



Hartford BF 0113(90)

Local Concerns Presentation to the Town of Hartford

US Routes 4 & 5 – Bridge #73 over New England Central Railroad and White River



July 23, 2024



Introductions

Laura Stone, P.E.

VTrans Scoping Engineer

Josh Olund, P.E., PhD

HNTB Project Manager

Meeting Overview

- Project Location
- Existing Conditions
- Project Purpose
- Site Constraints and Considerations
- Alternatives
- Maintenance of Traffic
- Collect Input From the Community

Project Location



Existing Conditions



- Bridge Type – 979' Long, 6-Span Steel Girder Bridge
- Ownership – State of Vermont
- Constructed in 1968, Deck Patching in 2018

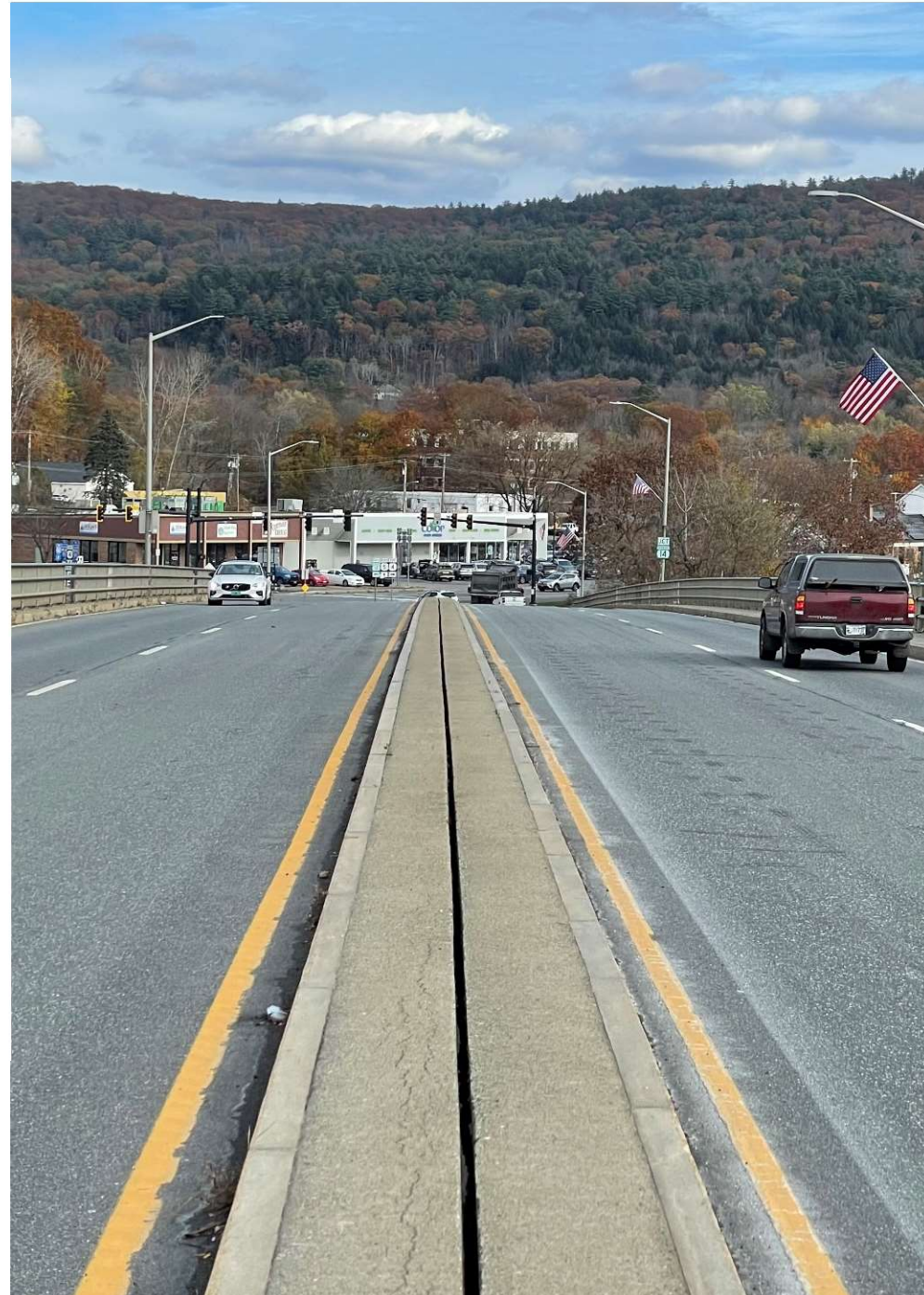
Existing Conditions

Structural Condition:

- Deck: 6 (Satisfactory)
- Superstructure: 6 (Satisfactory)
- Substructure: 5 (Fair)

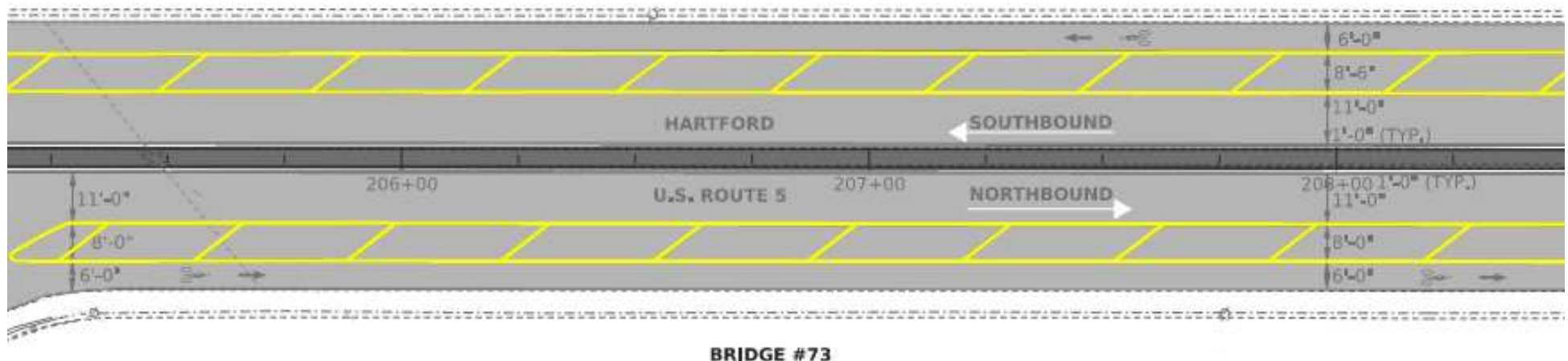
Feature Condition:

- Deck Geometry: 4 (Poor)
- Bridge Railings, Transitions and Approach Guardrail do not meet Current Standards



