



Woodstock Village BF 020-2(43) Alternatives Presentation Meeting

US Route 4 – Bridge #51 over Kedron Brook

April 21, 2015



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Introductions

Jennifer Fitch, P.E.

VTrans Scoping Project Manager

Laura Stone, P.E.

VTrans Scoping Engineer

Rob Young, P.E.

VTrans Design Project Manager

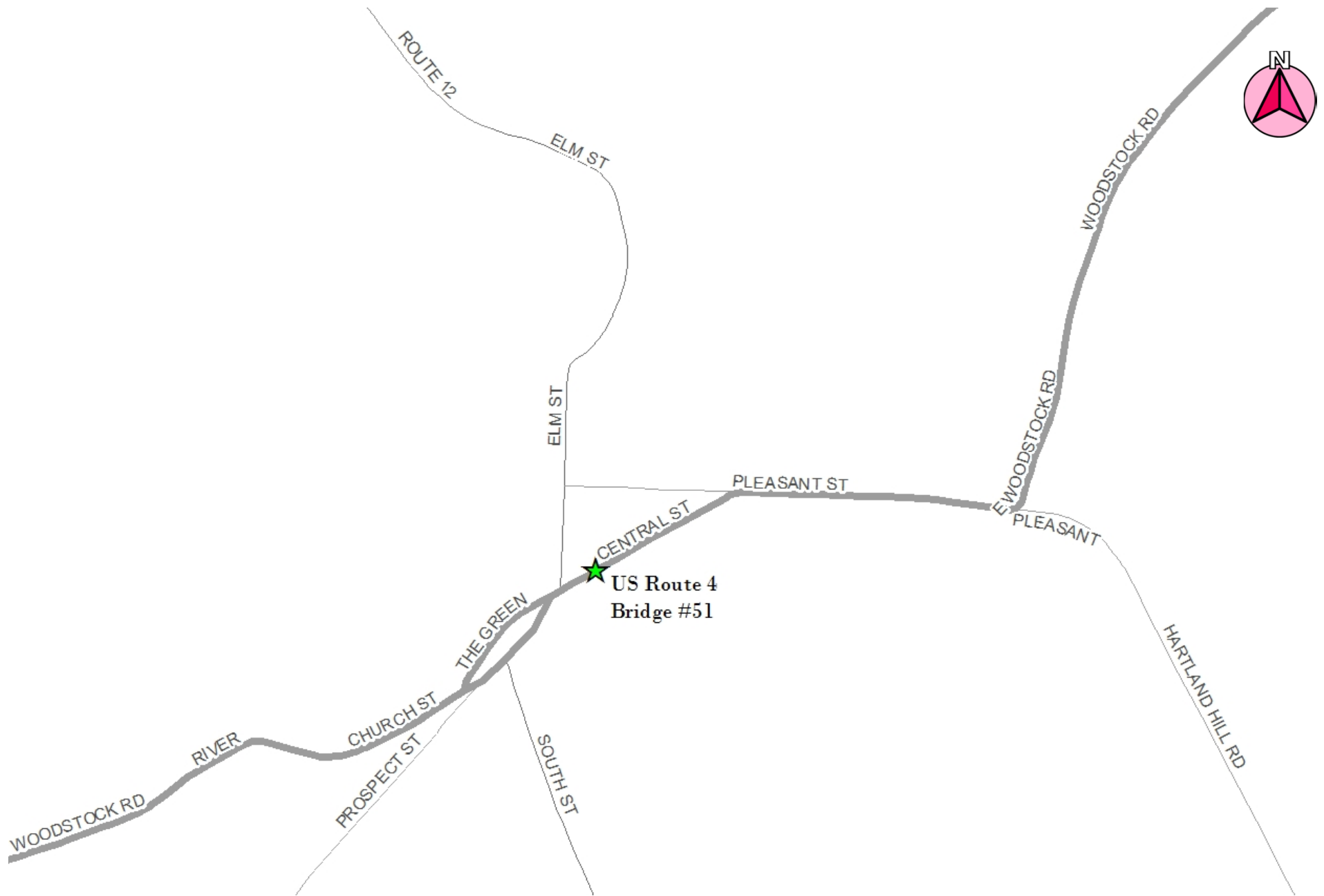
Judith Ehrlich

VTrans Historic Preservation Officer

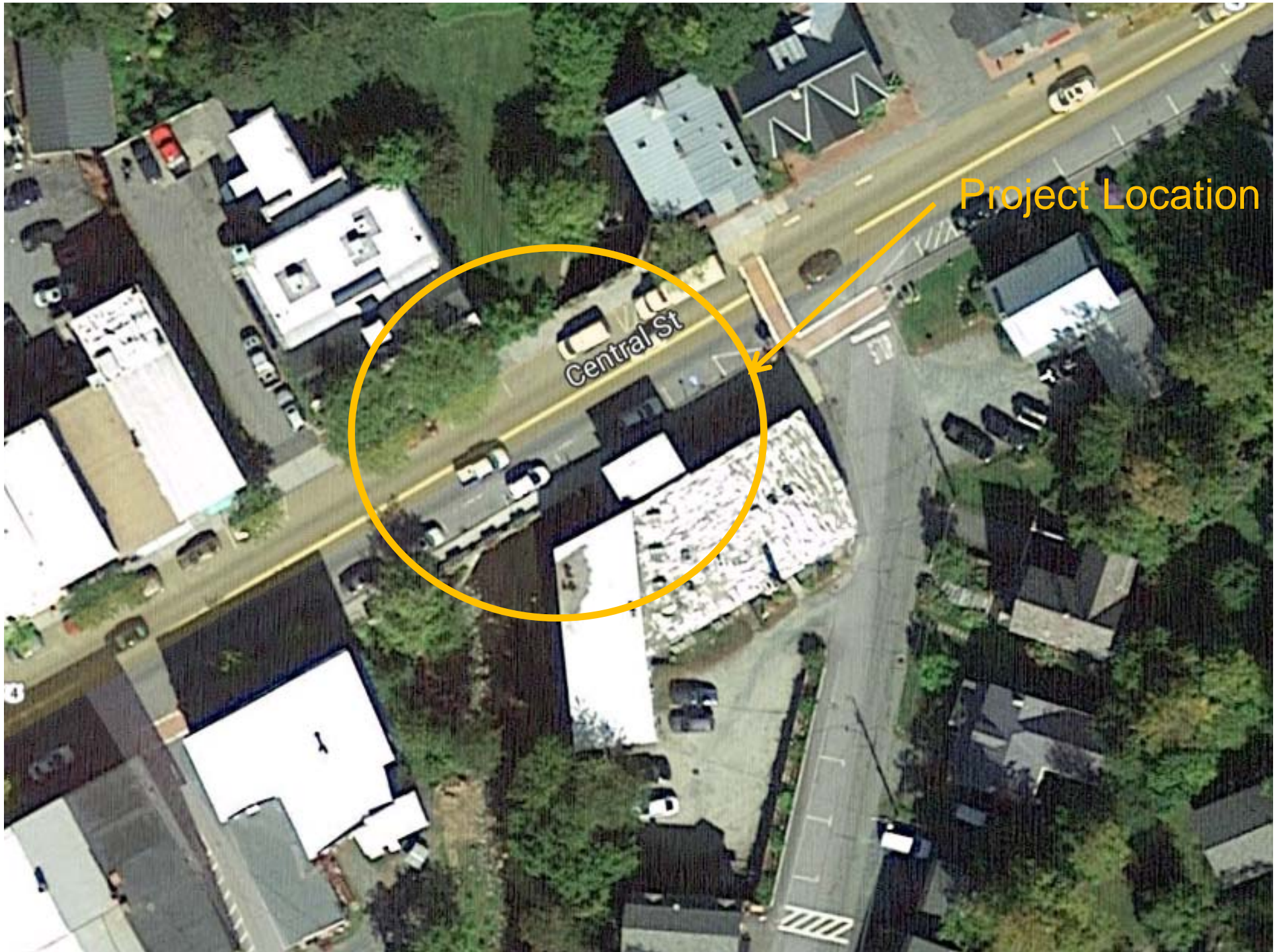


Purpose of Meeting

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



Location Map



Project Location

Central St

4

Meeting Overview

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

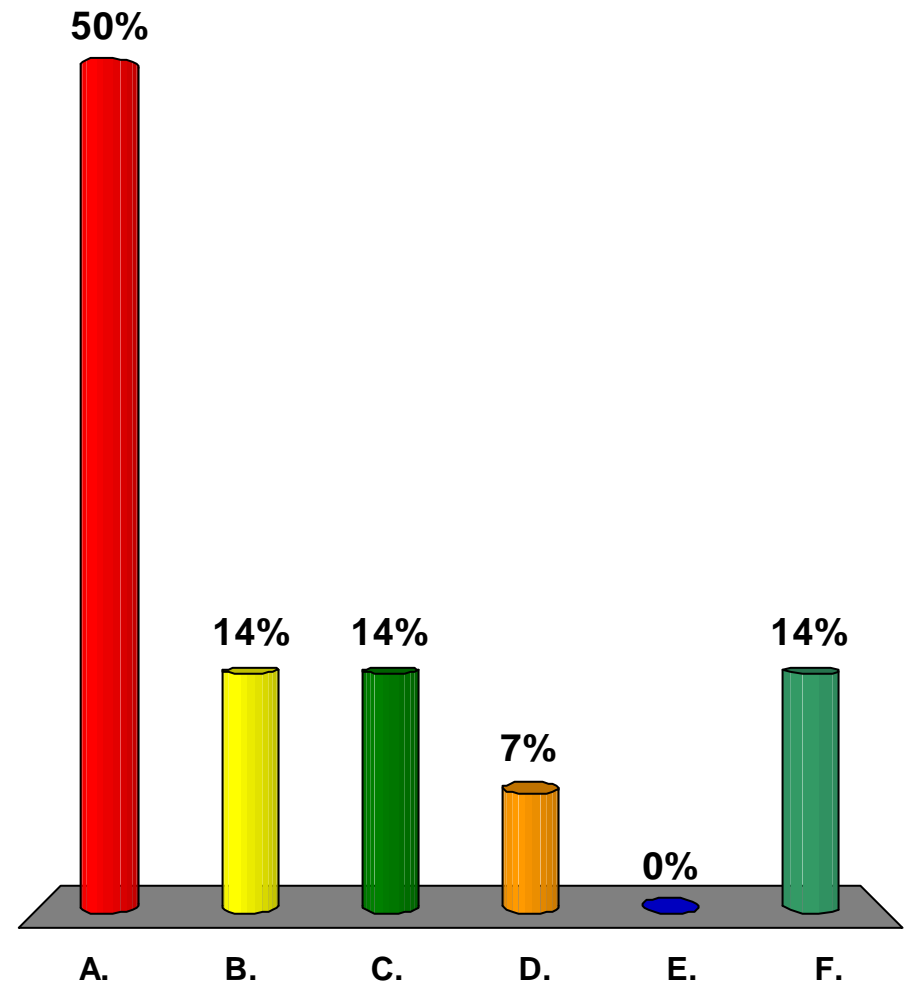
VTrans Project Development Process



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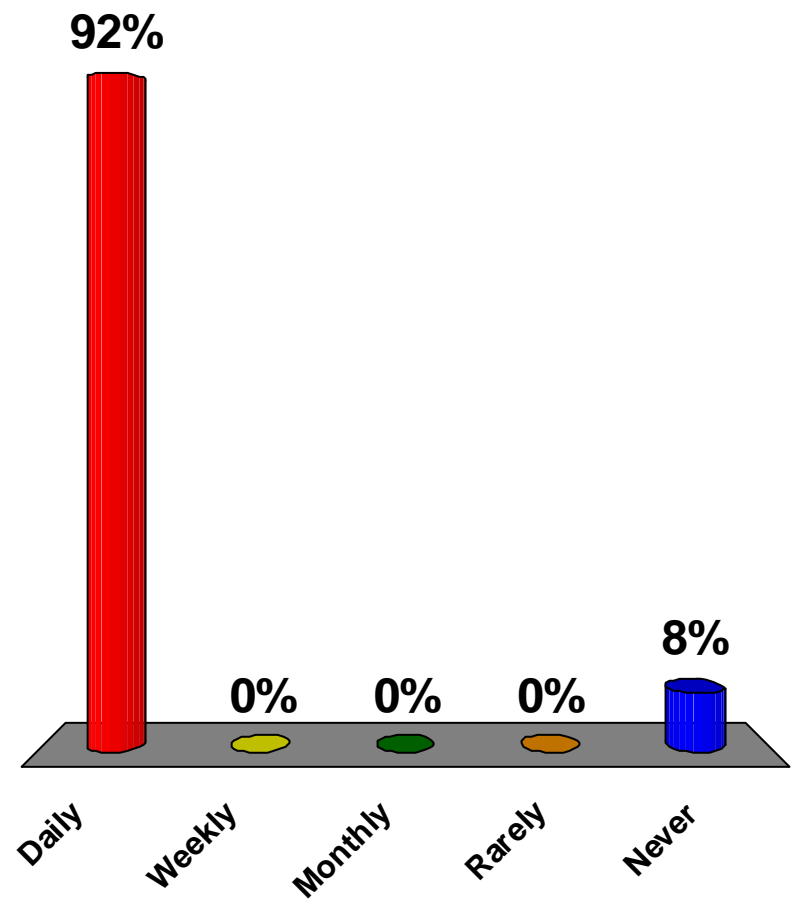
Who are you representing?

