



Newfane BF 0106(6)

Alternatives Presentation Meeting

Depot Road (FAS Route 106/TH 2) – Bridge #12 over Rock River

May 18, 2015

Introductions

Jennifer Fitch, P.E.

VTrans Scoping Project Manager

Laura Stone, P.E.

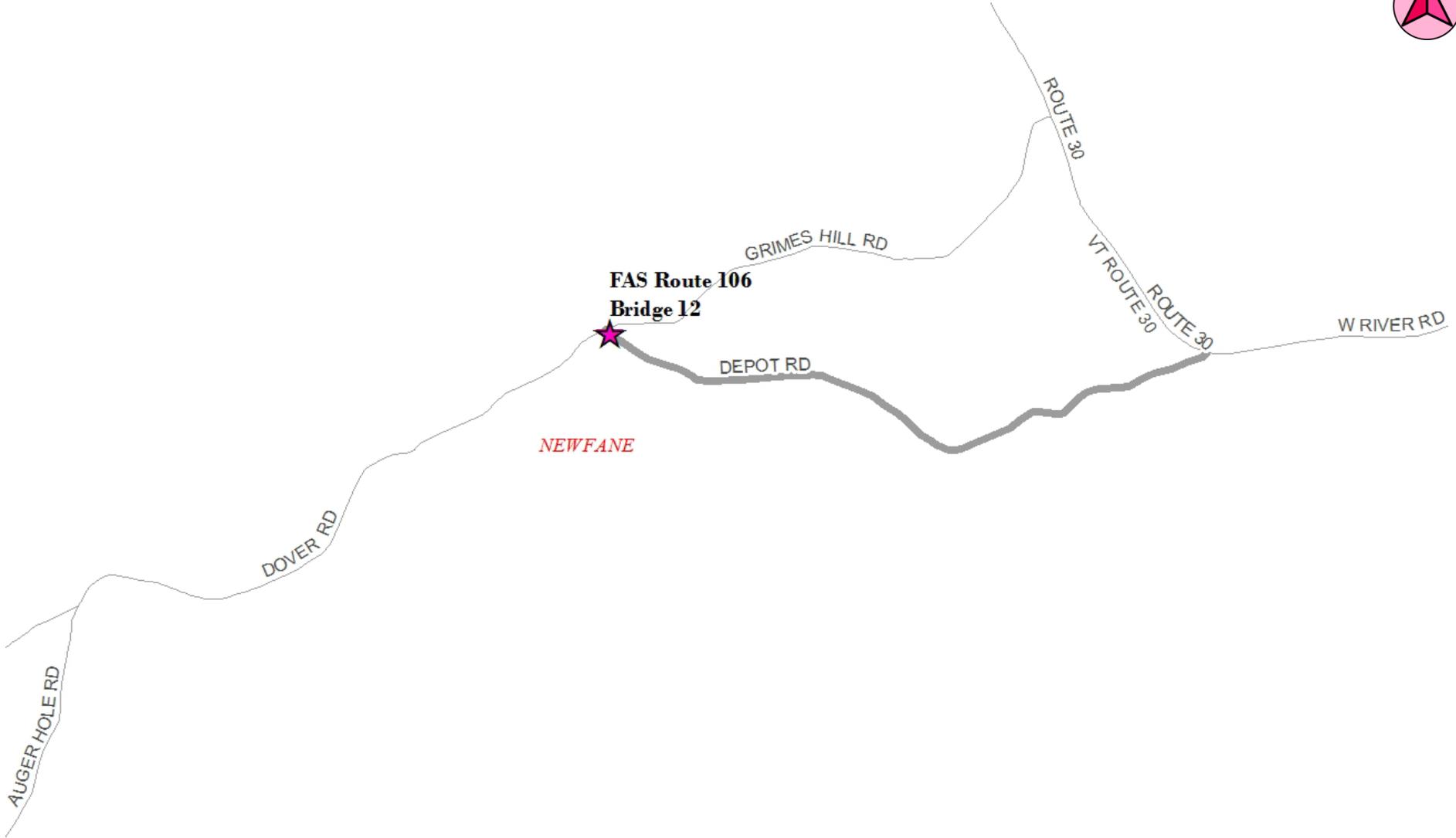
VTrans Scoping Engineer

Carolyn Carlson, P.E.

VTrans Design Project Manager

Purpose of Meeting

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



Location Map

Bridge 12
Project Location

Grimes Hill Rd



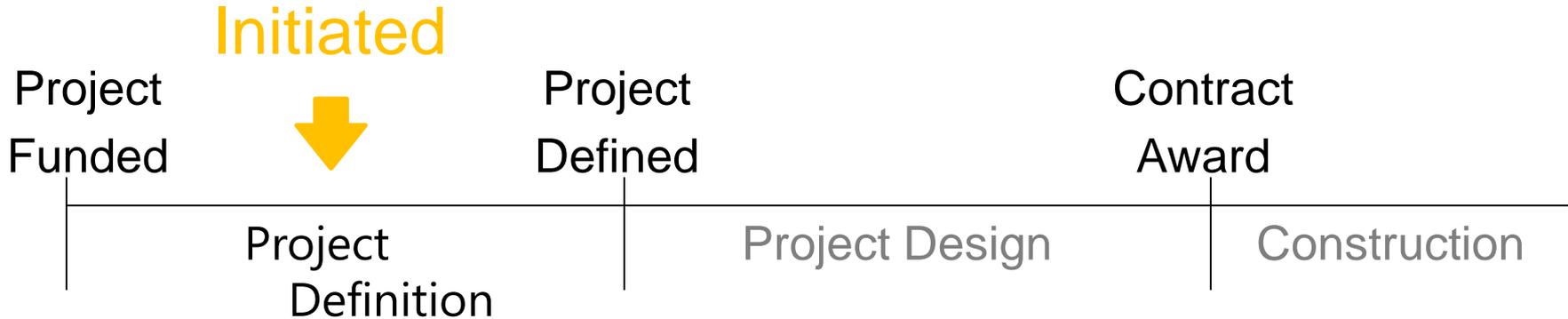
Rock River

Rock River

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

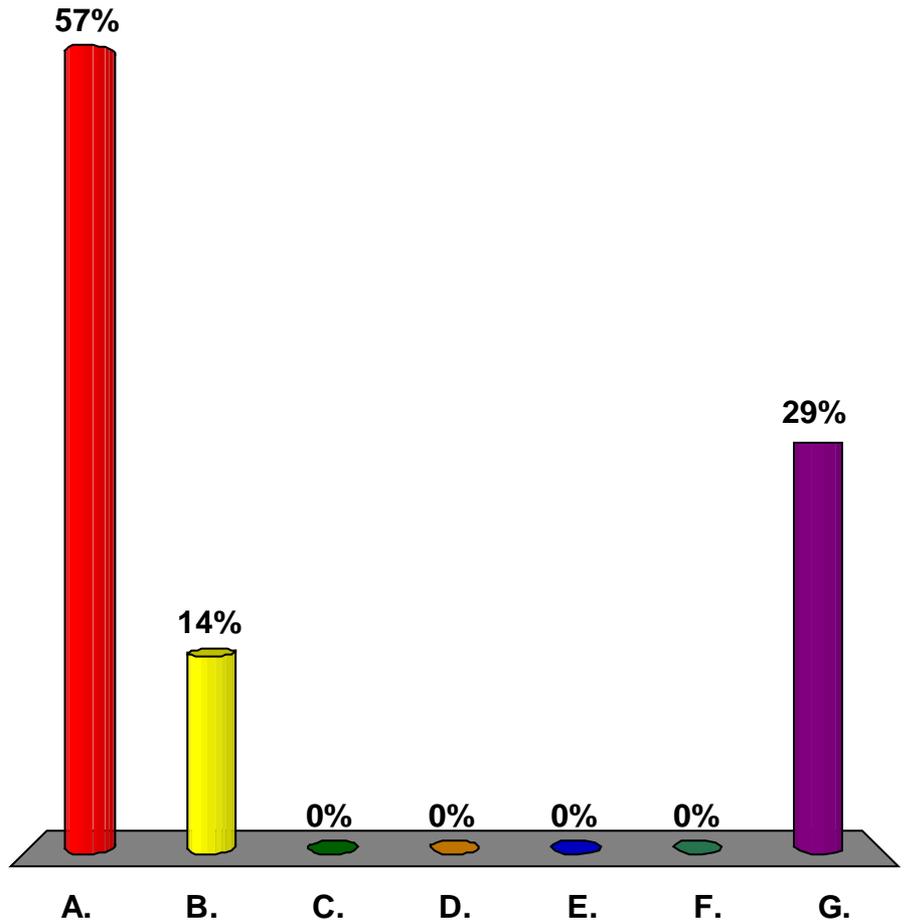


- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

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

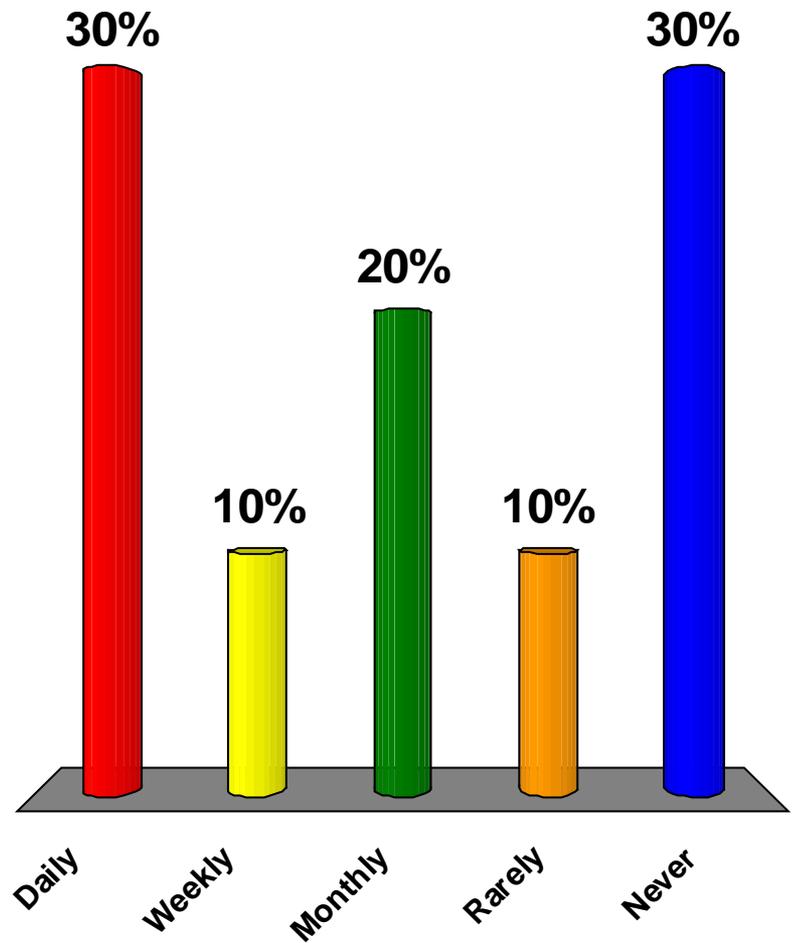
Who are you representing?