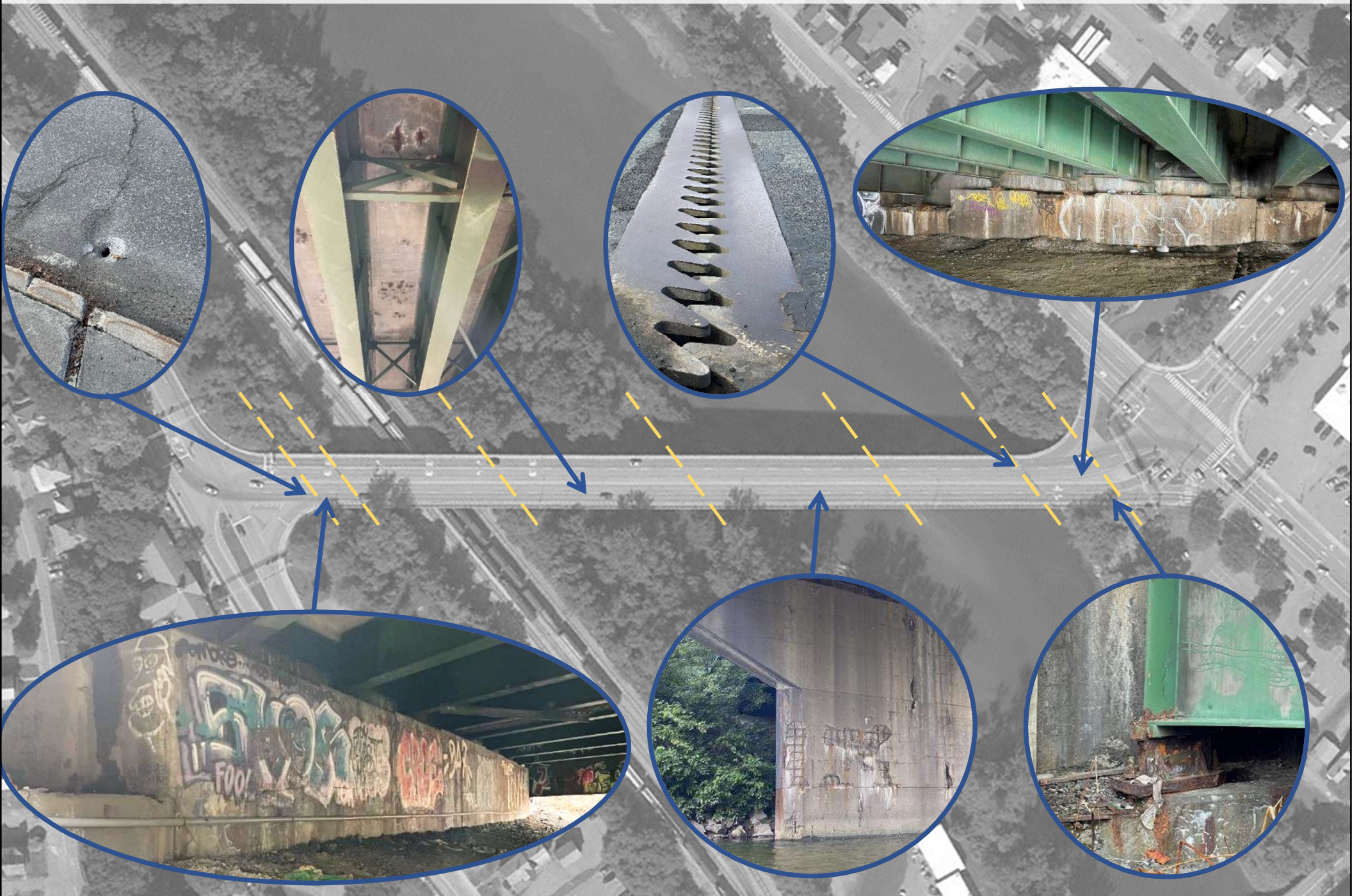
Existing Conditions

- Roadway Classification – Minor Arterial
- Current AADT (2028): 6090
 - Percent Trucks: 3.6%
- Future AADT (2048): 6682
 - Percent Trucks: 4.9%
- Proposed Restriping of the existing bridge
 - 6'-0" Bike Lanes
 - 8'-6" Southbound & 8'-0" Northbound Striped Buffers
 - Single 11'-0" Lane (Each Direction)
 - 1'-0" Shoulders
 - Maintain the 5'-0" Sidewalk on the Southbound Side

