



Barre Town BF 0169(12)
Regional Concerns Meeting
VT Route 110 – Bridge #21 over Jail Branch

January 14, 2020

Introductions

Mahendra Thilliyar, P.E.

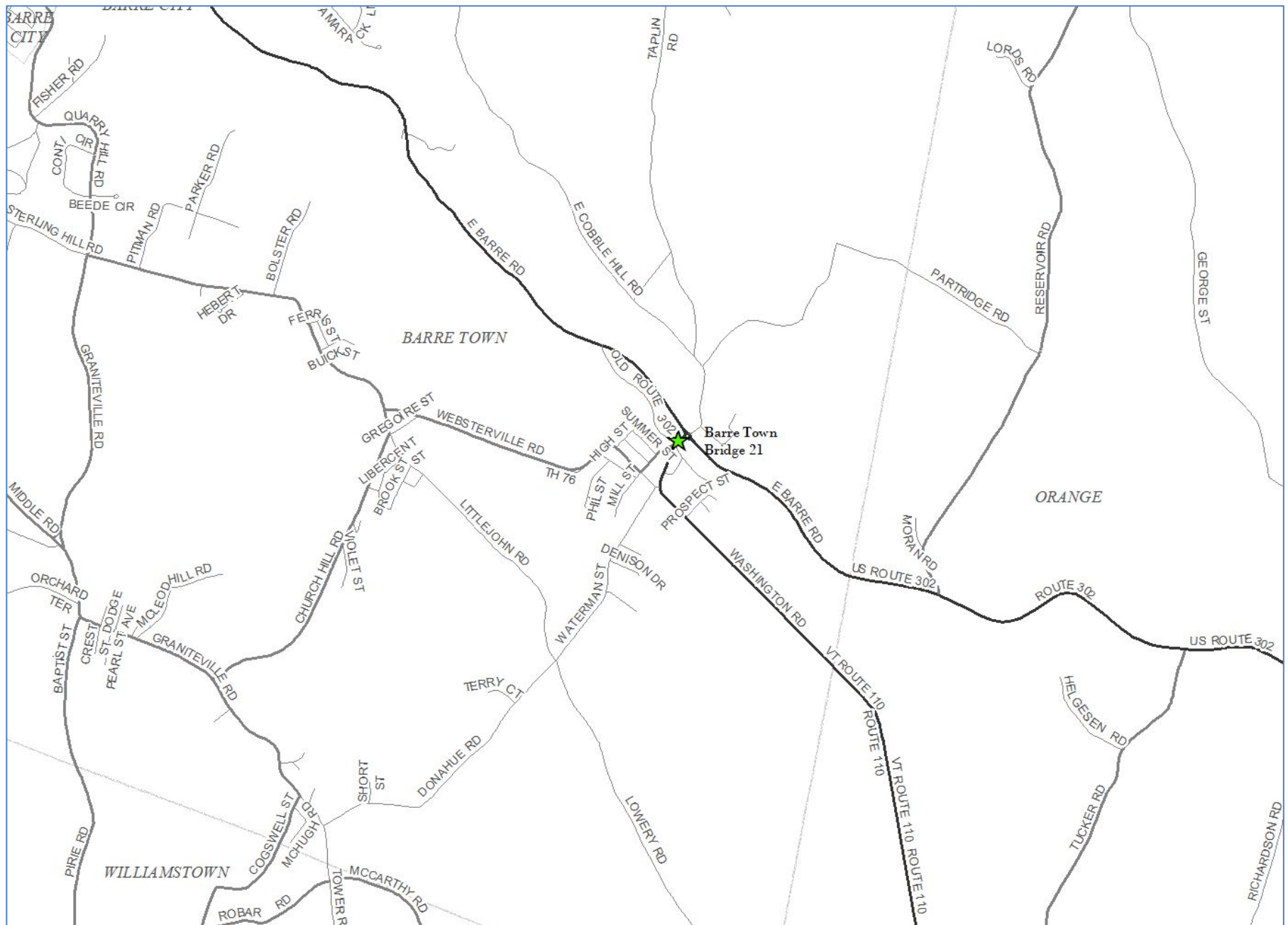
VTrans Consultant Project Manager

Laura Stone, P.E.

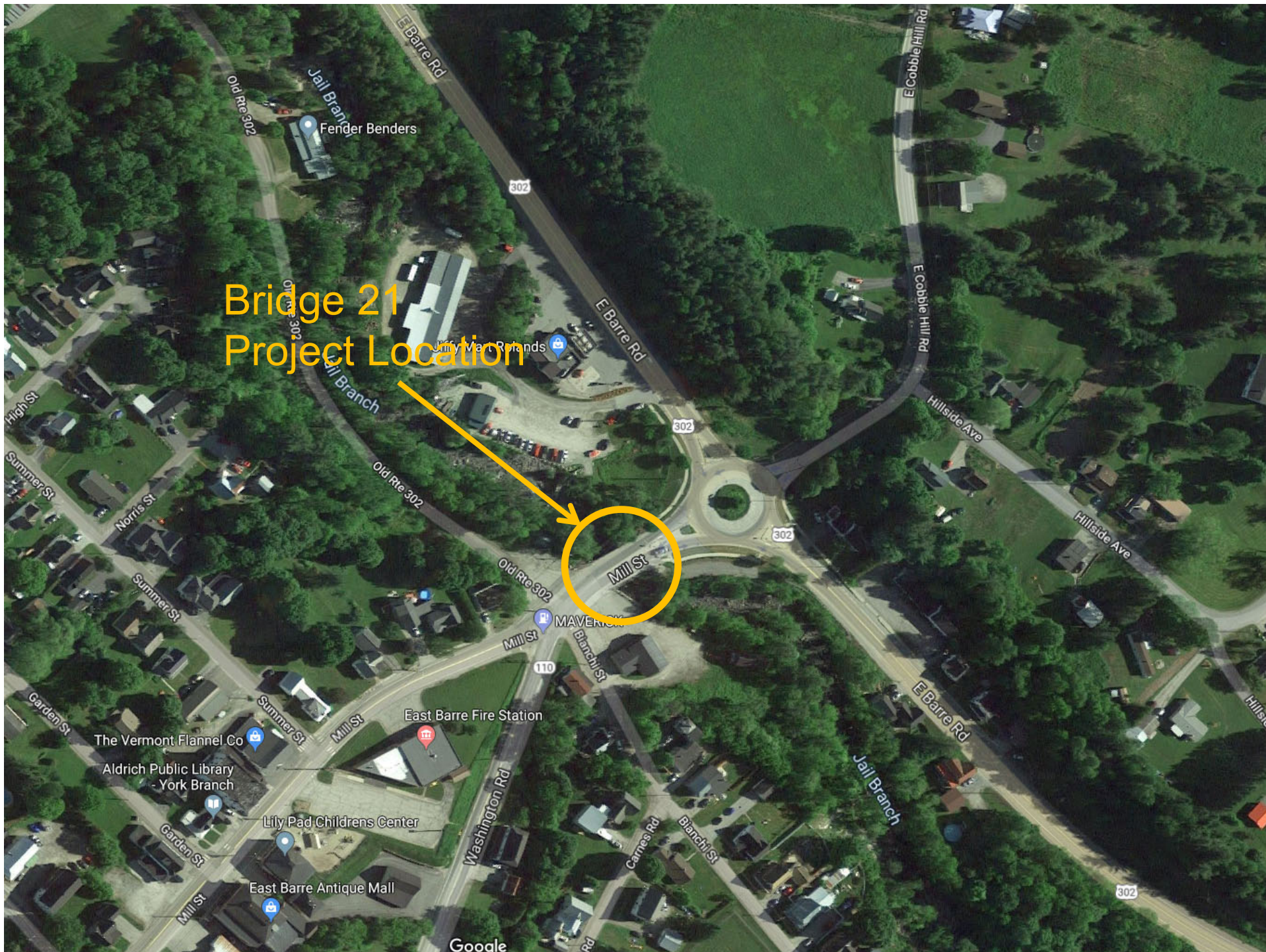
VTrans Scoping Engineer

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



Meeting Overview

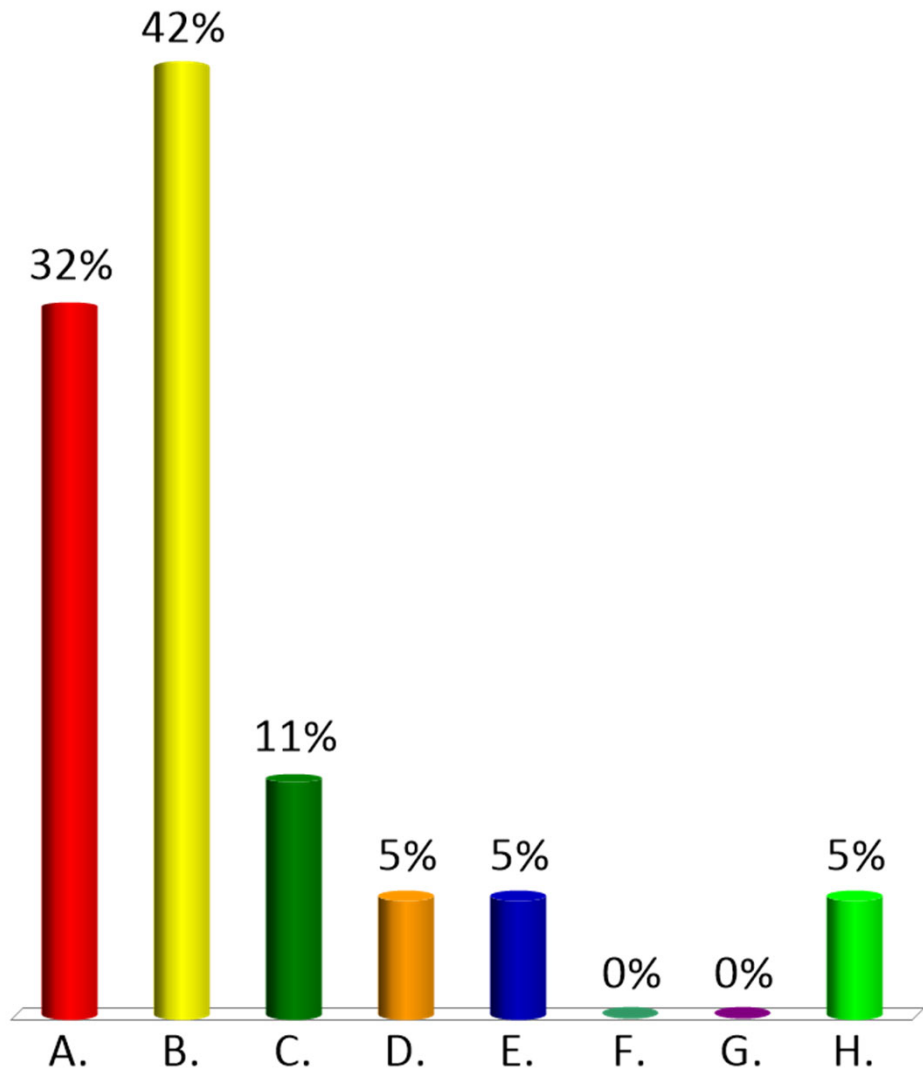
- VTrans Project Development Process
- Project Overview
 - Existing Conditions
 - Alternatives Considered
 - Selected Alternative
- Maintenance of Traffic
- Schedule
- Summary
- Questions

