# Weathersfield STP 0146(16) Scope Collaboration Meeting

## Vermont Route 131 – Bridge #15 over Mill Brook

**March 30, 2016**

12/10/2013

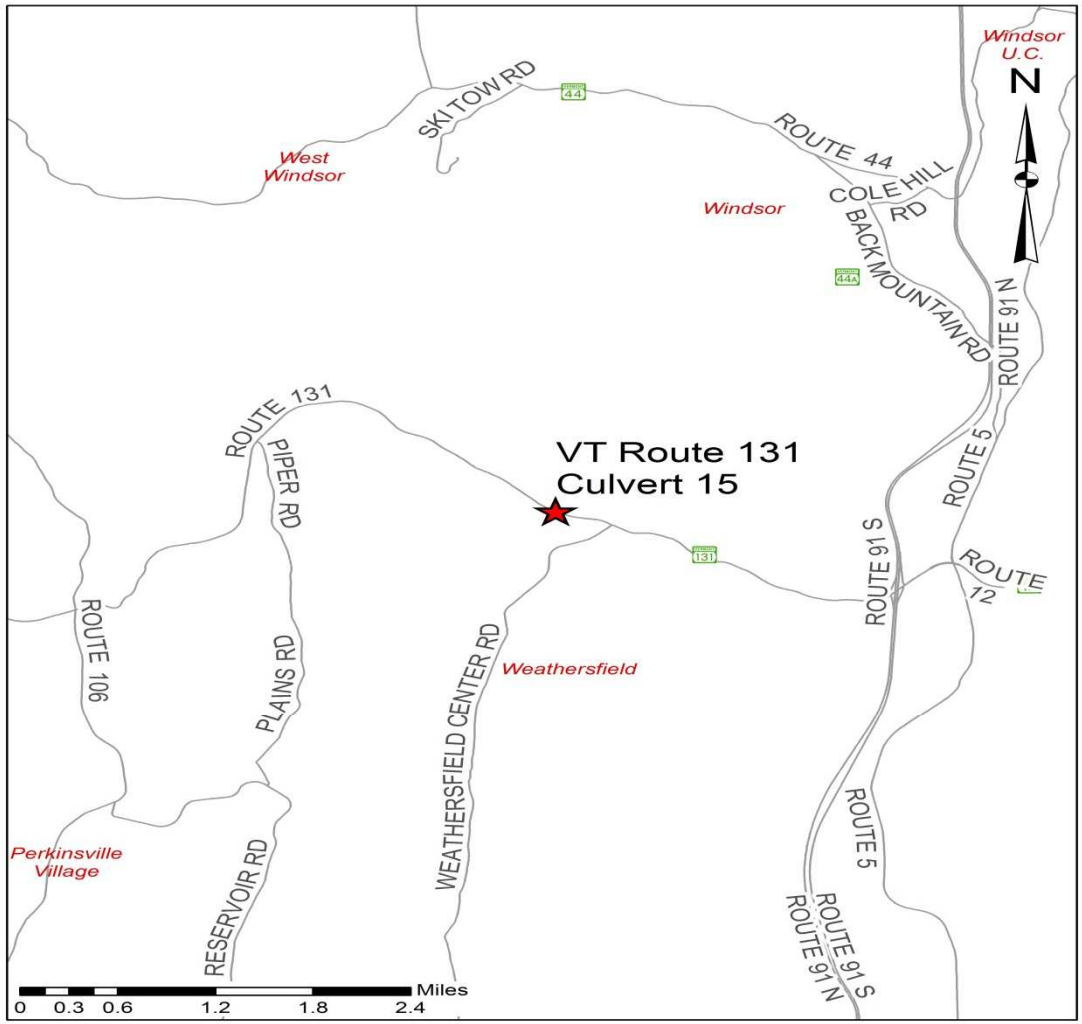
# Introductions

**Nick Wark, P.E.**
Design Project Manager

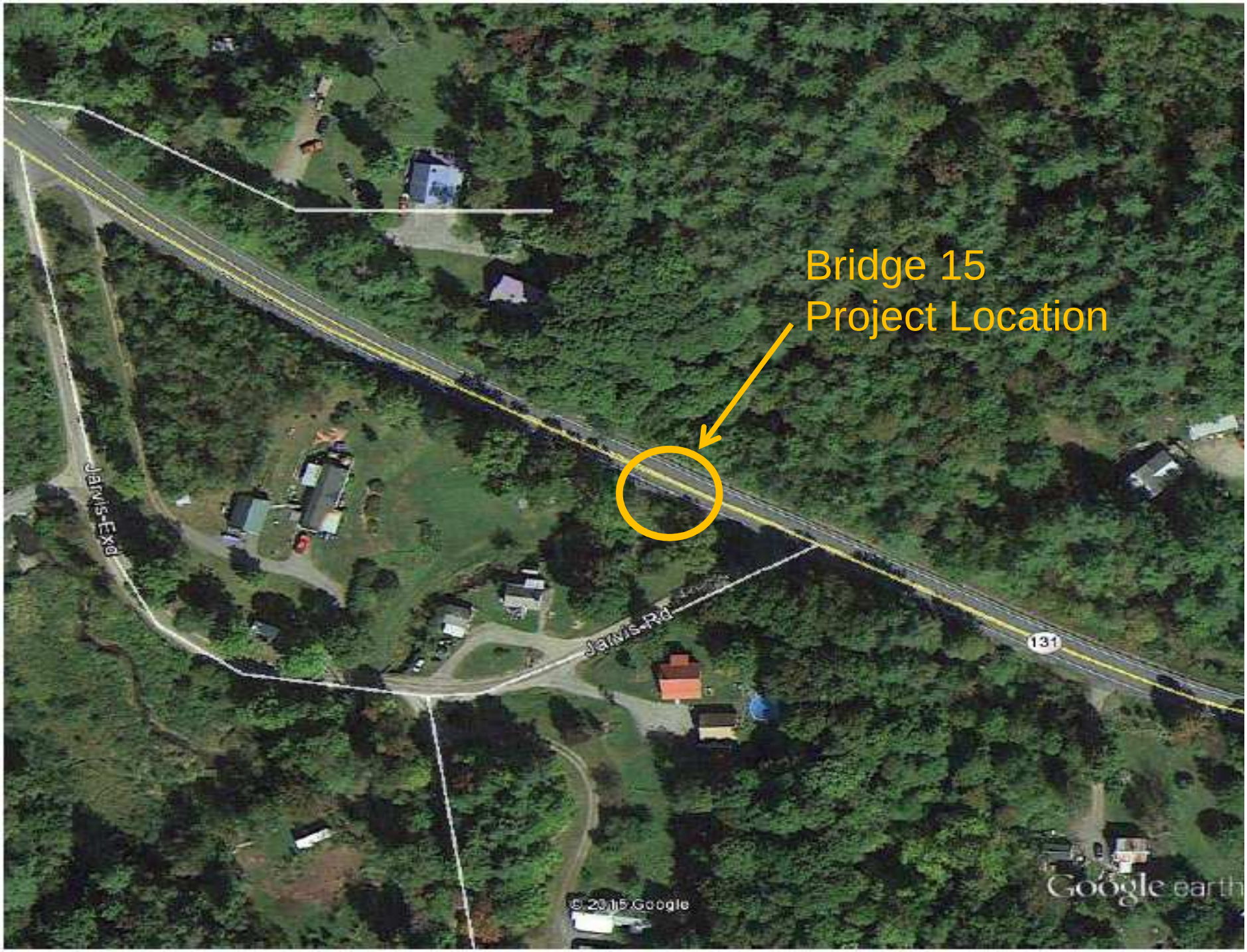
**Gary Sweeny, P.E.**
Scoping Engineer

