Lowell BF 029-2(14)
Regional Concerns Meeting

VT Route 100– Bridge #234 over the East Branch of Missisquoi River

July 9, 2019

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Introductions

Laura Stone, P.E.

VTrans Scoping Engineer

Carolyn Cota, 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 selected alternative
- Provide an opportunity to ask questions and voice concerns

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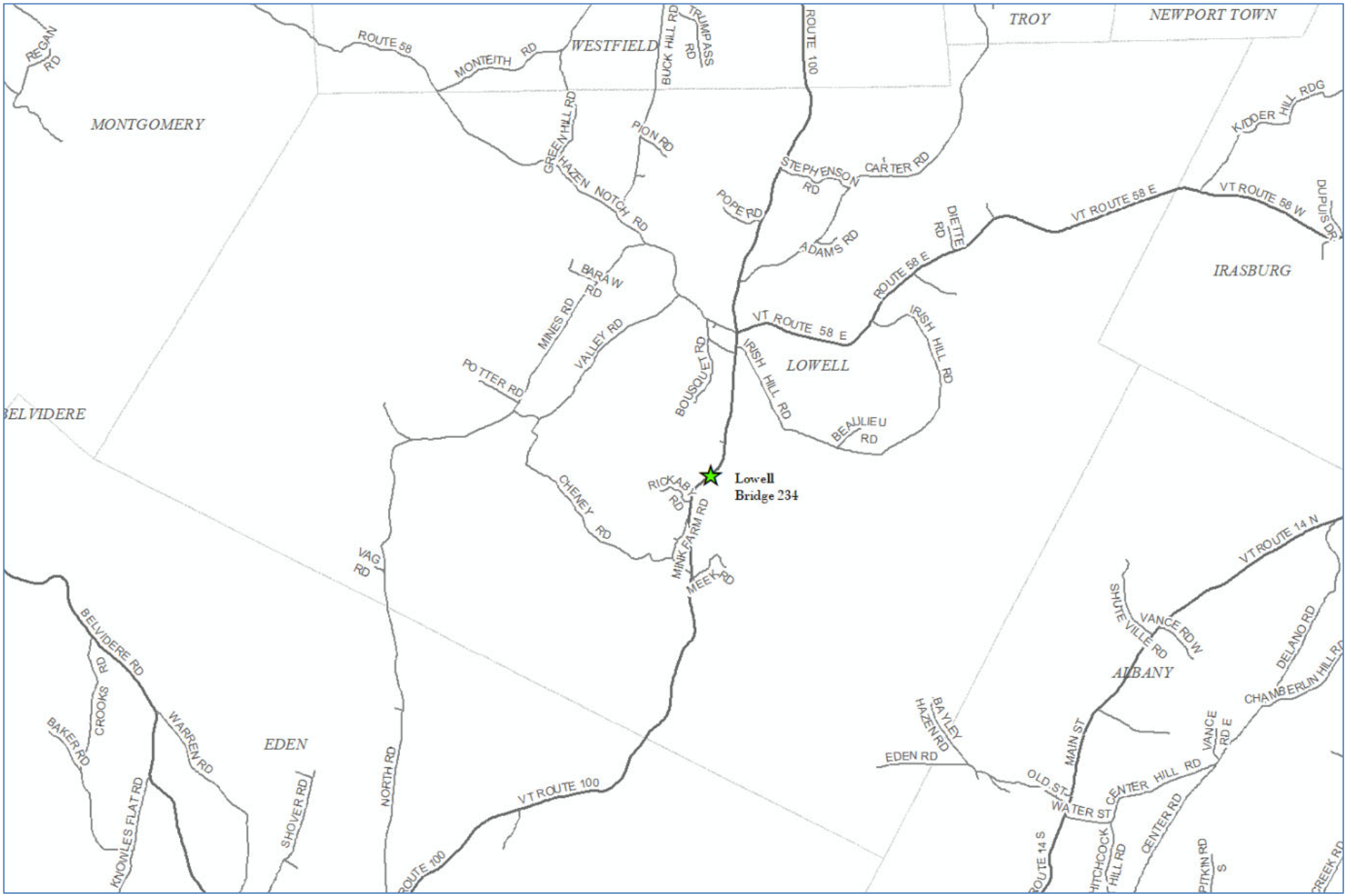