VTrans Project Development Process



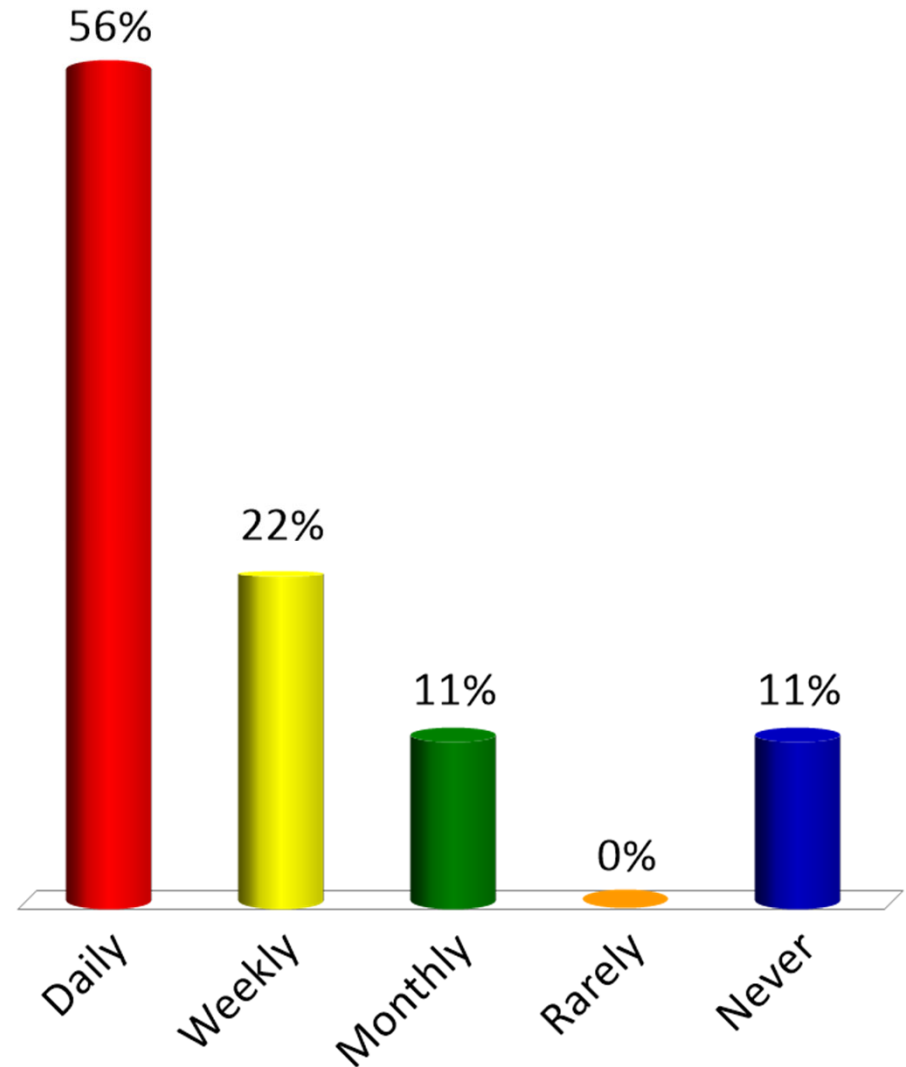
Who are you representing?

- A. Municipal Official
- B. Resident of Barre Town
- C. Property Owner in the Immediate Project Area
- D. Emergency Services
- E. Local Business
- F. Independent Organization
- G. Press
- H. Other



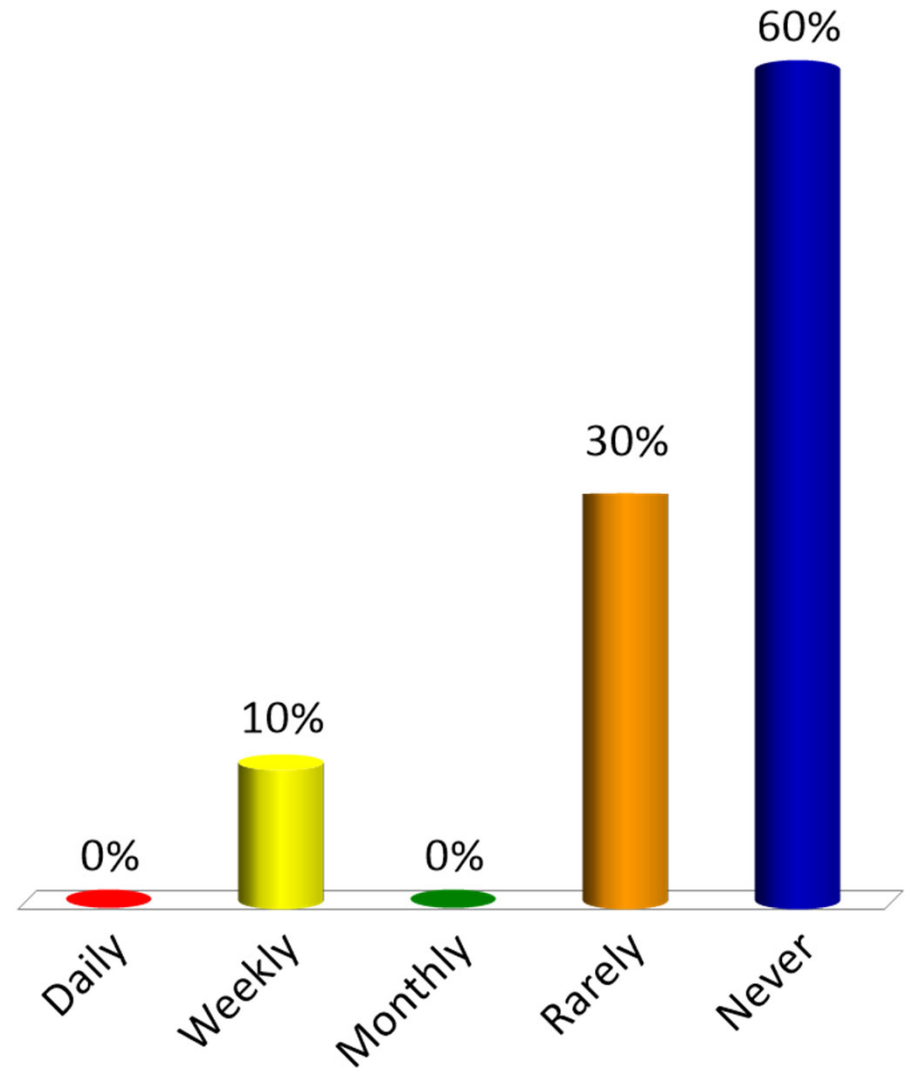
How often do you use this segment of VT Route 110?

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



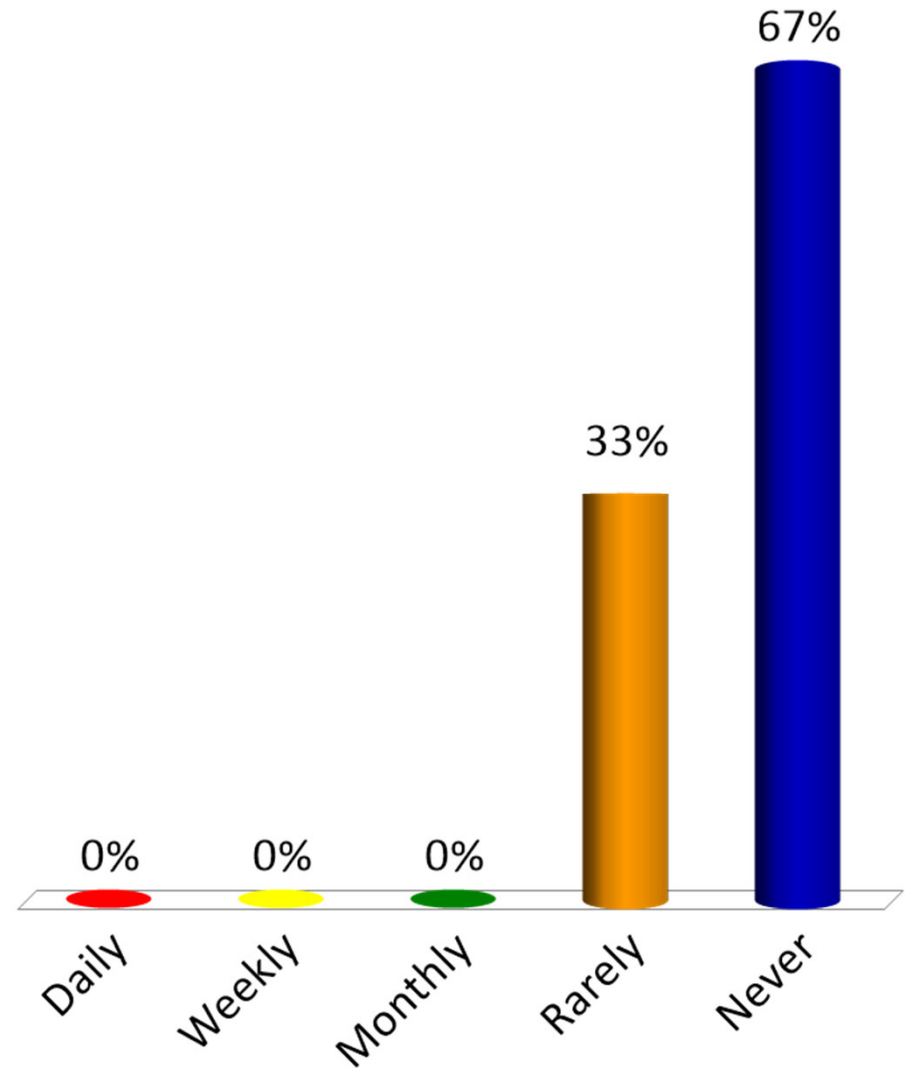
How often do you walk over the bridge?

