



# Weybridge-New Haven BF 032-(19)

## Regional Concerns Meeting

Vermont Route 17 – Bridge #8 over Otter Creek

September 21, 2016

# Introductions

**Jennifer Fitch, P.E.**

VTrans Scoping Project Manager

**Carolyn Carlson, P.E.**

VTrans Design Senior Project Manager

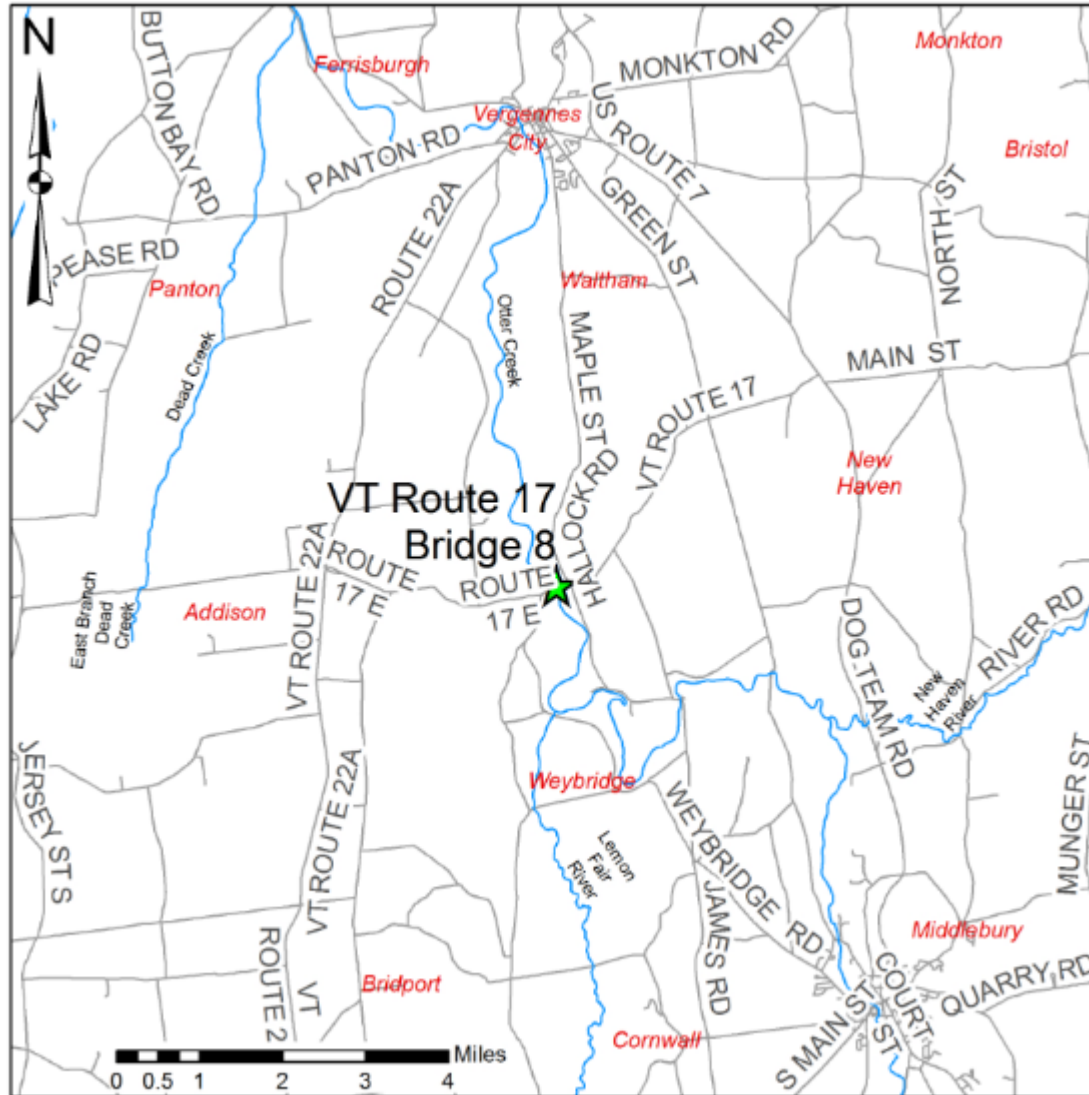
**Doug Bonneau, P.E.**

VTrans Project Manager

**Gary Sweeny, P.E.**

VTrans Scoping Engineer





Location Map



**Accelerated  
Bridge  
Program**  
VTRANS



Hallock Rd

Bridge 8  
Project Location

Otter Creek Rd

17

17

22

Otter Creek

Quaker Village Rd



# Purpose of Meeting

- Provide an understanding of our approach to the project
- Provide an overview of project constraints
- Discuss our plan for the project
- Provide an opportunity to ask questions and voice concerns



# Meeting Highlights

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



# VTrans Project Development Process

## Project Funded

- Existing Conditions
- Identify resources & constraints
- Evaluate alternatives
- Public Outreach

## Project Design

- Develop plans, estimate and specifications
- Quantify areas of impact
- Environmental permits
- Acquire Right-of-Way if necessary



We are here

## Contract Award

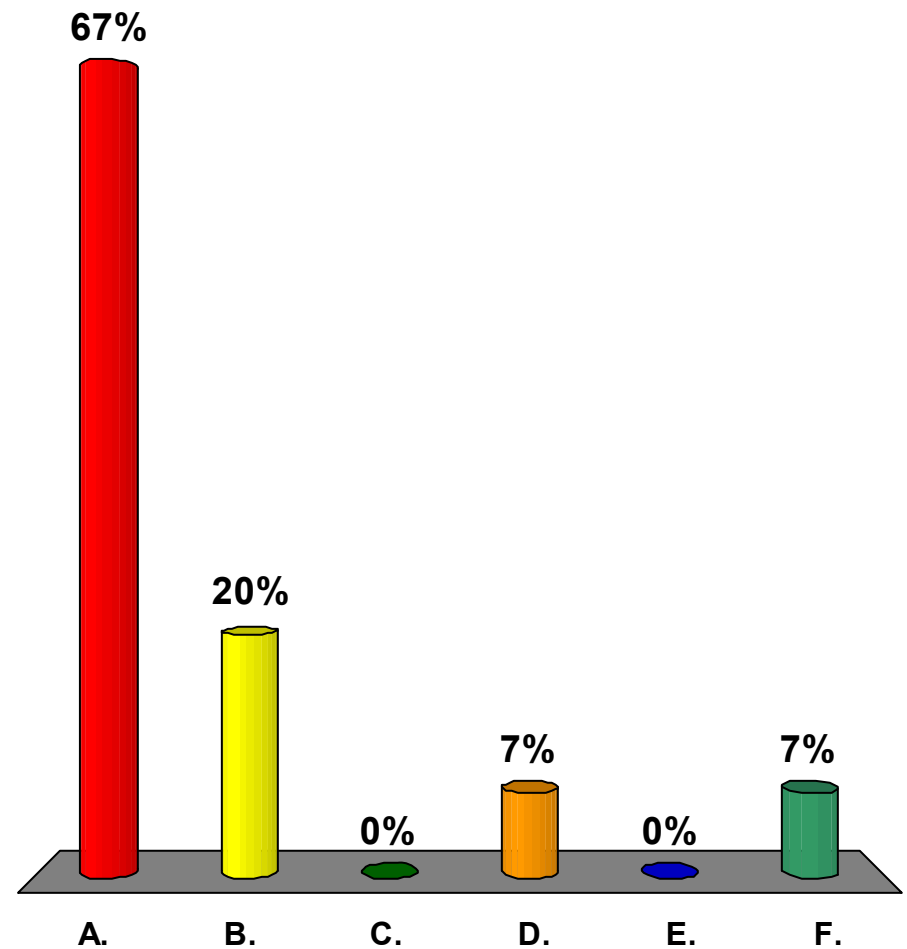
## Construction



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# Who are you representing?

