



**Brattleboro BF 2000 (26)**  
**Alternatives Presentation Meeting**  
**TH 446– Bridge #31 over Whetstone Brook**

December 1, 2015



# Introductions

**Jennifer Fitch, P.E.**

VTrans Scoping Project Manager

**Jonathan Griffin, P.E.**

VTrans Scoping Engineer

**Judith Ehrlich**

VTrans Historic Preservation Officer

**Kyle Obenauer**

Vtrans Historic Preservation Officer

**John Byatt, P.E.**

CLD Structures Team Leader

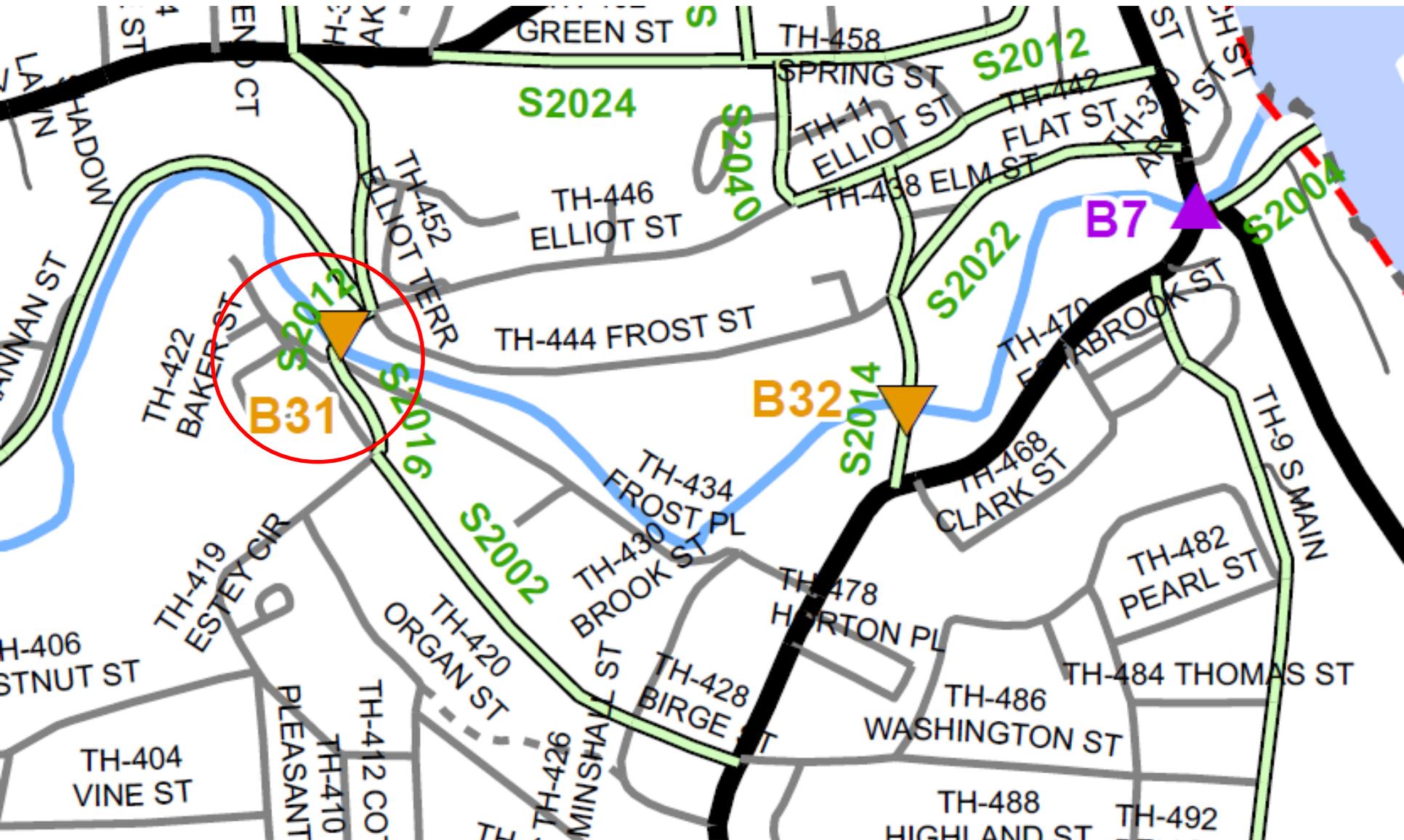


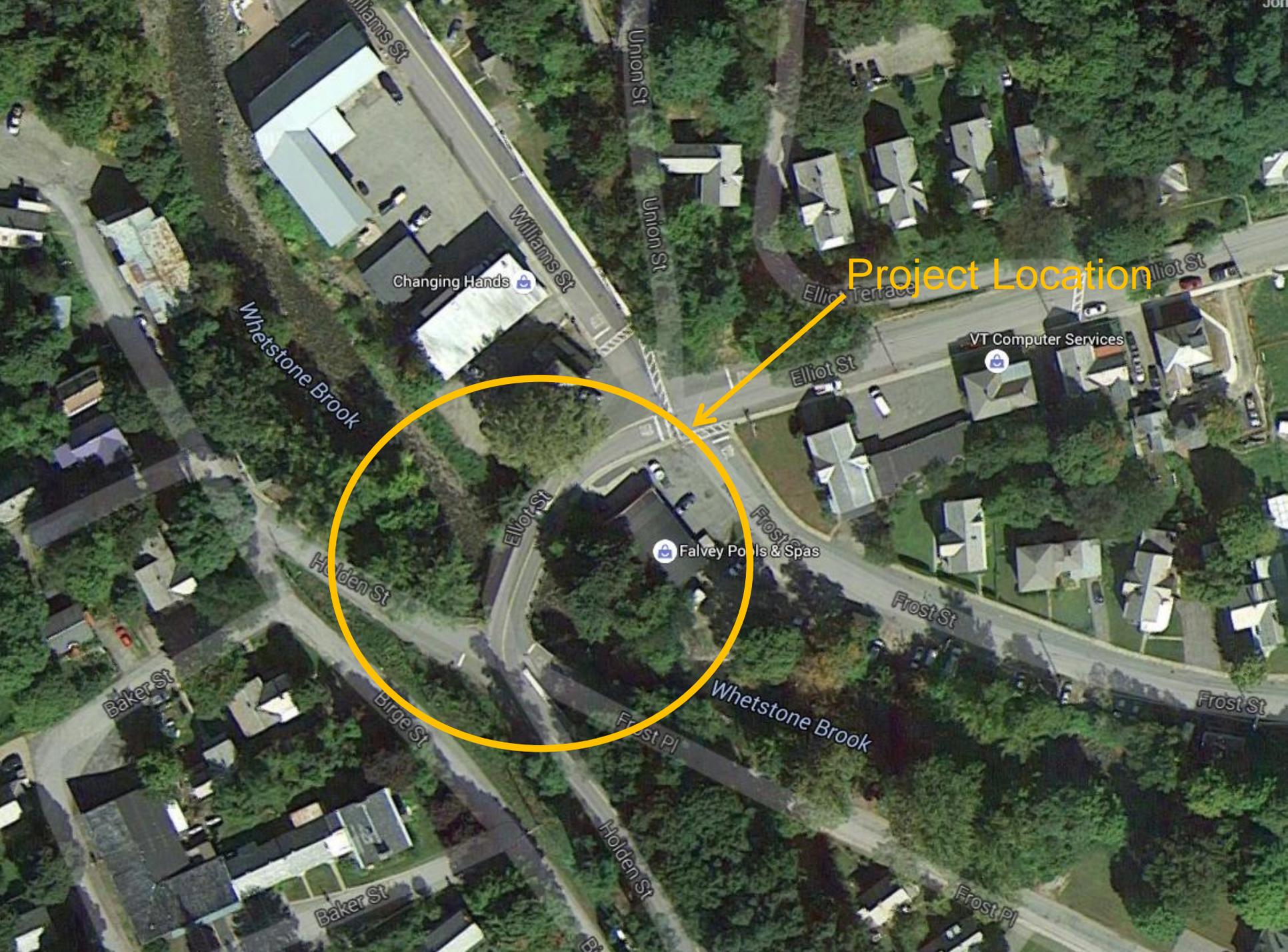
# Purpose of Meeting

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



# Location Map





Project Location

Changing Hands

VT Computer Services

Falvey Pools & Spas

