



Chester BF 025-1(45)

Regional Concerns Meeting

**Vermont Route 103 – Bridge #14 over Williams River & The Green
Mountain Railroad**

August 29, 2019



Chester BF 025-1(46)
Regional Concerns Meeting
State Highway 103 – Bridge #16 over Williams River
August 29, 2019



**Accelerated
Bridge
Program**
VTRANS

Introductions

Laura Stone, P.E.

VTrans Scoping Engineer

Carolyn Cota, P.E.

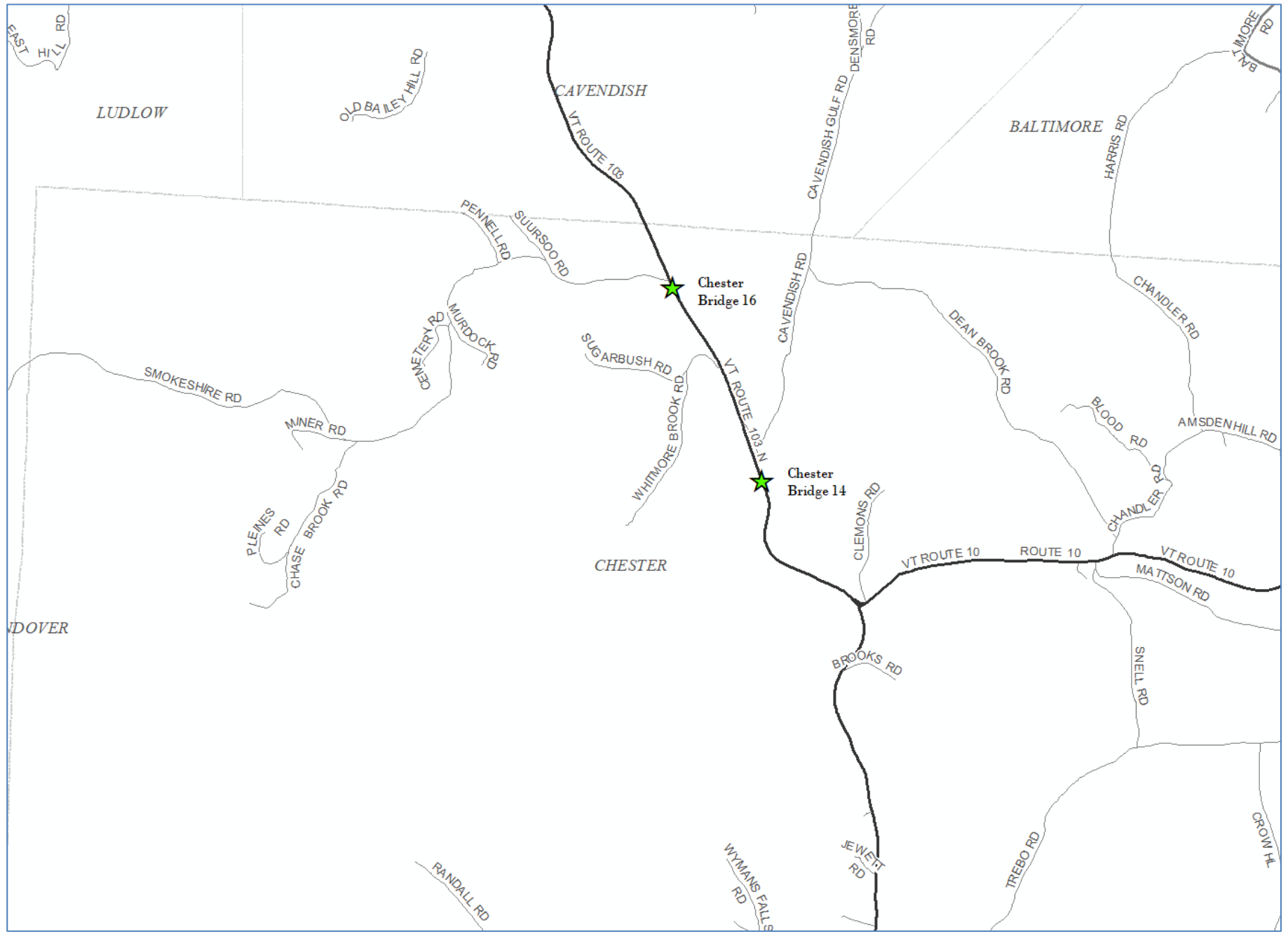
VTrans Project Manager for Chester(45)

Wendy Pelletier, P.E.