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



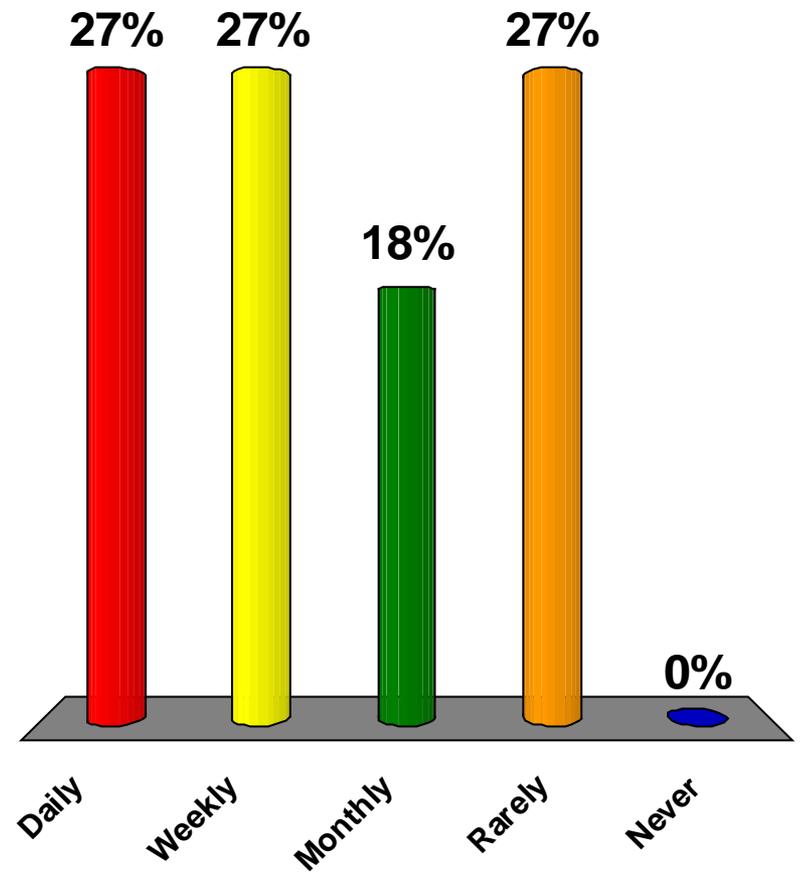
How often do you use this segment of Depot Road?

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



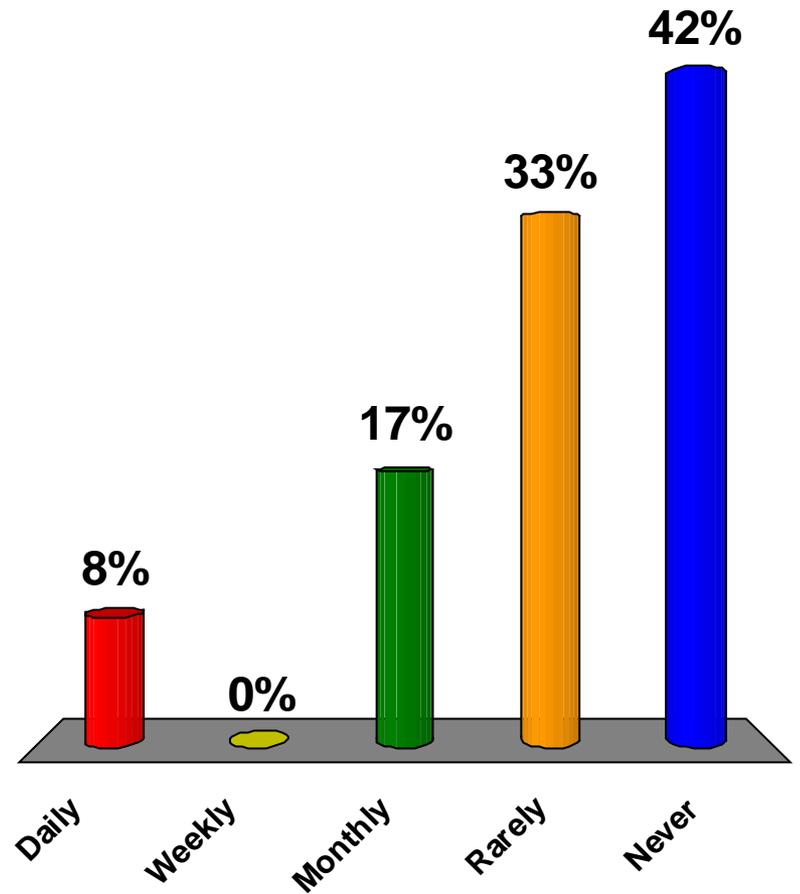
How often do you use this segment of Dover Road/Grimes Hill Road?

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



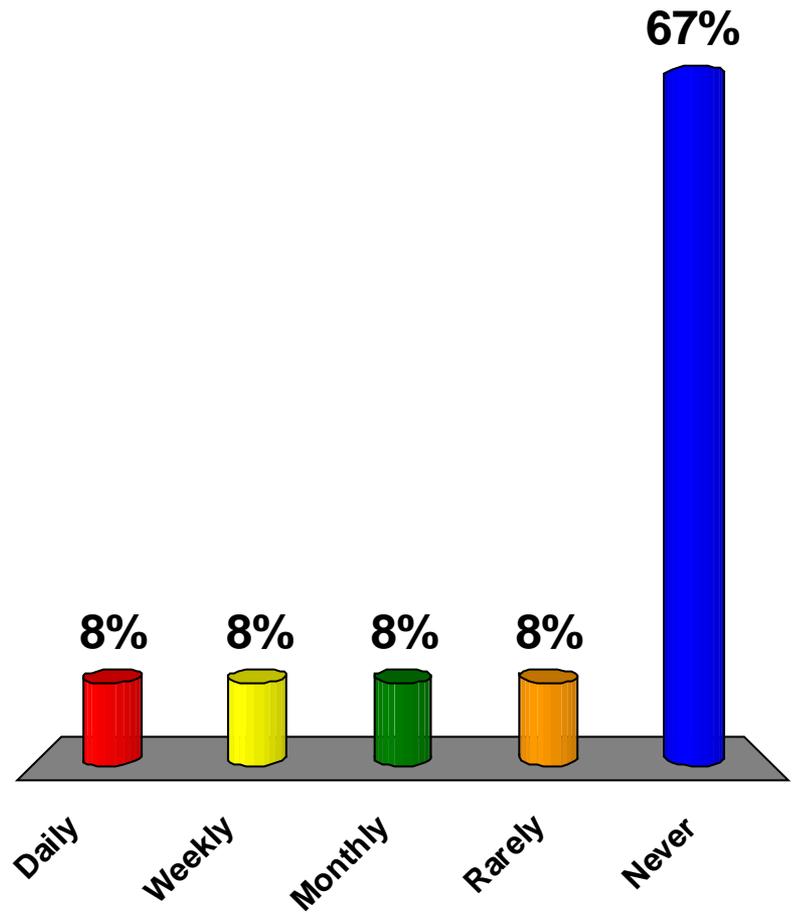
How often do you use this section of Rock River for recreation?

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



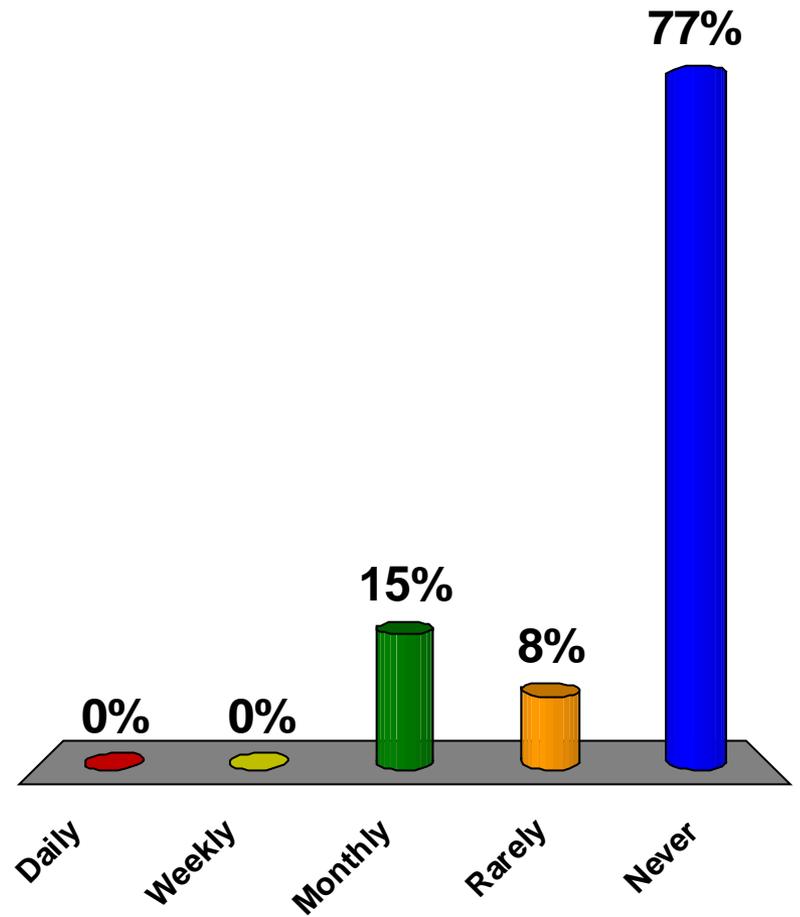
How often do you walk over the bridge?

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



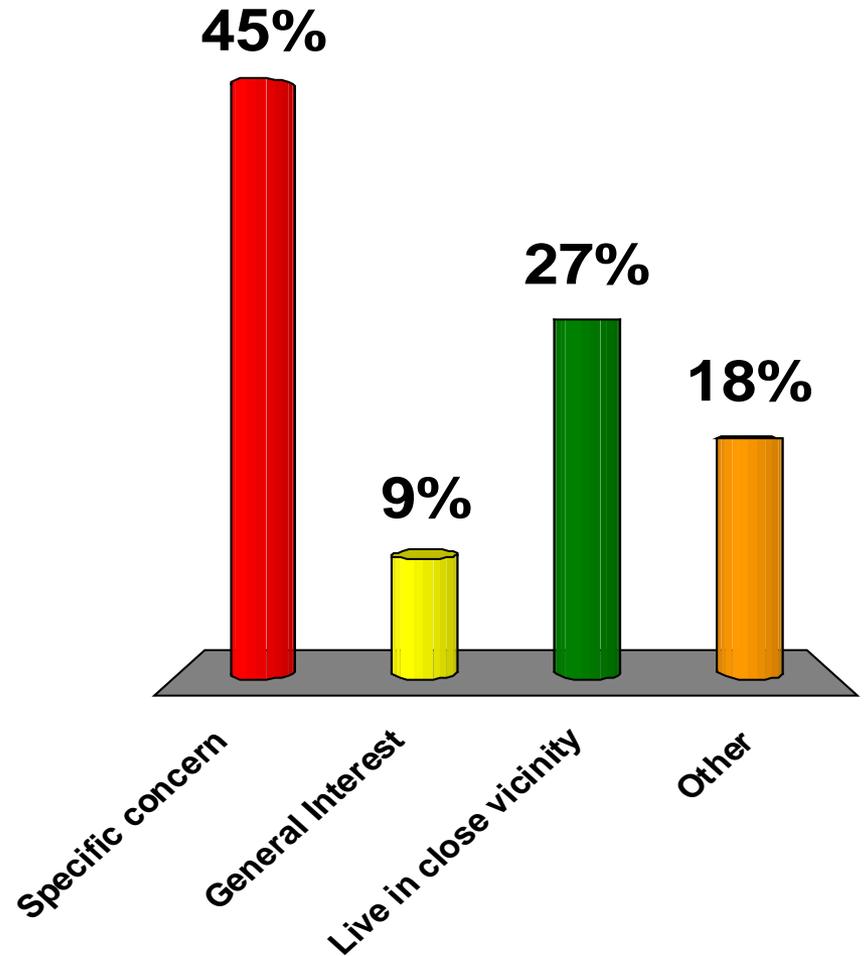
How often do you bike over the bridge?