Location Map

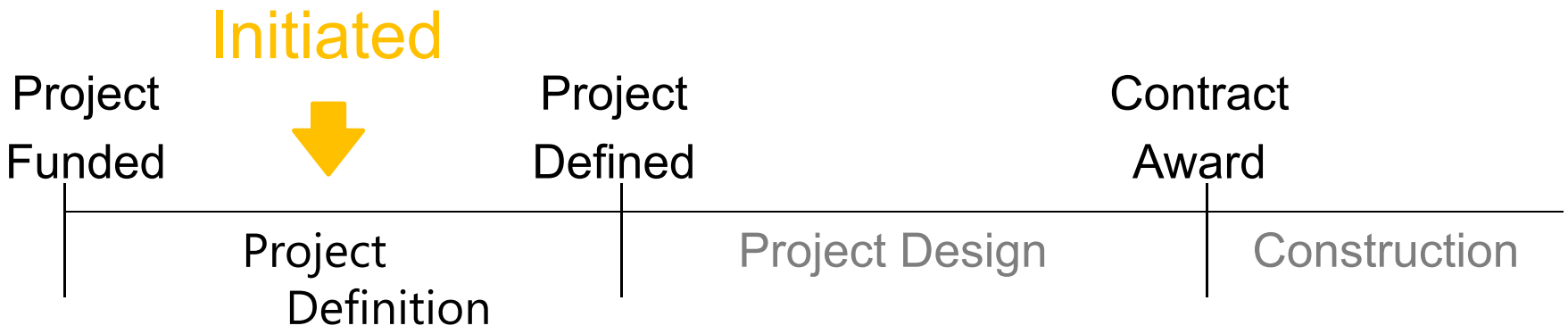

Bridge 234
Project Location
100
100
100
East Branch Missisquoi River

Meeting Overview

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

Accelerated Bridge Program
VTRANS

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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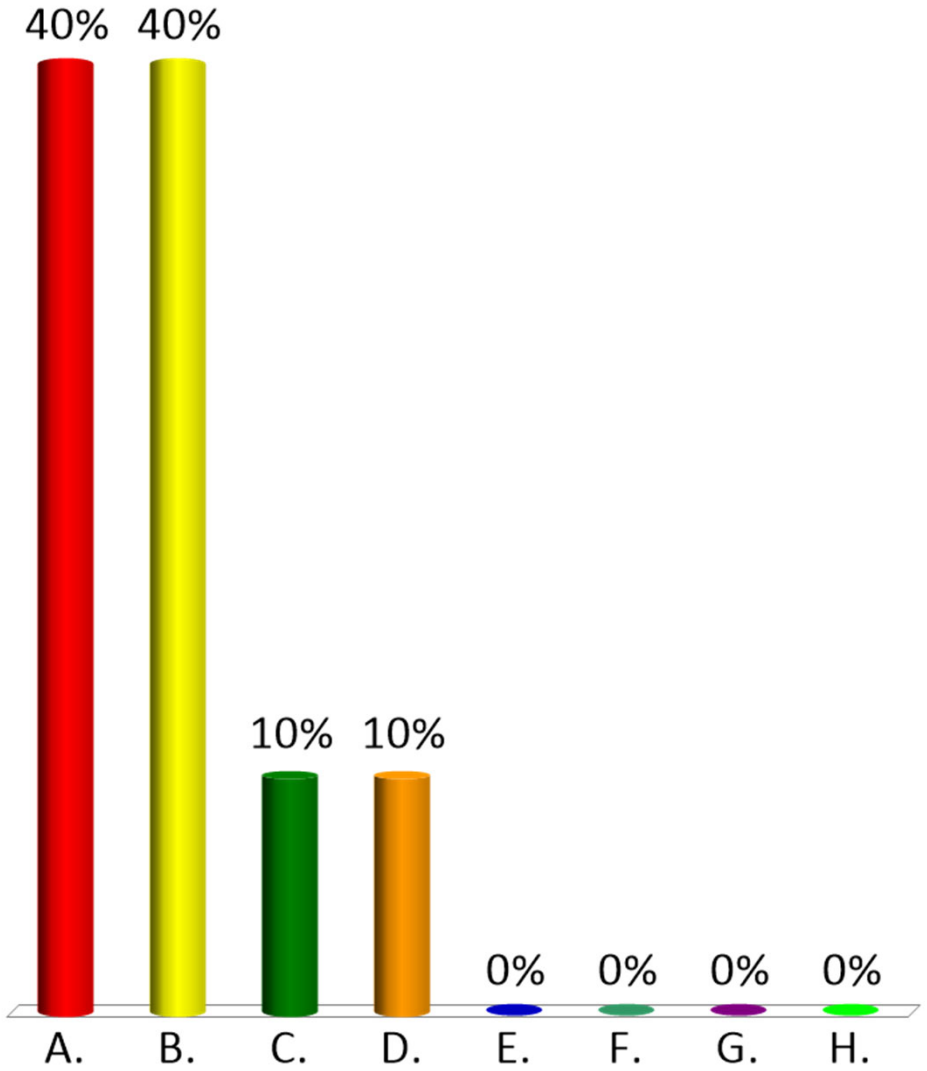
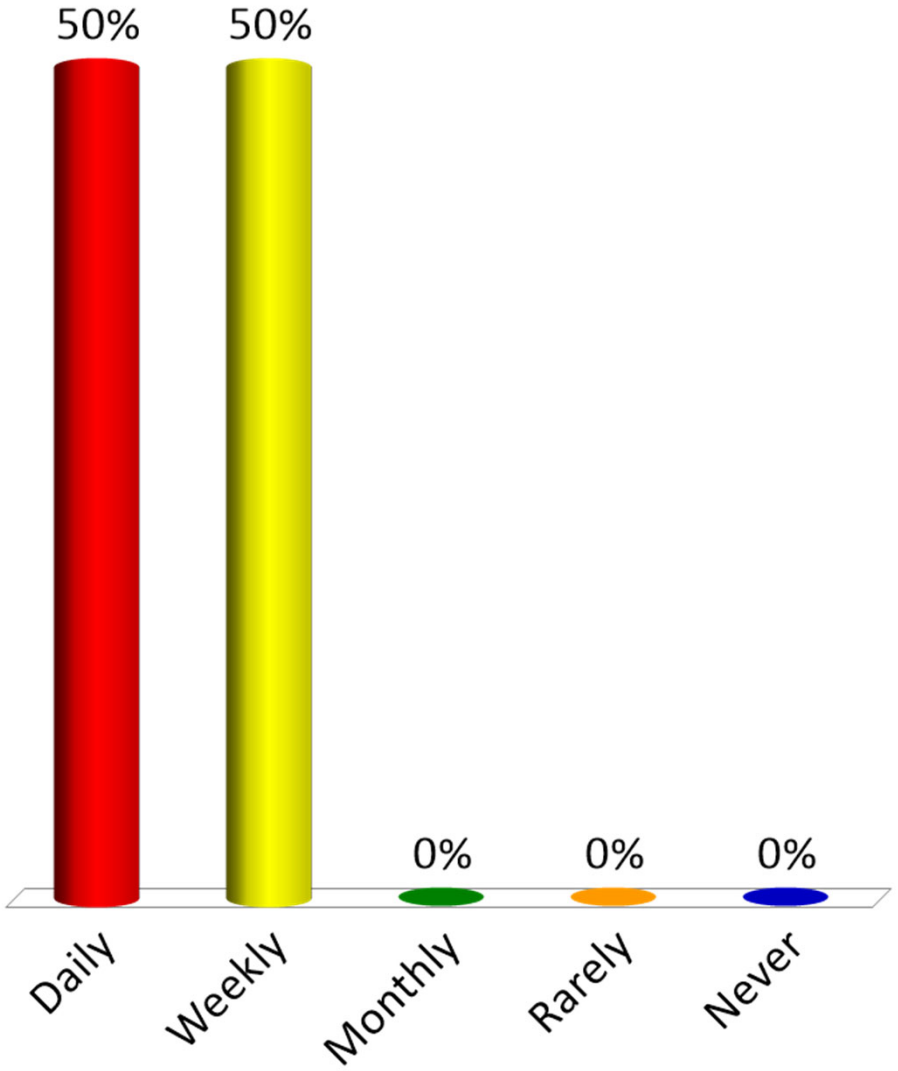
Who are you representing?

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



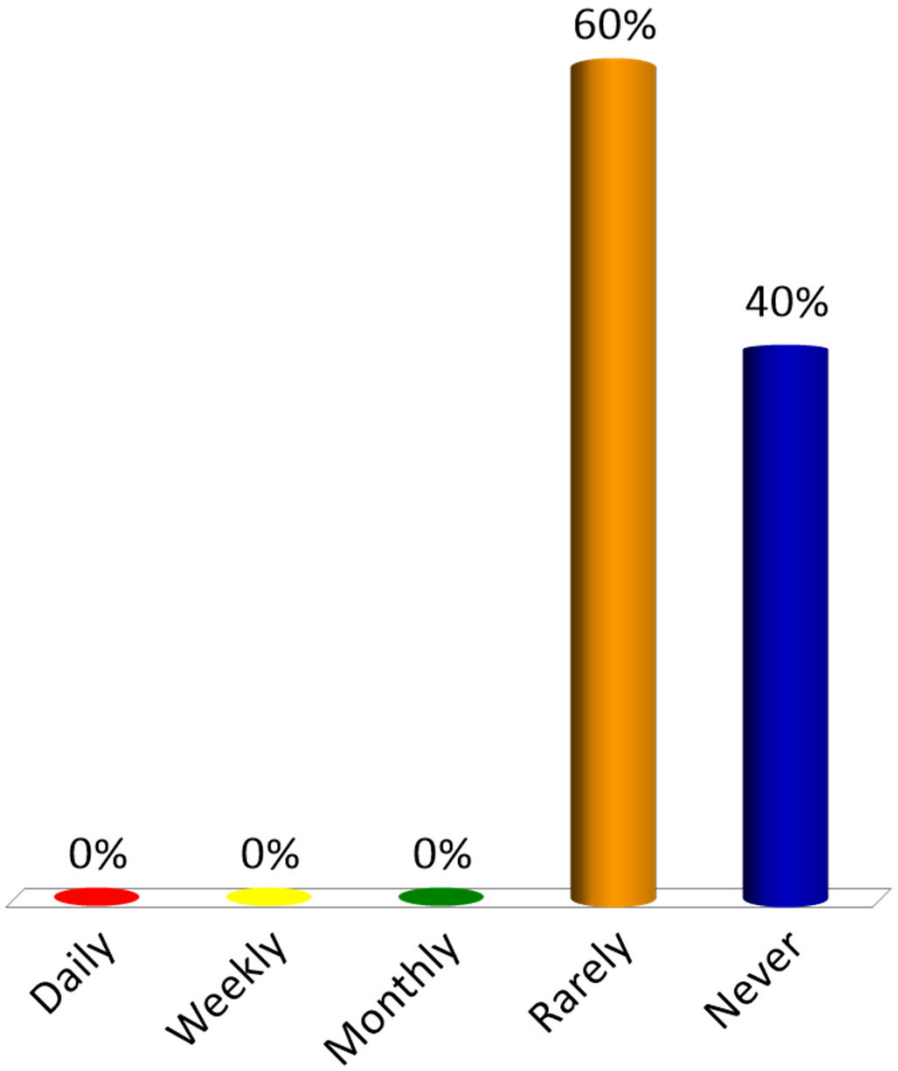
How often do you use this segment of VT Route 100?