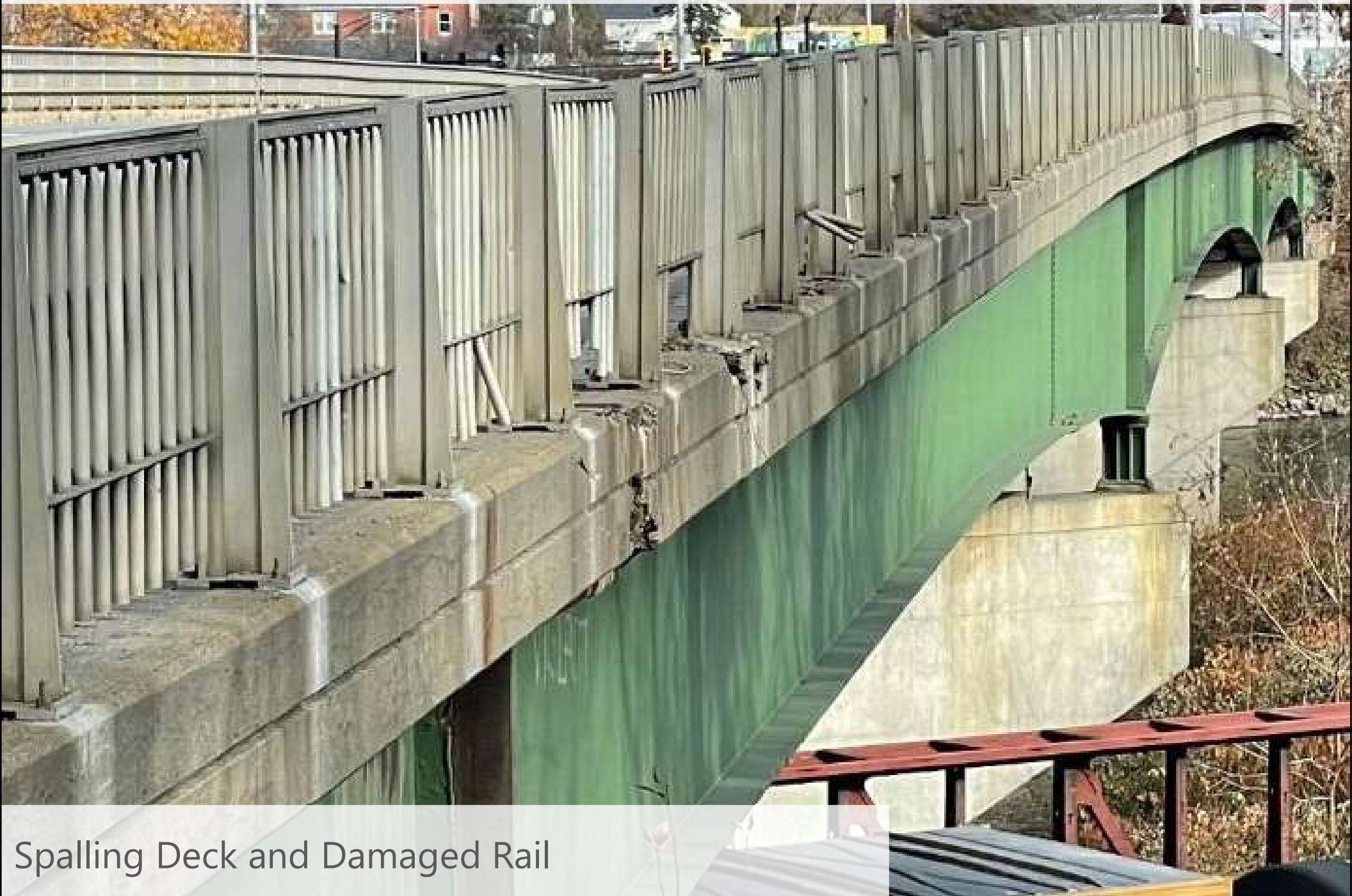


BRIDGE #73

Existing Conditions



Existing Conditions



Spalling Deck and Damaged Rail

Existing Conditions



Spalling and Leaking Deck

Existing Conditions



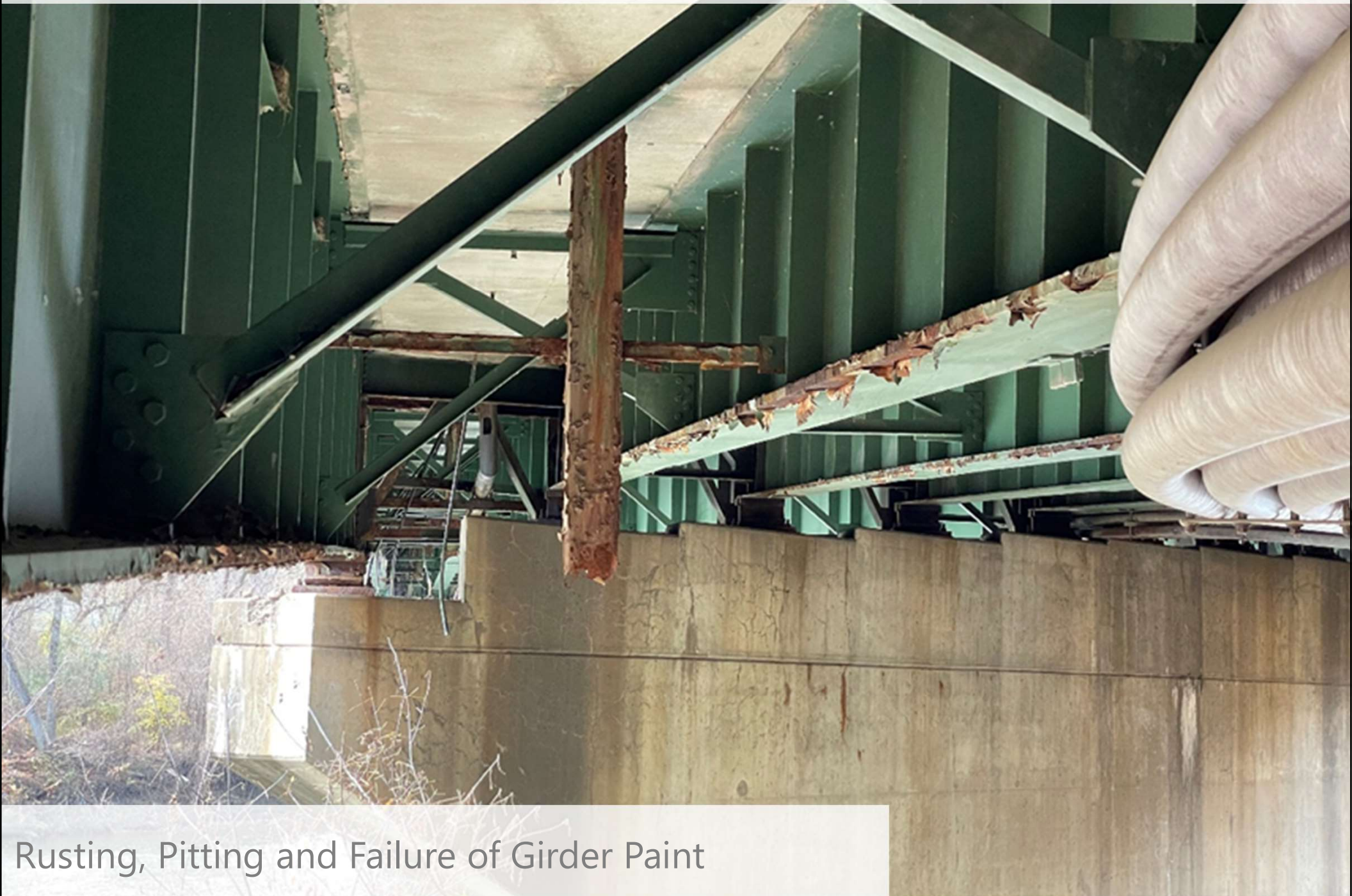
Displacement of Finger Joints

Existing Conditions



Failed Deck Drains and Potholes of Deck Pavement

Existing Conditions



Rusting, Pitting and Failure of Girder Paint

Existing Conditions



Bearing Seat Deterioration at Abutment 1

Existing Conditions



Spalling and Exposed Reinforcing of Abutment 2

Existing Conditions



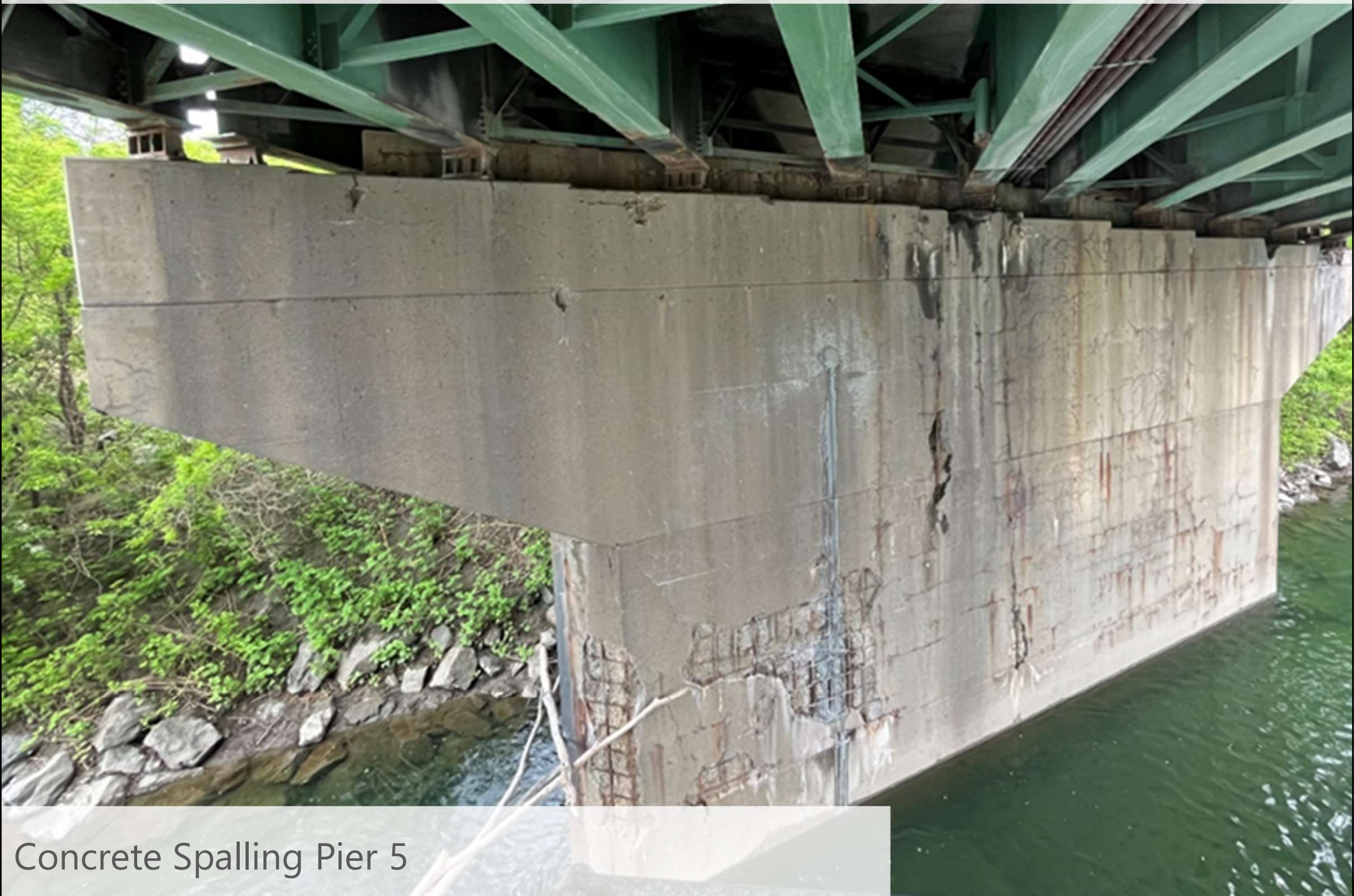
Undermined Bearing at Abutment 2

Existing Conditions



Bearing Seat Deterioration at Abutment 2

Existing Conditions



Concrete Spalling Pier 5

Draft Purpose and Needs Statement

Purpose

- Provide a safe, equitable crossing for all modes of transportation over the New England Central Railroad and White River that meets the needs of the travelling public

