



Irasburg IM DECK (46) Alternatives Presentation Meeting

I-91 North– Bridge #107N over

December 14, 2015



**Accelerated
Bridge
Program**
VTRANS

Introductions

Jennifer Fitch, P.E.

VTrans Scoping Project Manager

Jonathan Griffin, P.E.

VTrans Scoping Engineer

John Byatt, P.E.

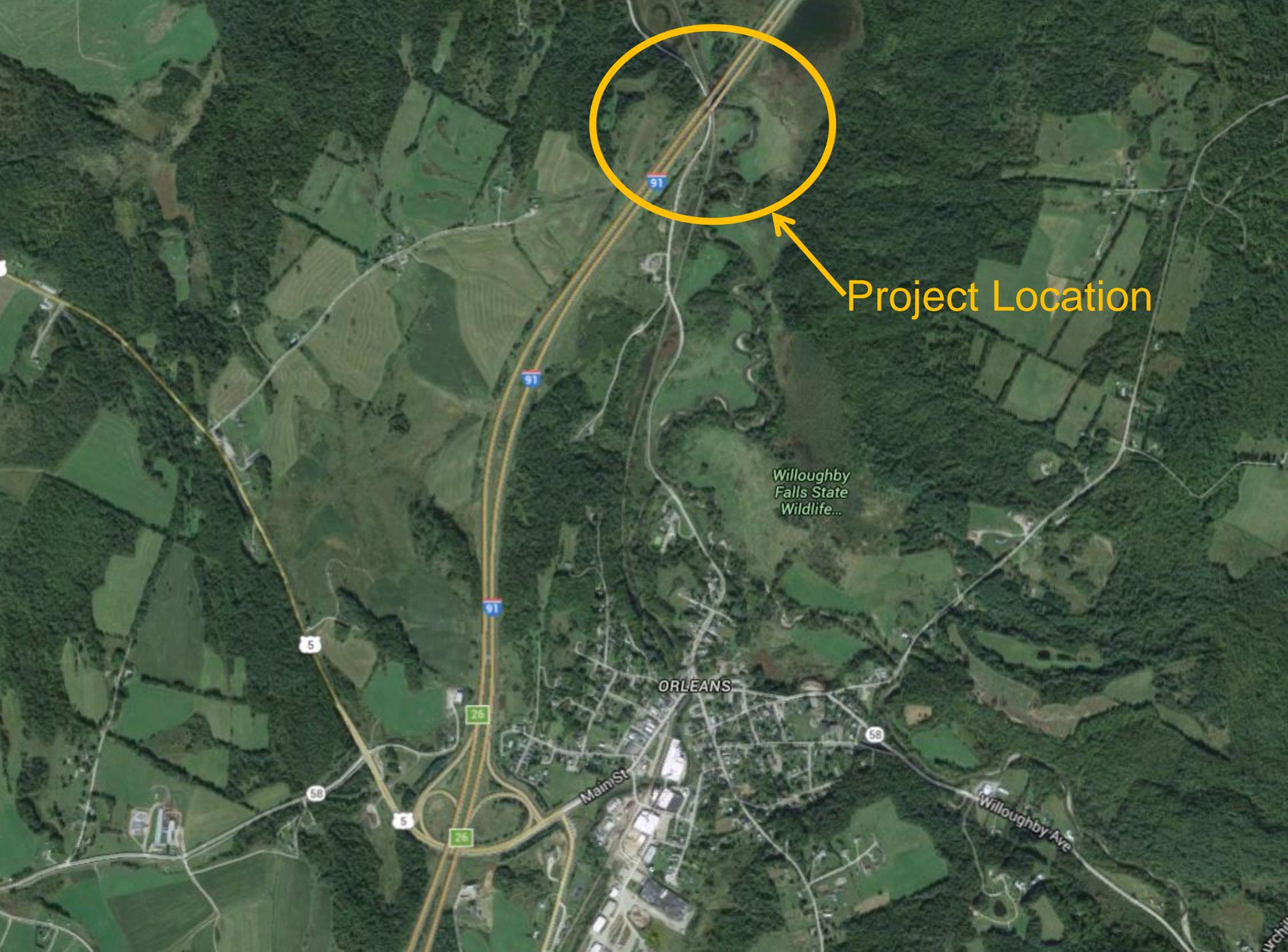
CLD Structures Team Leader



Purpose of Meeting

- Provide an understanding of our approach to the project
- Provide an overview of project constraints
- Discuss alternatives that were considered
- Discuss the recommended alternative
- Provide an opportunity to ask questions and voice concerns





Project Location

Willoughby
Falls State
Wildlife...

ORLEANS

Main St

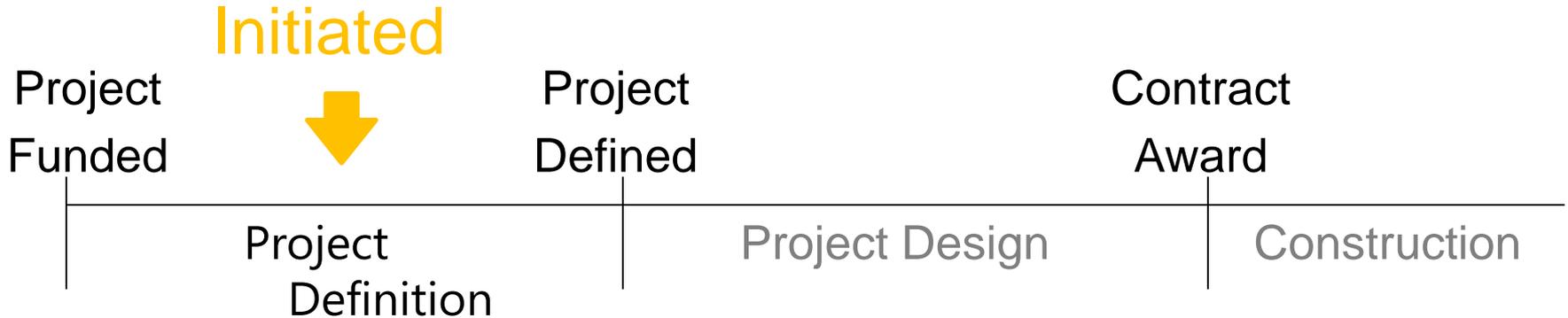
Willoughby Ave

Meeting Overview

- VTrans Project Development Process
- Project Overview
 - Existing Conditions
 - Alternatives Considered
 - Recommended Alternative
- Maintenance of Traffic
- Schedule
- Summary
- Questions