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



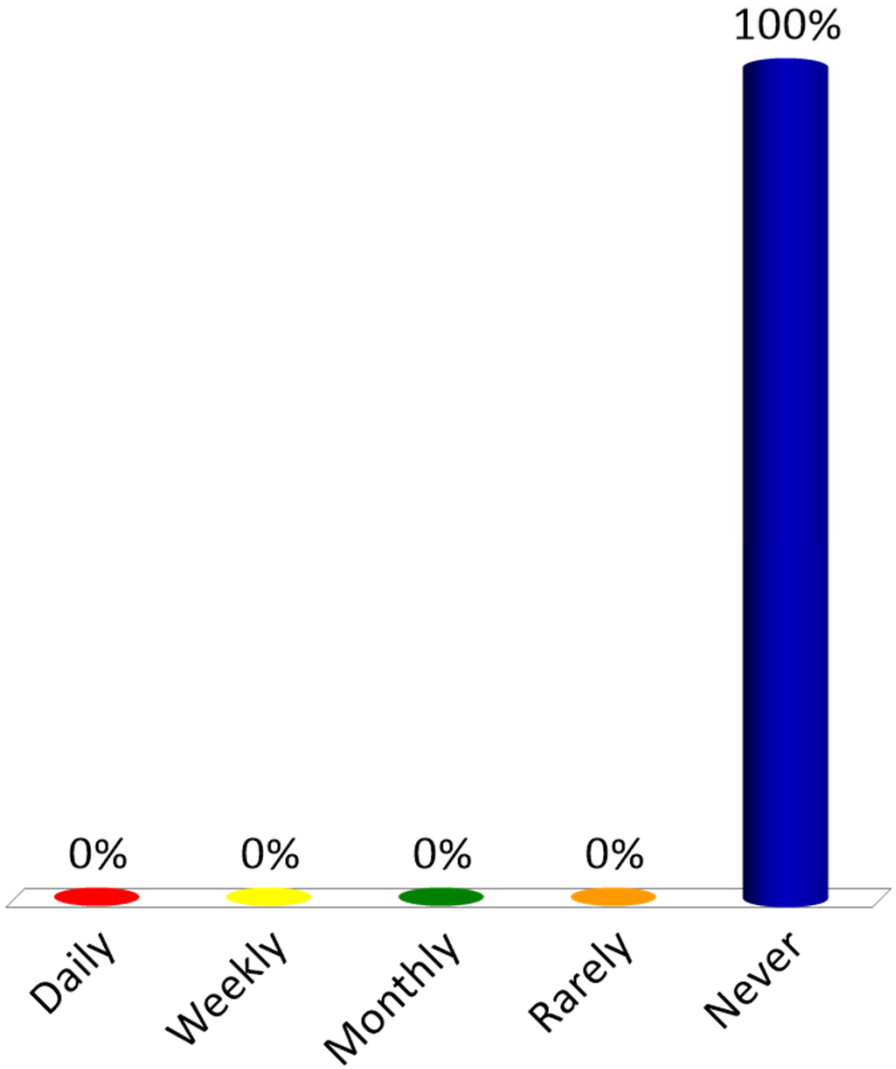
How often do you walk over the bridge?

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



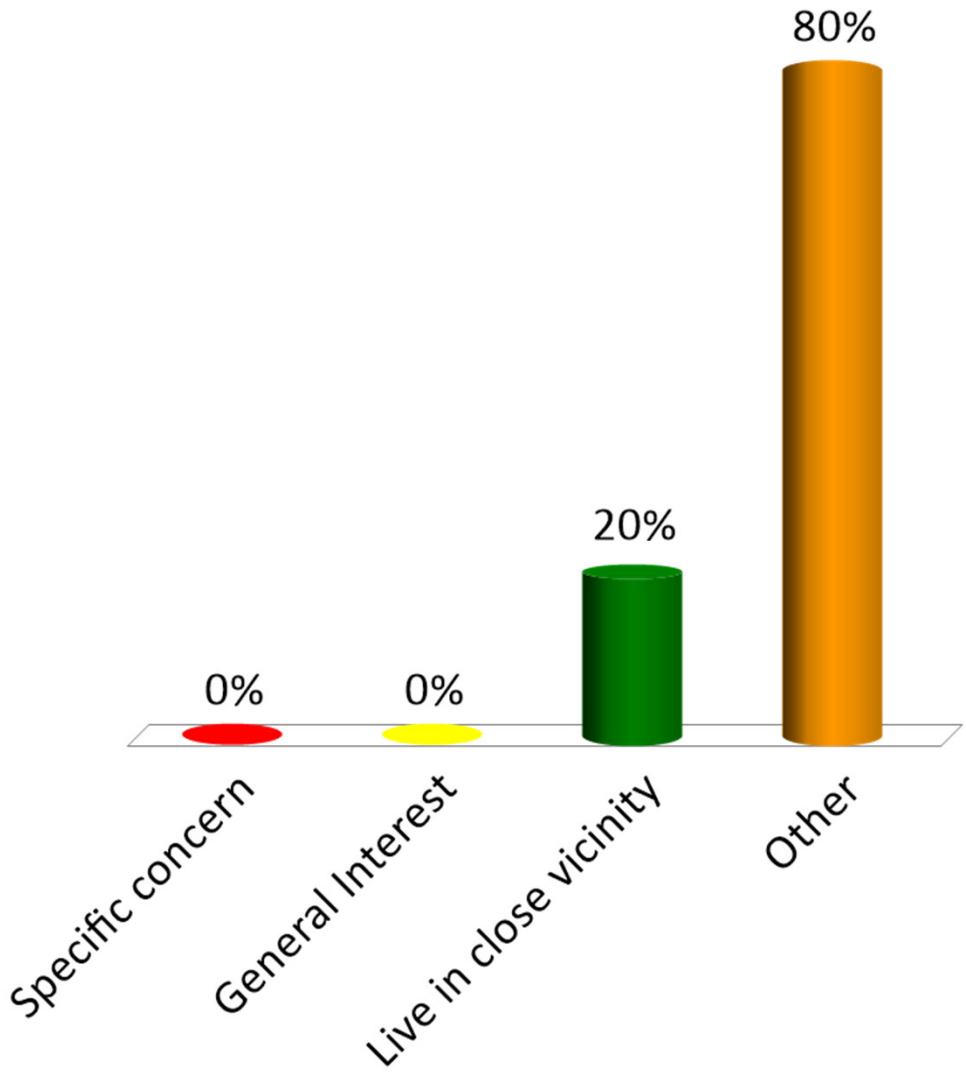
How often do you bike over the bridge?