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



What is your reason for attending this meeting?

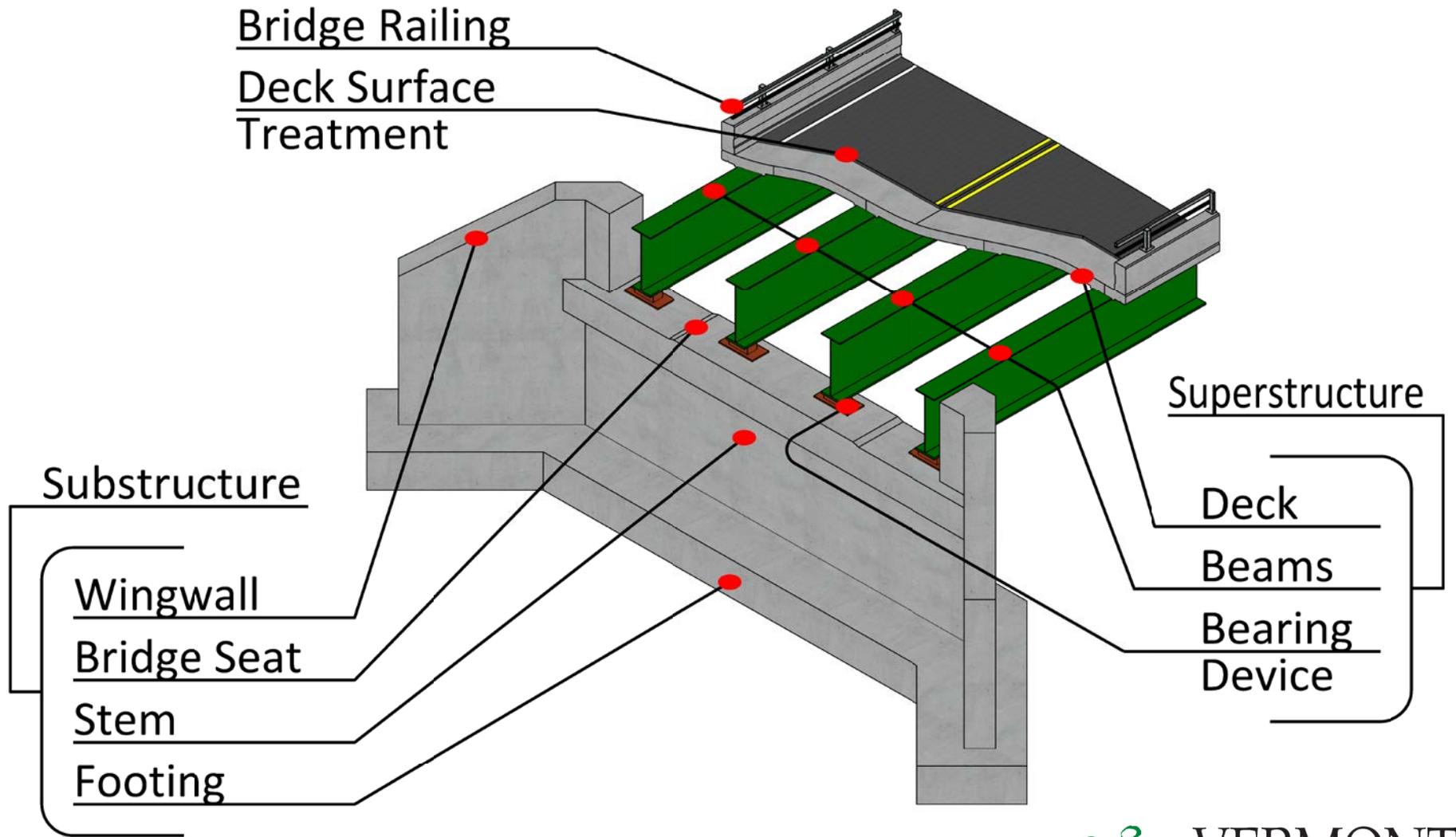
- A. Specific concern
- B. General Interest
- C. Live in close vicinity
- D. Other



Project Overview

- Existing Conditions
- Alternatives Considered
- Recommended Alternative

Description of Terms Used





Existing Conditions – Bridge #12

- Roadway Classification – Local Road (Class 2 TH)
- Bridge Type – 76.5' Span Reinforced Concrete Closed Spandrel Elliptical Arch
- Constructed in 1908
- Ownership – Town of Newfane

Existing Conditions – Bridge #12

- The original arch is in poor condition. The foundation has map cracking and efflorescence throughout with major delaminations.
- The existing vertical alignment through the project location does not meet the current standard.
- The lane and shoulder widths of the bridge and approaches are too narrow for the traffic volume, design speed and roadway classification.
- The existing bridge railing has failed.

Delaminated Concrete

Spandrel Wall



Abutment and Wingwall



Existing Conditions - Bridge #12

- Culvert Rating 4 ("Poor")
- Spandrel walls have failed
- Falling concrete from the delaminated walls poses a risk to swimmers below

Arch Ring Condition



Existing Conditions - Bridge #12

- Map cracking throughout the arch ring
- Cracks are leaking as evident by saturation and efflorescence

Bridge Railing



Existing Conditions - Bridge #12

- Failed Bridge Railing
- Substandard height
- Exposed reinforcing steel

05.14.2014

Looking East over the bridge



Existing Conditions - Bridge #12

- Substandard Horizontal Alignment for posted speed
- Substandard vertical alignment
- Substandard Width

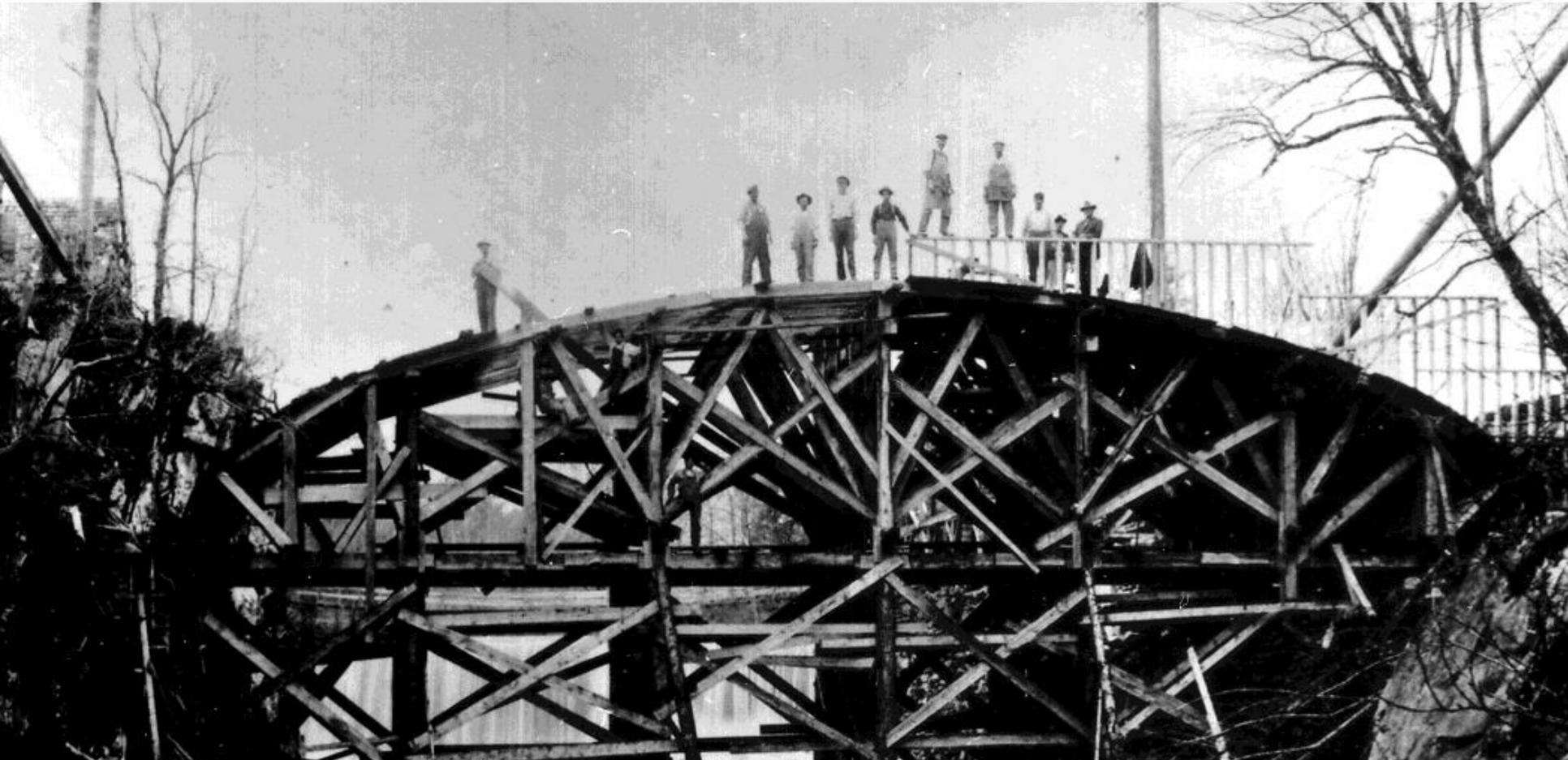


Existing Conditions - Bridge #12

- Upstream banks are archaeologically sensitive
- Historic Resources
 - Bridge is historic
 - Garage in downstream eastern quadrant is historic and classified as a hazardous waste site