VTrans Project Development Process



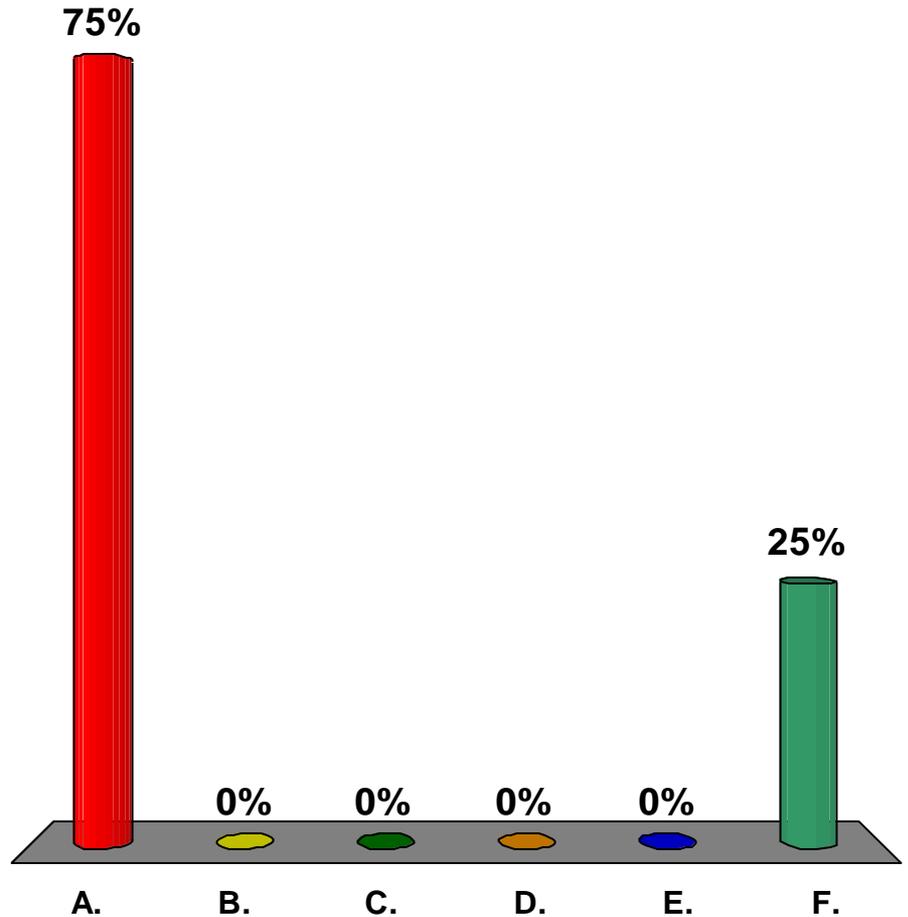
- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

- Quantify areas of impact
- Environmental permits
- Develop plans, estimate and specifications
- Right-of-Way process if necessary



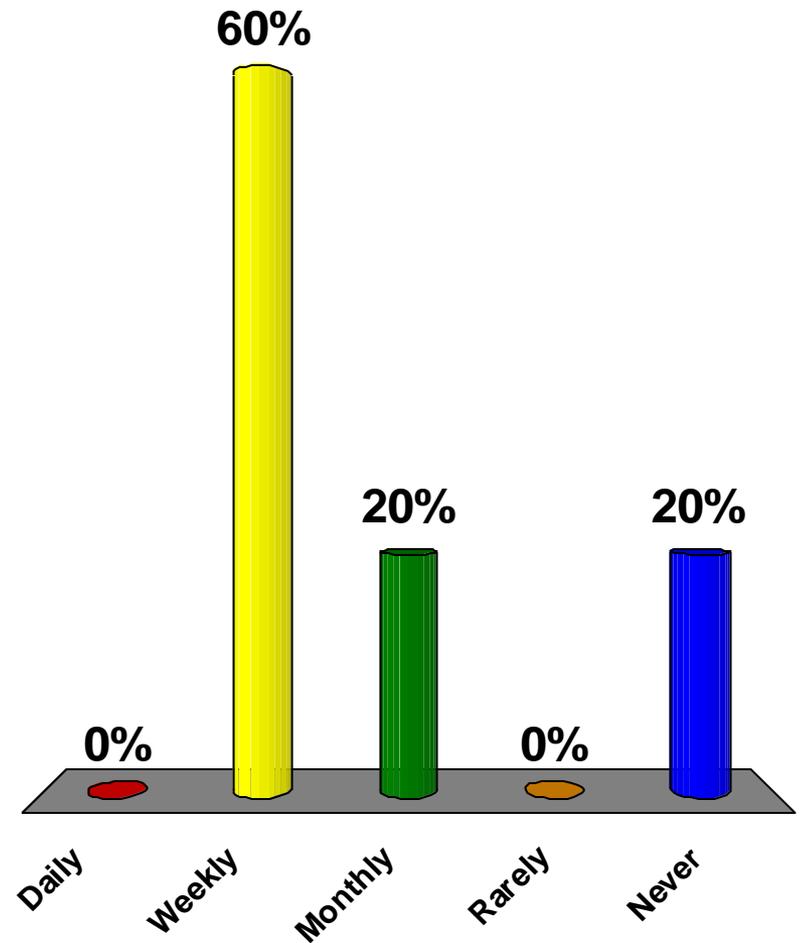
Who are you representing?

- A. Municipal Official
- B. Resident
- C. Local Business
- D. Independent Organization
- E. Emergency Services
- F. Other



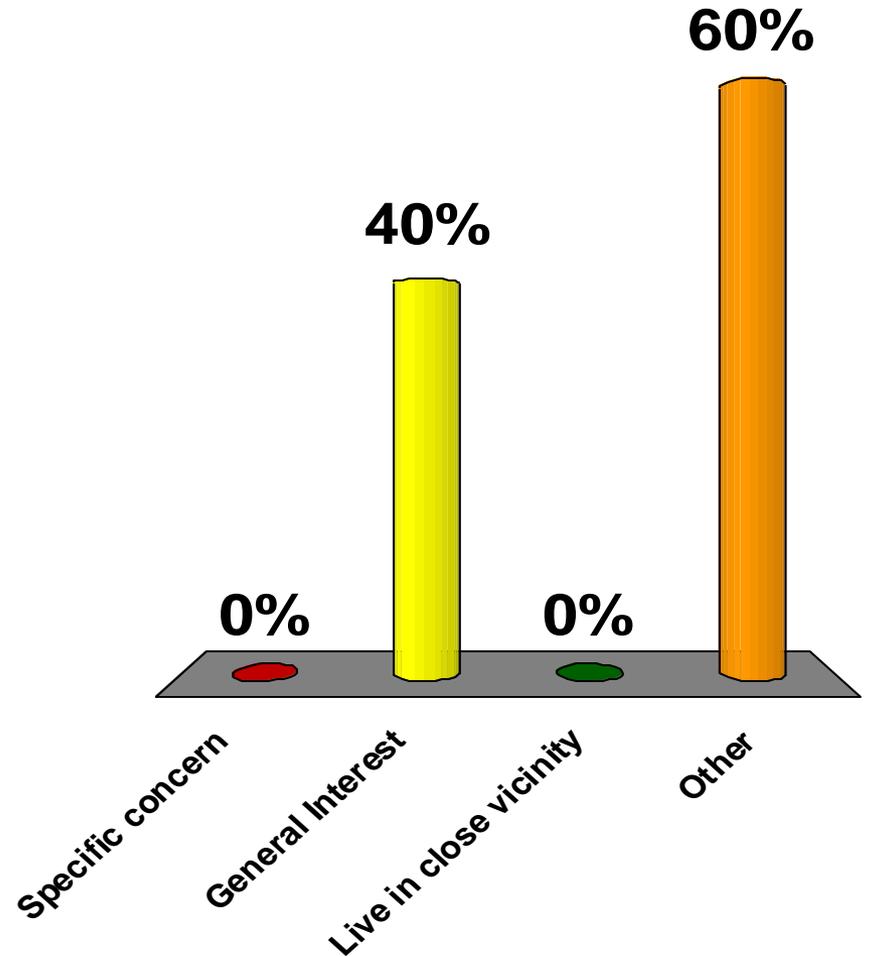
How often do you use this segment of I-91 North?

