Newbury BO 1447(32)
Alternatives Presentation Meeting

Town Highway 3, Bridge 15 over Wells River

June 26, 2019

Accelerated Bridge Program
VTRANS

Introductions

Laura Stone, P.E.

VTrans Scoping Engineer

Todd Sumner, P.E.

VTrans Project Manager

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Purpose of Meeting

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

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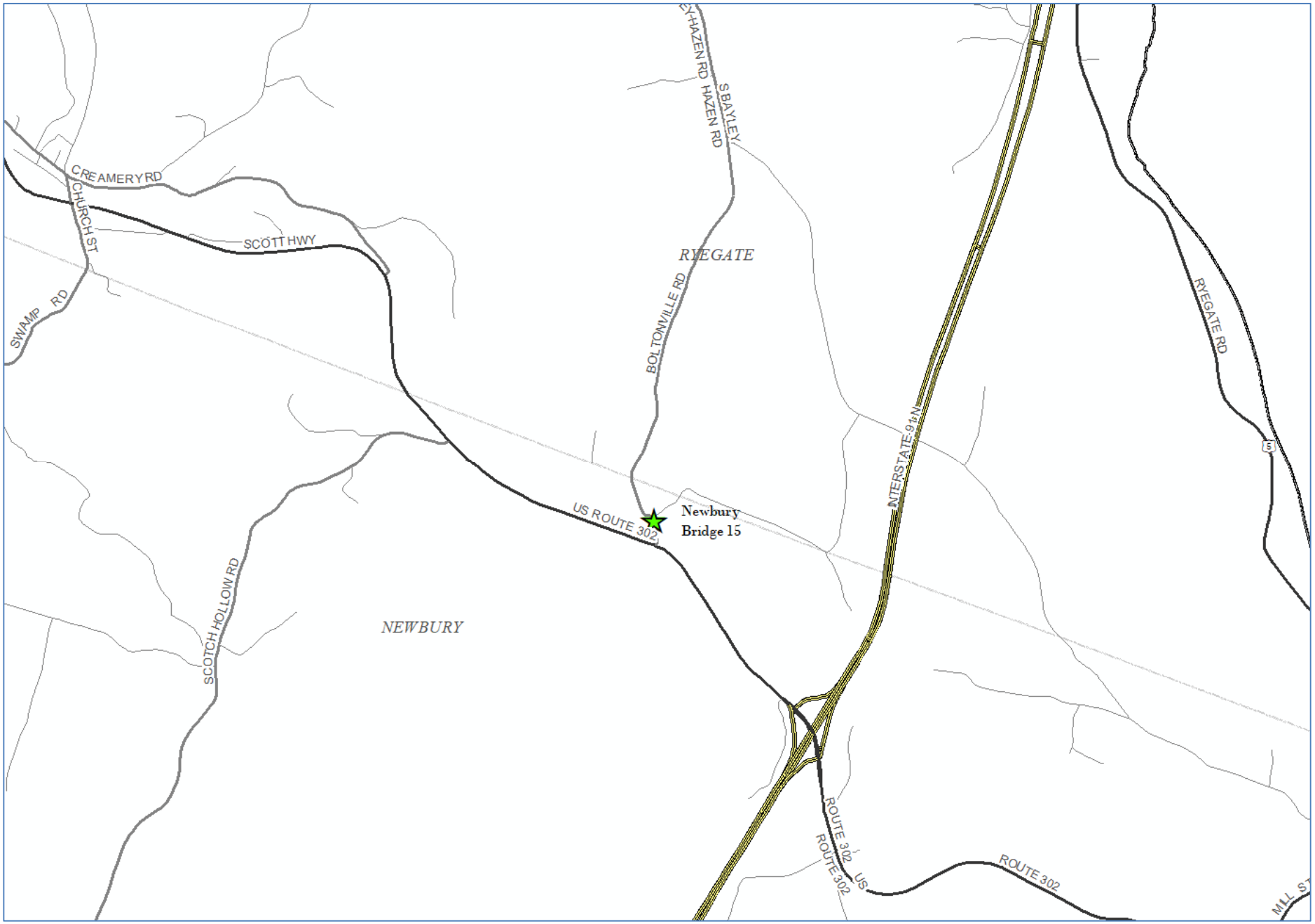
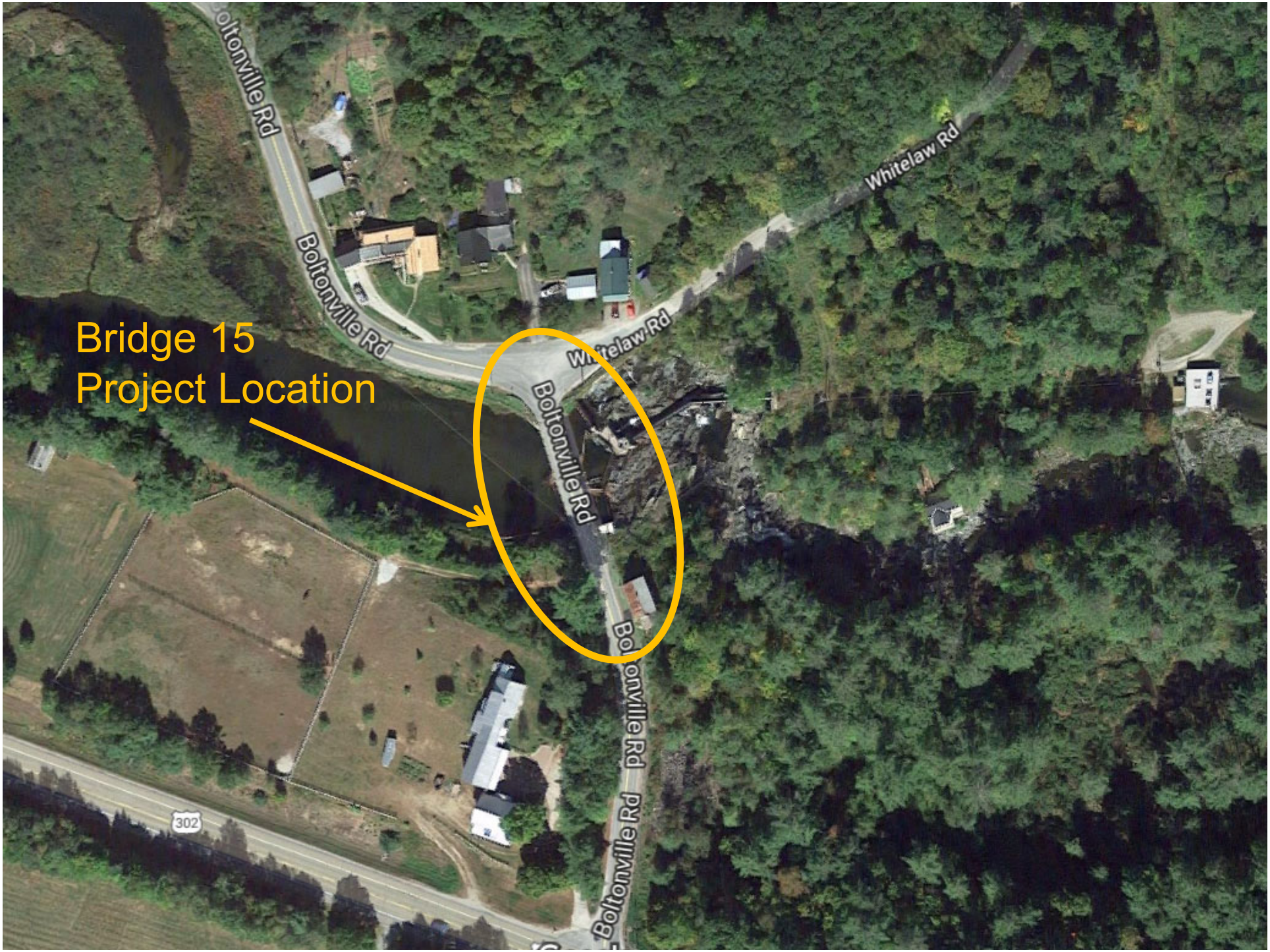


Location Map


Bridge 15
Project Location
Boltonville Rd
Whitelaw Rd
302

Meeting Overview

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

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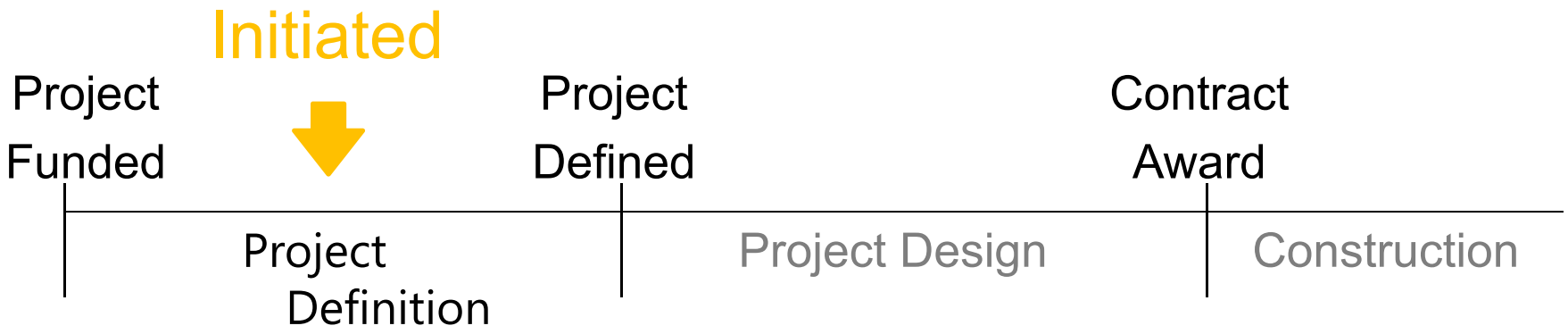
VTrans Project Development Process



- 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

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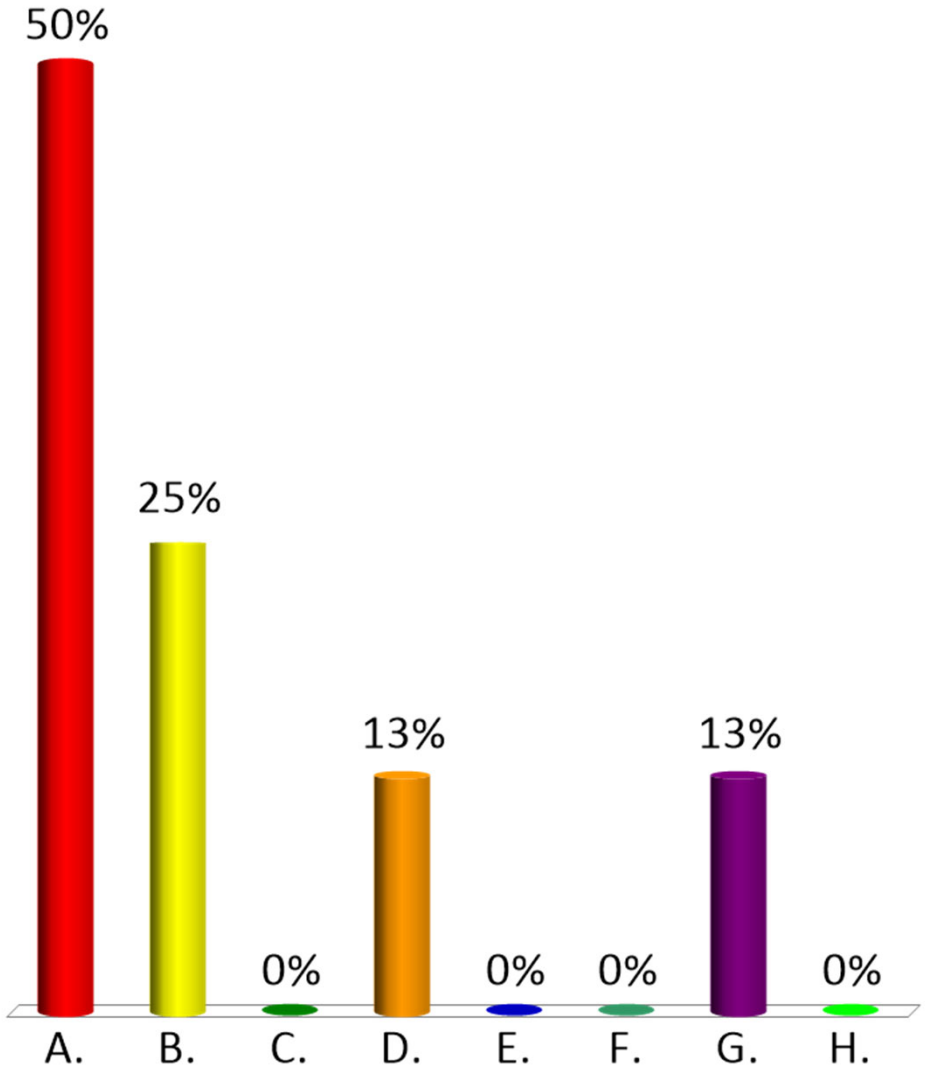
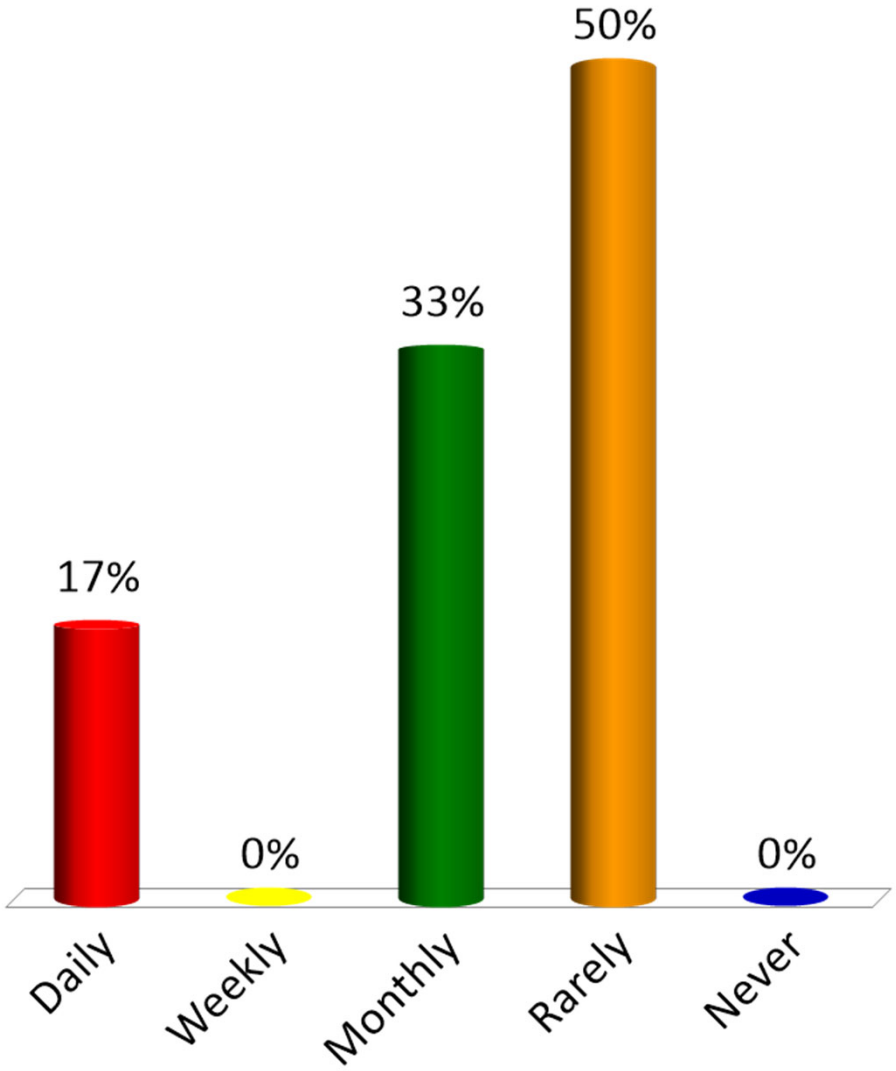
Who are you representing?

