



Waterford BF 0225(4)
Regional Concerns Meeting
VT Route 18 – Bridge #7

March 23, 2015



**Accelerated
Bridge
Program**
VTRANS

Introductions

Jennifer Fitch, P.E.

VTrans Scoping Project Manager

Laura Stone, P.E.

VTrans Scoping Engineer

Kristin Higgins, P.E.

VTrans Design Project Manager

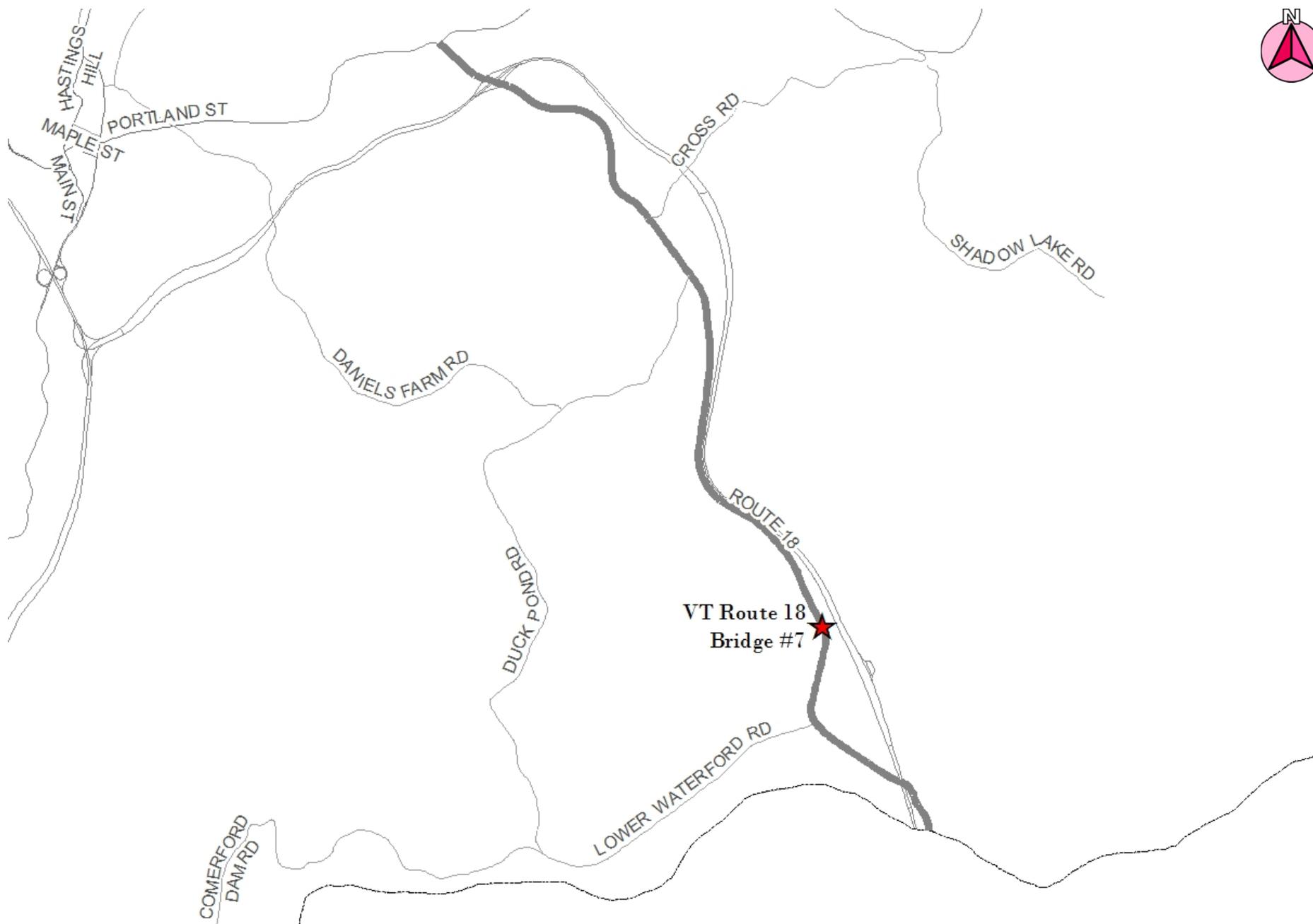
Jeremy Salvatori

VTrans Project Designer



Purpose of Meeting

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



Location Map



Project Location

Meeting Overview

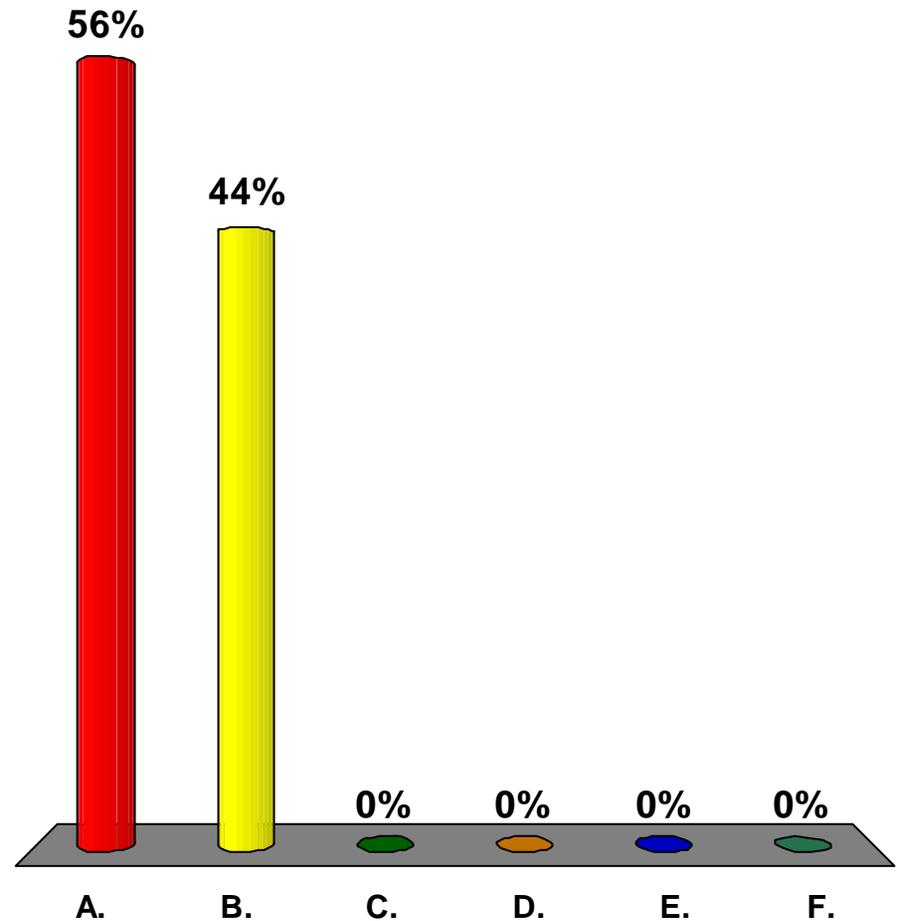
- VTrans Project Development Process
- Project Overview
 - Existing Conditions
 - Alternatives Considered
 - Selected Alternative
- Maintenance of Traffic
- Schedule
- Questions