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



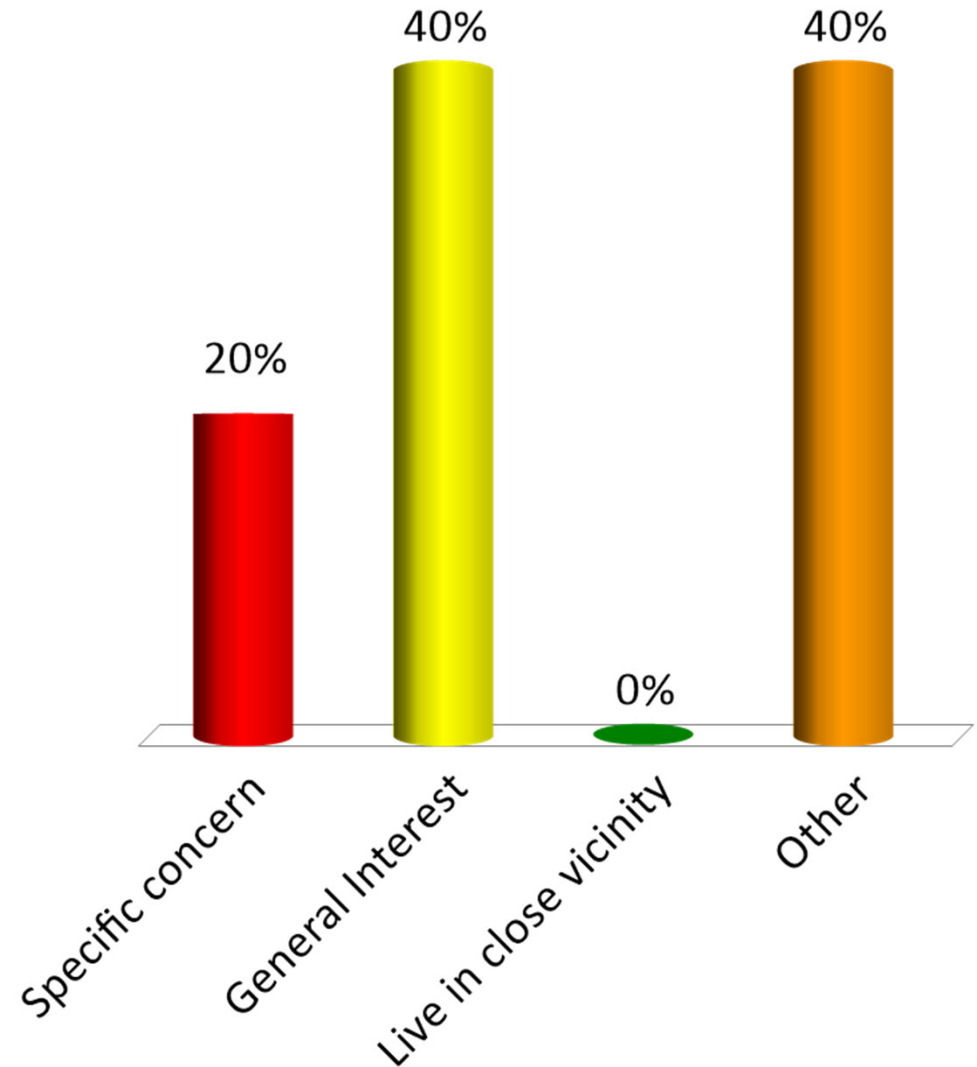
How often do you bike over the bridge?

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



What is your reason for attending this meeting?

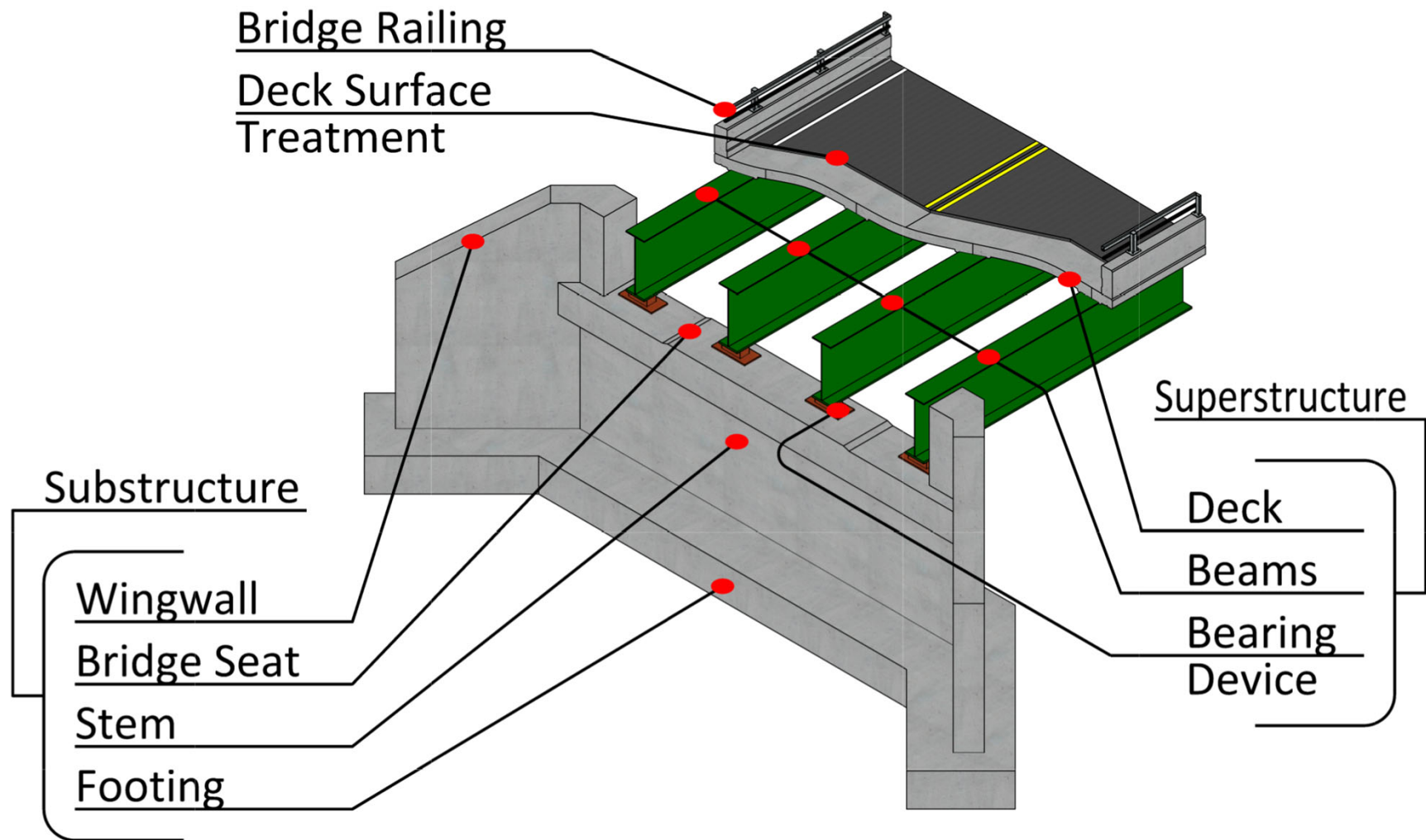
- A. Specific concern
- B. General Interest
- C. Live in close vicinity
- D. Other



Project Overview

- Existing Conditions
- Alternatives Considered
- Selected Alternative

Description of Terms Used



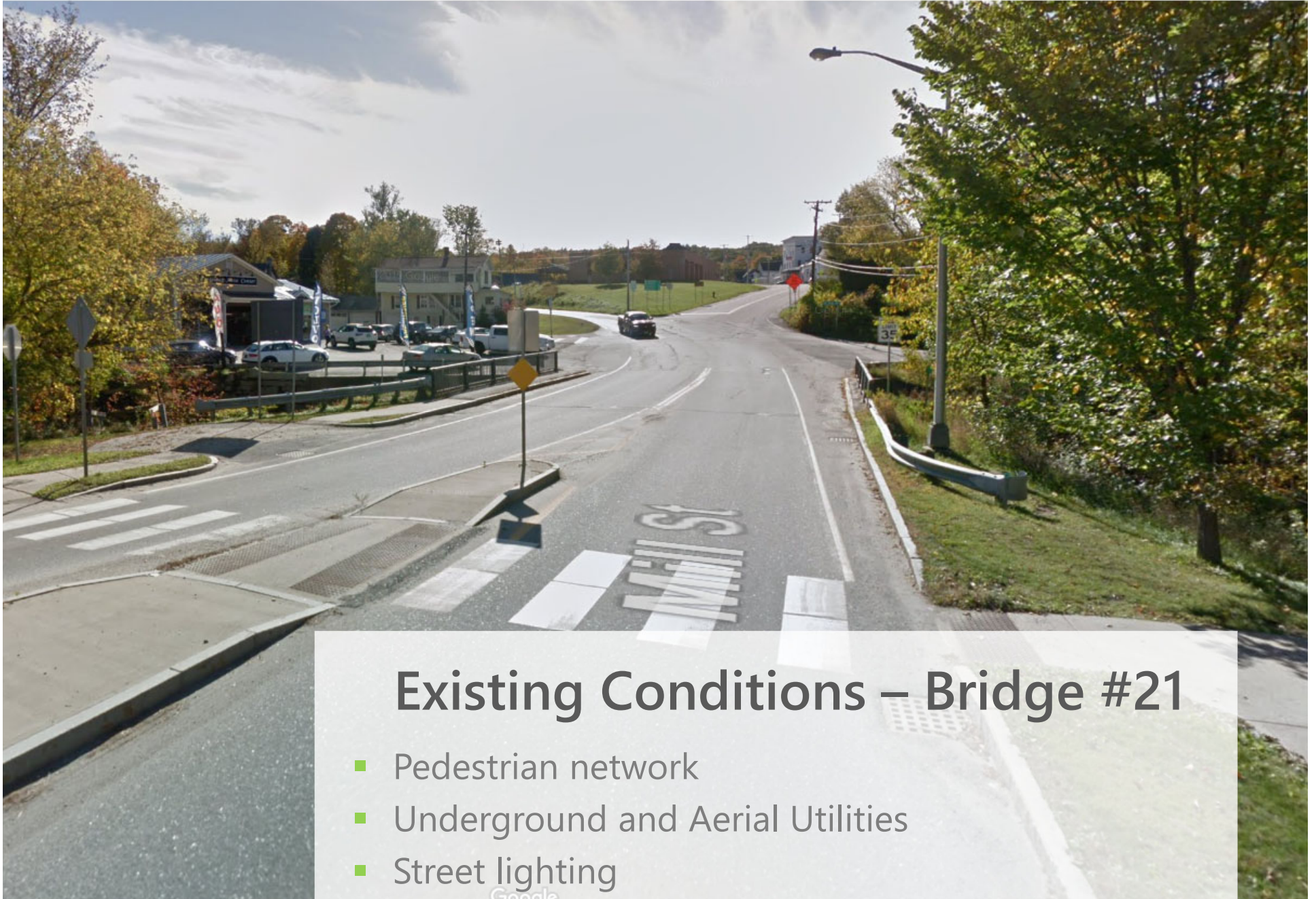
Looking North over Bridge 21



Existing Conditions – Bridge #21

- Roadway Classification – Major Collector
- Bridge Type – 44' Long, Concrete T-Beam Bridge
- Ownership – State of Vermont
- Constructed in 1930, Reconstructed (Widened) in 1959

Looking South over Bridge 21



Existing Conditions – Bridge #21

- Pedestrian network
- Underground and Aerial Utilities
- Street lighting

Existing Conditions – Bridge #21

- Wearing Surface: There is transverse and longitudinal cracking in the wearing surface due to a potential full depth failure of the deck.
- Deck: There are areas of heavy saturation, cracking, delaminations and staining in the deck. A full depth failure is eminent at any time in Bay 2.
- Beams: There are nine T-Beams. Four of the beams have spalling. The abutting beams have spalling with rusted rebar exposed and minor section loss in the reinforcing bars. The remaining T-beams have cracking and some saturation at their ends.
- Abutments: There are voids in the laid-up stone portions. There are cracks and some scaling in the concrete portions.