A. Municipal Official
B. Resident of Newbury
C. Resident of Ryegate
D. Emergency Services
E. Local Business
F. Independent Organization
G. Press
H. Other



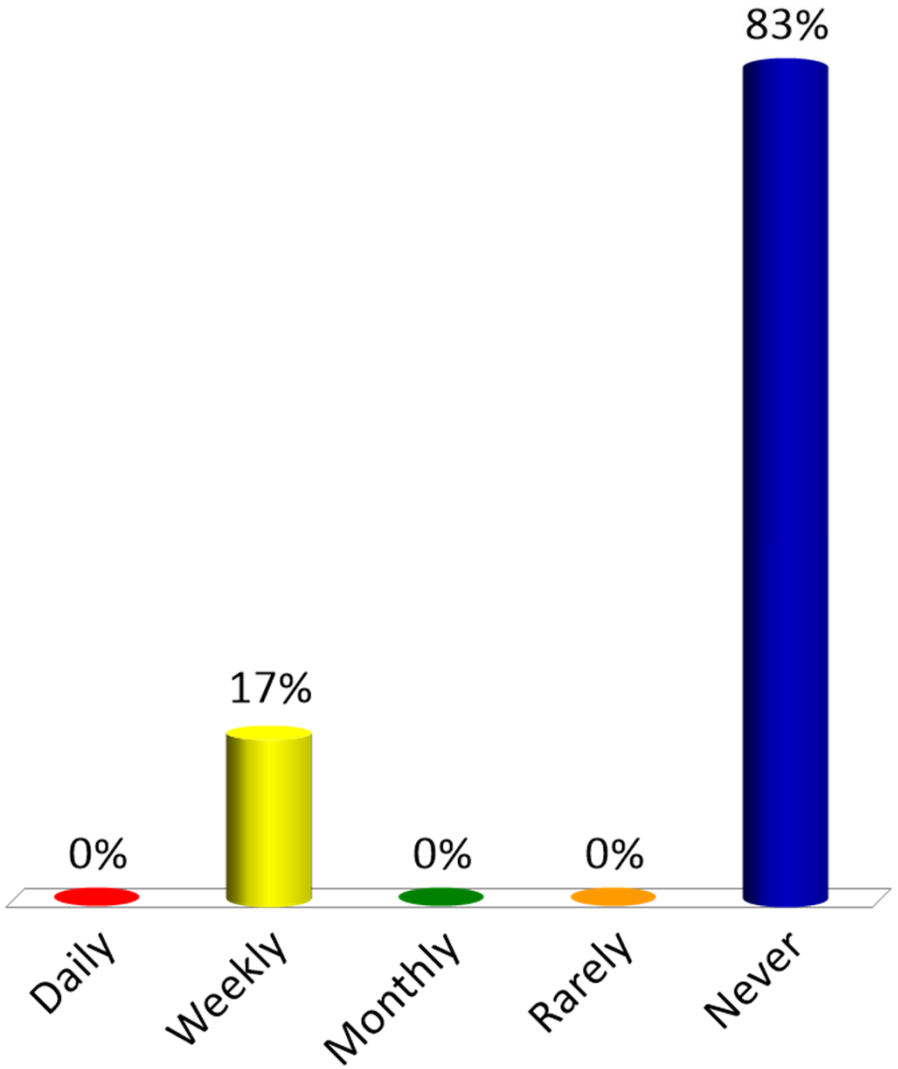
How often do you use this segment of Boltonville Road?

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



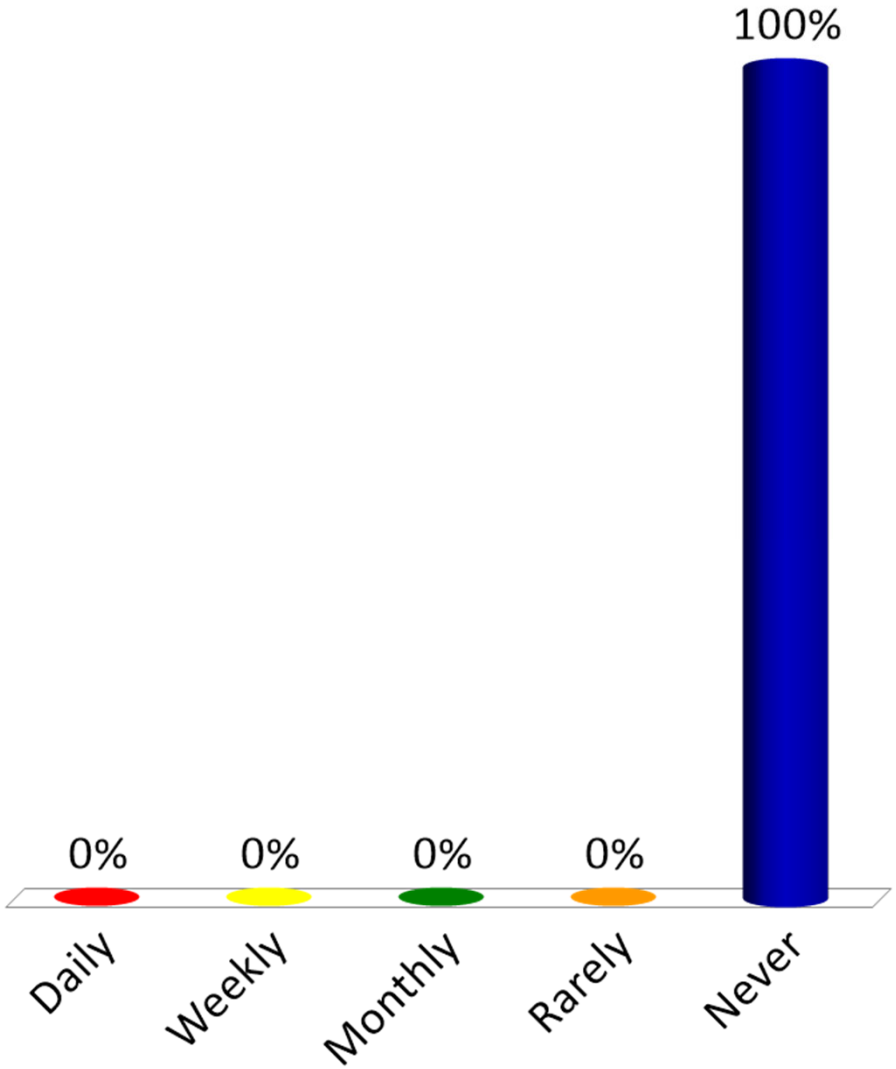
How often do you walk over the bridge?

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



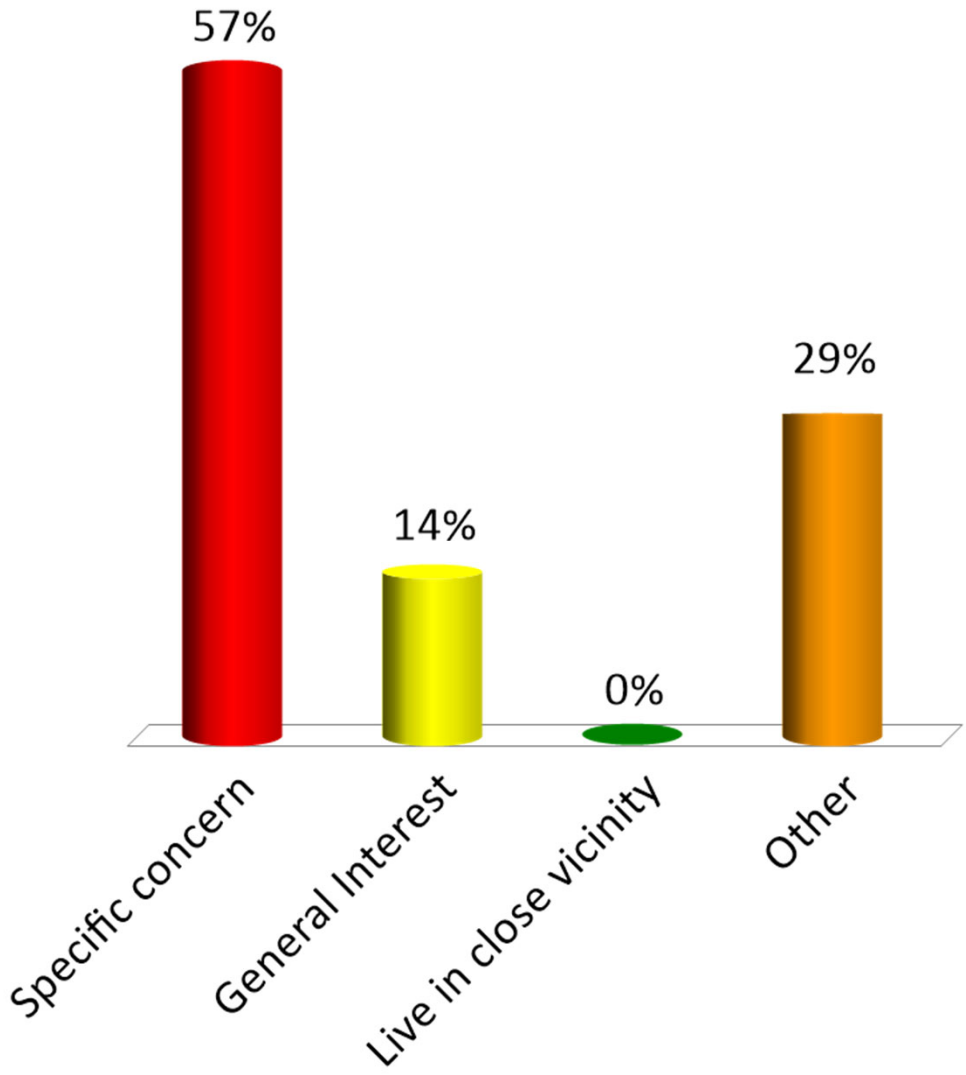
How often do you bike over the bridge?