- A. Daily
- B. Weekly
- C. Monthly
- D. Rarely
- E. Never



What is your reason for attending this meeting?

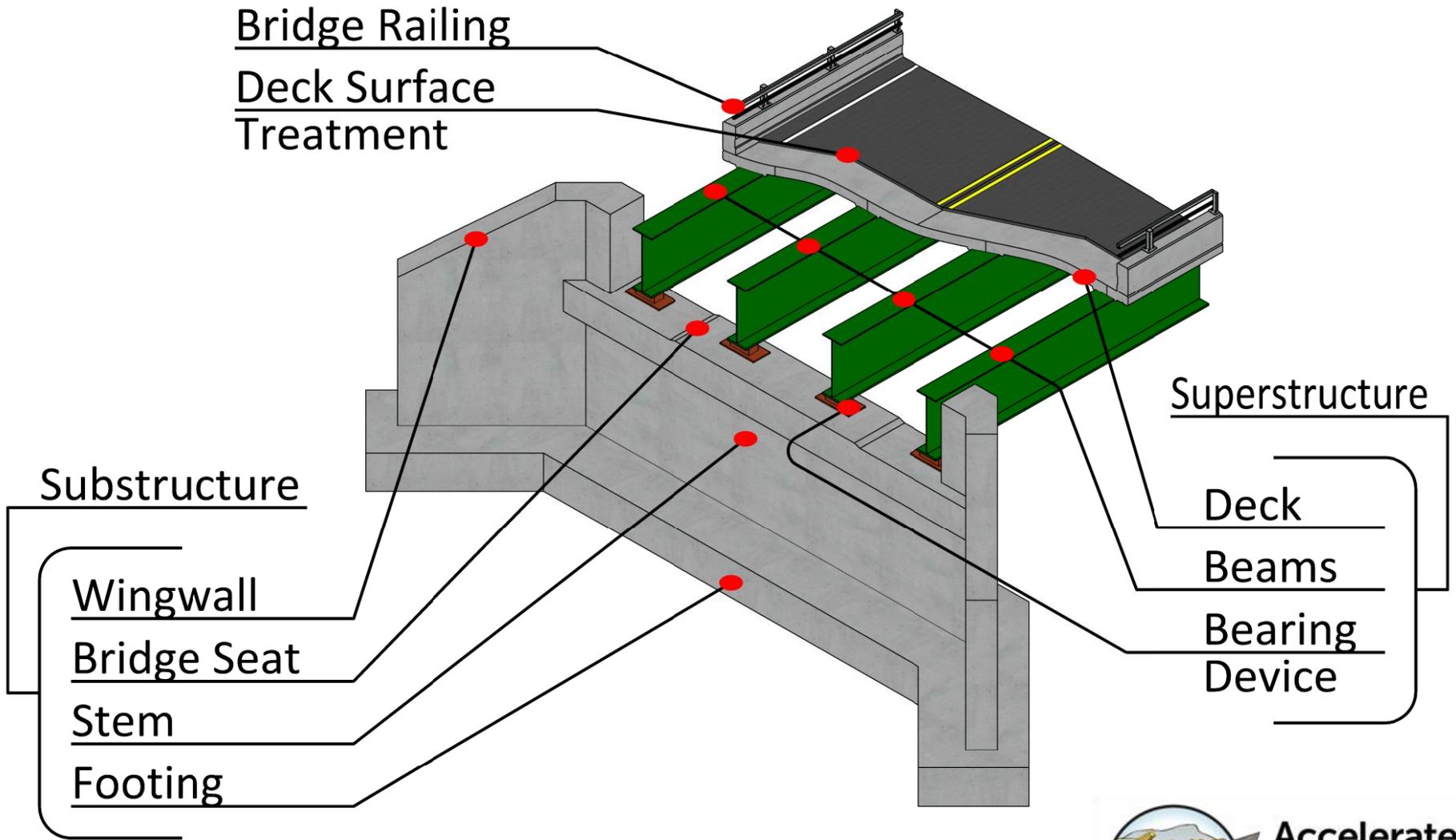
- A. Specific concern
- B. General Interest
- C. Live in close vicinity
- D. Other