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

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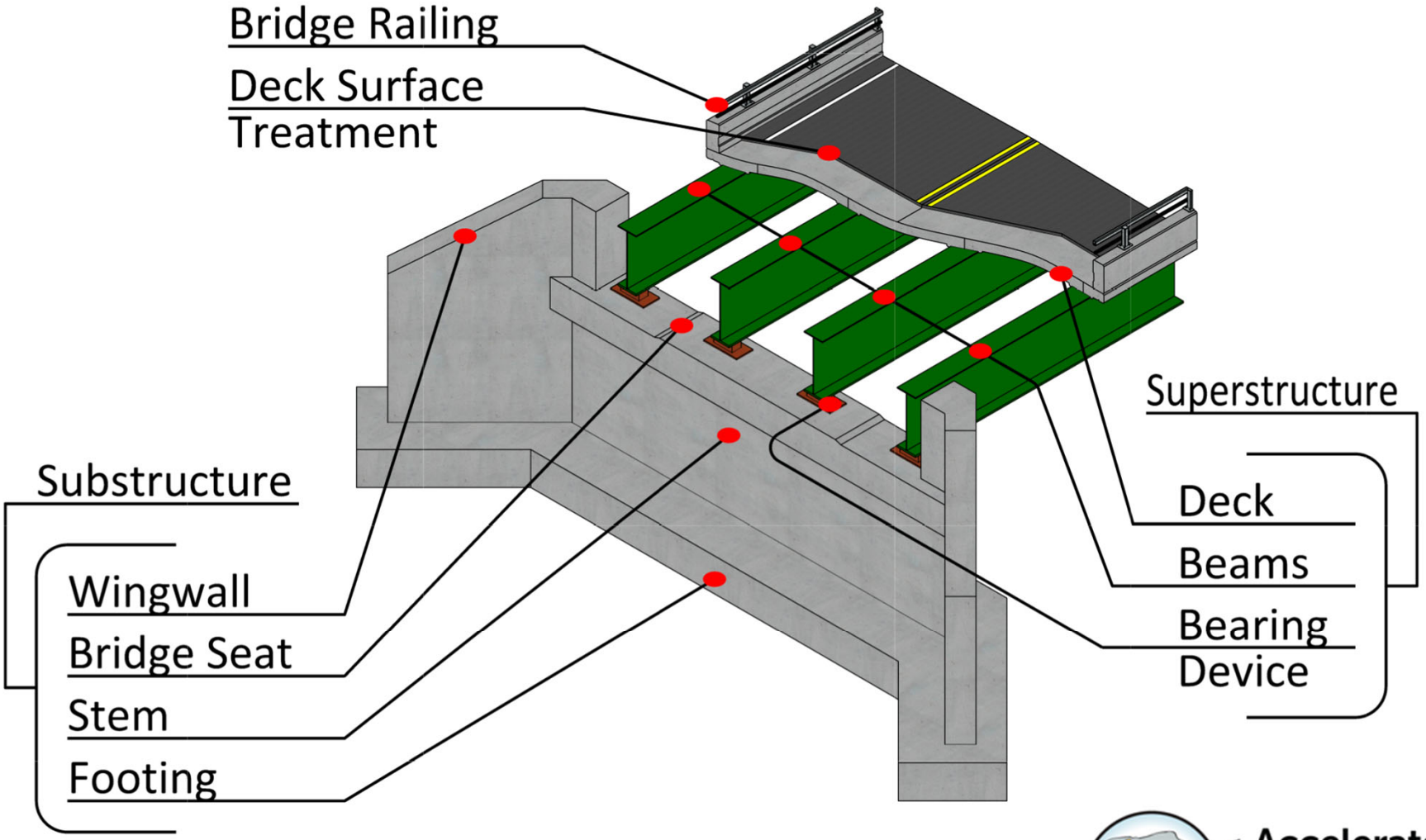
Description of Terms Used



Accelerated Bridge Program
VTRANS

Looking North over Bridge 234

Existing Conditions – Bridge #234

- Roadway Classification – Minor Arterial
- Bridge Type – 43’ Long Reinforced Concrete T-Beam Bridge
- Ownership – State of Vermont
- Constructed in 1929, Reconstructed (Widened) in 1948

Looking South over Bridge 234

Existing Conditions – Bridge #234

- 11’/4’ Existing Typical Section
  - Meets the minimum standard for safety and service
  - Does not meet the minimum shared-use standard of 5-feet
- 30-Degree skew

Existing Conditions – Bridge #234

- Bridge 234 is structurally deficient
- Reinforced Concrete Deck
  - Cracks, leaks, and heavy stains in beam bays 1, 2, and 3
  - Leakage is prevalent along the older section of the deck, with chloride inclusion
- There are 7 concrete T beams - Beams 4 and 5 are butted up next to each other at the widening
  - Heavy deterioration along their lower portions due to years of leakage through the joint between them.
  - Concrete along beam bottoms is spalled away and tension bars are exposed, but with minor loss. Some stirrups have rusted away and there is loss of concrete around the bars.
- Abutments have minor pop outs, cracks and leaks. There is a settlement crack through the upstream end at the south abutment from wingwall rotation.
- The bridge does not meet the minimum standard for hydraulics.

Existing Conditions - Bridge #234

- Deck Rating 5 (Fair)
- Superstructure Rating 4 (Poor)
- Substructure Rating 6 (Satisfactory)

Deck Condition

Existing Conditions - Bridge #234

- Saturation
- Rust Staining

Western Abutment

Existing Conditions - Bridge #234

- Gravel Bar

Eastern Abutment

Existing Conditions - Bridge #234

- Debris

Scour Issues

Existing Conditions - Bridge #234

Looking Upstream from Bridge 234

Existing Conditions - Bridge #234

- Waterway is confined on the upstream side of the bridge

Resources – Looking Downstream

Existing Conditions - Bridge #234

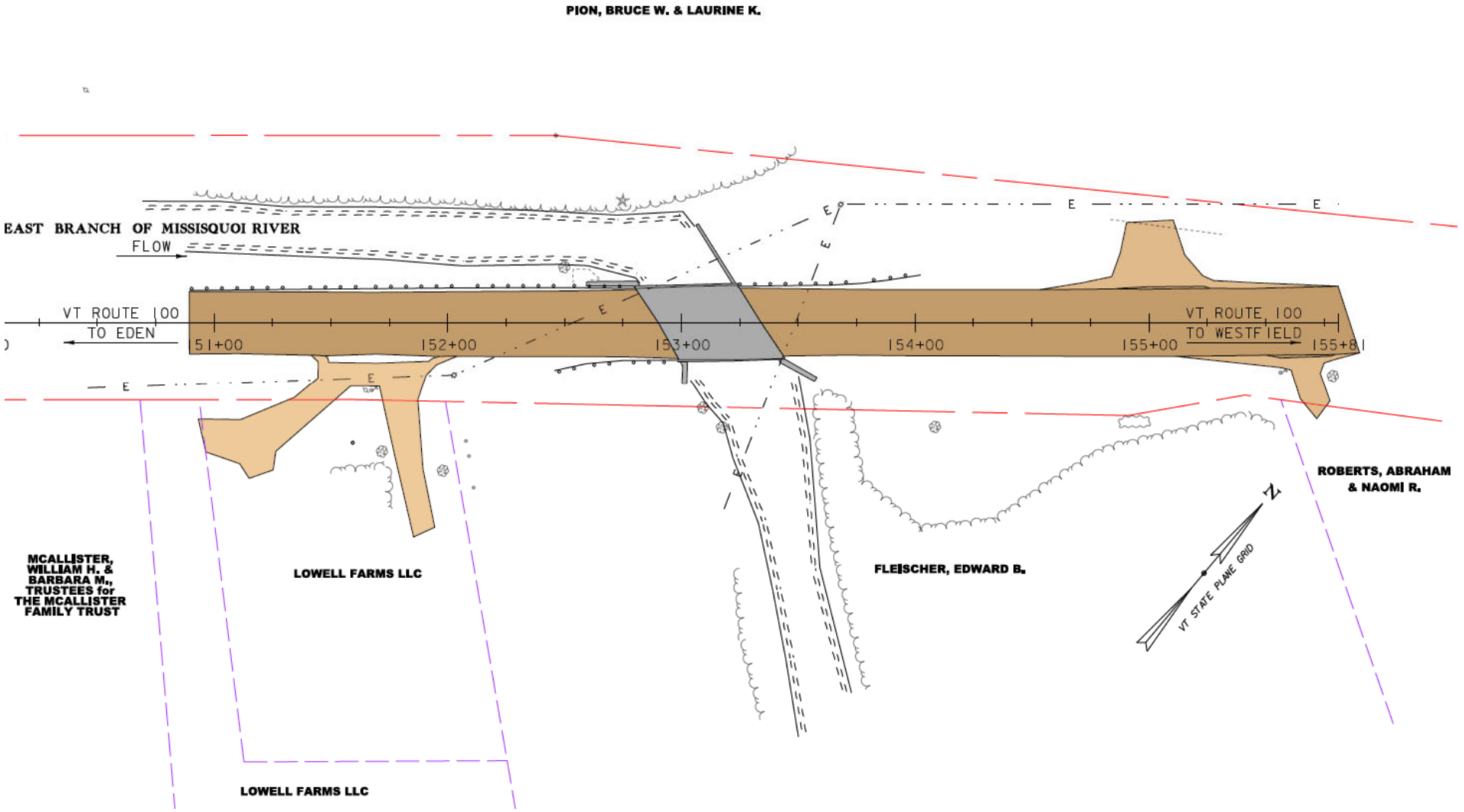
- Northern Long Eared Bat Habitat
- Wildlife Habitat
- Utilities