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

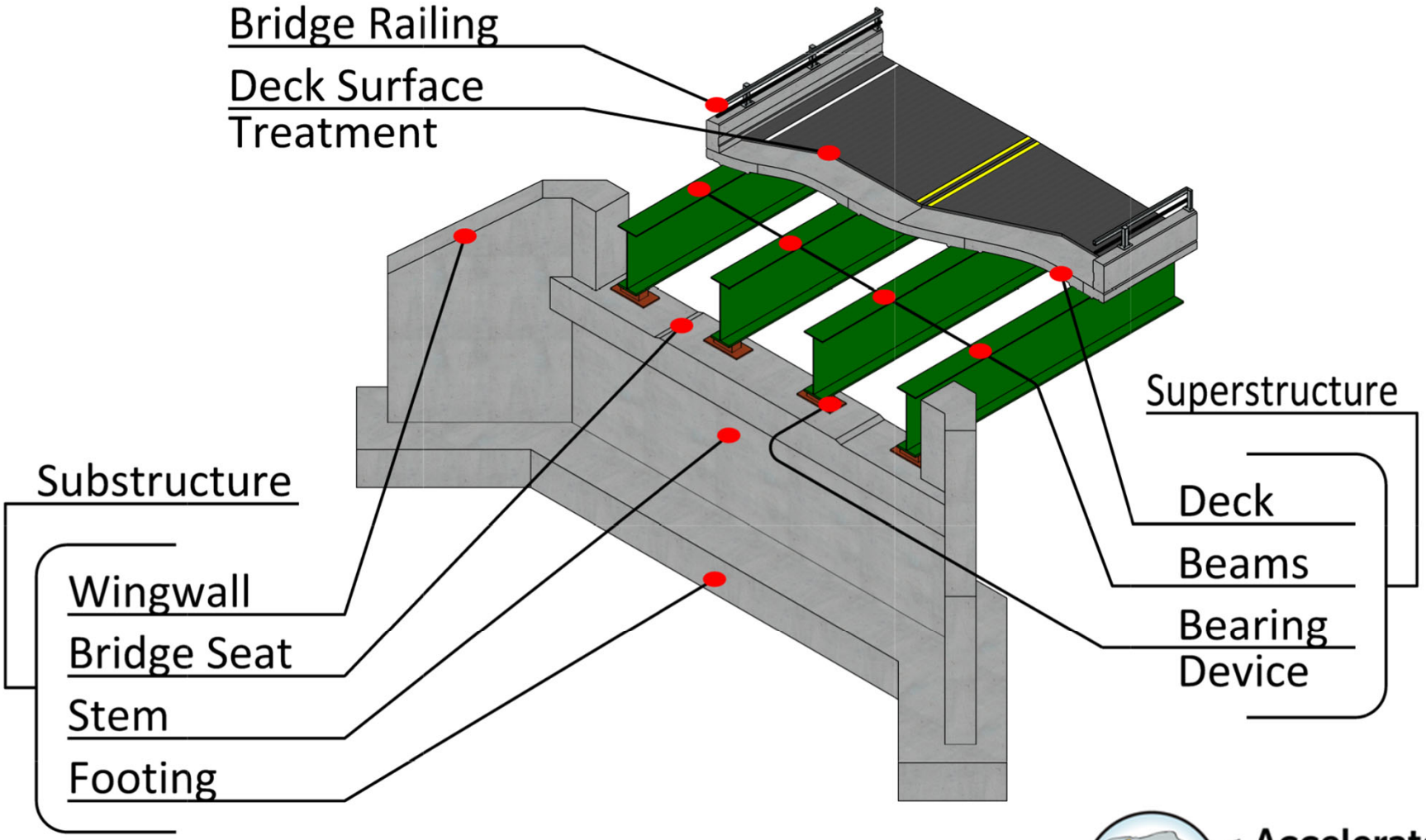


What is your reason for attending this meeting?

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



Description of Terms Used



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Looking North over Bridge

Existing Conditions – Bridge #15

- Roadway Classification – Minor Collector (Class 2 Town Highway)
- Bridge Type – 113’ Long 2-Span Rolled Beam Bridge
- Ownership – Town of Newbury
- Constructed in 1946

Looking South over Bridge

Existing Conditions – Bridge #15

- Narrow
  - 9’/1’ typical
    - Standard is 9’/3’
- Aerial Utilities

04/19/20

Existing Conditions – Bridge #15

- In September of 2016, the superstructure was given a rating of 3 (serious) due to heavy section loss in the steel beams at the ends near the pier. The beam ends were encased in concrete to extend the life of the bridge and prevent beam crushing. Even though the beams are encapsulated in concrete, they will still will continue to rust.
- The deck wearing surface is rough and littered with pot holes and cracks.
- The Reinforced concrete deck has saturation and cracking with stains and some small areas of spalling and honey combing. Deck leakage is prevalent, and distress is accelerating with the potential for full depth failures to develop in the next few years.
- Abutment 2 has some heavy scaling along the upstream knee wall and a minor vertical crack below beam 2.
- The bridge railing is in poor condition
- The bridge and roadway approaches are too narrow for the speed and traffic volumes present.

Existing Conditions - Bridge #15

Deck Rating	5 (Fair)
Superstructure Rating	5 (Fair)
Substructure Rating	6 (Satisfactory)

Superstructure – Prior to 2016 Rehabilitation

Existing Conditions - Bridge #15

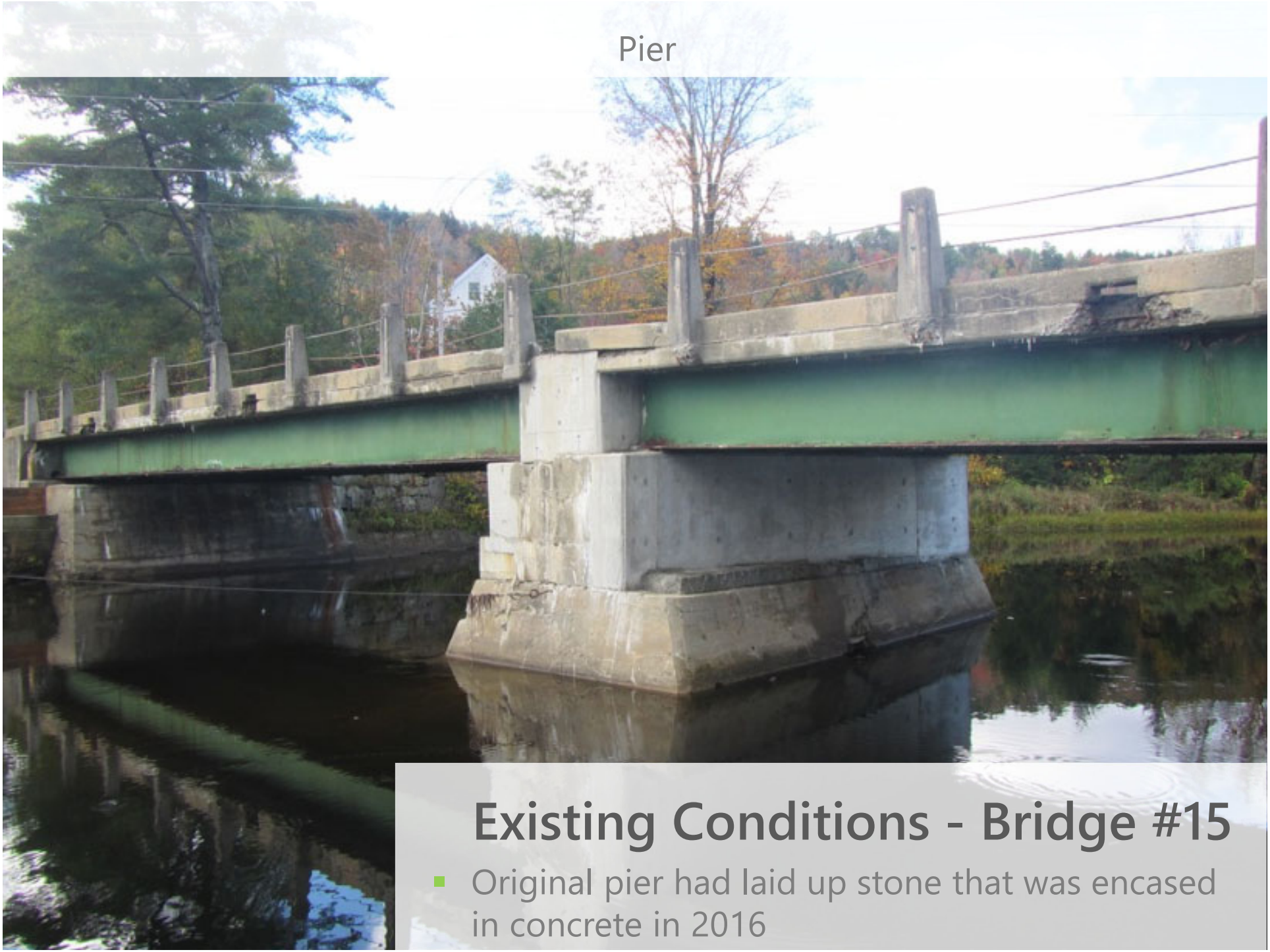
- heavy section loss in the steel beams at the ends near the pier

Southern Abutment

Existing Conditions - Bridge #15

Northern Abutment

Existing Conditions - Bridge #15



Existing Conditions - Bridge #15

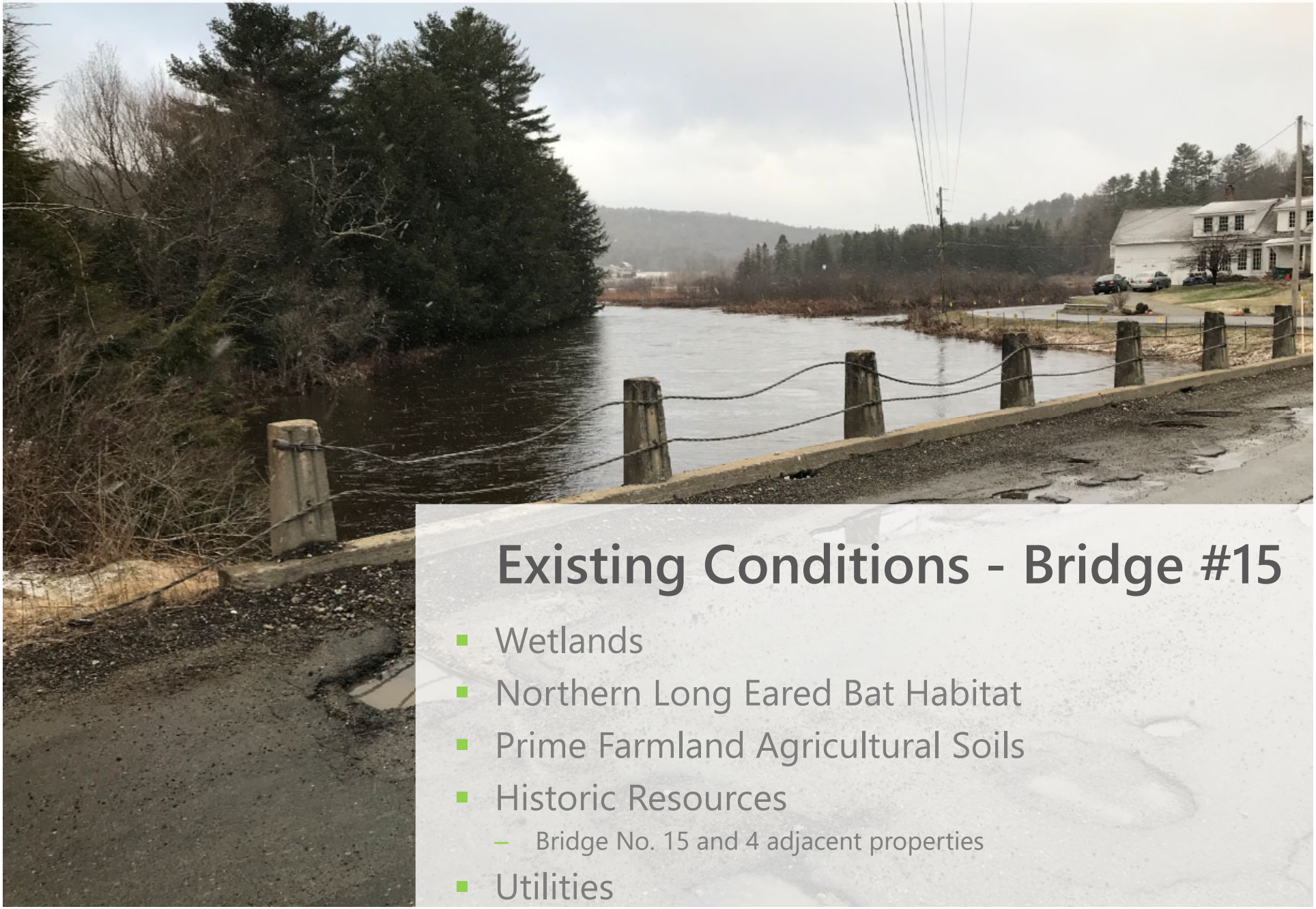
- Original pier had laid up stone that was encased in concrete in 2016

