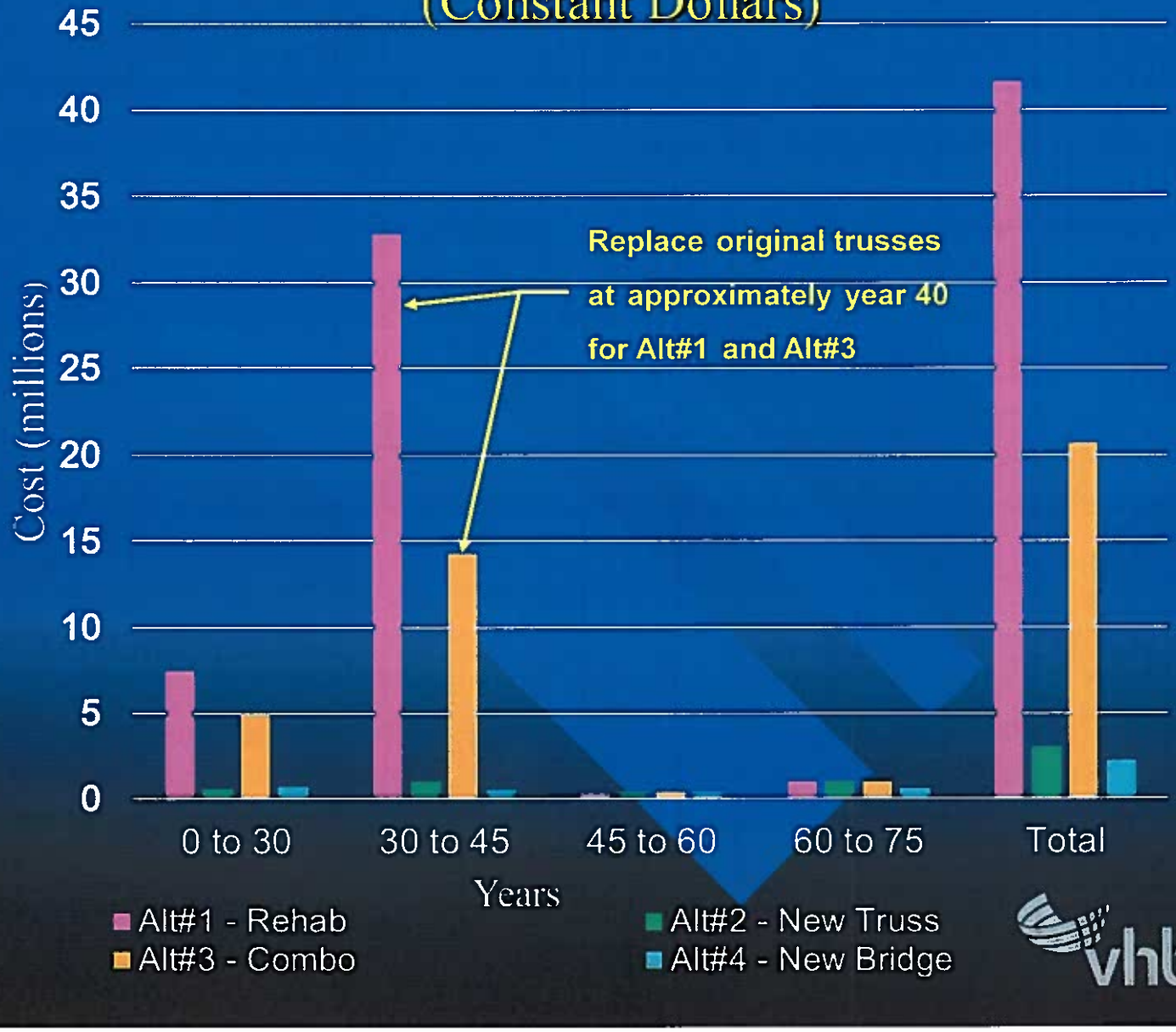
- Capital Cost
- Life-Cycle Cost / Maintenance
- Constructability
- Historic Resource Impacts (Re-opening of Section 106) – Ongoing
- Public Outreach for Inclusion of Consultant Parties – Ongoing 2017

Construction Estimates



Maintenance Costs

(Constant Dollars)



Summary of Alternatives

Alternative	Const. Est.	LCC (Present Value)	LCC (Constant Dollars)	Constr. Risk	Constr. Duration	Historic Impact	Maint-enance
1 - Rehab	$43.9 M	$53.9 M	$85.6 M	High	3-4 Years	Low	High
2- New Truss	$32.6 M	$33.4 M	$35.6 M	Low	1-2 Year	High	Moderate
3 - Combo	$38.2 M	$43.4 M	$59.0 M	High	2-3 Years	Moderate	High
4 – New Bridge	$42.2 M	$40.9 M	$44.4 M	Low	2-3 Years	High	Low

Alternative 1A – Rehabilitation consistent with MOA with least impact to the historic GSB resource

Alternative 2 – Truss replacement is least cost (capital and life-cycle cost) and shortest duration

Alternative 3 – Combination of truss replacement of approach spans and rehabilitation of truss main spans

Alternative 4 – All new bridge with steel girders supported on concrete column piers

vhb FDR

? GSB Recommendation ?

- Which Alternative Provides:
  - Meets project commitment for ped and bike access?
  - Lowest initial cost and low maintenance cost?
  - Provides a 75-year bridge to meet project goal?
  - Low constructability risk compared to the rehabilitation alternative?
  - Shortest construction duration to limit bridge closure and shuttle service for pedestrians and cyclists?
  - Meets environmental and cultural resource commitments (including Section 106 and 4f)?

Contact Information

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http://www.Newington-Dover.com/

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THANK YOU

Questions/Comments

New Hampshire DOT
Department of Transportation

DRIVING TOWARD ZERO
One Death Is Too Many

TRANSPORTATION MANAGEMENT CENTER