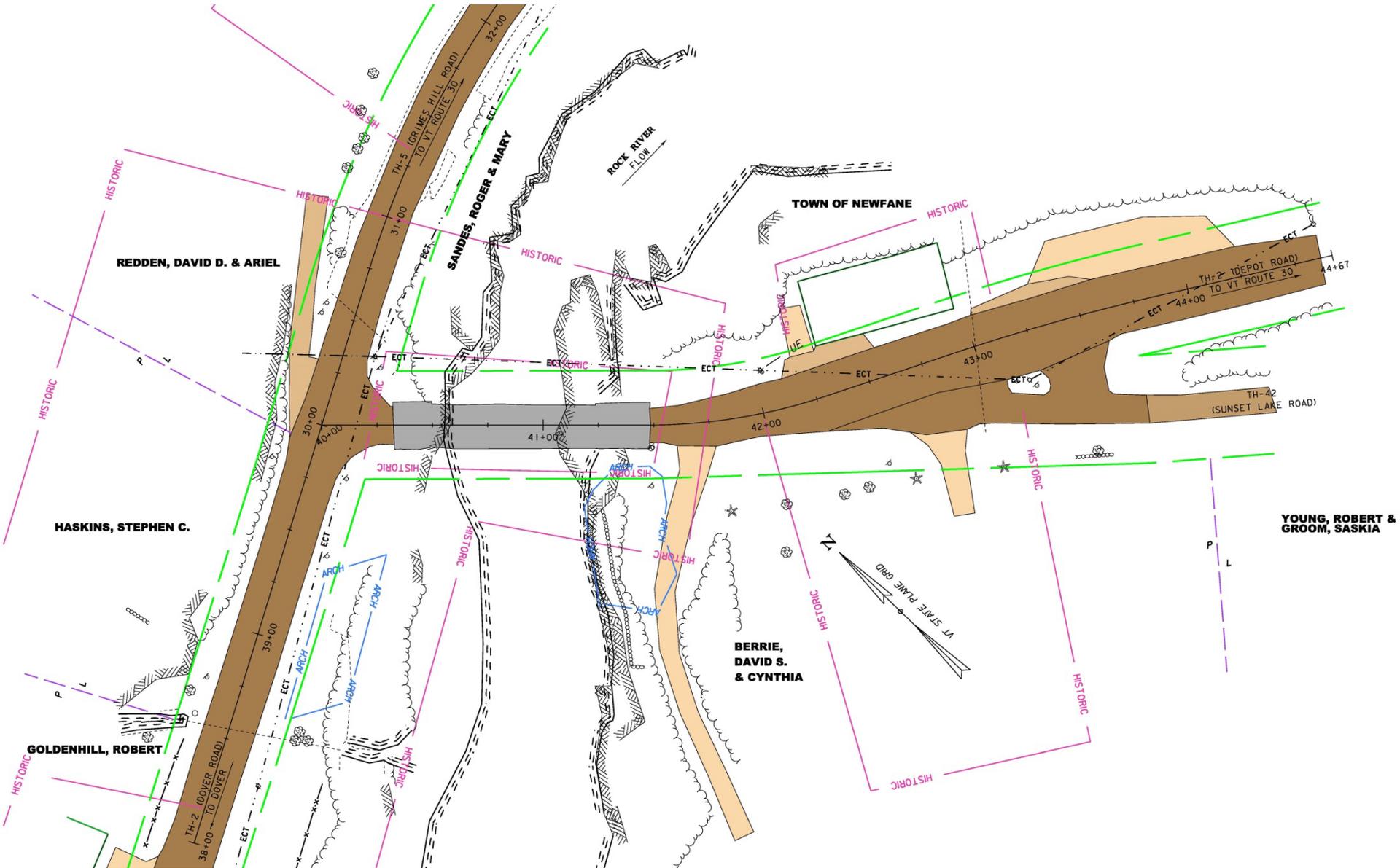
Resource Constraints



Existing Conditions - Bridge #12

- Ca. 1900 Bridge Construction
- Within the Williamsville Village Historic District with surrounding historic properties

Existing Conditions



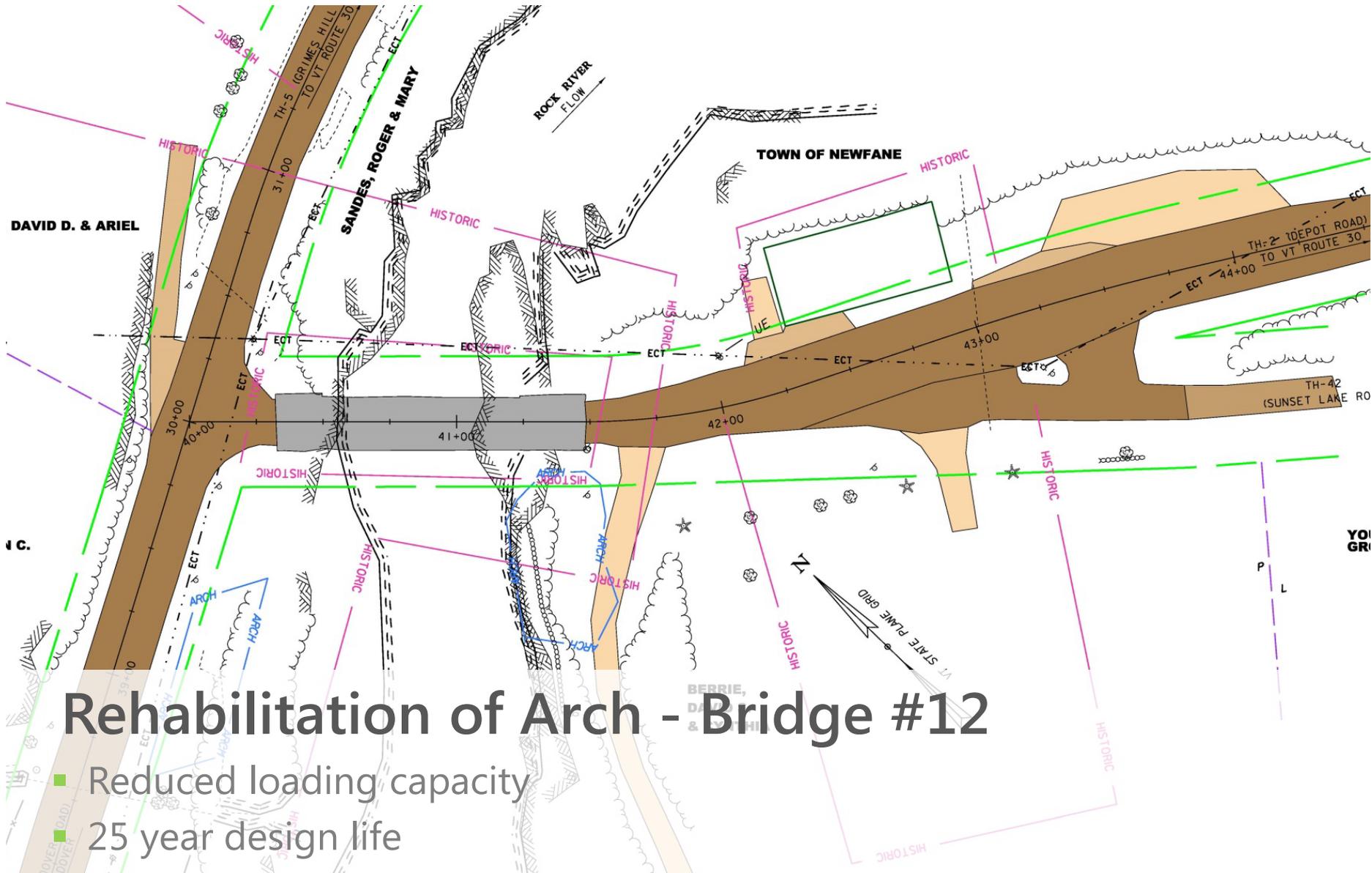
Design Criteria and Considerations

- AADT of 1,600 (Depot Road)
- AADT of 1,400 (Dover Road)
- AADT of 800 (Grimes Hill Road)
- DHV of 180
- % Trucks: 6.0
- Posted Speed of 25 mph (Design Speed of 10 mph)
- Historic requirements

Alternatives Considered – Bridge #12

- No Action
 - Additional maintenance required within 10 years
- Rehabilitation of Arch
 - Reduced load capacity
 - Design Complications
 - 25 Year Design Life
- Full Replacement with a New Functioning Reinforced Concrete Closed Spandrel Elliptical Arch
 - Longest design life
 - Substandard width to match existing – one-lane
- Full Replacement with a New Precast Bridge and Concrete Arch Façade
 - Longest design life
 - Substandard width to match existing (one-lane)