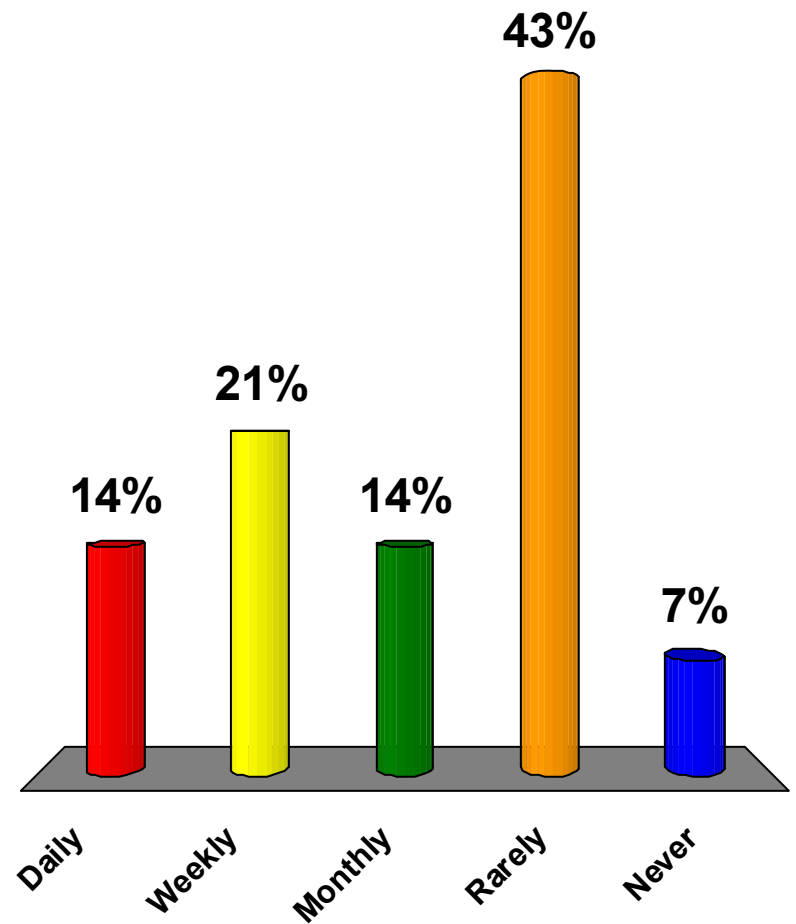
- A. Municipal Official
- B. Resident
- C. Emergency Services
- D. Local Business
- E. Independent Organization
- F. Other





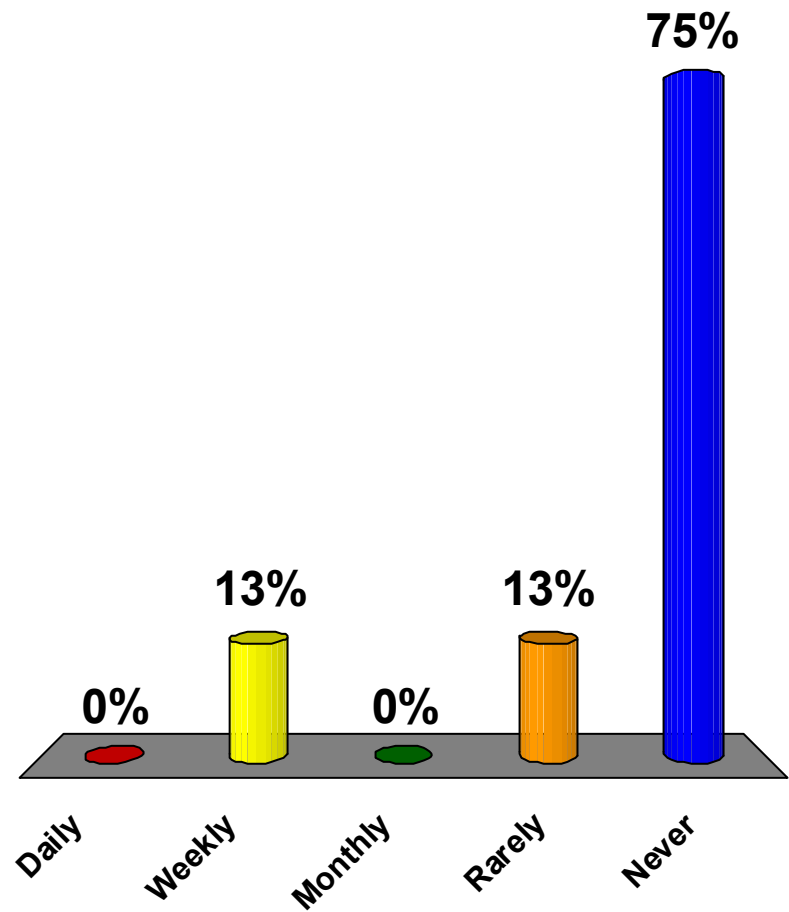
# How often do you use this segment of VT Route 17?

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



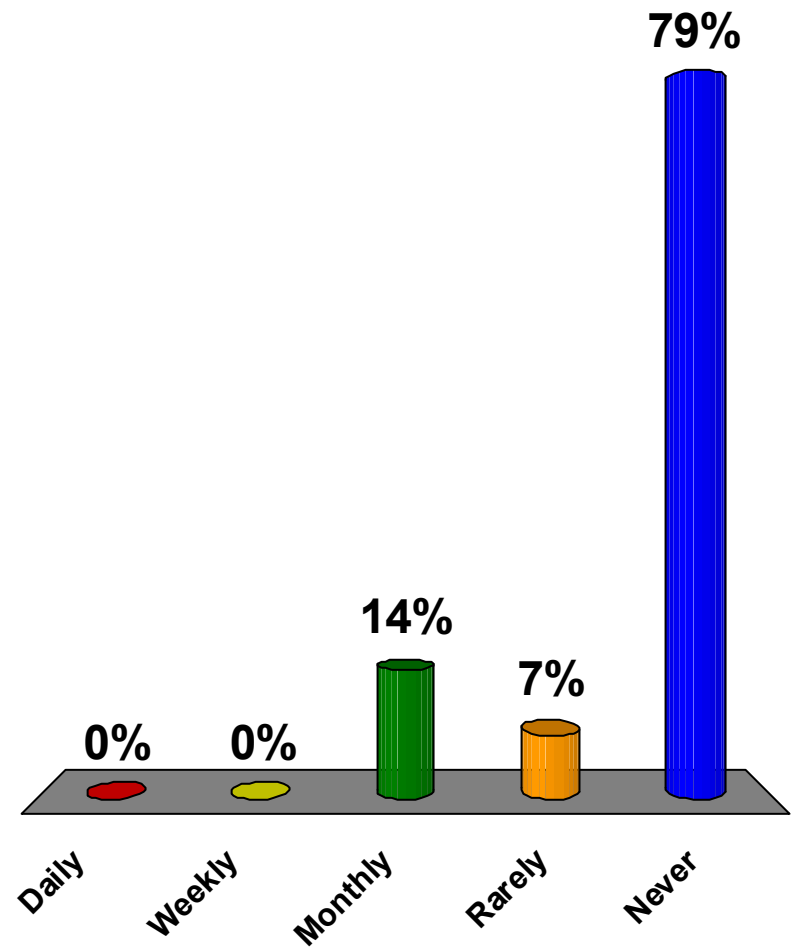
# How often do you walk over this segment of VT Route 17?

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



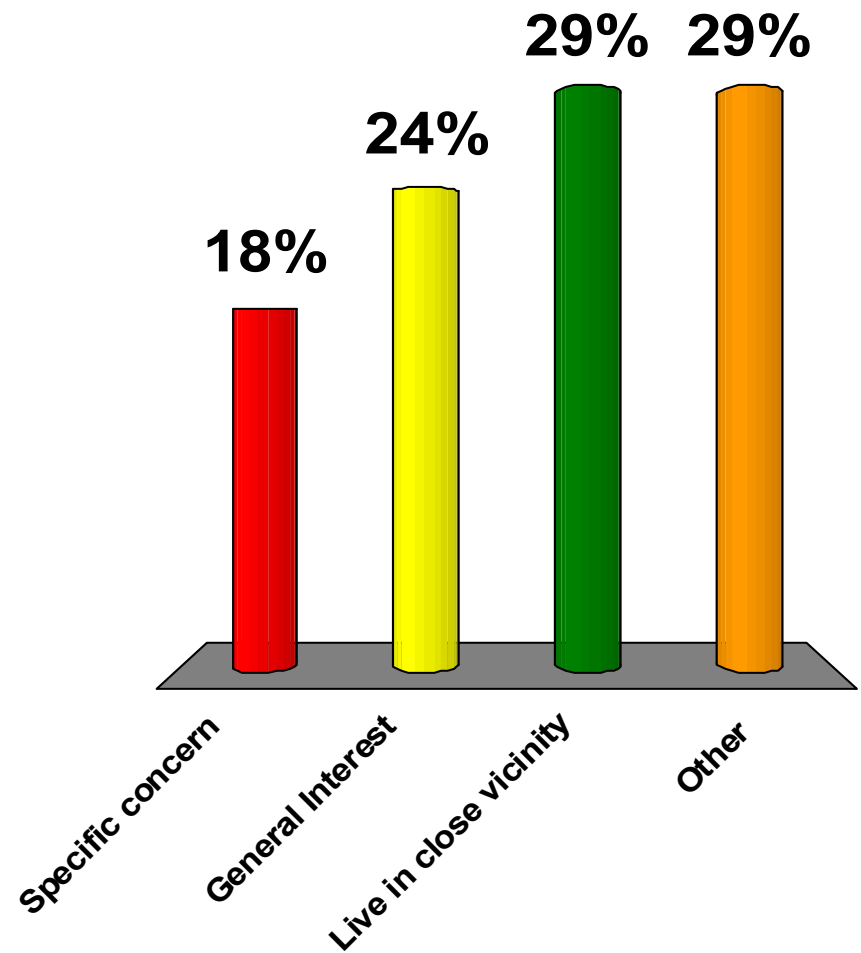
# How often do you bike over this segment of VT Route 17?