VTrans Project Manager for Chester(46)

Purpose of Meeting

- Provide an understanding of our approach to the projects
- Provide an overview of project constraints
- Discuss our selected alternatives
- Provide an opportunity to ask questions and voice concerns

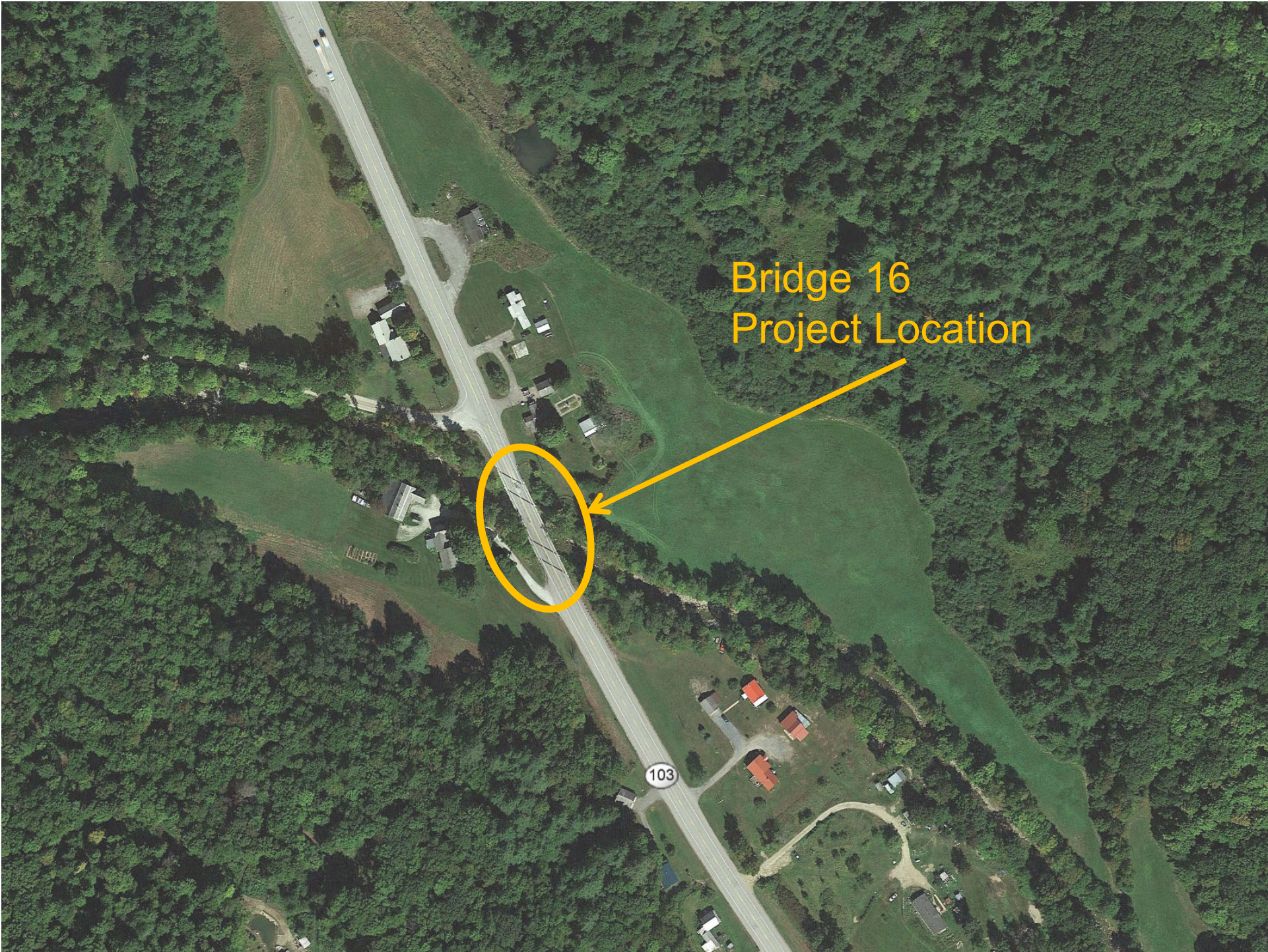


Location Map



Bridge 14
Project Location

Google



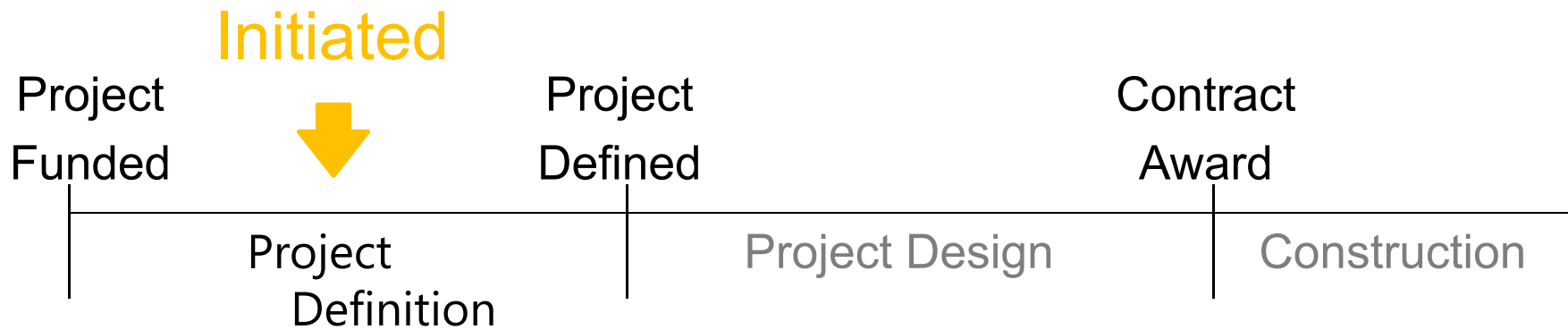
Bridge 16
Project Location