Condition Ratings



Existing Conditions - Bridge #21

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

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Northern Abutment



Existing Conditions - Bridge #21

Southern Abutment



Existing Conditions - Bridge #21

T-Beams at Widened Section



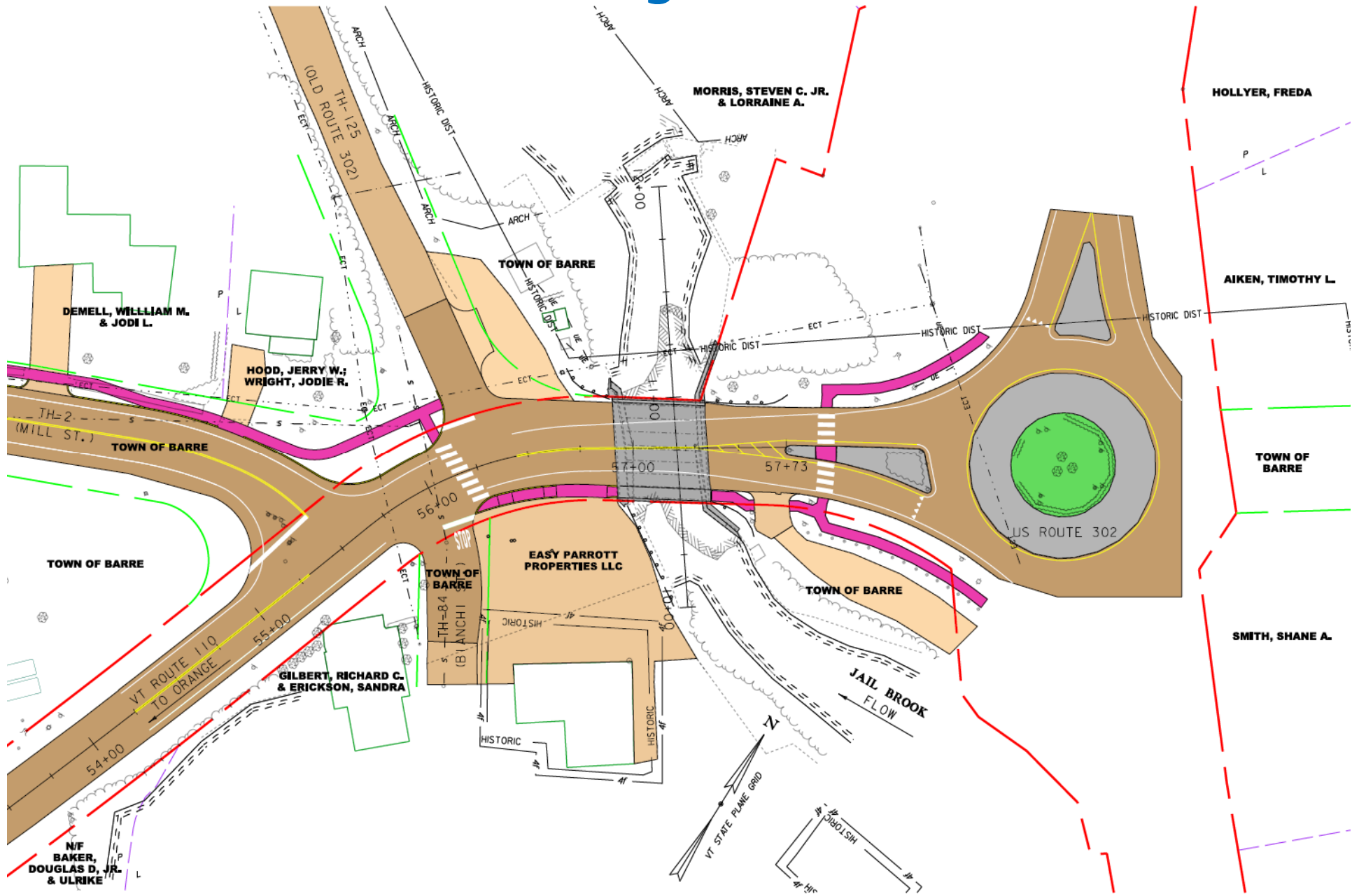
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Existing Conditions - Bridge #21

Existing Conditions - Bridge #21

- Archaeological Resources: Mill and Dam Remains
- Historic Resources
 - Within East Barre Historic District, 4(f) property (Barn/Storage Building)
 - Bridge is not historic
- Northern Long Eared Bat
- Urban Soils Background Area – Possible Contaminated Soils
- FEMA Floodplains

Existing Conditions



Design Criteria and Considerations

- Average Daily Traffic of 5,200 vehicles per day
- Design Hourly Volume of 600 vehicles per hour
- % Trucks: 2.0%
- Design Speed of 35 mph (Roundabout warned for 20 mph)
- Utilities – Underground and Aerial
- Stormwater

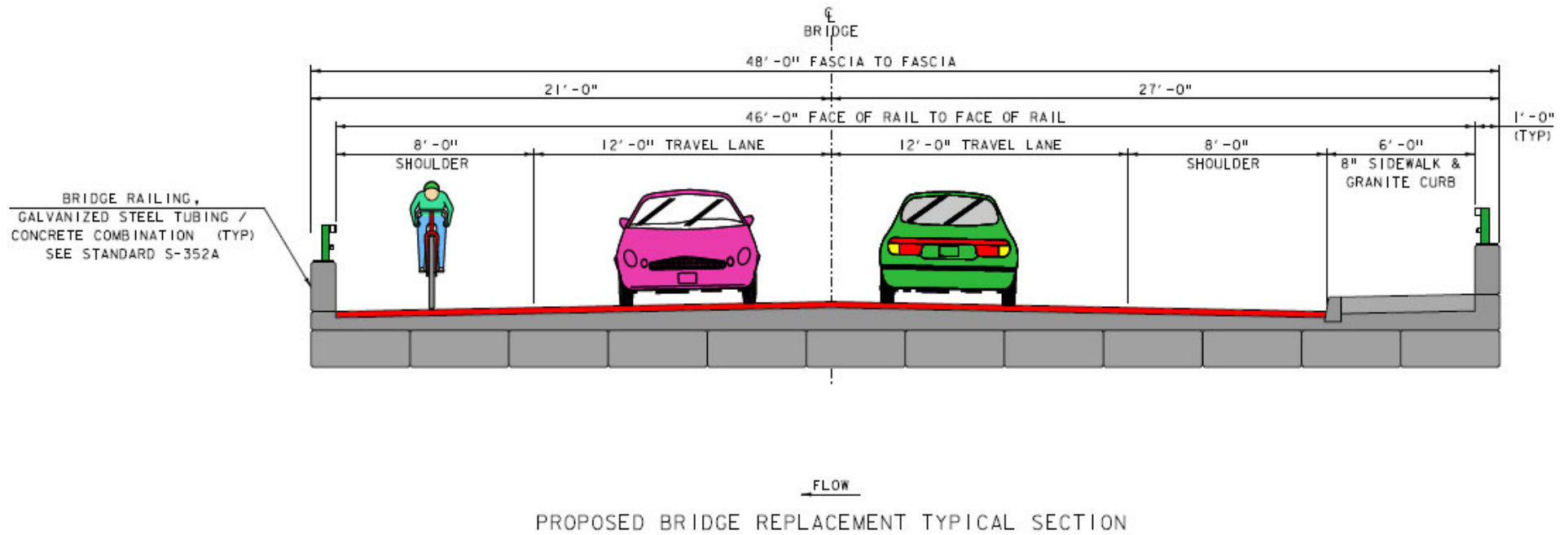
Alternatives Considered – Bridge #21

- No Action
 - Additional maintenance required within 10 years
- Minor Rehabilitation
 - Superstructure and Substructure Patching
 - 12'/8' typical with a 5.5' sidewalk
 - 15-year design life
- Superstructure Replacement
 - Abutment Patching
 - 40-year design life
- Full Bridge Replacement On Alignment
 - Maintain existing alignment
 - 75-year design life

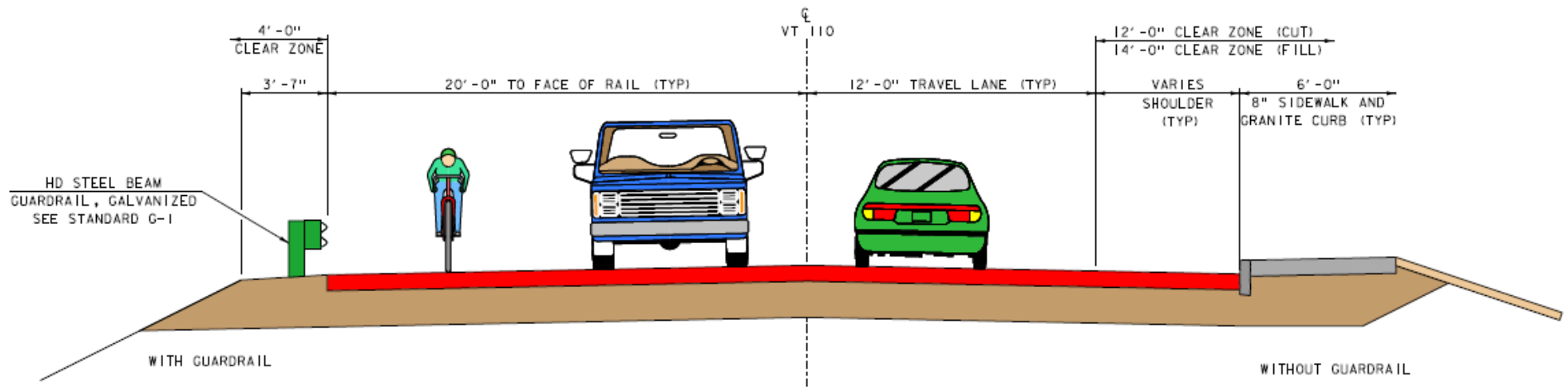
Selected Alternative - Bridge #21

- Full Bridge Replacement
 - 12'/8' typical with 5.5' wide sidewalk
 - Span length of approximately 45'
 - 75-year design life
 - Right of Way Needed
 - Overhead utilities may need to be relocated; coordination should take place early in the design phase.

