



Bennington BF 1000(20) Alternatives Presentation Meeting

VT Route 9– Bridge #6 over Walloomsac

June 24, 2019



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Bridge
Program**
VTRANS

Introductions

Laura Stone, P.E.

VTrans Scoping Engineer

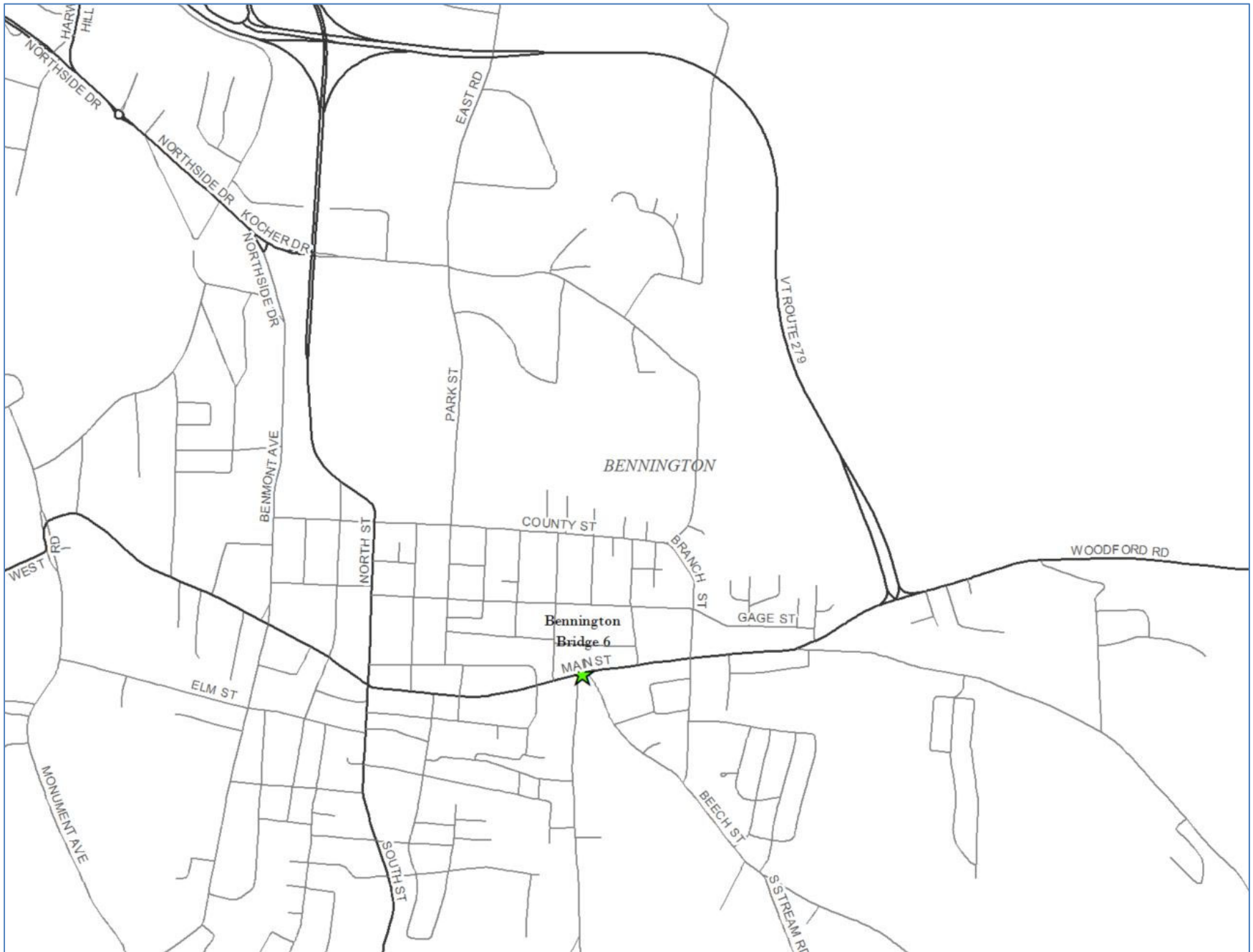
Rob Young, P.E.