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



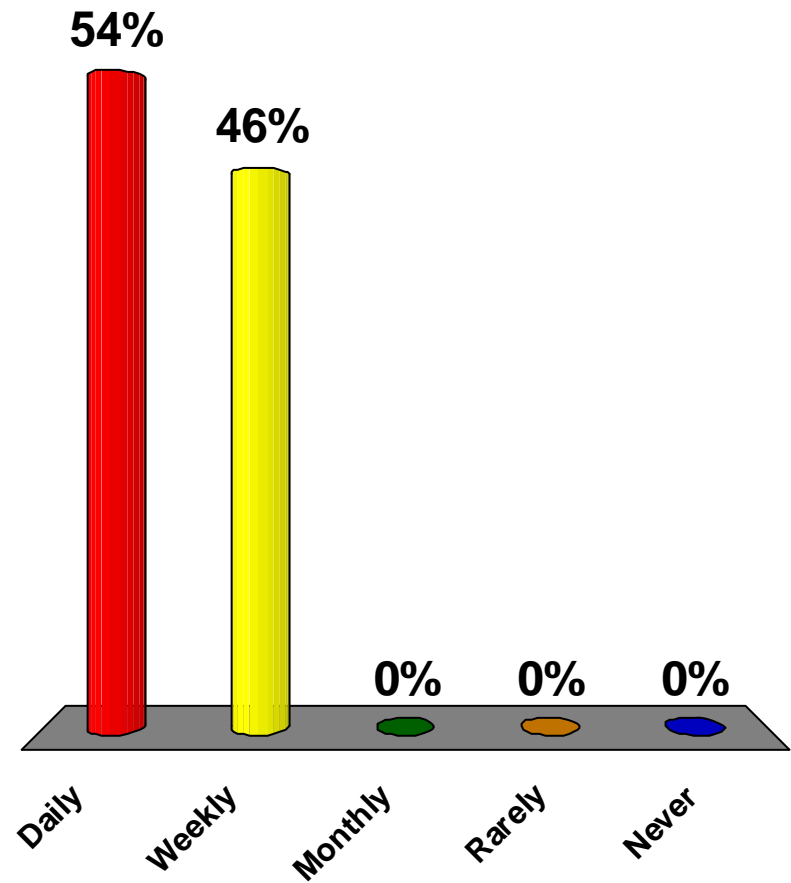
How often do you use this segment of US Route 4?

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



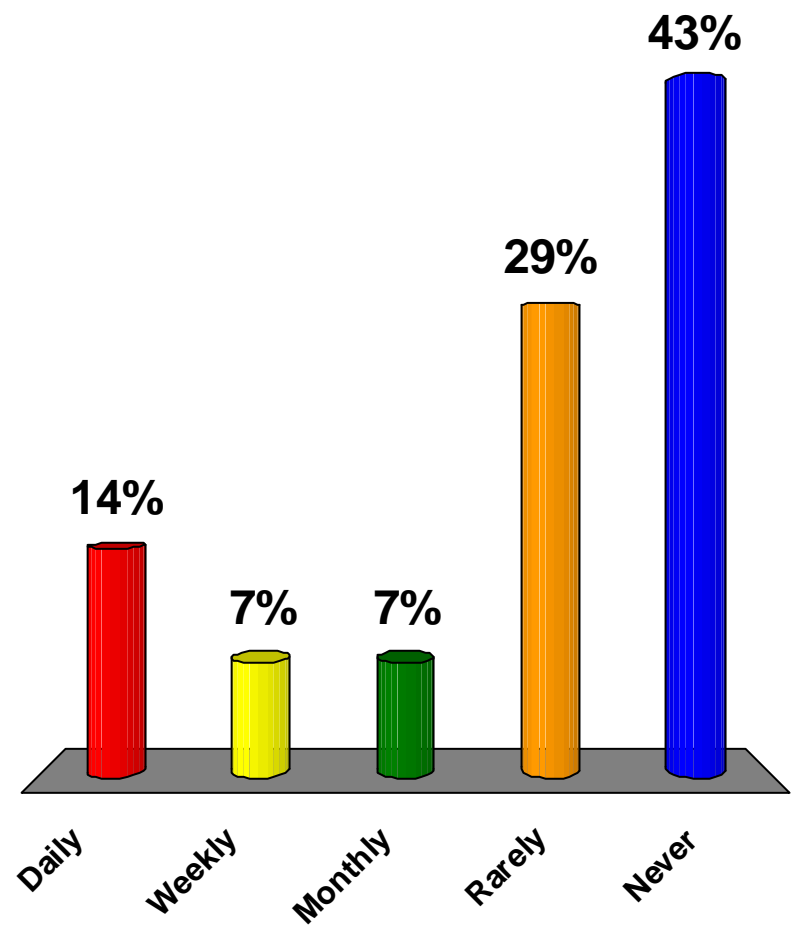
How often do you walk over the bridge?

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



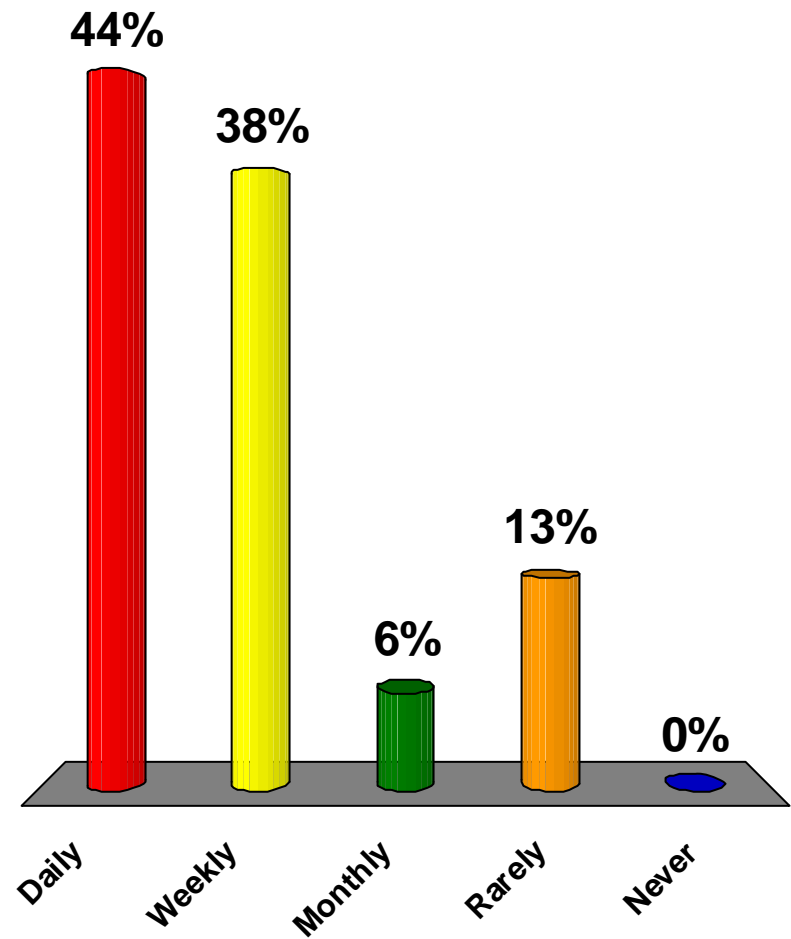
How often do you bike over the bridge?

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



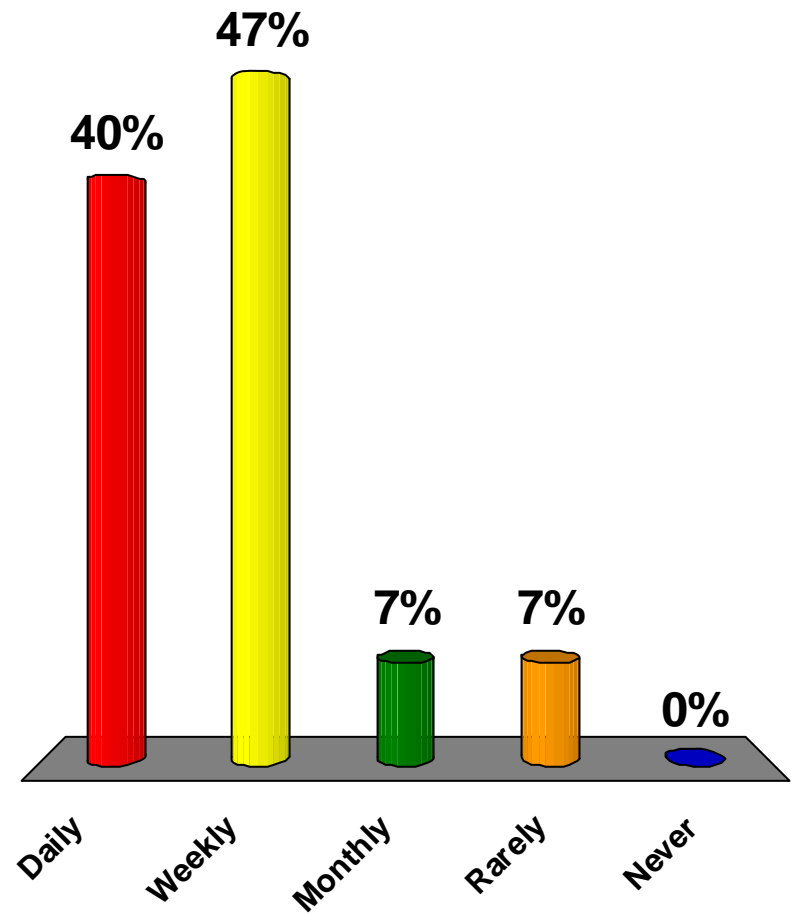
How often do you park on this segment of US Route 4?

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



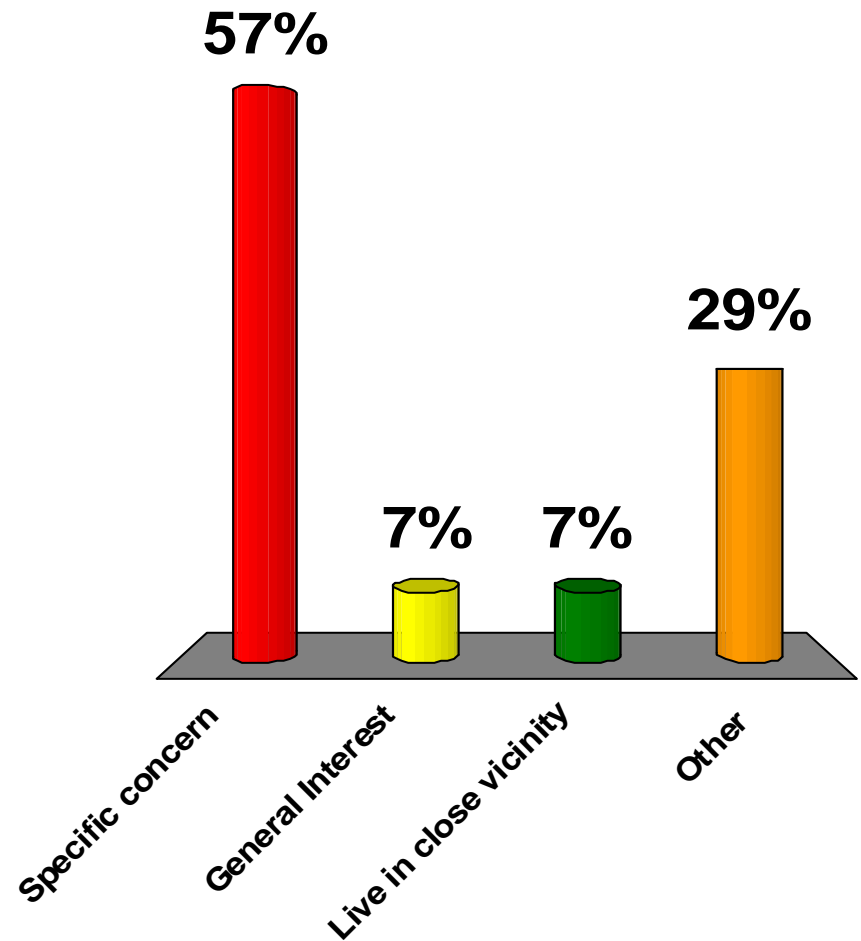
How often do you visit the shops on this segment of US Route 4?