- 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

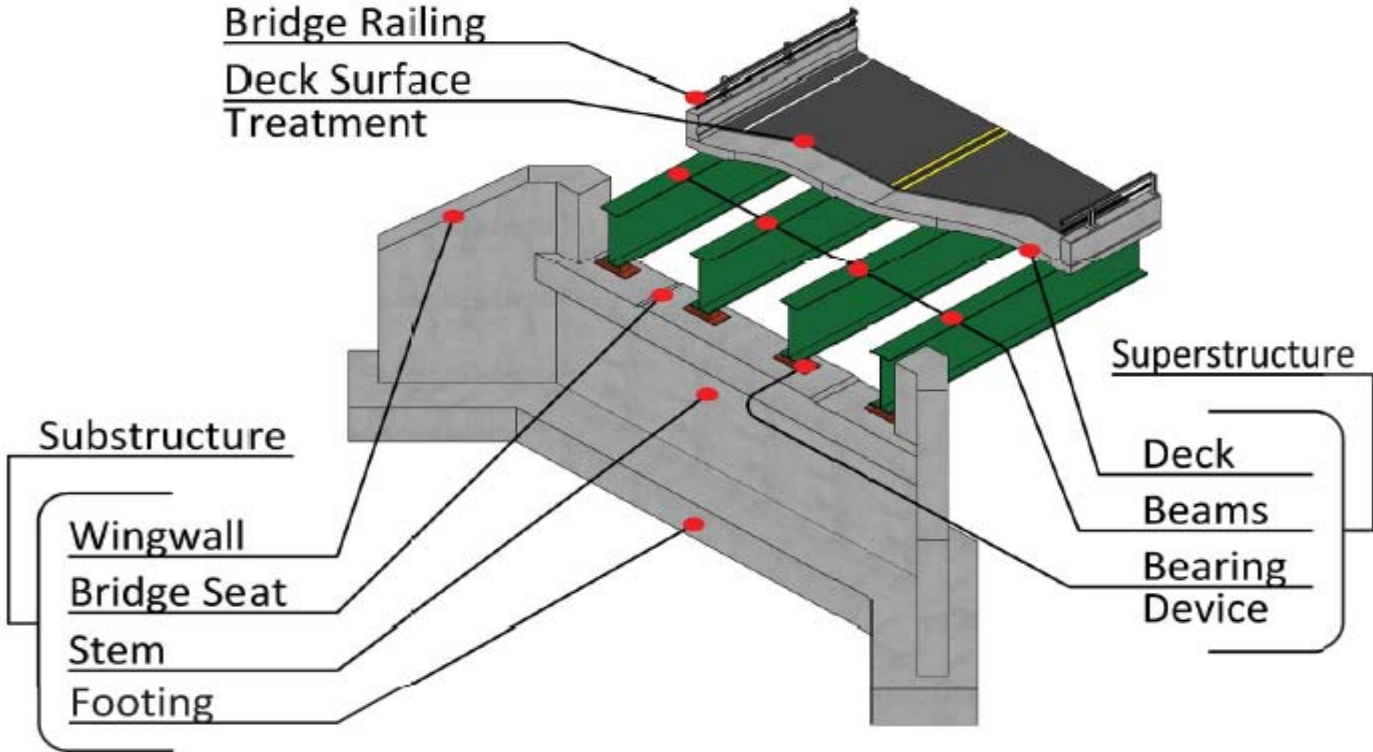


# Project Overview

- Existing Conditions
- Alternatives Considered
- Recommended Alternative

# Project Overview

## Bridge Terminology Description





## Existing Conditions – Bridge #8

- Roadway Classification – Rural Minor Arterial
- 3-Span Cast-in-Place Concrete Deck on Rolled Steel Beams
- Bridge: Span - Length – 222 feet, Skew – 0 degrees
- Constructed in 1934
- Ownership – State of Vermont



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# Existing Conditions – Bridge #8

- Bridge lane and shoulder widths are substandard
- Bridge rail is substandard
- Horizontal alignment substandard for posted 45 mph speed limit
- Overall condition of the bridge was reported as Fair per May 21, 2015 Inspection Report
- Recent increased concern over abutment stability
- Deterioration is advancing more rapidly
- Project delivery schedule has been accelerated





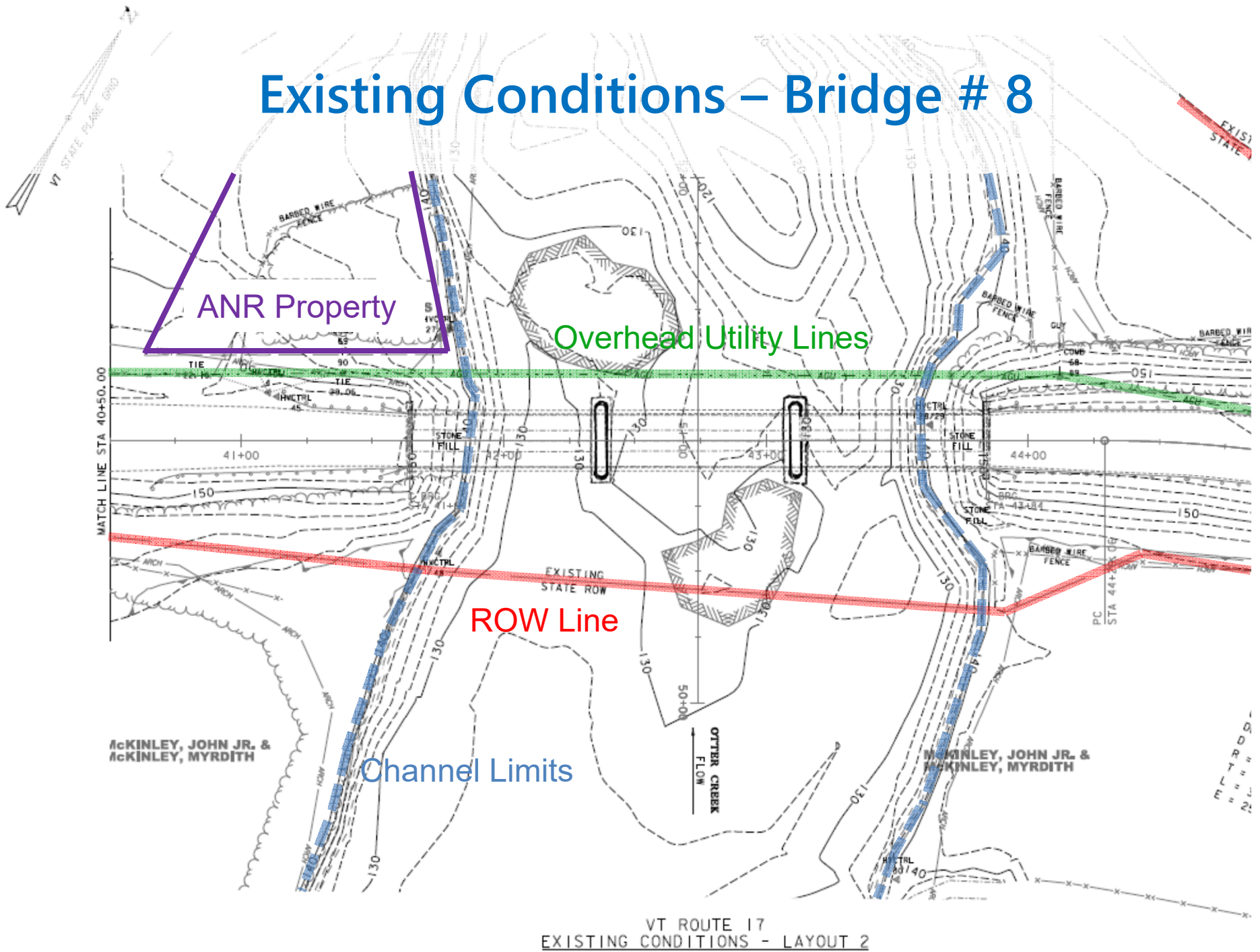
# Existing Conditions - Bridge #8

- Deck Rating 5 Fair
- Superstructure Rating 5 Fair
- Substructure Rating 5 Fair
- Channel Rating 7 Good