VTrans Project Development Process



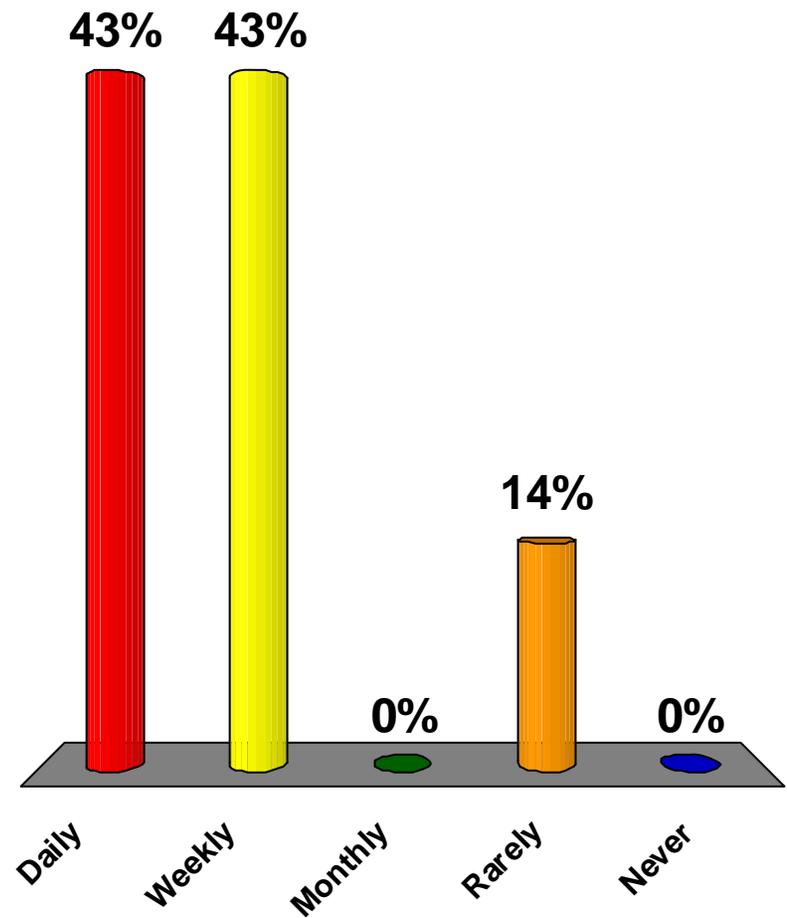
Who are you representing?

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



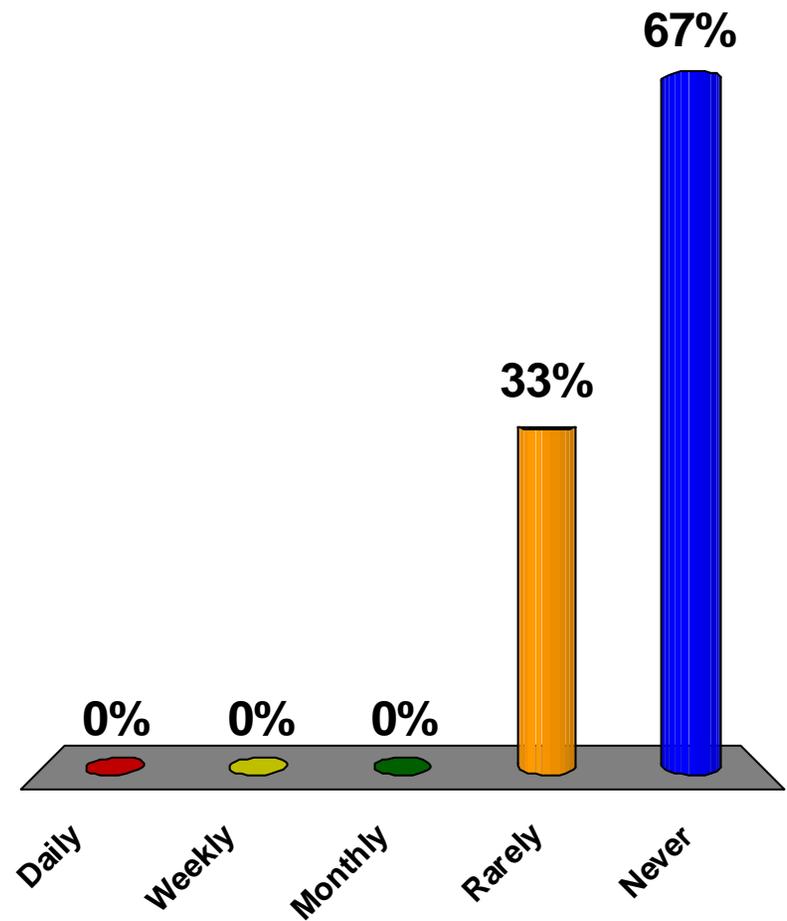
How often do you use this segment of VT Route 18?

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



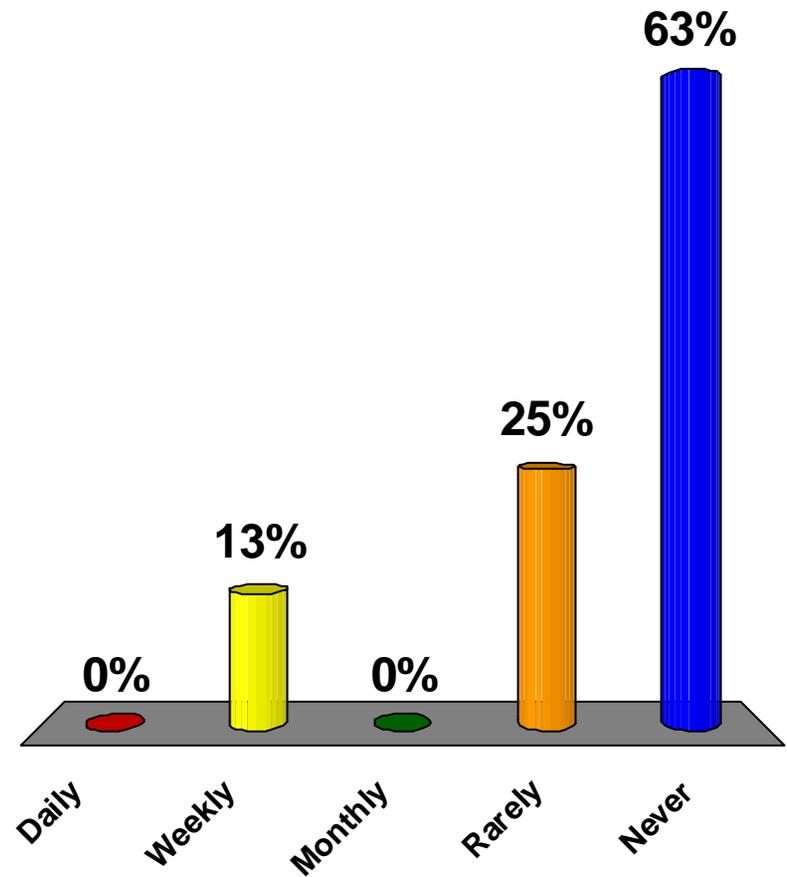
How often do you walk over the bridge?