Proposed Typical Section - Bridge

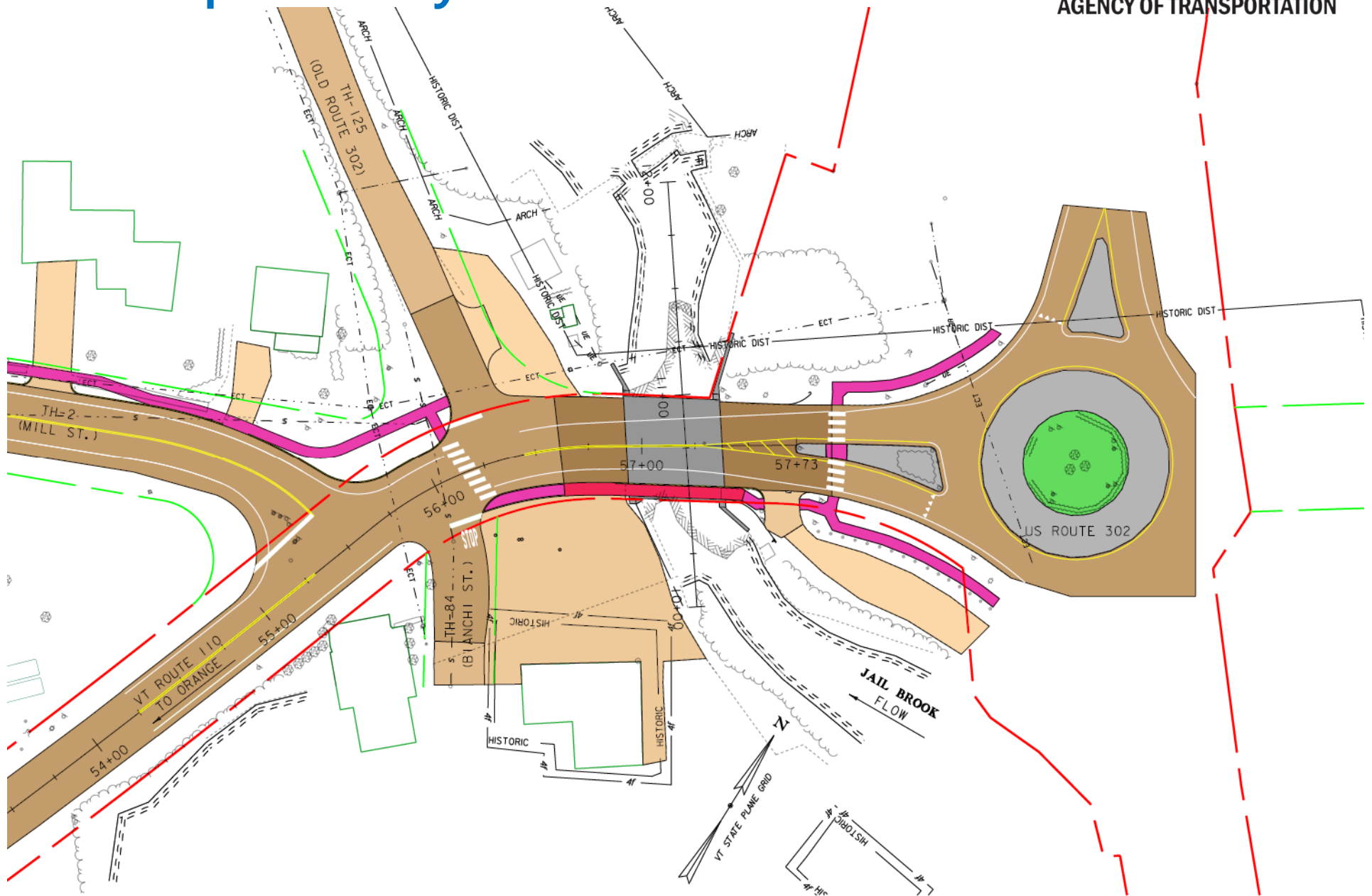


Proposed Typical Section - Roadway

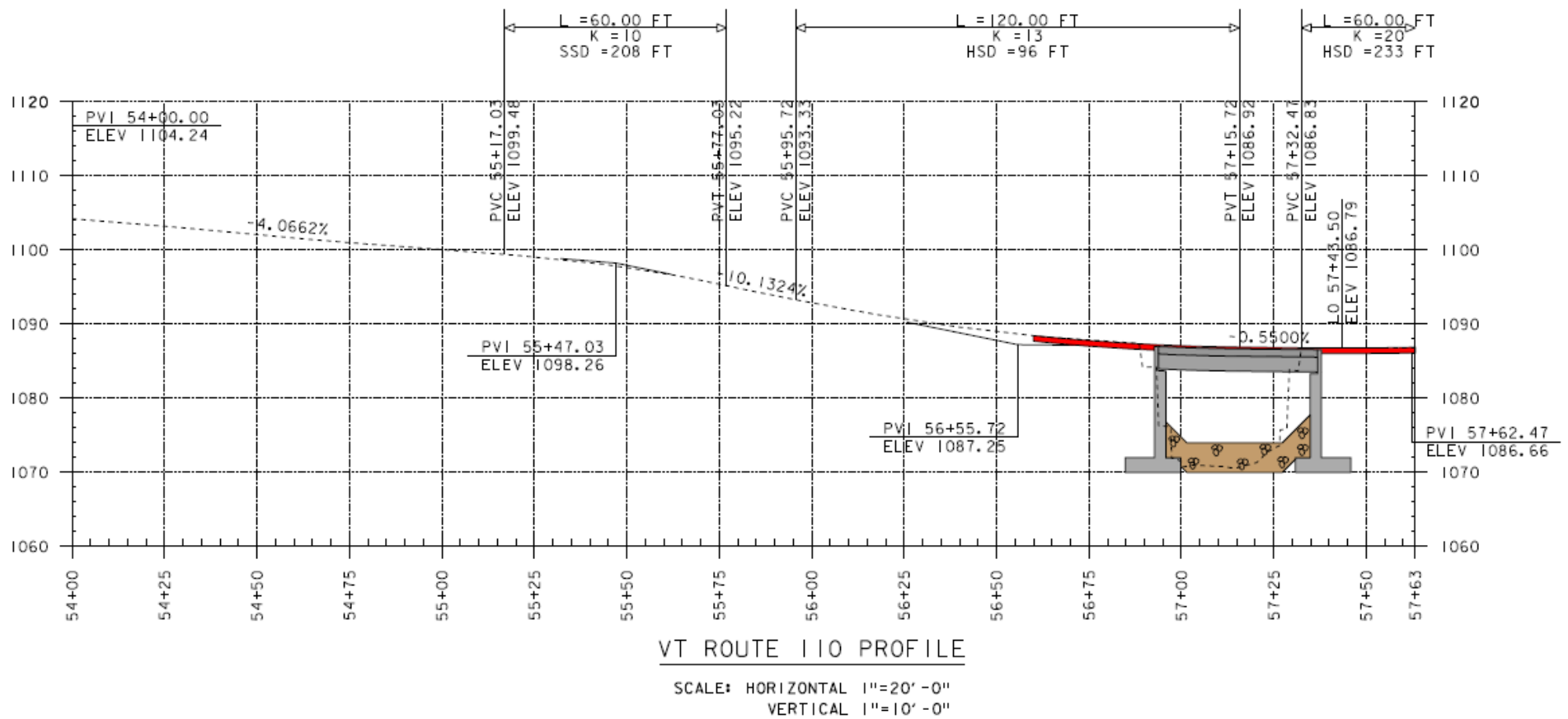


PROPOSED VT 110 TYPICAL SECTION

Proposed Layout



Proposed Profile



Maintenance of Traffic Options Considered

- Offsite Detour
- Phased Construction
 - 2 Lanes of traffic and pedestrians maintained
 - 3 phases
- Temporary Bridge

Recommended Method of Traffic Maintenance – Conditional on Town's Approval

A photograph of a road closure. In the center is a white rectangular sign with a black border and the words "ROAD" and "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 a concrete curb, green foliage, and a clear sky.

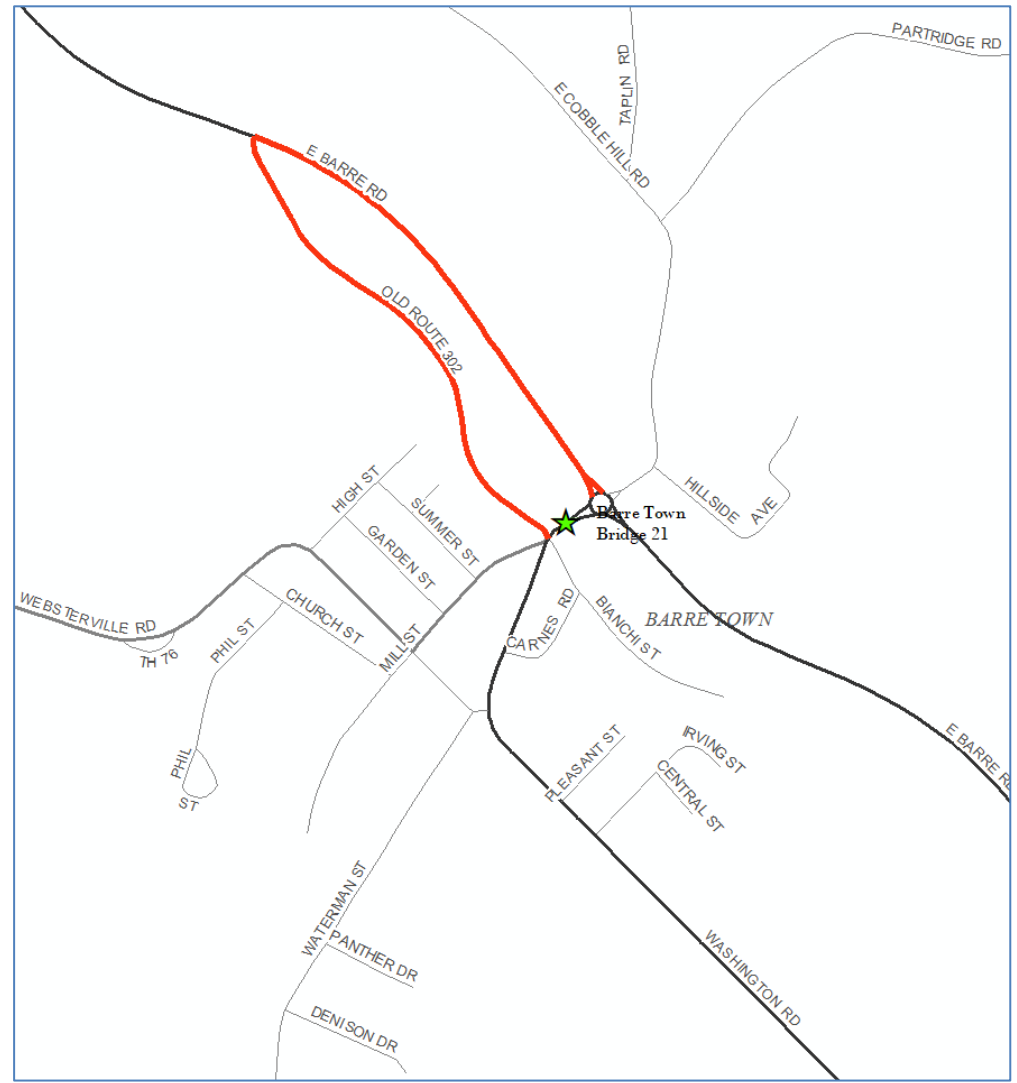
**ROAD
CLOSED**

Road Closure

- Detour chosen and signed by State
- Shortest regional route is 63.3 miles end-to-end
- 60-day bridge closure
- Several Local Bypass Routes available