*"05/21/2015 Bridge is in need of extensive reconstruction or replacement with all components rated as fair. Deck overlay was intended as only a repair and has served its purpose for approximately 15 years and the deck rating would be rated lower if not for the added reinforced thickness – MJ/MS"*

# Existing Conditions – Bridge # 8



VT ROUTE 17  
EXISTING CONDITIONS - LAYOUT 2

# Design Criteria and Considerations

- Two Lane Rural Minor Arterial
- Average Annual Daily Traffic (Design year): 1,200  
(Current year): 1,100
- Design Hourly Volume (Design Year): 140
- Average Daily Truck Traffic (Design Year): 290
- Design Speed of 45mph
- Substandard Criteria
  - Lane and shoulder width
  - Roadway geometry
  - Railing



# Resources

- Biological

- Wetlands

- Wildlife

- Good Habitat in General

- Federal and State Identified Bat Species

- A particular species of freshwater mussel

- Prime agricultural soils

- Floodplain for Otter Creek

- Archeological - highly sensitive pre-contact site



# Alternatives Considered – Bridge #8

- No Action
- Deck Replacement
- Superstructure Replacement
- Substructure Widening
- Full Bridge Replacement

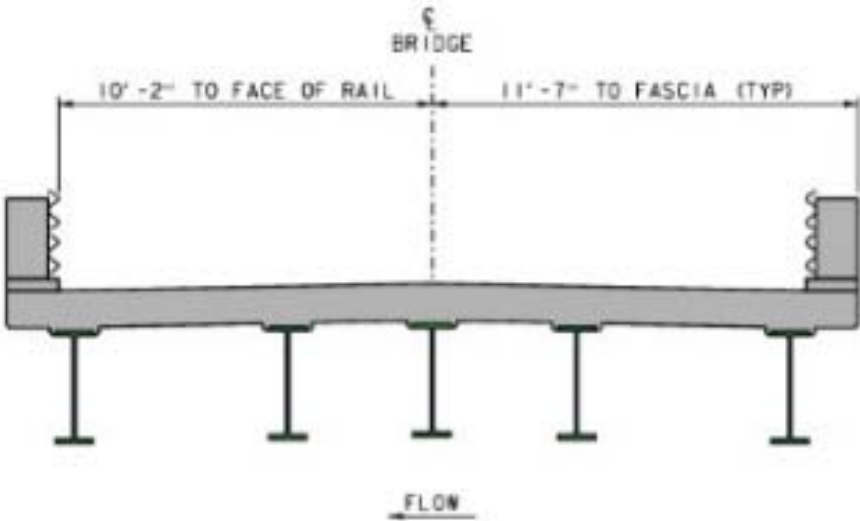


# Alternative Selected – Bridge #8

- Full Bridge Replacement
  - Existing Alignment
  - 240' two span continuous structure, pier at mid span
  - Channel improvements
  - Roadway geometry improvements



# Alternative Selected – Bridge #8

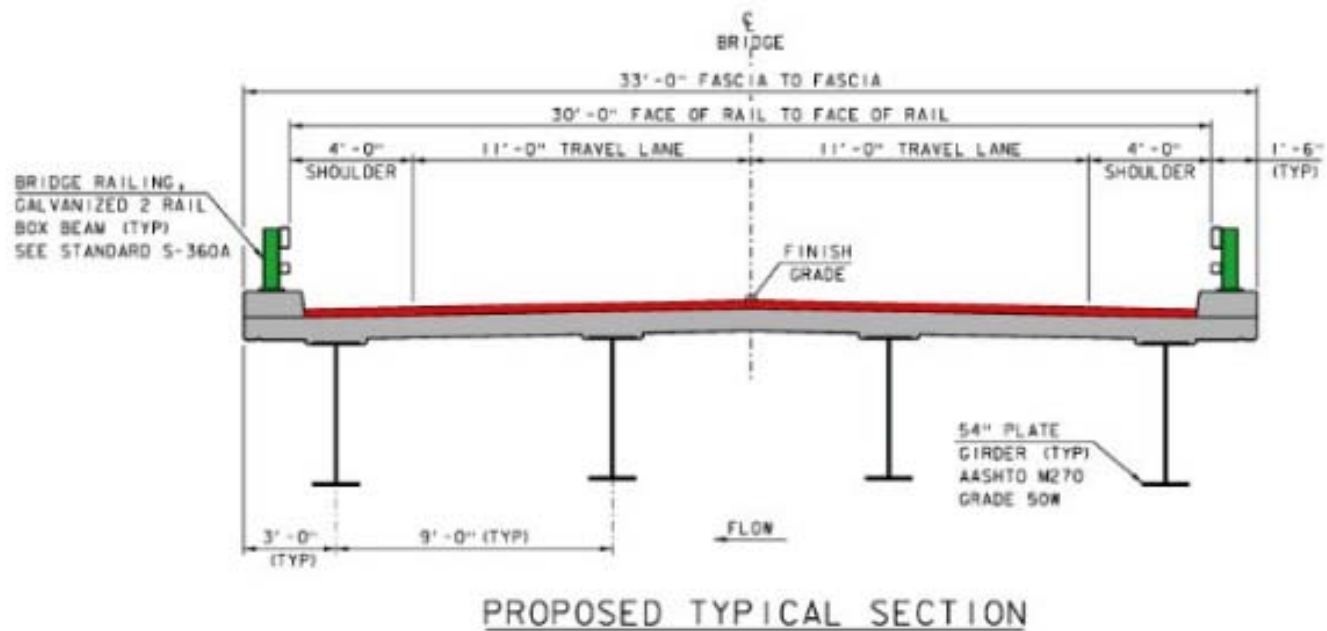


EXISTING TYPICAL SECTION



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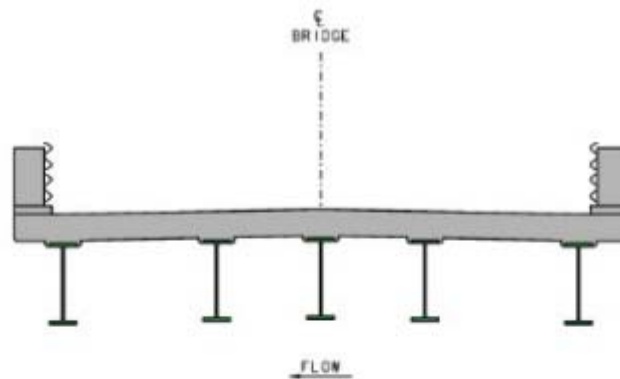
# Alternative Selected – Bridge #8



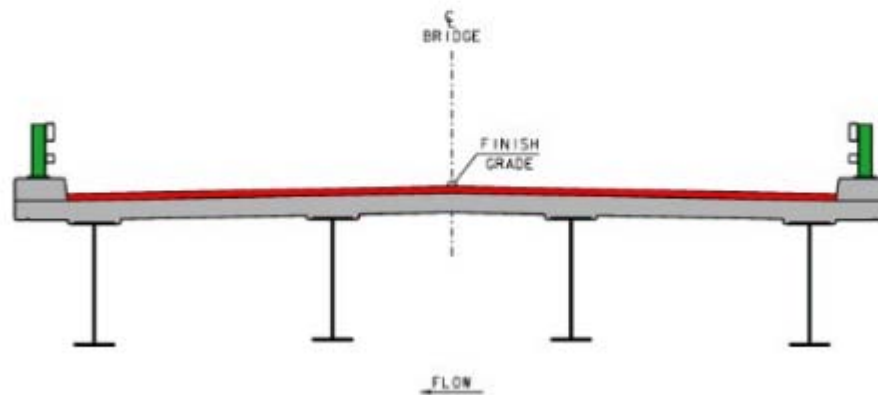
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# Alternative Selected – Bridge #8