Downstream Fascia

Existing Conditions - Bridge #234

- Cracks and spalls

Existing Conditions



Design Criteria and Considerations

- Average Daily Traffic: 2,900 veh/day
- Design Hourly Volume: 340 veh/hr
- % Trucks: 12.7
- Design Speed: 50 mph
- Aerial Utilities

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Alternatives Considered – Bridge #234

- No Action
  - Additional maintenance required within 10 years
- Minor Rehabilitation
  - Superstructure and Substructure Patching
  - 11’/4’ typical
  - 15 year design life
- Superstructure Replacement
  - Abutment Patching
  - 40 year design life
  - Substandard hydraulically
- Full Bridge Replacement On Alignment
  - Maintain horizontal alignment
  - Raise vertical alignment by approx. 1 foot to meet minimum hydraulic standard
  - 75 year design life

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Selected Alternative - Bridge #234

- Full Bridge Replacement
  - 11’/5’ typical
  - Span length of approximately 50’
  - Vertical grade raised approximately 1’ to meet minimum hydraulics
  - 75 year design life
  - Right of Way Needed
  - Aerial Utility Relocation

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Proposed Typical Section

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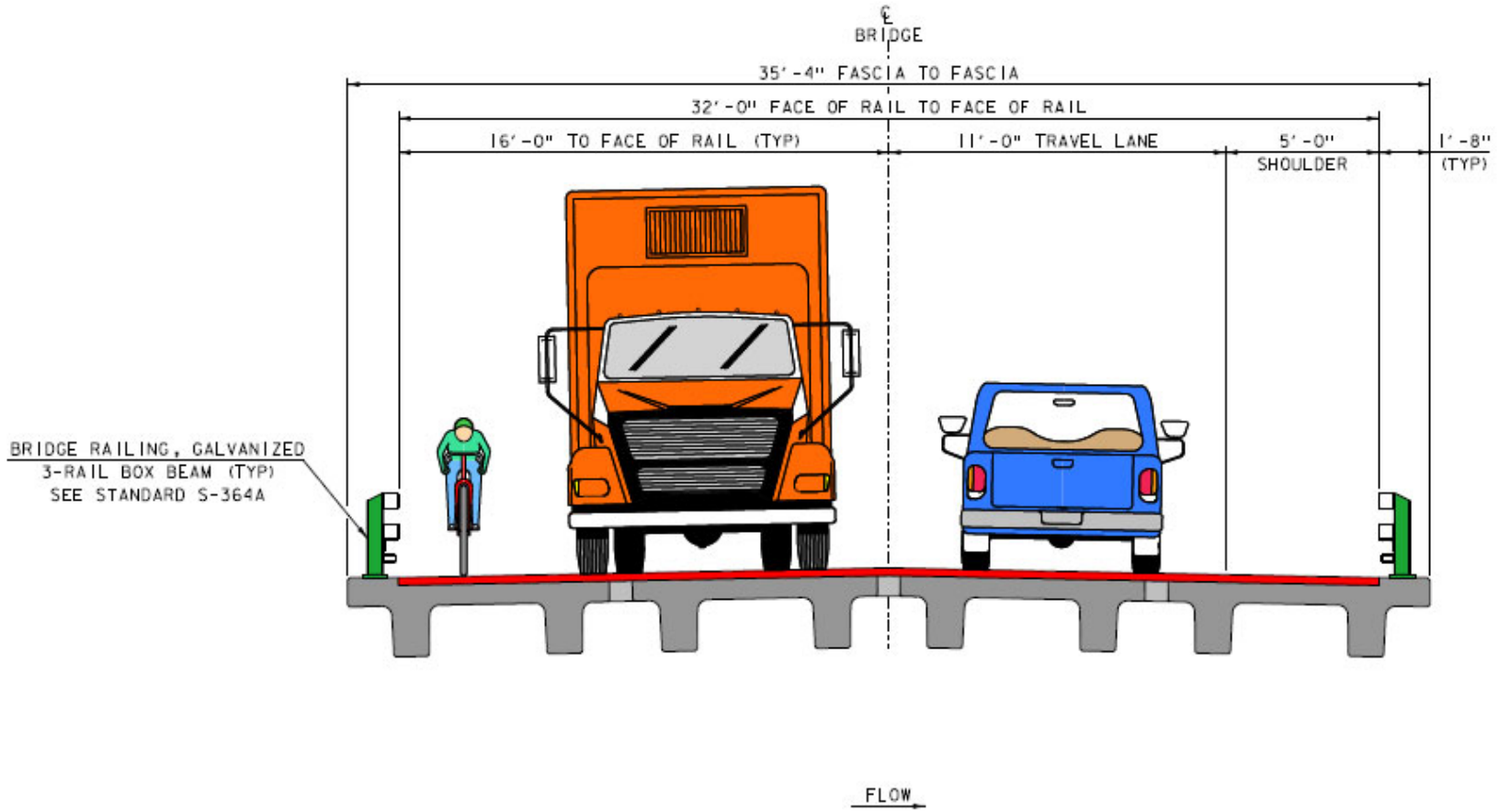