Need

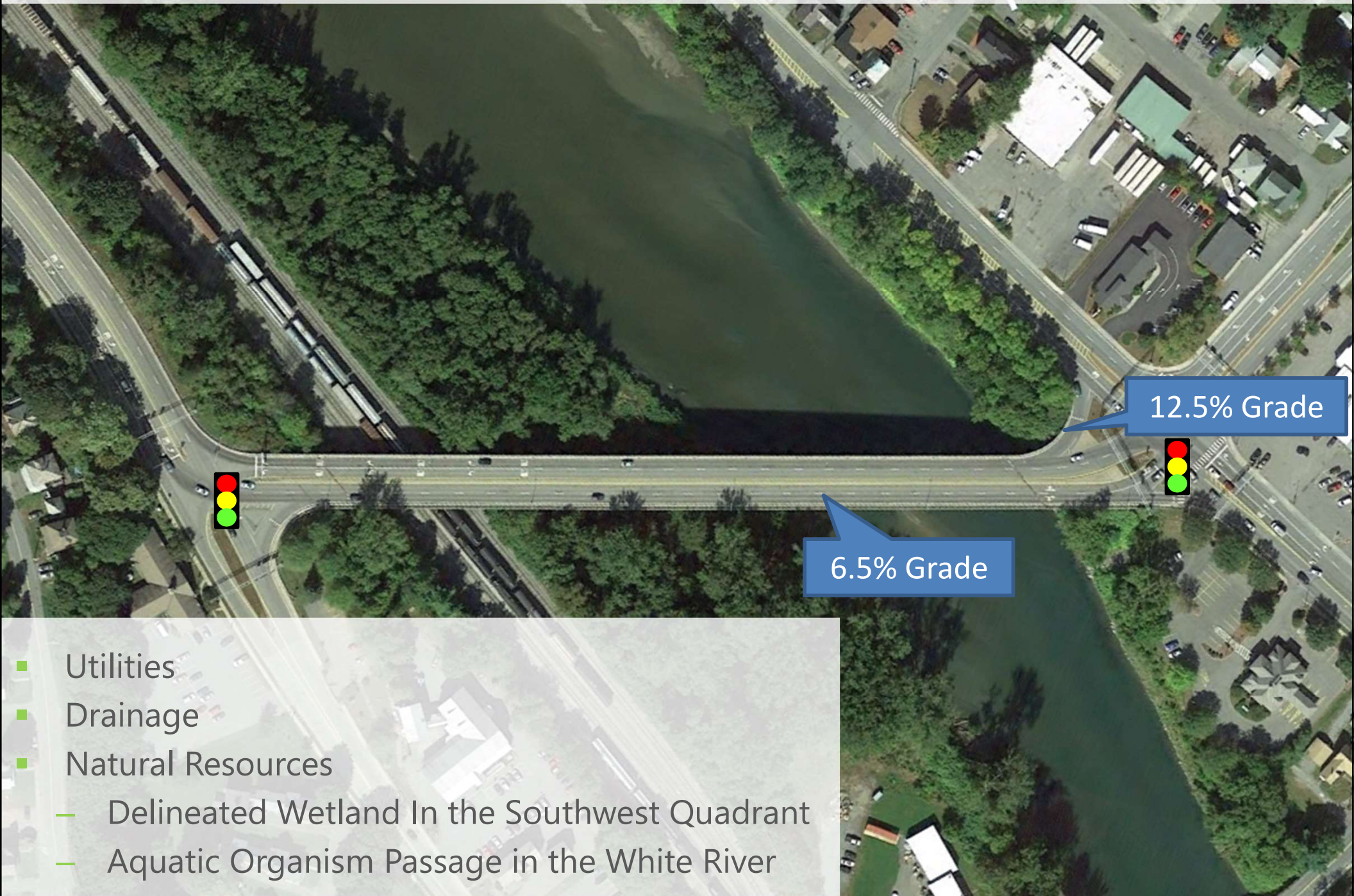
- Address structural deficiencies and ongoing deterioration
- Extend service life of the crossing
- The bridge railing and approach railing do not meet the current standards
- Address the girder paint system.

Concrete Coring and Testing



- 18 Concrete cores taken in the deck and substructure
 - Tests for compressive Strength
 - Chloride Penetration
 - Alkali-Silica Reaction (ASR)