VTrans Project Manager



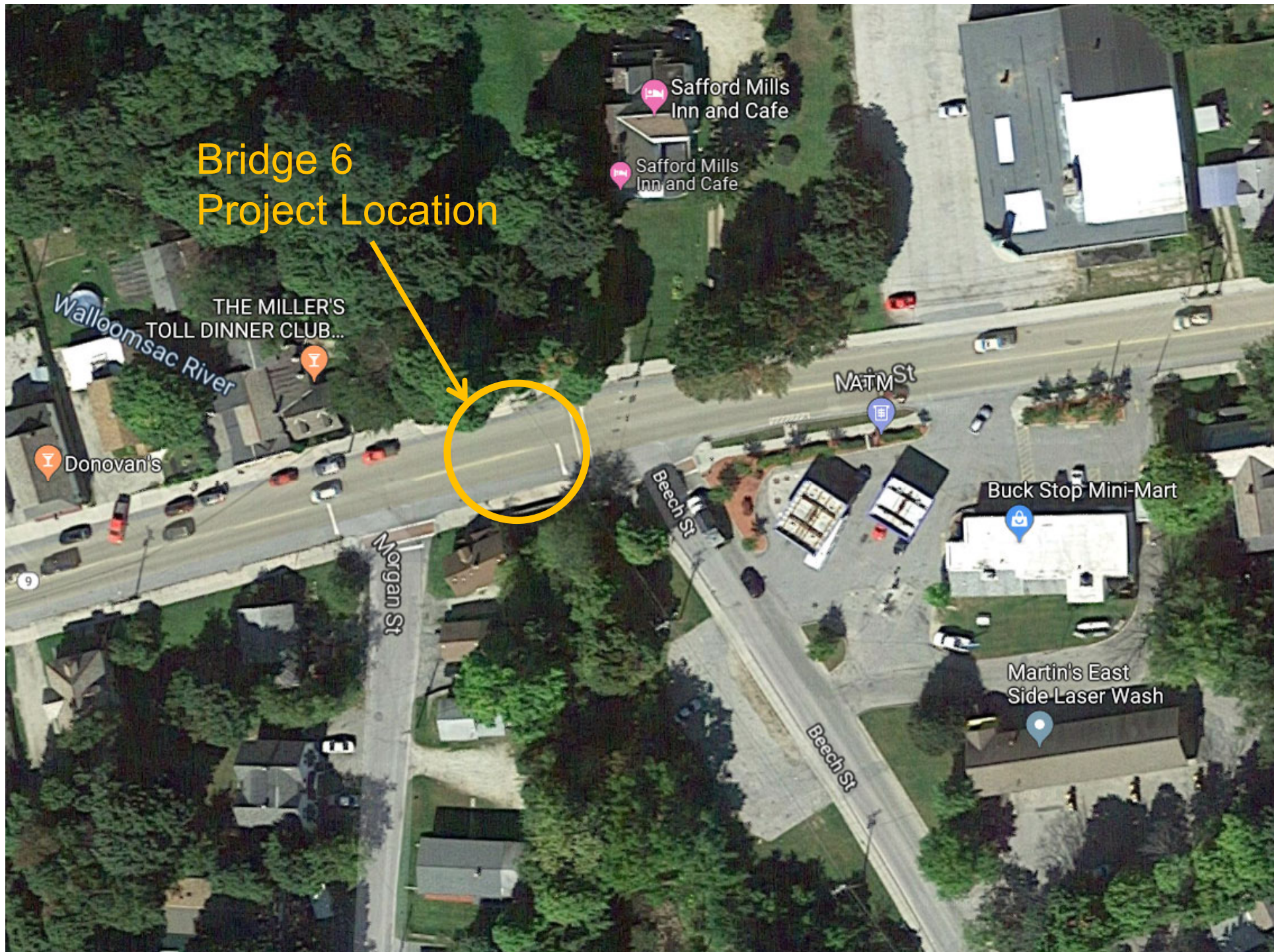
Purpose of Meeting

- 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



Location Map

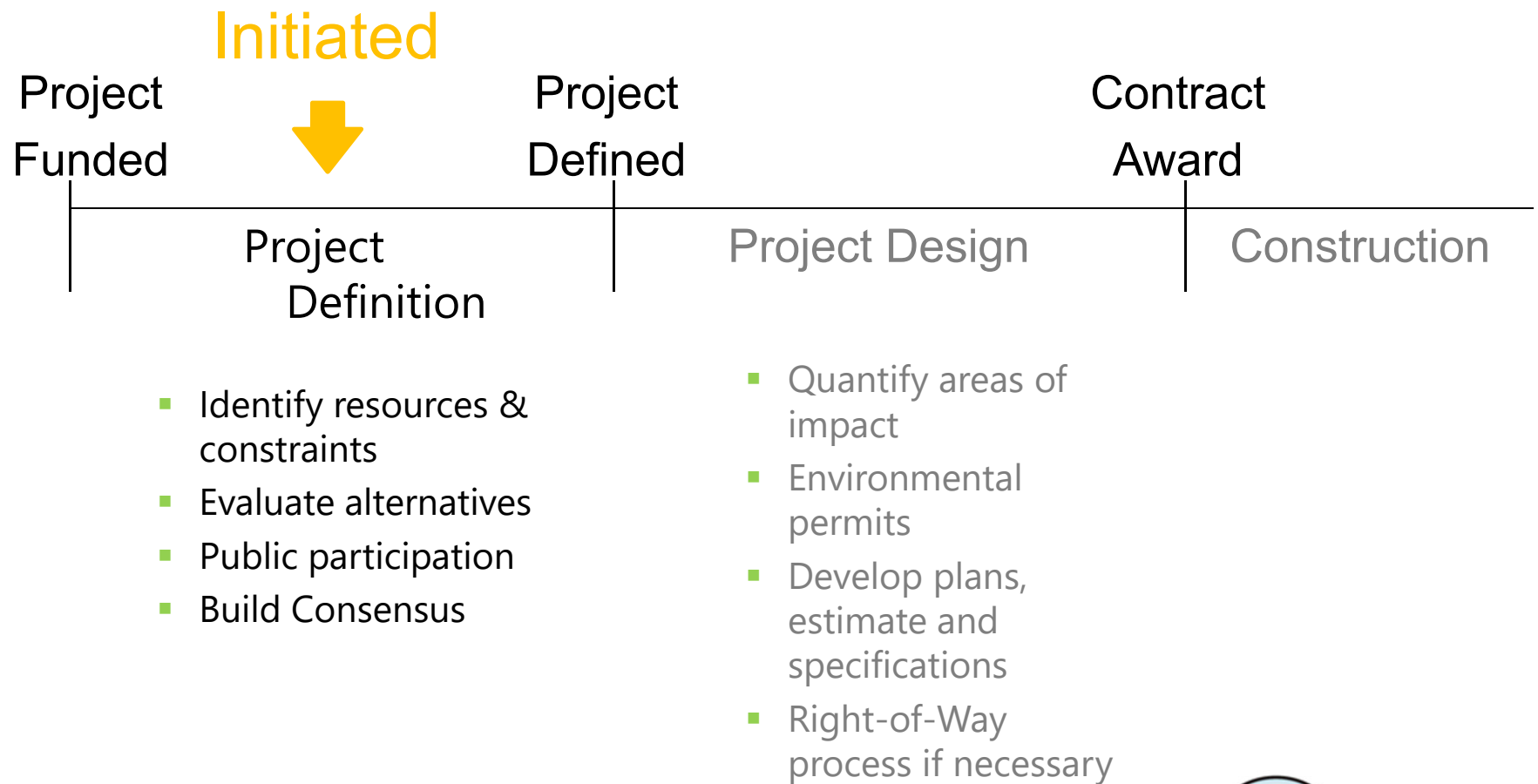
Bridge 6 Project Location



Meeting Overview

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

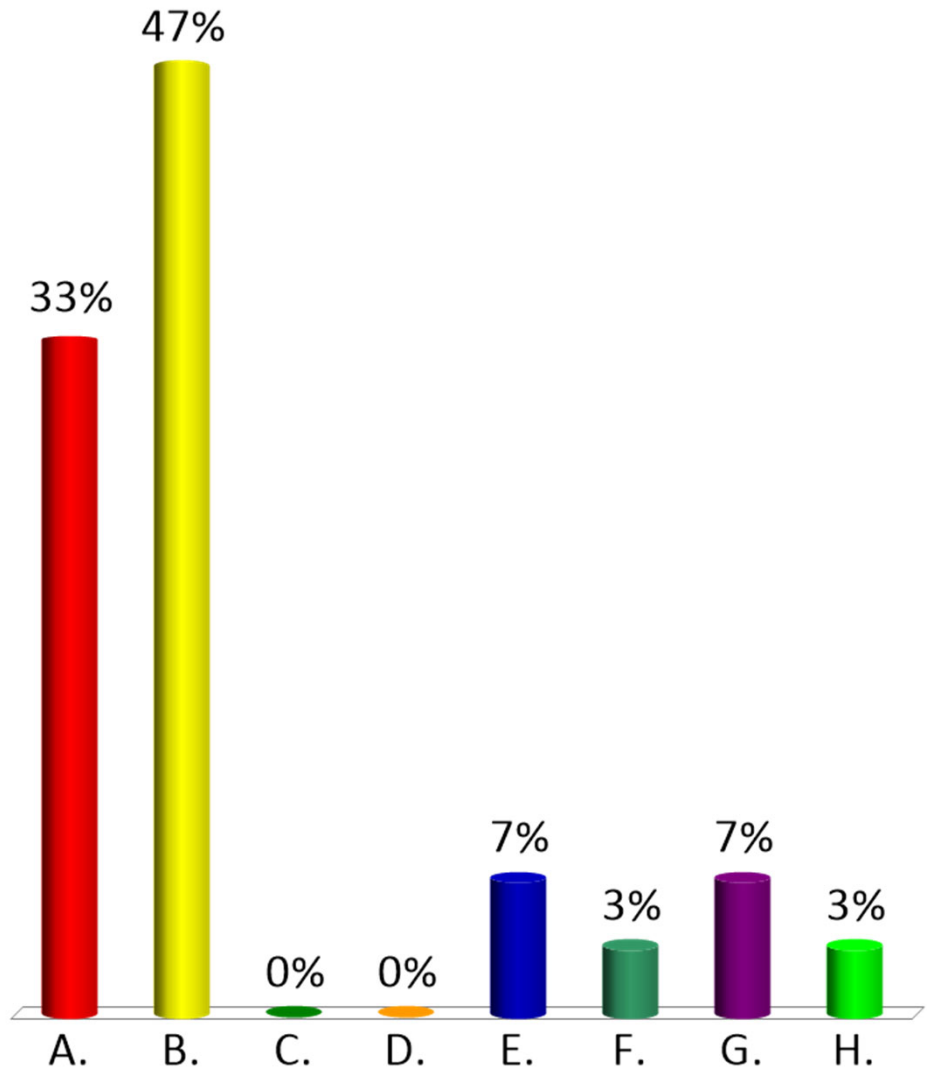
VTrans Project Development Process



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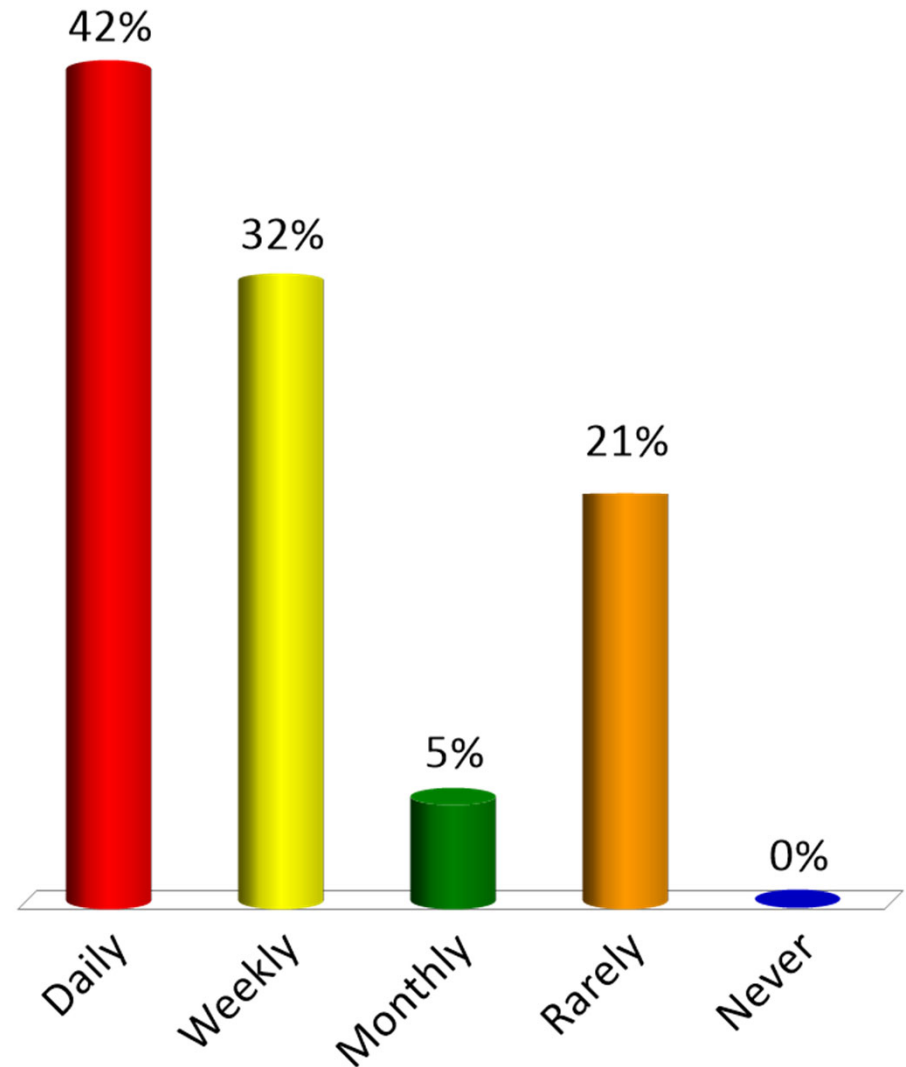
Who are you representing?

- A. Municipal Official
- B. Resident of Bennington
- C. Resident of Neighboring Town
- D. Emergency Services
- E. Local Business
- F. Independent Organization
- G. Press
- H. Other



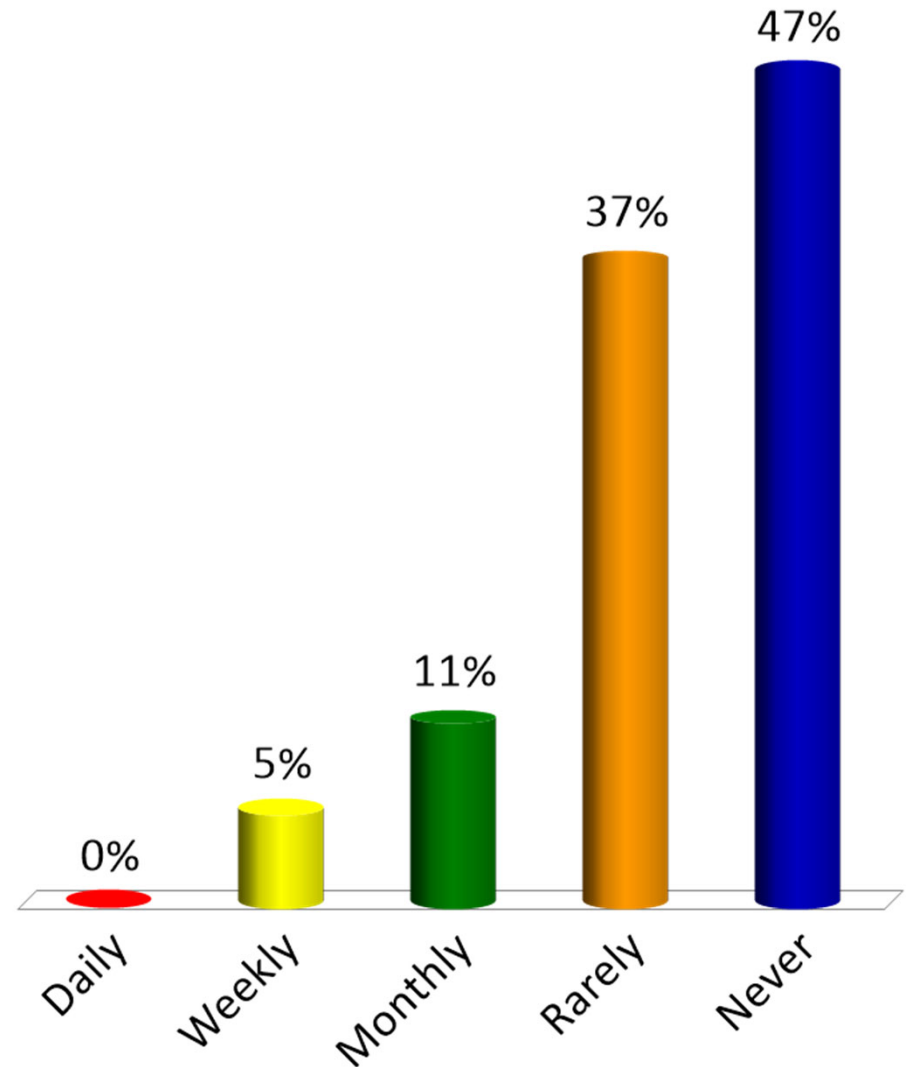
How often do you use this segment of VT Route 9?

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



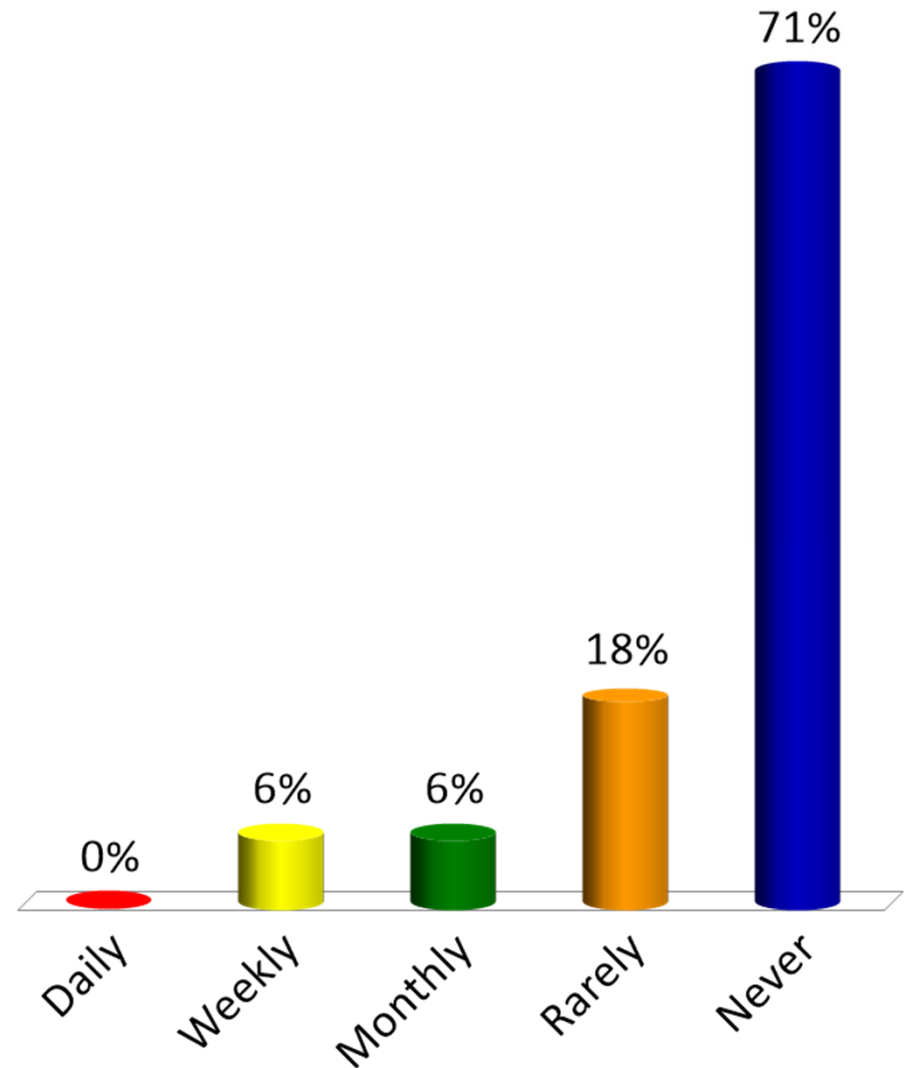
How often do you walk over the bridge?

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



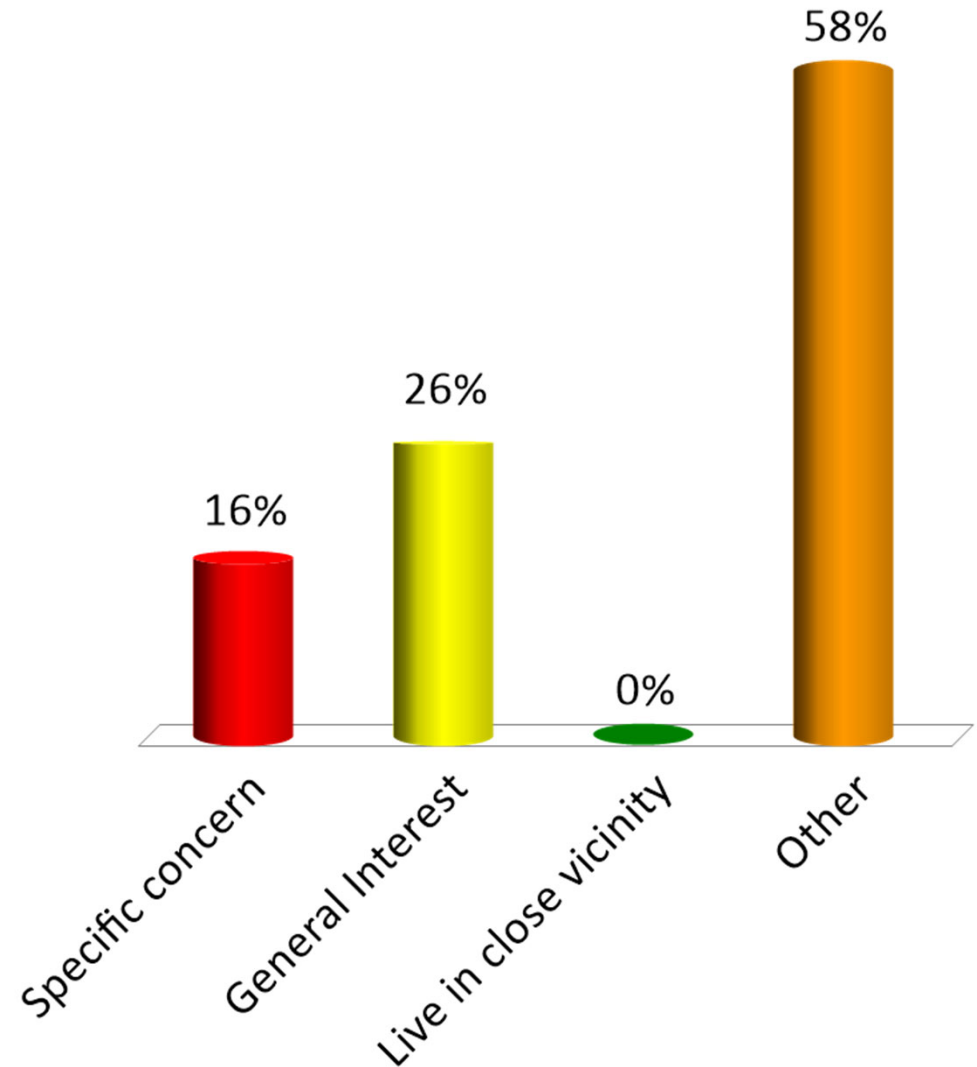
How often do you bike over the bridge?

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

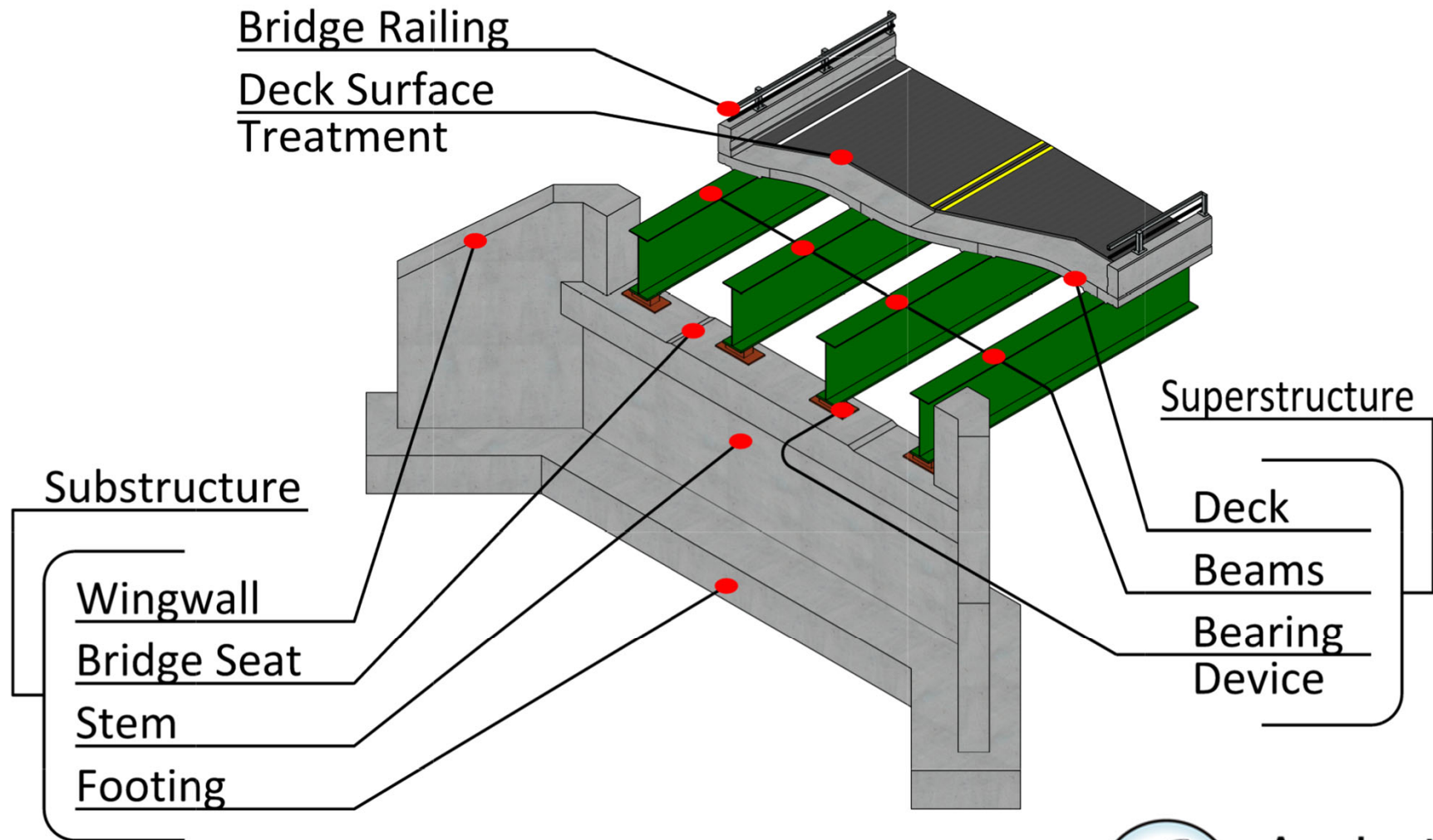


What is your reason for attending this meeting?