Whetstone Brook

Elliot Terrace

Elliot St

Holden St

Frost St

Frost St

Baker St

Birge St

Frost Pl

Whetstone Brook

Frost St

Baker St

Holden St

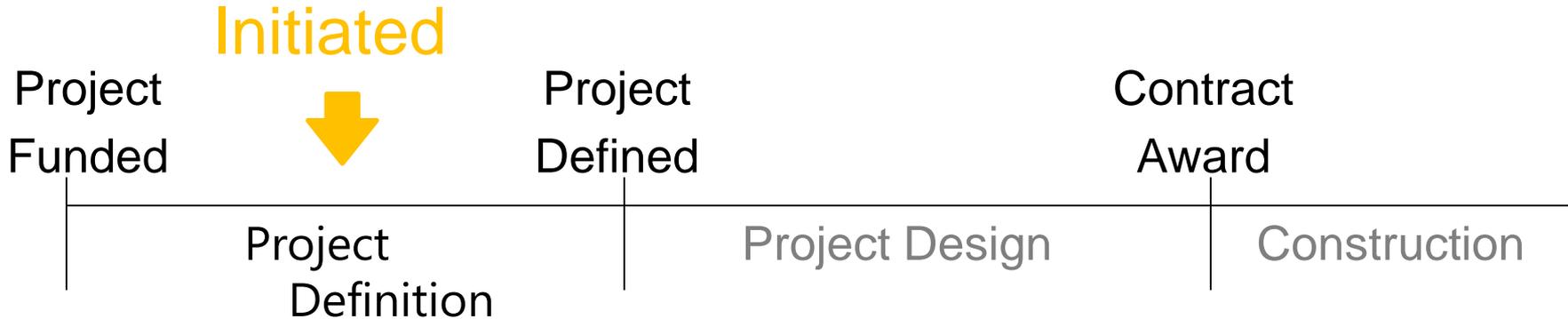
Frost Pl

# 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



- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

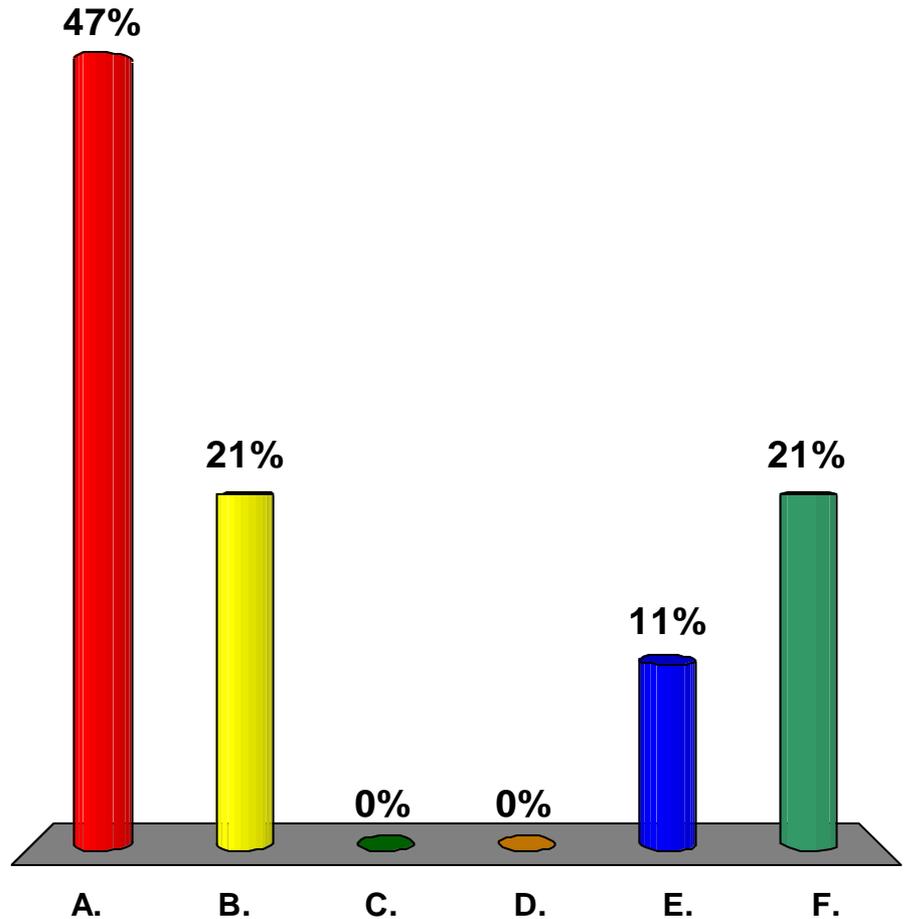
- Quantify areas of impact
- Environmental permits
- Develop plans, estimate and specifications
- Right-of-Way process if necessary



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Bridge  
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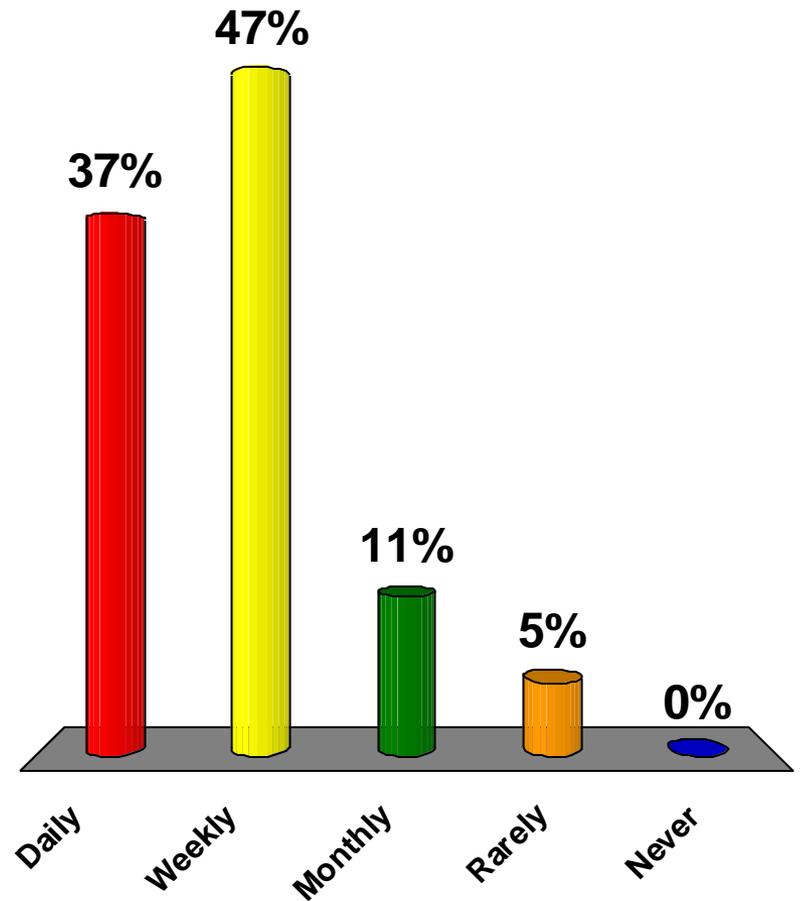
# Who are you representing?