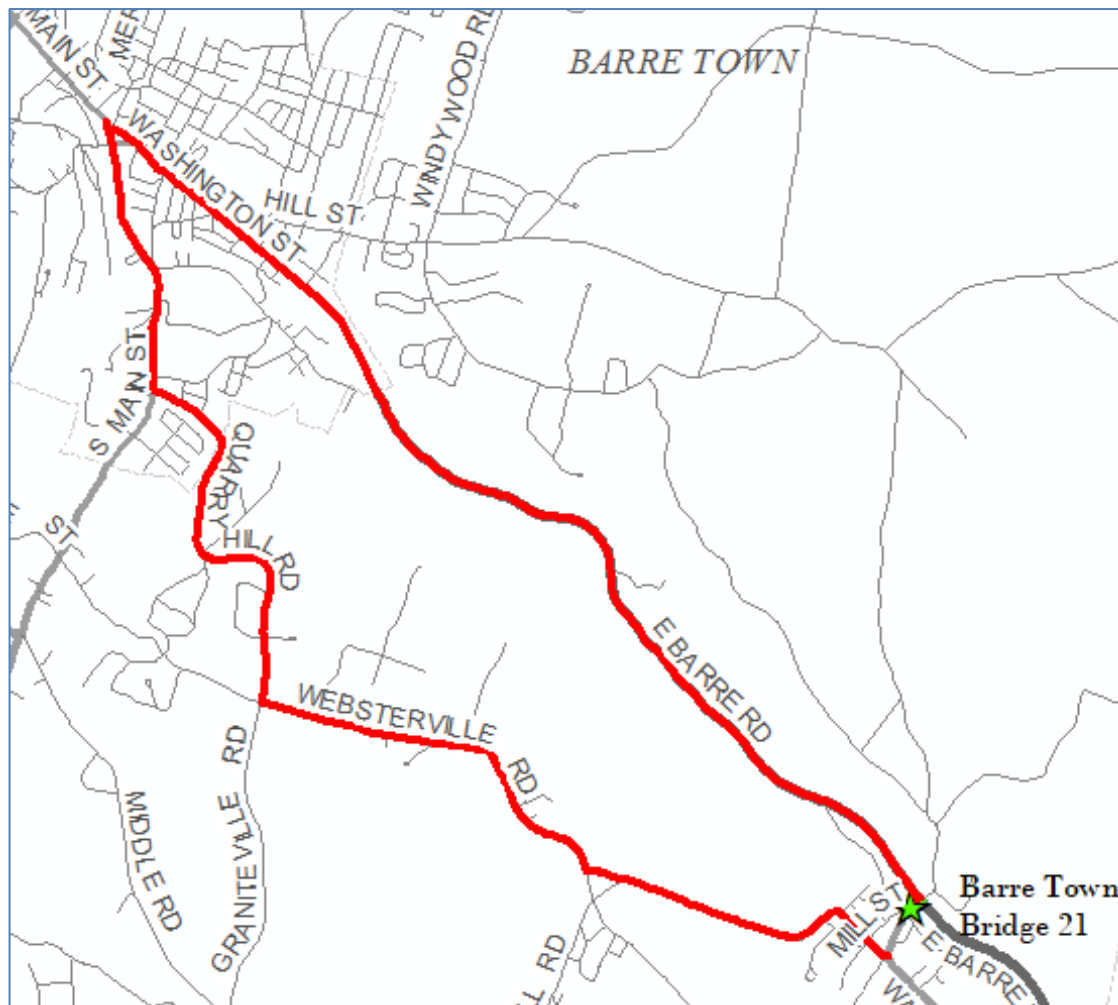
Traffic Control – Offsite Detour

- Local Bypass 1: VT Route 110, to US Route 302 (E Barre Road), and Old Route 302, back to VT Route 110
 - Through Route: 0.1 miles
 - Detour Route: 1.0 miles
 - Added Distance: 0.9 miles
 - End-to-End Distance: 1.1 miles



Traffic Control – Offsite Detour

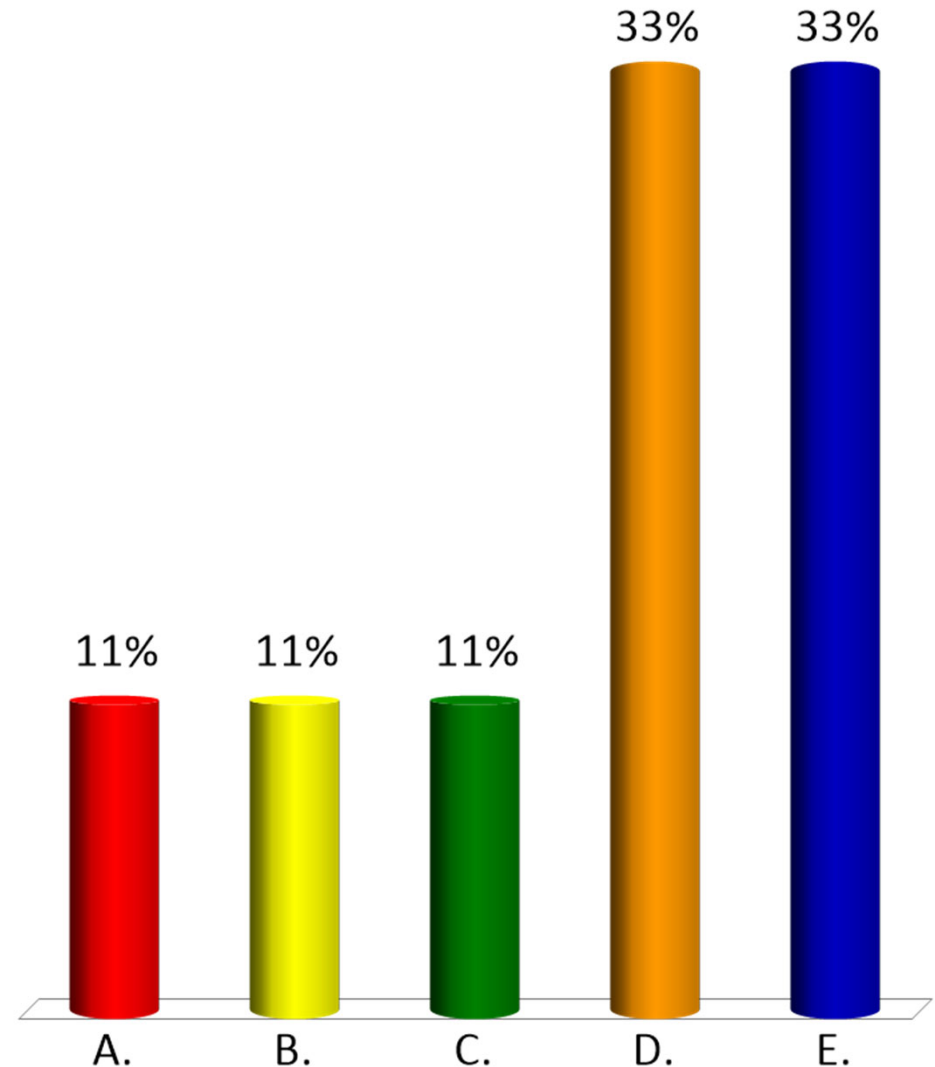
- VT Route 110, to Websterville Road, Quarry Hill Road, Quarry Street, South Main Street (VT Route 14), and US Route 302, back to VT Route 110



- Through Route: 0.2 miles
- Detour Route: 8.4 miles
- Added Distance: 8.2 miles
- End-to-End Distance: 8.6 miles

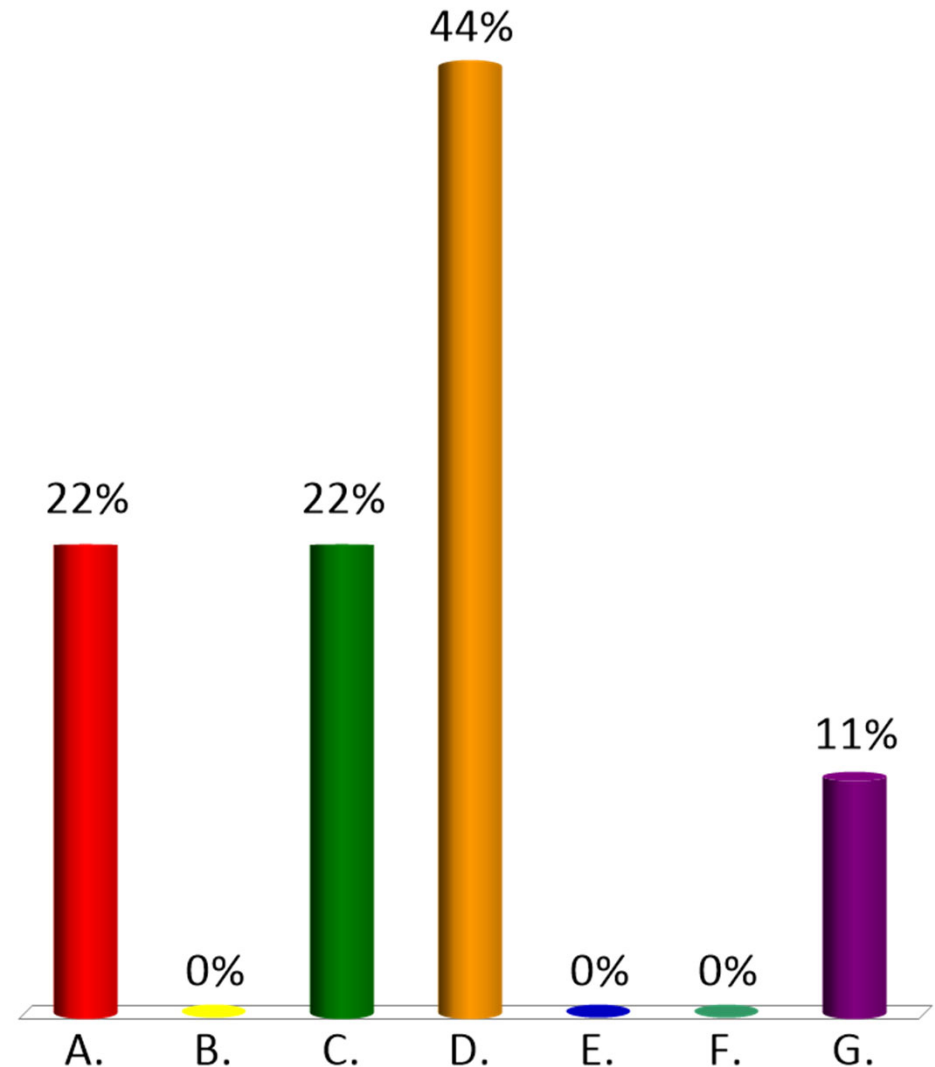
What would be the maximum acceptable length of closure for Bridge #21?

- A. 21 days
- B. 30 days
- C. 45 days
- D. 60 days
- E. 90 days



Which time of year would be most acceptable for Bridge #21 to be closed?