Site Constraints and Considerations

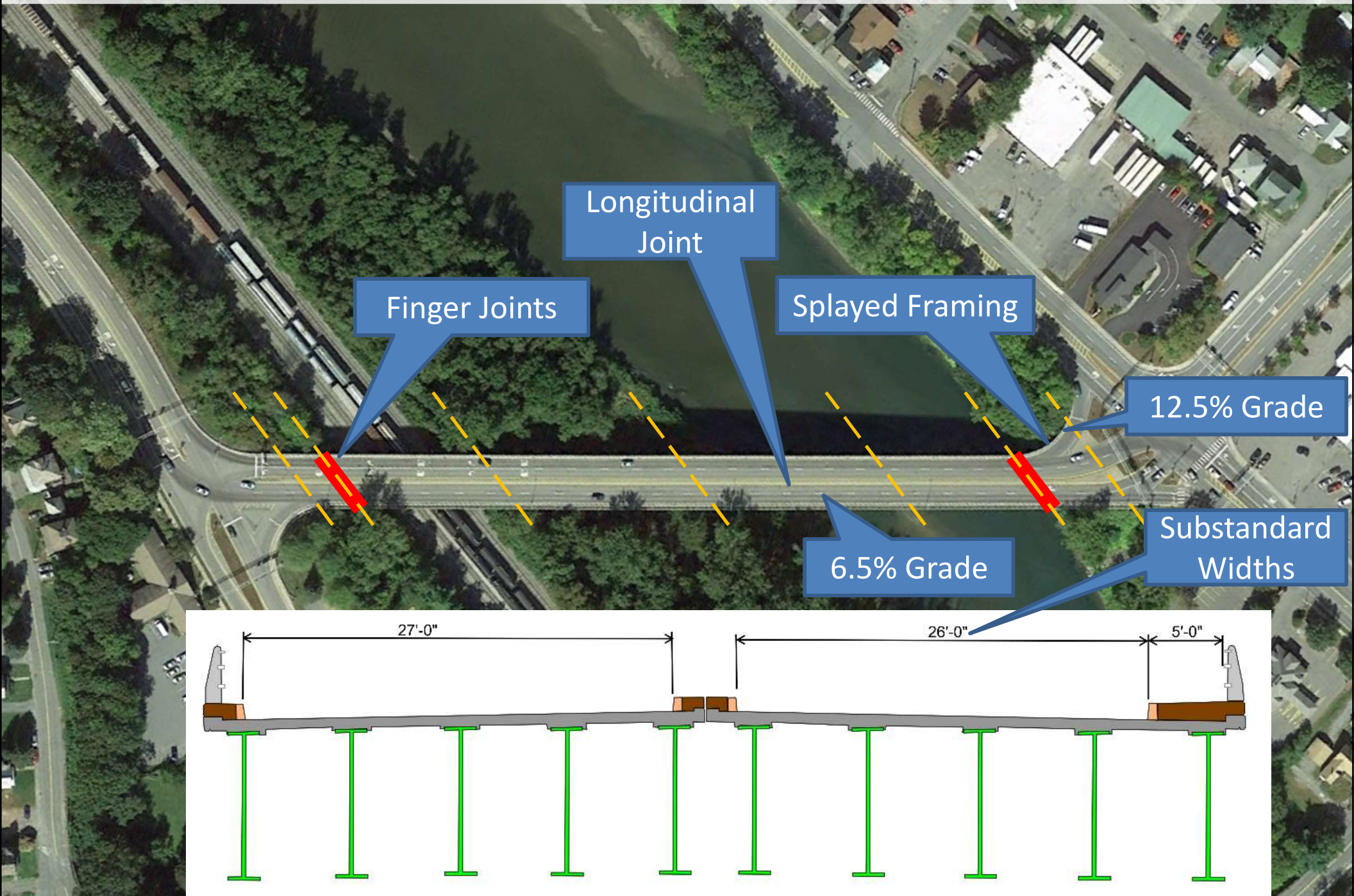


12.5% Grade

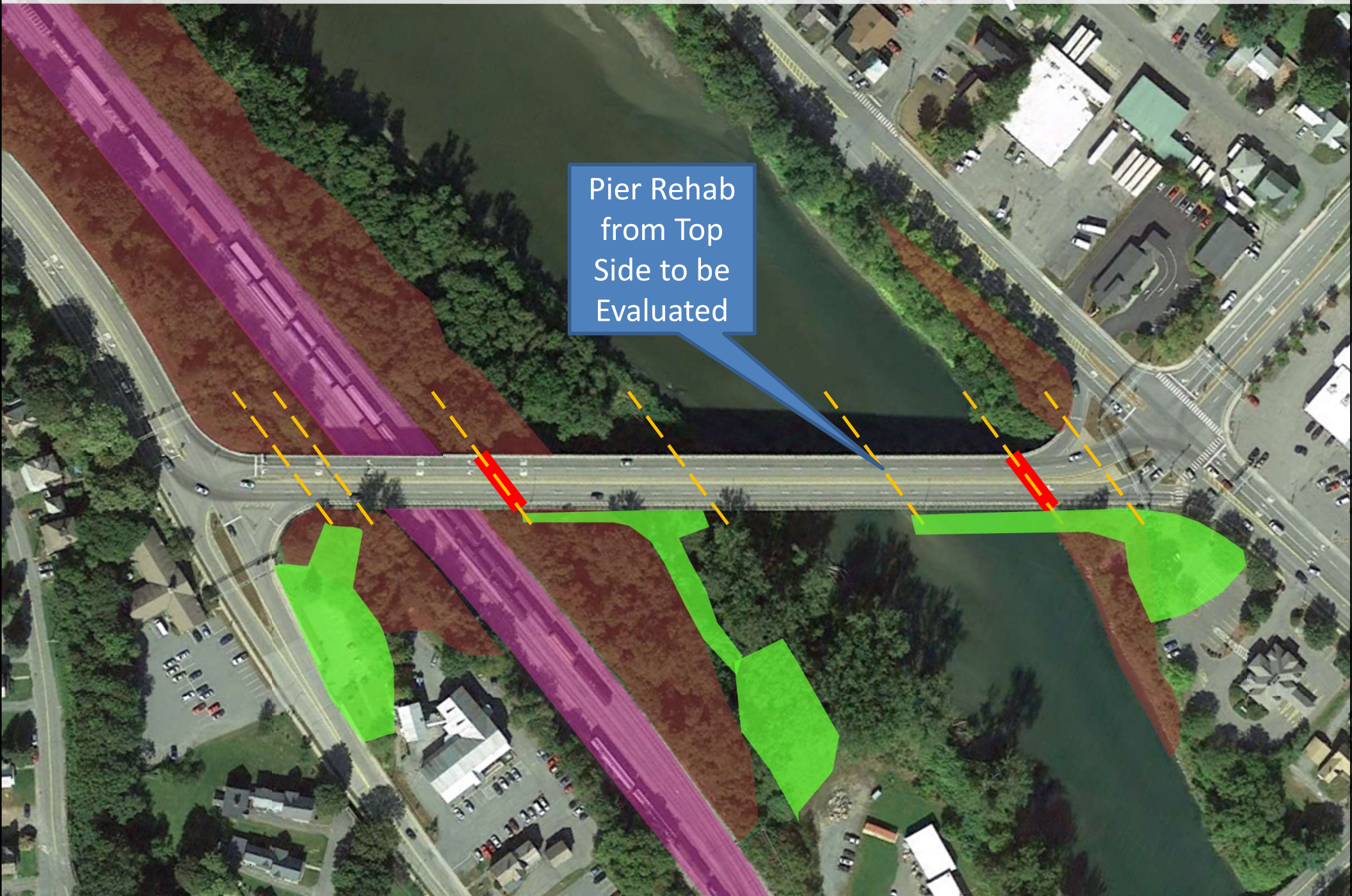
6.5% Grade

- Utilities
- Drainage
- Natural Resources
 - Delineated Wetland In the Southwest Quadrant
 - Aquatic Organism Passage in the White River

Structure Constraints and Considerations



Access Constraints and Considerations



Hazardous Waste



Design Criteria

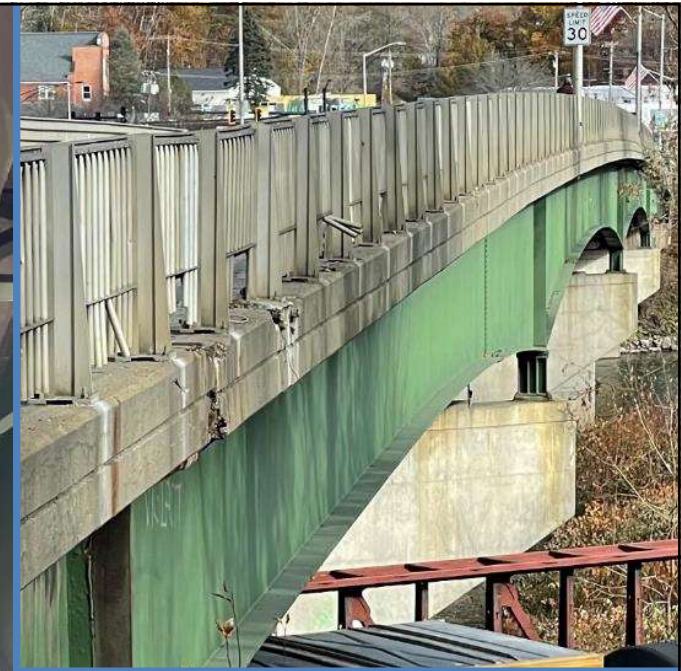
- Design Speed: 30 MPH
- Structural Capacity: HL-93
- Bridge Mounted Lighting
- New England Central Railroad Crossing
 - 5 Rail Lines Beneath Span 2
- Bridge Railing: TL-2
- Lane Widths: 11'-0"
- Shoulder Widths: 3'-0"

Alternatives To Be Considered

- No Action
 - Additional maintenance required within 10 years
- Rehabilitation and Preservation
 - 20-year design life
- Deck Replacement
 - 35-year design life
- Bridge Replacement
 - 100-year design life

Rehabilitation

- Joint Replacement
- Curbs and Railing Replacement
- Deck Patching (2018 Project)
- Painting