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



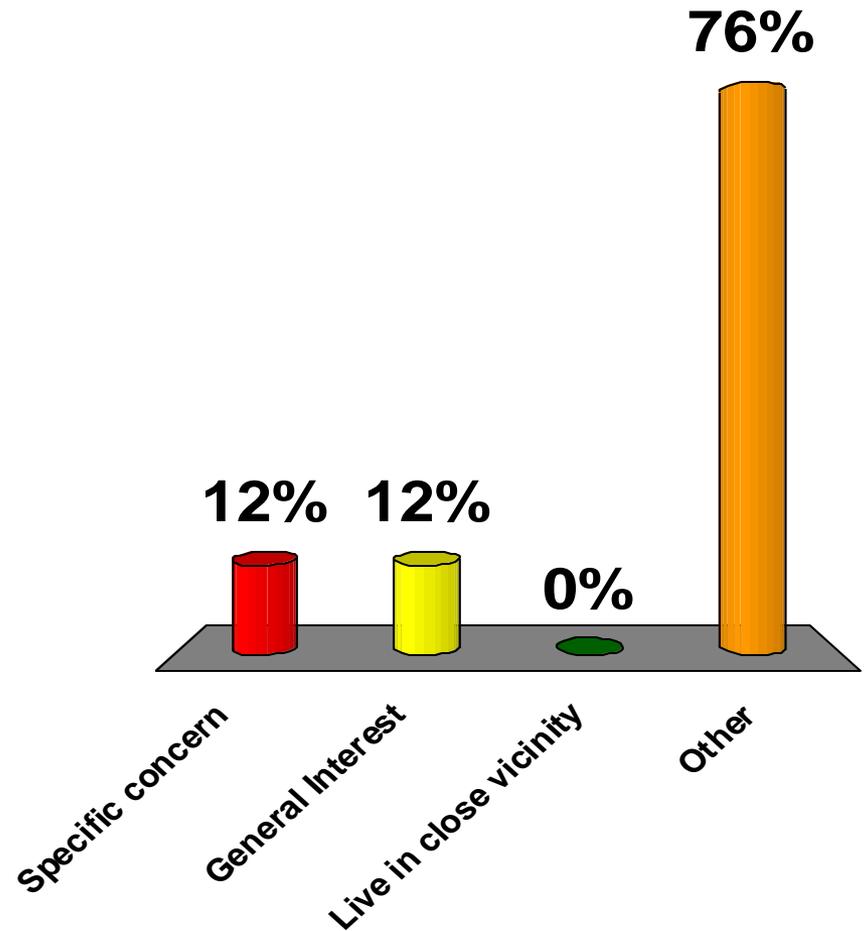
# How often do you use this segment of Elliot Street?