Project Overview

- Existing Conditions
- Alternatives Considered
- Recommended Alternative

Description of Terms Used



Looking Towards Southbound Bridge



Existing Conditions – Bridge #107N

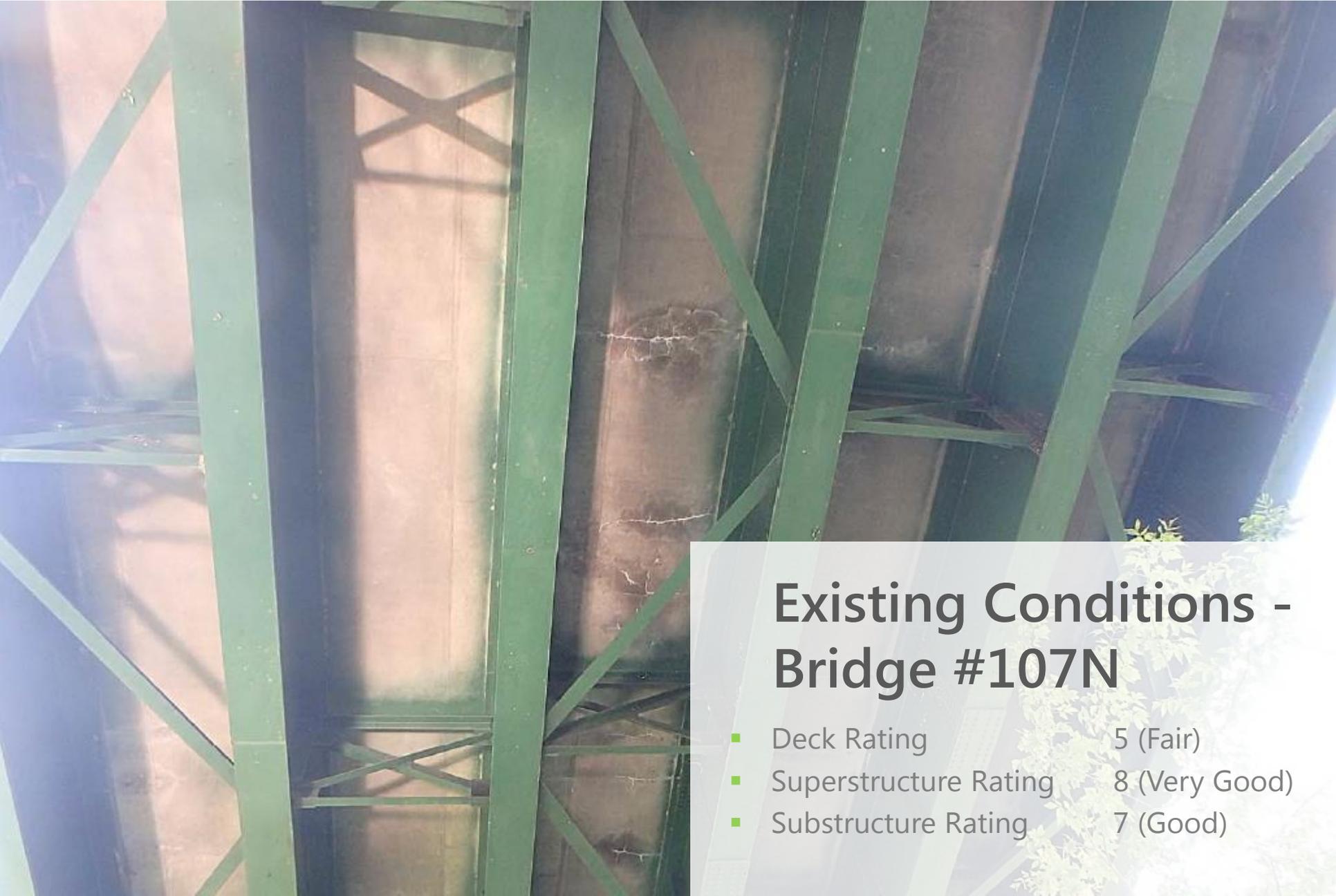
- Roadway Classification –Principal Arterial Interstate
- Bridge Type –447' Cast in Place deck on Haunched Girders
- Constructed in 1971
- Ownership – State of Vermont



Existing Conditions – Bridge #107N

- Concrete deck has a partial depth hole that has been patched, as well as additional signs of deterioration such as efflorescence and delamination.

Signs of Deterioration



Existing Conditions - Bridge #107N

- Deck Rating 5 (Fair)
- Superstructure Rating 8 (Very Good)
- Substructure Rating 7 (Good)

Span #1

Existing Conditions – Bridge #107N

- Span 1 may be salvageable
- No signs of deterioration from below the deck

Design Criteria and Considerations

- ADT of 3,600
- DHV of 680
- % Trucks: 16.3
- Design Speed of 65 mph
- Salvage first span

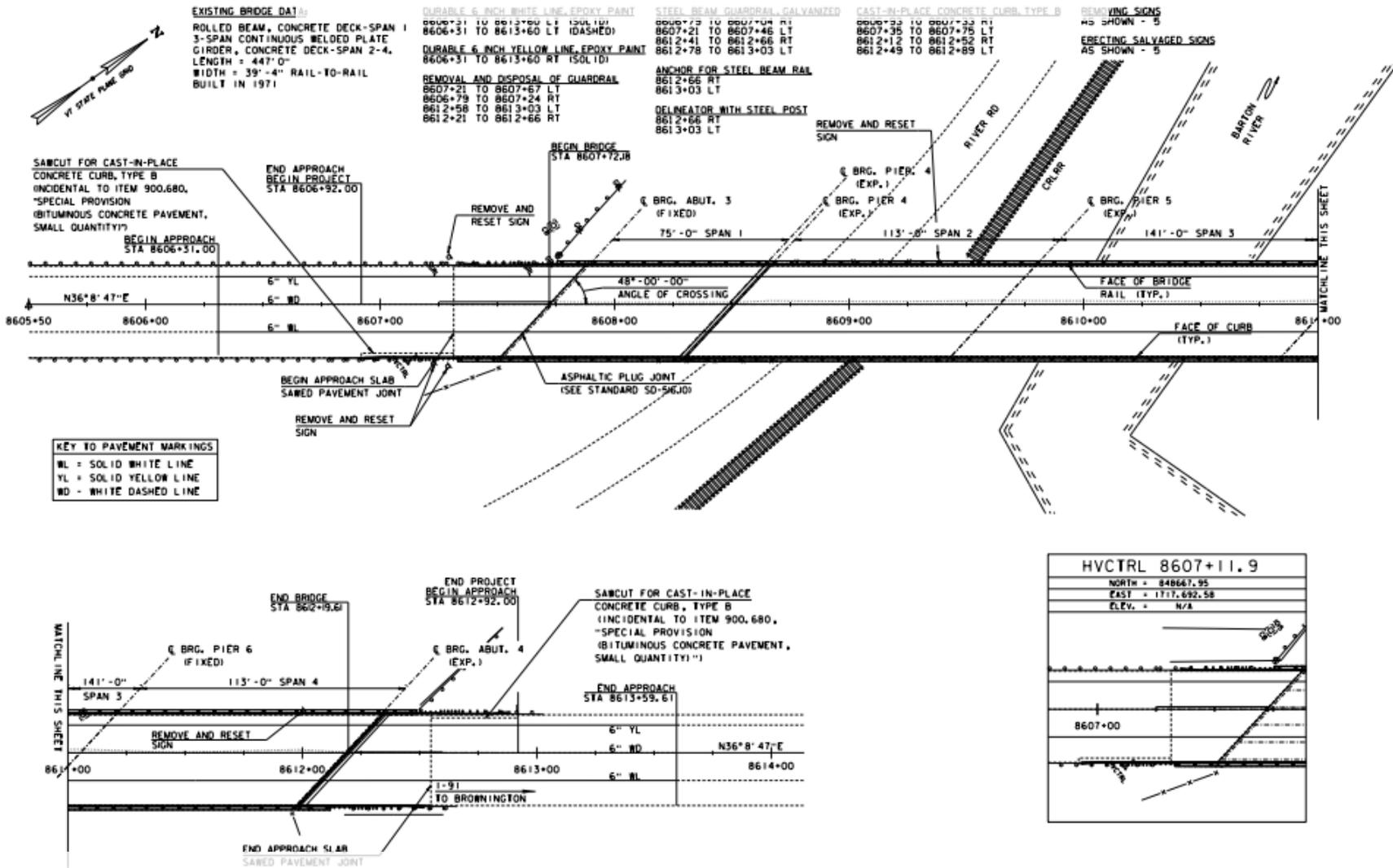


Alternatives Considered – Bridge #107N

- No Action
 - Additional maintenance required within 10 years
- Deck Patching
 - Ruled out due to extent of concrete deterioration
- Deck Replacement with Limited Patching
 - No substructure repair required
 - Extends the serviceable life of the structure