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



What is your reason for attending this meeting?

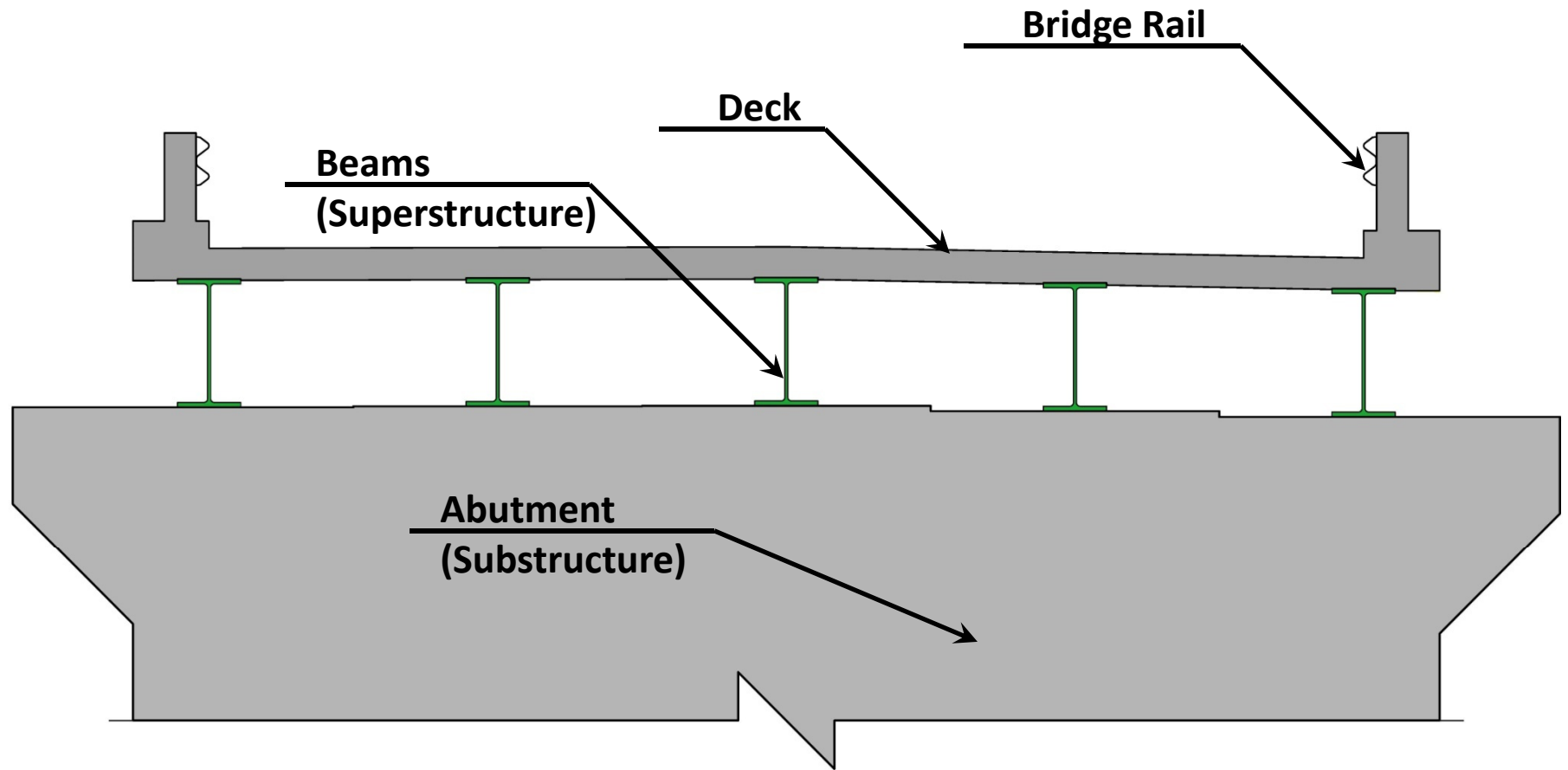
- A. Specific concern
- B. General Interest
- C. Live in close vicinity
- D. Other



Project Overview

- Existing Conditions
- Alternatives Considered
- Recommended Alternative

Description of Terms Used



Cross Section of Bridge



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Looking East over Bridge



Existing Conditions – Bridge #51

- Roadway Classification –Principal Arterial on NHS (Class 2 TH)
- Bridge Type –34' Long Concrete T-Beam Bridge
- Constructed in 1935
- Ownership – Village of Woodstock

Existing Conditions – Bridge #51

- Concrete T-Beams have saturation and exposed reinforcing steel throughout
- Bridge is too narrow
- Bridge does not meet minimum hydraulic standard
- Parking meters and signs along the roadway are located in the clear zone

Cracks and Saturation of Deck and T-Beams



Existing Conditions - Bridge #51

- Deck Rating 5 (Fair) 07/02/2013
- Superstructure Rating 5 (Fair)
- Substructure Rating 7 (Good)

Looking West over Bridge



Existing Conditions – Bridge #51

- Bridge and approach are narrow
- Parking meters and signs are located within clear zone

Resource Constraints



Existing Conditions - Bridge #51

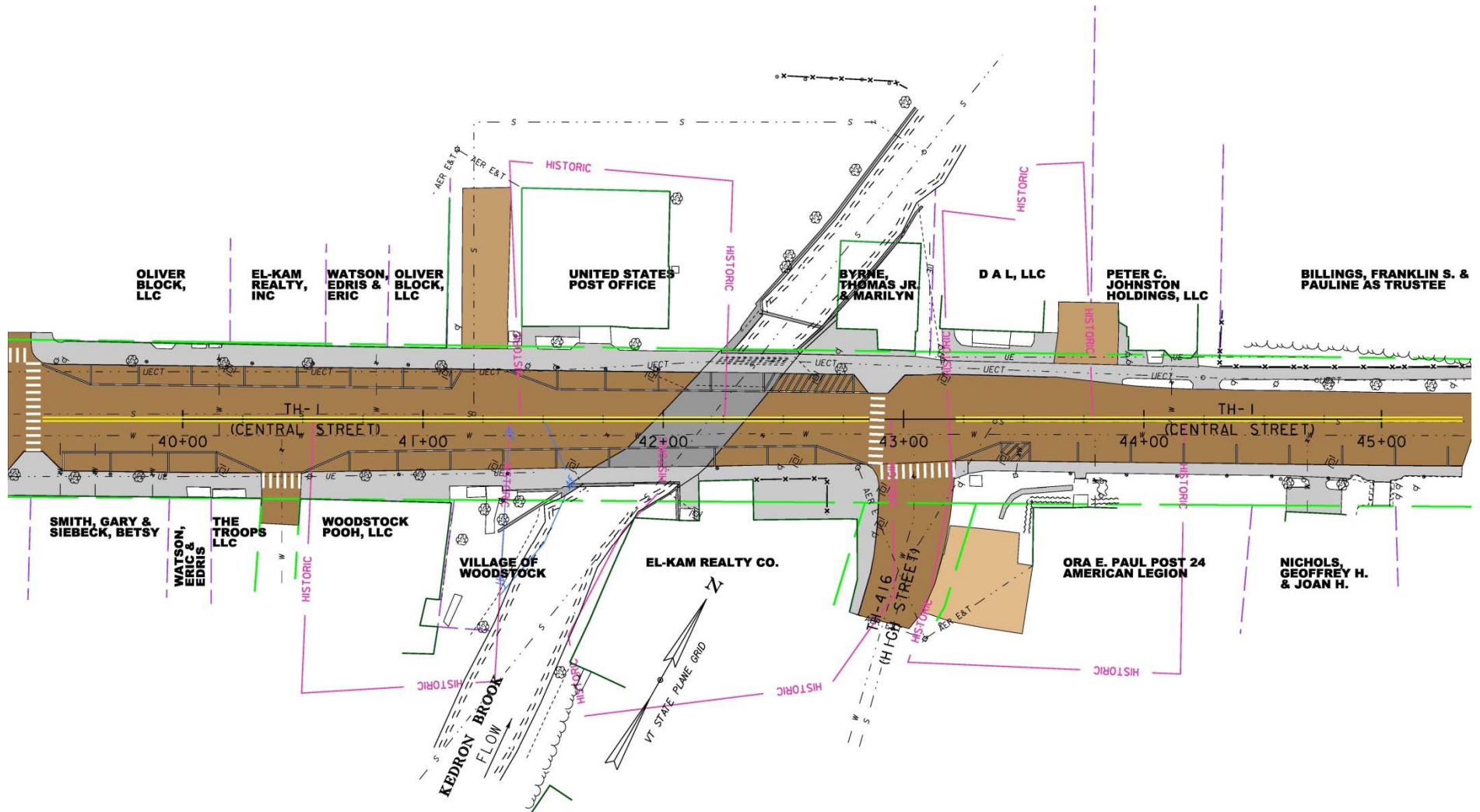
- Historic Bridge – ornamental hexagonal concrete railings typical of 1930's
- Located within the Woodstock Village Historic District
- Section 4(f) park property located in southwest quadrant
- Aquatic Organism Passage

07/02/2013

Existing Conditions



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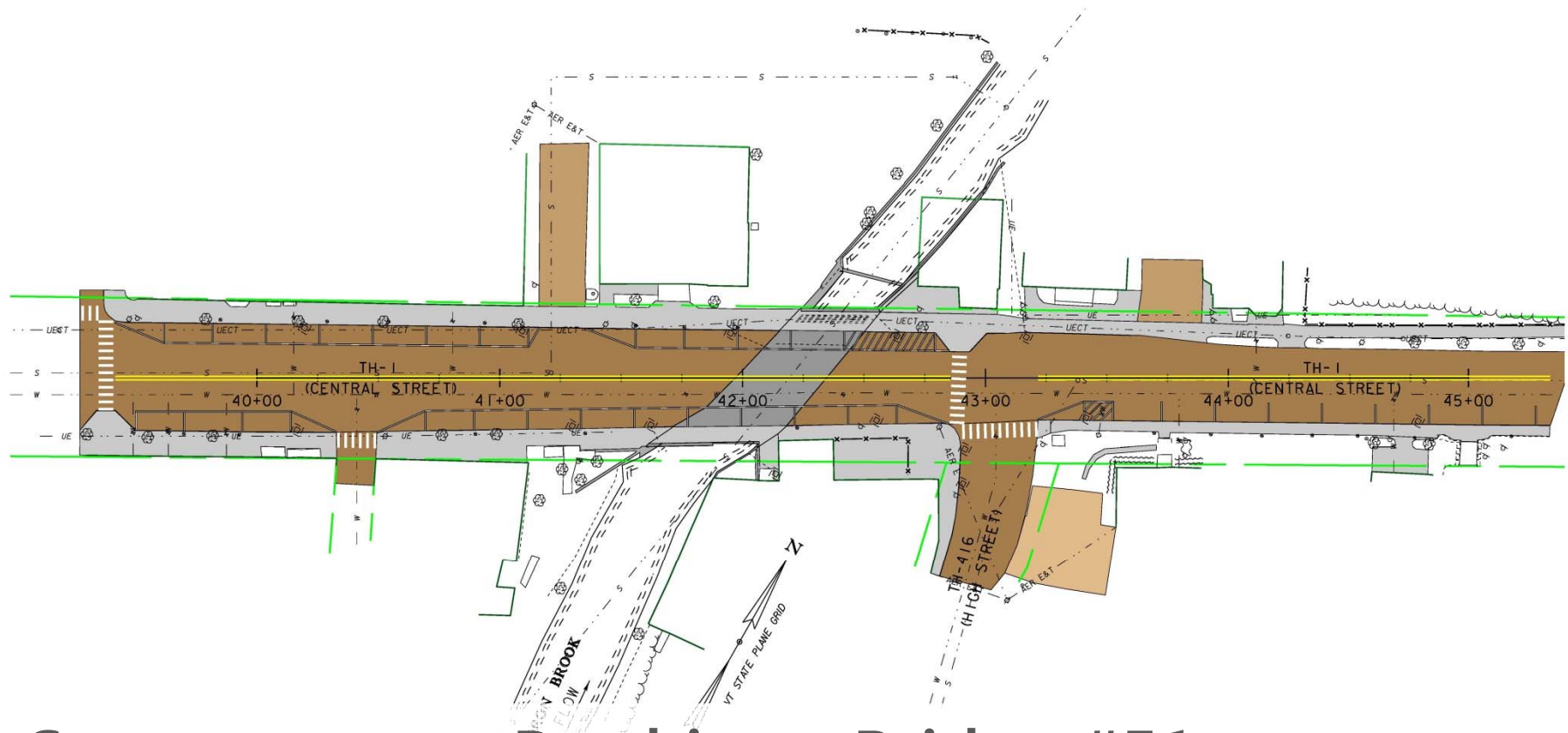
Design Criteria and Considerations