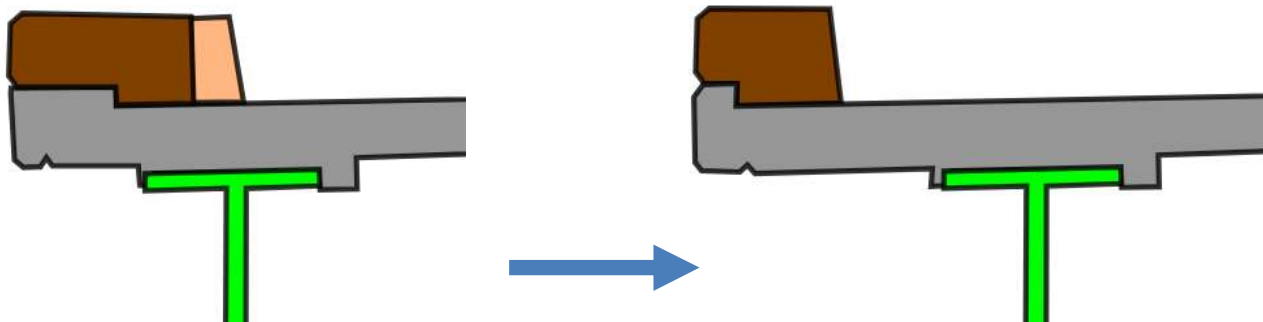
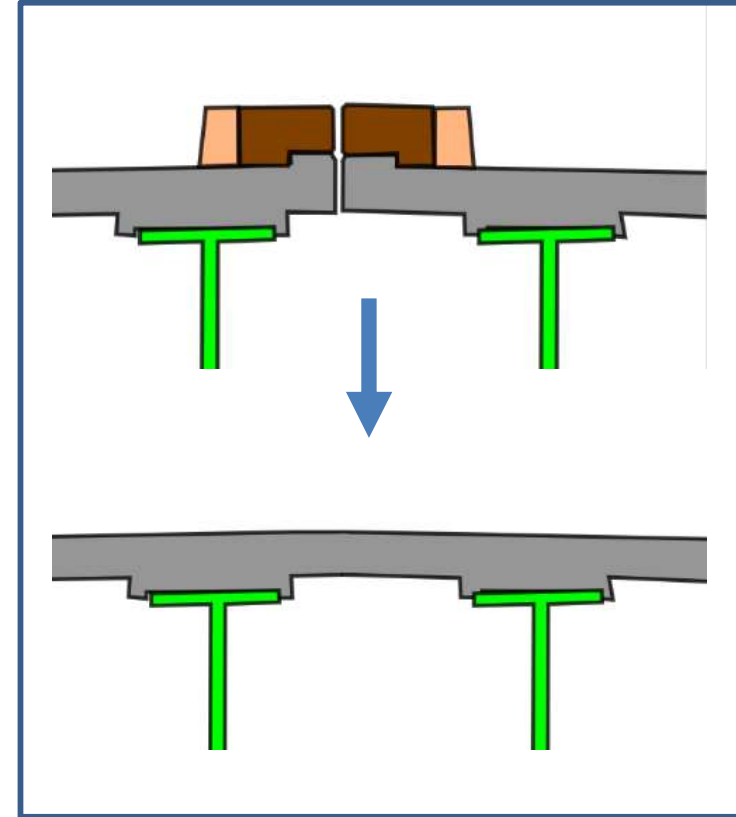
Rehabilitation

- Concrete Patching
 - Comprehensive Soundings
 - Backwall Replacement
 - Core Testing
- Bearing Rehabilitation
 - Seismic Resiliency
 - Jacking Methods
 - Changed Loading



Deck Replacement

- Replacement In-Kind
- Removal of Longitudinal Joint
- Overhang Widening



Complete Replacement

- Meet Standards and Functional Needs
- Fewer Girders
- Reduced Maintenance (Protective Coating)
- Reduced Bridge Length



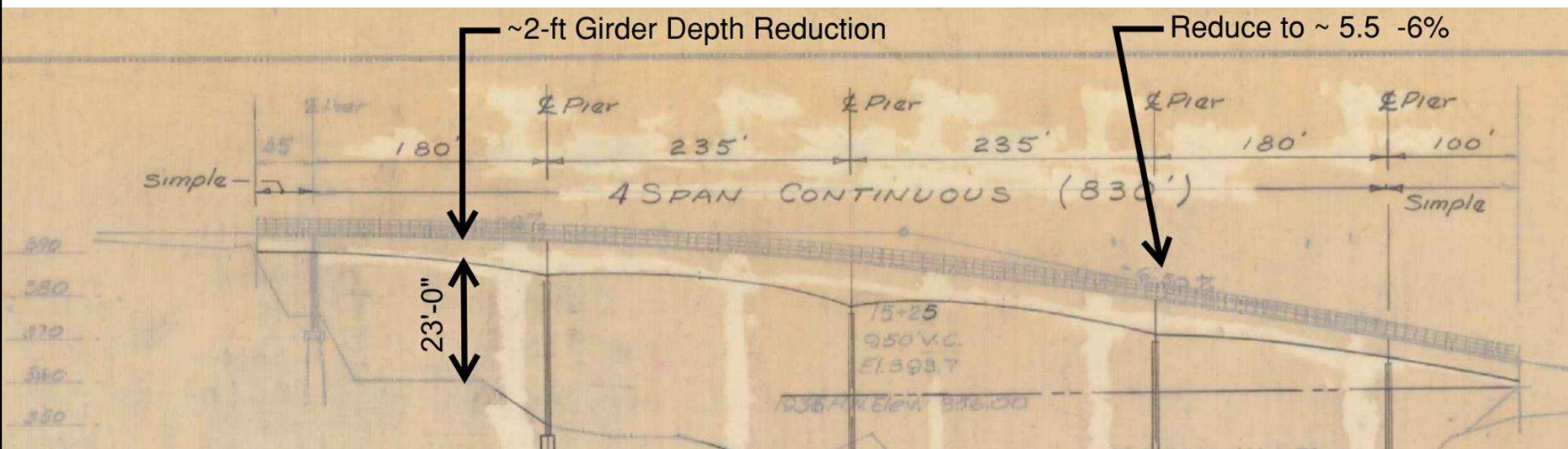
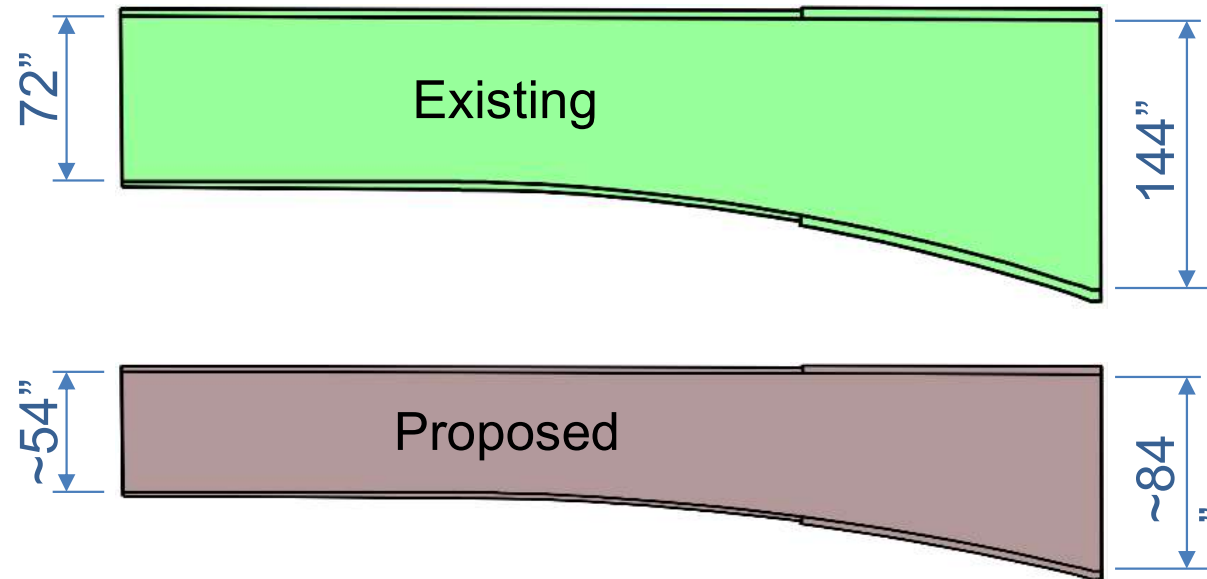
Significant Berms!