103

Meeting Overview

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

VTrans Project Development Process



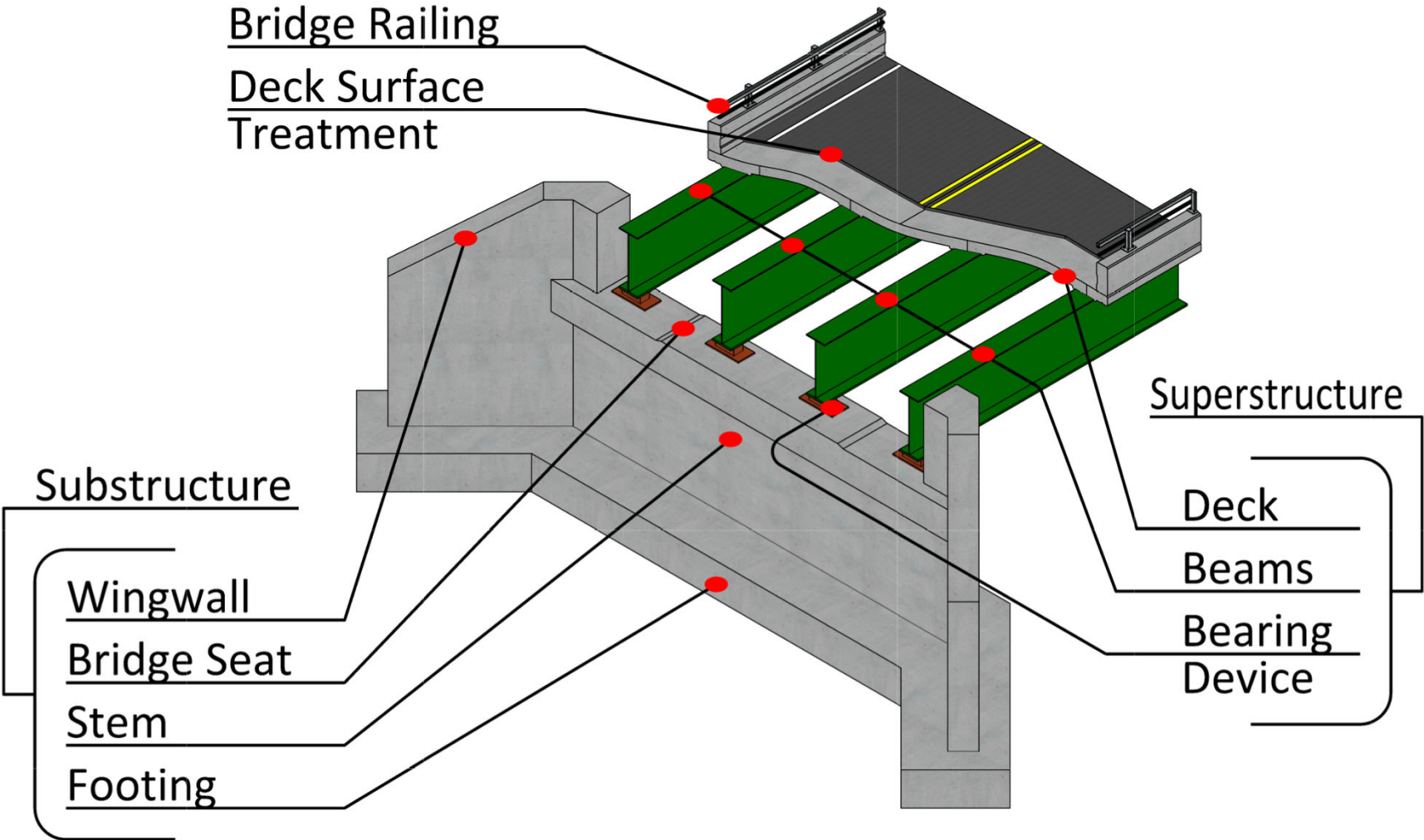
- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