- ADT of 10,600
- DHV of 1,200
- % Trucks: 4.6
- Design Speed of 25 mph
- Historic bridge located in historic district
- Historic Section 4(f) park located in southwest corner
- Extensive utility relocation
- Access to local businesses throughout construction

Alternatives Considered – Bridge #51

- No Action
 - Additional maintenance required within 10 years
- Superstructure Patching
 - Least-up front cost
 - No Substructure work
 - Substandard width and hydraulics
- Superstructure Replacement
 - No substructure repair required
 - Substandard width and hydraulics
- Full Bridge Replacement On Alignment
 - Substandard width and hydraulics
 - Longest service life

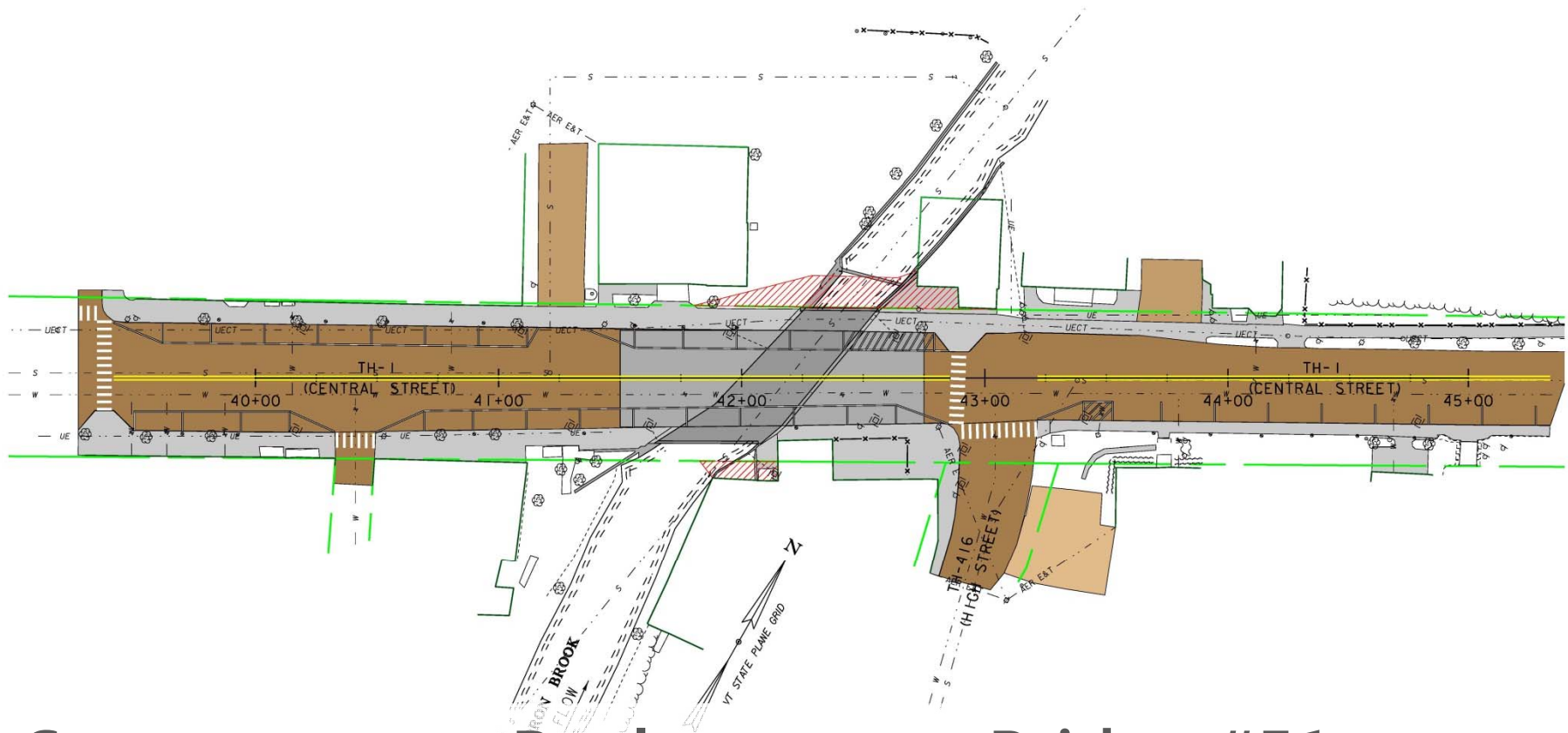
Alternative 1 Layout



Superstructure Patching - Bridge #51

- Substandard Width

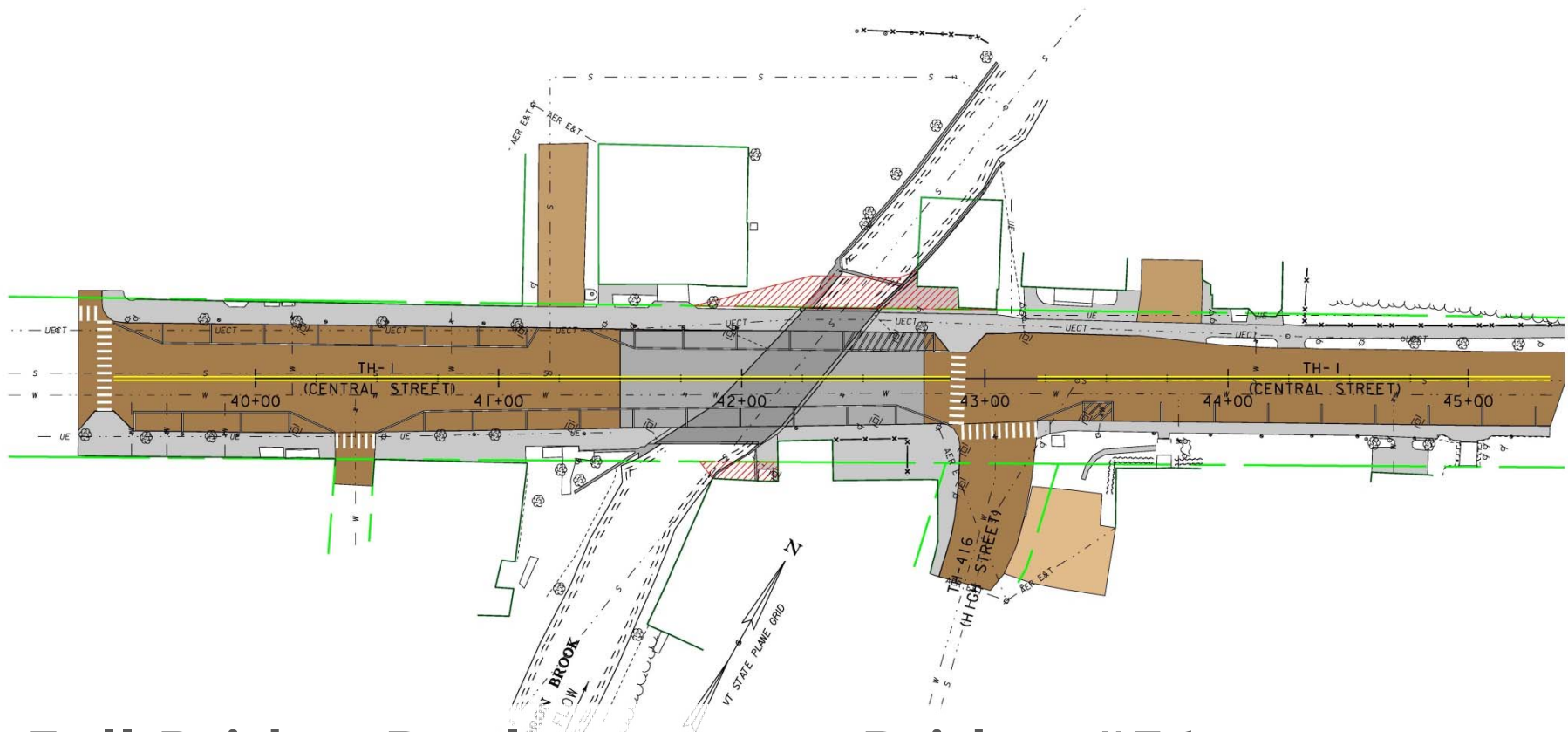
Alternative 2 Layout



Superstructure Replacement - Bridge #51

- Substandard Width

Alternative 3 Layout

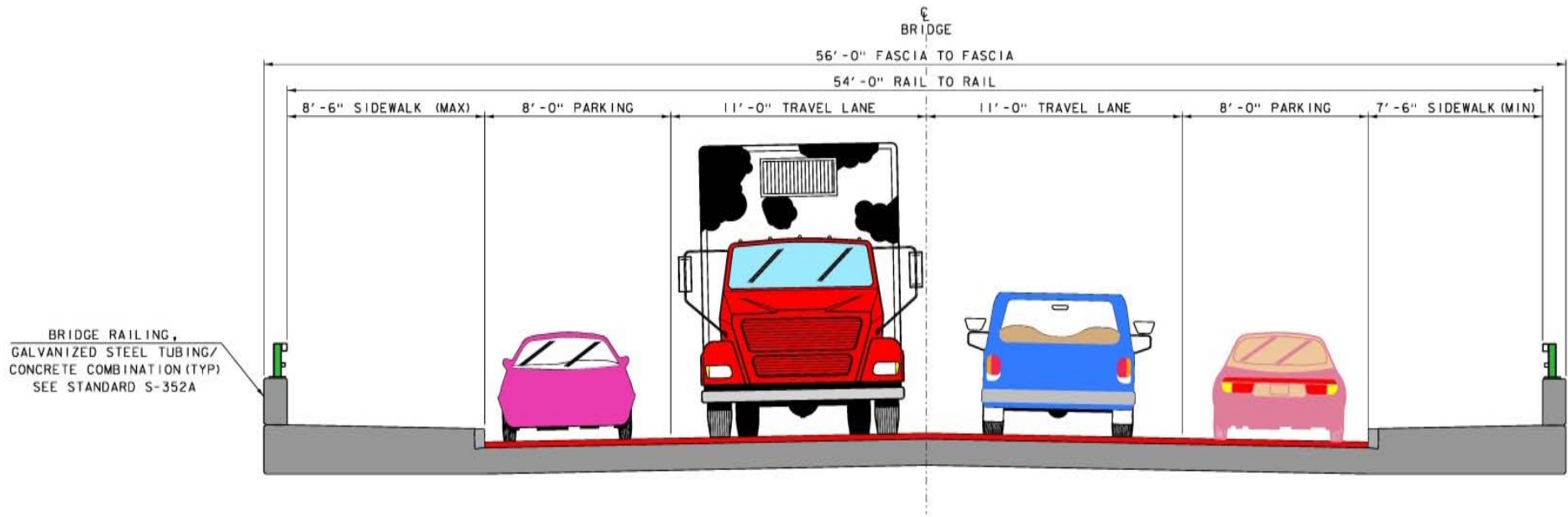


Full Bridge Replacement - Bridge #51

- Match existing geometry due to site constraints

Proposed Typical Section

- Proposed Curb to Curb = 38' (Existing is 38')
- Proposed Fascia to Fascia = 56' (Existing is 56')



Recommended Alternative - Bridge #51

- Superstructure Replacement
 - Replace superstructure with precast slab
 - Maintain existing bridge width and lane configuration (7.5' sidewalk – 8' parking – 11' travel – 11' travel – 8' parking – 8.5' sidewalk)
 - 34' single span
 - Does not meet hydraulic standard - none of the options considered would meet hydraulic standard due to site constraints
 - Major utility relocation needed
 - ROW needed
 - Historic railing



What Will the New Bridge Look Like?