EXISTING TYPICAL SECTION

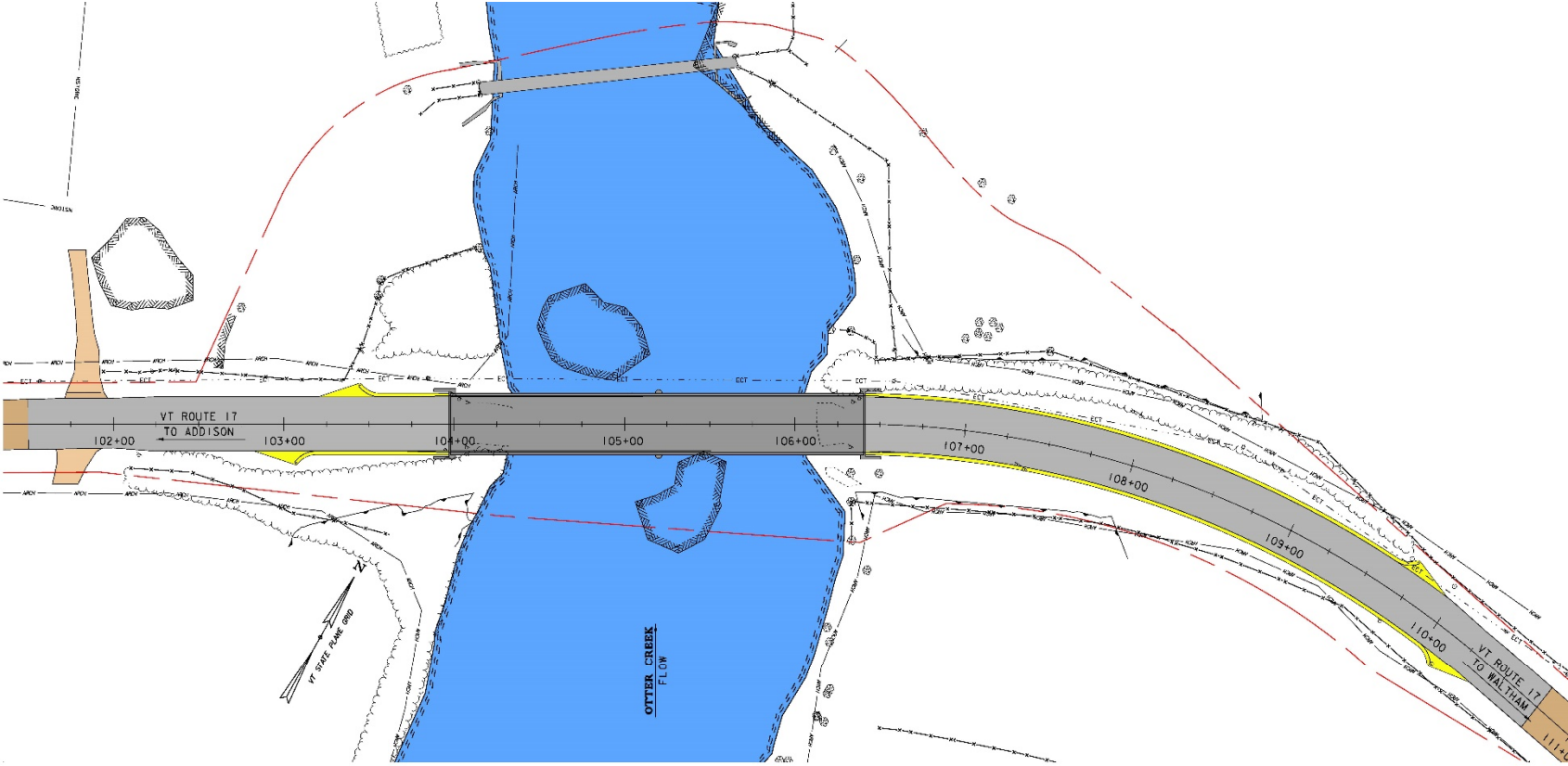


PROPOSED TYPICAL SECTION



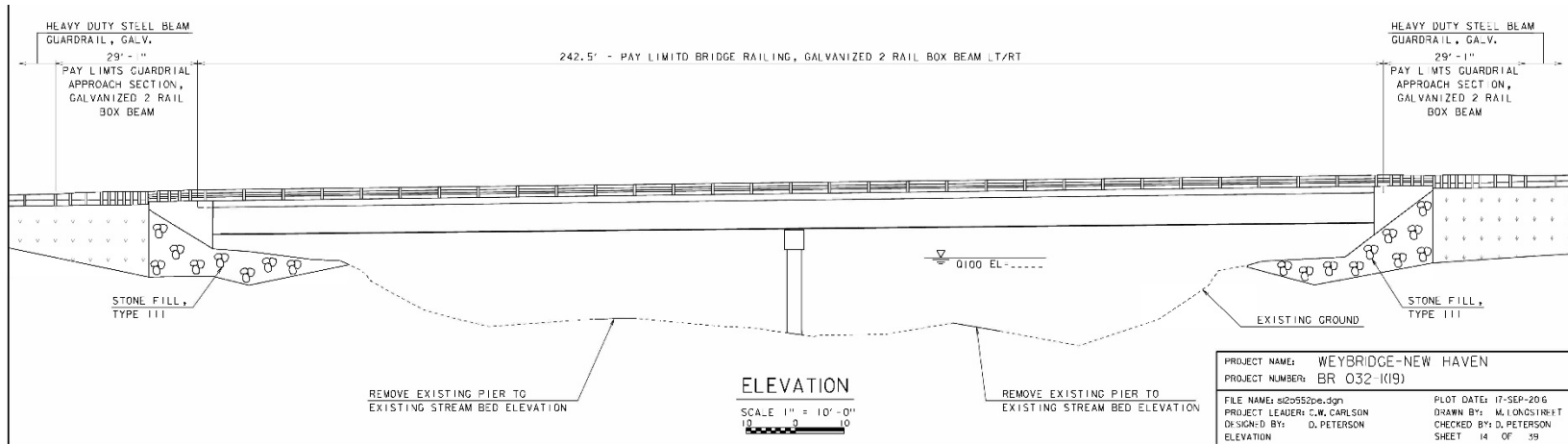
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# Alternatives Selected – Bridge #8



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# Alternatives Selected – Bridge #8



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# Maintenance of Traffic Options (MOT)

- Off-Site Detour with Bridge Closure
- Phased Construction
- Temporary Bridge
- Maintaining traffic on the Existing Bridge



# Maintenance of Traffic Option Selected

- Off-Site Detour with Bridge Closure 60-70 days
- A traffic study was done in September, 2016 to analyze impacts from the closure.