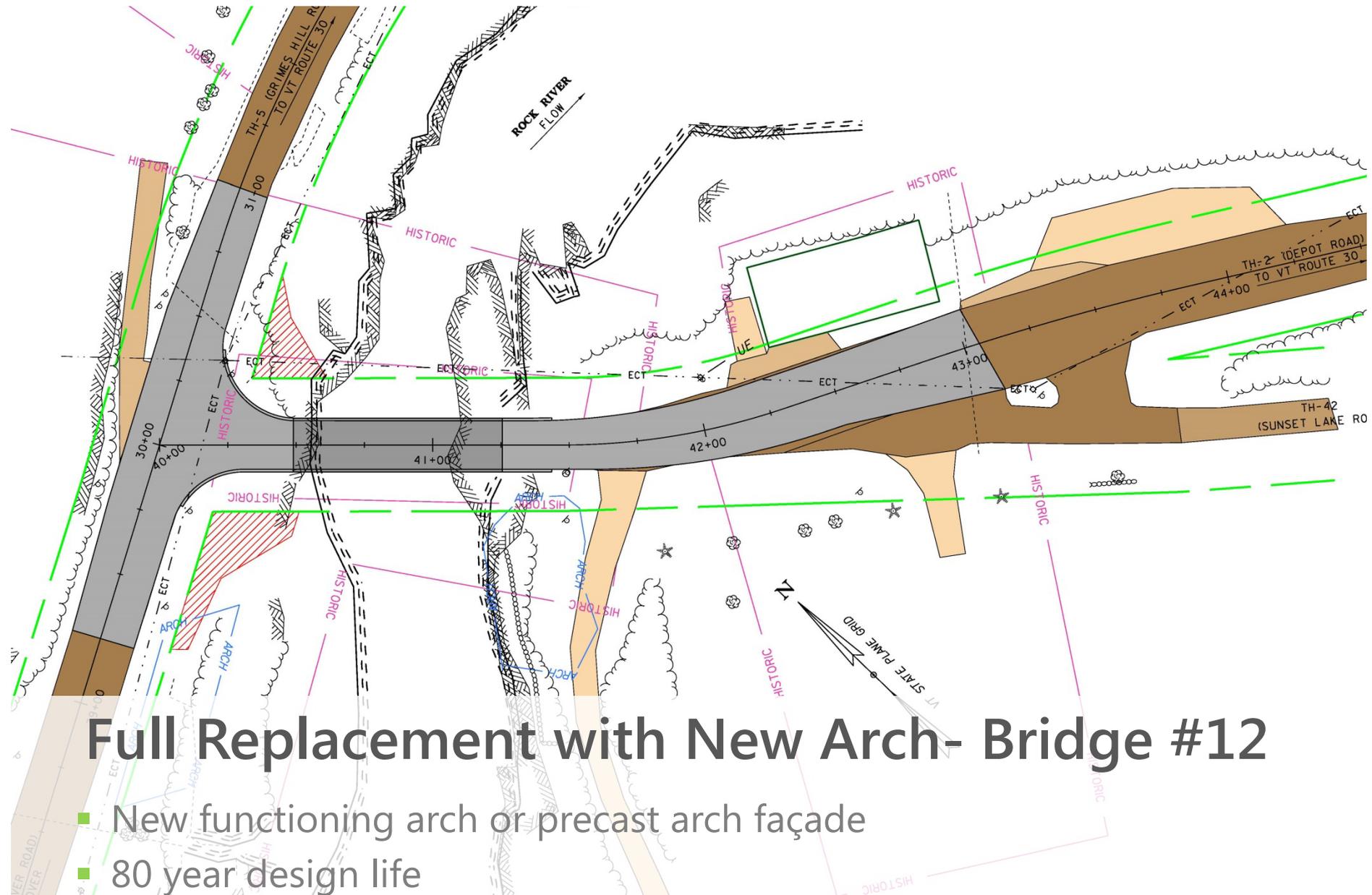
Alternative 1 Layout



Rehabilitation of Arch - Bridge #12

- Reduced loading capacity
- 25 year design life

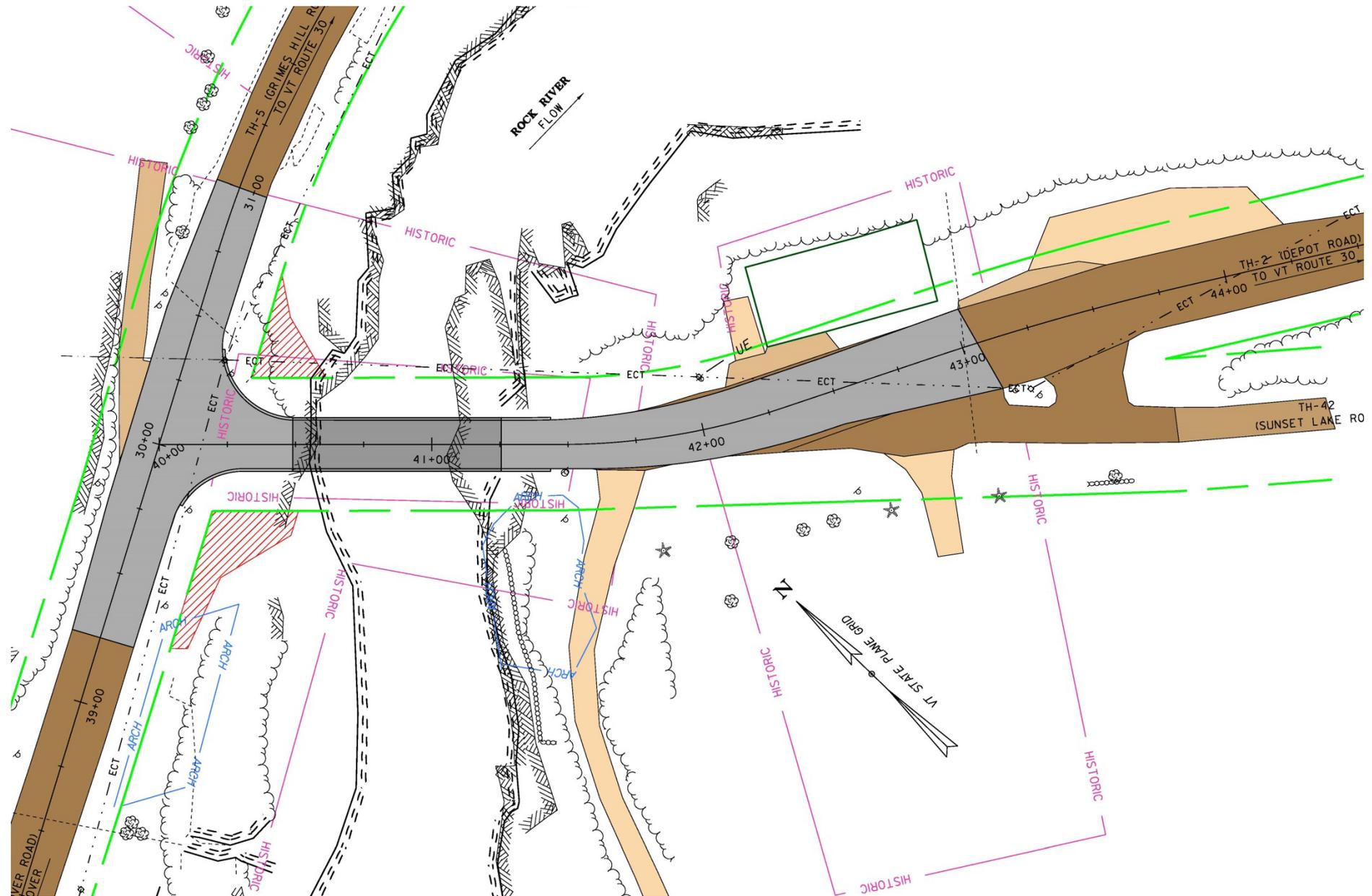
Alternative 2 Layout



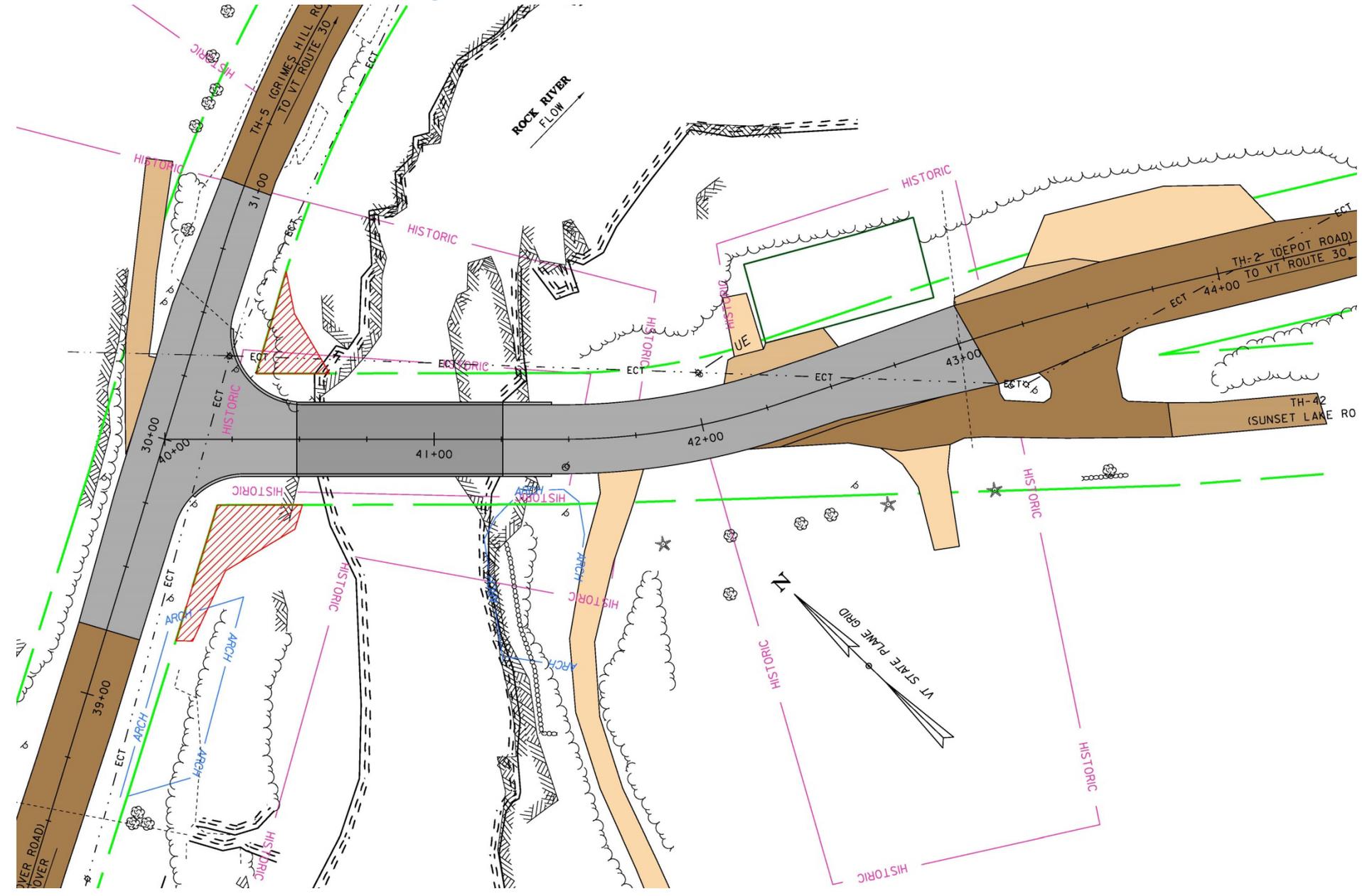
Recommended Alternative - Bridge #12

- Full Bridge Replacement
 - Maintain existing travel lane and shoulder widths
 - Town has expressed a desire to keep bridge 12 as a one-lane bridge
 - Slight vertical raise to meet the standard
 - 80 year design life
 - Utility relocation needed
 - ROW needed