Railing Example - Bridge #51

- Tenney Bridge Rail

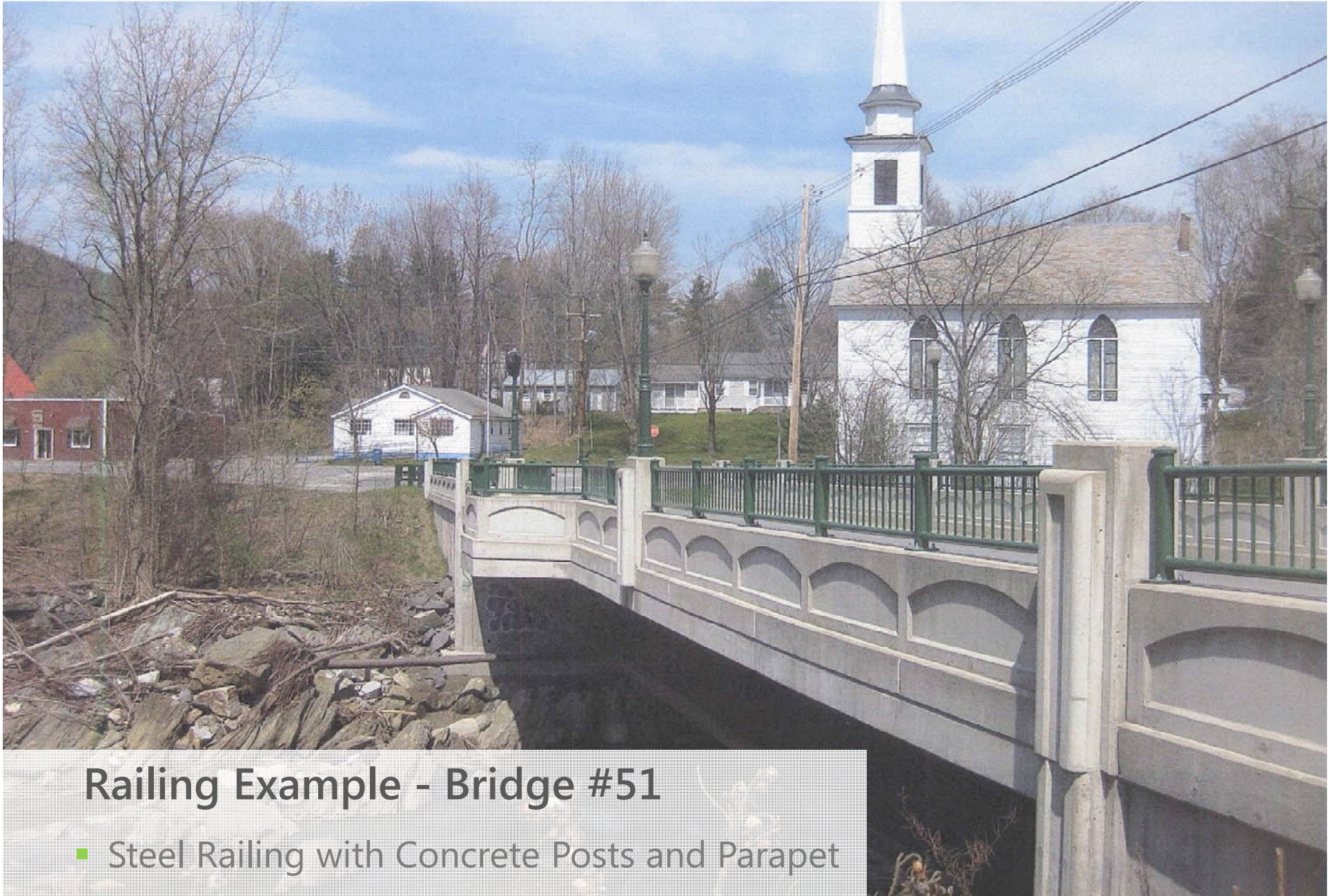
What Will the New Bridge Look Like?



Railing Example - Bridge #51

- Steel Concrete Combination Railing

What Will the New Bridge Look Like?



Railing Example - Bridge #51

- Steel Railing with Concrete Posts and Parapet

What Will the New Bridge Look Like?



Railing Example - Bridge #51

- Concrete Railing - Windows

What Will the New Bridge Look Like?



Railing Example - Bridge #51

- Concrete Railing – No Windows

Which bridge railing do you prefer?

A.



B.



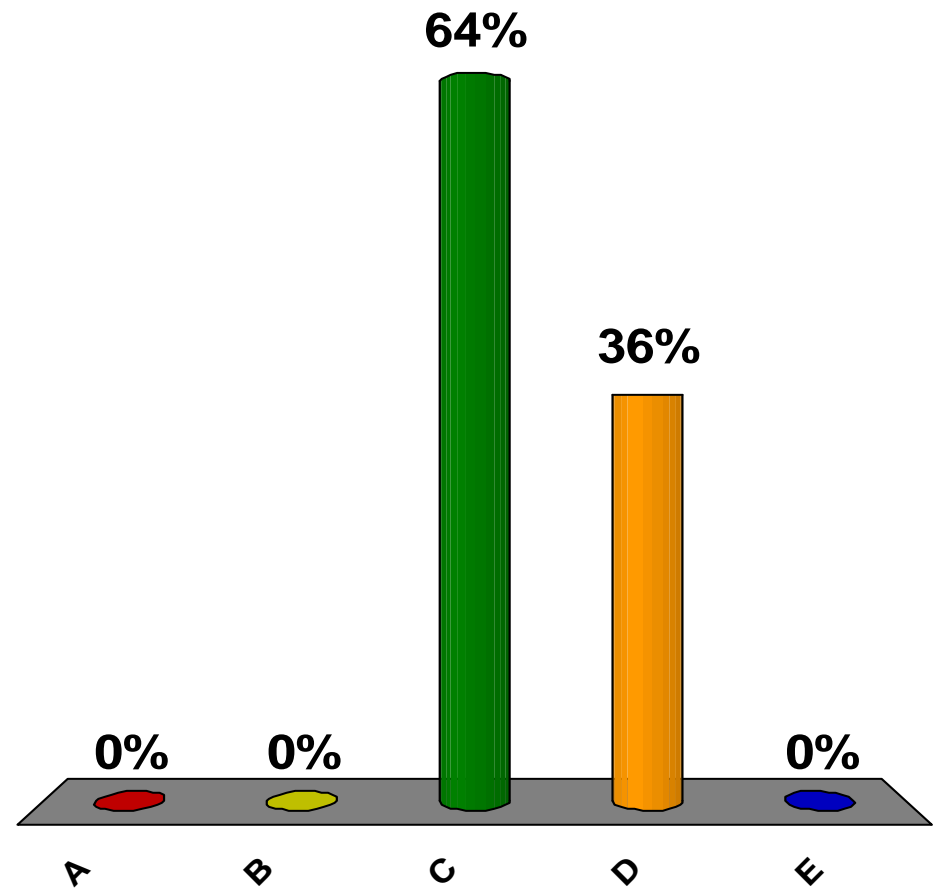
C.



D.



E.



Maintenance of Traffic Options Considered

- Short Term Road Closure w/ Offsite Detour
 - Signed by State
 - Passenger car/pedestrian route: 0.56 miles end-to-end
 - Regional truck detour route: 73.6 miles end-to-end
 - By closing the bridge to traffic during construction, the local share is reduced by 50%
- Phased Construction
 - Option 1: 2-Way Traffic maintained by phasing with offsite pedestrian detour
 - Option 2: Pedestrian and 1-way eastbound vehicular traffic maintained by phasing with offsite detour for westbound traffic
- Temporary Bridge
 - Not considered due to site constraints



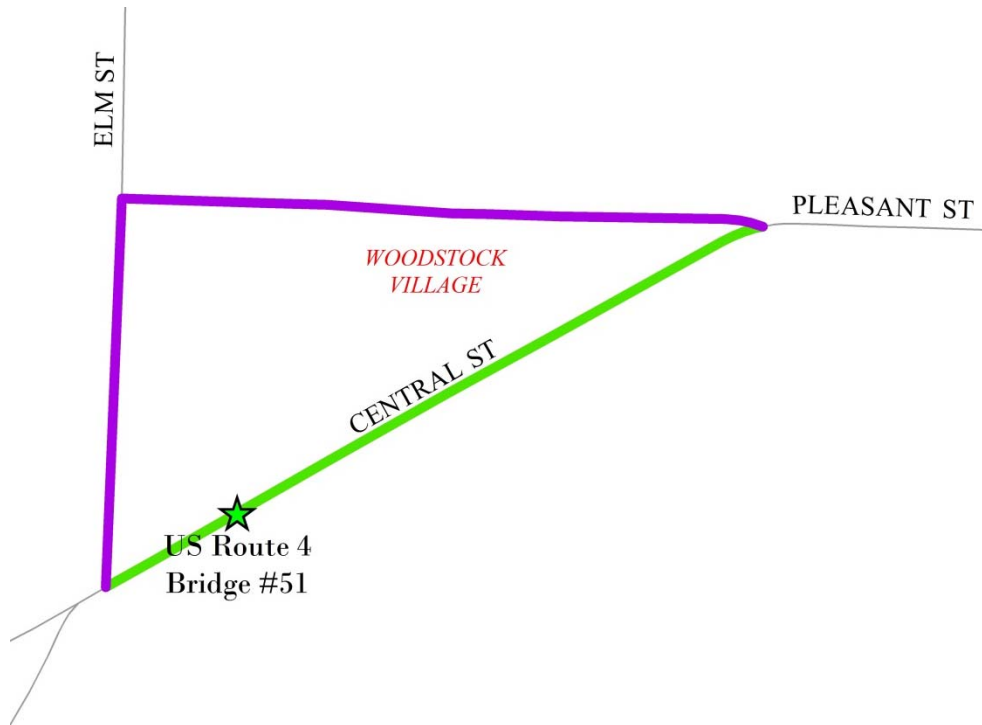


Road Closure

- Approx. 3 or 6 week bridge closure depending on alternative chosen
- Detour route signed by State
- Shortest passenger car route available: 0.56 miles end-to-end

Local Detour Route for Cars and Pedestrians

- US Route 4, to Elm Street, Pleasant Street, back to US Route 4



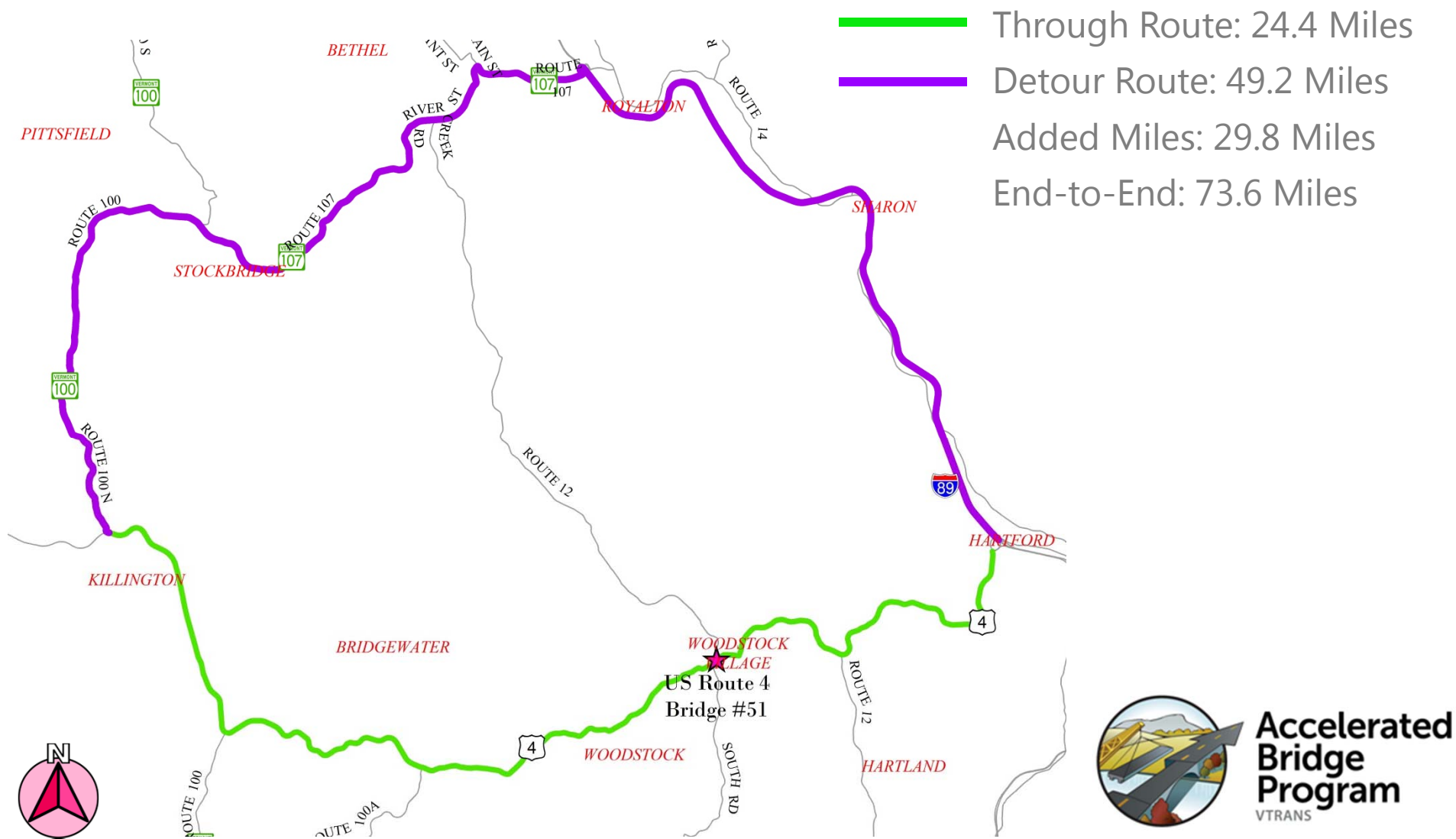
- Through Route: 0.25 Miles
- Detour Route: 0.31 Miles
- Added Miles: 0.06 Miles
- End-to-End: 0.56 Miles