- 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

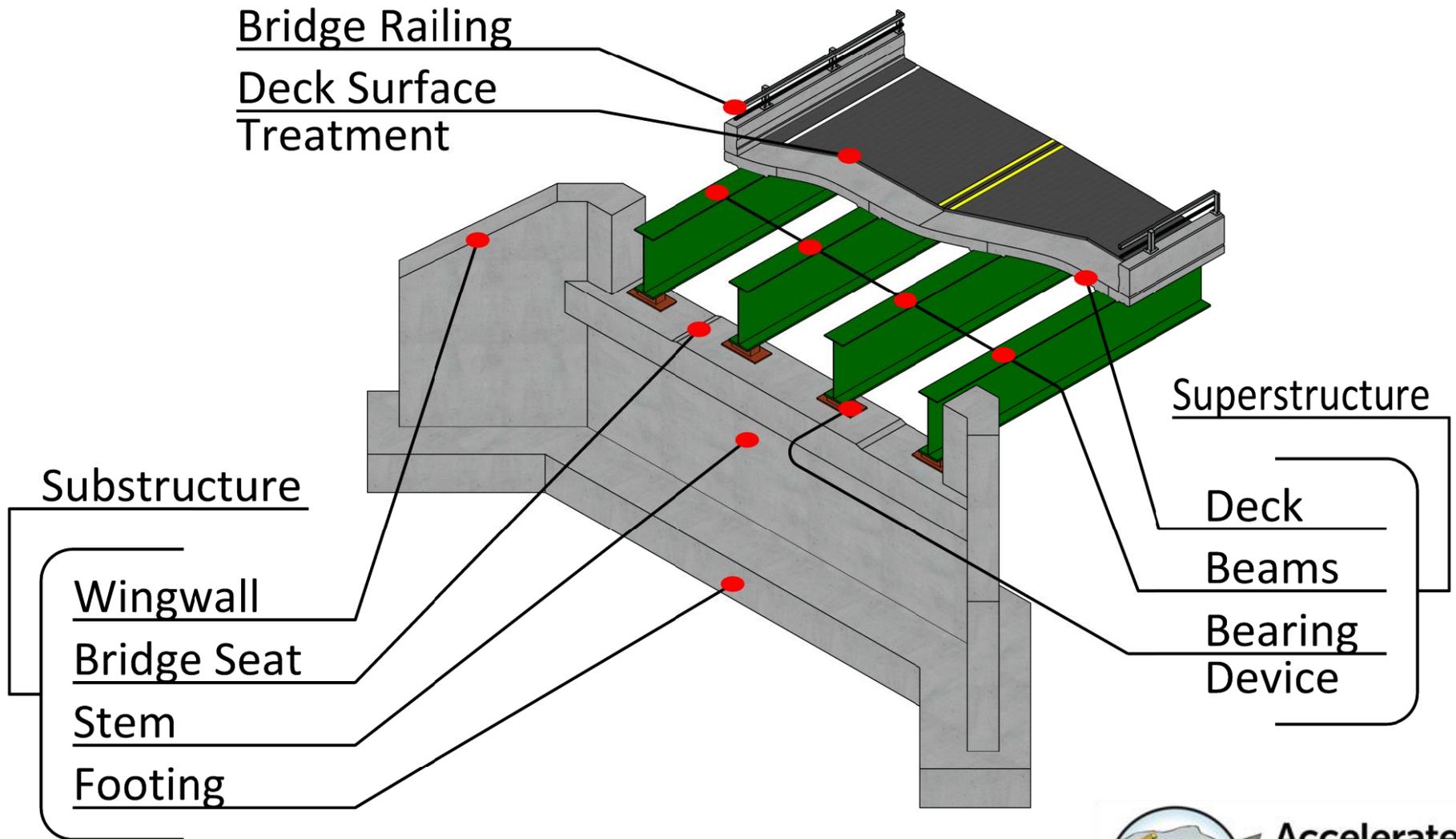


# Project Overview

- Existing Conditions
- Alternatives Considered
- Recommended Alternative



# Description of Terms Used





## Existing Conditions – Bridge #31

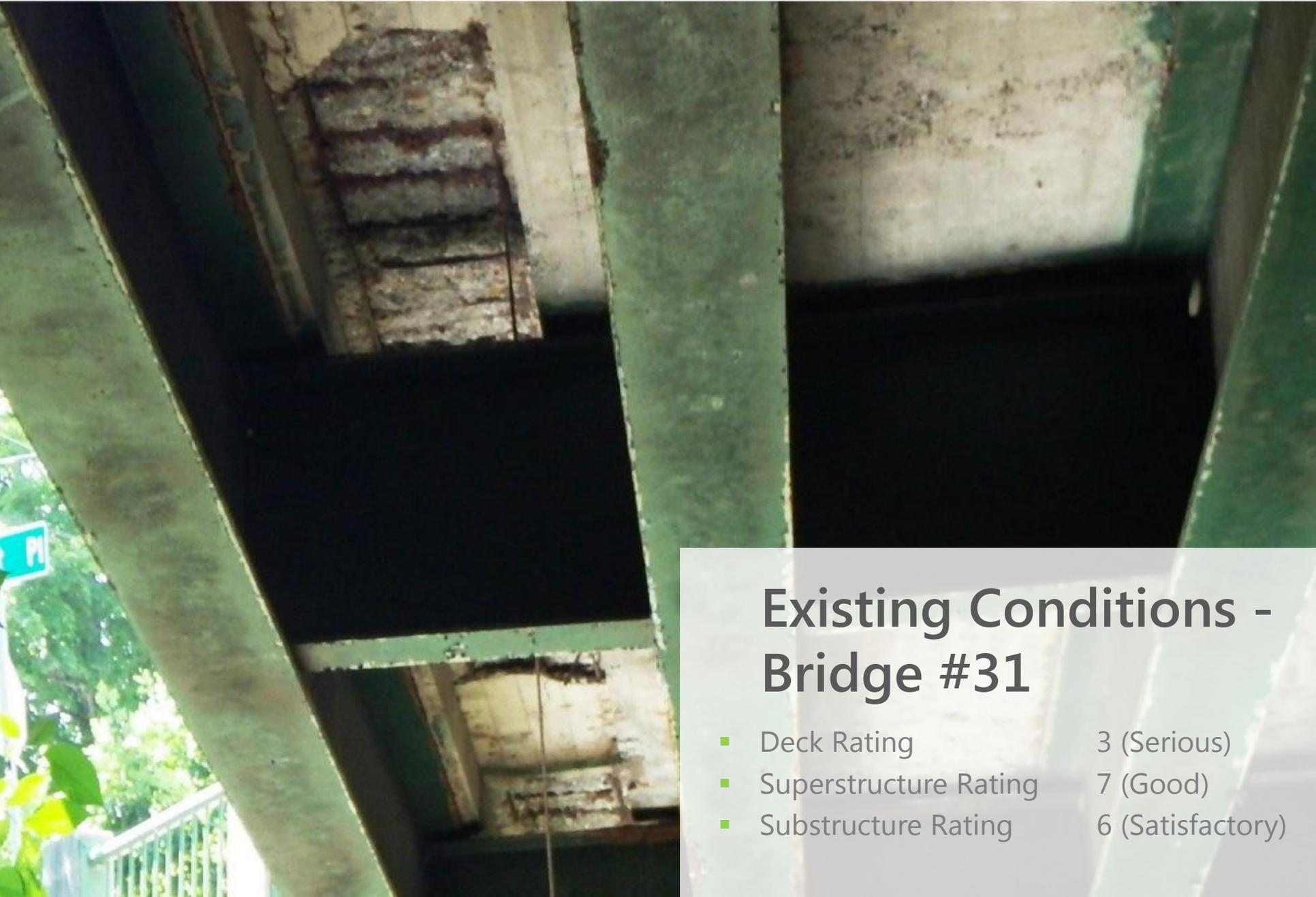
- Roadway Classification –Major Collector
- Bridge Type –88' Cast in Place deck on Rolled Beams
- Constructed in 1946
- Ownership – Town of Brattleboro

# Existing Conditions – Bridge #31

- Concrete deck has a full depth hole that has been temporarily patched, as well as additional deterioration and exposed rebar
- Bridge is narrow
- Bridge Railing is historic



## Exposed Rebar/Deterioration of Deck



### Existing Conditions - Bridge #31

- Deck Rating 3 (Serious)
- Superstructure Rating 7 (Good)
- Substructure Rating 6 (Satisfactory)



## Existing Conditions – Bridge #31

- Bridge and Approach Rail is Substandard
- Travel Lane is narrow

## Resource Constraints



### Existing Conditions - Bridge #31

- Historic Bridge Rail– Concrete Parapet/Metal Railing

# Design Criteria and Considerations

- ADT of 4,800
- DHV of 640
- % Trucks: 1.4
- Design Speed of 25 mph
- Historic bridge Railing
- Aerial utility relocation



# Alternatives Considered – Bridge #31

- No Action
  - Additional maintenance required within 10 years
- Deck Patching
  - Ruled out due to extent of concrete deterioration
- Deck Replacement
  - No substructure repair required
  - Improves Bridge width and Load capacity



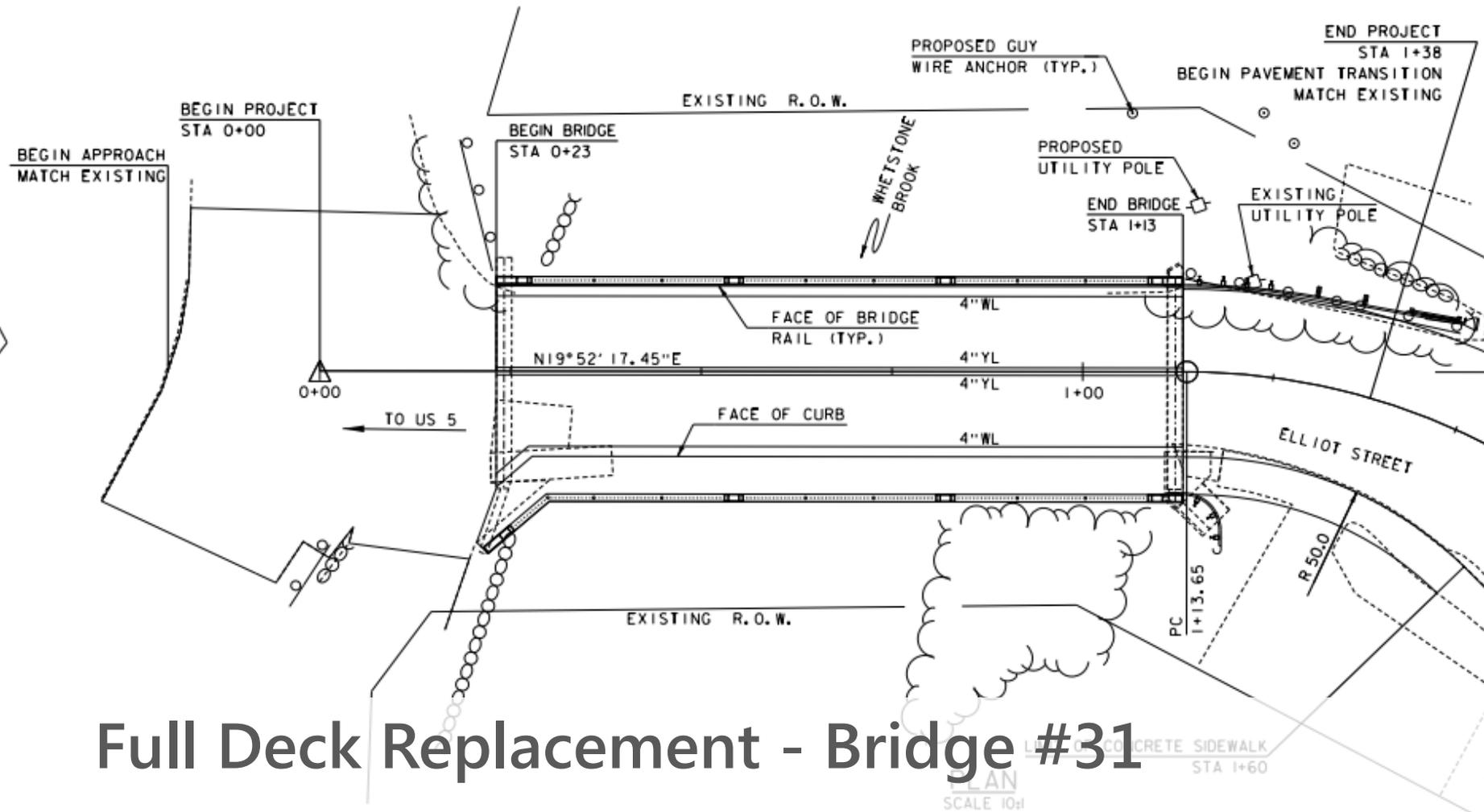
## EXISTING BRIDGE DATA:

ROLLED BEAMS, CONCRETE DECK  
LENGTH = 88' - 0"  
WIDTH = 28' - 2" RAIL TO RAIL  
BUILT IN 1947

# Alternative 3 Layout



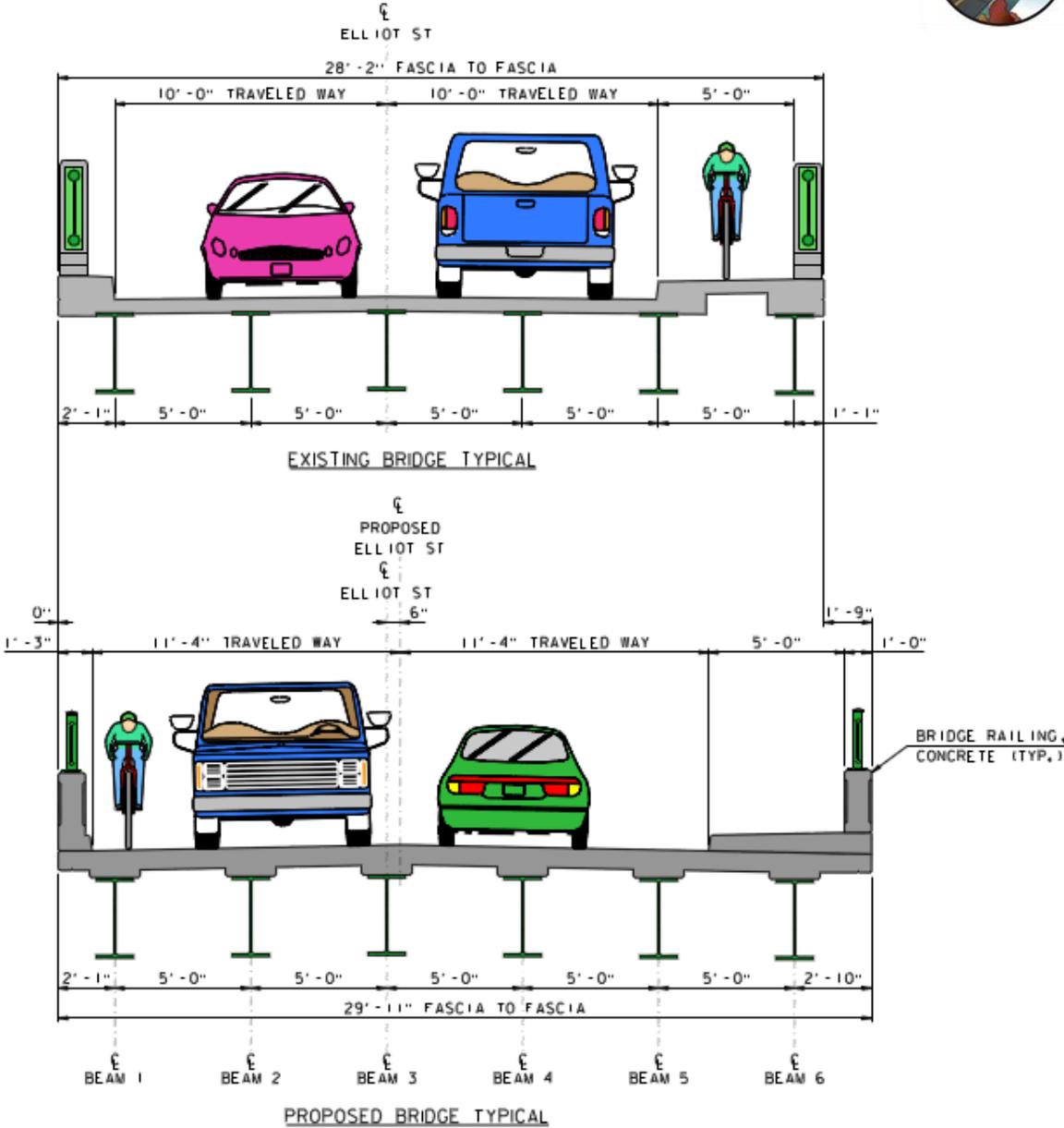
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## Full Deck Replacement - Bridge #31

- Slightly improves bridge width
- Improve Bridge approach railing where possible (still substandard)

# Proposed Typical Section



# Recommended Alternative - Bridge #31

- Deck Replacement
  - Replace the Deck with a cast-in-place concrete bare deck
  - Improve the existing bridge width as much as possible
  - 88' single span
  - Aerial utility relocation
  - No ROW needed



# What Will the New Bridge Rail Look Like?



## Railing Example - Bridge #31

- Metal Rail/Concrete Parapet Combination

11.06.2013

# Maintenance of Traffic Options Considered

- Short Term Road Closure w/ Offsite Detour
  - Signed by town
  - By closing the bridge to traffic during construction, the local share is reduced by 50%
- Phased Construction
  - Not considered given site conditions (intersections at each end as well as lack of staging area for construction)
- Temporary Bridge
  - Not considered for maintenance projects due to cost and need to expedite project delivery

A white rectangular sign with a black border and the words "ROAD CLOSED" in large, bold, black capital letters. The sign is mounted on a white post. The sign is positioned in the center of a road closure barrier made of white posts and horizontal bars with red and white diagonal stripes. In the background, there is a concrete barrier, a chain-link fence, and green trees under a clear blue sky.