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

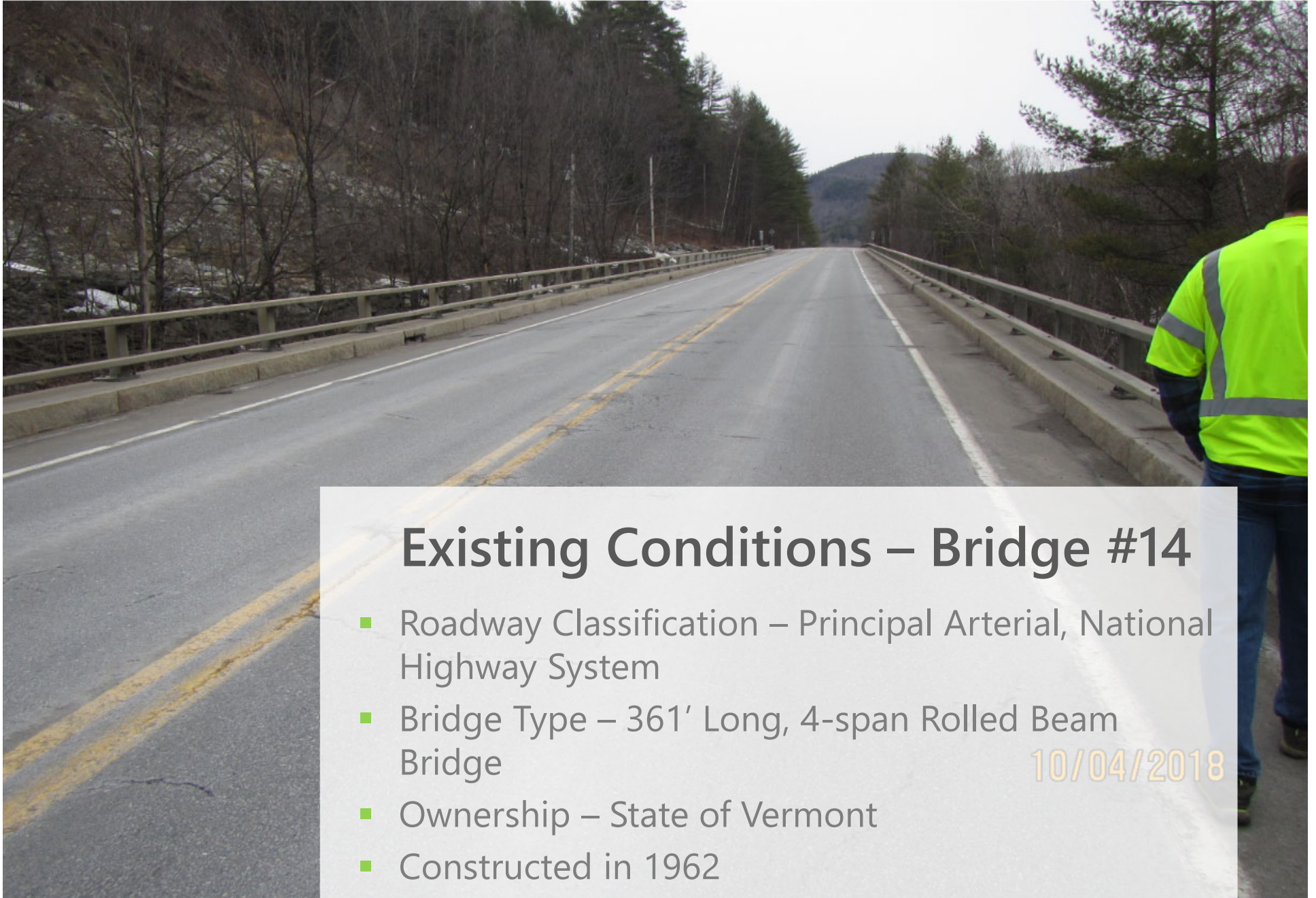
Project Overview

- Existing Conditions
- Alternatives Considered
- Selected Alternative

Description of Terms Used



Looking North over Bridge 14



Existing Conditions – Bridge #14

- Roadway Classification – Principal Arterial, National Highway System
- Bridge Type – 361' Long, 4-span Rolled Beam Bridge
- Ownership – State of Vermont
- Constructed in 1962

10/04/2018

Existing Conditions – Bridge #14

- The bridge is “structurally deficient”
 - Advanced deterioration of the deck
 - Joint failure with leakage
 - The beam ends have heavy rusting and corrosion due to years of leakage
 - The abutments have minor cracking
 - The pier caps/seats have heavy deterioration with cracking and delaminated concrete with many pop outs exposing corroded rebar
- The bridge has a substandard width (3'-12'-12'-3').
 - Standard is 10'-12'-12'-10'

Condition Ratings



Existing Conditions - Bridge #14

- Deck Rating 4 (Poor)
- Superstructure Rating 6 (Satisfactory)
- Substructure Rating 5 (Fair)