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



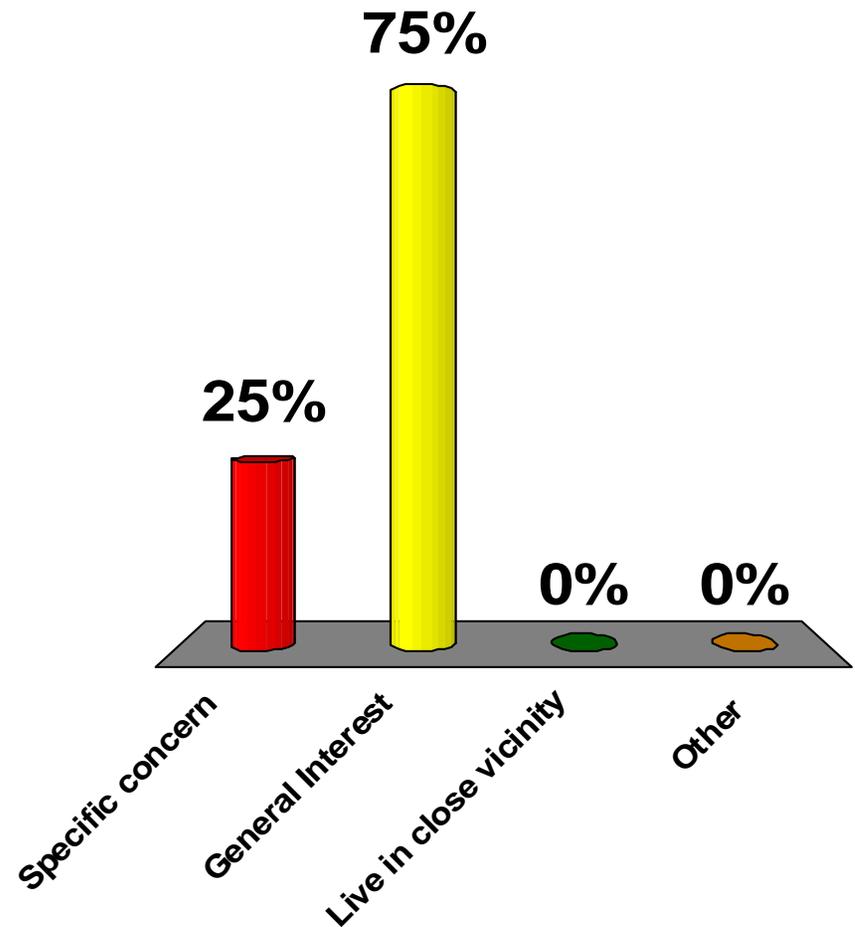
How often do you bike over the bridge?

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



What is your reason for attending this meeting?

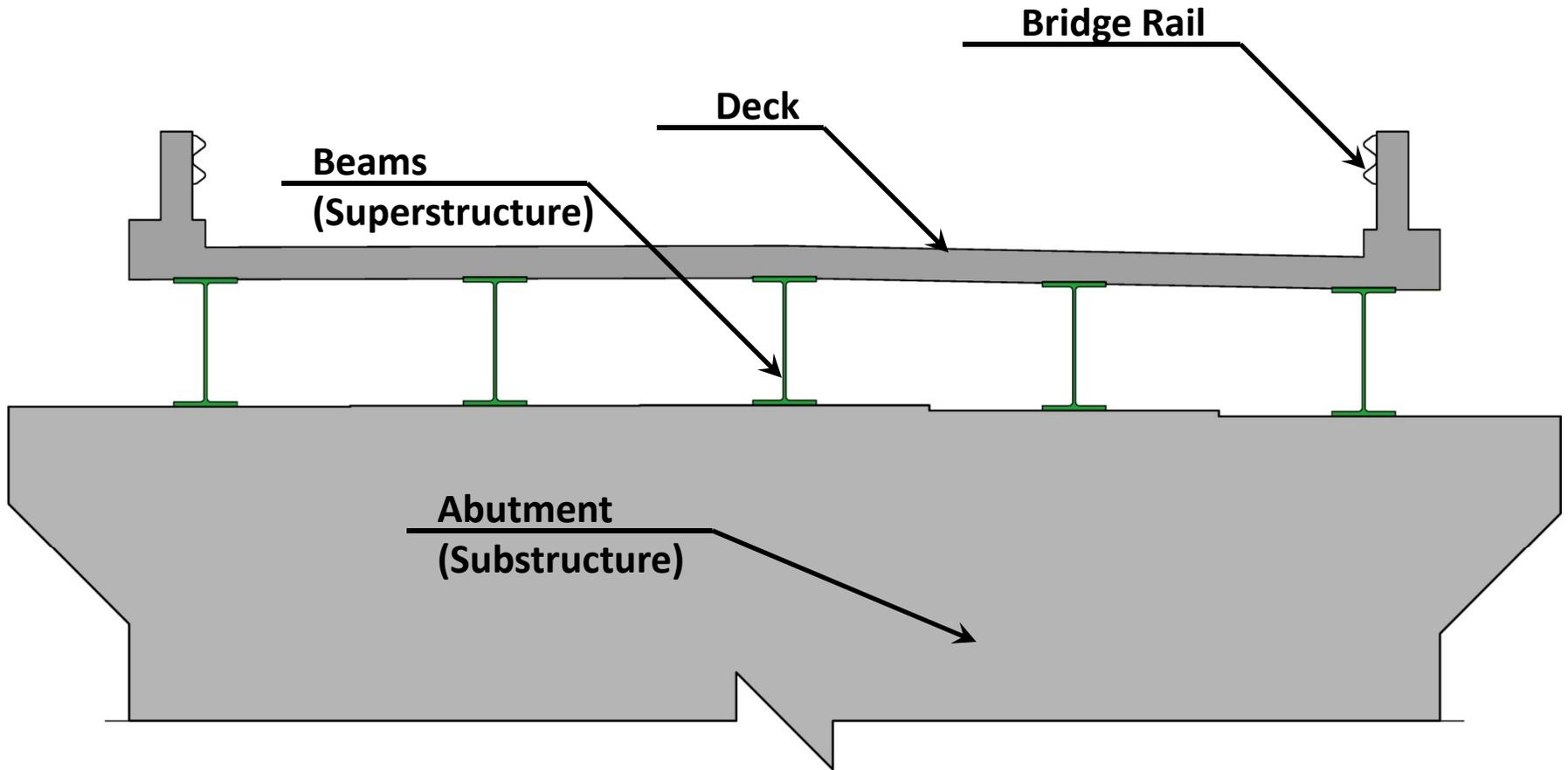
- A. Specific concern
- B. General Interest
- C. Live in close vicinity
- D. Other