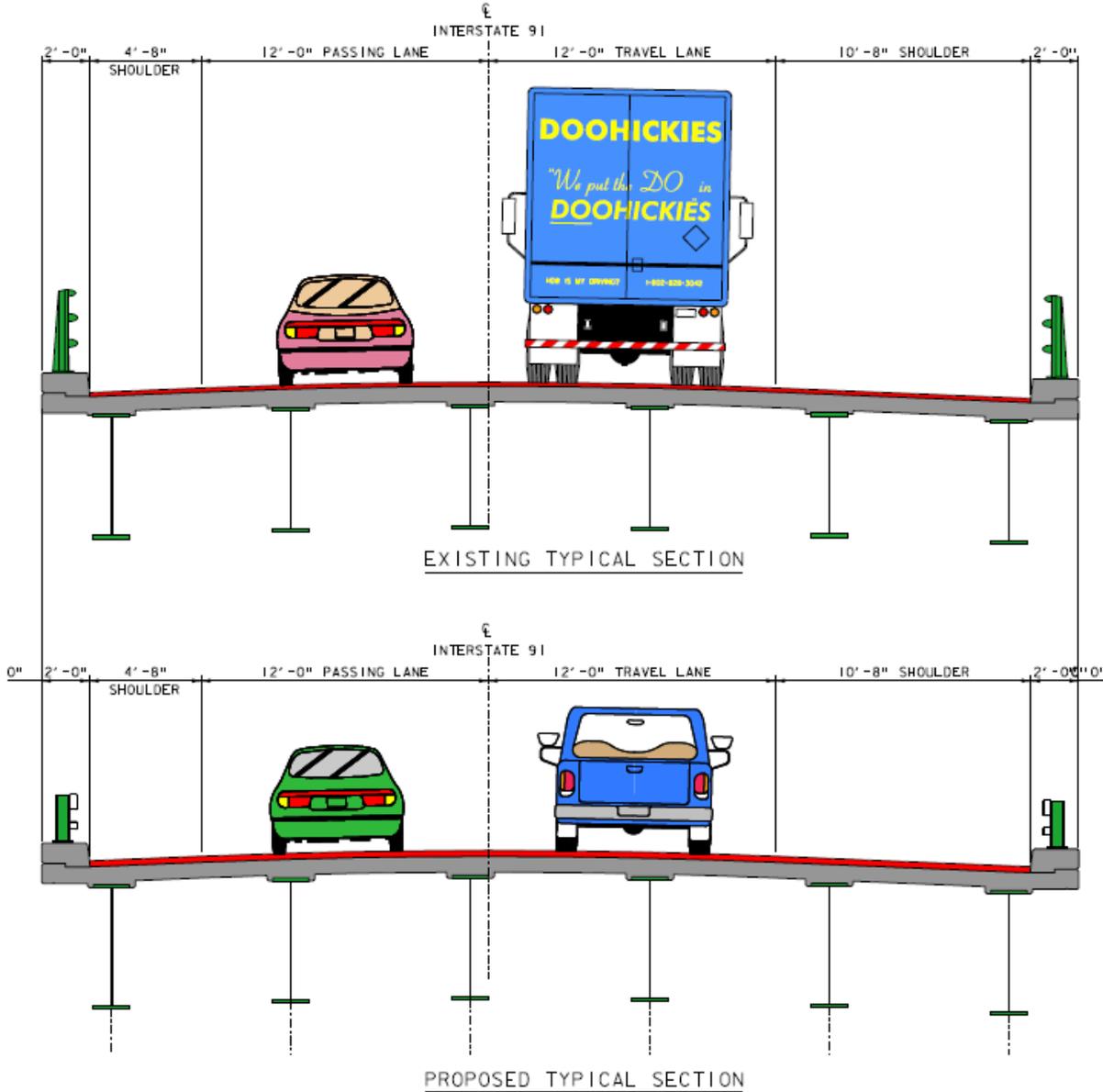
Alternative 3 Layout



Deck Replacement - Bridge #107N

- Match Existing Width and alignment

Proposed Typical Section



Recommended Alternative - Bridge #107N

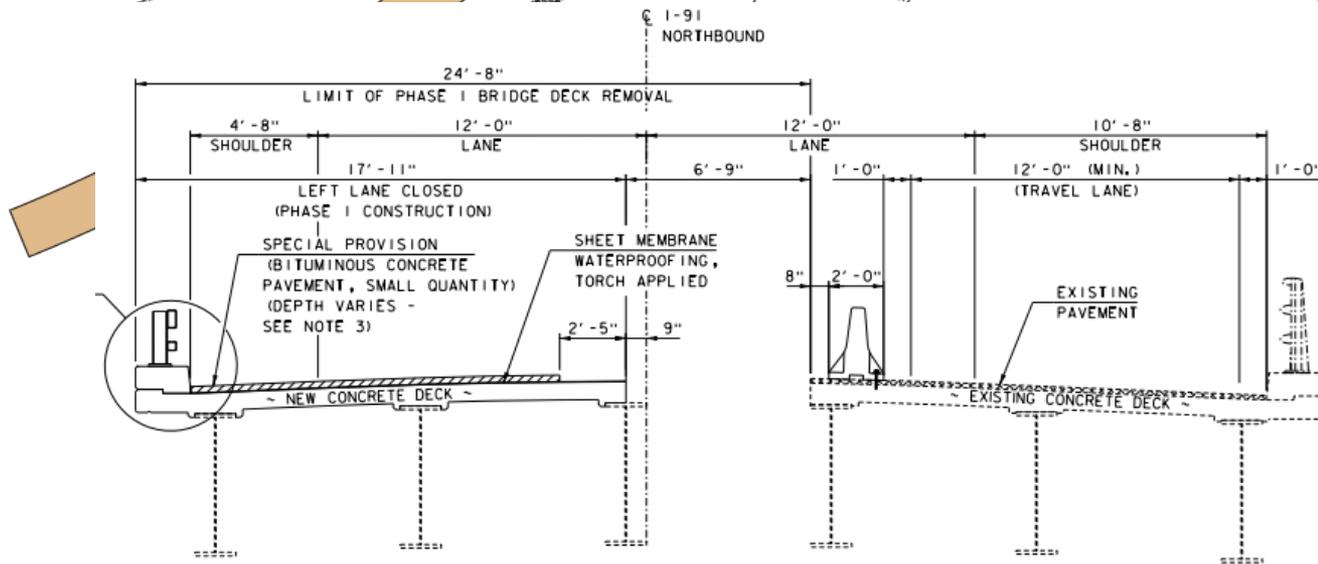
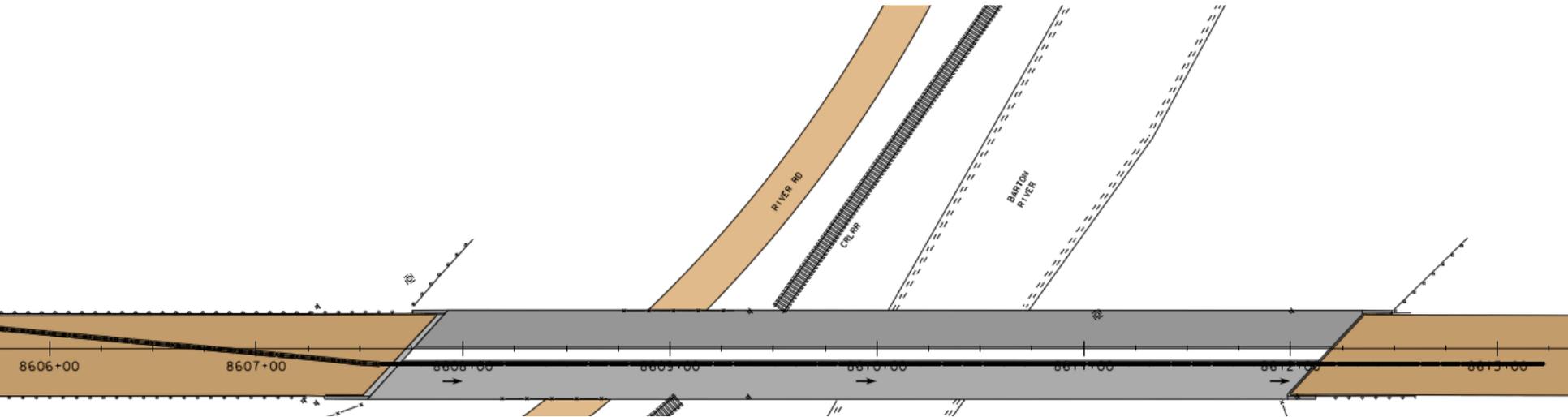
- Deck Replacement
 - Replace 3 spans of the deck with a cast-in-place concrete bare deck
 - Resident Engineer to determine if Span 1 will be patched or replaced



Maintenance of Traffic Options Considered

- Short Term Road Closure w/ Offsite Detour
 - Not considered due to traffic volumes and additional impacts to towns along the through route.