Looking Downstream

Existing Conditions - Bridge #15

- Dam located directly downstream

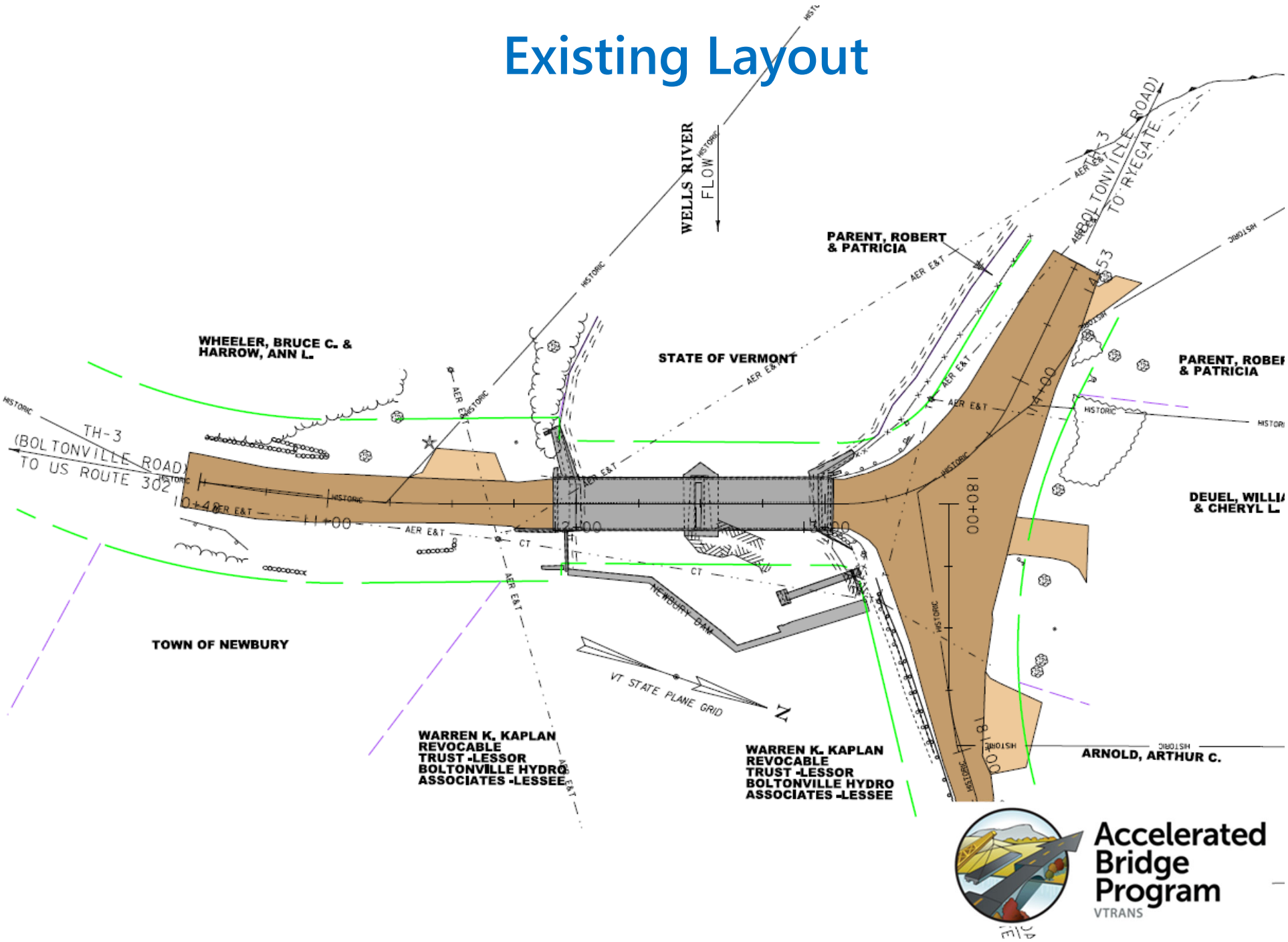
Resources – Looking Upstream



Existing Conditions - Bridge #15

- Wetlands
- Northern Long Eared Bat Habitat
- Prime Farmland Agricultural Soils
- Historic Resources
  - Bridge No. 15 and 4 adjacent properties
- Utilities

Existing Layout



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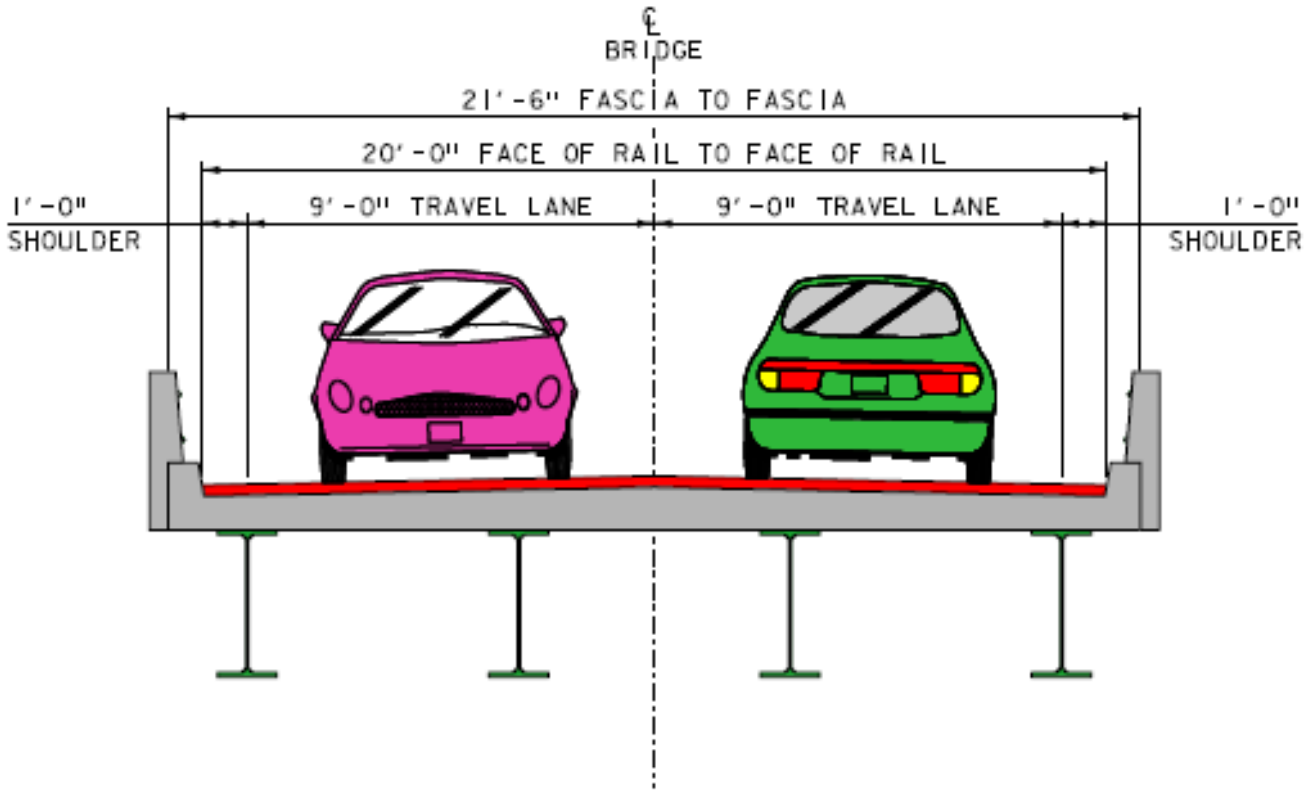
Existing Typical Section



EXISTING BRIDGE TYPICAL SECTION

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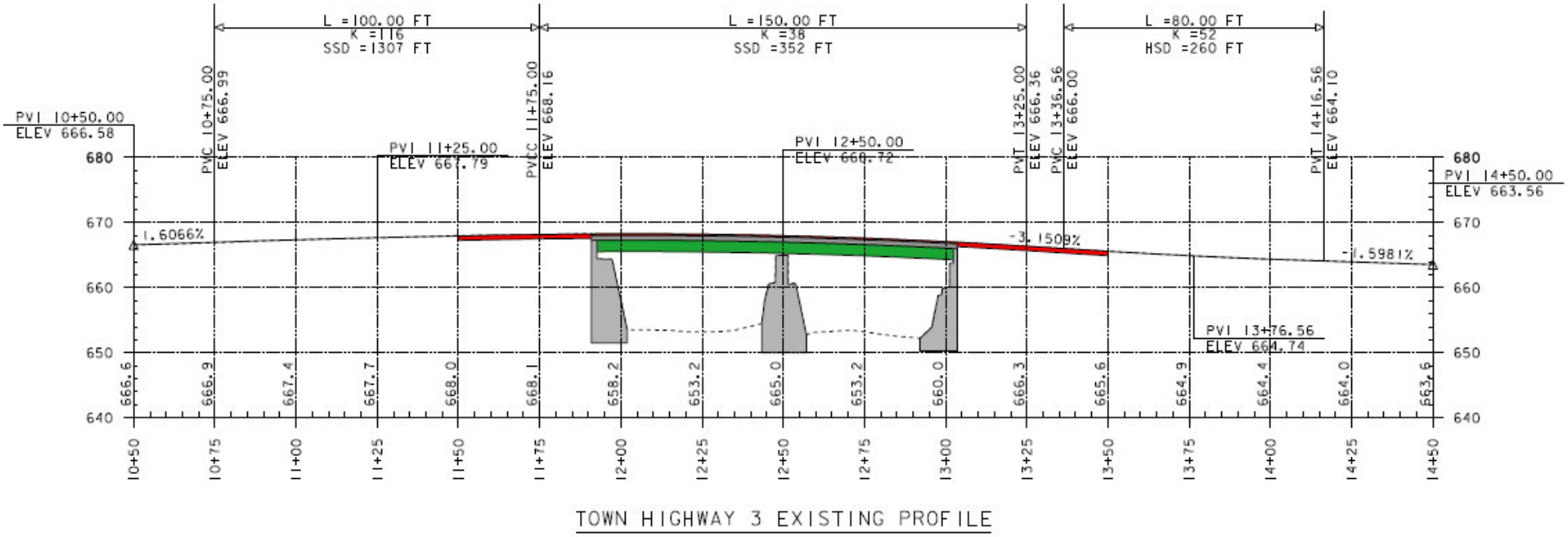
Existing Profile



TOWN HIGHWAY 3 EXISTING PROFILE

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Design Criteria and Considerations

- ADT of 430
- DHV of 65
- % Trucks: 9.8
- Design Speed of 50 mph (not posted)
- Utilities
  - There is a pole in the southeast quadrant that carries a transmission line which will require relocation
  - A utility relocation will take at least 18 months
  - Right-of-Way needed to relocate utilities

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ACT 153 of the 2012 Legislative Session

	Local Share	
	Road Closed During Construction	Road Open During Construction
Rehabilitation	2.5%	5%
Replacement	5%	10%

- Per Act 153, the local share is reduced by 50% for rehabilitating versus replacement
- Per Act 153, the local share is reduced by 50% for closing the road to traffic during construction

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Alternatives Considered – Bridge #15

- No Action
  - Additional maintenance required within 10 years
- Superstructure Replacement
  - Widen to 9’/3’ typical section
  - 40 year design life based on condition of abutments
- Full Bridge Replacement On or Off Alignment
  - Widen to 9’/3’ typical section
  - 75 year design life

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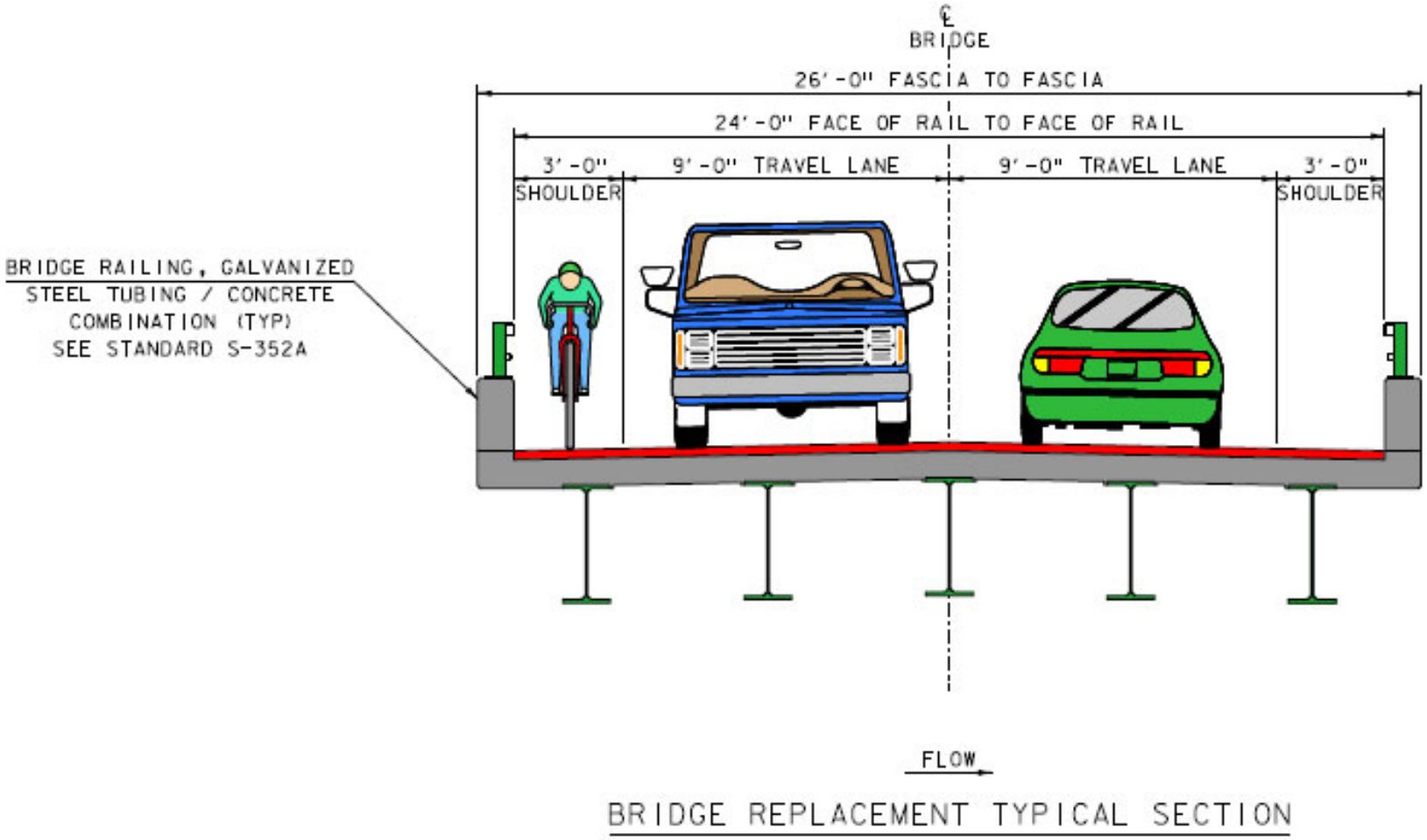
Alternative 1: Superstructure Replacement Typical Section