Project Overview

- Existing Conditions
- Alternatives Considered
- Selected Alternative

Description of Terms Used



Cross Section of Bridge



Existing Conditions – Bridge #7

- Roadway Classification – Rural Major Collector (State Highway)
- Bridge Type – 12' long Concrete Slab Widened with a Concrete Box
- Constructed in 1938
- Ownership – State of Vermont (No local funds)

Existing Conditions – Bridge #7

- Footings have scaling and are undermining
- Southern footing has completely separated from the stem and is allowing spalling and undermining of the stem
- Concrete spalling and efflorescence throughout the soffit
- Does not meet hydraulic standard

Existing Conditions - Bridge #7

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



Abutment Undermining and Spalling of Stem Concrete

Soffit Deterioration



Existing Conditions - Bridge #7

- Concrete Spalling
- Efflorescence
- Substandard Hydraulic Opening

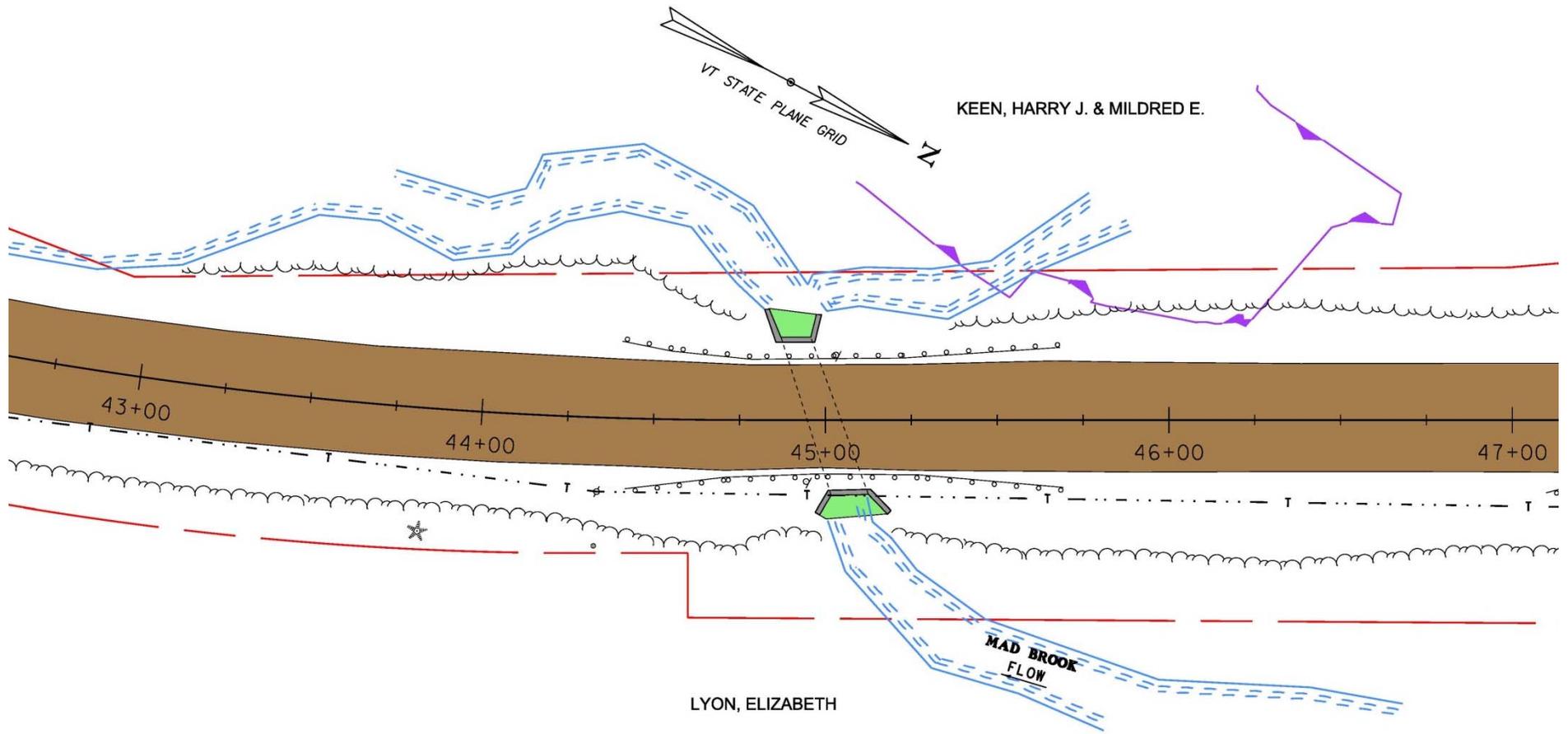
Resource Constraints



Existing Conditions - Bridge #7

- Wetlands located upstream and downstream
- Mad Brook hosts cold water native fish species – Aquatic Organism Passage

Existing Conditions



Design Criteria and Considerations – Bridge #7

- ADT of 1,200
- DHV of 140
- % Trucks: 37.1
- Design Speed of 50 mph
- Aquatic Organism Passage
- Wetlands Upstream and Downstream

Alternatives Considered – Bridge #7

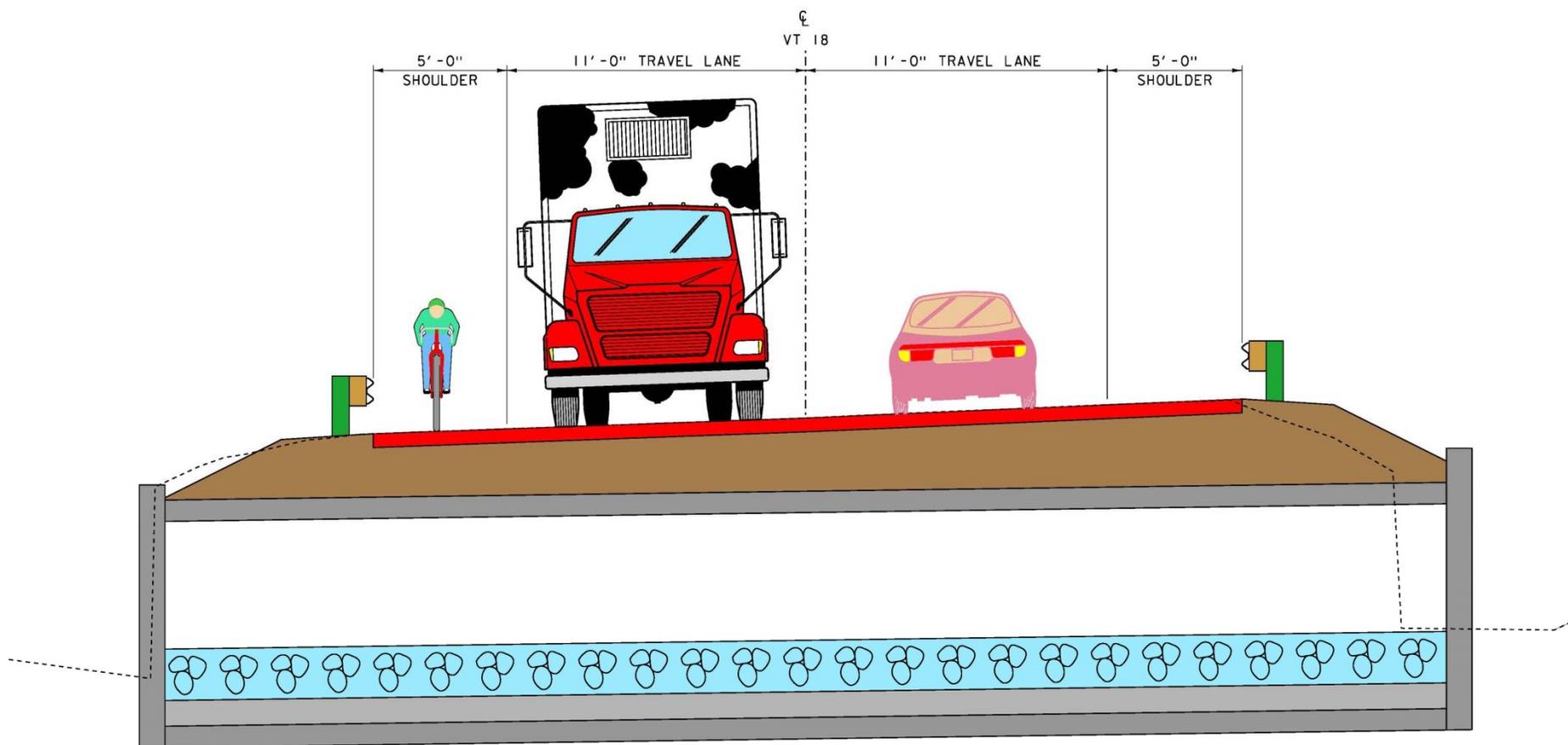
- No Action
 - Additional maintenance required within 10 years
- Full Replacement with a 16' x 8' Precast Reinforced Concrete Box
 - Least upfront cost
 - Meets hydraulic and geometric standards
 - AOP Considerations
- Full Replacement with a 30' Span Integral Abutment Bridge
 - Highest upfront cost
 - Meets hydraulic and geometric standards