- Phased Construction
 - Maintain traffic on one half of the structure while the other half is removed and replaced. Reduced traffic down to one lane
- Temporary Bridge
 - Not considered for maintenance projects due to cost and need to expedite project delivery.
- Cross Over
 - A cross over temporarily places both north and southbound traffic over the same structure while the other is being repaired. A cross over was not considered here due to cost, impacts, and additional project deliver time.

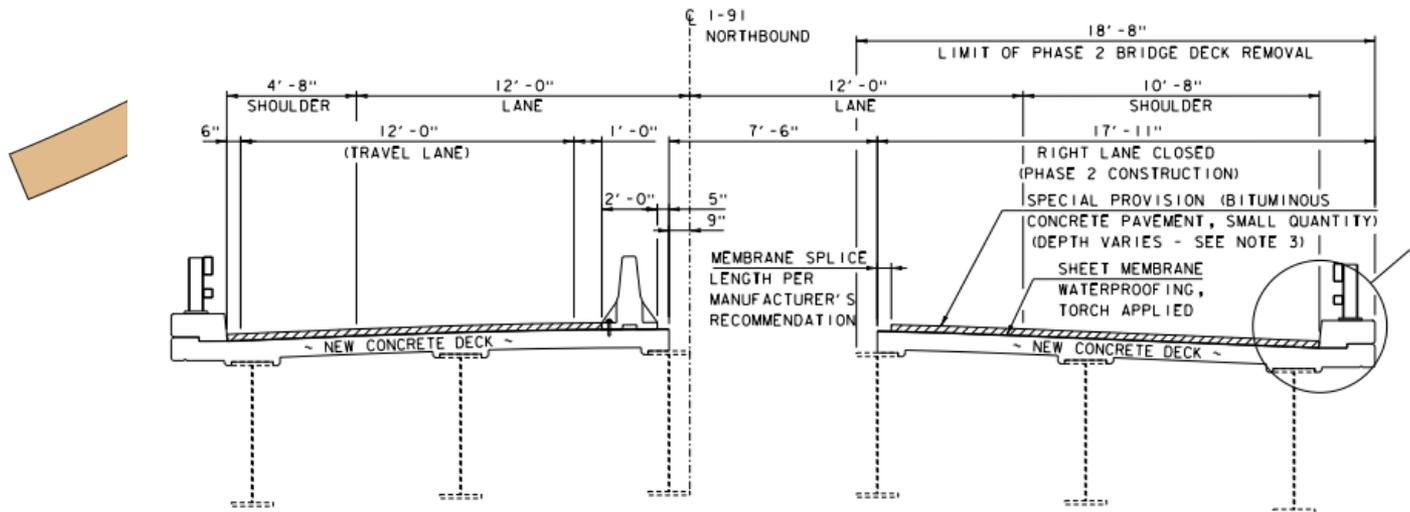
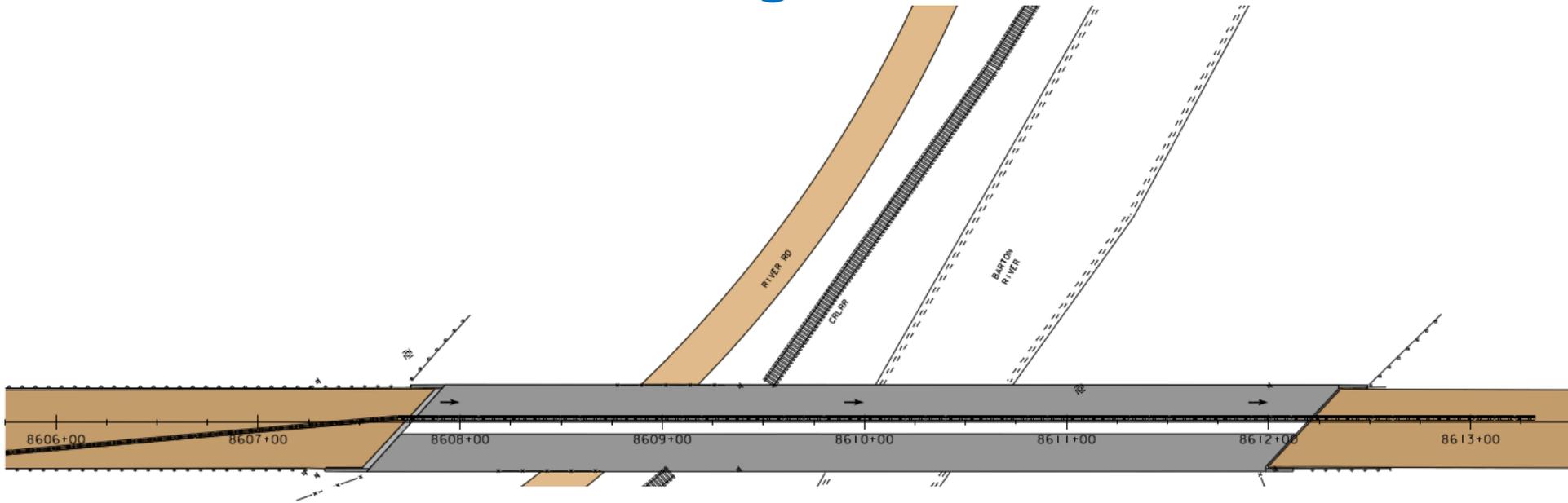
Phase 1 (Left Lane Closed)