SUPERSTRUCTURE/BRIDGE REPLACEMENT TYPICAL SECTION

Proposed Layout

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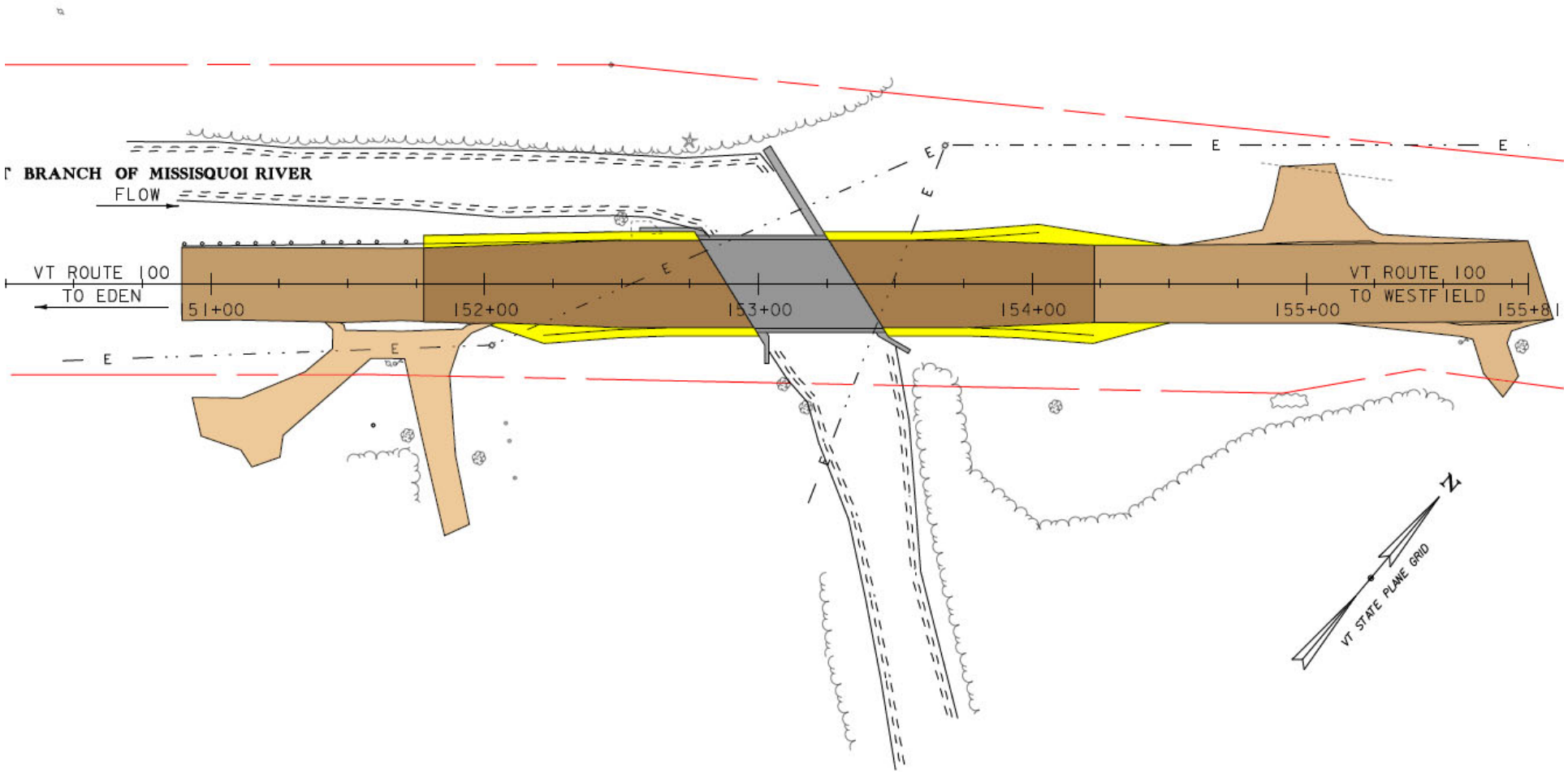

Proposed Profile

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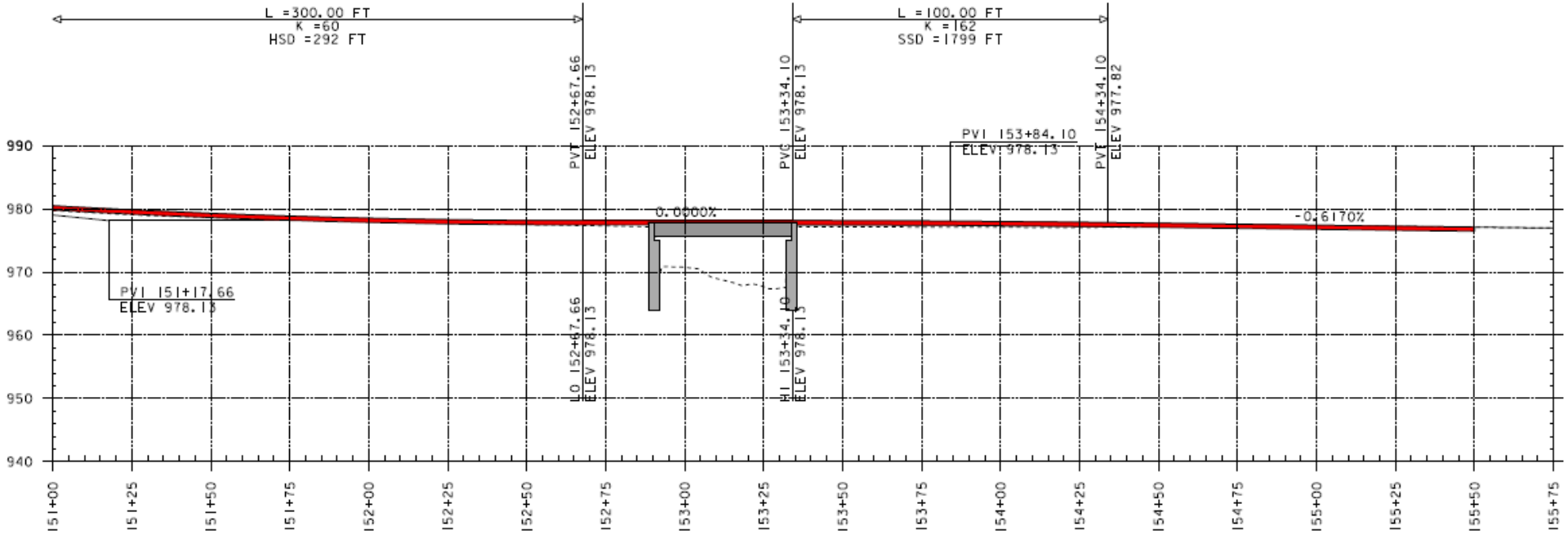

VT ROUTE 100 RAISED PROFILE

SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"

What Will the New Bridge Look Like?

Proposed Example - Bridge #234

- Integral Abutment with Shallow Superstructure (Slab Bridge Shown)
- Flush Mounted Box Beam Railing

Maintenance of Traffic Options Considered

- Offsite Detour
- Phased Construction
- Temporary Bridge

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Selected Method of Traffic Maintenance

Temporary Bridge

- Downstream
- One-Lane Temporary Bridge
- Signal required for One Lane option

Downstream Temp Bridge Layout

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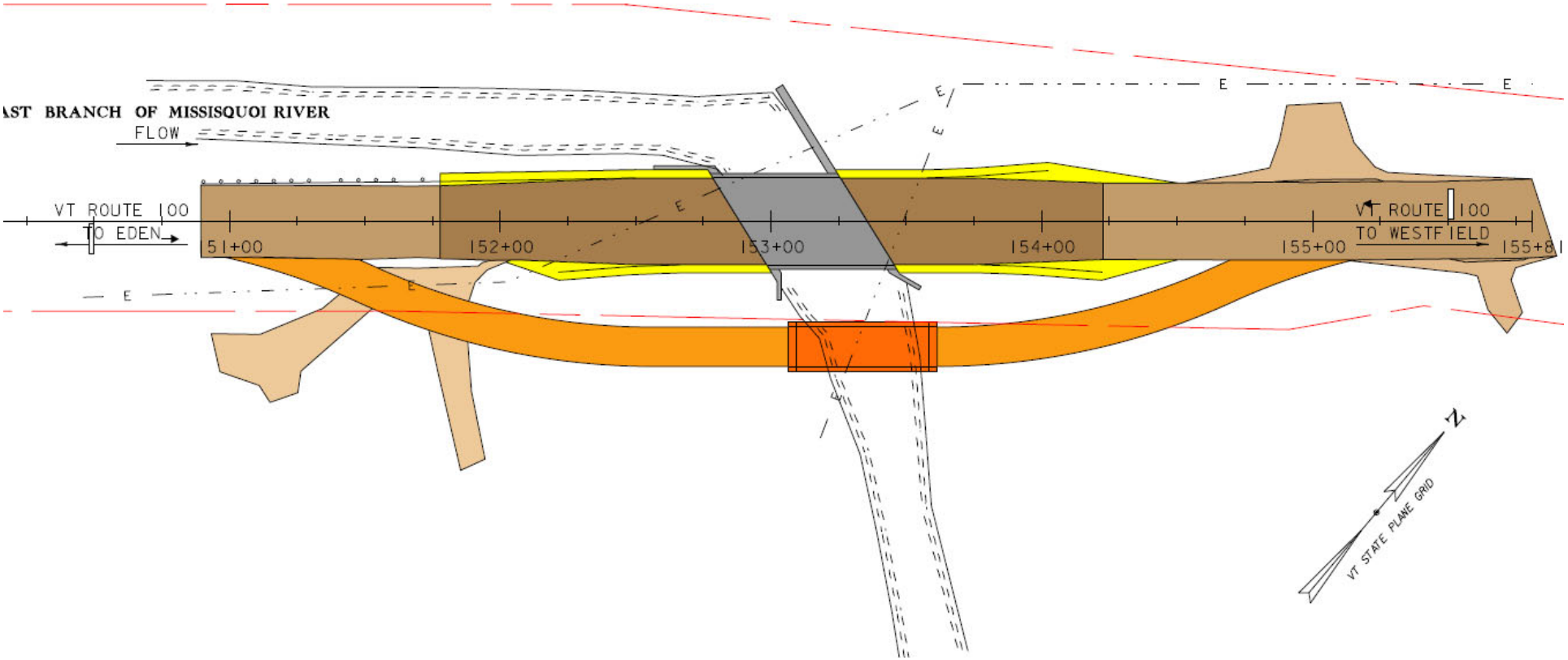