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



Description of Terms Used



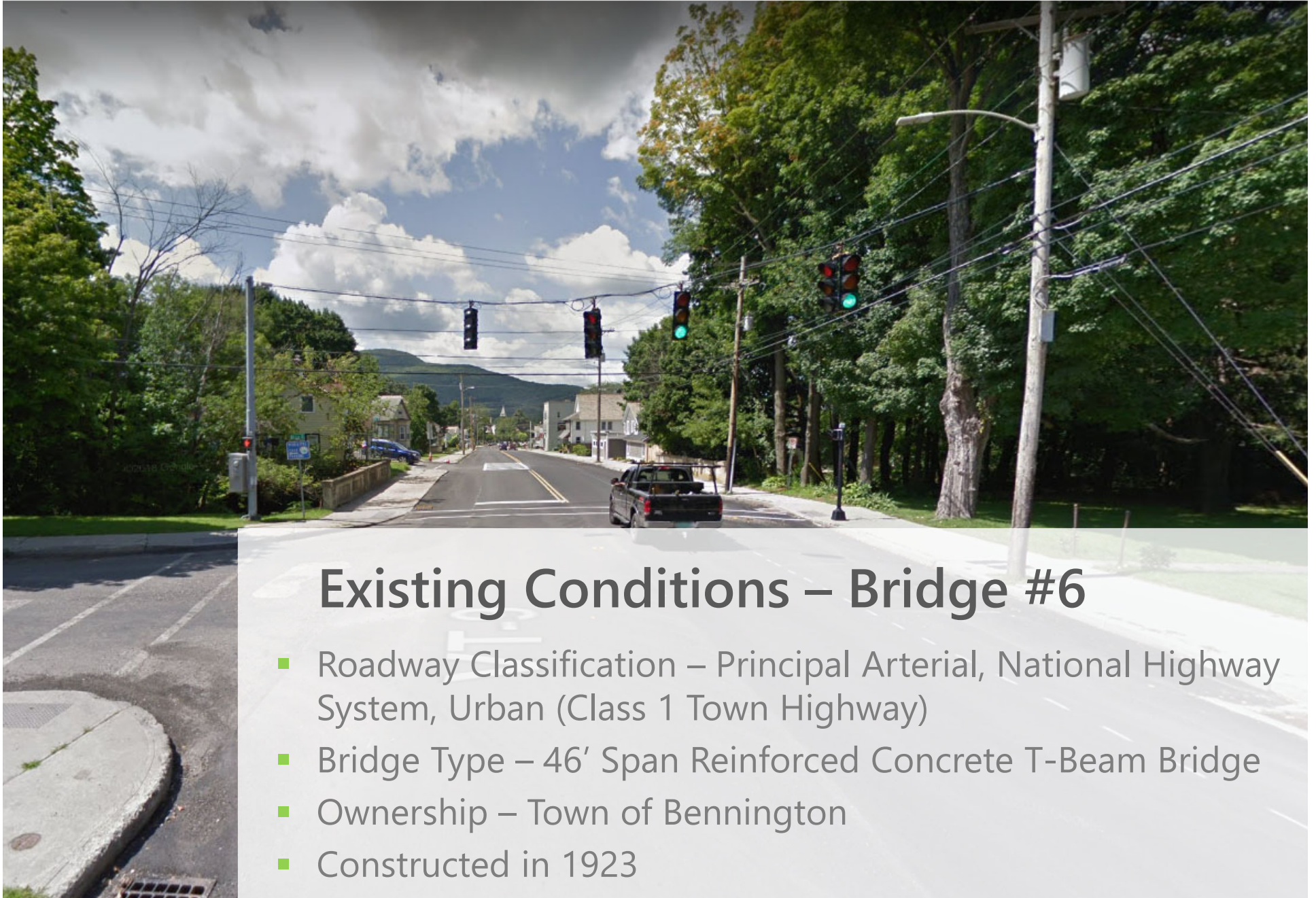
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ACT 153 of the 2012 Legislative Session

	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

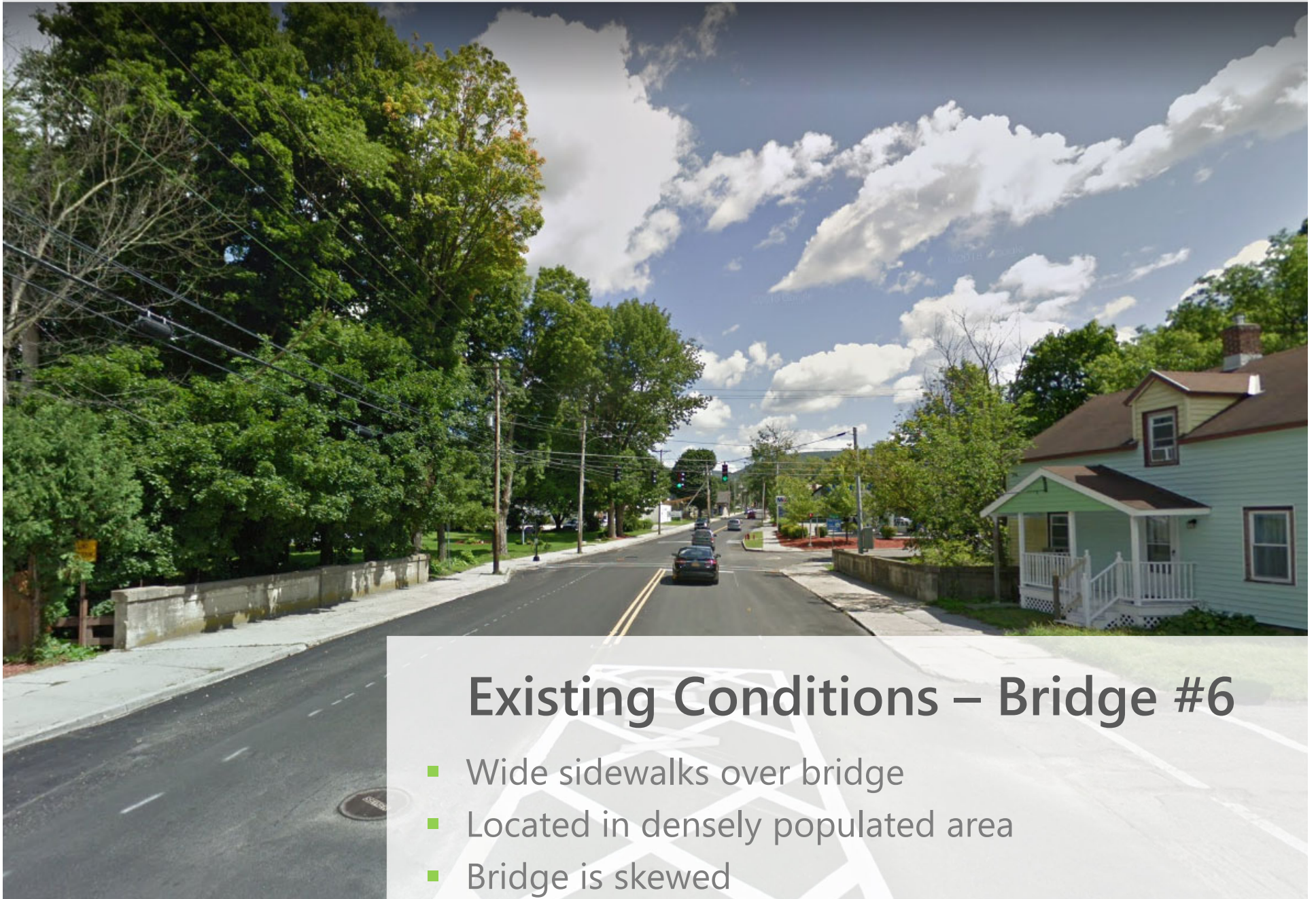
Looking West over Bridge



Existing Conditions – Bridge #6

- Roadway Classification – Principal Arterial, National Highway System, Urban (Class 1 Town Highway)
- Bridge Type – 46' Span Reinforced Concrete T-Beam Bridge
- Ownership – Town of Bennington
- Constructed in 1923

Looking East over Bridge



Existing Conditions – Bridge #6

- Wide sidewalks over bridge
- Located in densely populated area
- Bridge is skewed

Existing Conditions – Bridge #6

- The substructures and superstructure are in fair condition with a rating of 5. There is significant deterioration of the concrete and bridge seats.
 - Spalling, voids, and cracks in the abutments.
- Settlement cracks in Abutment 2.
- There are drainage features on the bridge that are leaking and saturating concrete members, accelerating deterioration.
- The bridge does not meet the minimum hydraulic requirements and is located within a flood insurance study area.
 - Negative 4-feet of freeboard at the design storm



Condition Ratings



Existing Conditions - Bridge #6

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

05/30/2017

Substructure



Existing Conditions - Bridge #6

- Scour, spalling, cracks

Abutment



05/30/201

Existing Conditions - Bridge #6

Abutment



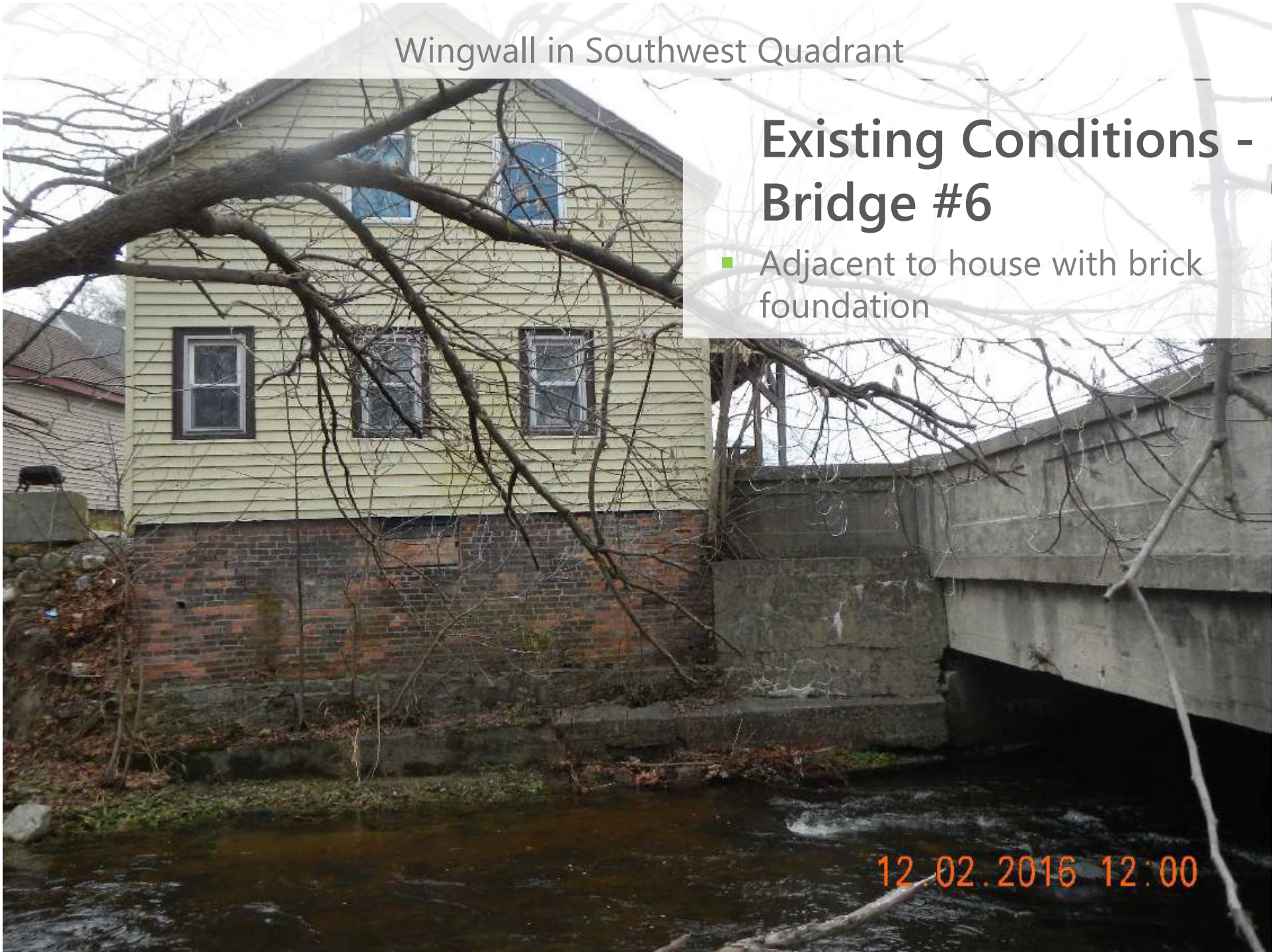
Existing Conditions - Bridge #6

Wingwall in Southwest Quadrant

Existing Conditions - Bridge #6

- Adjacent to house with brick foundation

12.02.2016 12:00



Resources – Looking Downstream

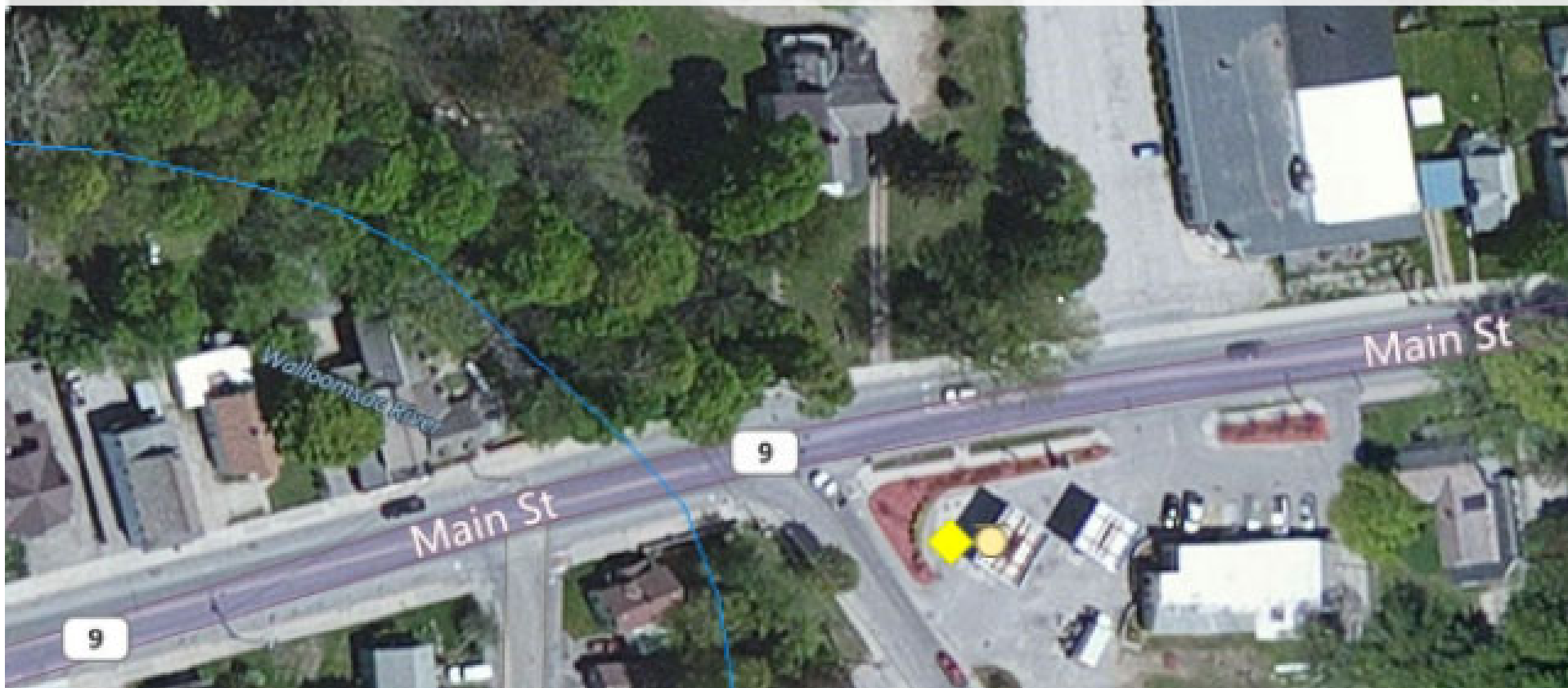


Existing Conditions - Bridge #6

- Northern Long Eared Bat Habitat
- Archaeological Resources
- Historic Resources
 - Bridge No. 6 and the former Safford-Morgan House at 722 Main Street
- FEMA Floodplains
- Hazardous Waste Site
- Utilities