Selected Alternative - Bridge #7

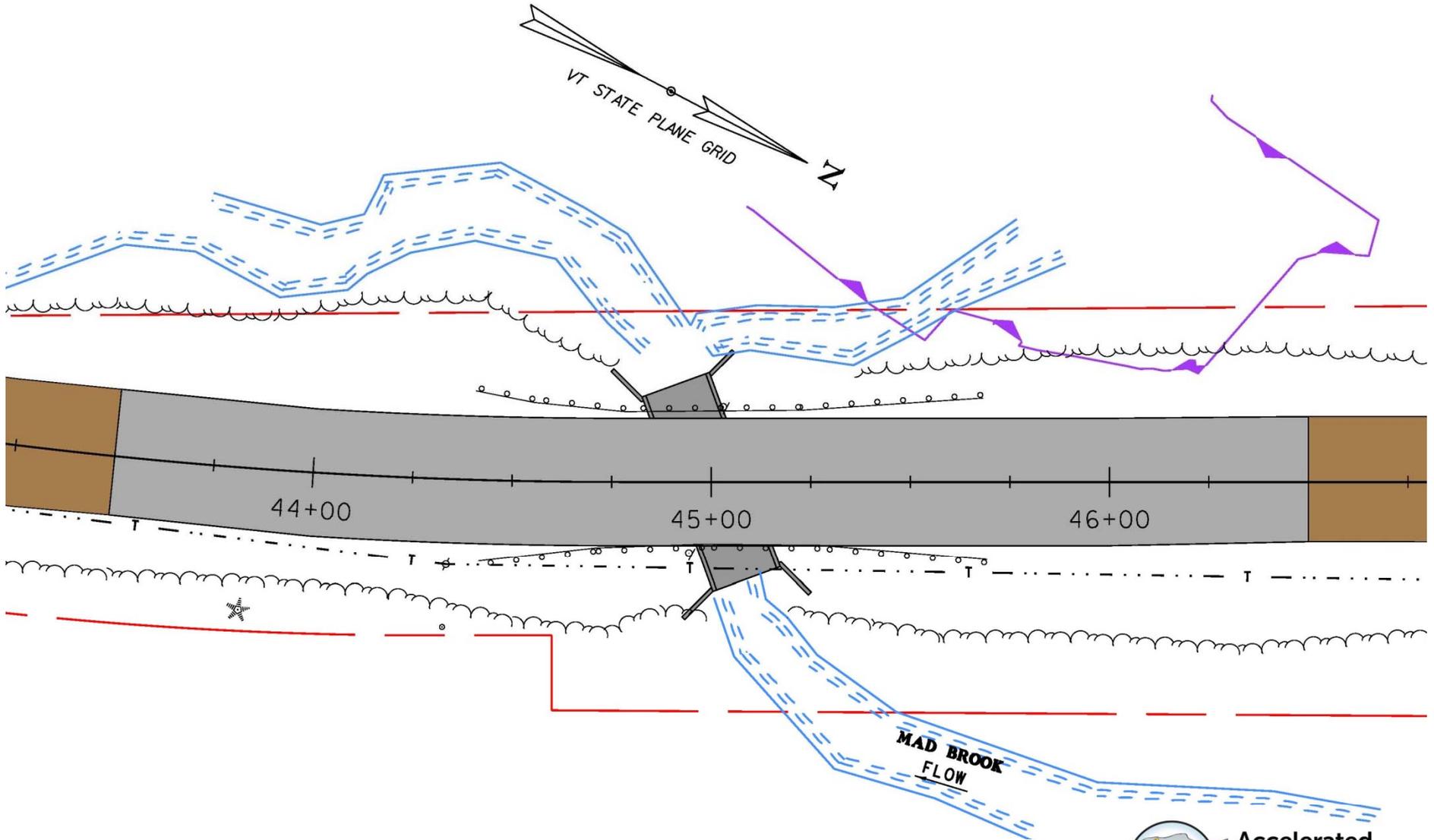
- Replace entire structure with a 16' x 8' Precast Reinforced Concrete Box
 - Maintain current roadway width to meet VT State Standards
 - Meets minimum hydraulic standard

Proposed Typical Section

- Proposed Bridge Rail to Rail = 32' (Existing is 32')



Proposed Layout



What Will the New Bridge Look Like?