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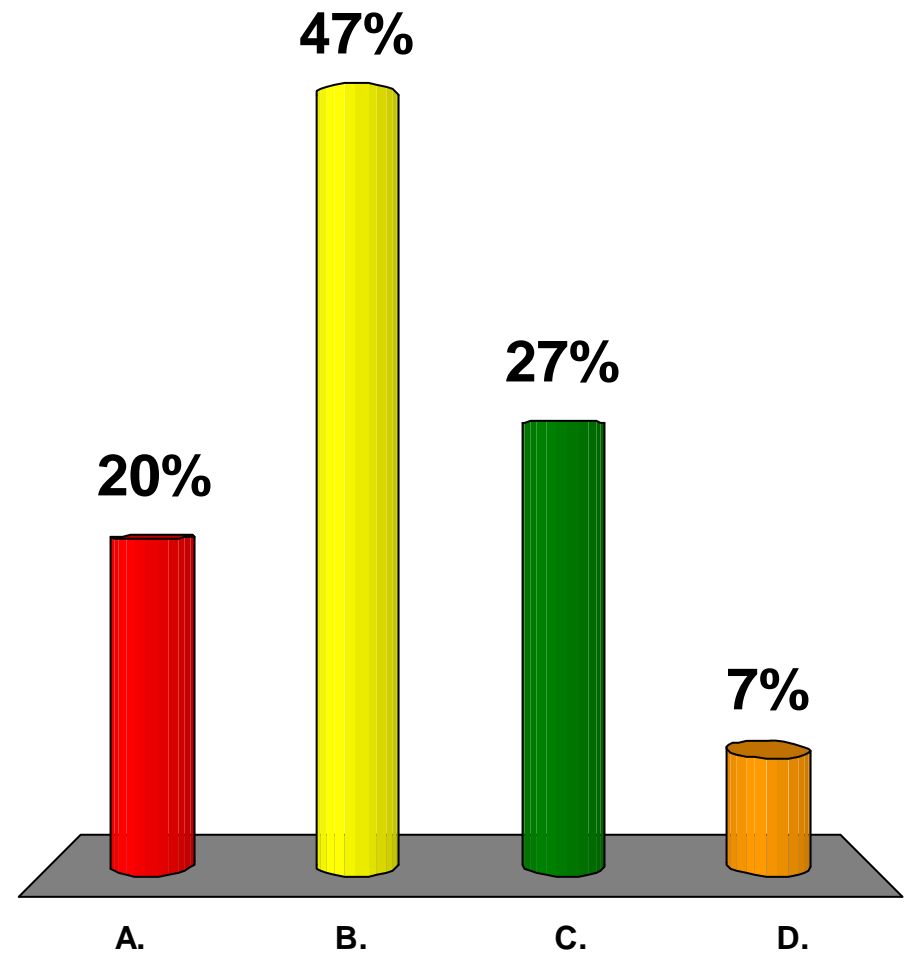
Regional Detour Route for Trucks

- US 4, to VT 100, VT 107, I-89, back to US 4



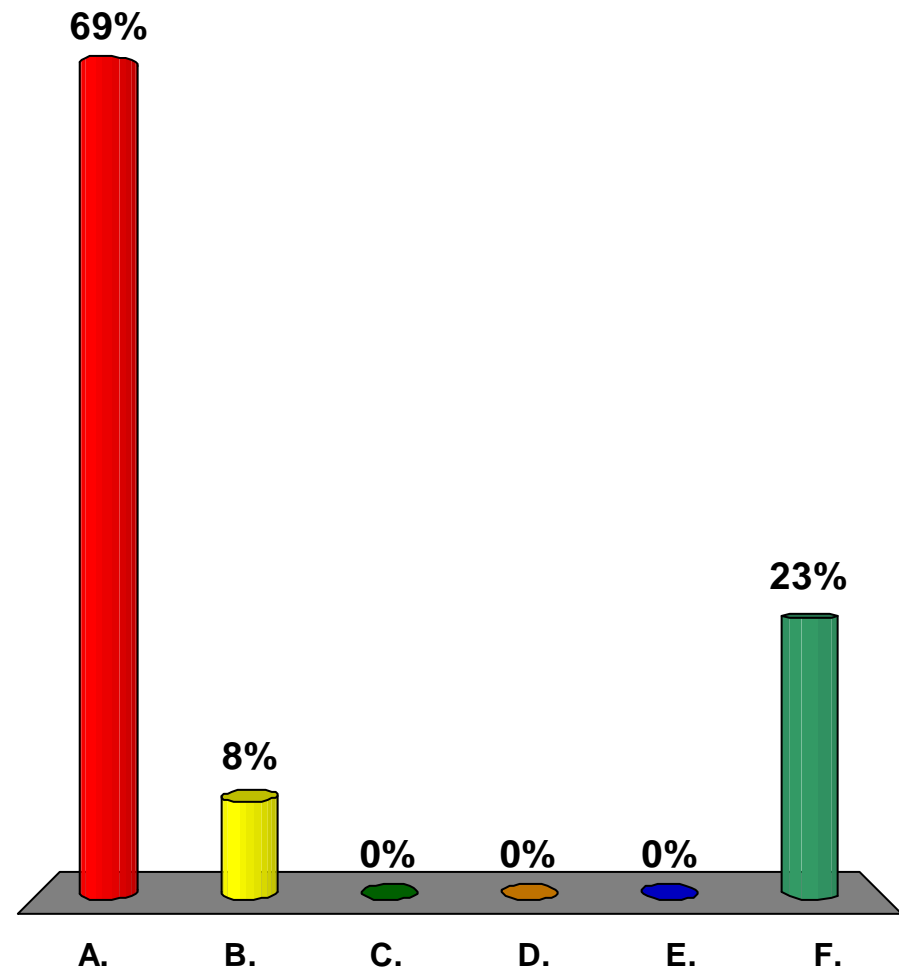
What would be the maximum acceptable length of closure for Bridge #51?

- A. 1 week
- B. 3 weeks
- C. 6 weeks
- D. 10 weeks



Which time of year would be most acceptable for Bridge #51 to be closed?