12.02.2016 12:05

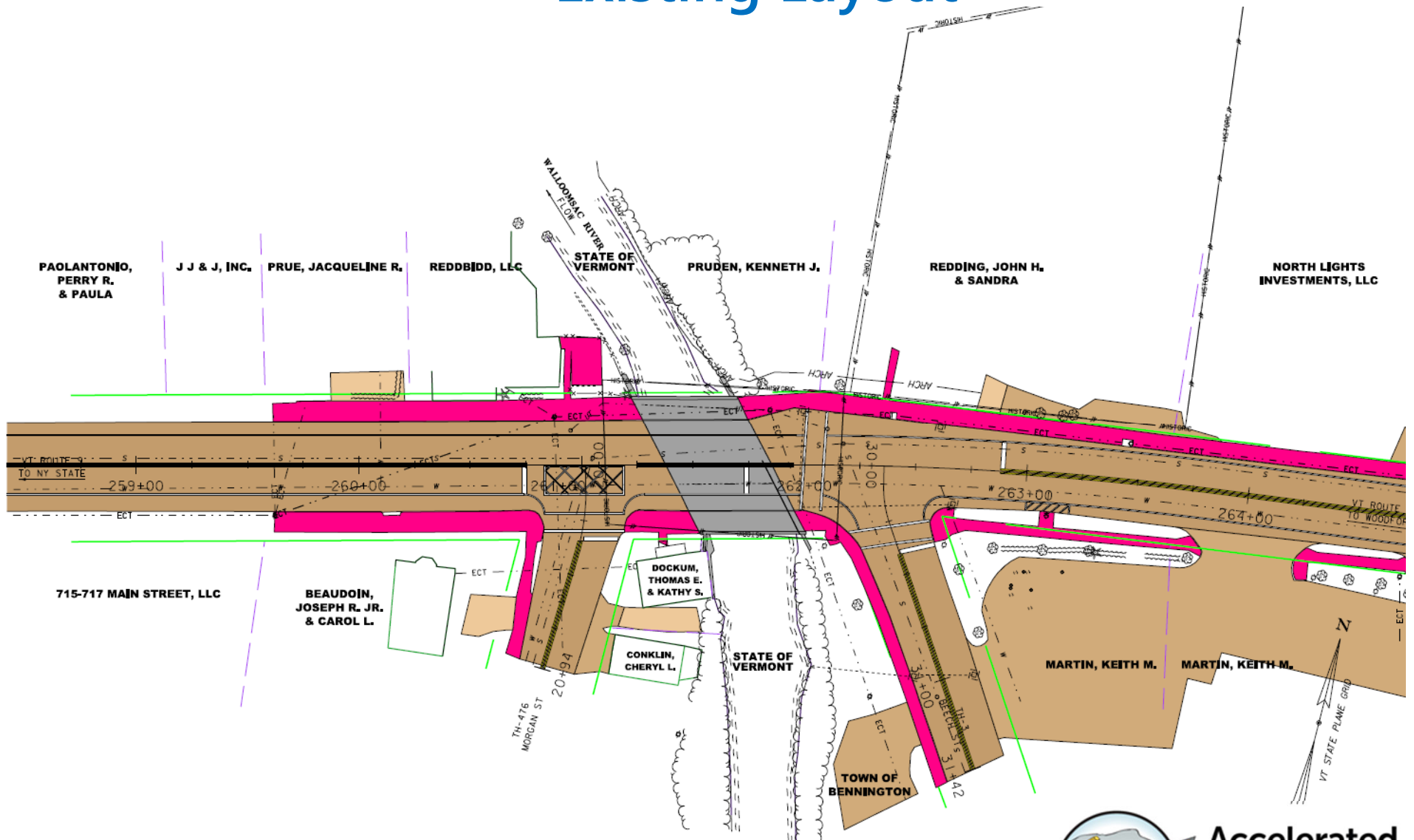
Finance and Maintenance Agreement: Hazardous Waste



Existing Conditions - Bridge #6

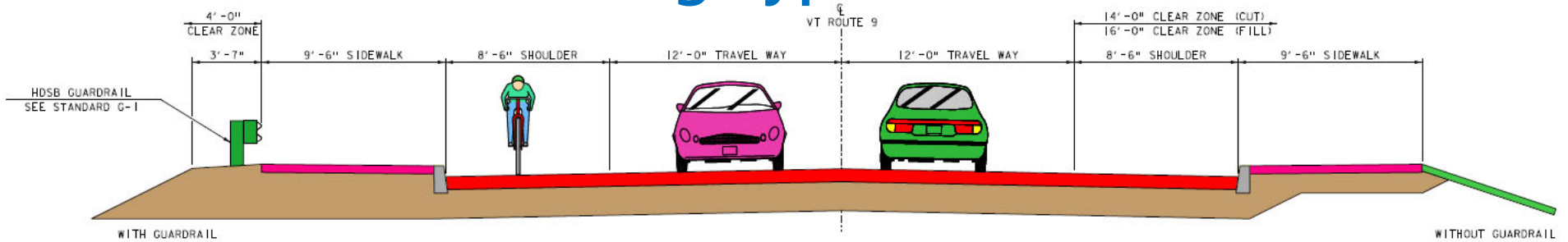
- **22. Hazardous Material Contamination.** The cost of handling, treatment and disposal of petroleum-contaminated soils or other hazardous material contamination in existence prior to construction of the Project shall be non-participating. Accordingly, any costs associated therewith shall be the sole responsibility of the MUNICIPALITY. Hazardous material generated during the construction of the project shall be disposed of as provided for in the project specifications and shall be a participating cost.

Existing Layout

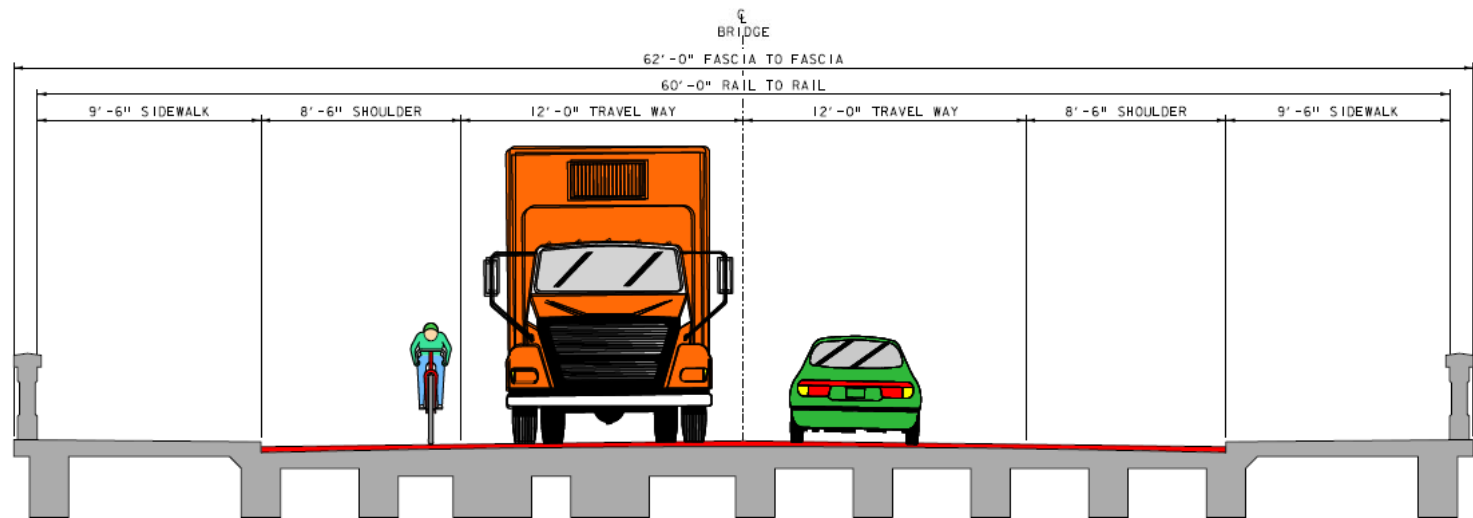


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Existing Typical Section



VT ROUTE 9 TYPICAL SECTION

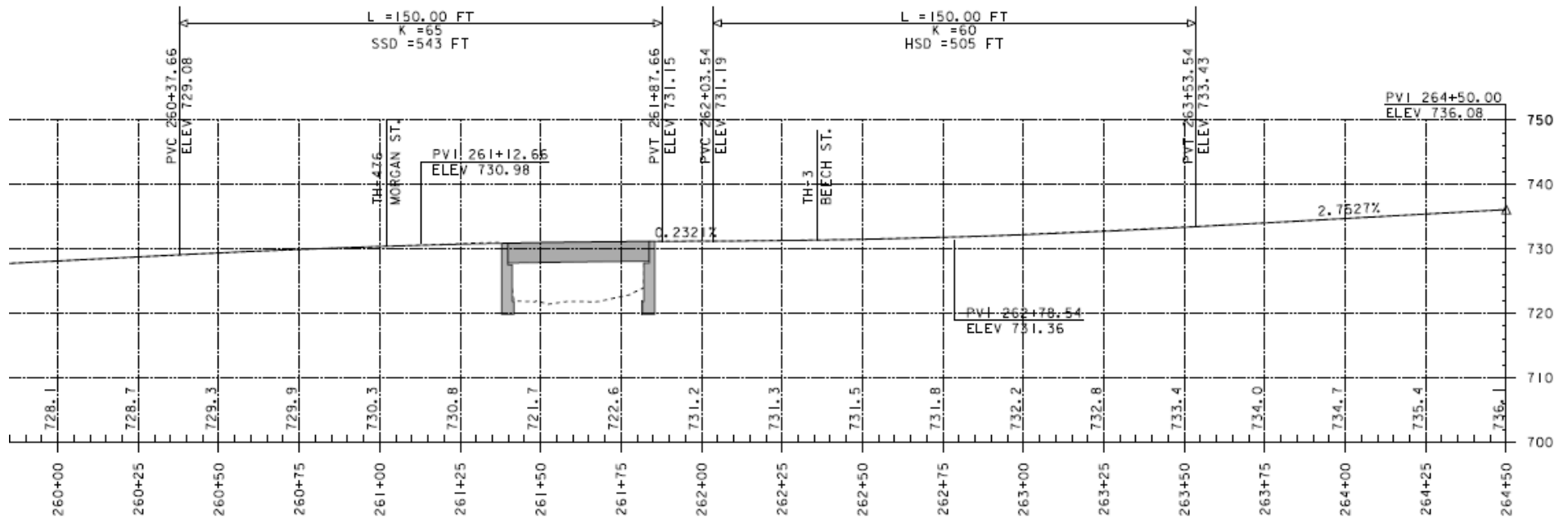


EXISTING BRIDGE TYPICAL SECTION



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Existing Profile



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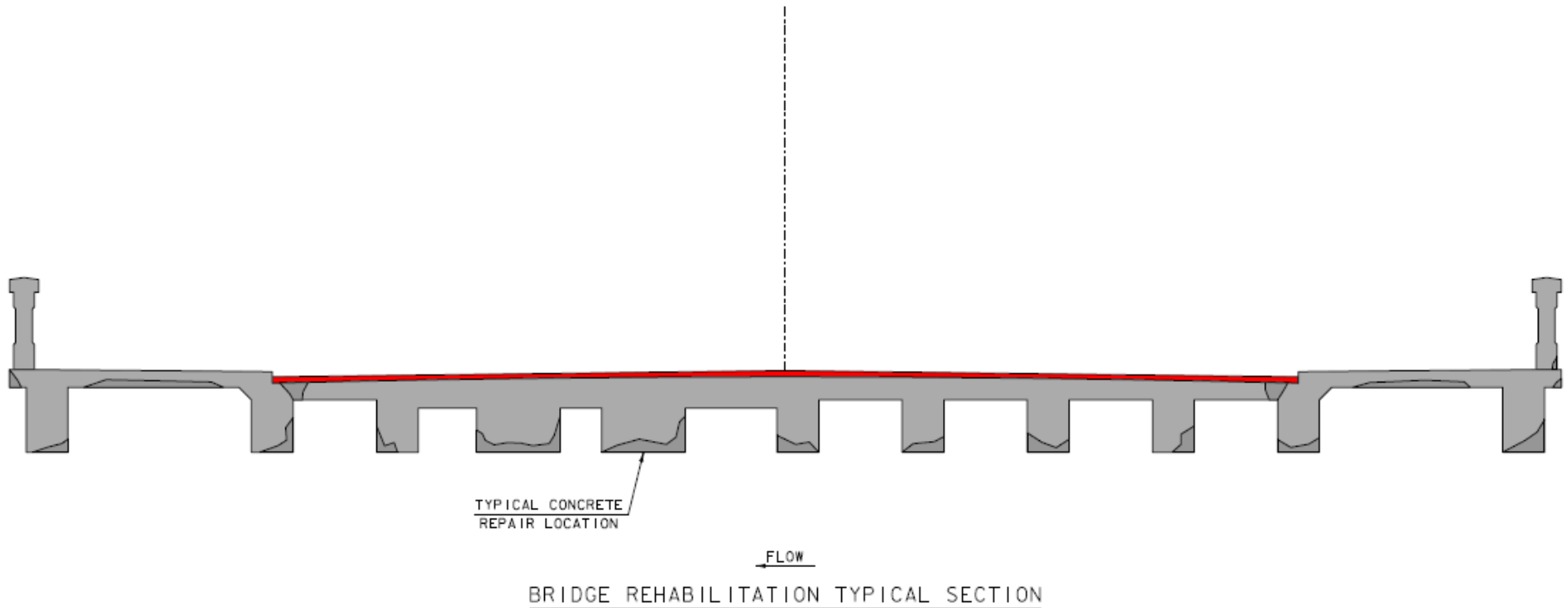
Design Criteria and Considerations

- ADT of 9,800
- DHV of 1,000
- % Trucks: 4.6
- Design Speed of 30 mph
- Utilities