PHASE I

(SPANS 2 THROUGH 4 SHOWN, SPAN 1 SIMILAR)
SCALE: 3/8" = 1'-0"

Phase 2 (Right Lane Closed)

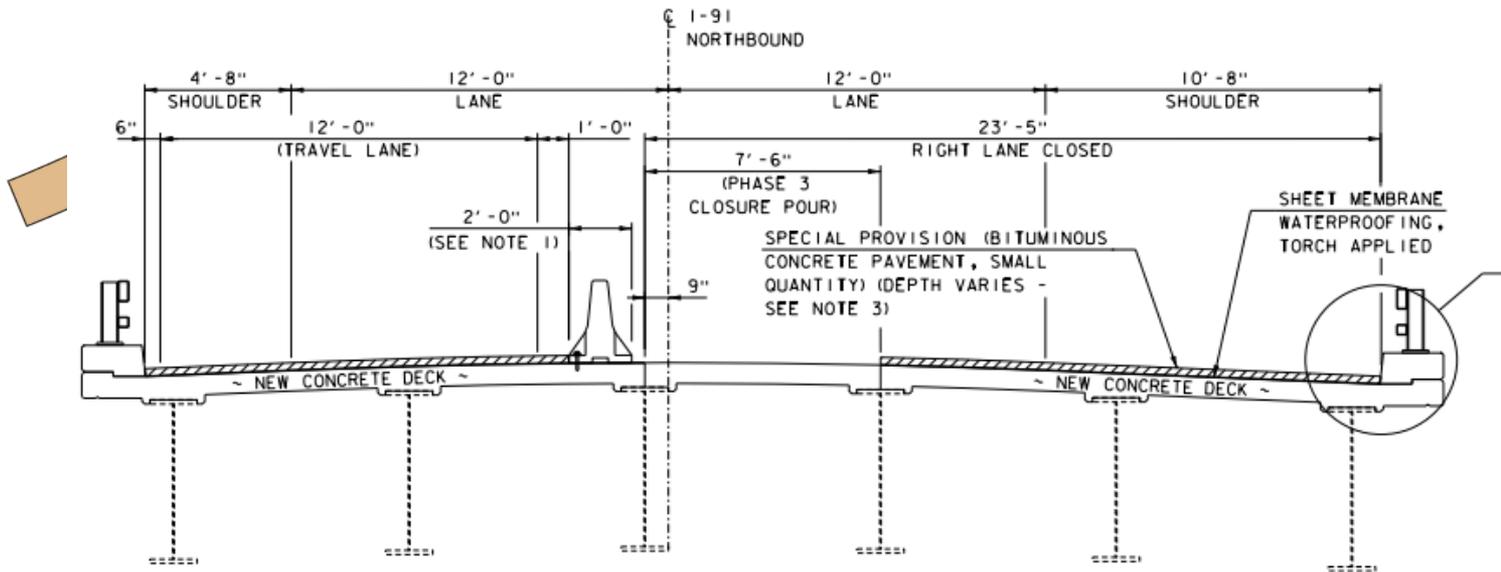
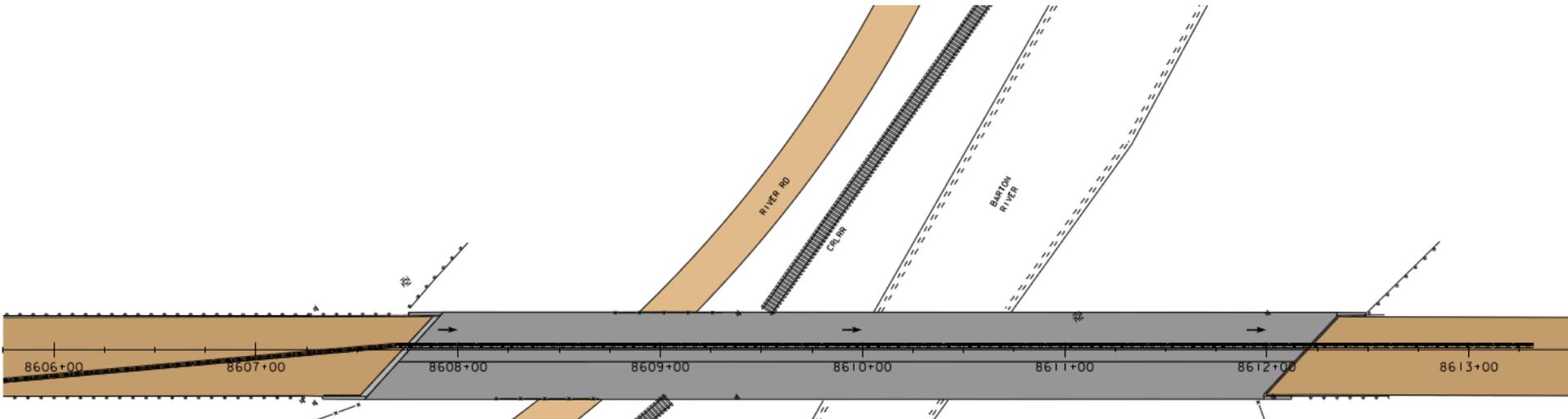


PHASE 2

(SPANS 2 THROUGH 4 SHOWN, SPAN 1 SIMILAR)

SCALE: $\frac{3}{8}" = 1'-0"$

Phase 3 (Right Lane Closed)