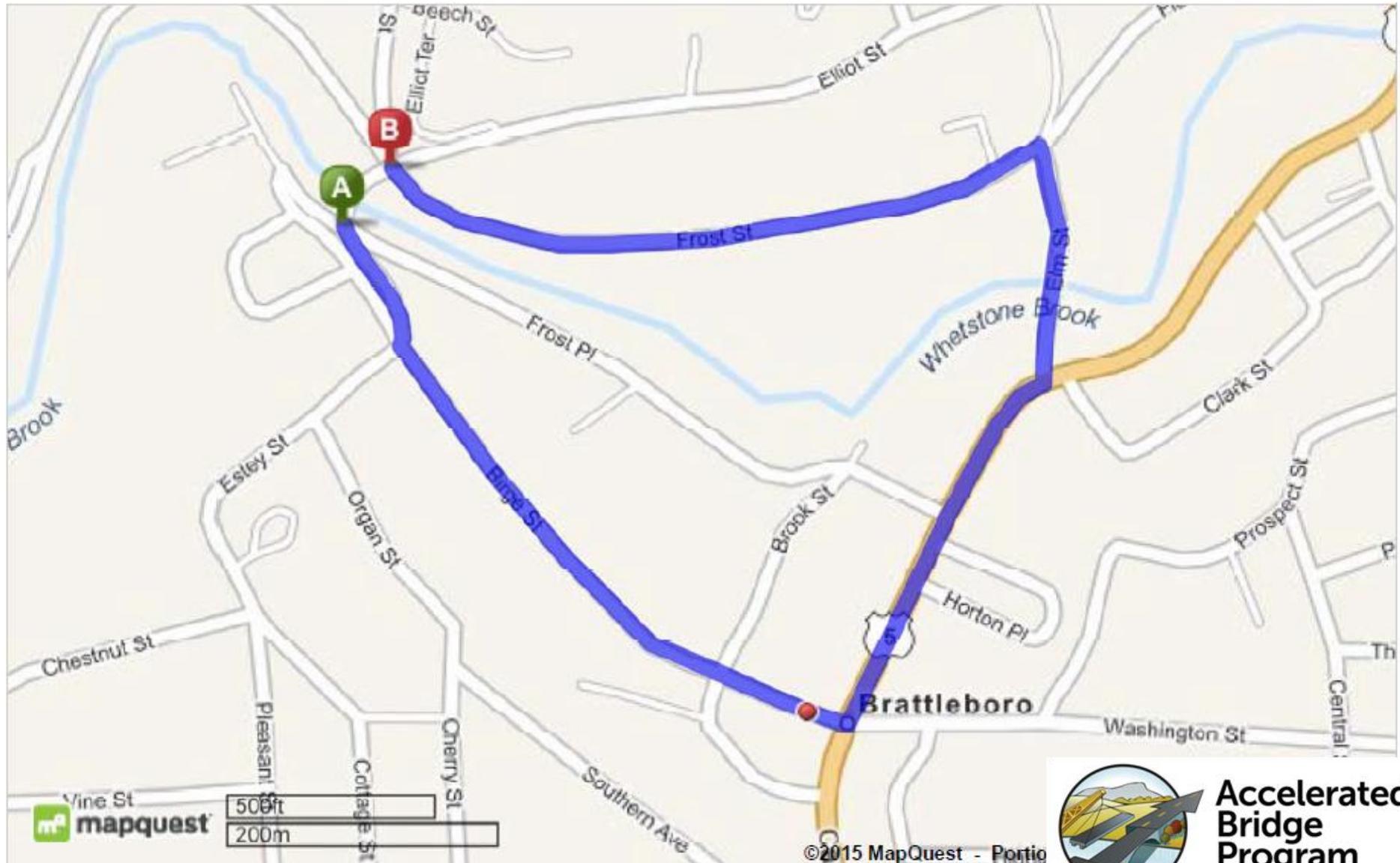
**ROAD  
CLOSED**

## Road Closure

- Approx 8 week bridge closure
- Detour route signed by Town of Brattleboro

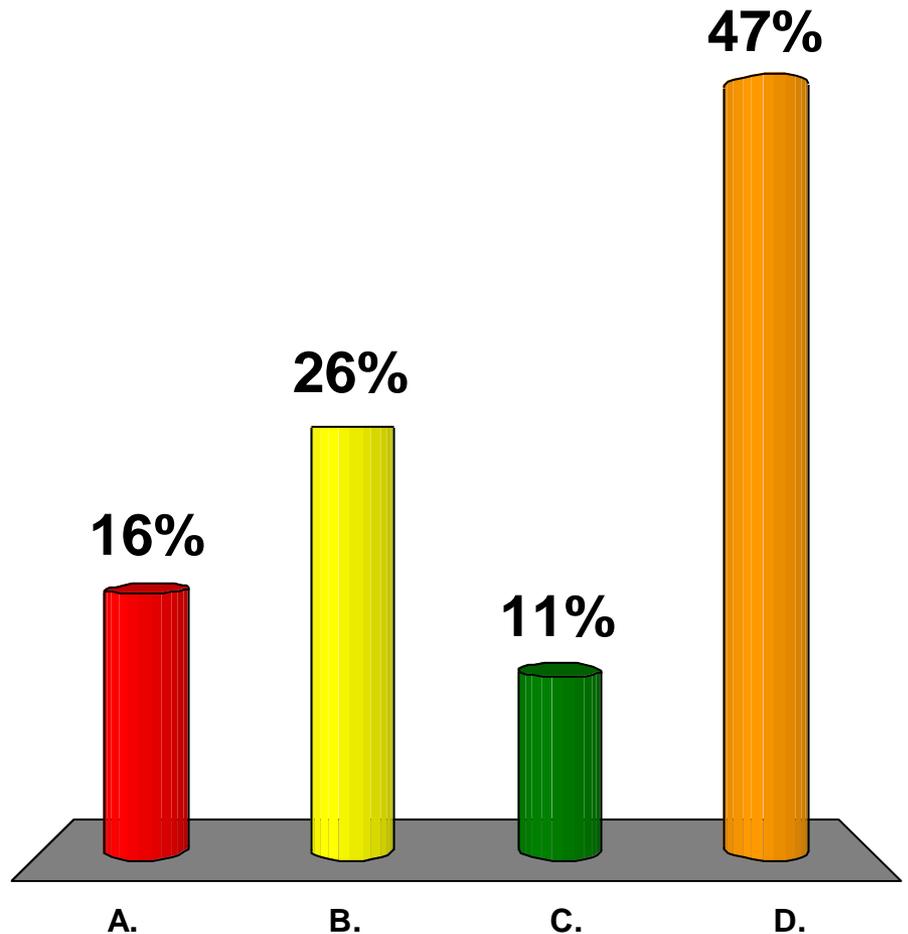
# Possible Detour

Total Travel Estimate: 1.04 miles - about 3 minutes



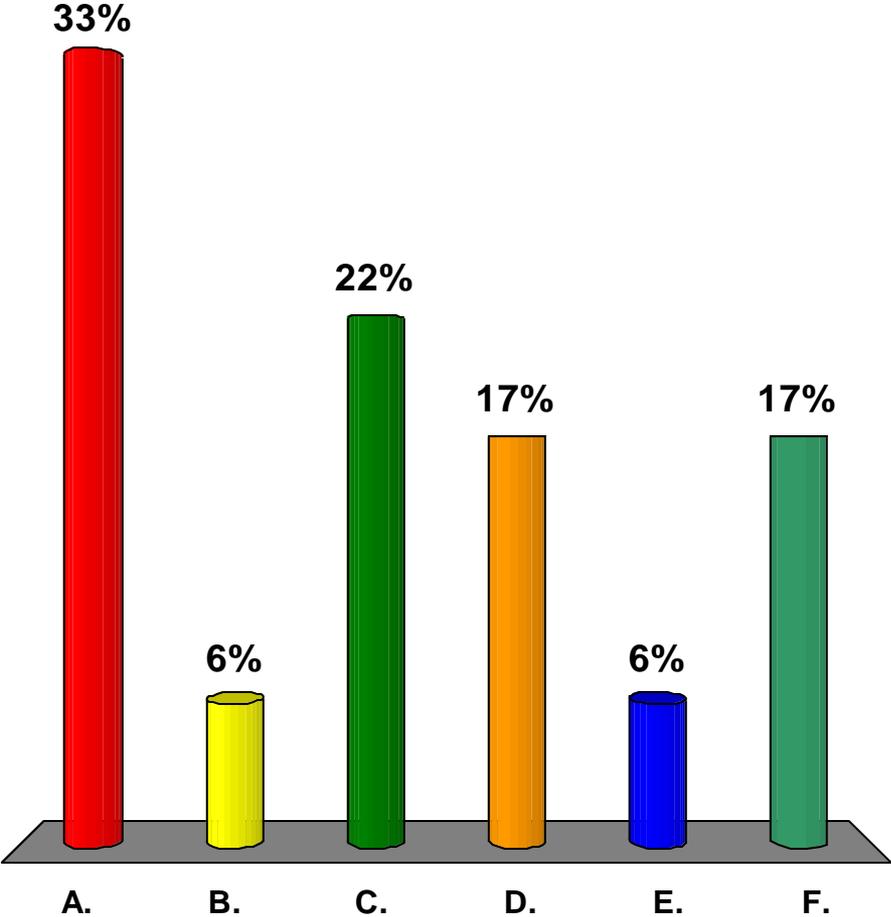
# What would be the maximum acceptable length of closure for Bridge #31?

- A. 7weeks
- B. 8 weeks
- C. 9 weeks
- D. 10 weeks



# Which time of year would be most acceptable for Bridge #31 to be closed?

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



# Recommended Scope

- Replace deck with new cast-in-place concrete deck with traffic maintained on offsite detour
  - 8 week proposed closure, detour signed by Town
  - Improve width (increased 1'-9")
  - New Bridge and Approach Rail