# Purpose of Meeting

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



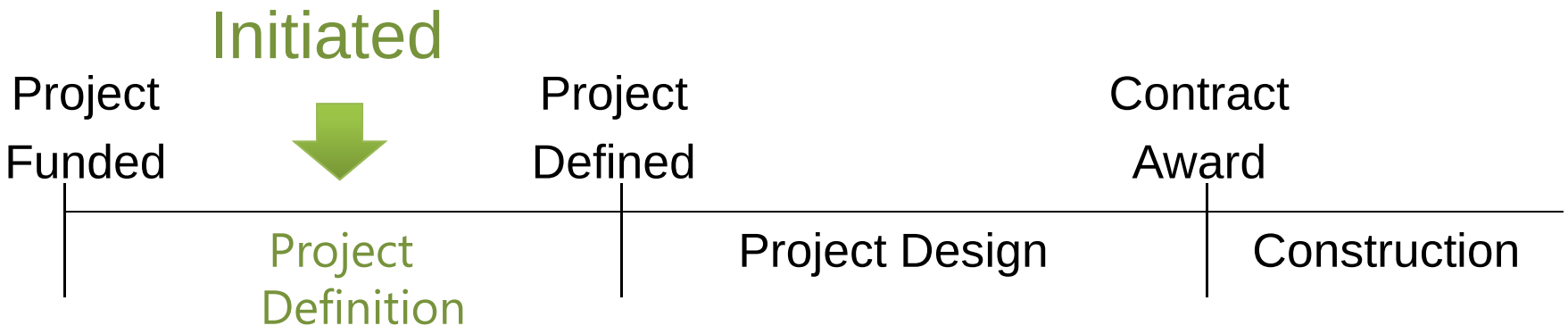

# Location Map


Bridge 15
Project Location
Jarvis Rd
131
© 2015 Google
Google earth

# Meeting Overview

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

# VTrans Project Development Process

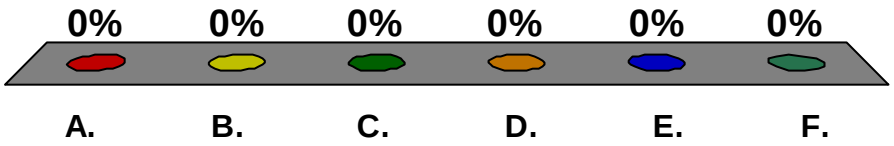



- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

- Quantify areas of impact
- Environmental permits
- Develop plans, estimate and specifications

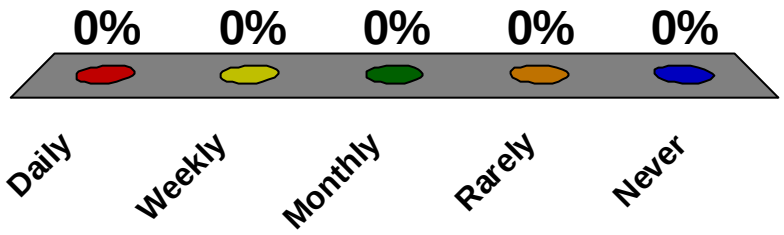
# Who are you representing?

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



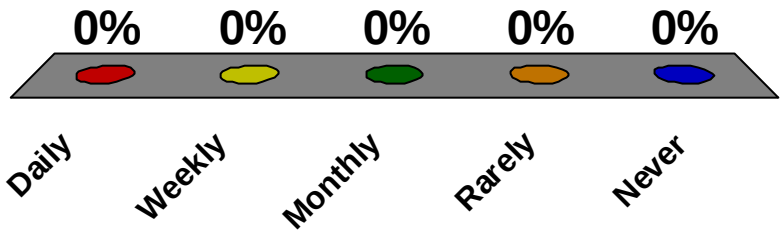
# How often do you use this segment of VT Route 131?

