Putney STP DECK (38)
Alternatives Presentation Meeting
US Route 5 – Bridge #15 over Sacketts Brook

February 24, 2016
Introductions

Jennifer Fitch, P.E.
VTrans Scoping Project Manager

Jonathan Griffin, P.E.
VTrans Scoping Engineer

Rob Young, P.E.
VTrans Design Project Manager

Kyle Obenauer
Historic Preservation Specialist
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
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

## Initiated

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

## Project Defined

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

## Contract Award

## Construction
Who are you representing?

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

A. 27%
B. 9%
C. 36%
D. 9%
E. 0%
F. 18%
How often do you use this segment of US Route 5?

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

[Bar chart showing percentages: Daily 0%, Weekly 27%, Monthly 27%, Rarely 36%, Never 9%]
How often do you bike over the bridge?

A. Daily
B. Weekly
C. Monthly
D. Rarely
E. Never
How often do you park on this segment of US Route 5?

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

- Daily: 45%
- Weekly: 18%
- Monthly: 18%
- Rarely: 9%
- Never: 9%
How often do you visit the shops on this segment of US Route 5?

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

- Bridge Railing
- Deck Surface Treatment
- Substructure
- Wingwall
- Bridge Seat
- Stem
- Footing
- Superstructure
- Deck
- Beams
- Bearing Device
Existing Conditions – Bridge #15

- Roadway Classification – Major Collector (US Route 5)
- Bridge Type – 54’ Long Rolled Steel Beam
- Constructed in 1954
- Ownership – State of Vermont
Existing Conditions – Bridge #15

- Concrete Deck has saturation and exposed reinforcing steel
- Non-Crash Tested Guardrail
- Northeast Wing Wall has moved
Existing Conditions - Bridge #15

- Deck Rating: 5 (Fair)
- Superstructure Rating: 7 (Good)
- Substructure Rating: 7 (Good)

Cracks and Saturation of Deck
Existing Conditions – Bridge #15

- Existing Wing Wall displaced out of its original position 7”
- Northeast Approach railing is mounted on the Wing Wall
Existing Conditions - Bridge #15

- Historic Bridge – ornamental concrete metal railings
Existing Conditions
Design Criteria and Considerations

- ADT of 3,000
- DHV of 440
- % Trucks: 3.6
- Design Speed of 30 mph
- Historic bridge
- Extensive underground utilities to work around
- Access to local businesses throughout construction
Alternatives Considered – Bridge #15

- No Action
  - Ruled out Given Additional maintenance required within 10 years

- Deck Patching
  - Least-up front cost
  - Wing Wall Repair
  - Ruled out Given the Short Design Life: Additional maintenance required within 15 years.

- Deck Replacement
  - Wing Wall Repair
  - New Crash tested Railing
Recommended Alternative - Bridge #15

- Deck Replacement
  - Replace Cast in place deck with full depth precast panels
  - Maintain existing bridge width and lane configuration
  - Historic railing
Proposed Typical Section

- Maintain existing Bridge width
Railing Example - Bridge #15

- Tenney Bridge Rail

What Will the New Bridge Look Like?
Railing Example - Bridge #15

- Steel Concrete Combination Railing
What Will the New Bridge Look Like?

Railing Example - Bridge #15
- Steel Railing with Concrete Posts and Parapet
The New Bridge Rail

Railing Example - Bridge #15
Which bridge railing do you prefer?

A.

B.

C.

D.