# Maintenance of Traffic Option Selected

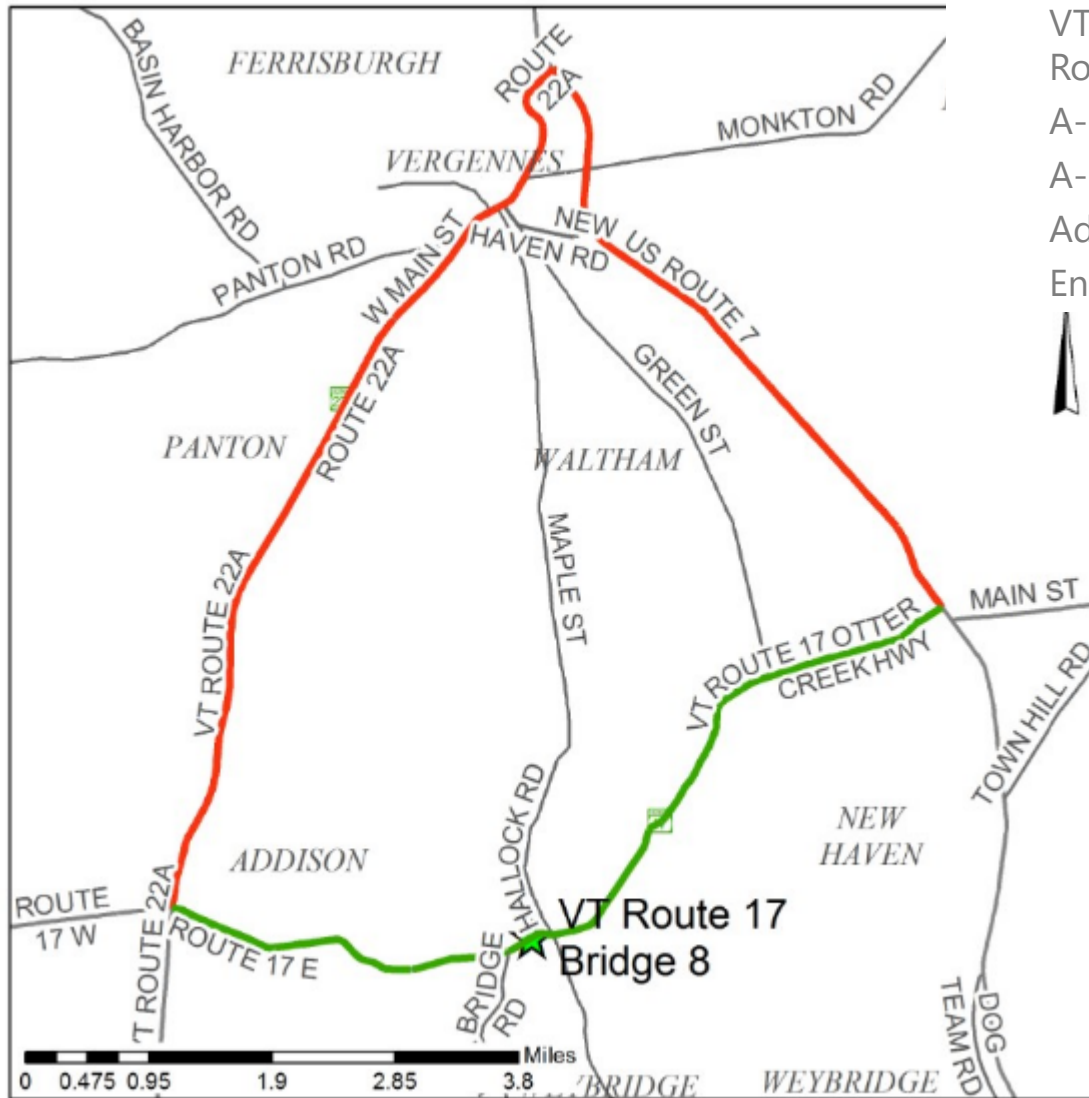
## Traffic Study – Proposed Bridge Closure and Detour

Table 1 – Intersections Summary - Existing and Detour Level-Of-Service (LOS)

| Intersection                           | Description   | Existing LOS | Detour LOS |
|--|---|--------------|------------|
| VT 22A / VT 17                         | Two-way stop-controlled;<br>west of Bridge 8 in Addison   | A            | A          |
| VT 22A (Main Street) /<br>Green Street | Signalized;<br>downtown Vergennes                         | A            | B          |
| US 7 / VT 22A                          | Signalized;<br>north of Vergennes, in Ferrisburgh         | A            | B          |
| US 7 / VT 17                           | One-way stop-controlled;<br>east of Bridge 8 in New Haven | A            | A          |

Table assumes that all traffic follows the State detour route. Some left turning movements will see LOS drop to C, but overall intersections will not drop below B.

# MOT: Off-Site Detour



## Northern Detour Route

VT Route 22A, to US Route 7, back to VT Route 17

A-B Through Route: 7.3 miles

A-B Detour Route: 12.8 miles

Added Distance: 5.5 miles

End to End Distance: 20.1 miles

# MOT: Local Bypass Route

## Local Bypass Route

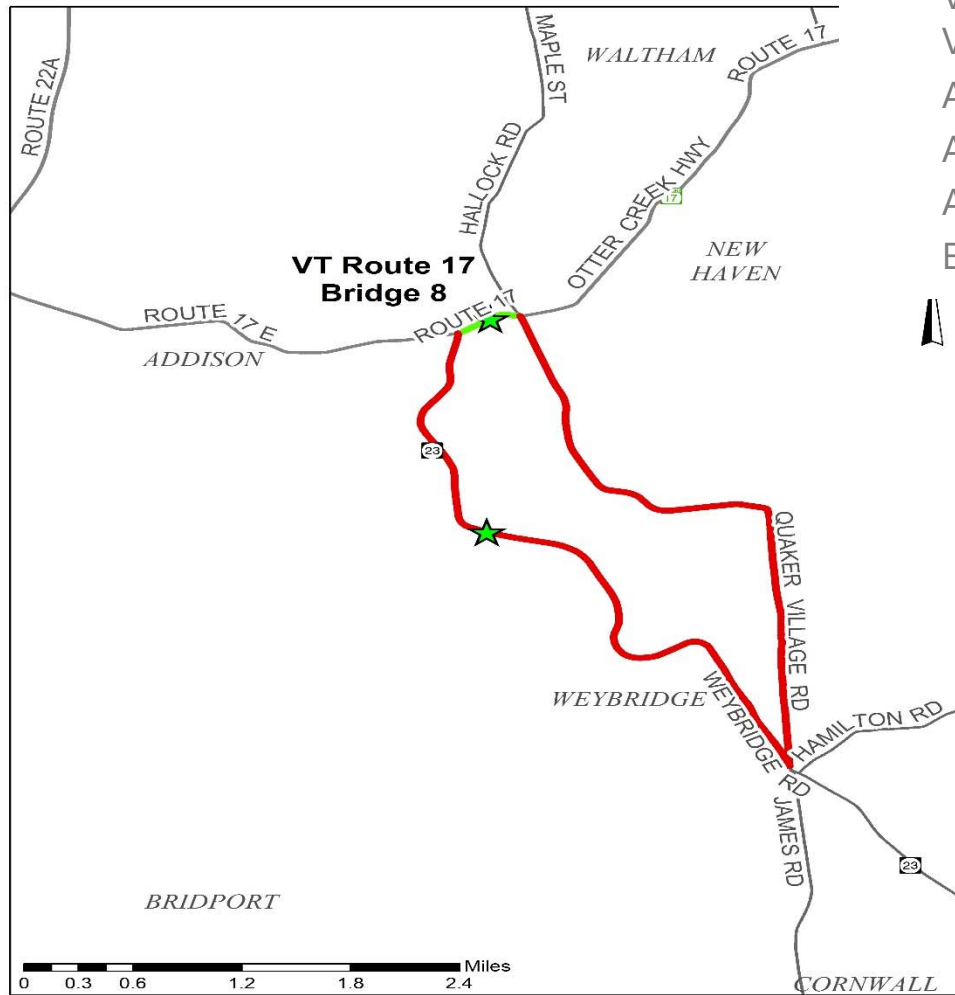
VT Route 23, to Drake Road, to Quaker Village Road, back to VT Route 17