10/04/2018

Looking South over Bridge 14

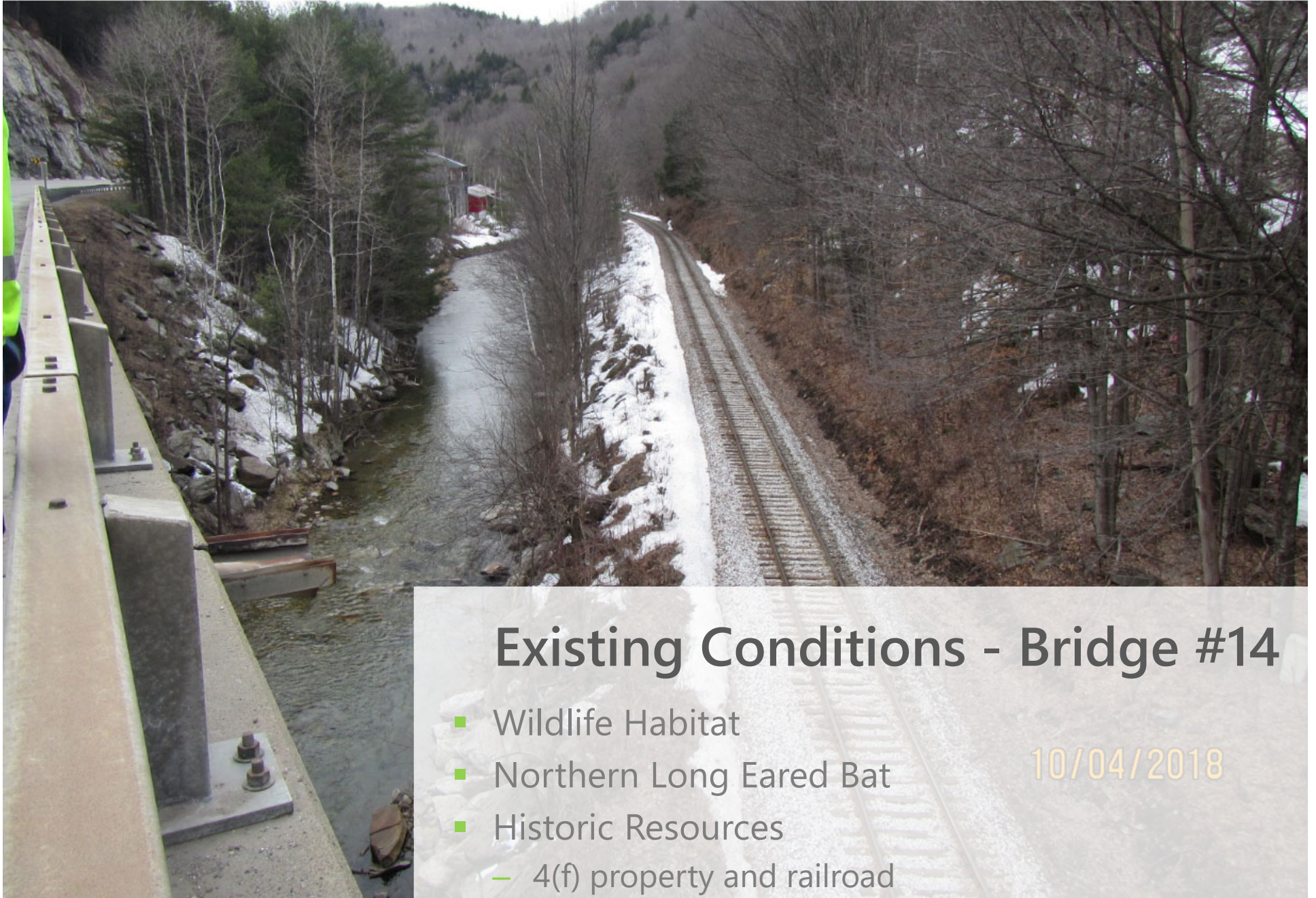


Existing Conditions - Bridge #14

- Horizontal curve south of bridge
- Bedrock outcrop south of bridge

10/9/2018

Resources – Looking Downstream