Proposed Layout – 1 Lane

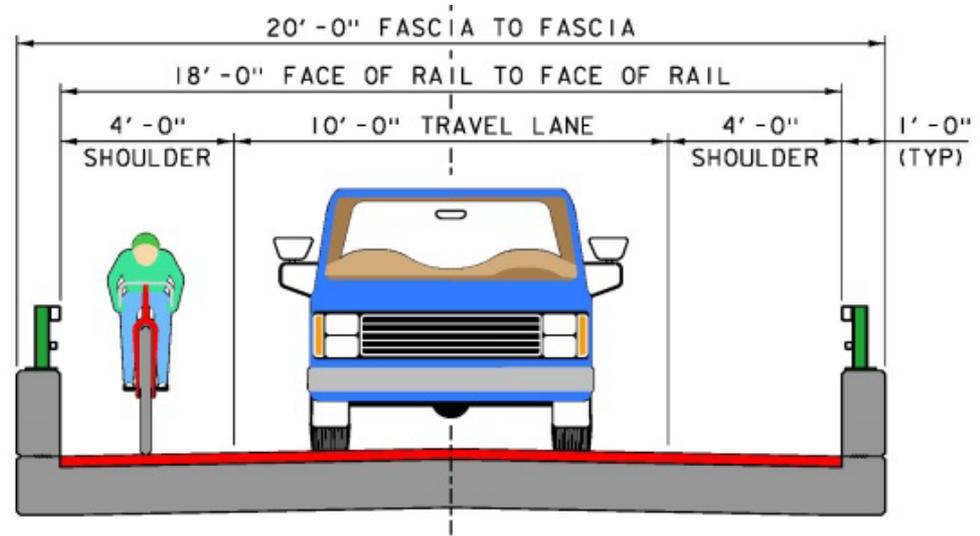


Proposed Layout – 2 Lane

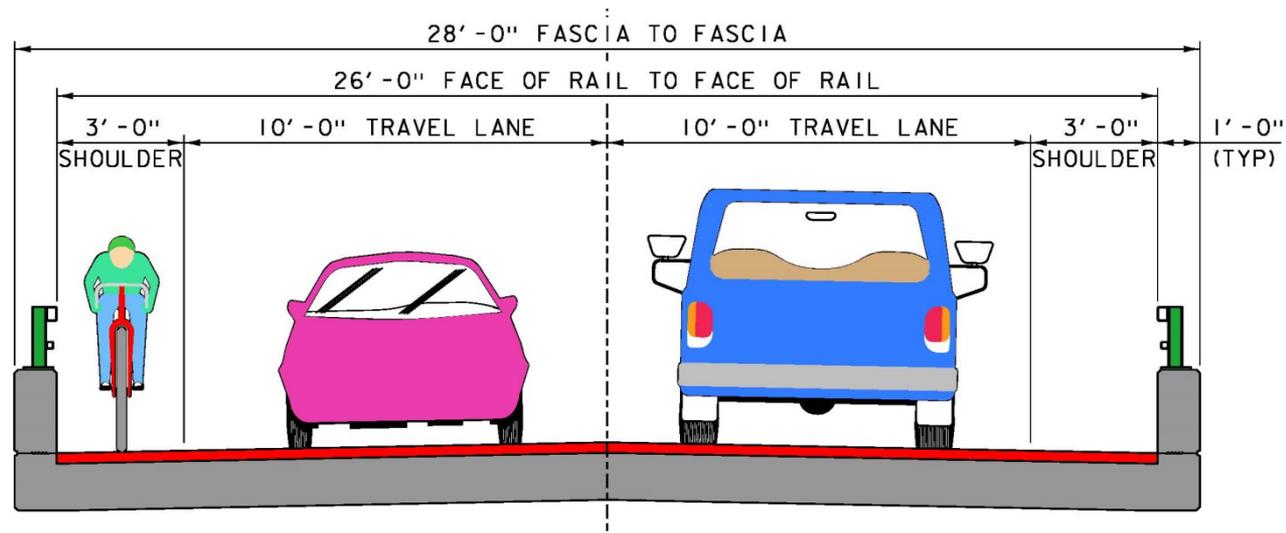


Proposed Typical Sections

- 1 Lane
- 18' Face-of-Rail to Face-of-Rail



- 2 Lanes
- 26' Face-of-Rail to Face-of-Rail



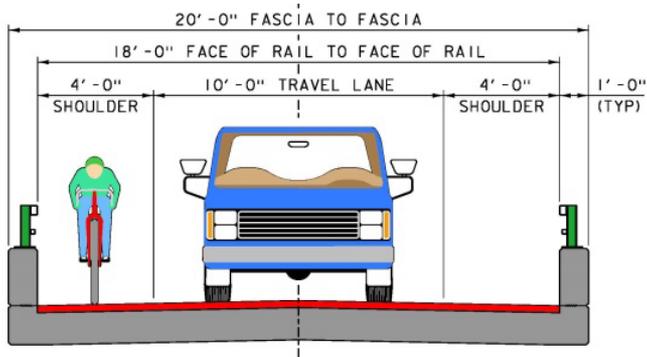
Newfane – Vermont TH5 & TH2 Intersection

1

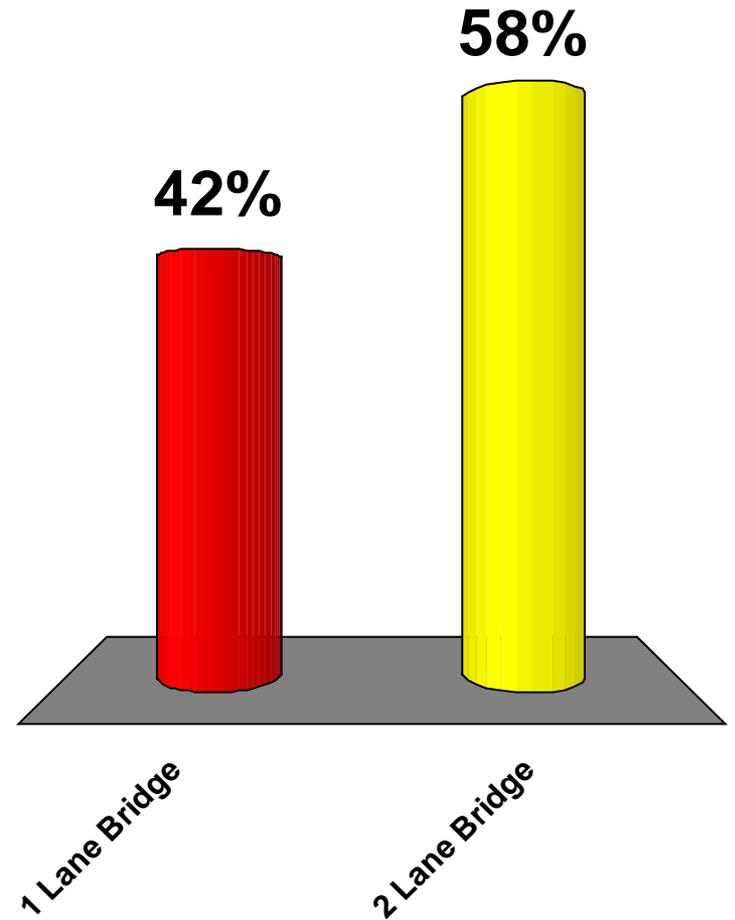
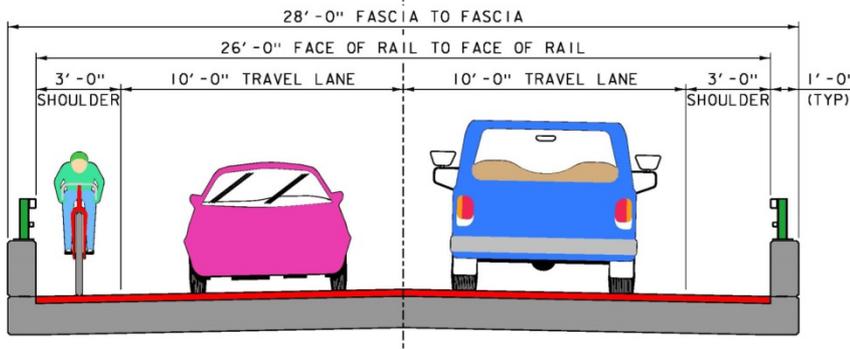
PROJECT FLY OVER,
LOOKING AT NEWFANE
VERMONT CONCRETE
ARCH BRIDGE WITH ONE
WAY TRAFFIC.

What is your preferred typical section?

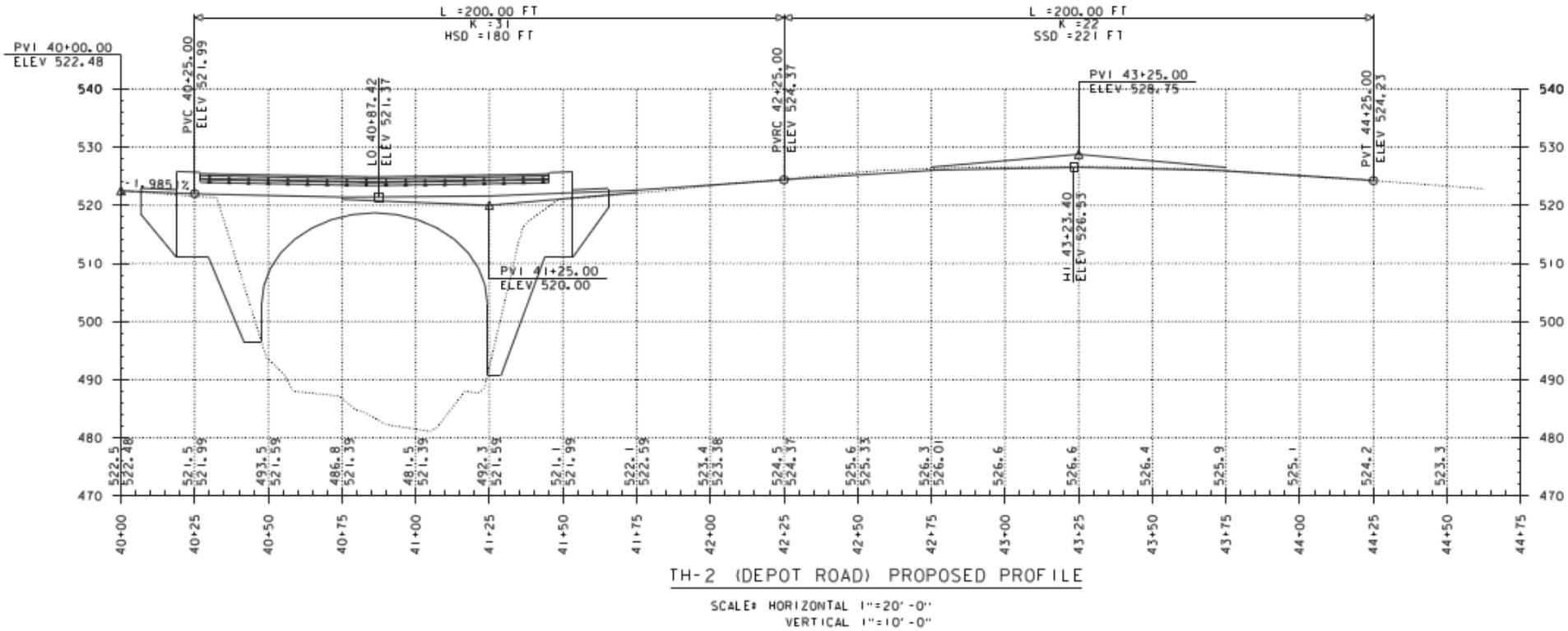
A.



B.



Proposed Profile



What Will the New Bridge Look Like?



Example Construction- Bridge #12

- Concrete Arch – Concrete lines and details to mimic original arch
- Historic Railing

Maintenance of Traffic Options Considered

- Road Closure with Offsite Detour
 - The Town of Newfane has requested a bridge closure
 - By closing the bridge to traffic during construction, the local share is reduced by 50%.

A photograph of a road closure barrier. The barrier consists of several horizontal white panels with red diagonal stripes. A central white sign with a black border and the words "ROAD CLOSED" in large, bold, black capital letters is mounted on two white posts. The barrier is positioned on a paved road, with a concrete curb and green foliage in the background.