- A. May
- B. June
- C. July
- D. August
- E. September
- F. Other

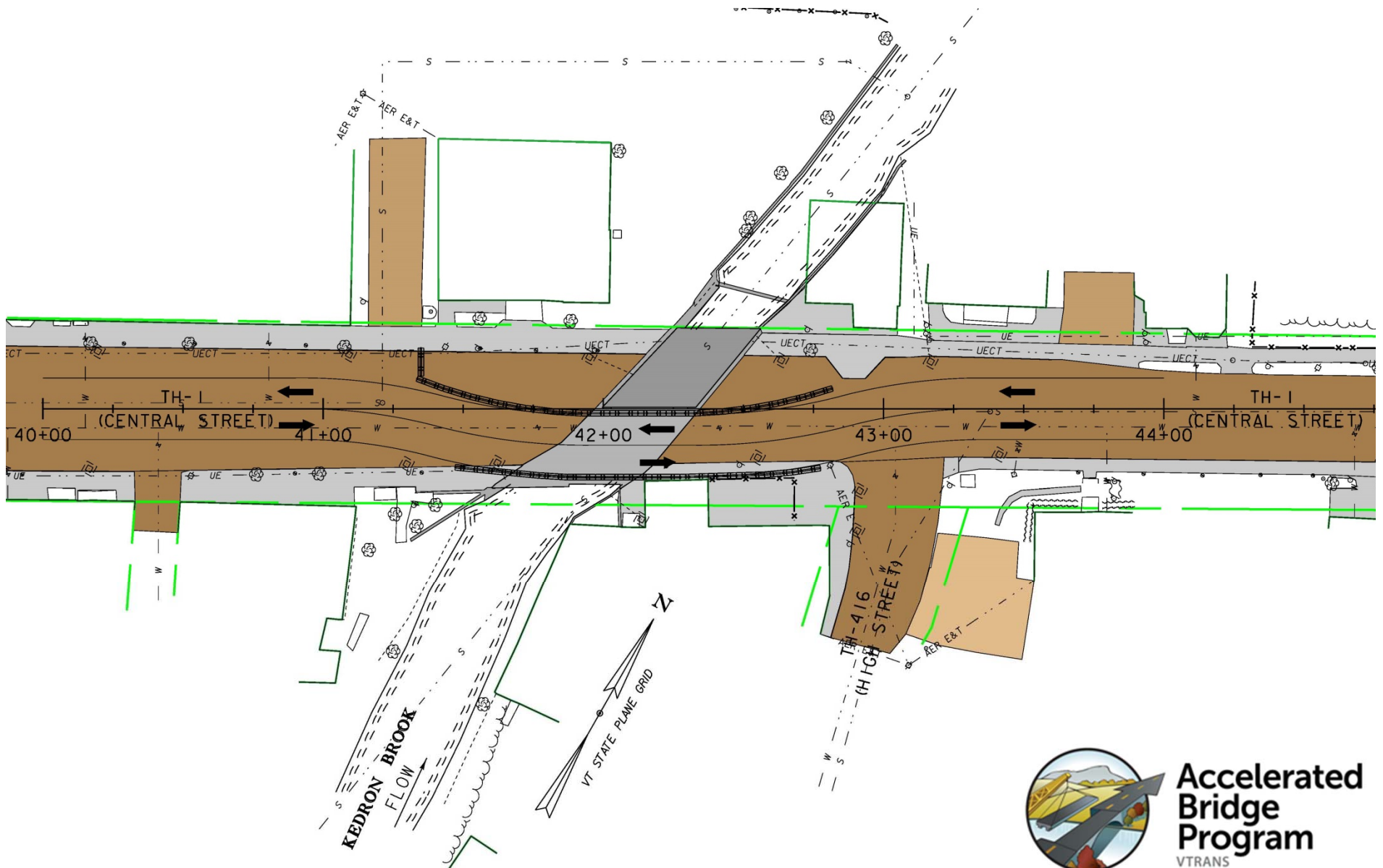




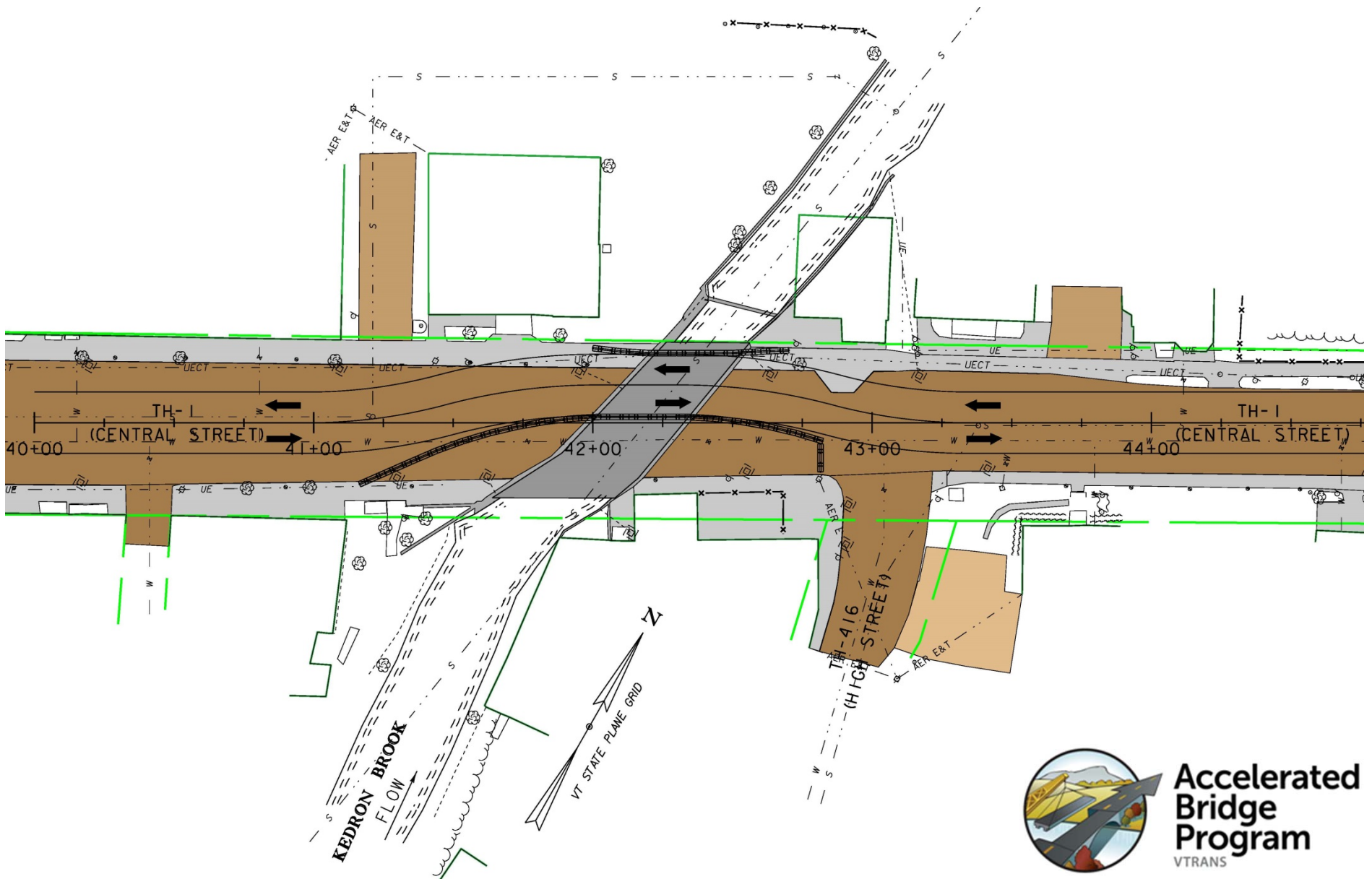
Phased Construction – Option 1

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

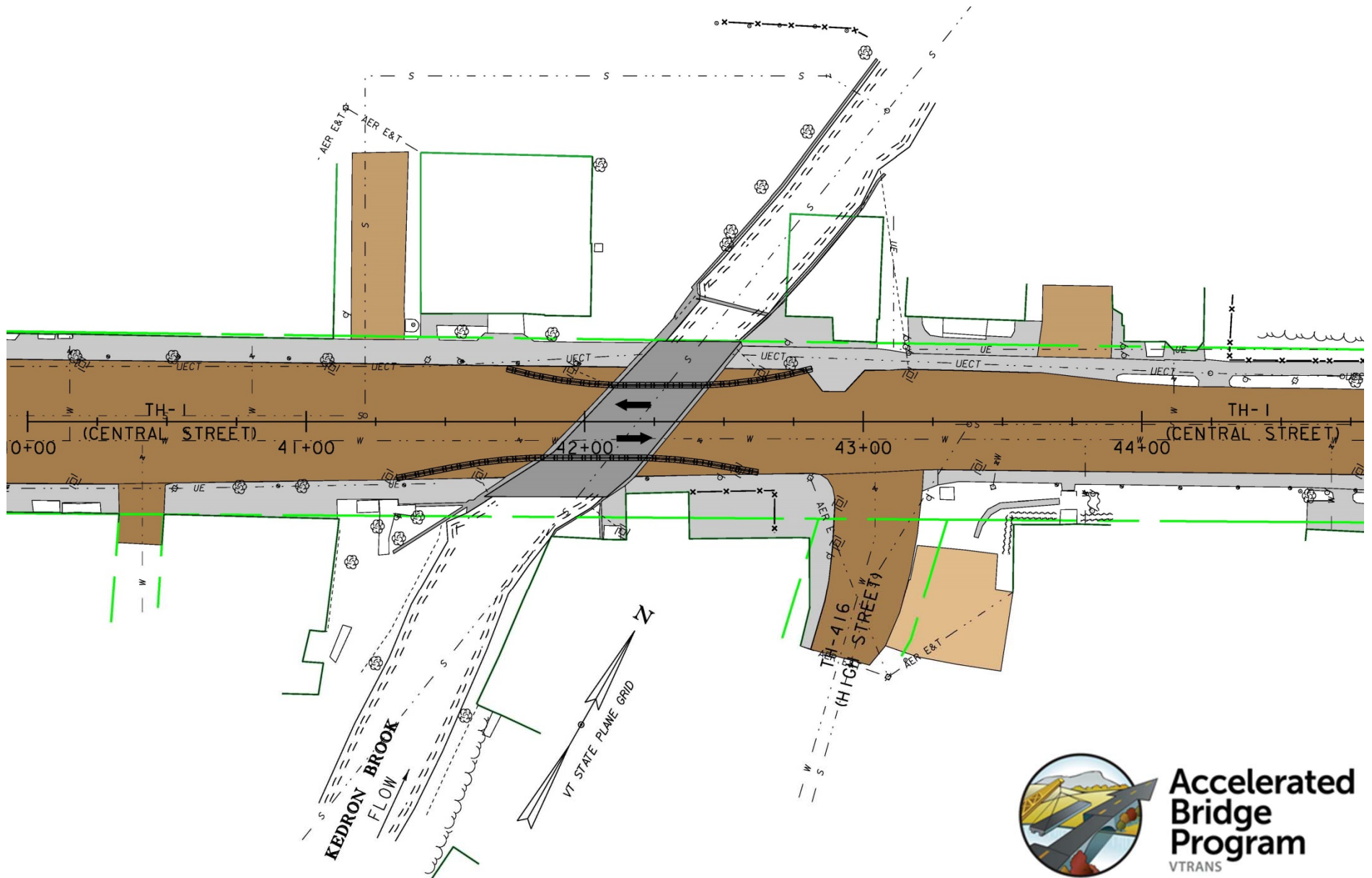
Option 1 Phased Construction - Phase 1



Option 1 Phased Construction - Phase 2



Option 1 Phased Construction - Phase 3



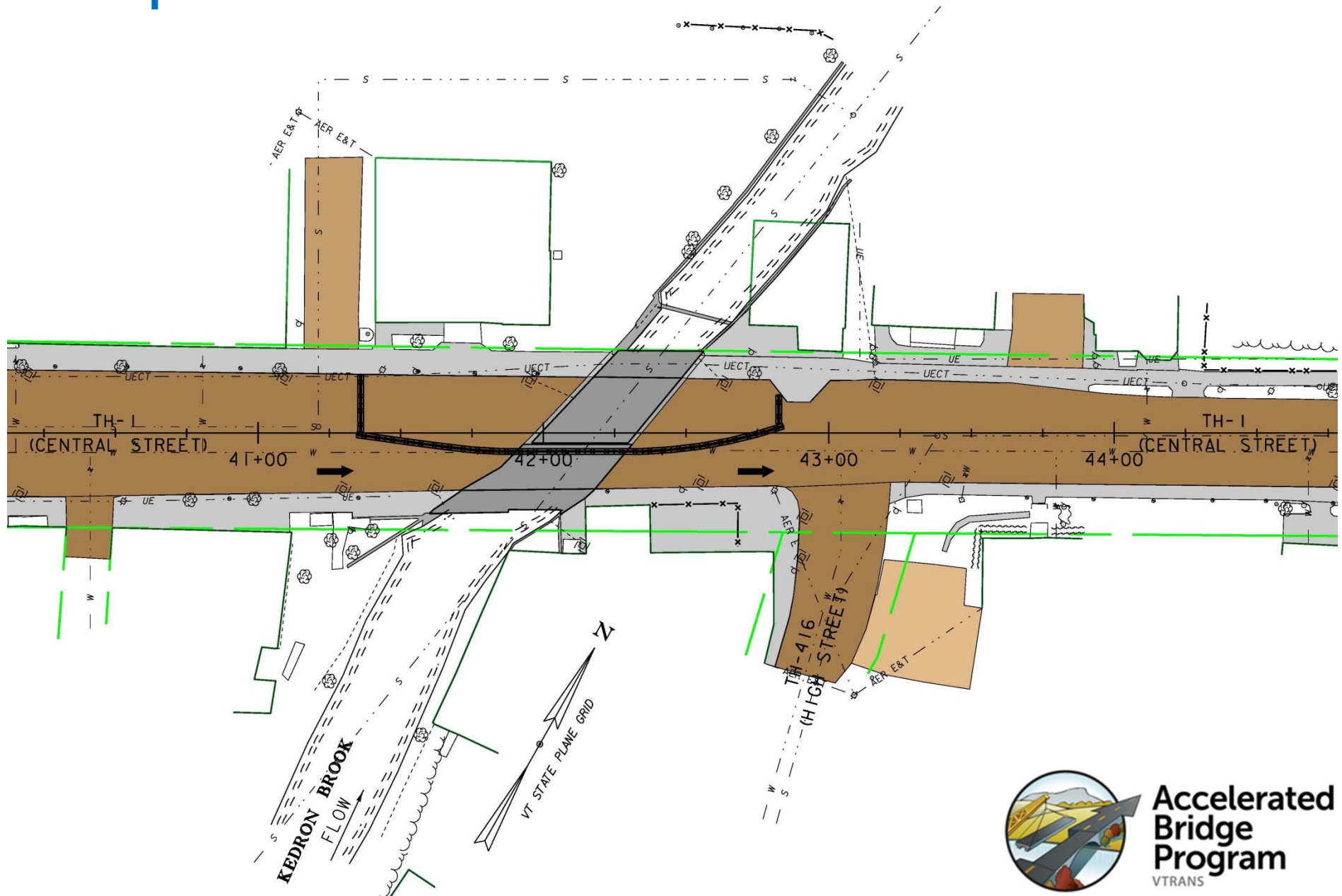
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Phased Construction – Option 2

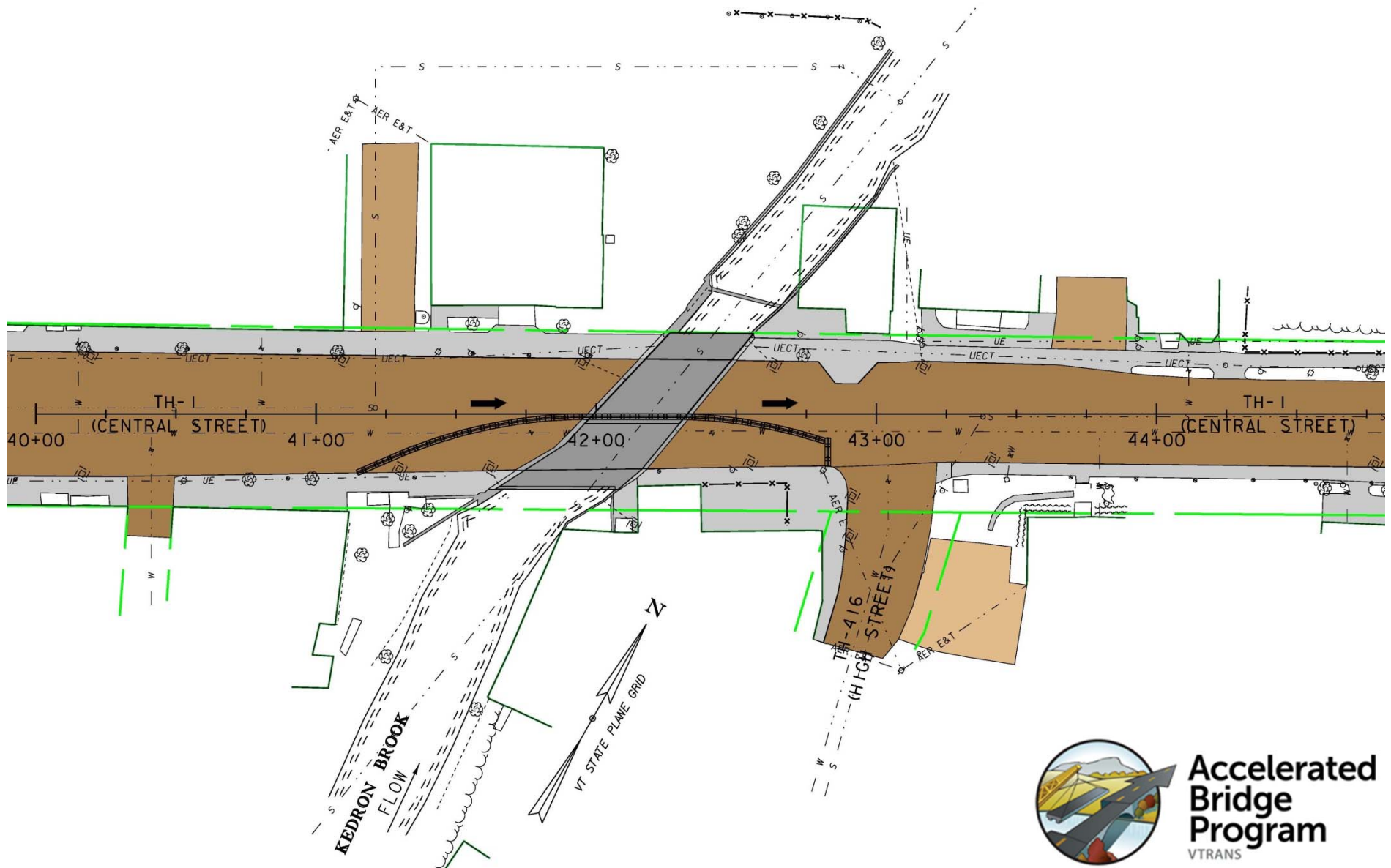
- Pedestrian and 1-way eastbound vehicular traffic maintained
- Offsite detour for westbound traffic