Proposed Example - Bridge #7

- 4-sided Reinforced Concrete Box
- Buried inlet for AOP

Maintenance of Traffic Options Considered

- Short Term Road Closure w/ Offsite Detour
 - Signed by State, regional detour route: 17.3 miles end-to-end
 - Several local bypass routes; shortest is 10.2 miles end-to-end
- Phased Construction
 - Minimal impacts to adjacent properties, wetlands, and wooded areas
 - Longer construction duration
 - Less safe for workers and traveling public
 - No ROW needed
- Temporary Bridge
 - One-way with signals, Upstream
 - Biggest impacts to Right-of-Way, adjacent properties, and environmental resources

Selected Maintenance of Traffic

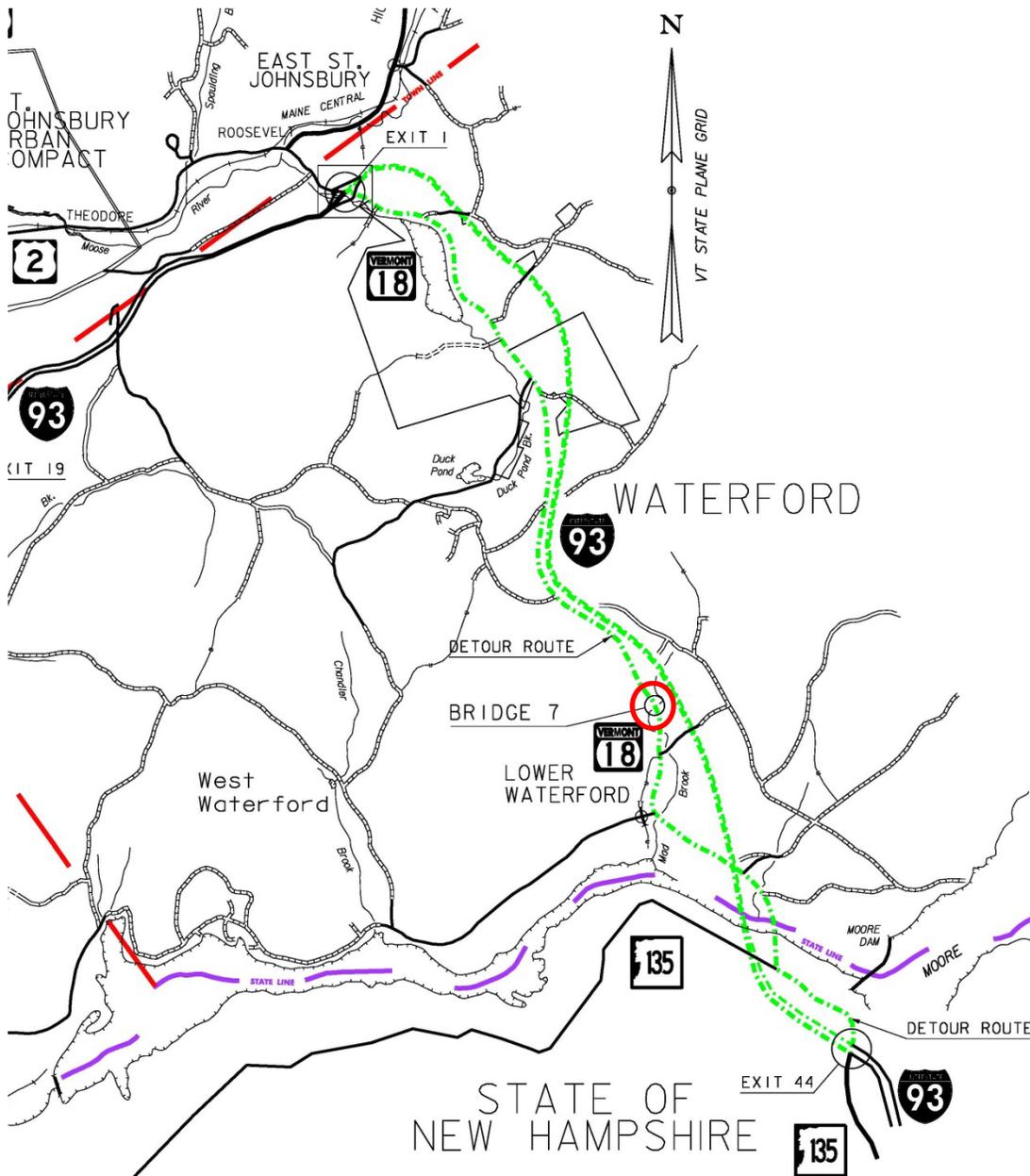


**ROAD
CLOSED**

Road Closure

- 1 week bridge closure duration
- Detour route signed by State of Vermont

Maintenance of Traffic



- Detour Route (Limited Access)

- VT Route 18, to NH Route 18, NH Route 135, and I-93, back to VT Route 18

Through Route: 9.3 Miles

Detour Route: 9.3 Miles

Added Miles: 0.3 Miles

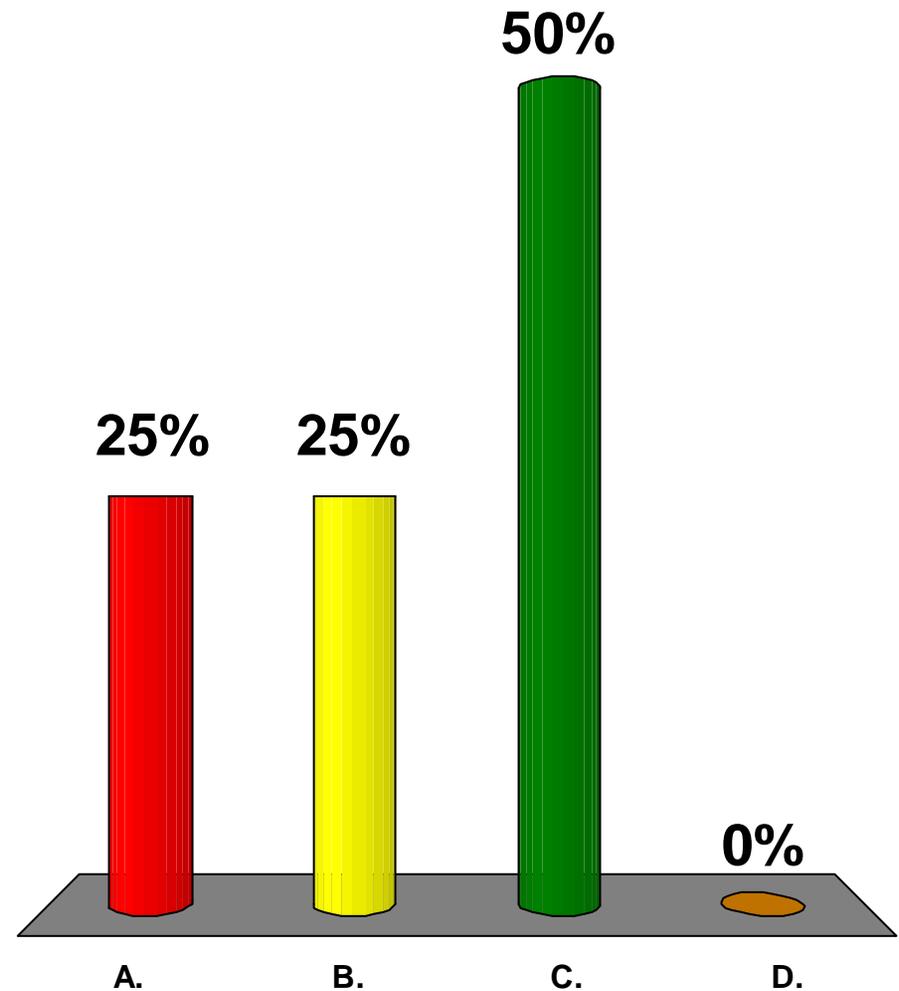
End-End Distance: 17.3 Miles

- Separate bicycle detour signed

- There are several local bypass routes available, ranging in End-to-End distances of 10 miles to 15 miles