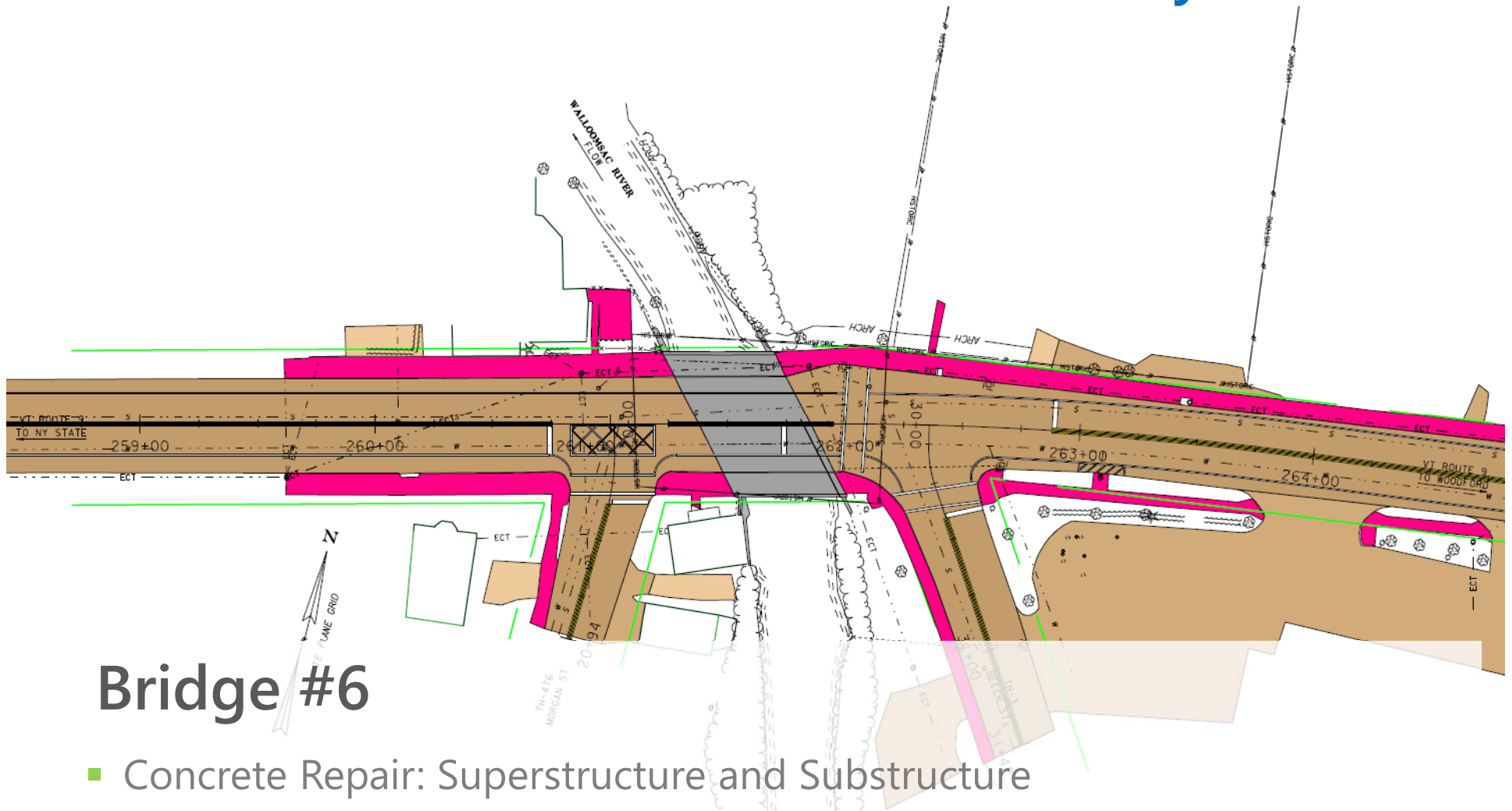
Alternatives Considered – Bridge #6

- No Action
 - Additional maintenance required within 10 years
- All Alternatives 8'-12'-12'-8' Typical
- Minor Rehabilitation
 - Superstructure and substructure repair
 - 15 year design life
- Superstructure Replacement
 - Substructure repair
 - 30 year design life based on condition of abutments
- Full Bridge Replacement On Alignment
 - Maintain horizontal and vertical alignment
 - Substandard hydraulically
 - 100 year design life

Alternative 1: Minor Rehabilitation Typical Section



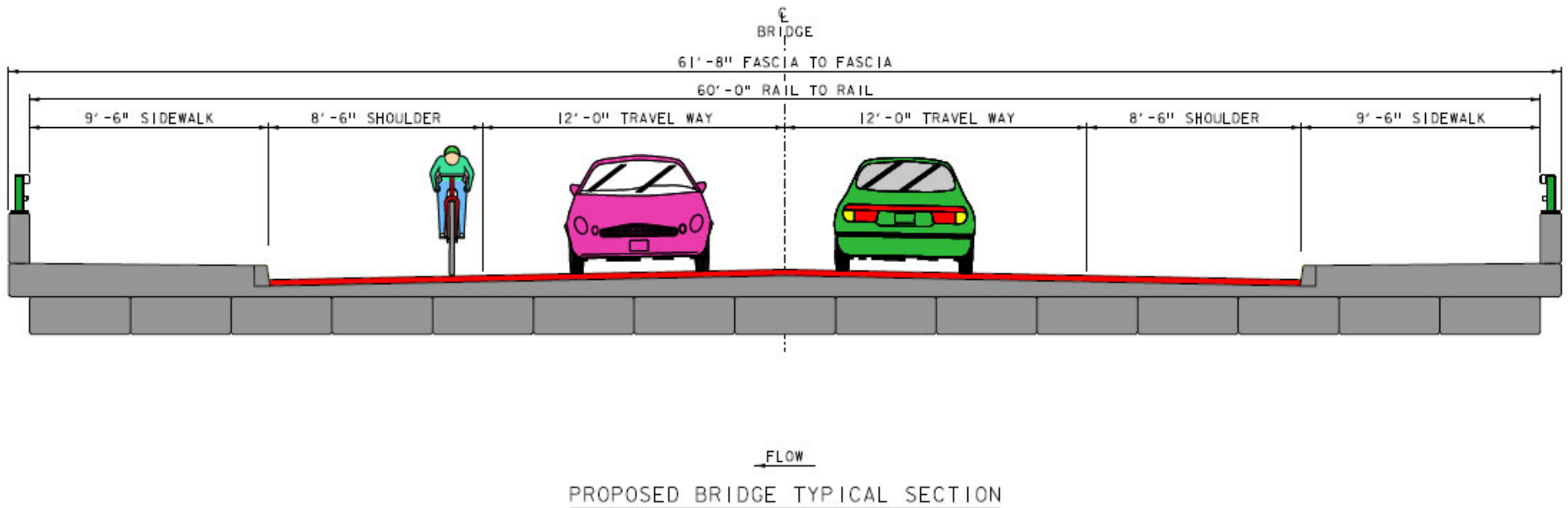
Alternative 1: Minor Rehabilitation Layout



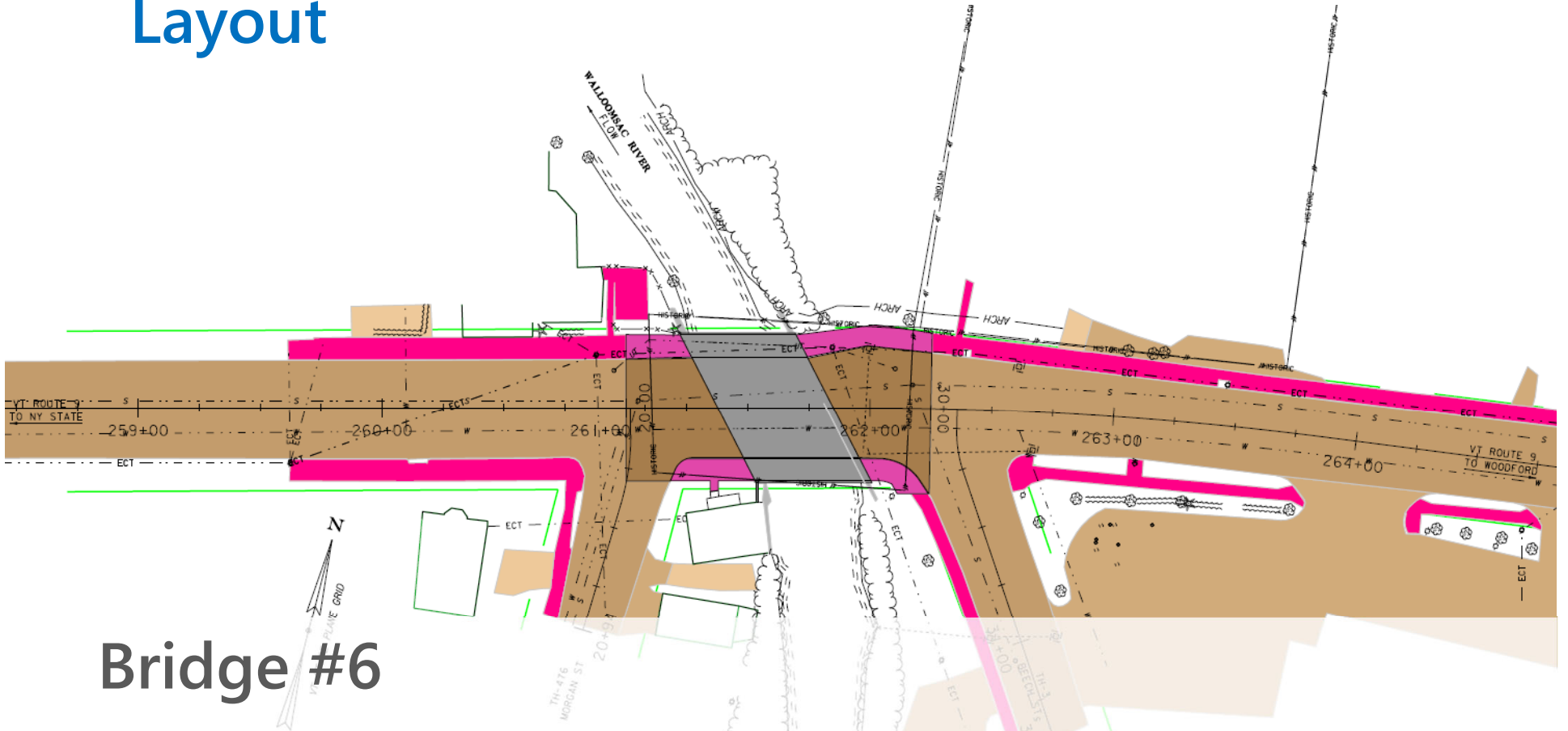
Bridge #6

- Concrete Repair: Superstructure and Substructure
- New Bridge Joints and Membrane and Pave
- 8'-12'-12'-8' Typical with 9' wide sidewalks on both sides of the bridge
- 15 year design life

Alternative 2: Superstructure Replacement Typical Section



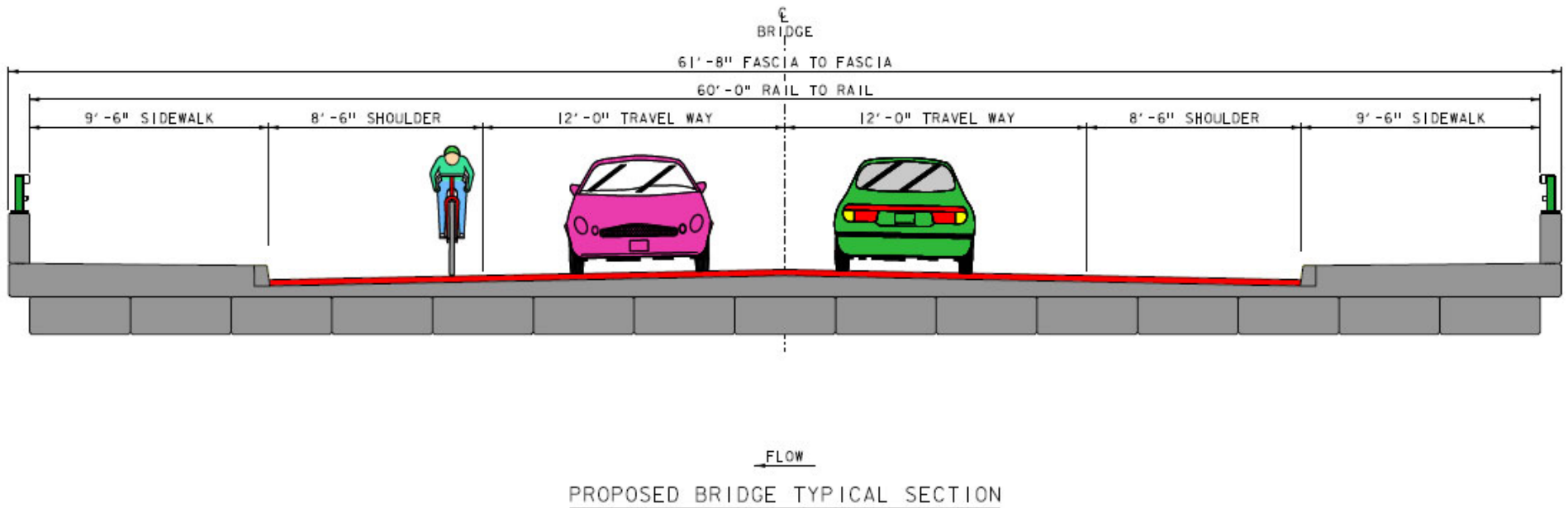
Alternative 2: Superstructure Replacement Layout



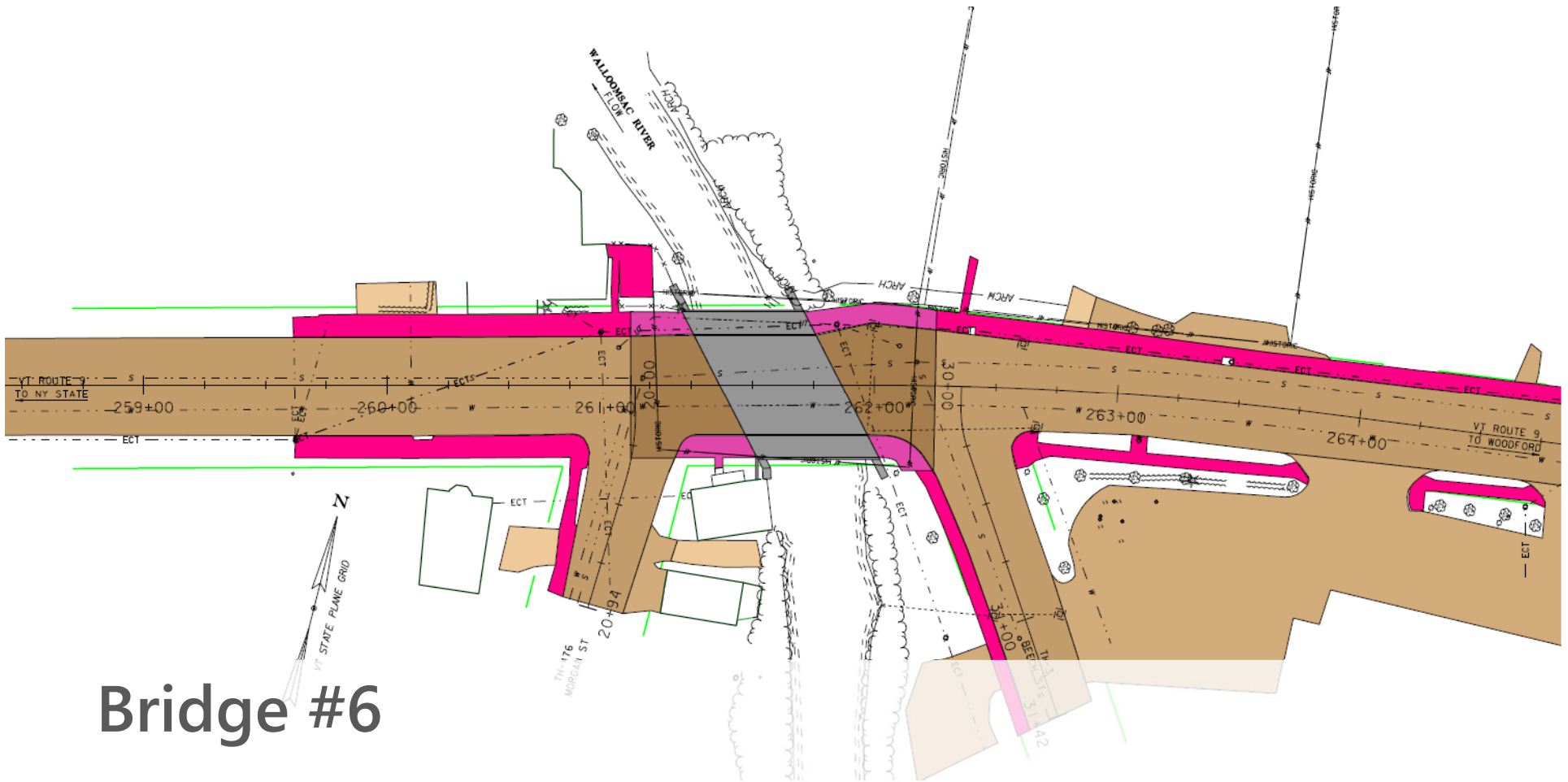
Bridge #6

- New deck and beams on existing substructures
- Concrete repair as needed for substructures
- 8'-12'-12'-8' Typical with 9' wide sidewalks on both sides of the bridge
- 30 year design life based on current condition of substructures