  - Relocate Aerial utility
  - No ROW needed
  - Construction – Summer 2016



# Alternatives Matrix

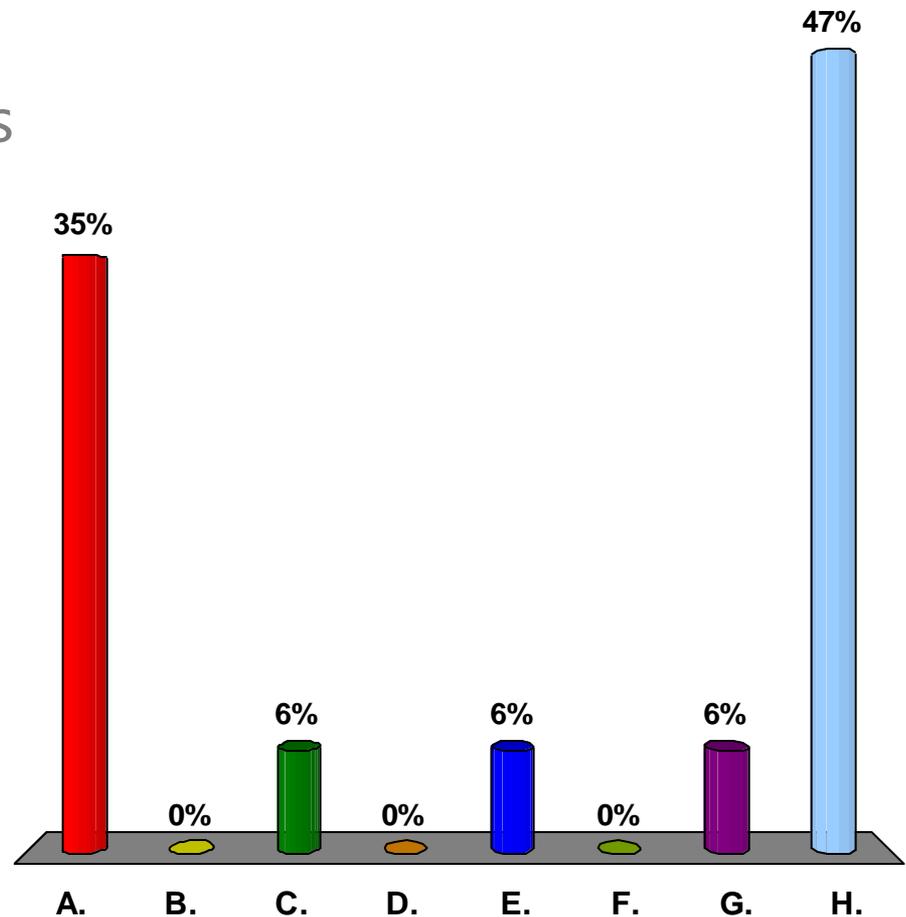
Recommended



	Alt 1	Alt 2	Alt 3
<b>Brattleboro BF 2000 (26)</b>	Do Nothing	Deck Patching	Deck Replacement
	N/A	Offsite Detour	Offsite Detour
<b>Total Project Costs</b> (Including Engineering and Contingencies)	\$0	N/A	\$595,200
<b>Town Share</b>	\$0	N/A	\$14,880 (2.5%)
<b>Project Development Duration</b>	0	N/A	1 year
<b>Construction Duration</b>	0	N/A	4 months
<b>Closure Duration (If Applicable)</b>	N/A	N/A	8 weeks
<b>Geometric Design Criteria</b>	Substandard width	Substandard width	Substandard width
<b>Alignment Change</b>	No	No	No
<b>Utilities</b>	No Change	No Change	Relocation
<b>ROW Acquisition</b>	No	No	No
<b>Design Life</b>	Less than 10 Years	N/A	40 Years