A-B Through Route: 0.4 miles

A-B Detour Route: 6.9 miles

Added Distance: 6.5 miles

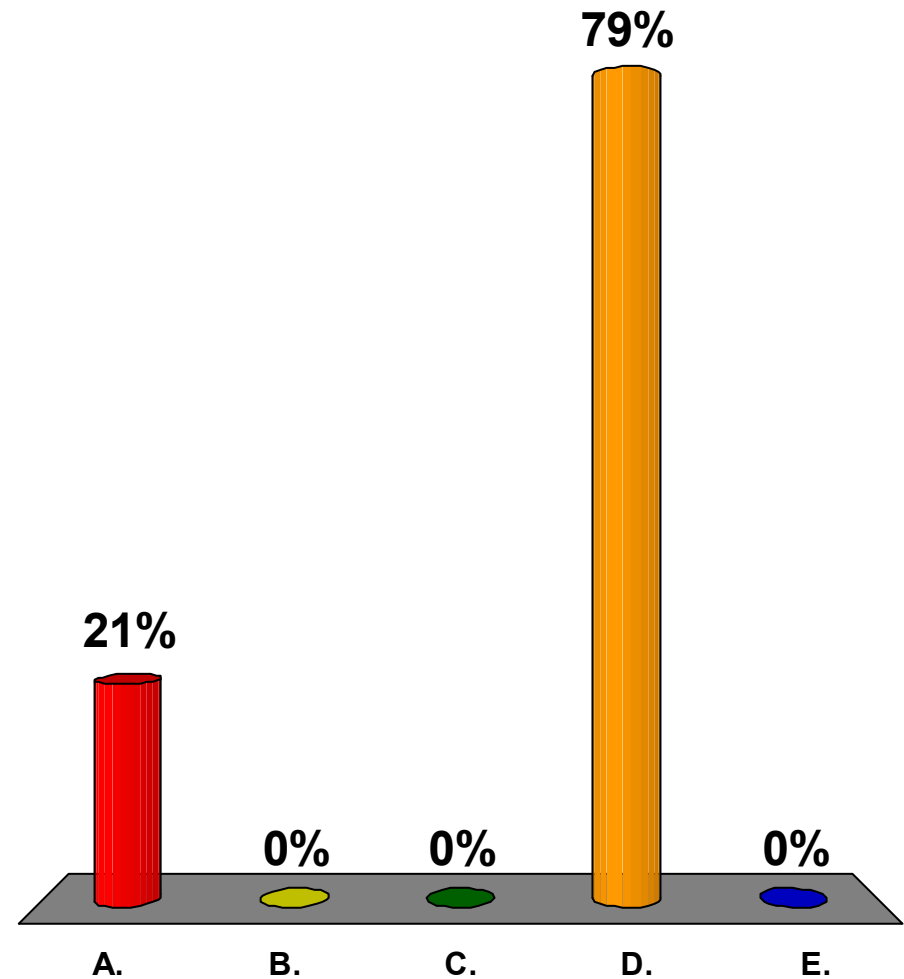
End to End Distance: 7.3 miles





# Which time of year would be most acceptable for Bridge #8 to be closed?

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



# Conclusion

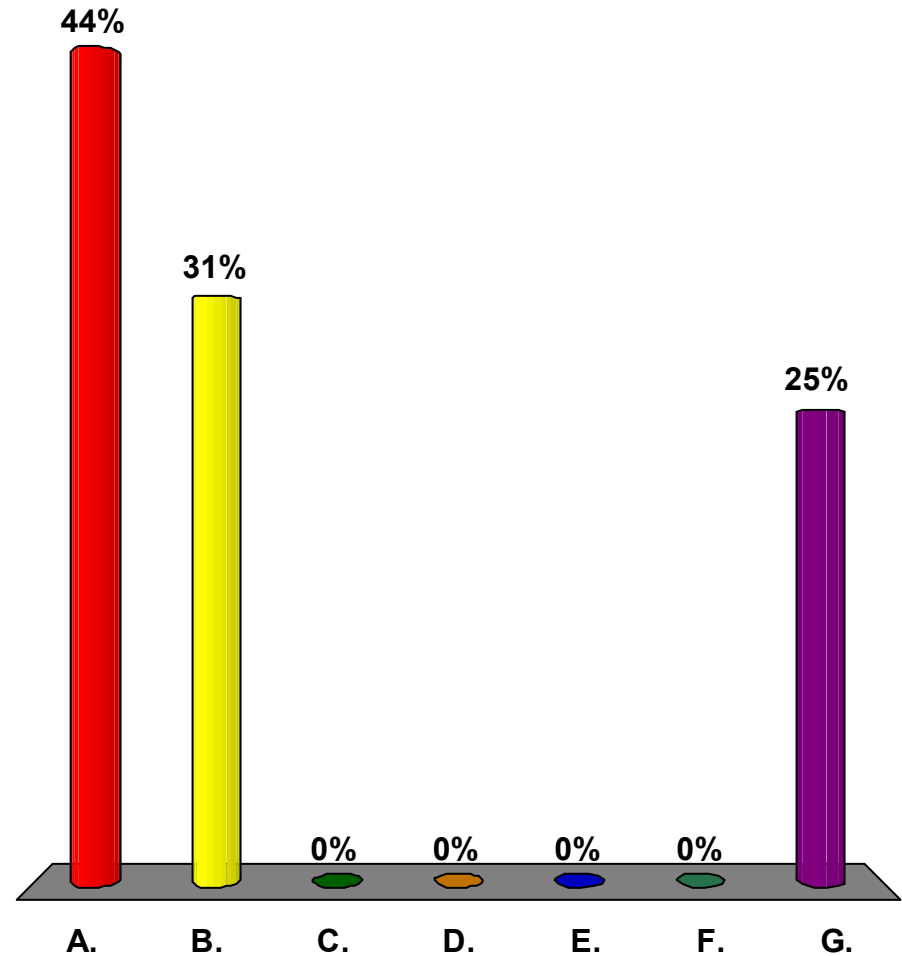
- Complete Replacement of Bridge 8
- 60-70 day closure with off-site detour

# Cost and Engineering Matrix

| <b>Weybridge-New Haven<br/>BF 032-1(19)</b>                  | <b>Alternative 4a<br/>Complete Bridge Replacement<br/>Off-Site Detour</b> |
|--|---|
| Total Project Cost (Including Engineering and Contingencies) | \$5,192,000   |
| Project Development Duration                                 | 2 Years   |
| Construction Duration  | 12 Months   |
| Closure Duration   | 60-70 Days  |
| Geometric Design Criteria                                    | Meets Standards   |
| Alignment Change   | Yes   |
| Utilities  | Temporary Relocation?   |
| ROW Acquisition  | No  |
| Anticipated Service Life                                     | 80-100 Years  |
| Annualized Cost  | \$64,900  |

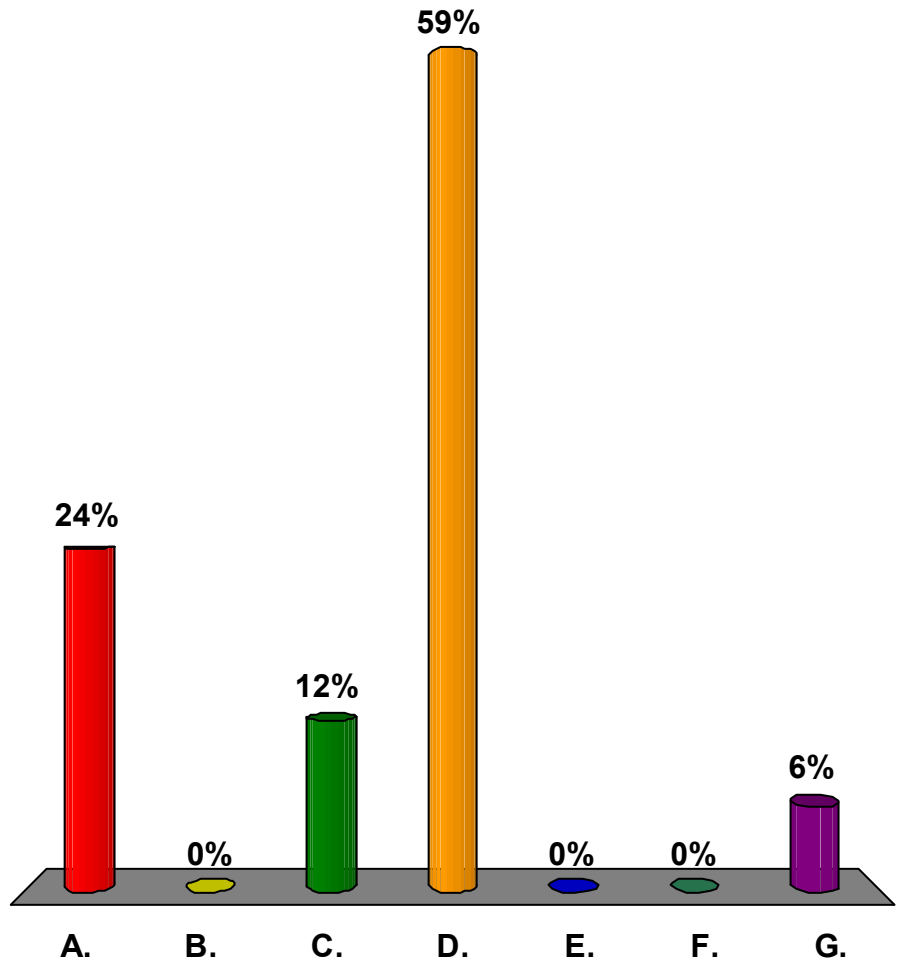
# Which would you be most concerned about?