Option 2 Phased Construction - Phase 1



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Option 2 Phased Construction - Phase 2



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Recommended Scope

- Replace superstructure with new precast slab with Traffic Maintained on Offsite Detour
 - 3 week proposed closure, detour signed by State
 - Match existing substandard width (7.5' sidewalk – 8' parking – 11' travel – 11' travel – 8' parking – 8.5' sidewalk)
 - 34' single span
 - Does not meet hydraulic standard - none of the options considered would meet hydraulic standard due to site constraints
 - Major utility relocation needed
 - ROW needed
 - Historic railing
 - Construction – Summer 2017 or 2018



Alternatives Matrix

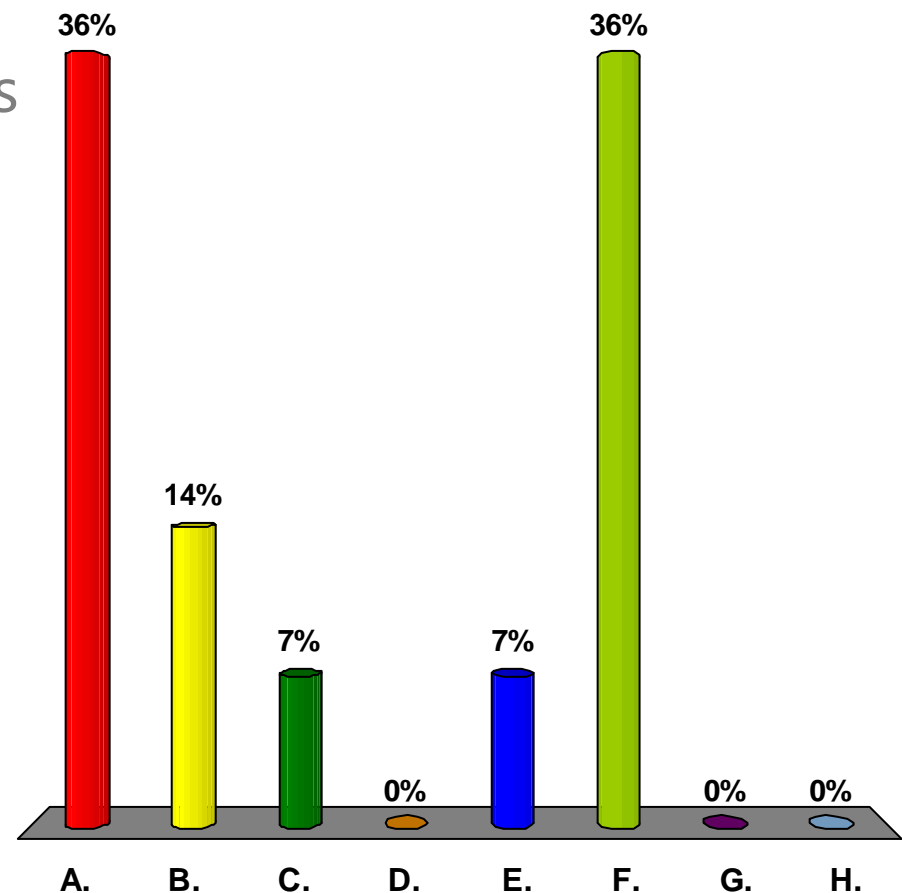
Recommended



| | Alt 1 | Alt 2a | Alt 2b | Alt 2c | Alt 3 |
|--|--------------------------|----------------------------|--|--|-------------------------|
| Woodstock Village BF 020-2(43) | Superstructure Patching | 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 (Including Engineering and Contingencies) | \$370,620 | \$1,132,300 | \$1,647,750 | \$1,669,720 | \$2,512,480 |
| Town Share | \$18,531 (5%) | \$28,310 (2.5%) | \$82,390 (5%) | \$83,490 (5%) | \$125,630 (5%) |
| Project Development Duration | 2 years | 2 years | 2 years | 2 years | 2 years |
| Construction Duration | 3 months | 6 months | 9 months | 9 months | 8 months |
| Closure Duration (If Applicable) | N/A | 3 weeks | N/A | N/A | 6 weeks |
| Geometric Design Criteria | Substandard width | Substandard width | Substandard Width | Substandard Width | Substandard width |
| Alignment Change | No | No | No | No | No |
| Utilities | No Change | Relocation | Relocation | Relocation | Relocation |
| ROW Acquisition | Yes | Yes | Yes | Yes | Yes |
| Design Life | 15 Years | 50 years | 50 Years | 50 Years | 80 Years |

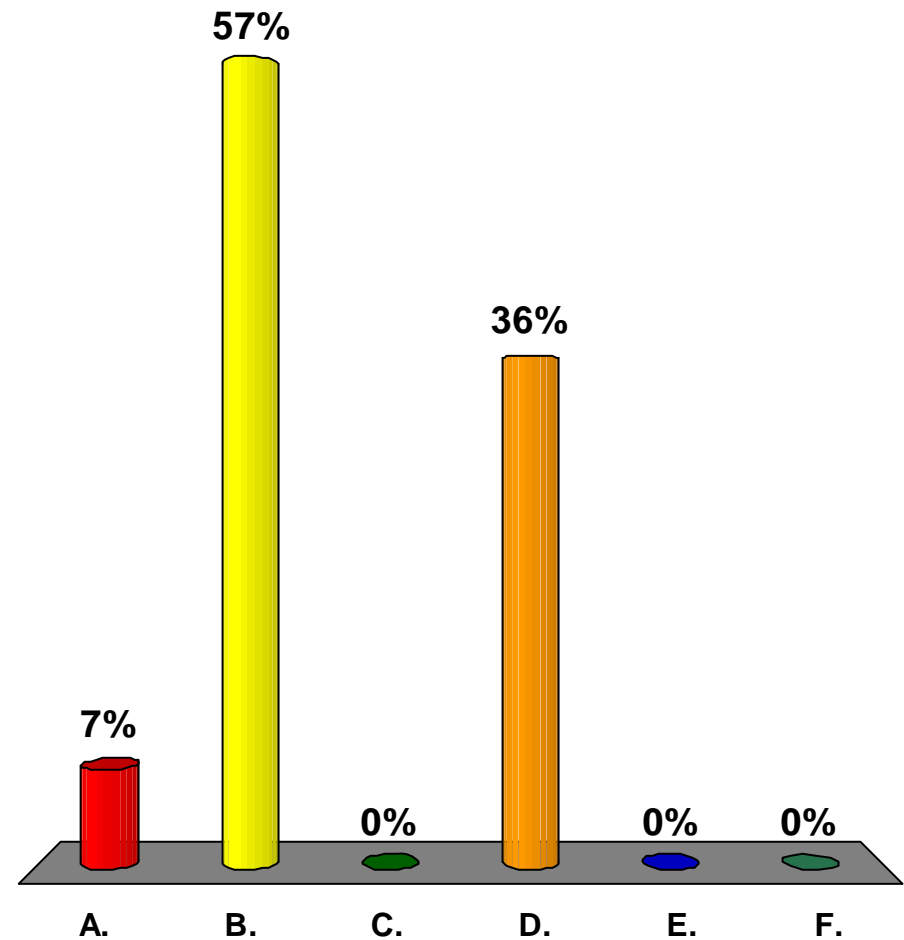
Which would you be most concerned about?

- A. Closure Duration
- B. Bridge Aesthetics
- C. Environmental Impacts
- D. Recreational Impacts
- E. Emergency Services
- F. Business Impacts
- G. Other
- H. Not really concerned



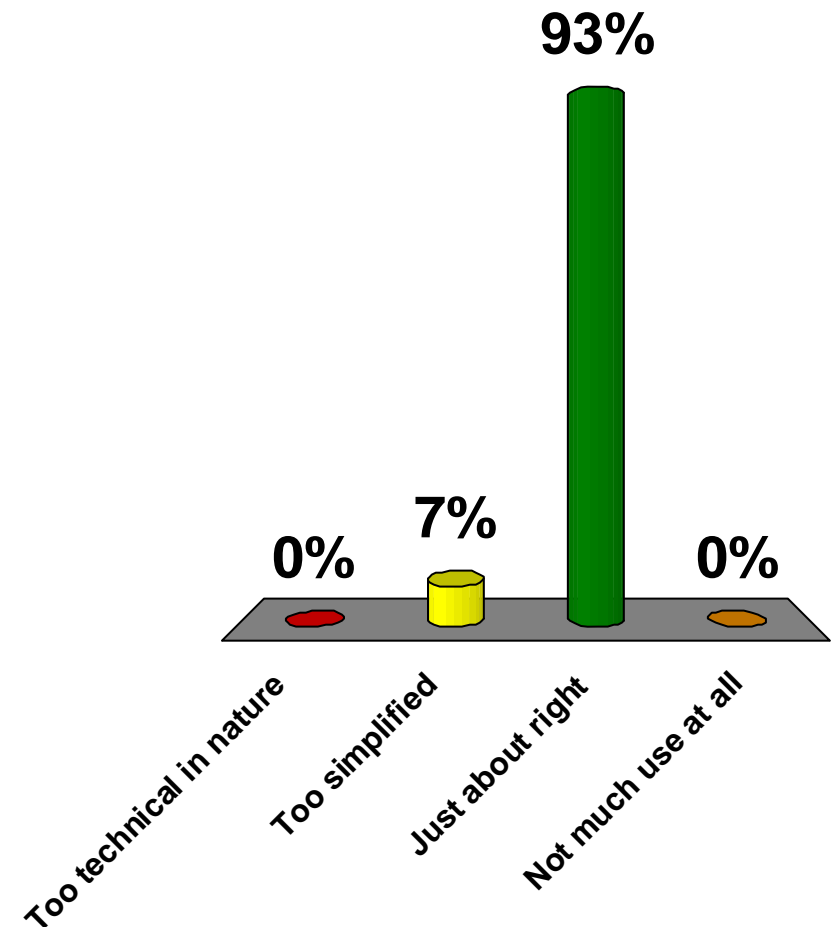
Which design aspect is the most important to you?

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



Did you find this presentation to be?

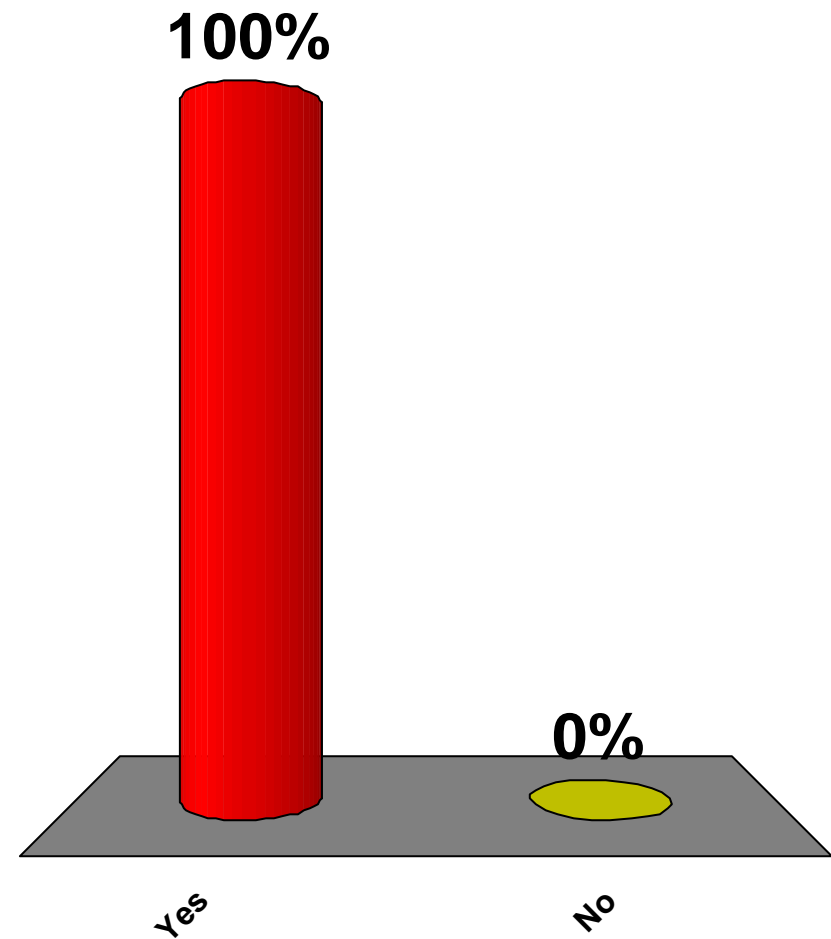
- A. Too technical in nature
- B. Too simplified
- C. Just about right
- D. Not much use at all



Do you find the recommended scope of work satisfactory?

A. Yes

B. No



Next Steps – Bridge #51

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

For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/13J280>



Woodstock Village BF 020-2(43) Questions & Comments

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