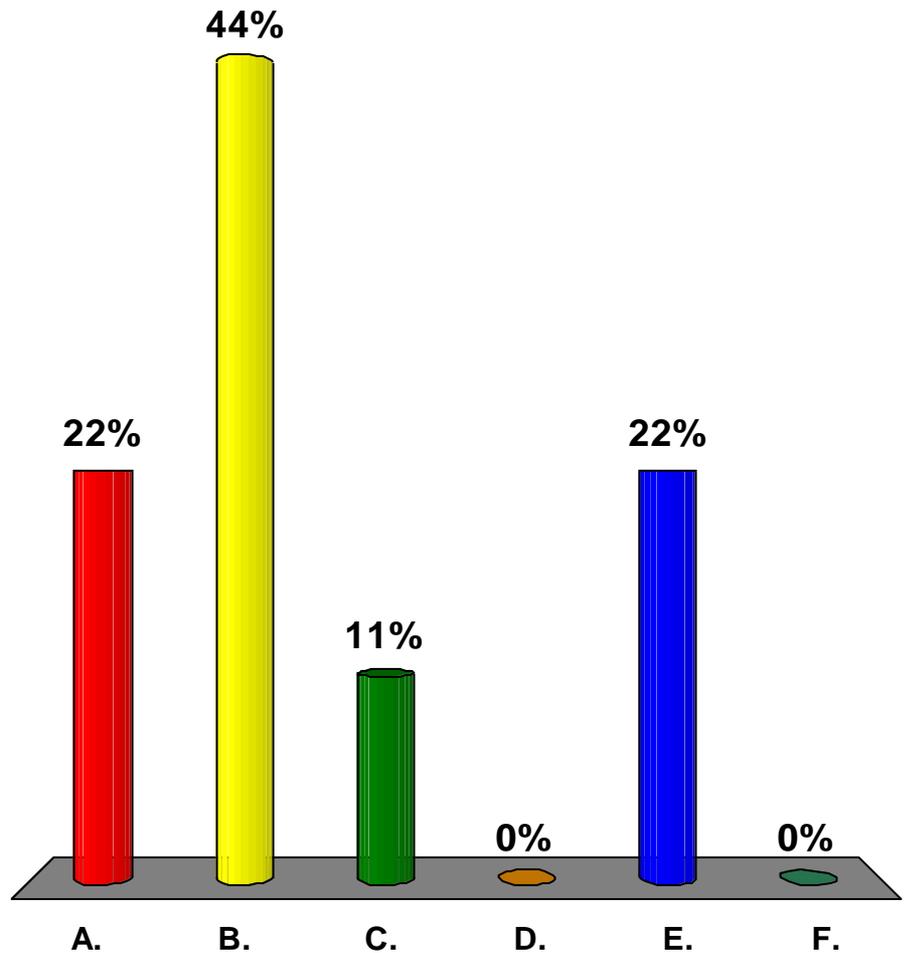
# Which would you be most concerned about?

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



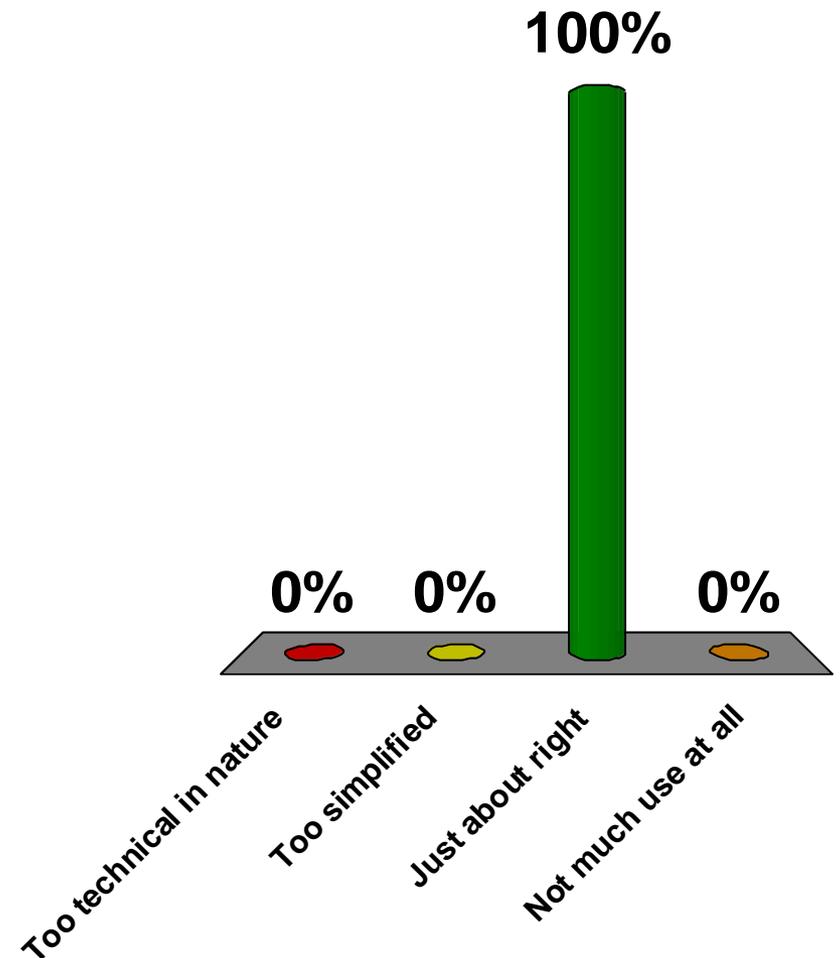
# Which design aspect is the most important to you?

- A. Bridge Width
- B. Aesthetics - Bridge Railing
- C. Construction year
- D. Construction Duration
- E. Cost
- F. Other



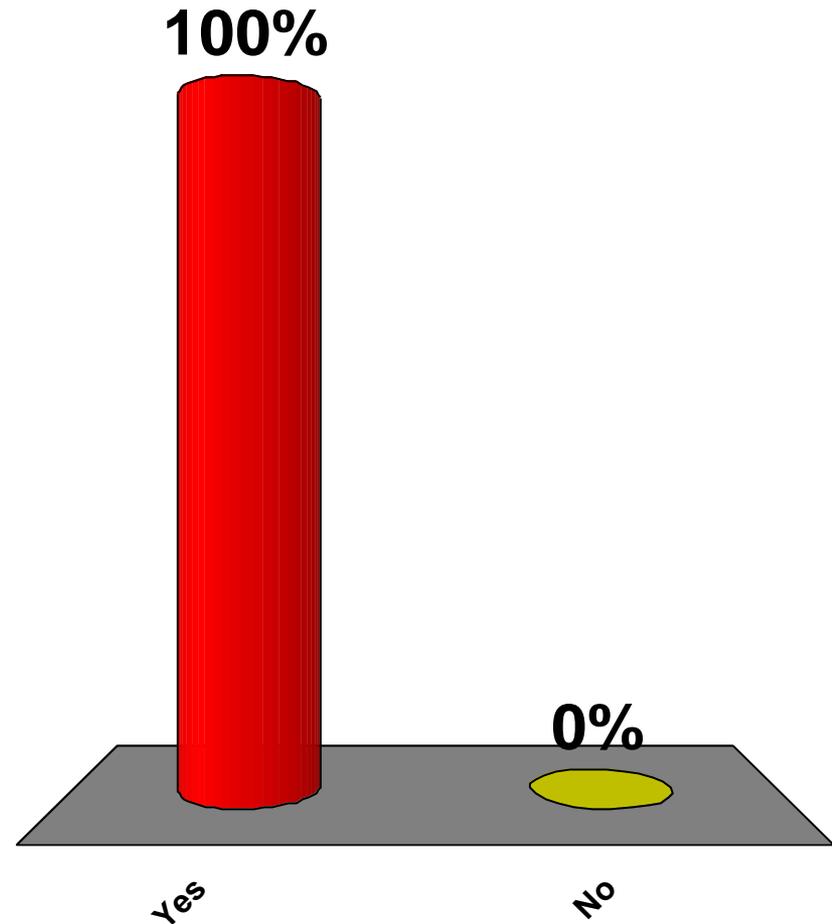
# Did you find this presentation to be?

- 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 #31

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
  - Distribute Conceptual plan for comment
  - Process local agreements – ROW F&A Agreement

## For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/15J091>



# Brattleboro BF 2000 (26)

## Questions & Comments

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# Additional Considerations

- Are there any other considerations we should be made aware of?