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



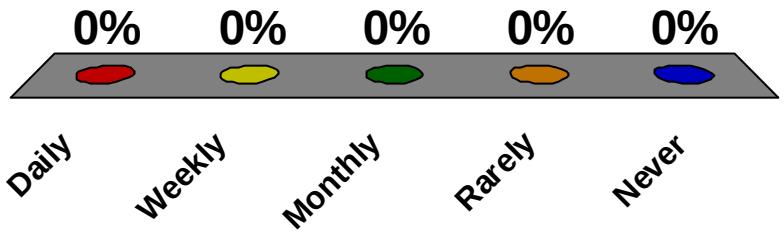
# How often do you walk over this segment of VT Route 131?

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



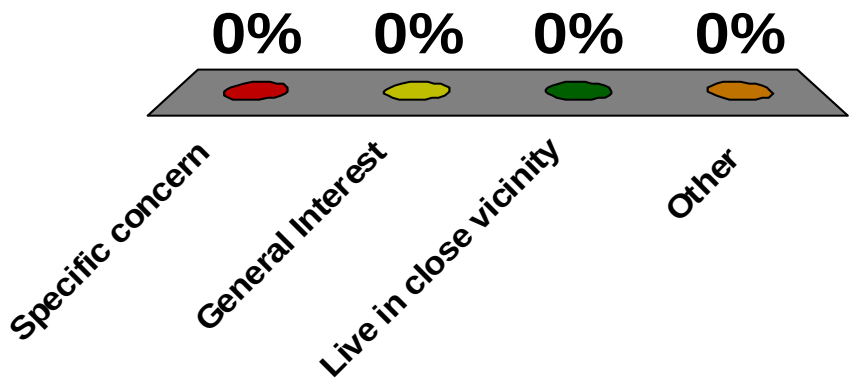
# How often do you bike over this segment of VT Route 131?

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

# Existing Conditions – Bridge #15

- Roadway Classification – Rural Major Collector
- Multi-Plate Steel Pipe
- Culvert:  Span - 11 feet, Length – 114 feet
- Constructed in 1959
- Ownership – State of Vermont