Reduce Bridge Length by ~80-ft



Complete Replacement

- Reduce Girder Depth
- Reduce Profile



Traffic Control Considerations

Opportunities:

- Bridge Width
- Available Detours
- Low AADT
- Existing Signals

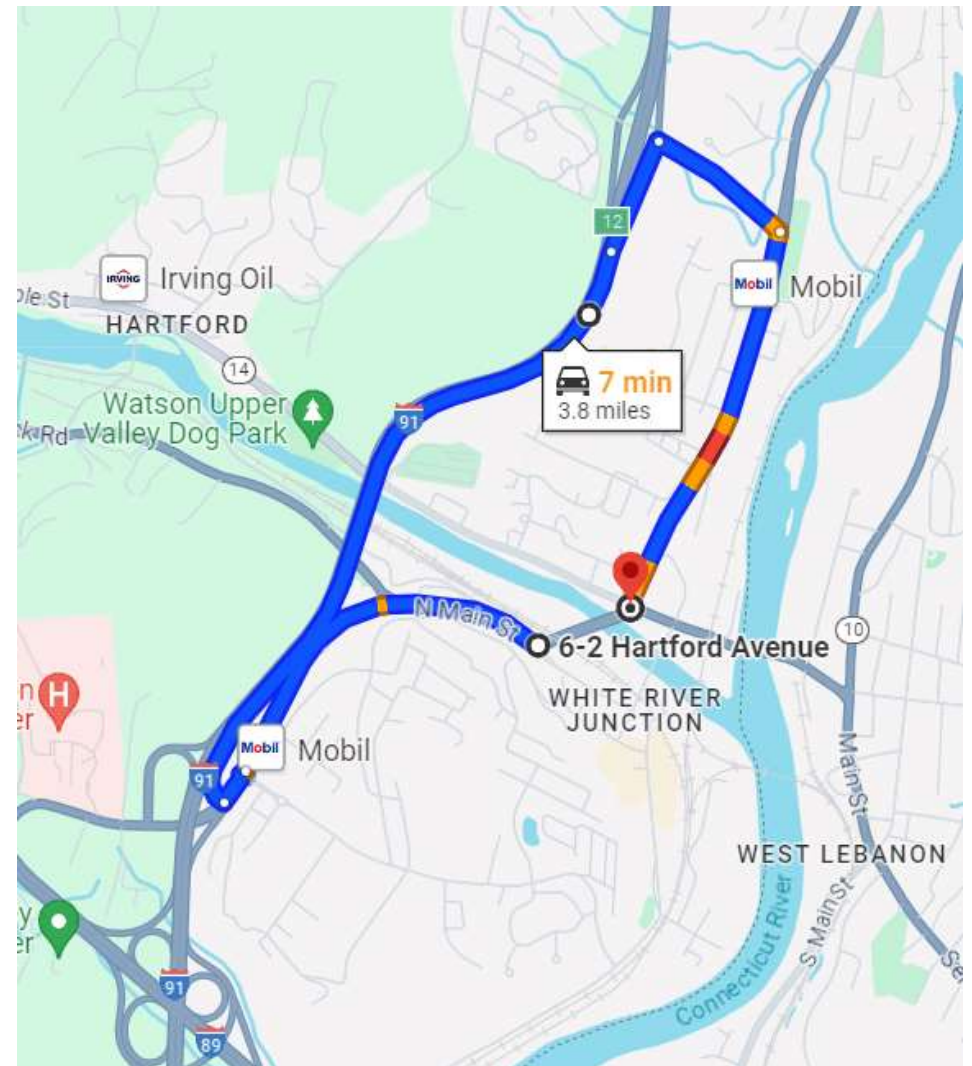
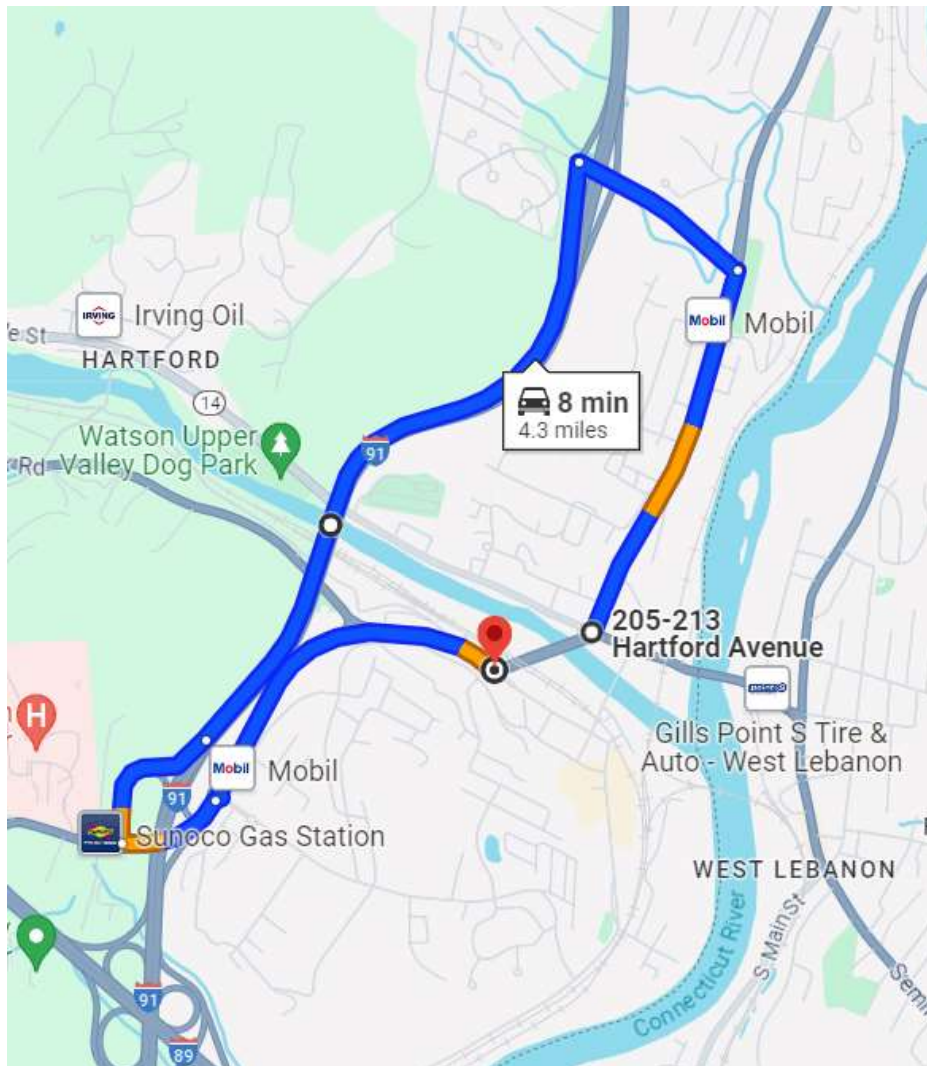
Options:

- Detour & Closure
- Phased Construction

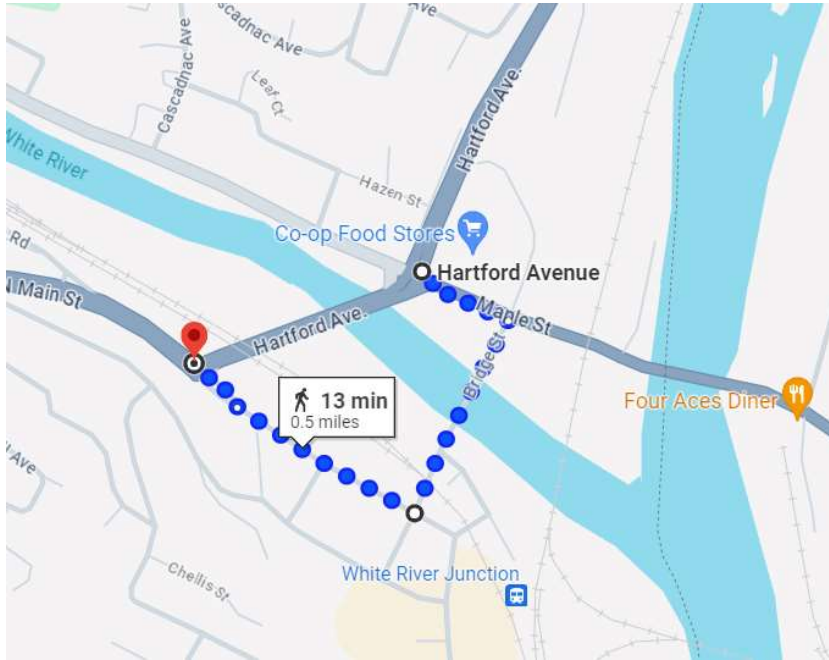


Maintenance of Traffic – Signed Detour

- NB and SB Detour Route
- Traffic: Detour along North Main Street, I-91, Bugbee St. and Hartford Avenue



Maintenance of Traffic – Local Detour

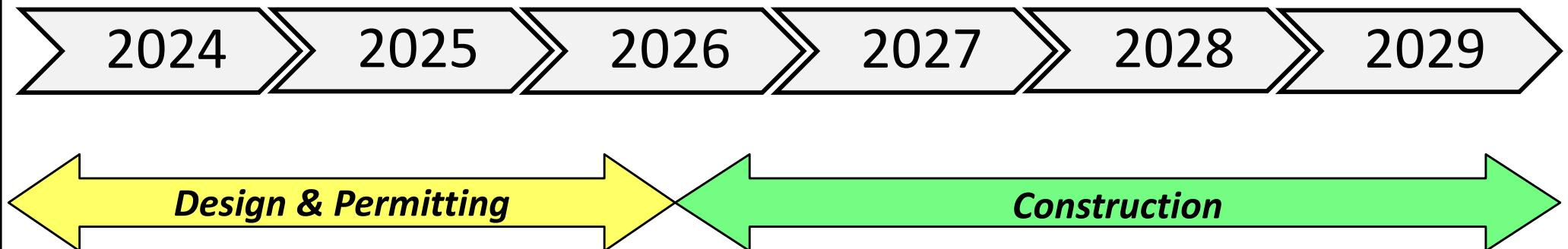


- Traffic: 0.5 mile detour along North Main Street, Bridge Street and Maple Street
- Pedestrians: Sidewalks and crosswalks available throughout the detour
- Max vehicle height limited to 12'-3" due to NECR overpass over Bridge Street



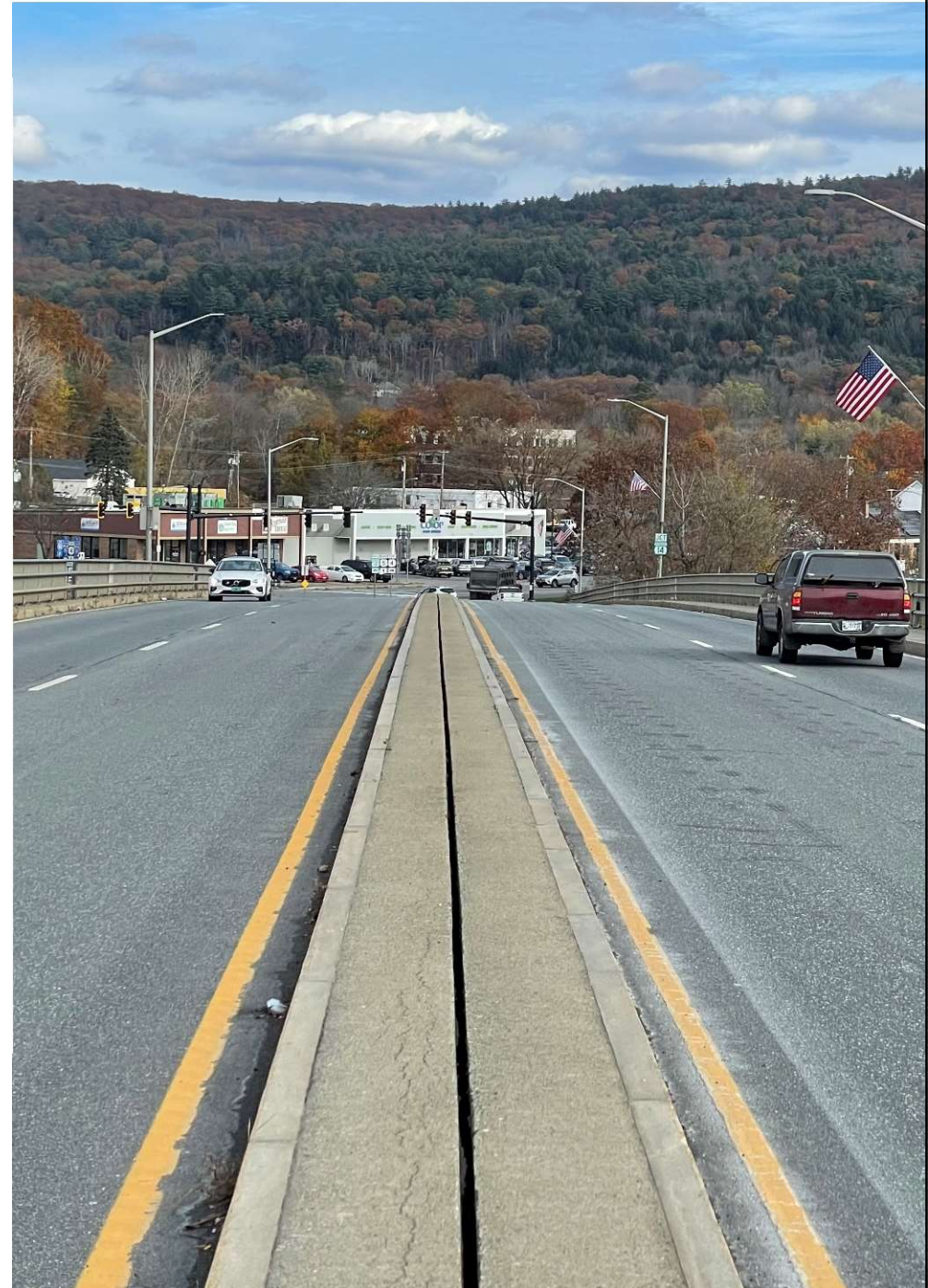
Next Steps and Anticipated Schedule

- Obtain and Analyze Concrete Testing Results
- Evaluate Alternatives
- Hold Public Information Meeting to present Recommended Alternative
- Complete Scoping Report
- Begin National Environmental Policy Act (NEPA) Process for Environmental Permitting
- Begin Development of Project Plans and Documents



Public Input

- Concerns About the Project?
- Safety Concerns?
- Pedestrians and Cyclists Usage
- Truck Usage
- Opinions about width, traffic patterns
- Detour Routes



For more information:

<https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/22B392>



Hartford BF 0113(90) Questions and Comments

US Routes 4 & 5 – Bridge #73 over New England Central Railroad and White River



July 23, 2024