BRIDGE REPLACEMENT TYPICAL SECTION

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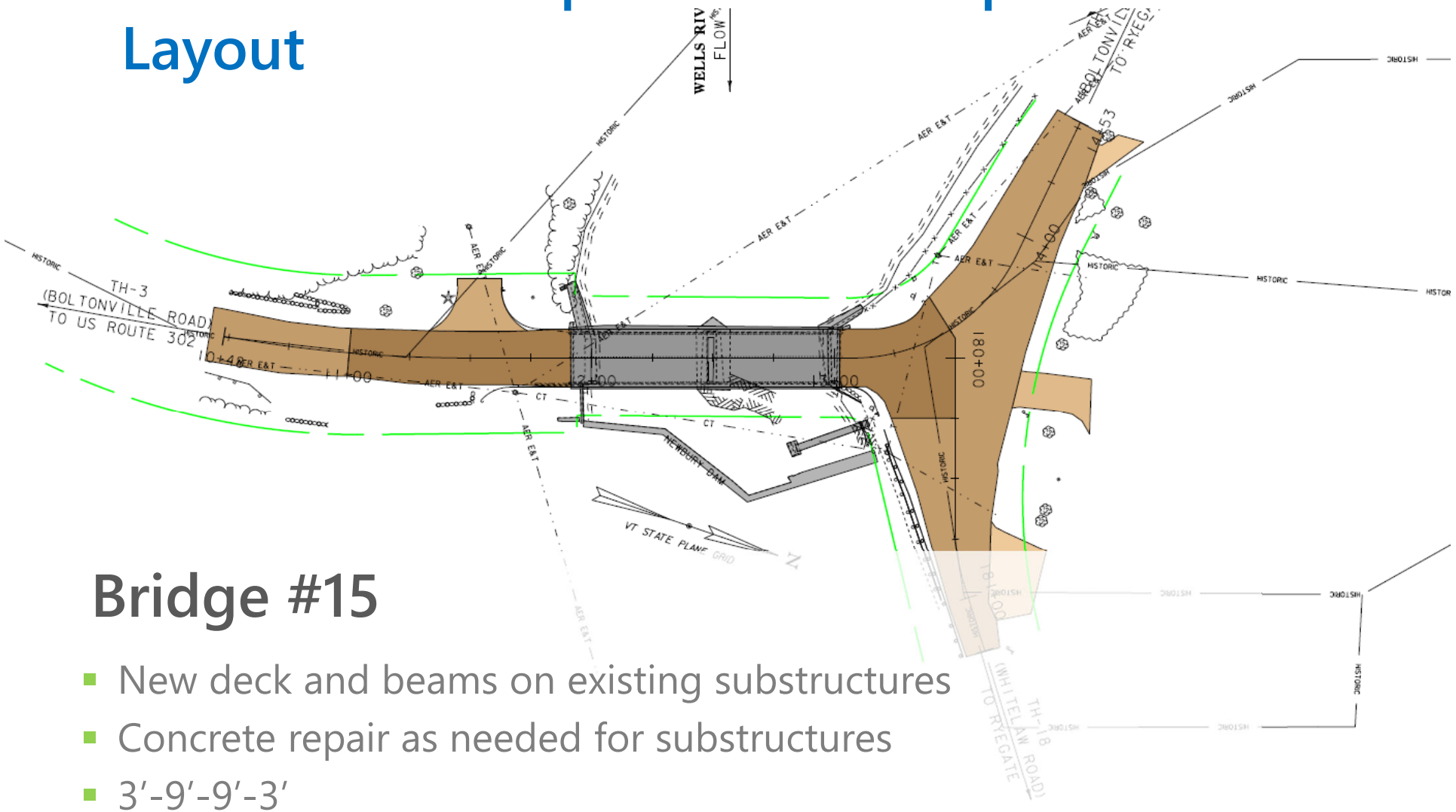
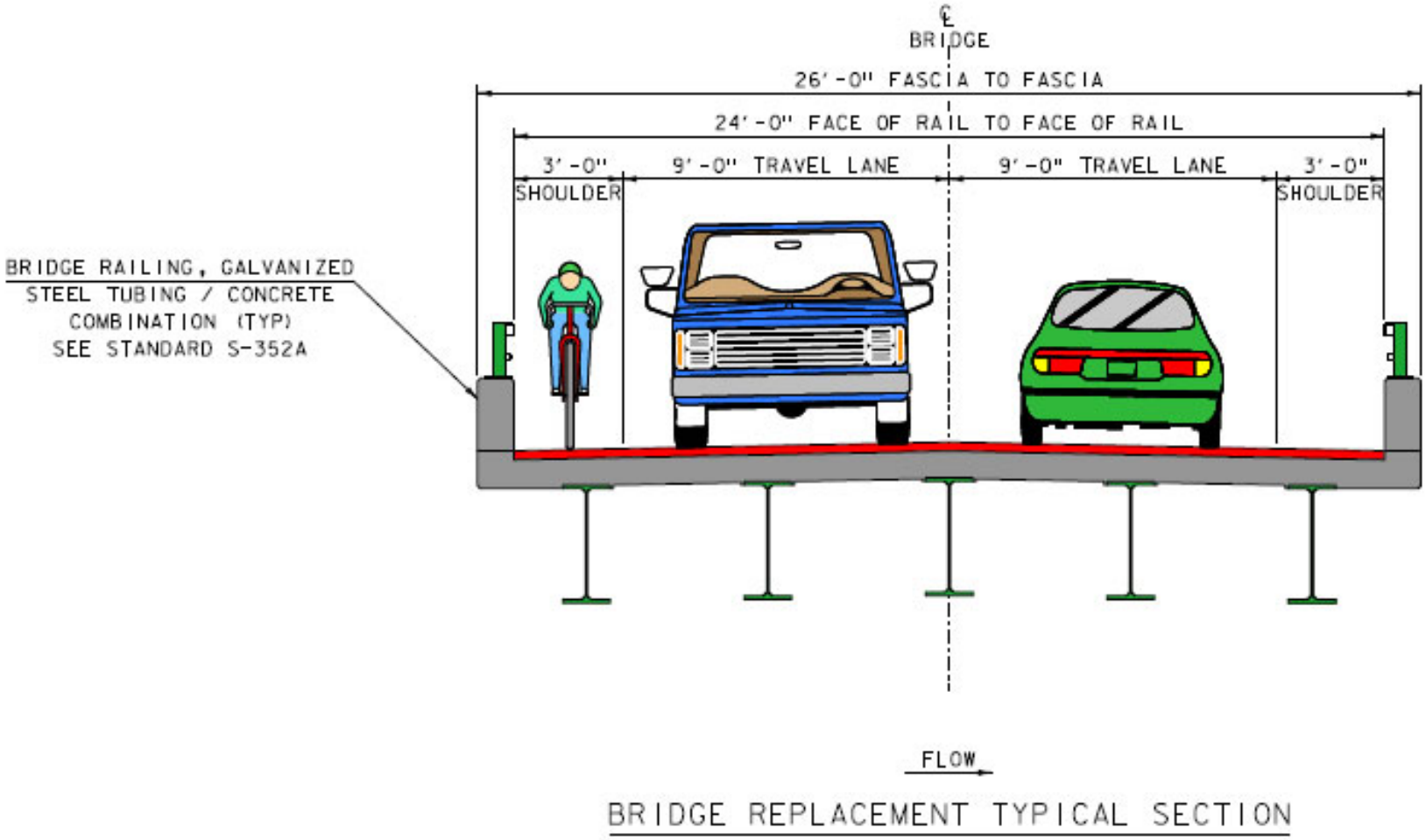
Alternative 1: Superstructure Replacement Layout



Bridge #15

- New deck and beams on existing substructures
- Concrete repair as needed for substructures
- 3′-9′-9′-3′
- Raise low beam 3″ to meet minimum hydraulic requirements
- 40 year design life based on current condition of substructures
- 2.5% or 5% Local Share depending on Maintenance of Traffic