Preliminary Project Schedule

- Construction Start – 2022
  - Total Cost Estimate: $1,995,000

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Project Summary

- Full Bridge Replacement with Traffic Maintained on a Temporary Bridge
  - 11′/5′ typical
  - Span length of approximately 50′
  - Vertical grade raised approximately 1′ to meet minimum hydraulics
  - 75 year design life
  - Right of Way Needed
  - Aerial Utility Relocation

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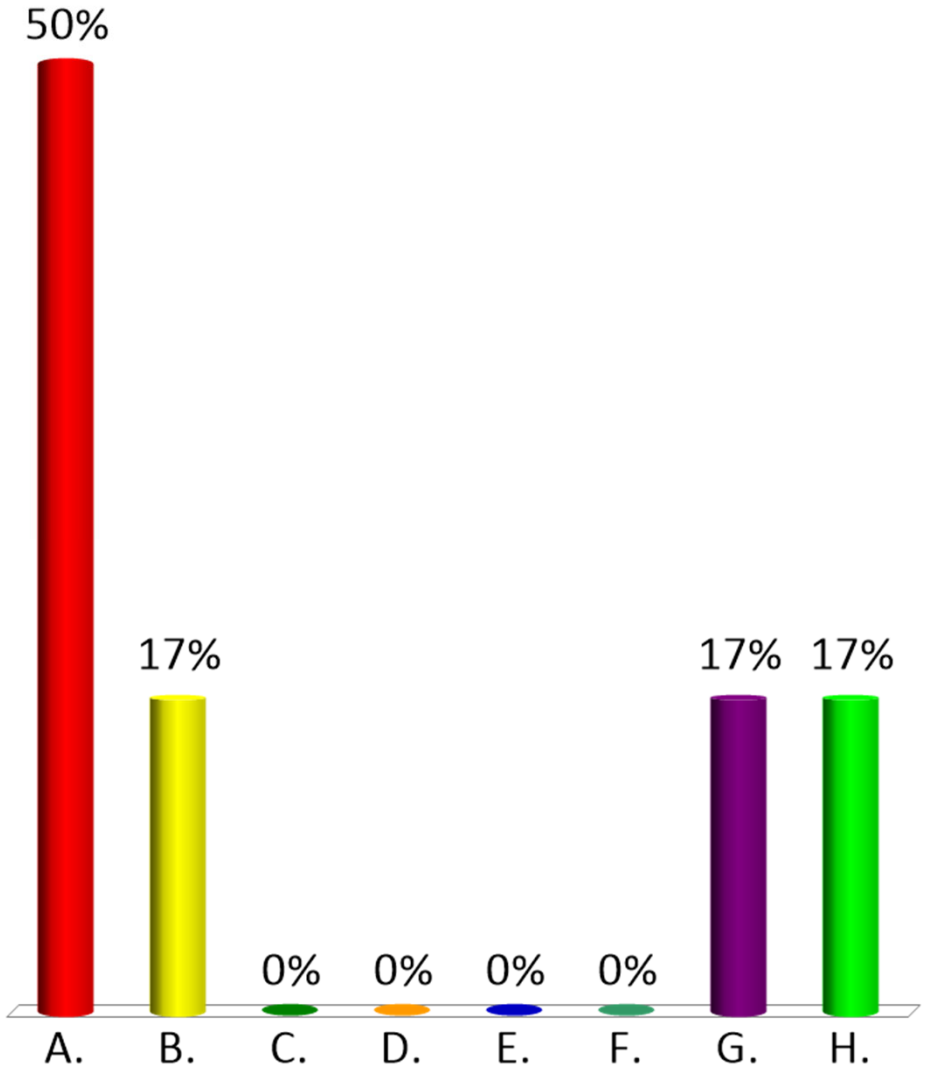
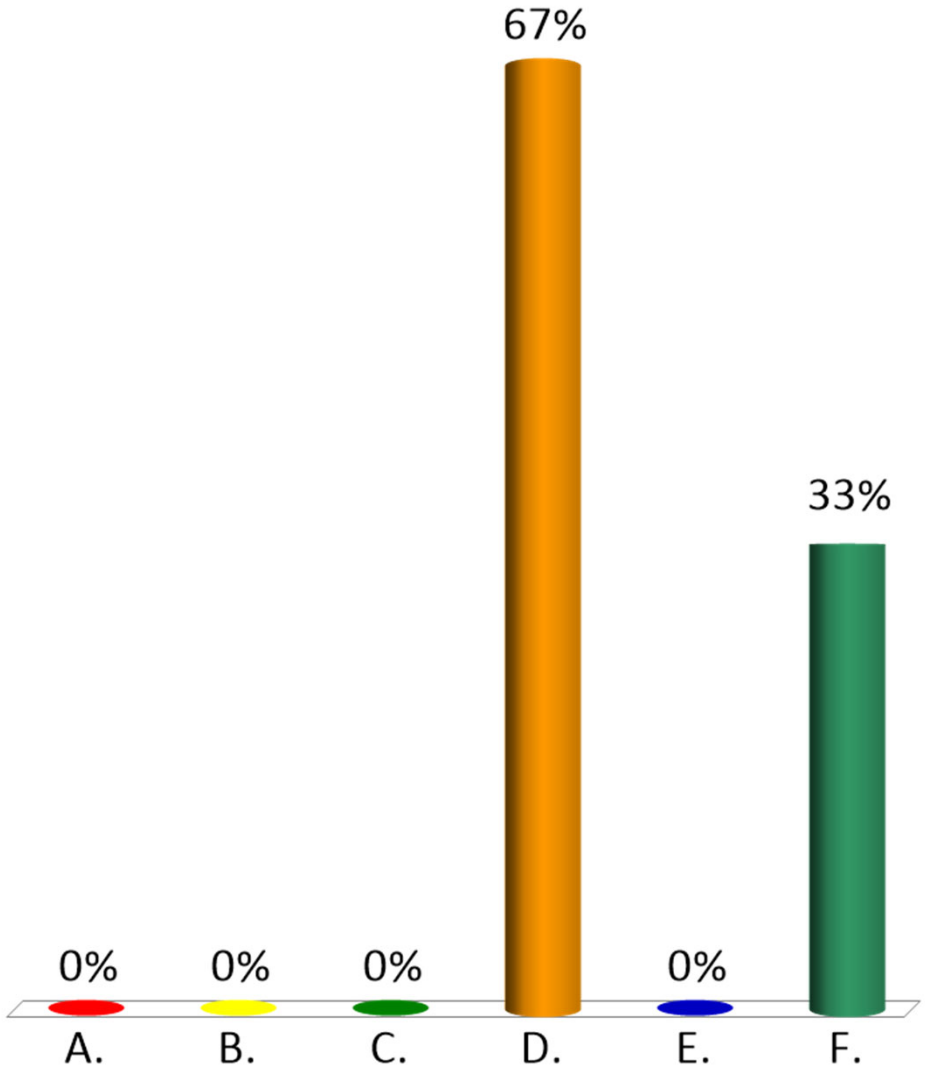
Which would you be most concerned about?