ROAD
CLOSED

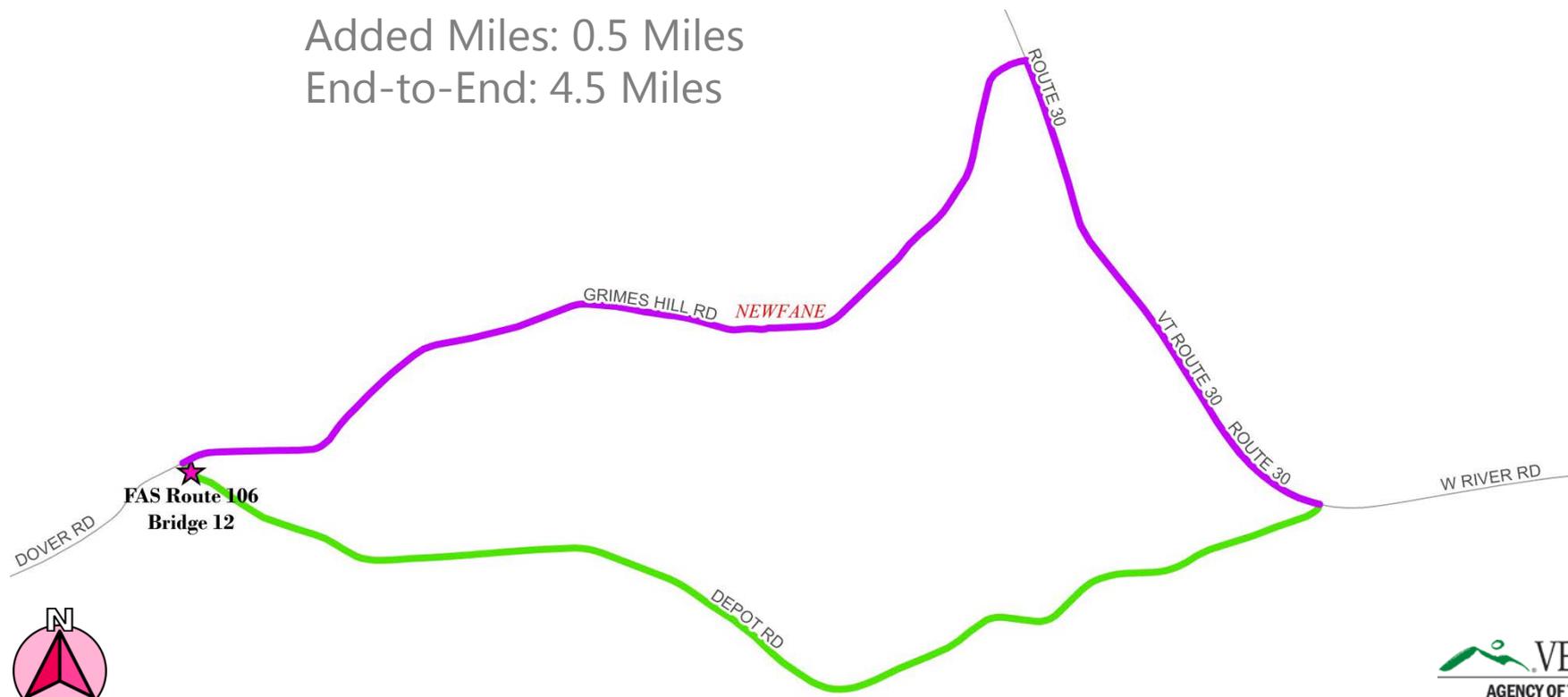
Road Closure

- 20 weeks approximate bridge closure
- Detour signed by town
- 4.5 miles end-to-end

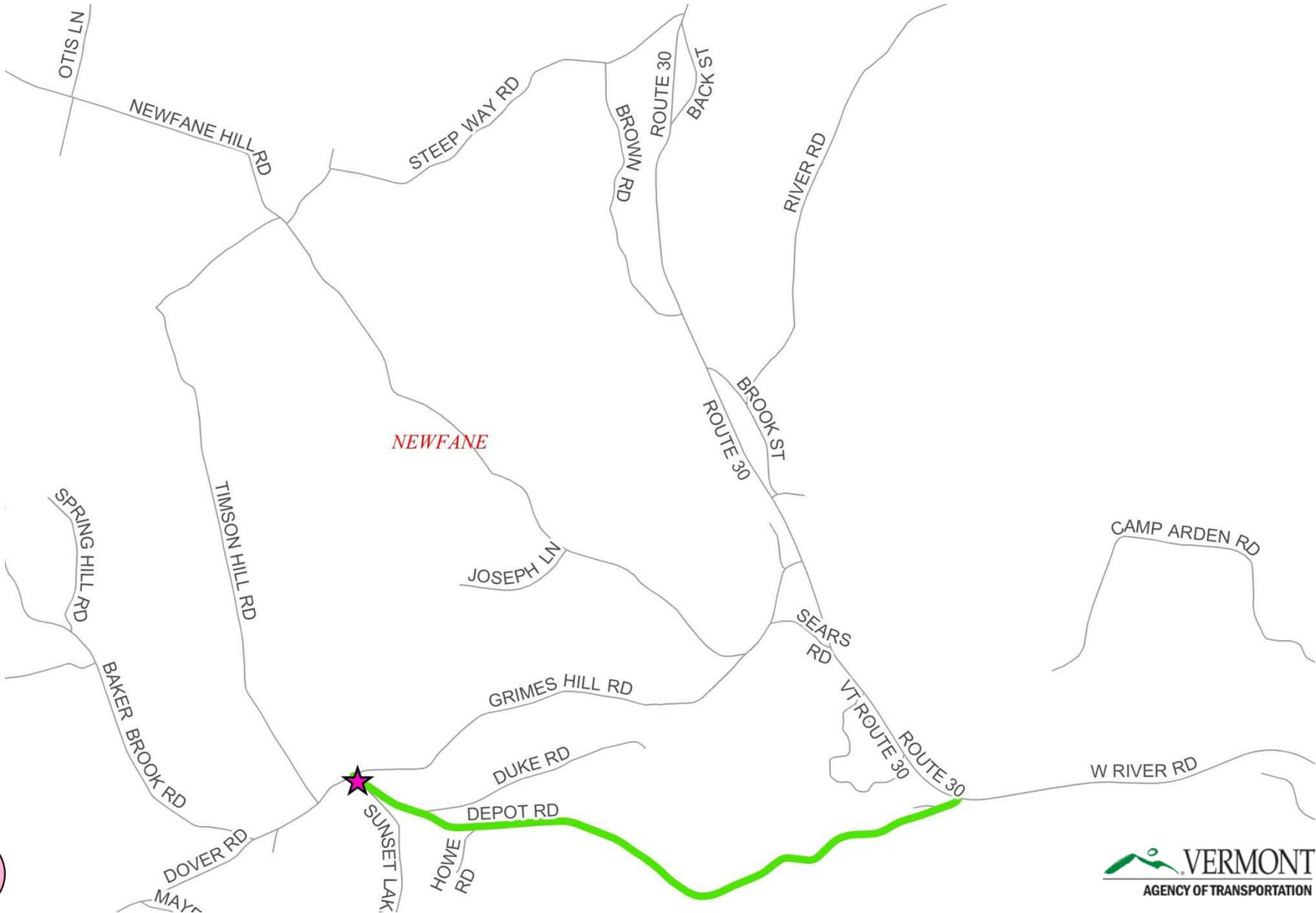
Shortest Possible Detour Route

- Depot Road, to Grimes Hill Road, and VT Route 30, back to Depot Road

- Through Route: 2.0 Miles
- Detour Route: 2.5 Miles
- Added Miles: 0.5 Miles
- End-to-End: 4.5 Miles

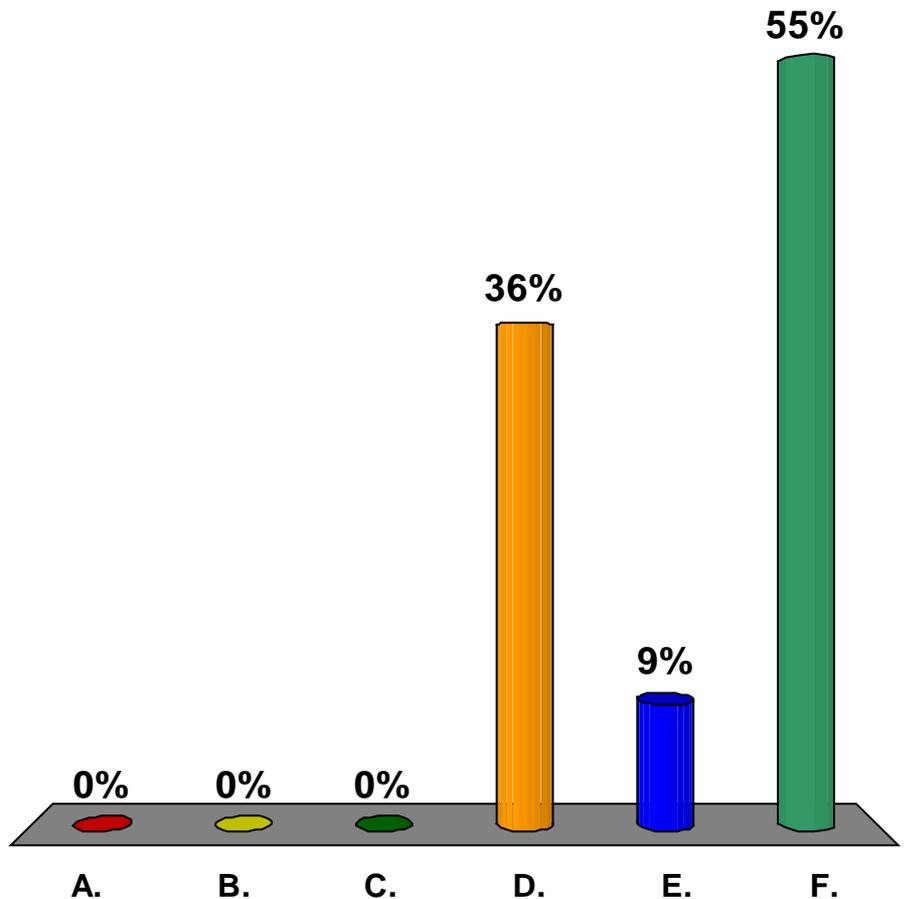


Alternative Routes Available



What would be the maximum acceptable length of closure for Bridge #12?