E.
Maintenance of Traffic Options Considered

- Short Term Road Closure w/ Offsite Detour
  - Signed by State
  - Passenger car/pedestrian route: 1.8 miles end-to-end
  - Regional truck detour route: 22.3 miles end-to-end
- Phased Construction
  - 1-way alternating vehicular traffic maintained by phasing
- Temporary Bridge
  - Not considered due to site constraints
Road Closure

- Approx. 10 day bridge closure
- Detour route signed by State
- Shortest passenger car route available: 1.8 miles end-to-end
Regional Detour Route

Through Route: 0.8 Miles
Detour Route: 22.3 Miles
Added Miles: 21.5 Miles
Added time: Approx. 27 minutes
Maintenance of Traffic: Post Closure

Deck Replacement following Closure

- Limited pedestrian access during construction of Concrete Railing
Phased Construction – Option 1

- Alternating 1 way traffic
- Bridge closed to pedestrians – offsite pedestrian detour for construction season
Maintenance of Traffic: Phasing

Deck Replacement in Two Phases

- No pedestrian access during phased construction
Maintenance of Traffic: Phasing

Deck Replacement in Two Phases

- Recommend Closing Hi-Lo Biddy Rd if phased
Option 1 Phased Construction - Phase 1
Option 1 Phased Construction - Phase 2
Recommended Maintenance of Traffic - Bridge #15

- Short Term Road Closure
  - Allowable two week alternating one way traffic prior to the closure
  - 10 day closure
  - Two way, two lane traffic following construction
What would be the **maximum** acceptable length of closure for Bridge #15?

A. 7 Days  
B. 10 Days  
C. 14 Days  
D. 28 Days
Which time of year would be most acceptable for Bridge #15 to be closed?

A. May
B. June
C. July
D. August
E. September
F. Other
# Alternatives Matrix

<table>
<thead>
<tr>
<th>Putney STP Deck (38)</th>
<th>Alt 1</th>
<th>Alt 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action</td>
<td>Deck Replacement</td>
<td>Offsite Detour</td>
<td></td>
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</tbody>
</table>

| Total Project Costs (Including Engineering and Contingencies) | N/A | $817,600 |  |
| Town Share | N/A | N/A |  |
| Project Development Duration | N/A | 2 years |  |
| Construction Duration | N/A | 2 months |  |
| Closure Duration (If Applicable) | N/A | 10 days |  |
| Geometric Design Criteria | N/A | No Change |  |
| Alignment Change | No | No |  |
| Utilities | No Change | Relocation |  |
| ROW Acquisition | N/A | Yes |  |
| Design Life | <10 years | 40+ years |  |
Recommended Alternative - Bridge #15

- Deck Replacement
  - Replace Cast in place deck with full depth precast panels
  - Maintain existing bridge width and lane configuration
  - Historic railing (Cast after the initial 10 day closure period)
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. Shoulder width/bicycle accommodations
B. Aesthetics - Bridge Railing
C. Construction year
D. Construction Duration
E. Cost
F. Other

Bar chart showing:
- A: 9%
- B: 9%
- C: 0%
- D: 82%
- E: 0%
- F: 0%
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

0% 8% 92%
How did you Hear about this meeting?

A. Brattleboro Reformer
B. Front Porch Forum
C. Iputney
D. Town Representative
E. Other

A. 0%
B. 0%
C. 0%
D. 83%
E. 17%
Do you find the recommended scope of work satisfactory?

A. Yes
B. No
Putney  STP DECK (38)
Questions & Comments
US Route 5 – Bridge #15 over Sacketts Brook

February 24, 2015

For more information:
- https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/15b105
Maintenance of Traffic: Closure

Trucks Entering Water St
- Requires use of private drive opposite Water St
- Requires coordination with proposed sidewalk project
Maintenance of Traffic: Closure

Trucks Exiting Water St
- Requires use of private drive opposite Water St
- Rework Intersection of Water St and Route 5
Trucks Entering Water St

- The current configuration isn’t wide enough along Water St
Maintenance of Traffic: Phase 1

Trucks Exiting Water St

- The current configuration causes conflicts with the concrete barrier on the structure.
Maintenance of Traffic: Phase 2

Trucks Entering Water St

- Concerns near the End of existing WW
Maintenance of Traffic: Phase 2

Trucks Exiting Water St

- Concerns near the End of existing WW