- A. Construction delays on VT Route 17
- B. Length of Detour
- C. Bridge Aesthetics
- D. Environmental Impacts
- E. Recreational Impacts
- F. Other
- G. Not really concerned



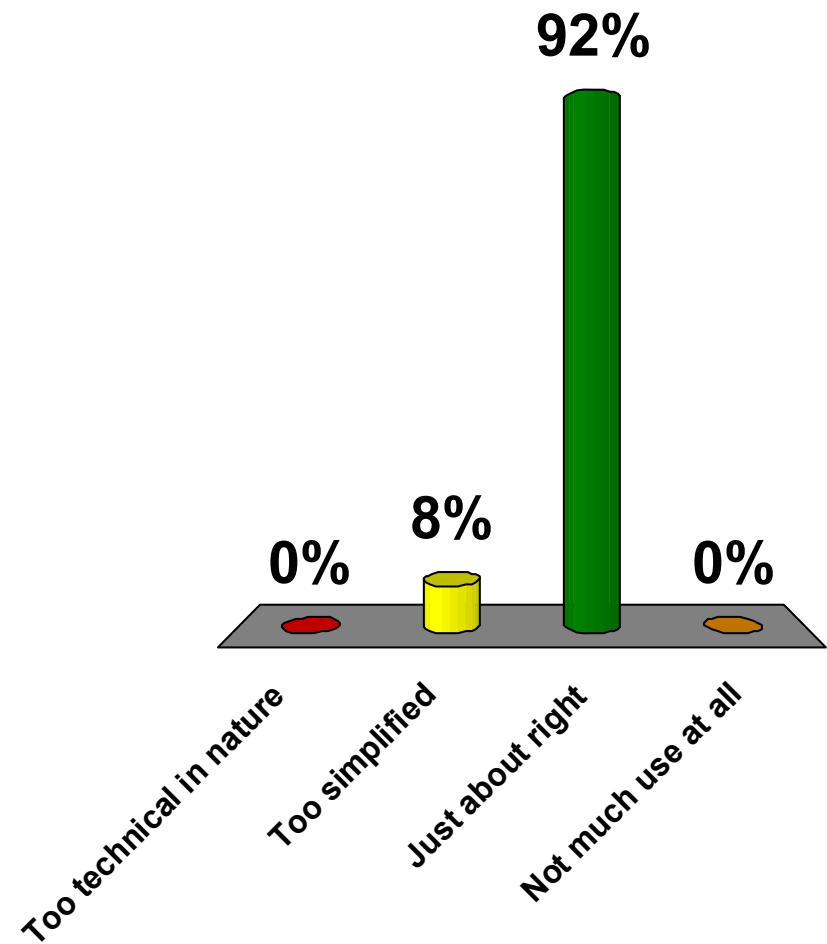
# Which design aspect is the most important to you?

- A. Shoulder width/bicycle accommodations
- B. Aesthetics - Bridge Railing
- C. Construction year
- D. Construction Duration
- E. Cost
- F. Safety Improvements for Left Turn lanes
- G. Other



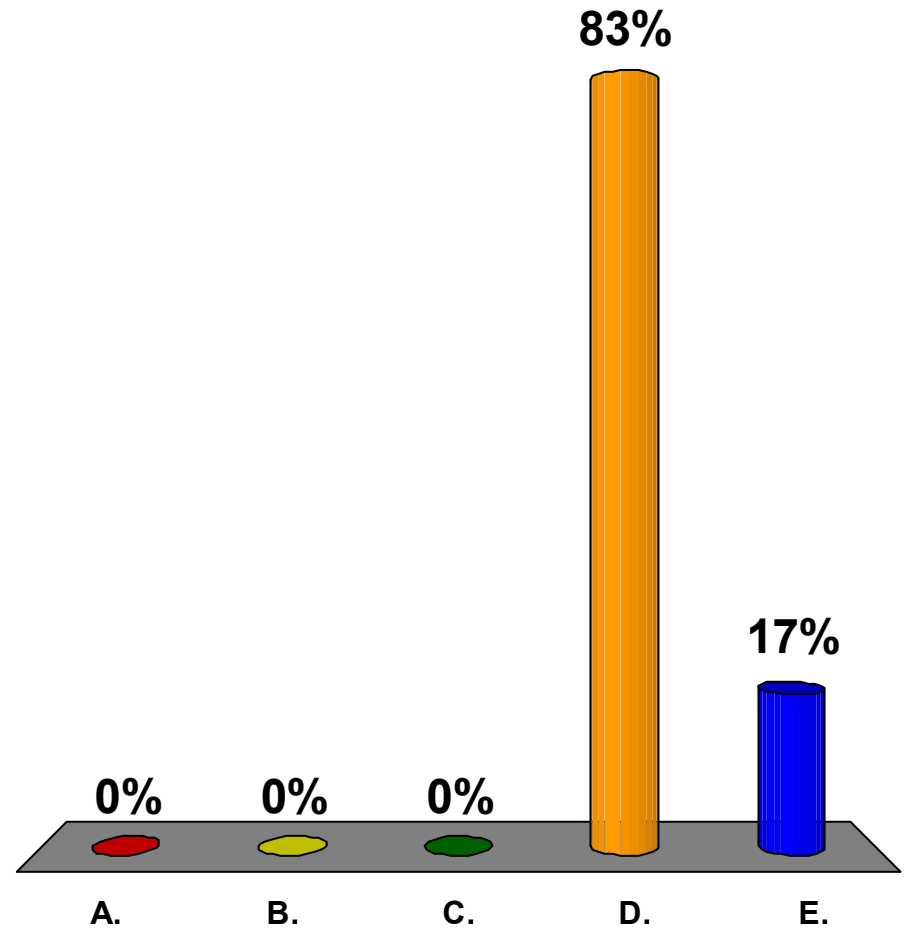
# Did you find this presentation to be?

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



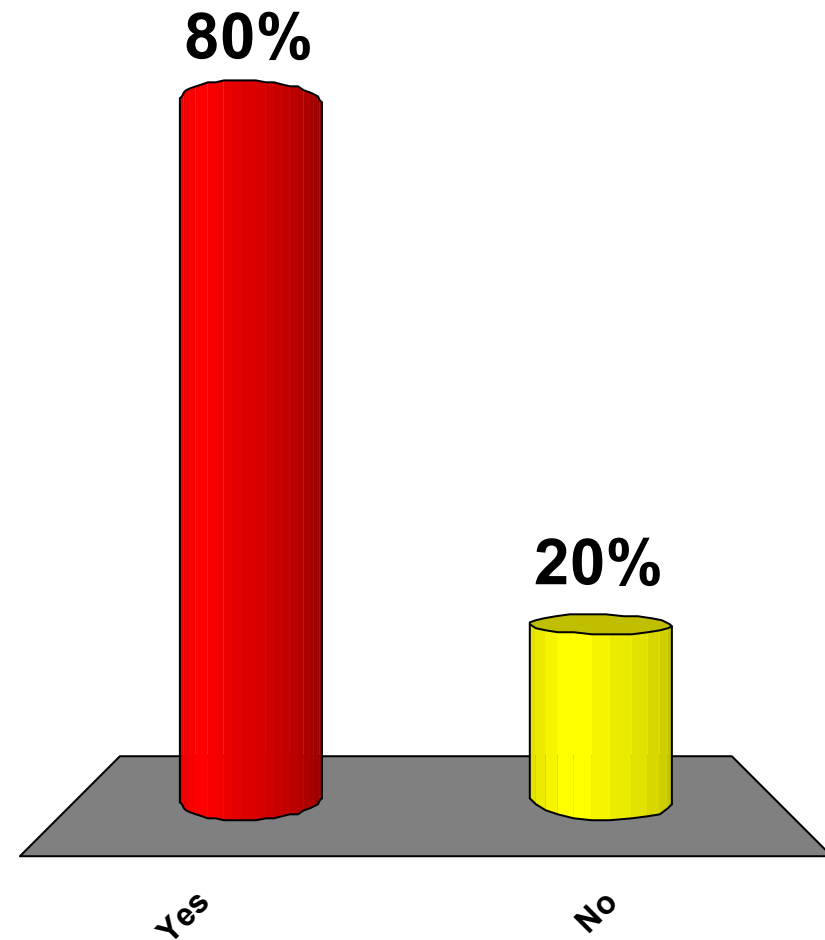
# How did you hear about this meeting?

- A. Local news media
- B. Front Porch Forum
- C. Town Bulletin Board
- D. Town Representative
- E. Other



# Do you find the scope of work satisfactory?

- A. Yes
- B. No







# Weybridge-New Haven BF 032-(19)

## Questions and Comments

**Vermont Route 17 – Bridge #8 over Otter Creek**

**SEPTEMBER 21, 2016**