A. Construction delays on VT Route 100
B. Temporary Bridge Impacts
C. Bridge Aesthetics
D. Environmental Impacts
E. Recreational Impacts
F. Business Impacts
G. Other
H. Not really concerned



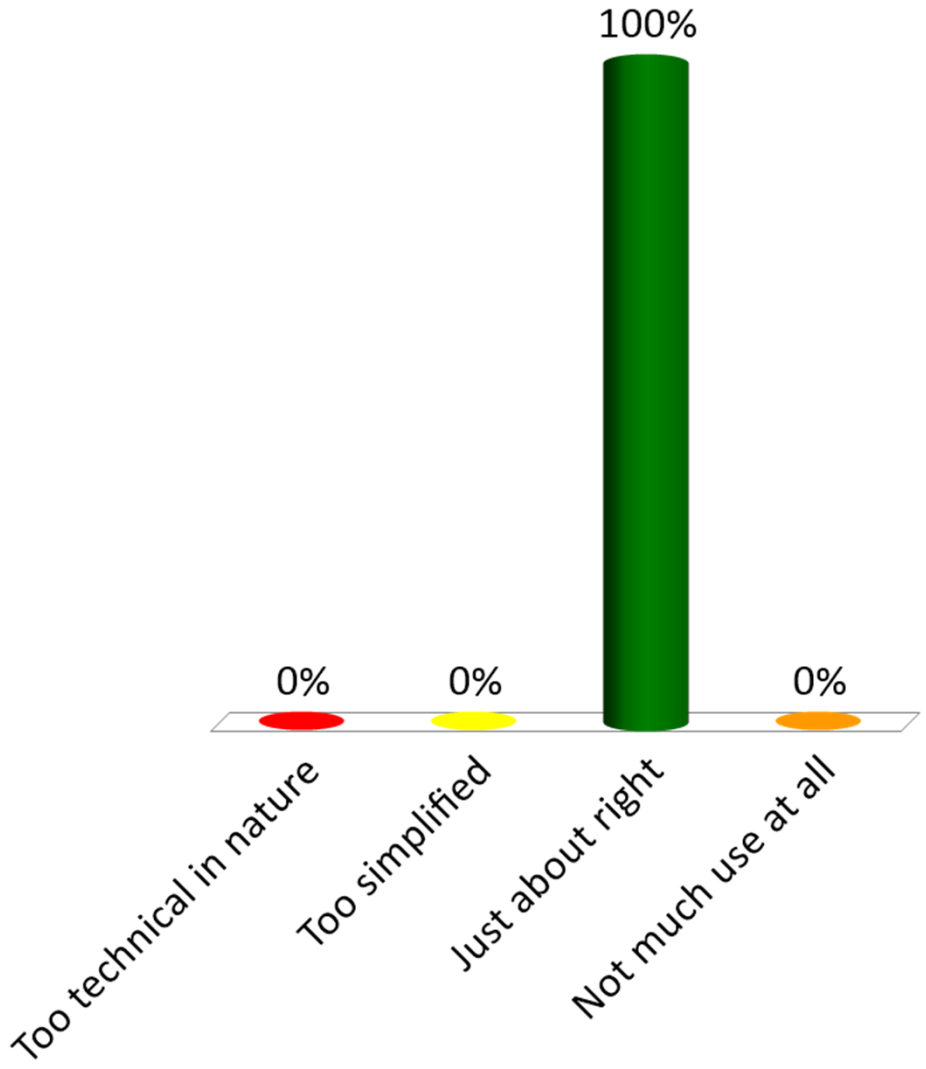
Which design aspect is the most important to you?

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?

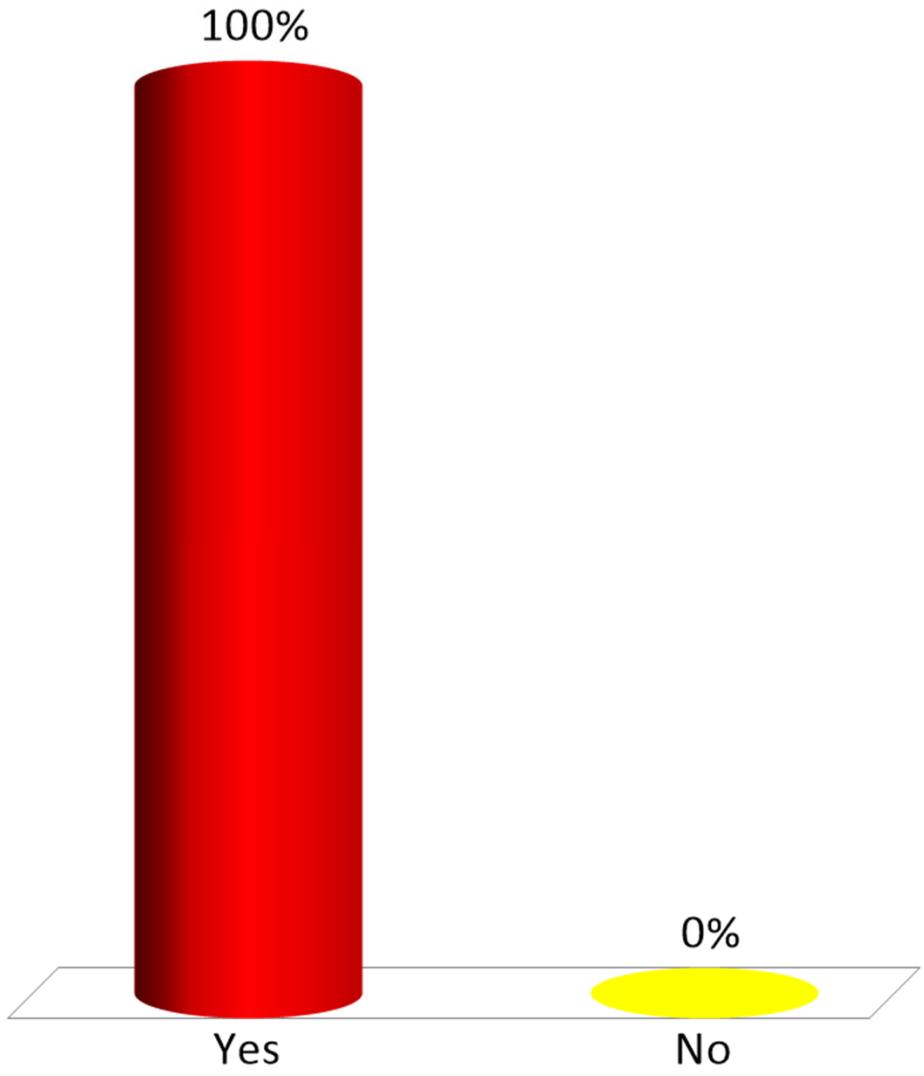
A. Too technical in nature
B. Too simplified
C. Just about right
D. Not much use at all



Do you find the selected scope of work satisfactory?

A. Yes

B. No



For more information:

- https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/12B592

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Questions and Comments

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