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



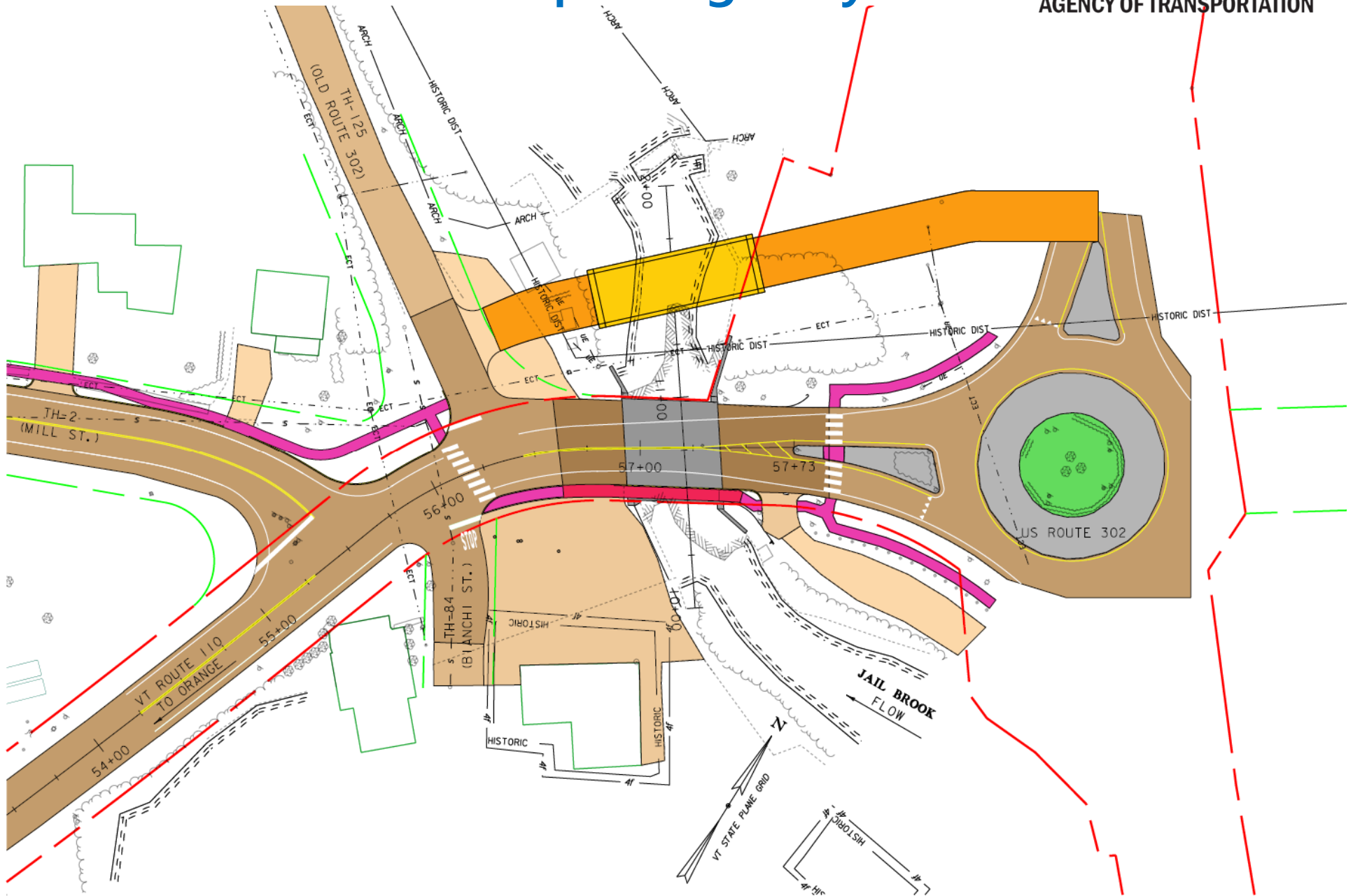
Contingent Method of Traffic Maintenance



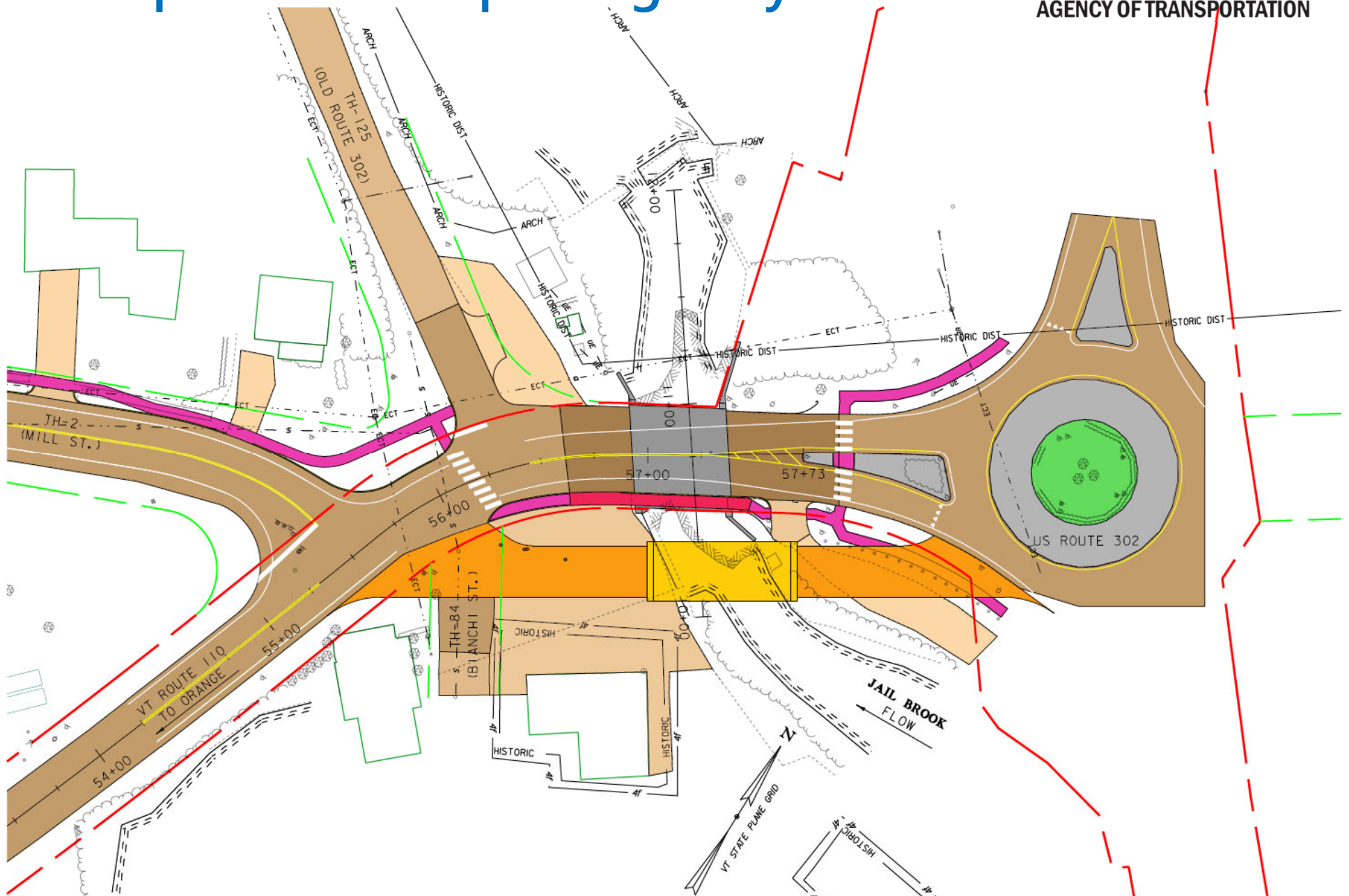
Temporary Bridge

- Two Lane Temporary Bridge with a sidewalk
- Potential impacts to utilities

Downstream Temp Bridge Layout



Upstream Temp Bridge Layout



Preliminary Project Schedule

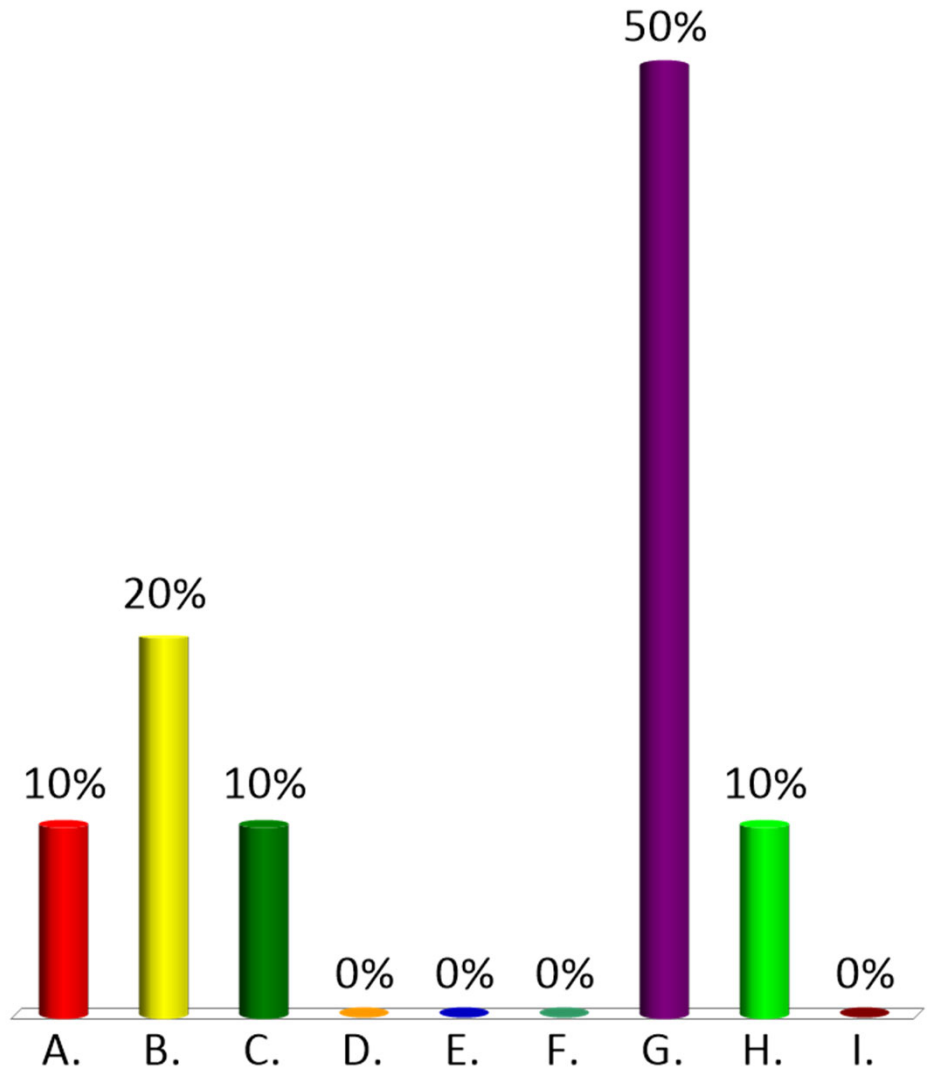
- Construction Start – 2023
 - Total Cost Estimate: \$2,600,000