PHASE 3

(SPANS 2 THROUGH 4 SHOWN, SPAN 1 SIMILAR)
SCALE: 3/8" = 1'-0"

Recommended Scope

- Replace deck with new cast-in-place concrete deck with traffic maintained using phased construction
 - Replace 3 spans
 - Determine if Span #1 needs to be replaced
 - Repair or replace Span #1 as necessary

Alternatives Matrix

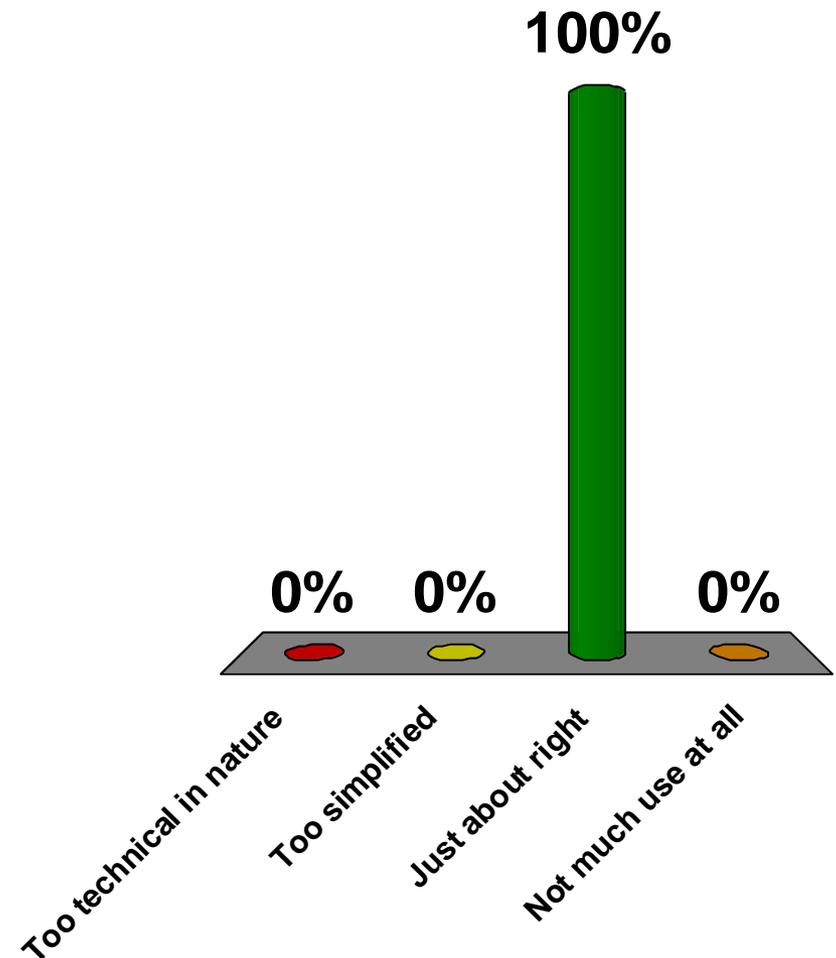
Recommended



| | Alt 1 | Alt 2 | Alt 3 |
|---|--------------------|----------------|---------------------|
| Irasburg IM DECK (46) | Do Nothing | Deck Patching | Deck Replacement |
| | N/A | Offsite Detour | Phased Construction |
| Total Project Costs (Including Engineering and Contingencies) | \$0 | N/A | \$2,128,700 |
| Town Share | N/A | N/A | N/A |
| Project Development Duration | 0 | N/A | 1 year |
| Construction Duration | 0 | N/A | 7 months |
| Closure Duration (If Applicable) | N/A | N/A | N/A |
| Geometric Design Criteria | Meets Standard | Meets Standard | Meets Standard |
| Alignment Change | No | No | No |
| Utilities | No Change | No Change | No Change |
| ROW Acquisition | No | No | No |
| Design Life | Less than 10 Years | N/A | 30 Years |

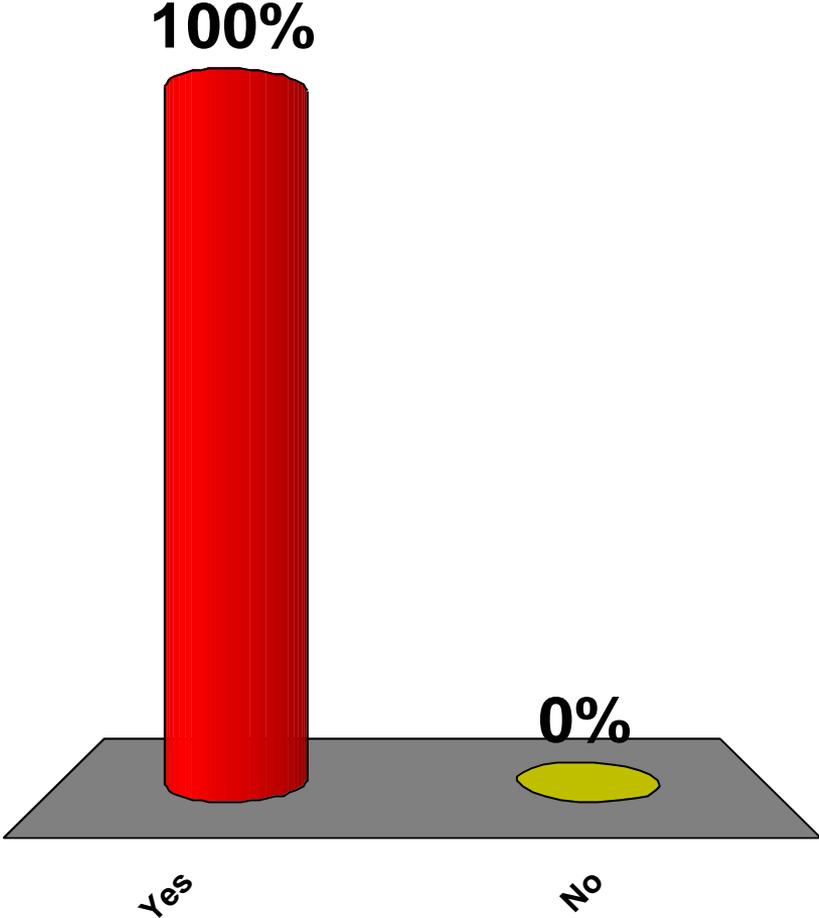
Did you find this presentation to be?

- A. Too technical in nature
- B. Too simplified
- C. Just about right
- D. Not much use at all



Do you find the recommended scope of work satisfactory?

- A. Yes
- B. No



For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/15a116>



Irasburg IM DECK (46) Questions & Comments

I-91– Bridge #107N over TH 38, CRLRR, Barton River

December 14, 2015



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Additional Considerations

- Are there any other considerations we should be made aware of?