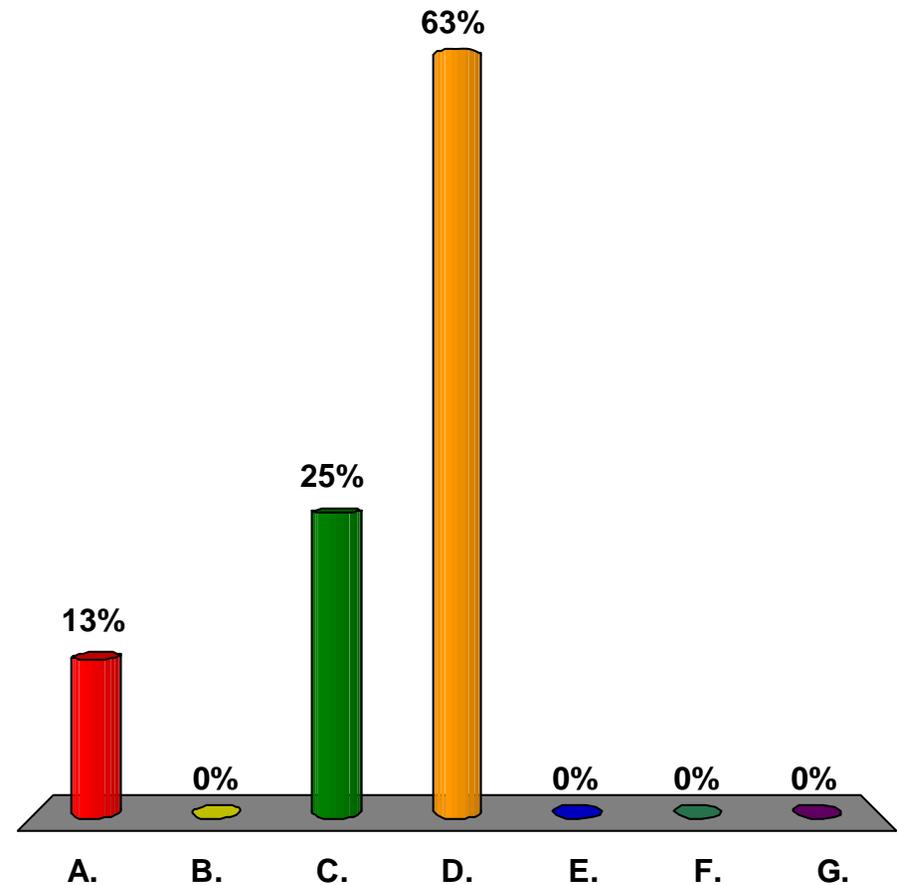
What would be the maximum acceptable length of closure for Bridge #7?

- A. 5 days
- B. 1 week
- C. 2 weeks
- D. 4 weeks



Which time of year would be most acceptable for Bridge #7 to be closed?

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



Preliminary Project Schedule

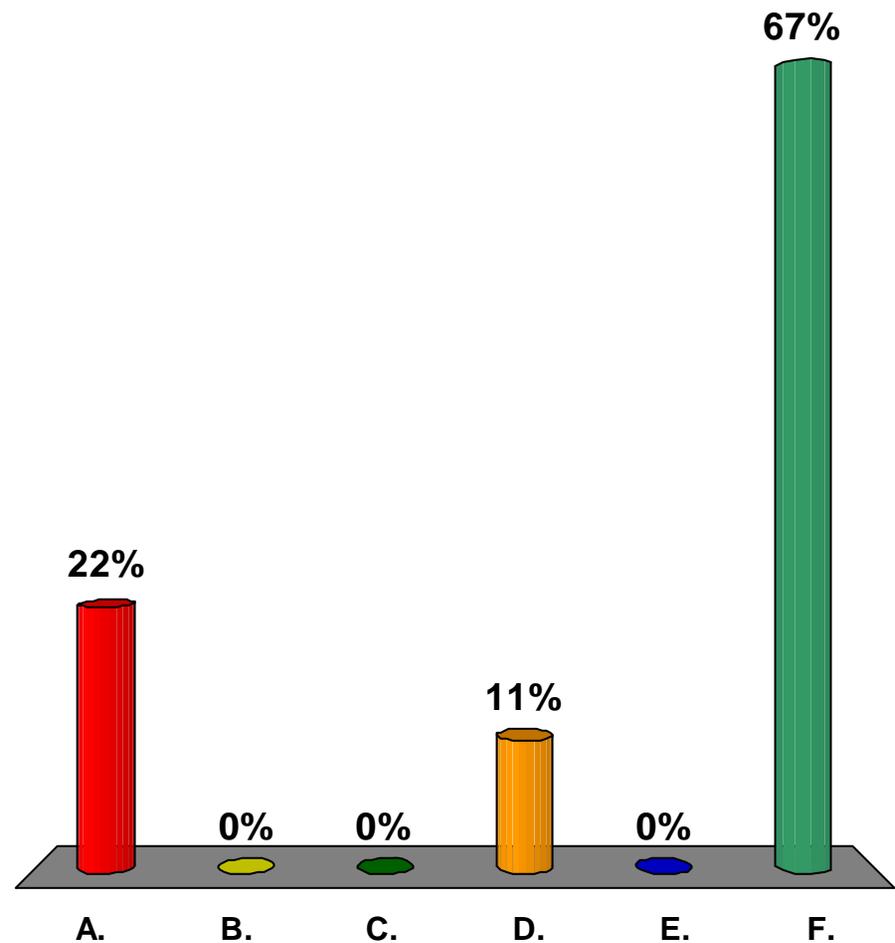
- Construction – Summer 2017 or 2018

Project Summary

- Replace entire structure with a reinforced concrete box:
 - Traffic Maintained on offsite detour during 1 week closure
 - Meets all geometric standards
 - Meets hydraulic standards
 - 16' wide x 8' tall inside dimensions
 - AOP
 - Utility relocation needed
 - No ROW needed