Project Summary

- Full Bridge Replacement with Traffic Maintained on an Offsite Detour Utilizing Local Roads
 - 12'/8' typical with 5.5' wide sidewalk
 - Span length of approximately 45'
 - 75-year design life
 - Right-of-Way Needed
 - Possible overhead utility relocation
 - Avoid impacts to underground utilities (communications)
 - 60 Day Road Closure with traffic detoured onto local roads with the Town's permission

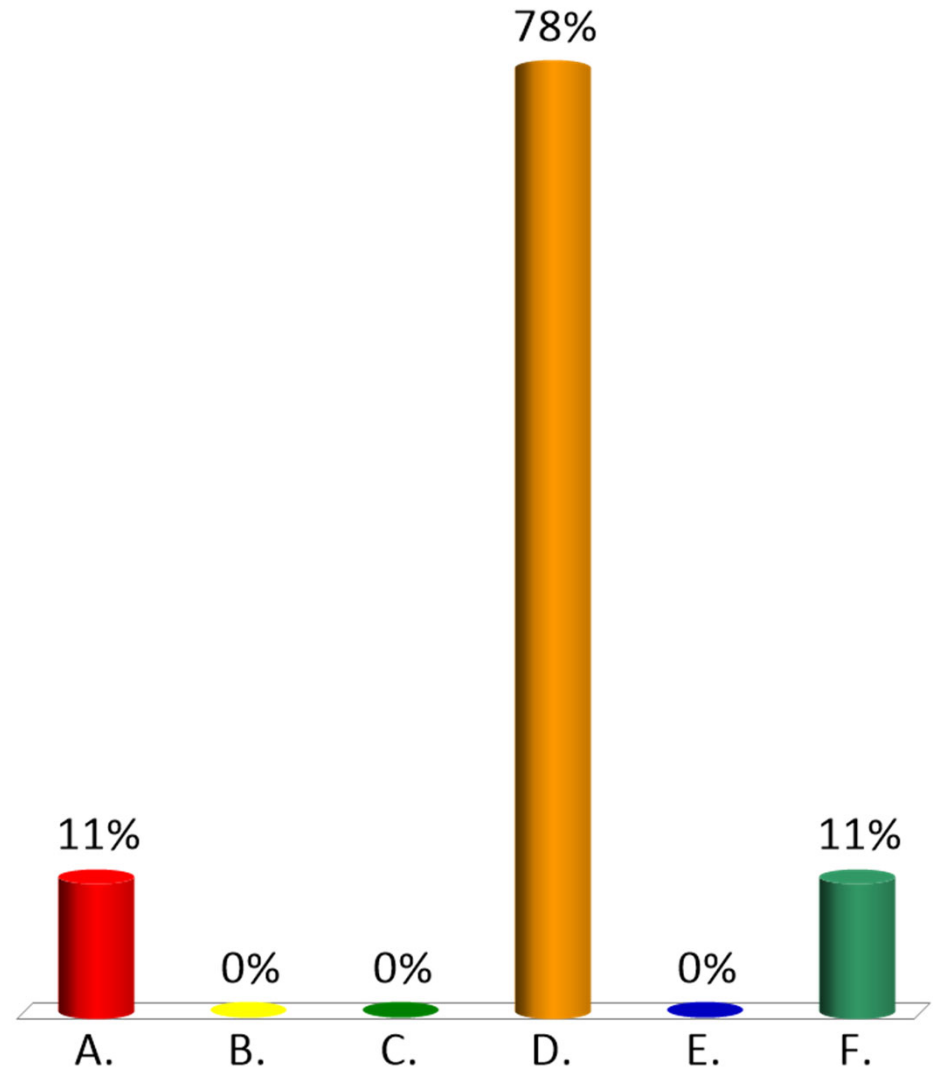
Which would you be most concerned about?

- A. Construction delays on VT Route 110
- B. Length of Detour
- C. Duration of Closure
- D. Bridge Aesthetics
- E. Environmental Impacts
- F. Recreational Impacts
- G. Business Impacts
- H. Other
- I. Not really concerned



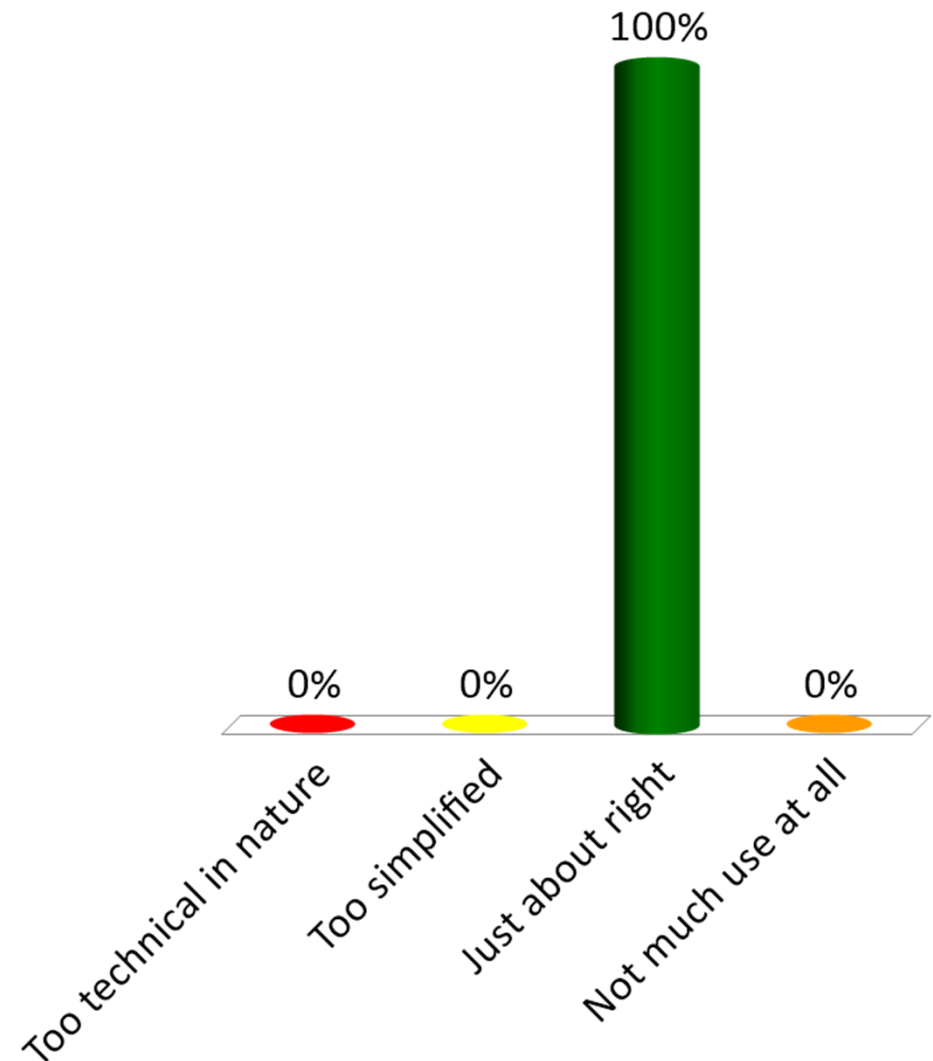
Which design aspect is the most important to you?

- 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?

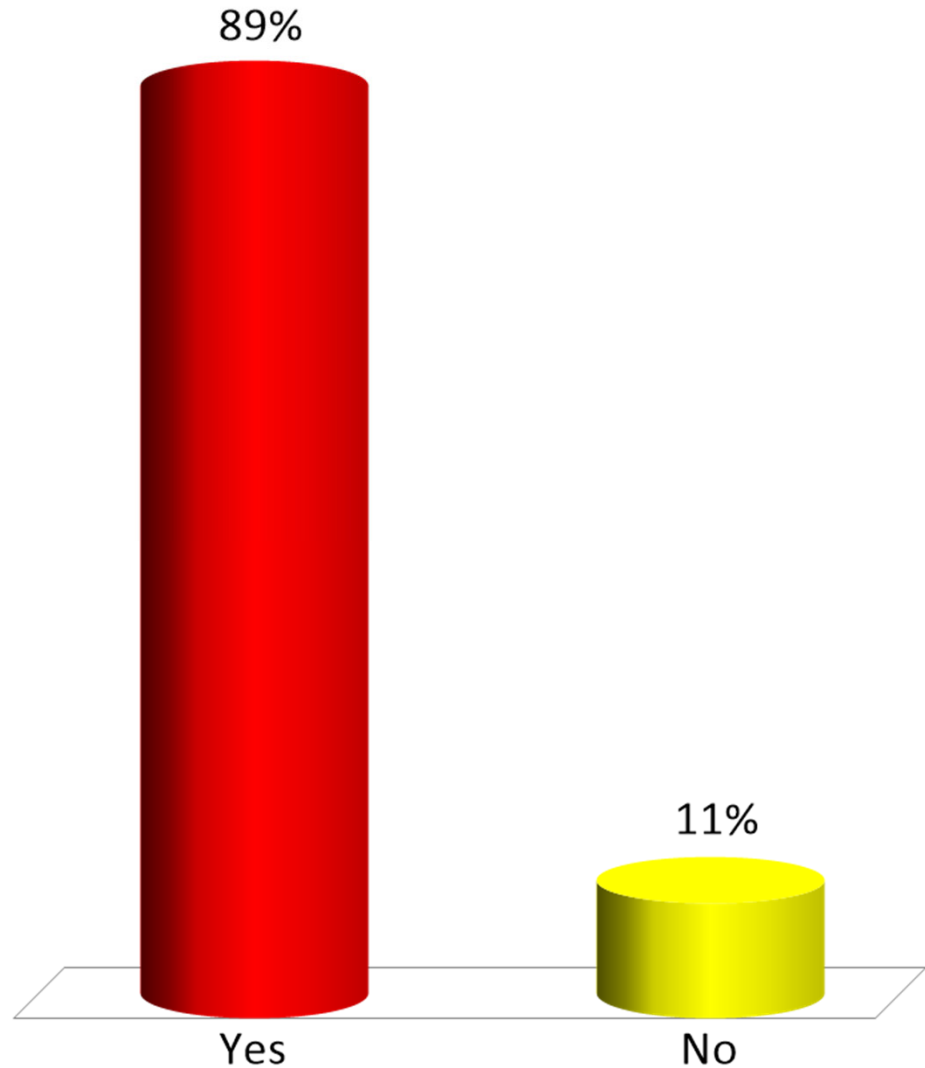
- A. Too technical in nature
- B. Too simplified
- C. Just about right
- D. Not much use at all



Do you find the selected scope of work satisfactory?

A. Yes

B. No



For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/12C576>



Barre Town BF 0169(12) Questions and Comments VT Route 110 – Bridge #21 over Jail Branch

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