Alternative 2: Full Bridge Replacement Typical Section



BRIDGE REPLACEMENT TYPICAL SECTION

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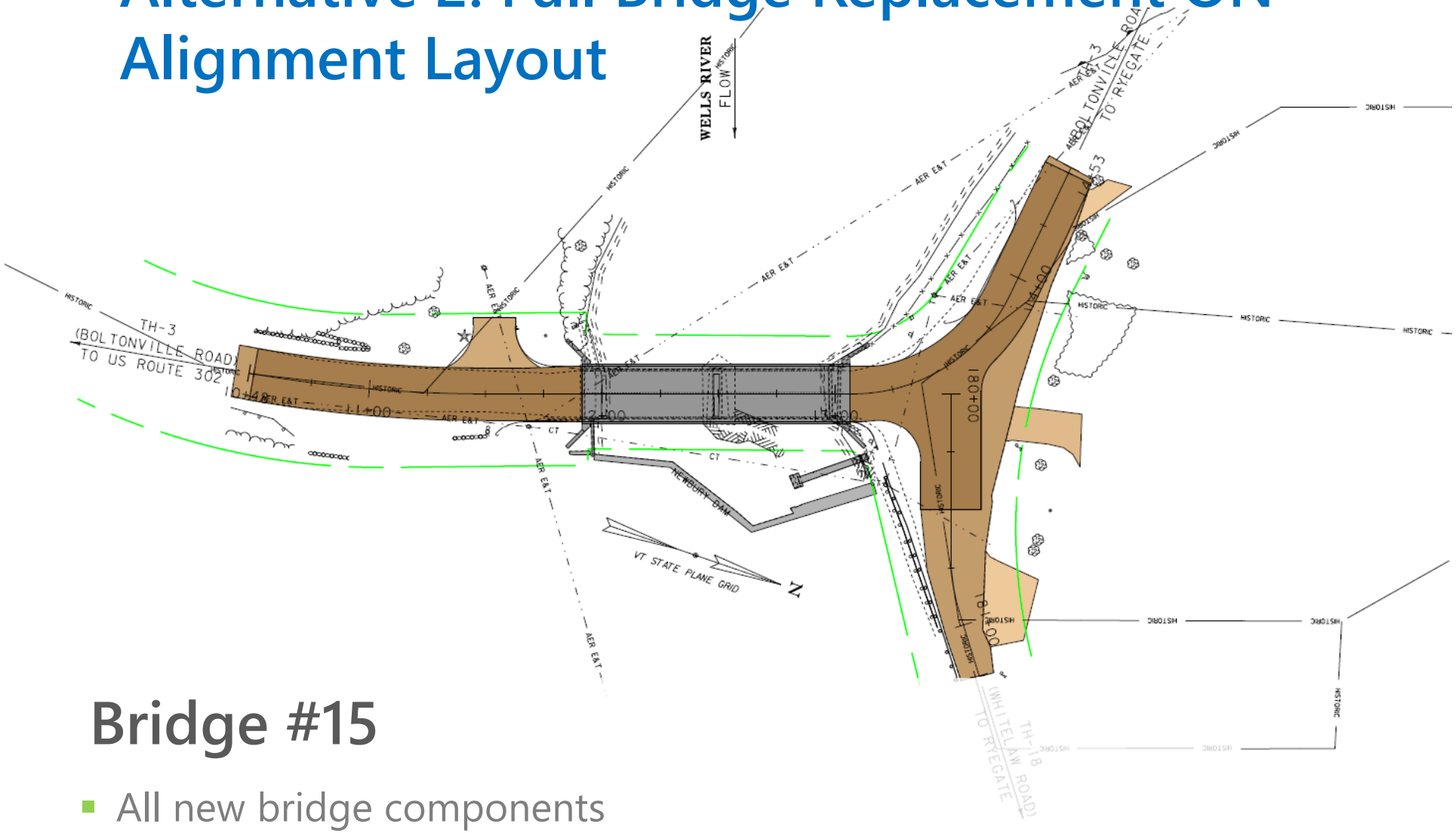
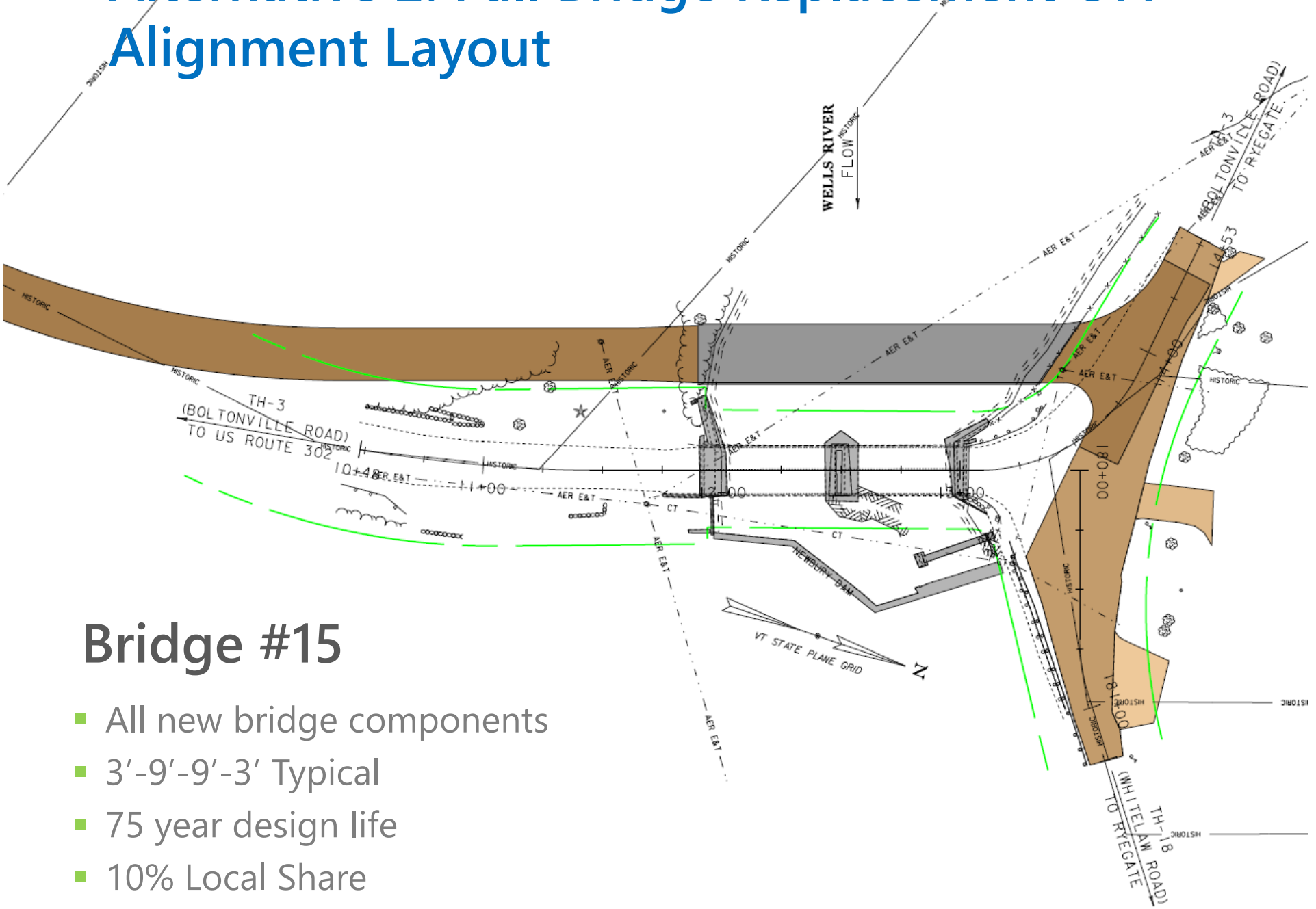
Alternative 2: Full Bridge Replacement ON-Alignment Layout



Bridge #15

- All new bridge components
- 3′-9′-9′-3′ Typical
- 75 year design life
- 5% or 10% Local Share depending on Maintenance of Traffic

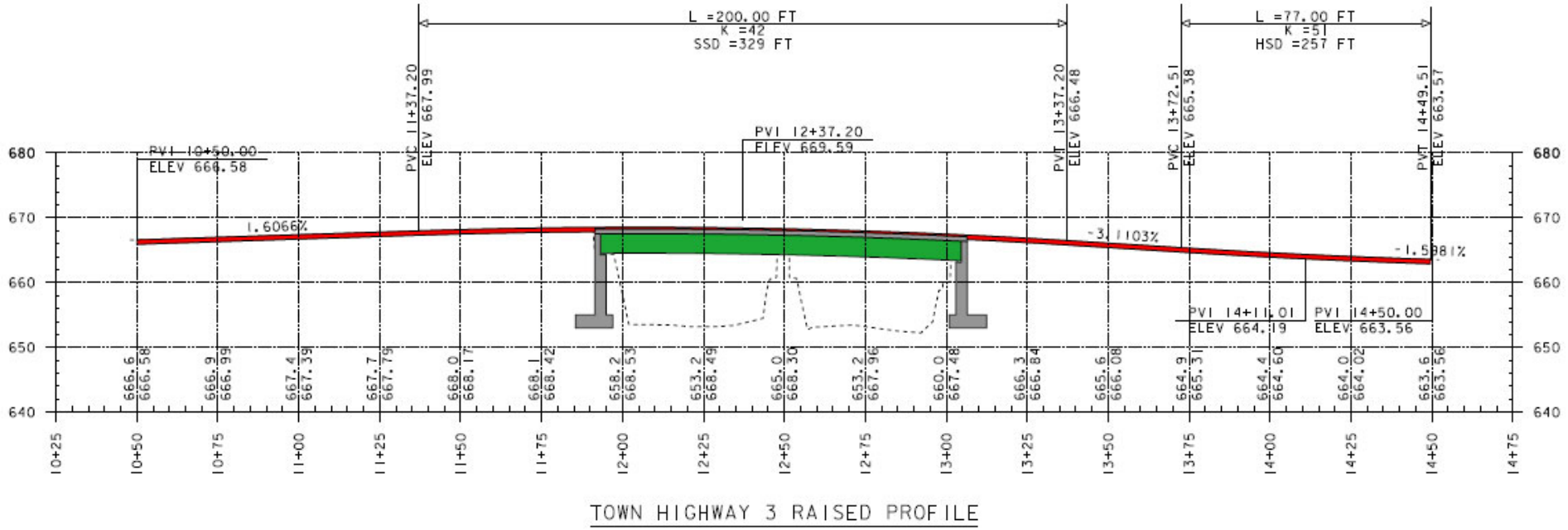
Alternative 2: Full Bridge Replacement OFF-Alignment Layout



Bridge #15

- All new bridge components
- 3’-9’-9’-3’ Typical
- 75 year design life
- 10% Local Share

Proposed Profile



Bridge #15

- Bridge slightly raised to meet minimum hydraulic requirements

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Recommended Alternative - Bridge #15

- Superstructure Replacement
  - Widen to 9’/3’ typical section
  - Improve Hydraulics to meet the minimum standard
    - Raise low beam 3” to meet minimum hydraulics
  - 40 year design life
  - Per Act 153, the local share is reduced by 50% for rehabilitating versus replacement

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Maintenance of Traffic Options Considered

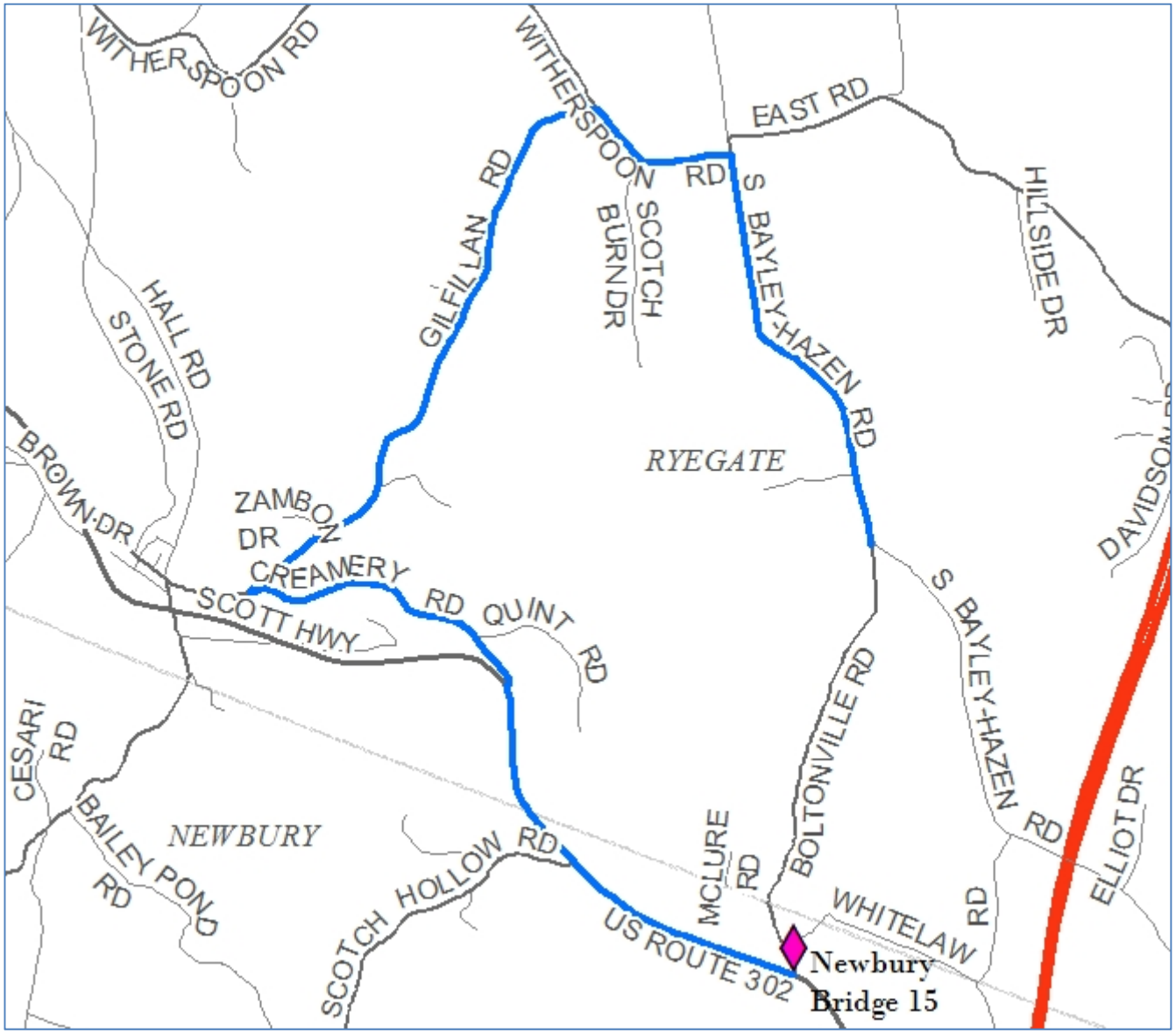
- Offsite Detour
- Temporary Bridge
- Existing Bridge for Off-Alignment Option

VERMONT
AGENCY OF TRANSPORTATION

Road Closure

- Detour chosen and signed by Town
- Shortest route is 8 miles end-to-end
- 30 to 60 day closure
- Coordination with Ryegate
- Per Act 153, the local share is reduced by 50% for closing the road to traffic during construction