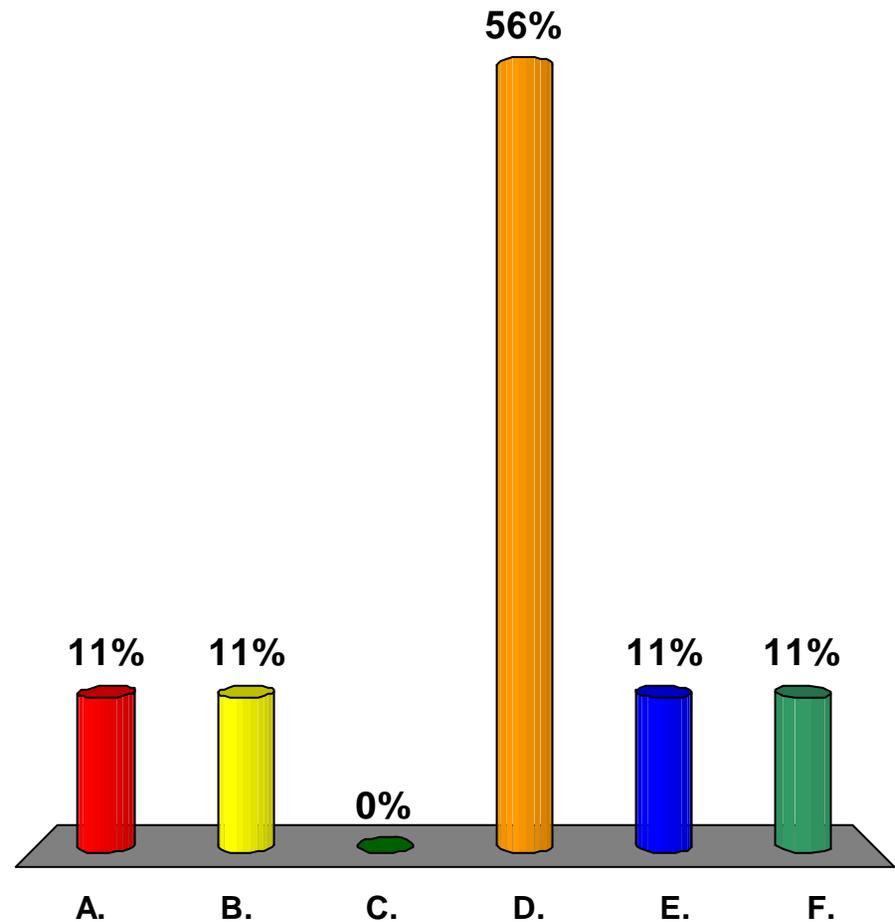
Which would you be most concerned about?

- A. Closure Duration
- B. Bridge Aesthetics
- C. Environmental Impacts
- D. Recreational Impacts
- E. Other
- F. Not really concerned



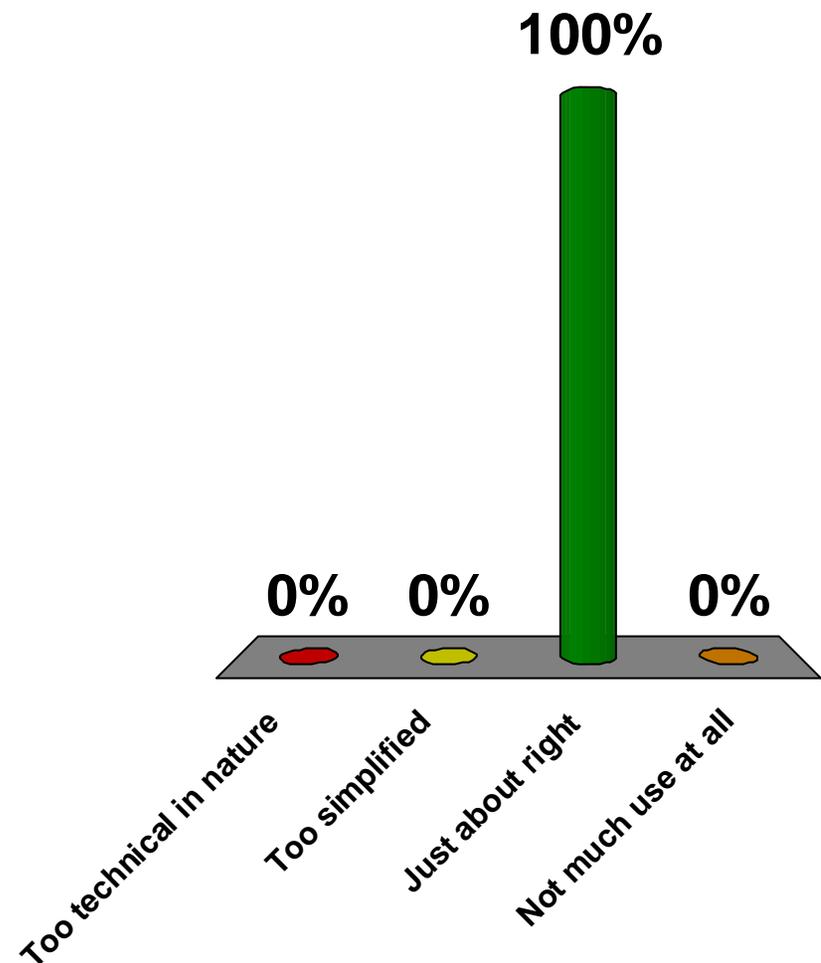
Which design aspect is the most important to you?

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



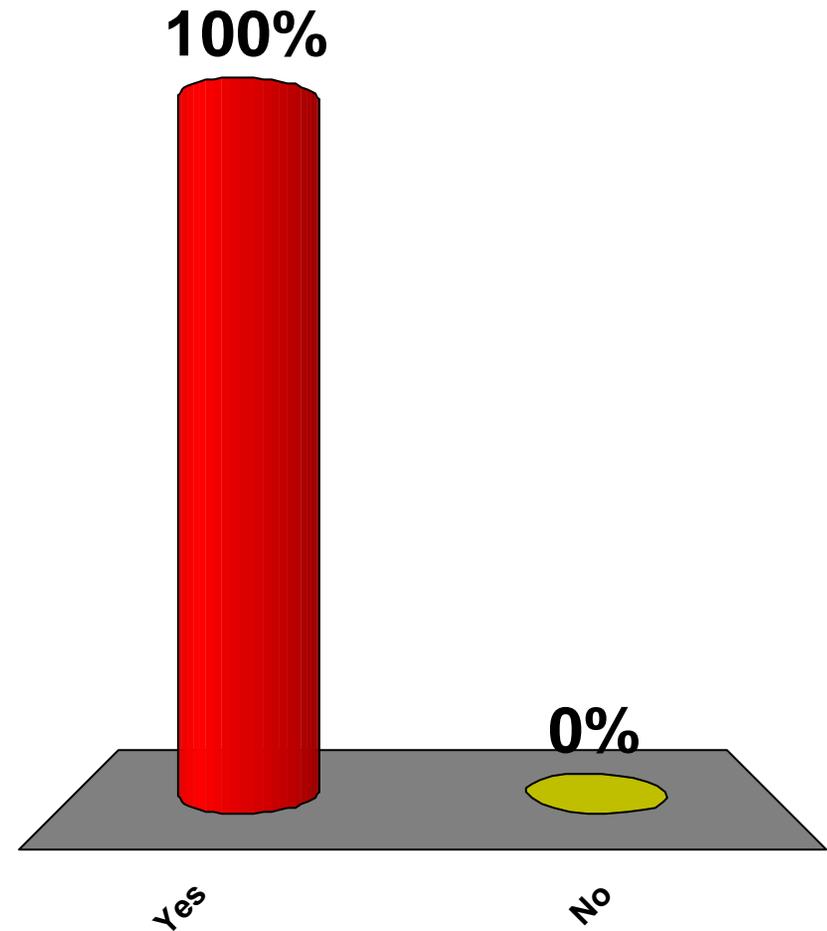
Did you find this presentation to be?

- 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



For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/13C268>



Waterford BF 0225(4) Questions and Comments

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