Alternative 3: Full Bridge Replacement Typical Section



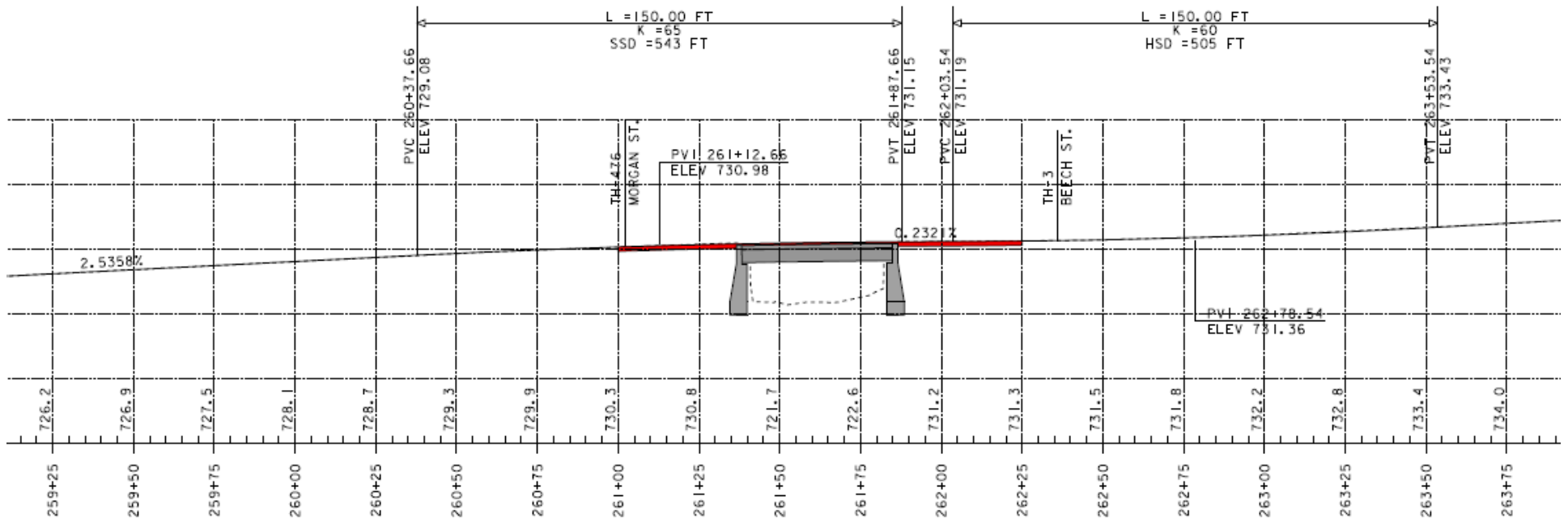
Alternative 3: Full Bridge Replacement Layout



Bridge #6

- All new bridge components
- 8'-12'-12'-8' Typical with 9' wide sidewalks on both sides of the bridge
- Does not meet minimum hydraulic standard
- 100 year design life

Proposed Profile



VT ROUTE 9 PROPOSED PROFILE



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Recommended Alternative - Bridge #6

- Full Bridge Replacement
 - 12'/8' typical with 9-foot wide sidewalk on both sides
 - Span length of approximately 50'
 - Remains Hydraulically Inadequate
 - Shallow superstructure type to be chosen
 - 100 year design life

Maintenance of Traffic Options Considered

- Offsite Detour
- Short Term Lane Closures
 - Minor rehab only
 - During Off-Peak Hours
- Phased Construction
 - 2 ways need to be maintained as well as pedestrians
 - Option 1: 2-Way Traffic Maintained by Phasing w/ Offsite Pedestrian Detour
 - Option 2: Pedestrian and 1-Way Eastbound Vehicular Traffic Maintained by Phasing w/ Offsite Detour for Westbound Vehicular Traffic

A photograph of a road closure. In the center is a white rectangular sign with a black border and the words "ROAD CLOSED" in large, bold, black capital letters. The sign is mounted on a white post. Behind the sign is a barrier made of horizontal metal rails with red and white diagonal stripes. The background shows green trees and a clear blue sky.

**ROAD
CLOSED**

Road Closure

- Detour signed by State
- Detour distance: 5.4 miles end-to-end
- 60 day closure with Incentive/Disincentive
- Night-time Work Allowed
- Local share is reduced by 50% per VT Legislation Act 153 of 2012

Traffic Control – Offsite Detour



- Detour: VT Route 9, to US Route 7, and VT Route 279, back to VT Route 9 (5.4 miles end-to-end)
 - Appropriate for large trucks and passenger cars
 - Adds 2.7 miles to the through route

Traffic Control – Offsite Detour: Pedestrians

- Pedestrian Detour Route: VT Route 9, to Safford Street, Gage Street, and Bradford Street back to VT Route 9 (0.8 miles end-to-end)

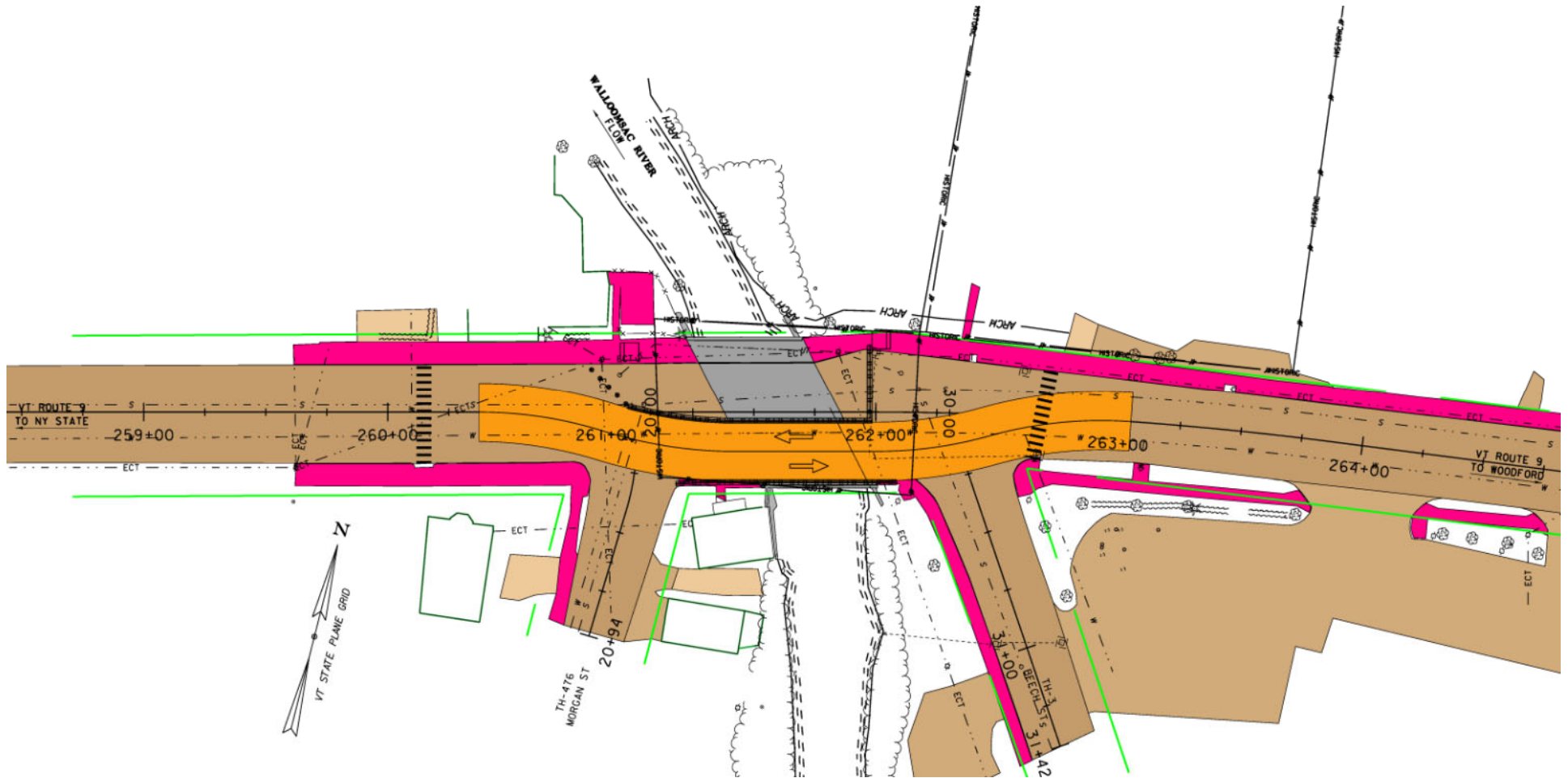




Phased Construction – Option 1

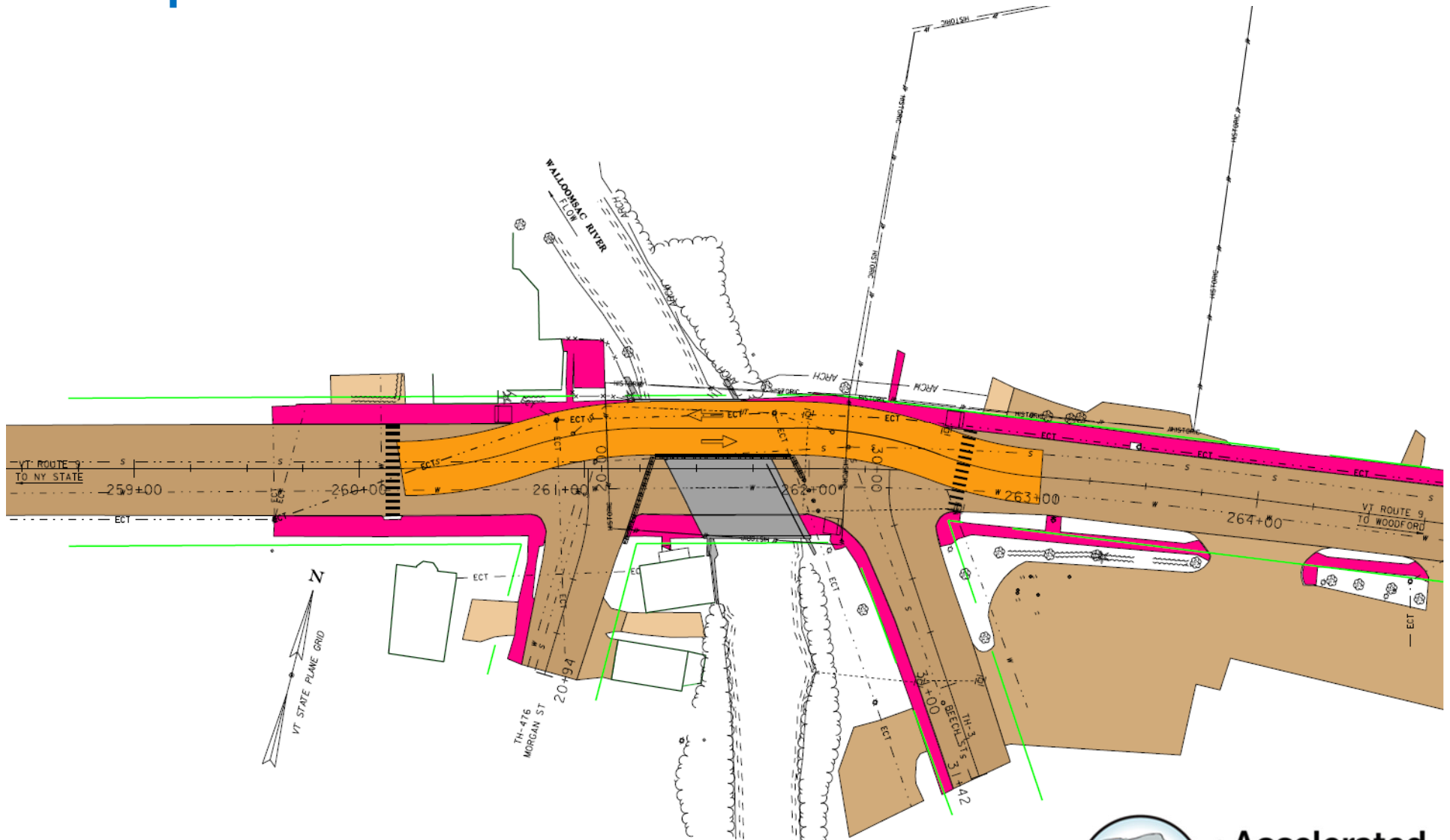
- Two way traffic maintained
- Bridge closed to pedestrians – offsite pedestrian detour for construction season

Option 1 Phased Construction - Phase 1



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Option 1 Phased Construction - Phase 2



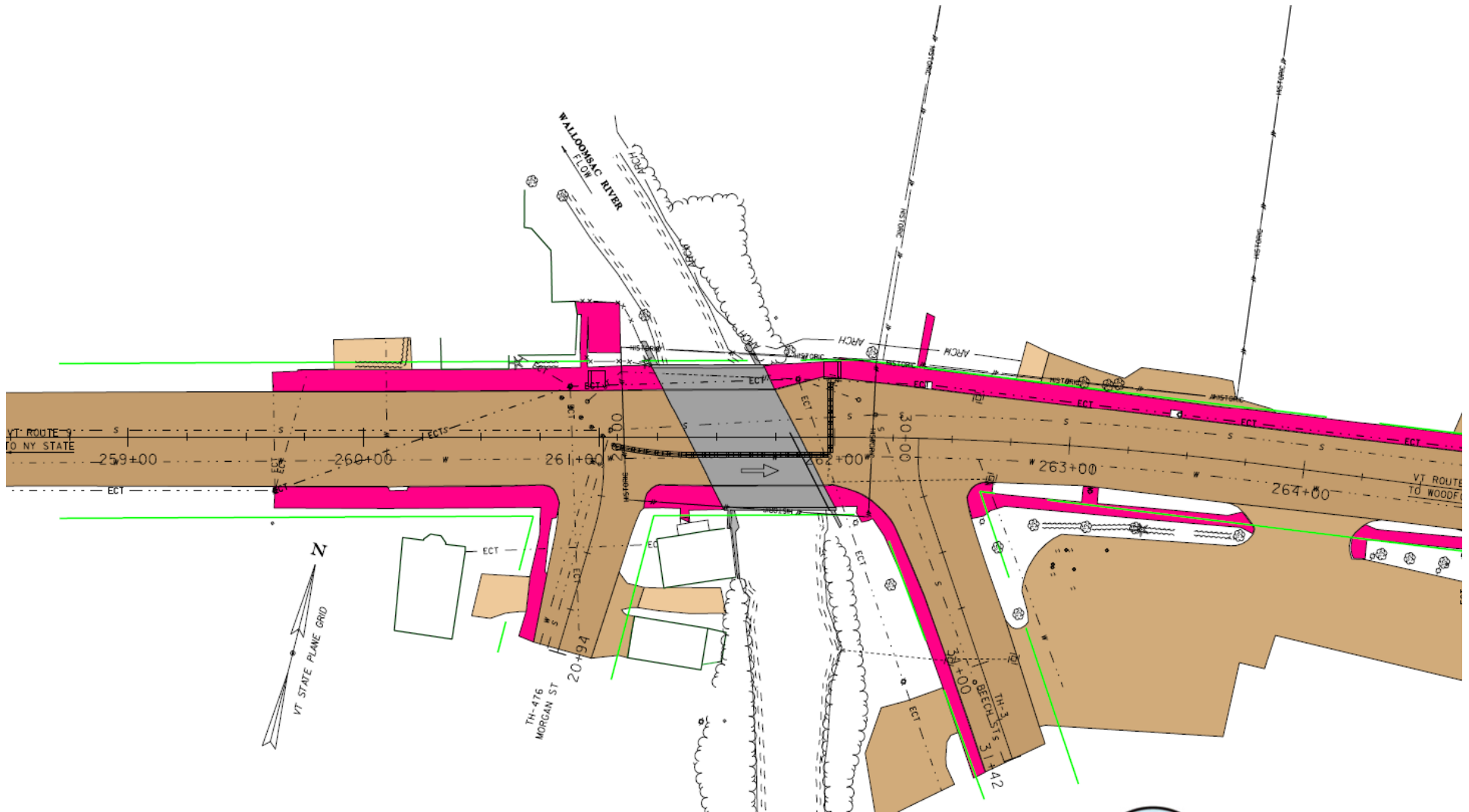
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Phased Construction – Option 2