- A. 8 weeks
- B. 10 weeks
- C. 12 weeks
- D. 16 weeks
- E. 20 weeks
- F. 24 weeks



Alternatives Matrix

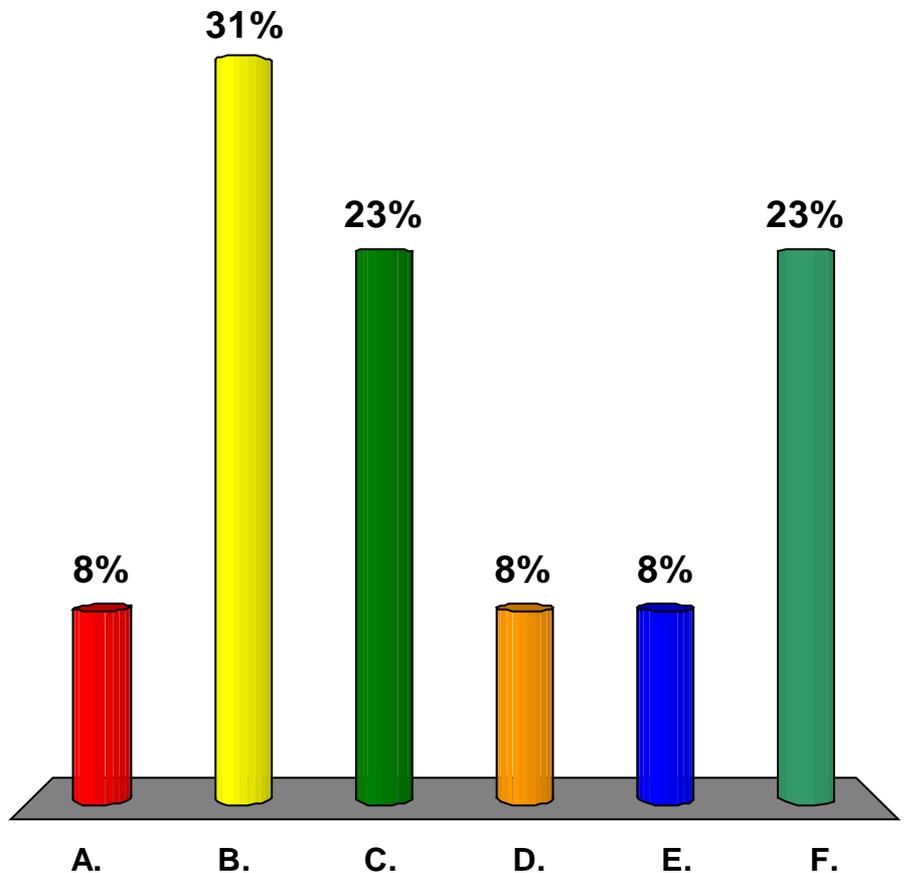
Recommended



Newfane BF 0106(6)	Alt 1	Alt 2	
	Rehabilitation of Existing Reinforced Concrete Arch	a. Bridge Replacement with New Functioning Reinforced Concrete Closed Spandrel Elliptical Arch	b. Bridge Replacement with New Precast Bridge and Concrete Arch Facade
	Offsite Detour	Offsite Detour	
Total Project Costs (Including engineering and contingencies)	\$1,345,040	\$2,133,290	\$2,903,240
Town Share	\$0	\$106,665 (5%)	\$145,162 (5%)
Project Development Duration	5 years	5 years	5 years
Construction Duration	8 months	8 months	8 months
Closure Duration (If Applicable)	Approximately 12 weeks	Approximately 20 weeks	Approximately 16 weeks
Geometric Design Criteria	Substandard width	Substandard width	Substandard width
Alignment Change	Slight Vertical Rise	Slight Vertical Rise	Slight Vertical Rise
Utility	Relocation	Relocation	Relocation
ROW Acquisition	Yes	Yes	Yes
Design Life	25 Years	80 years	80 years

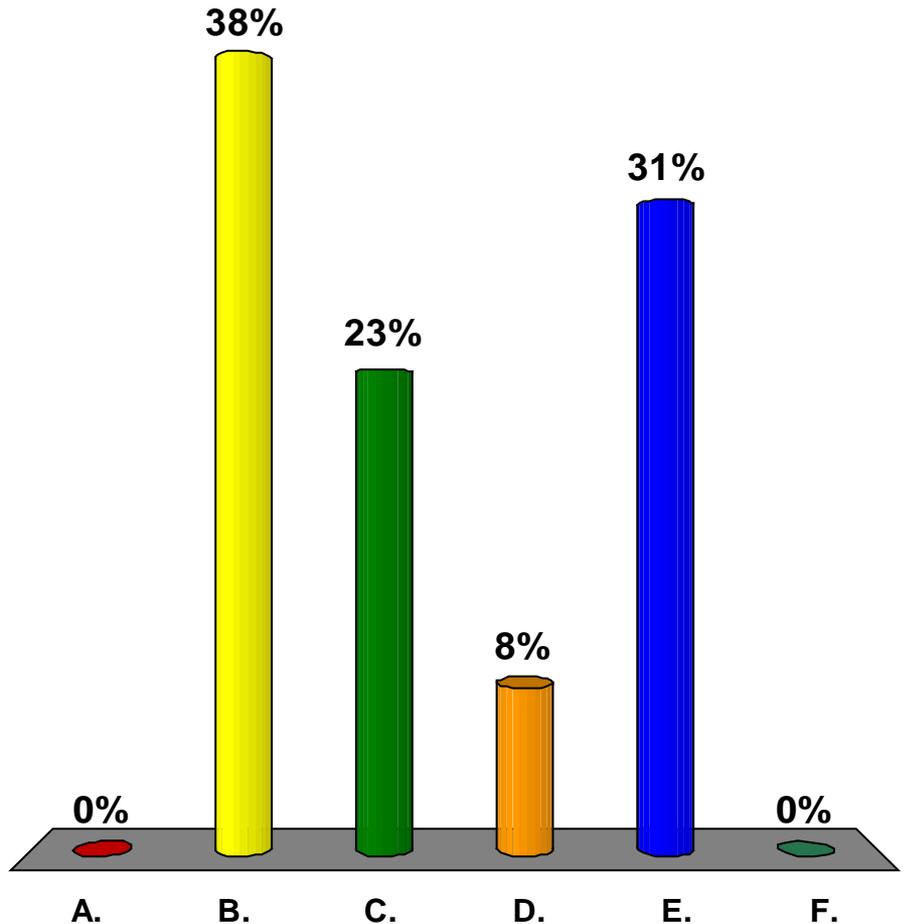
Which would you be most concerned about?

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



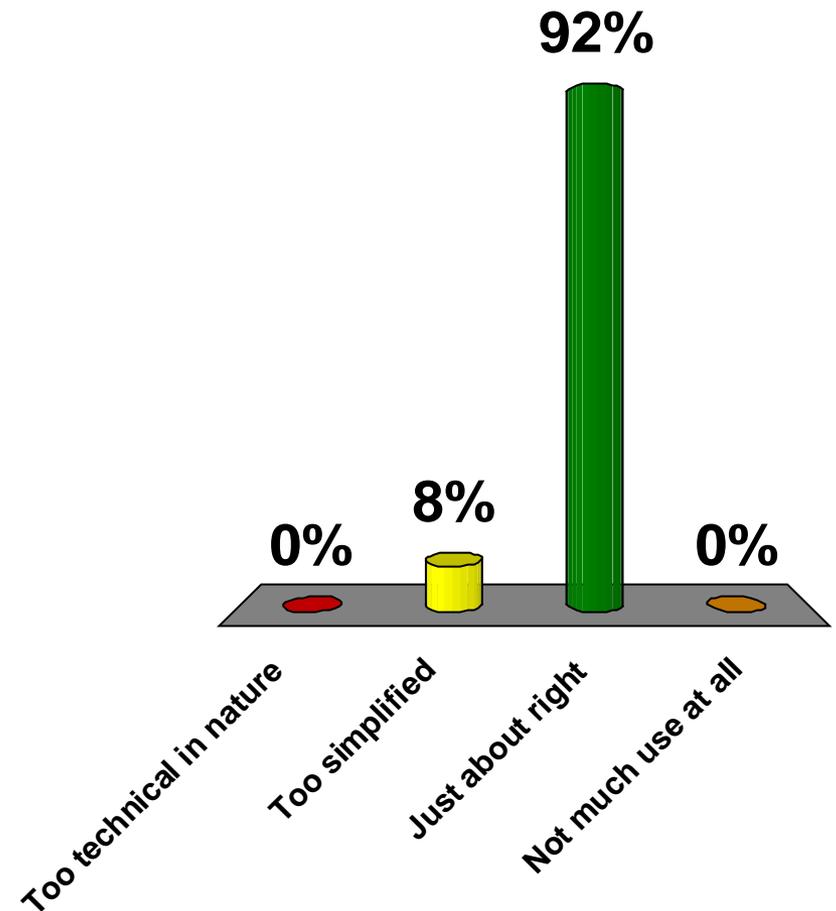
Which design aspect is the most important to you?

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



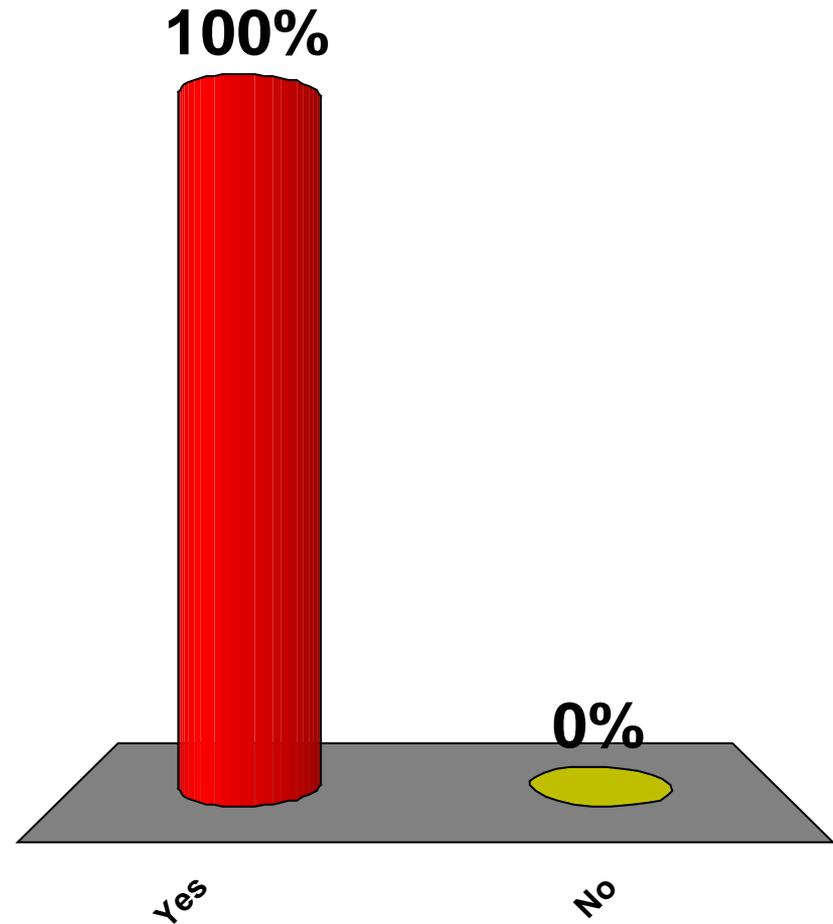
Did you find this presentation to be?

- 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



Next Steps – Bridge #12

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
 - Develop Conceptual plans and distribute for comment
 - Request a Public Information meeting
 - Process local agreements
 - Right-of-Way process (if needed)
 - Town is responsible for any chosen detour route

For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/13J306>

Newfane BF 0106(6) Questions and Comments

Depot Road (FAS Route 106/TH 2) – Bridge #12 over Rock River

May 18, 2015

Additional Considerations

- None for this project