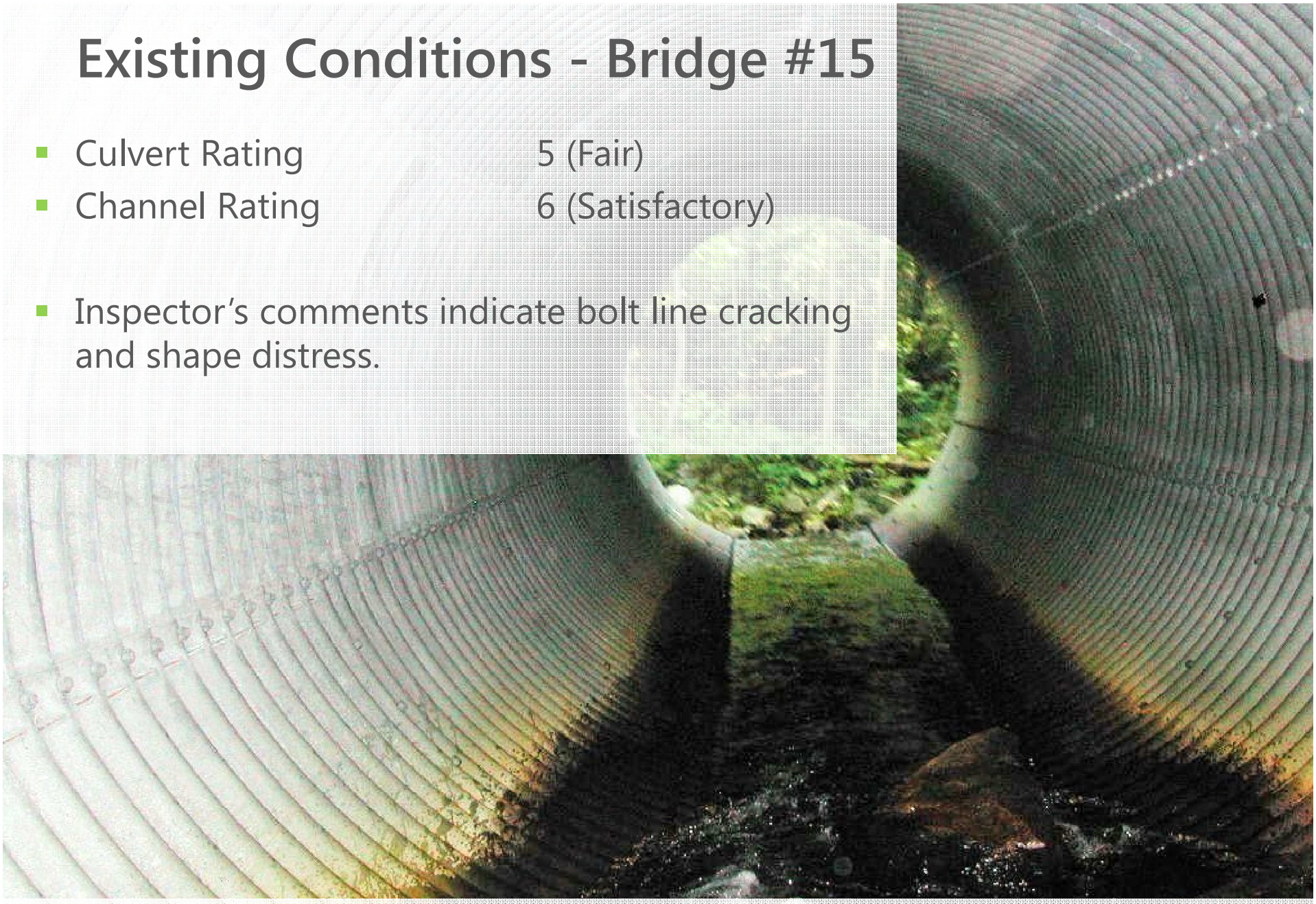
# Existing Conditions – Bridge #15

- The culvert has a rating of 5 “Fair”, and has bolt line cracking.
- There is some distortion and bolt line cracking from displacement.  The cracking may be a result of the distortion.
- There are no known roadway deficiencies.

# Existing Conditions - Bridge #15

- Culvert Rating 5 (Fair)
- Channel Rating 6 (Satisfactory)

- Inspector's comments indicate bolt line cracking and shape distress.



Typical corrosion deterioration

VT 131 Looking West

Waterfall at Upstream End

Upstream end – Existing Marble Masonry Headwall

# Design Criteria and Considerations

- ADT of 4,800
- DHV of 540
- % Trucks: 5.9
- Design Speed of 50 mph
- Substandard Features:

  Culvert Rating: 5

  Hydraulics: Does not meet Full Bank Width

# Alternatives Considered – Bridge #15

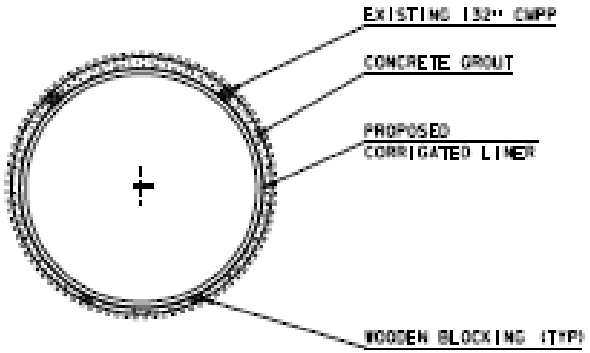
- No Action
  - Additional maintenance required within 10 years
- Rehabilitation
  - Competitive up-front cost
  - Additional 30 years of service life
  - No improvements to roadway geometry proposed
- Culvert Replacement with Trenchless Methods
  - New 60 year service life expectancy
  - No improvements to roadway geometry proposed
- Culvert Replacement with Open Cut
  - Longest service life – 80 years
  - Most expensive
  - No roadway improvements expected