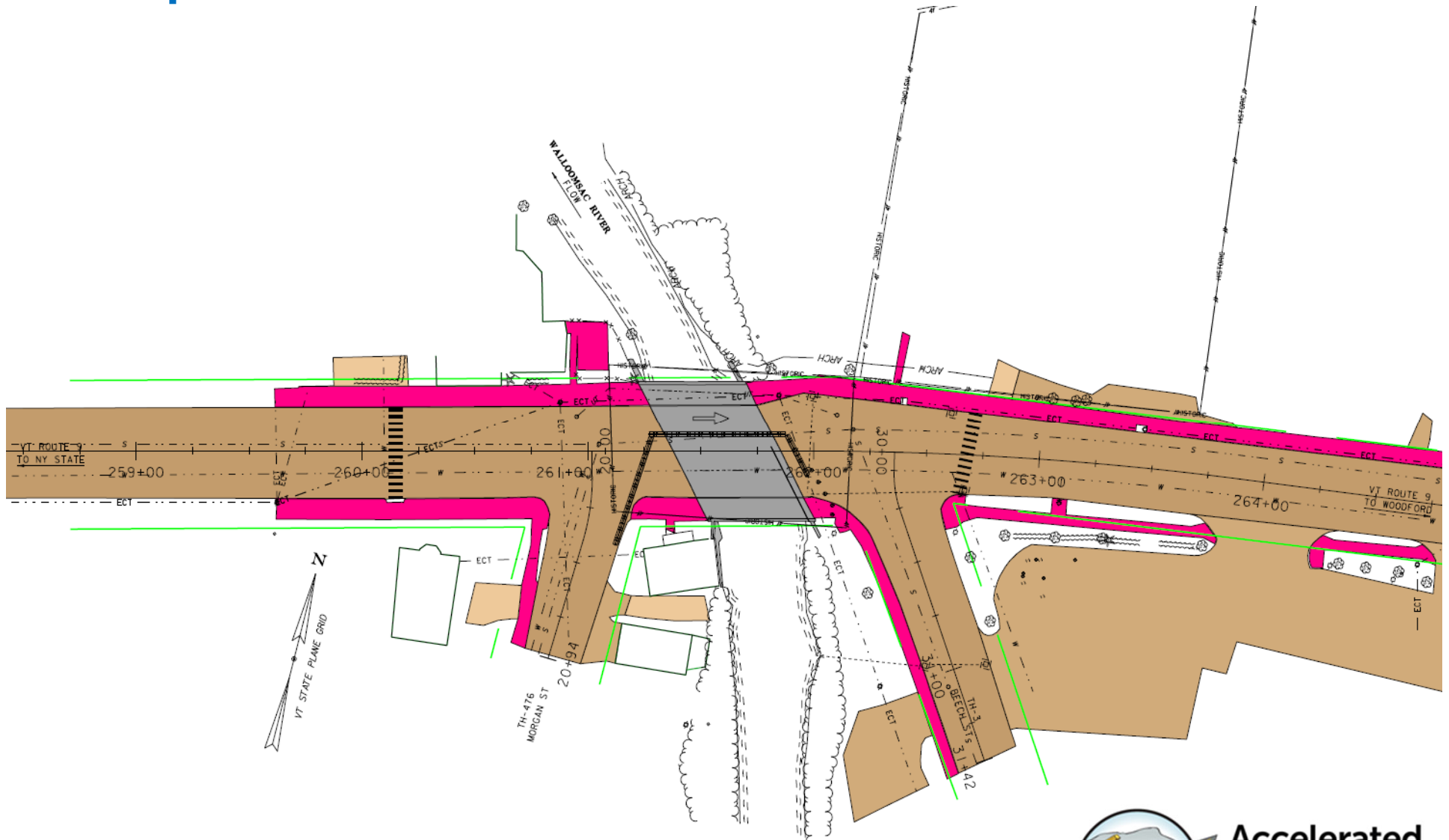
- Pedestrian and 1-way eastbound vehicular traffic maintained
- Offsite detour for westbound traffic

Option 2 Phased Construction - Phase 1



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Option 2 Phased Construction - Phase 2



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Recommended Scope

- Full Bridge Replacement with Traffic Maintained on an Offsite Detour
 - 60 day proposed closure, detour signed by State
 - 12'/8' typical with 9-foot wide sidewalk on both sides
 - Span length of approximately 50'
 - Does not meet hydraulic standard - none of the options considered would meet hydraulic standard due to site constraints
 - Shallow superstructure type to be chosen
 - Historic railing
 - 100 year design life
 - Right of Way Needed
 - Aerial Utility Relocation
 - Municipal/Buried Utility Relocation

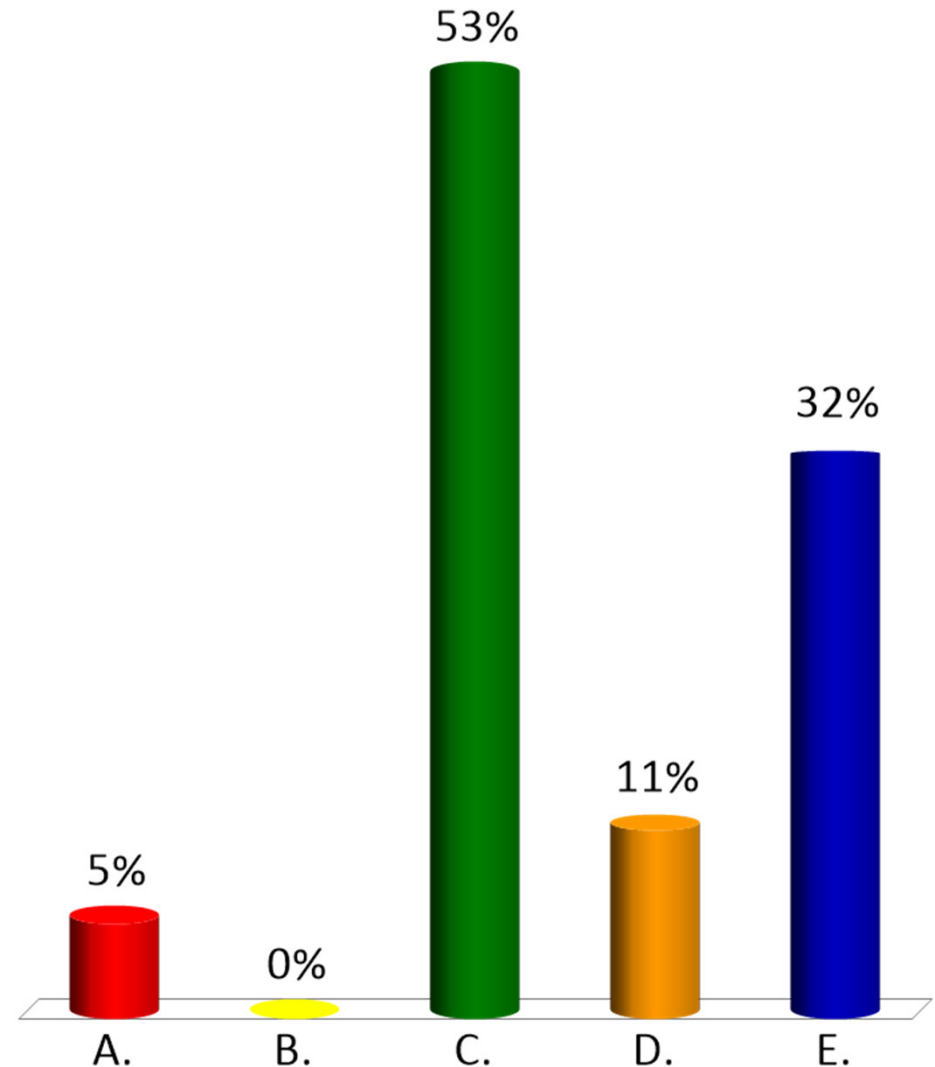


Alternatives Matrix

	Alt 1	Alt 2a	Alt 2b	Alt 2c	Alt 3
Bennington BF 1000(20)	Superstructure Repair	Superstructure Replacement			Full Bridge Replacement
	Short Term Lane Closures	Offsite Detour	2-Way Traffic Maintained by Phasing w/ Offsite Pedestrian Detour	Pedestrian and 1-Way Eastbound Vehicular Traffic Maintained by Phasing w/ Offsite Detour for Westbound Vehicular Traffic	Offsite Detour
Total Project Costs	568,984	1,753,734	2,473,765	2,541,265	3,138,822
Annualized Costs	37,932	58,458	82,459	84,709	31,388
TOWN SHARE	28,449	43,843	123,688	127,063	156,941
TOWN %	5%	2.5%	5%	5%	5%
Project Development Duration	4 years	4 years	4 years	4 years	4 years
Construction Duration	2 months	3 months	9 months	9 months	6 months
Closure Duration (If Applicable)	N/A	30 days	N/A	N/A	60 days
Typical Section - Roadway (feet)	40	40	40	40	40
Typical Section - Bridge (feet)	40	40	40	40	40
Geometric Design Criteria	Meets Minimum Standard	Meets Minimum Standard	Meets Minimum Standard	Meets Minimum Standard	Meets Minimum Standard
Hydraulics	Substandard Hydraulics and BFW	Substandard Hydraulics and BFW	Substandard Hydraulics and BFW	Substandard Hydraulics and BFW	Substandard Hydraulics
Utilities	No Change	Relocation - Aerial and Buried	Relocation - Aerial and Buried	Relocation - Aerial and Buried	Relocation - Aerial and Buried
ROW Acquisition	Yes	Yes	Yes	Yes	Yes
Road Closure	No	Yes	No	No	Yes
Design Life	15	30	30	30	100

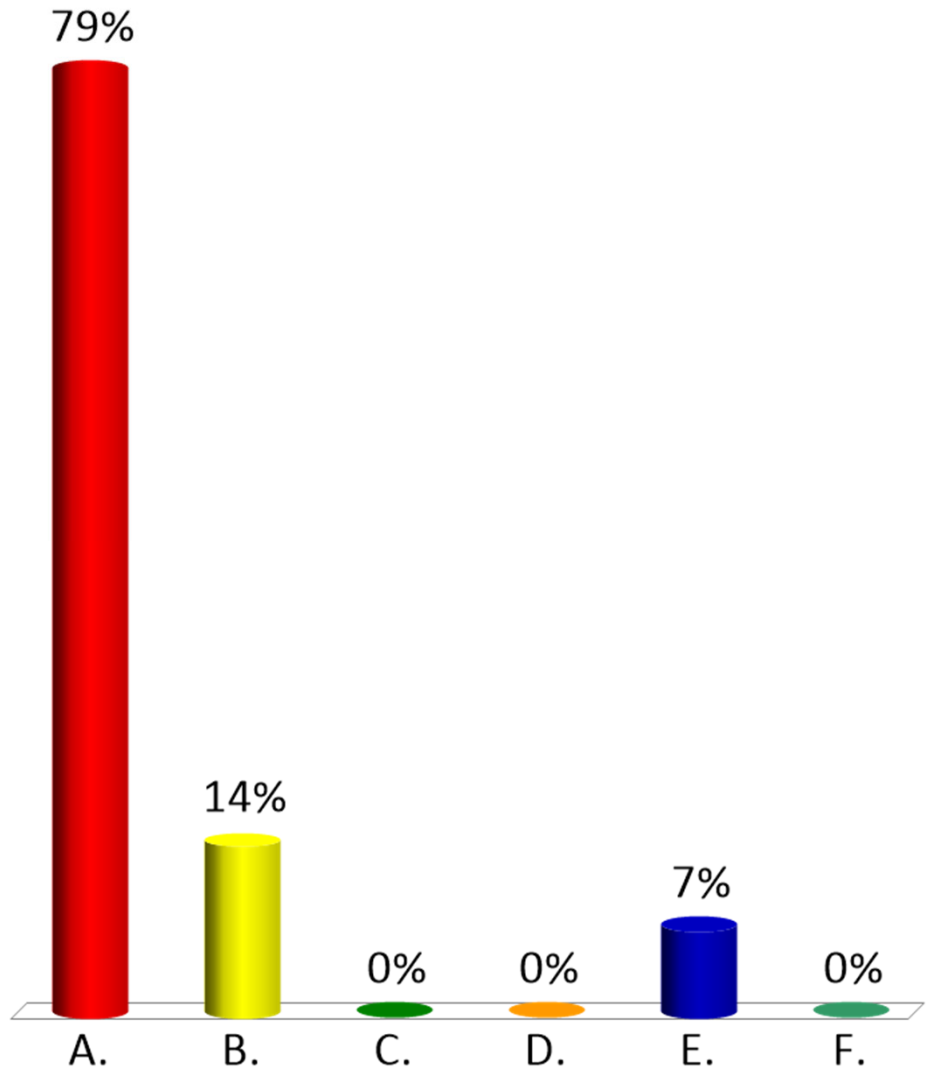
What would be the maximum acceptable length of closure for Bridge #6?

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



Which time of year would be most acceptable for Bridge #6 to be closed?