Traffic Control – Offsite Detour

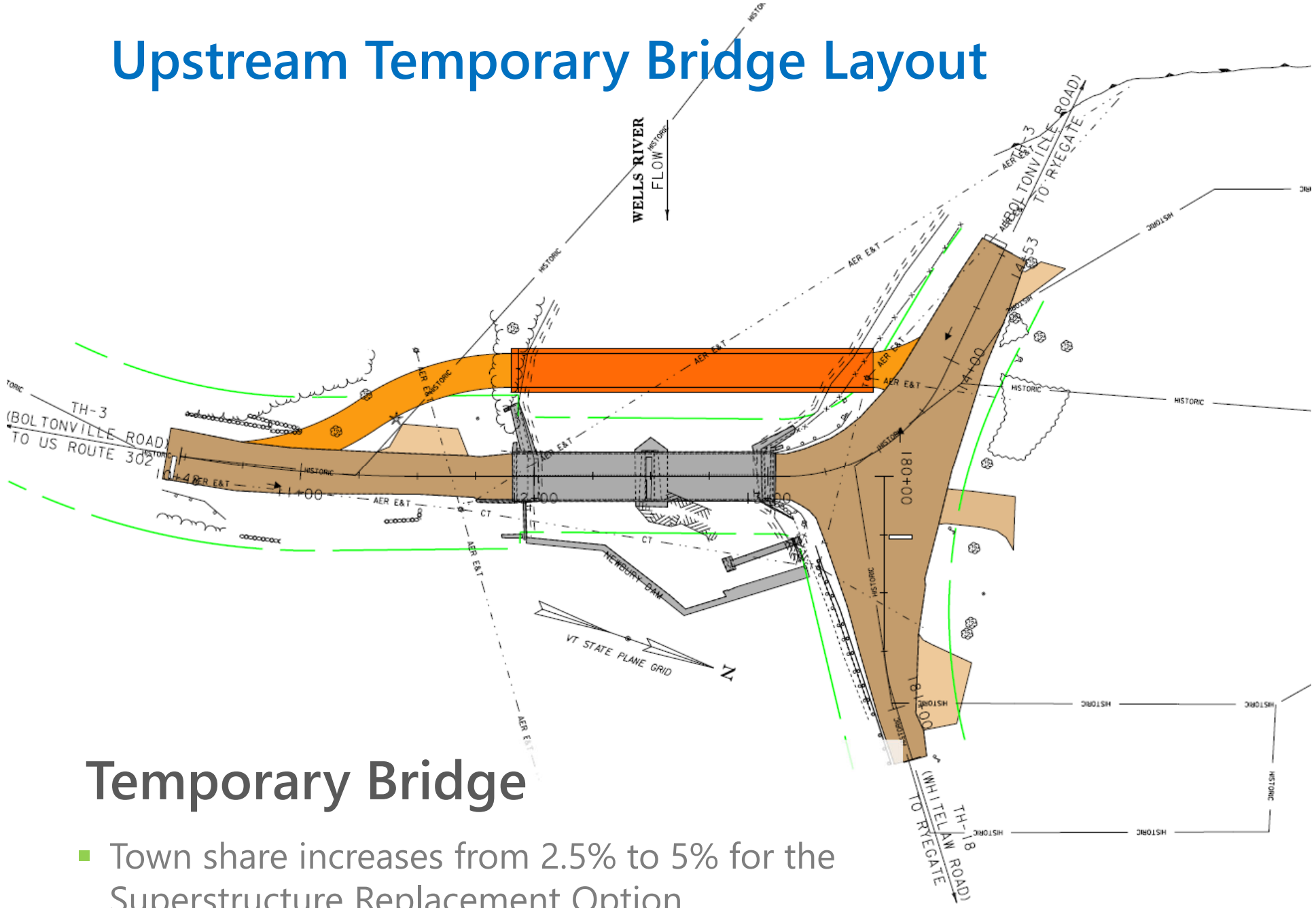


- Local Detour: 8.1 miles end-to-end

Temporary Bridge

- One Lane Temporary Bridge with Traffic Signal

Upstream Temporary Bridge Layout



Temporary Bridge

- Town share increases from 2.5% to 5% for the Superstructure Replacement Option

Recommended Scope

- Superstructure Replacement with Traffic Maintained on an Offsite Detour for 60 days
  - 9’/3’ typical
  - Improve Hydraulics to meet the minimum standard
  - 40 year design life
  - Right of Way Needed
  - Aerial Utility Relocation
  - The 60-day closure assumes a CIP deck on beams
    - The project schedule shows advertisement in January 2021. A 30-day closure would require precast components and construction year would need to be pushed out a year to 2022
  - 2.5% Local Share

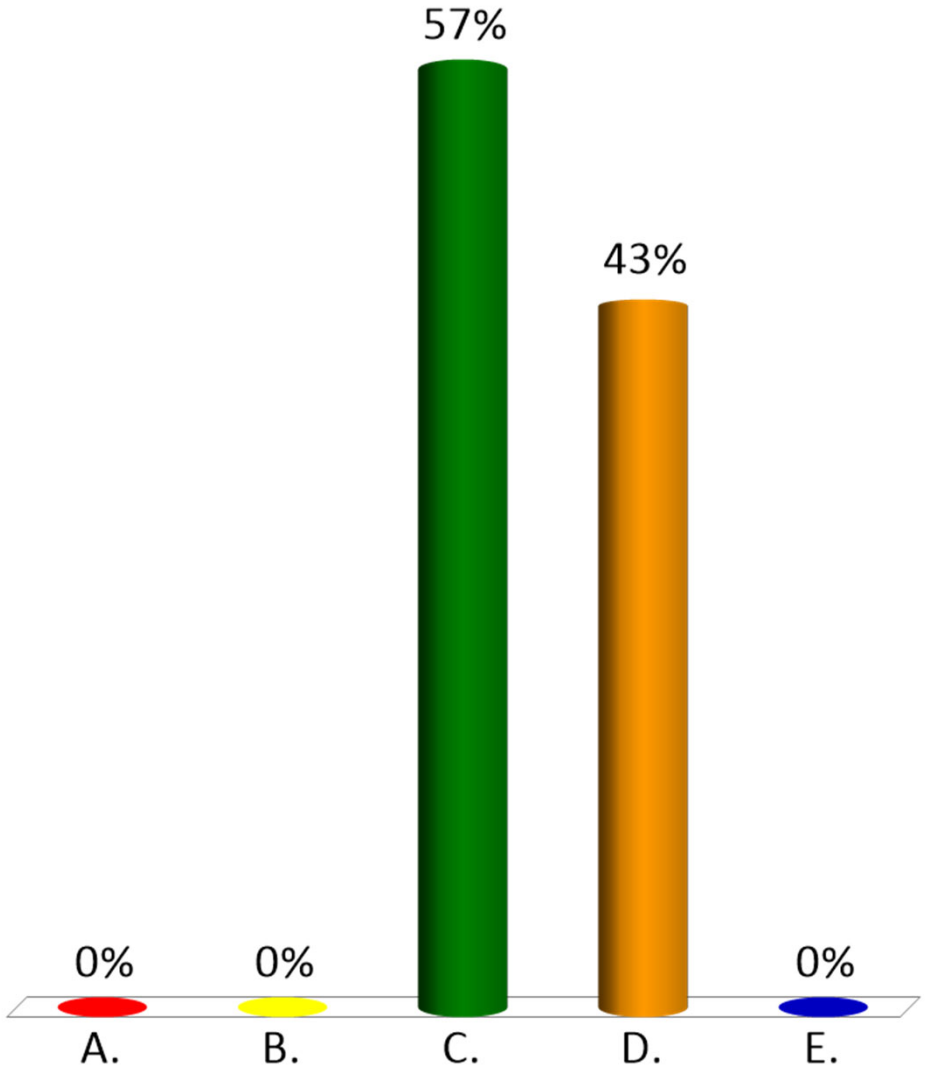
VERMONT
AGENCY OF TRANSPORTATION

Alternatives Matrix

Newbury BO 1447(32)	Do Nothing	Alternative 1			Alternative 2		
		Superstructure Replacement			Full Bridge Replacement		
		a. Offsite Detour - Accelerated	a. Offsite Detour	b. Temporary Bridge	a. Offsite Detour	b. Temporary Bridge	c. Off Alignment – Traffic Maintained on Existing Bridge
Total Project Costs (incl. Engineering and Contingencies)	$0	1,790,634	1,165,600	1,440,171	2,802,790	2,823,652	2,738,652
Annualized Costs	$0	44,765.84	29,139.99	36,004.29	37,370.53	37,648.69	36,515.36
TOWN SHARE	$0	**44,766**	**29,140**	**72,008.57**	**140,139**	**282,365**	**273,865**
TOWN %	$0	2.5%	2.5%	5%	5%	10%	10%
Project Development Duration	N/A	2 years	2 years	4 years	2 years	4 years	4 years
Construction Duration	N/A	6 months	6 months	18 months	6 months	18 months	9 months
Closure Duration (If Applicable)	N/A	30 days	60 days	N/A	90 days	N/A	N/A
Typical Section - Roadway (feet)	21			22’			
Typical Section - Bridge (feet)	1-9-9-1			3-9-9-3			
Alignment Change	No Change	No	No	No	Vertical Raise	Vertical Raise	Vertical Raise and Horizontal Shift
Hydraulics	No Change			Meets Minimum Criteria			
Utilities	No Change	Relocation	Relocation	Relocation	Relocation	Relocation	Relocation
ROW Acquisition	No	No	No	Yes	Yes	Yes	Yes
Road Closure	No	Yes	Yes	No	Yes	No	No
Design Life	10 Years	40	40	40	75	75	75

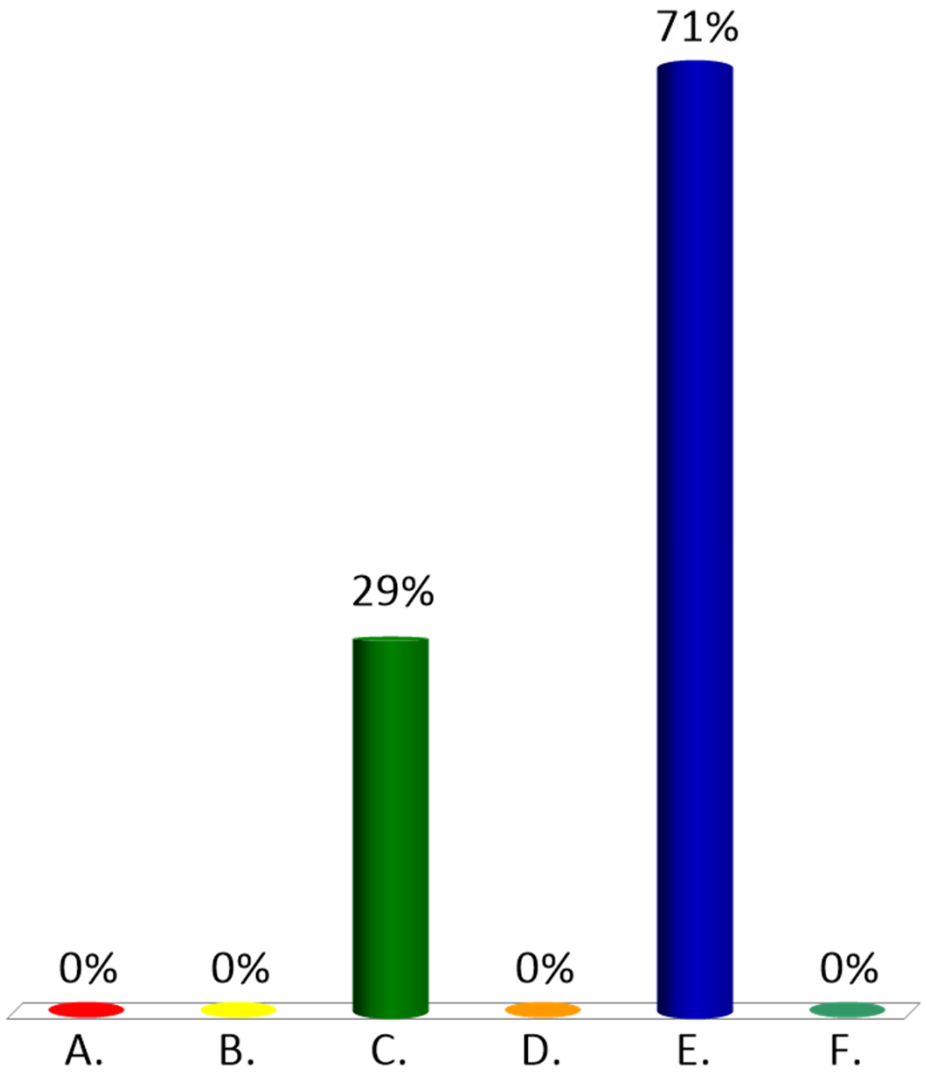
What would be the maximum acceptable length of closure for Bridge #15?

A. 30 days (≈4 weeks)
B. 45 days (≈6 weeks)
C. 60 days (≈9 weeks)
D. 90 days (≈13 weeks)
E. A closure is not acceptable



Which time of year would be most acceptable for Bridge #15 to be closed?