# Recommended Alternative - Bridge #15

- Rehabilitation
  - New culvert slip liner or spray-on liner, 10 ft. diameter allowable.  Enhancement of Structural Integrity is recommended
  - Maintain existing roadway alignment
  - Utility relocation not expected
  - Permanent ROW will not be needed, but temporary rights are probably going to be needed downstream. Rock/waterfall may force contractor to work from downstream end
  - Estimated construction year: 2019

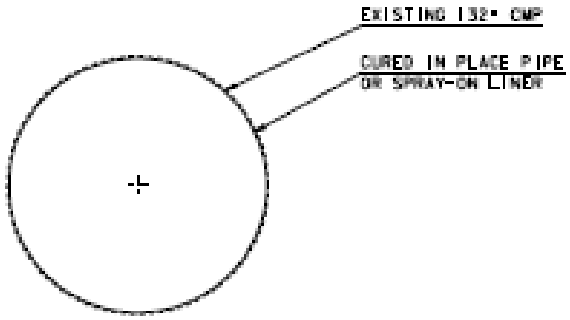
# Proposed Bridge Typical

VERMONT
AGENCY OF TRANSPORTATION




ALTERNATIVE IA TYPICAL SECTION

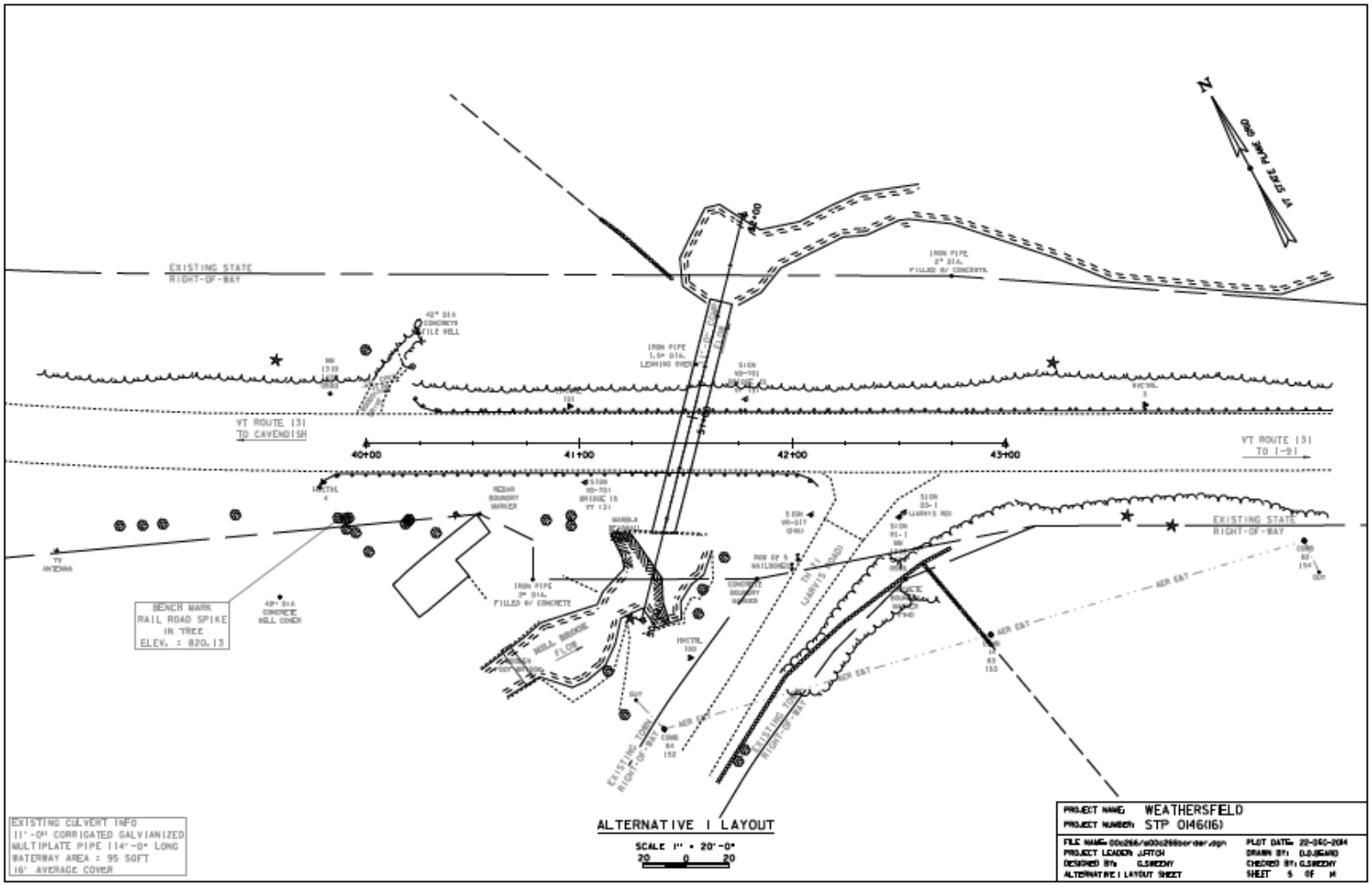
N.T.S.