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

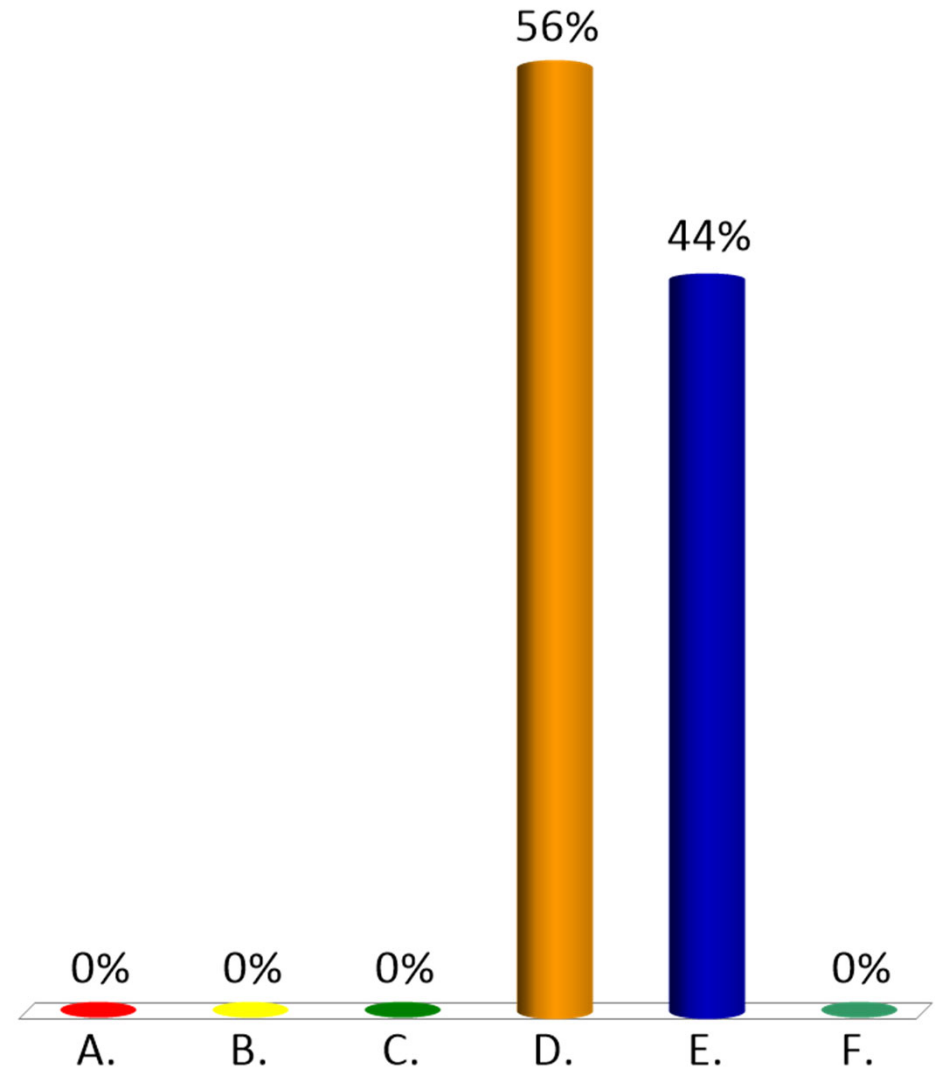


Preliminary Project Schedule

- Construction Start – 2023
 - Total Cost Estimate: \$3,140,000
 - Town Share: \$157,000

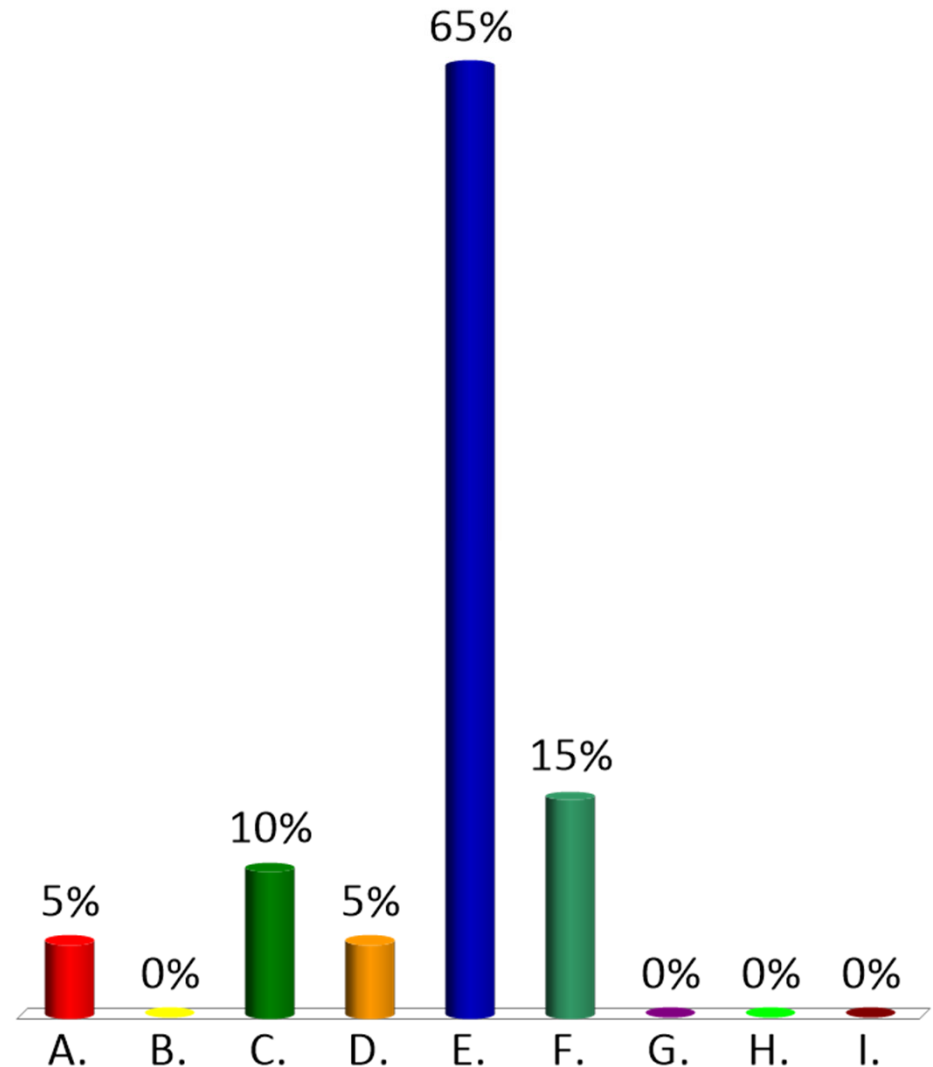
Which design aspect is the most important to you?

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



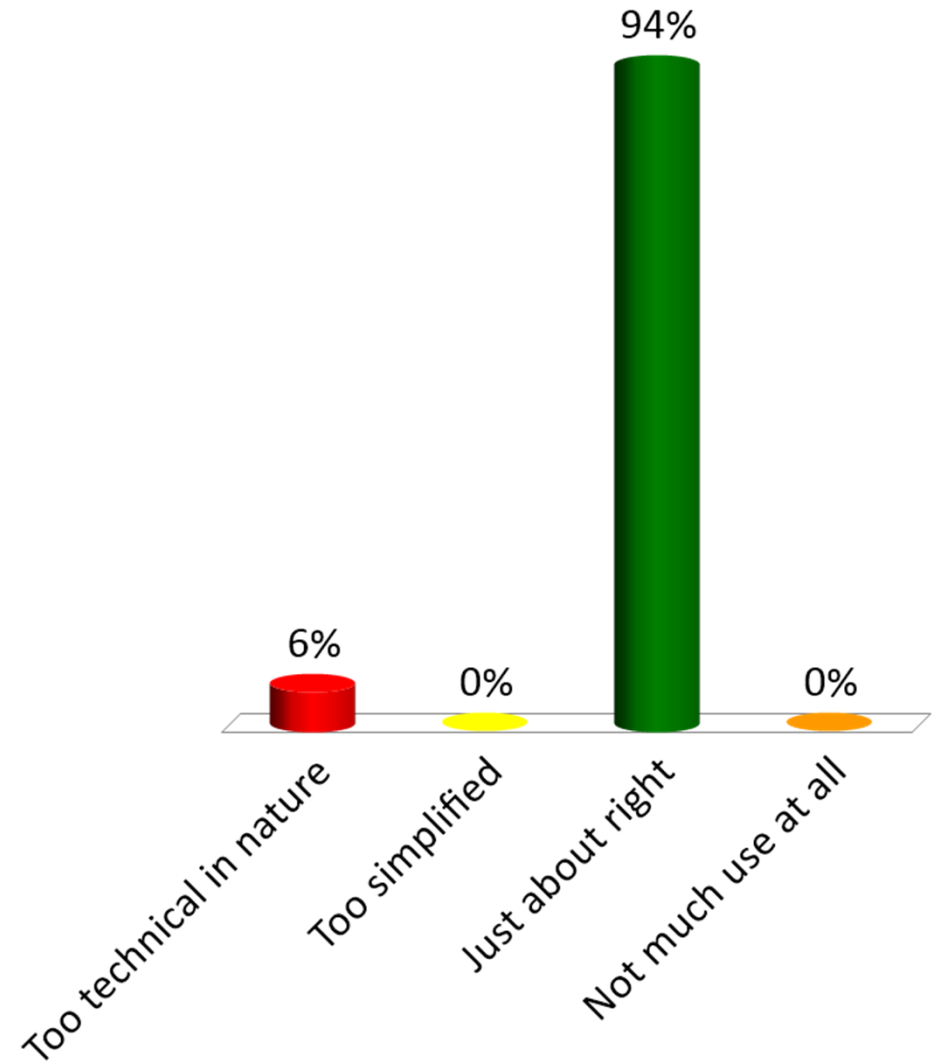
Which would you be most concerned about?

- A. Construction delays on VT Route 9
- B. Detour Distance
- C. Duration of Detour
- D. Bridge Aesthetics
- E. Business Impacts
- F. Environmental Impacts
- G. Recreational Impacts
- H. Other
- I. Not really concerned



Did you find this presentation to be?

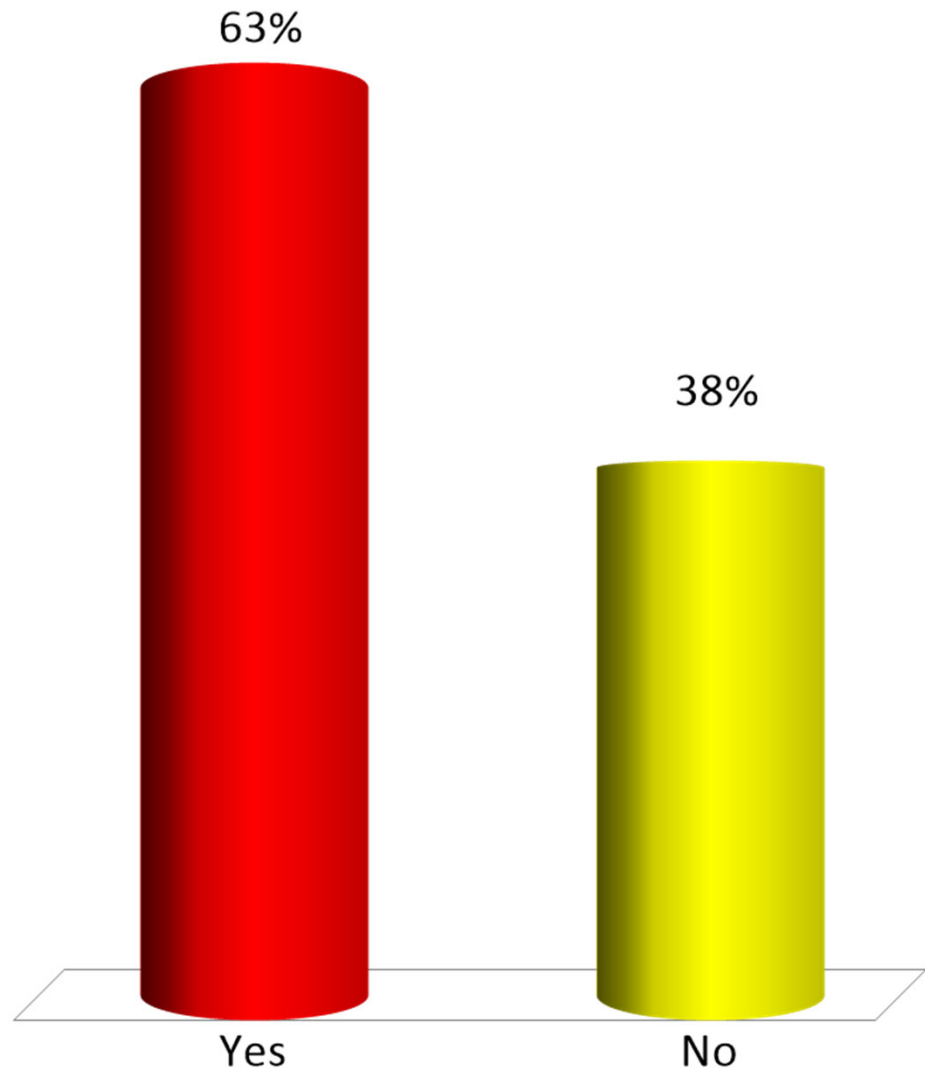
- A. Too technical in nature
- B. Too simplified
- C. Just about right
- D. Not much use at all



Do you find the recommended scope of work satisfactory?

A. Yes

B. No



Next Steps – Bridge #6

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)

For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/12J606>



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Questions & Comments

VT Route 9– Bridge #6 over Walloomsac

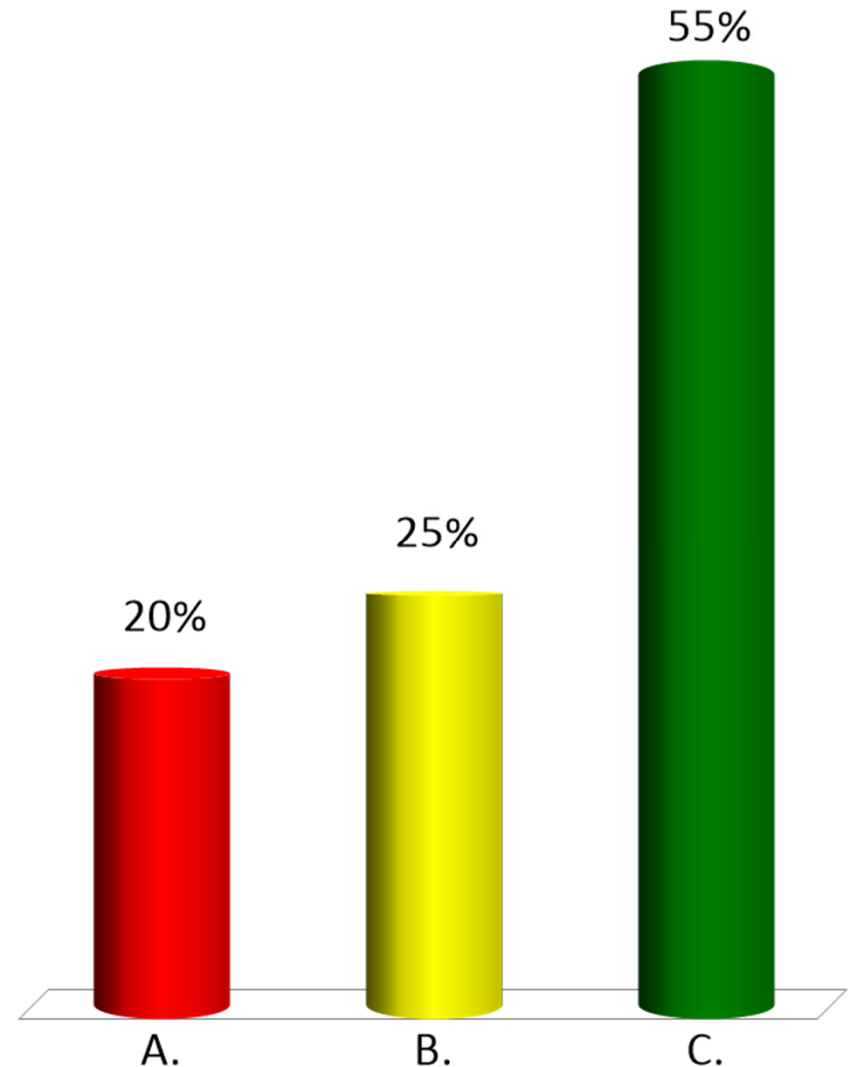
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Which alternative do you have strongest support for?

- A.** **Alt 1:** Minor Rehabilitation
- B.** **Alt 2:** Superstructure Replacement
- C.** **Alt 3:** Full Bridge Replacement



Which traffic control method do you have strongest support for?

- A. Bridge Closure**
(50% Reduction in Town Share)
- B. Phased Construction**