A. May - June
B. June - July
C. July - August
D. August – September
E. During Summer Break
F. Other



Preliminary Project Schedule

- Construction Start – 2021
  - Total Cost Estimate: $1,165,600
    - Town Share: $29,140

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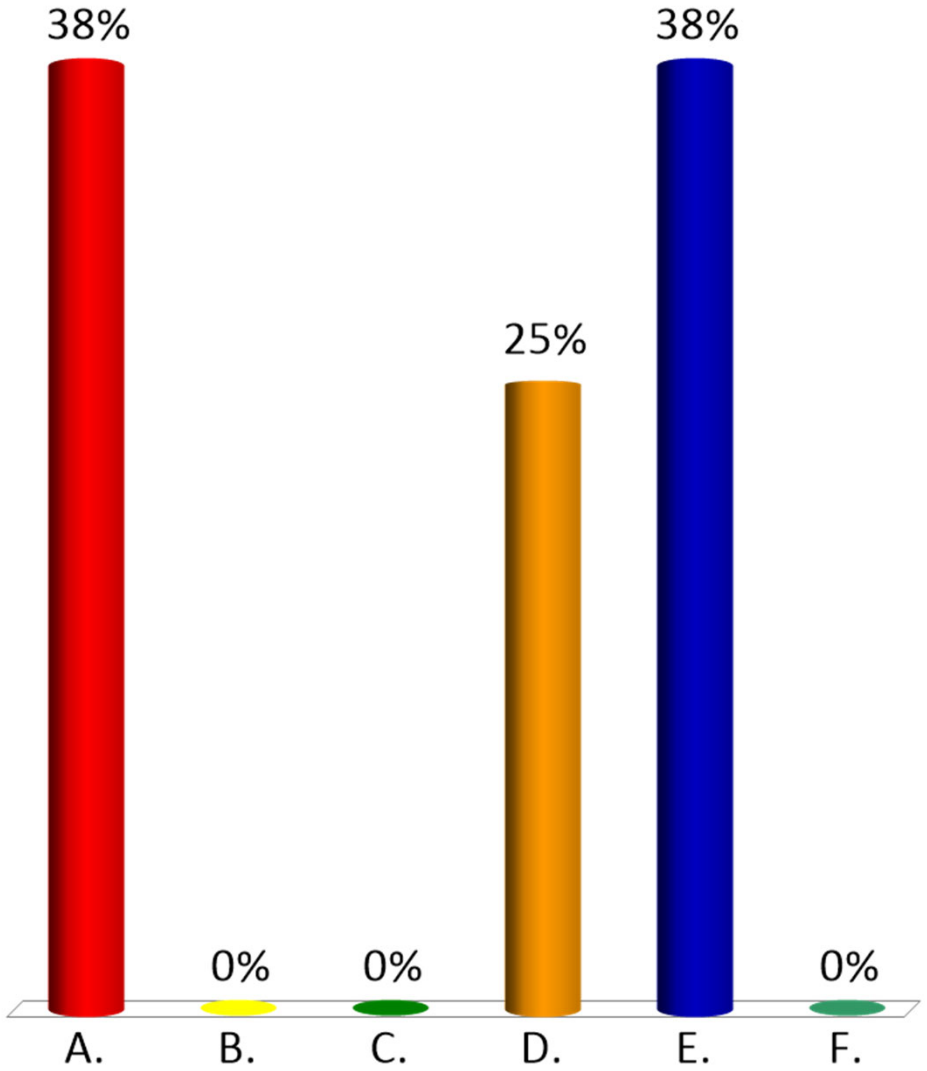
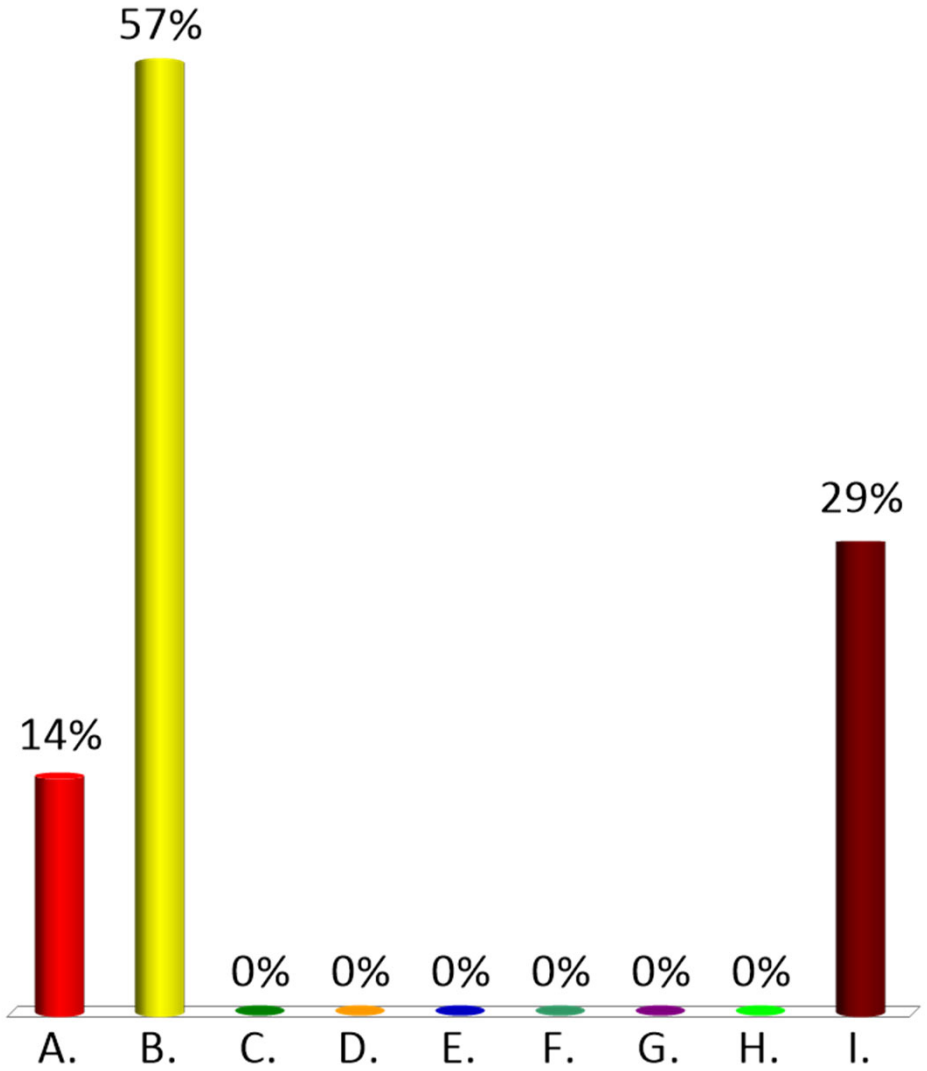
Which design aspect is the most important to you?

A. Shoulder width/bicycle accommodations
B. Aesthetics - Bridge Railing
C. Construction year
D. Construction Duration
E. Cost
F. Other



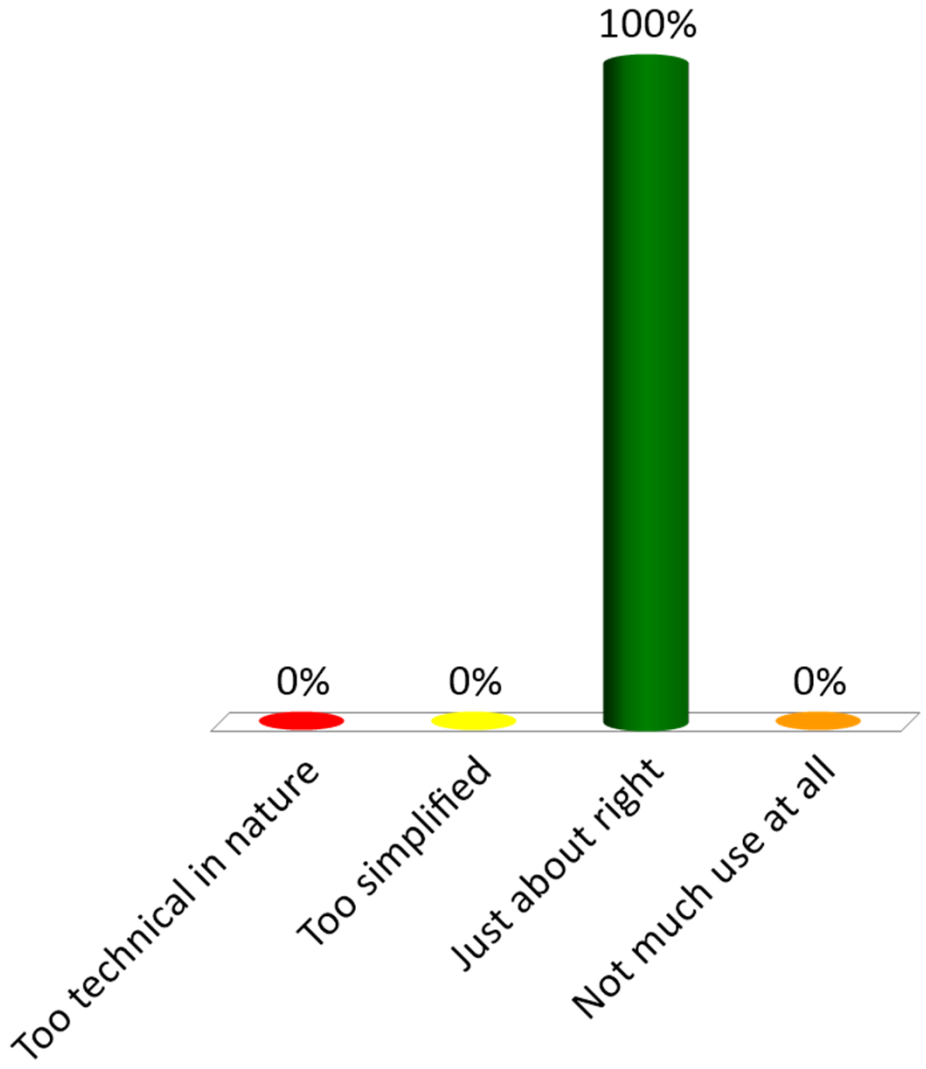
Which would you be most concerned about?

A. Construction delays on Boltonville Road
B. Detour Distance
C. Duration of Detour
D. Bridge Aesthetics
E. Environmental Impacts
F. Recreational Impacts
G. Business Impacts
H. Other
I. Not really concerned



Did you find this presentation to be?

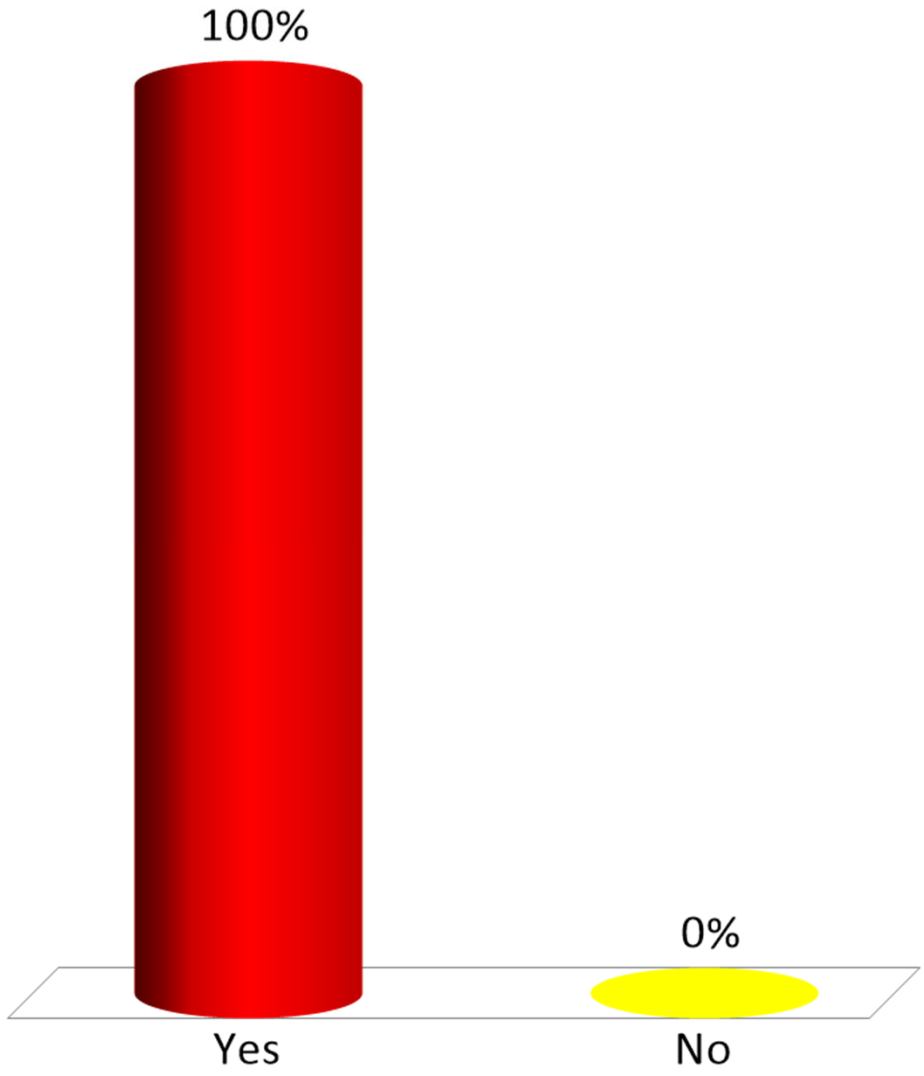
A. Too technical in nature
B. Too simplified
C. Just about right
D. Not much use at all



Do you find the recommended scope of work satisfactory?

A. Yes

B. No



Next Steps – Bridge #15

This is a list of a few important activities expected in the near future and is not a complete list of activities.

- Wait for Town response to recommendation on proposed project
  - Develop Conceptual plans and distribute for comment
  - Request a Public Information meeting
  - Process local agreements
  - Right-of-Way process (if needed)

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For more information:

- https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/16J179

Newbury BO 1447(32)
Questions and Comments

Town Highway 3, Bridge 15 over Wells River

June 26, 2019

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