ALTERNATIVE IB TYPICAL SECTION

N.T.S.

# Proposed Layout



# Maintenance of Traffic Options

- Road Closure with Offsite Detour
- Phased Construction
- Temporary Bridge

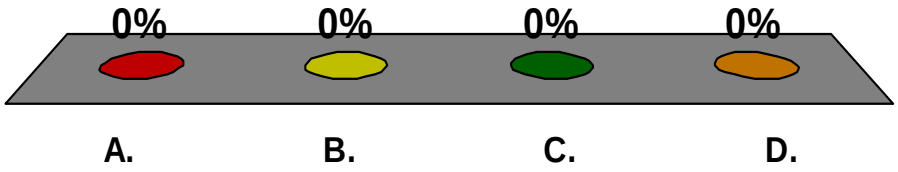
- Periodic Lane Closures for Rehabilitation Recommended

# Alternatives Matrix

| Weathersfield STP 0146(16) | Alt 1a | Alt 1b | Alt 2 | Alt 3a | Alt 3b | Alt 3c |
|---|---|---|---|---|---|---|
| | Rehab Slip Liner | Rehab Spray-on Liner | Replacement Trenchless | Replacement Open Cut | Replacement Open Cut | Replacement Open Cut |
| | Minor Traffic Impact | Minor Traffic Impact | Minor Traffic Impact | Offsite Detour | Downstream Temporary Bridge | On-Alignment Temporary Bridge |
| Total Project Cost (Including Engineering and Contingencies) | $669,000 | $794,000 | $1,225,000 | $1,834,000 | $2,150,000 | $2,321,000 |
| Project Development Duration | 2 Years | 2 Years | 2 Years | 4 Years | 4 Years | 4 Years |
| Construction Duration | 2 Months | 2 Months | 3 Months | 4 Months | 18 Months | 18 Months |
| Closure Duration (If applicable) | N/A | N/A | N/A | 21 Days | N/A | N/A |
| Geometric Design Criteria | No Change | No Change | No Change | No Change | No Change | No Change |
| Alignment Change | No | No | No | No | No | No |
| Utilities | No Change | No Change | No Change | No Change | No Change | No Change |
| ROW | Yes | Yes | Yes | Yes | Yes | Yes |
| Design Life | 30 Years | 30 Years | 60 Years | 80 Years | 80 Years | 80 Years |

# Which alternative do you have strongest support for?

A. **Alt 1:** Rehab/minimal traffic impact
B. **Alt 2:** Full replacement jack & bore w/minimal traffic impact
C. **Alt 3a:** Replacement w/ offsite detour
D. **Alt 3b:** Replacement w/ temporary bridge



# Weathersfield STP 0146(16)
# Questions and Comments

12/10/2013

## Vermont Route 131 – Bridge #15 over Mill Brook

**March 30, 2016**