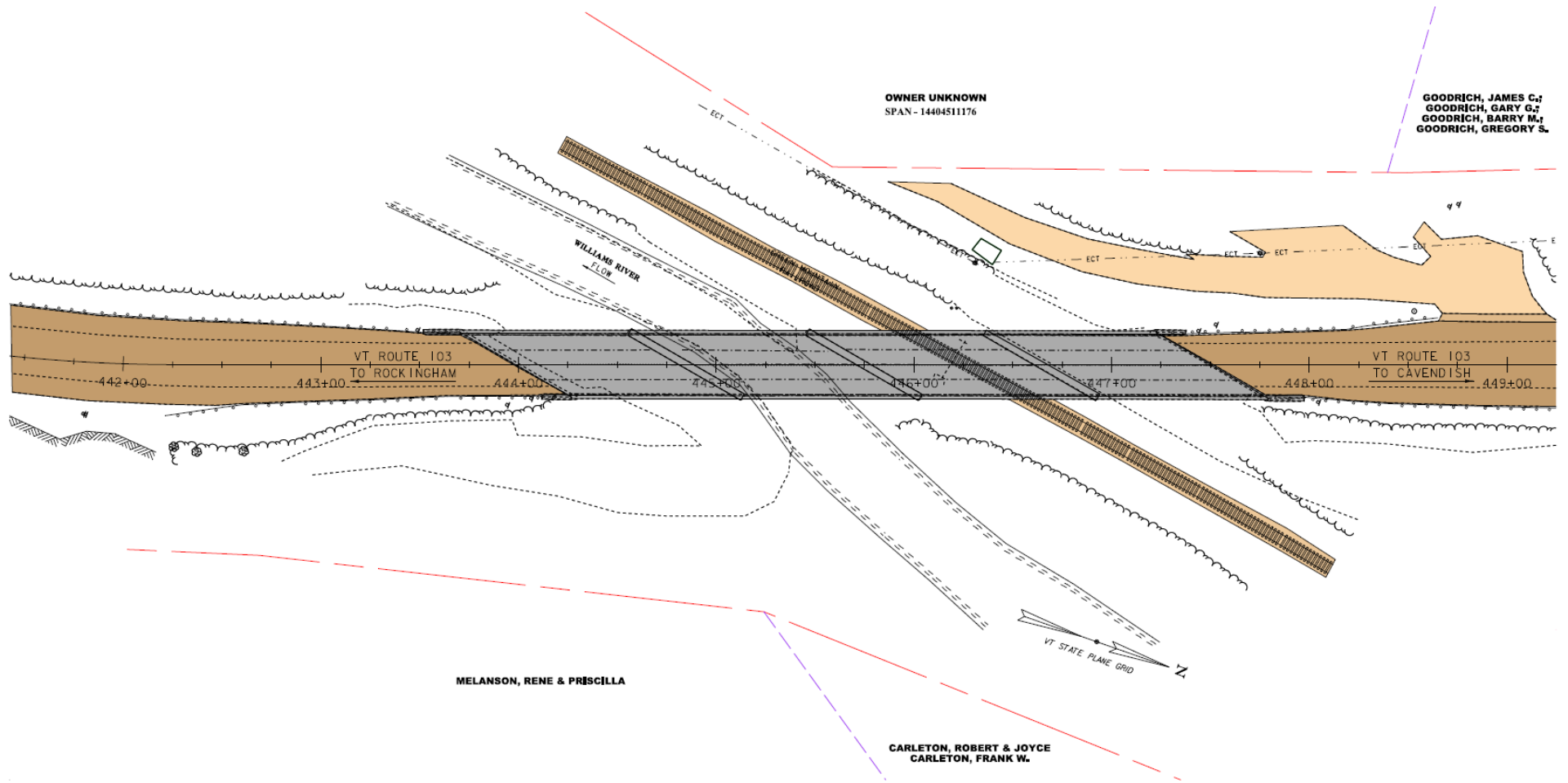


Existing Conditions - Bridge #14

- Wildlife Habitat
- Northern Long Eared Bat
- Historic Resources
- 4(f) property and railroad

10/04/2018

Existing Conditions – Bridge 14



Looking North over Bridge



Existing Conditions – Bridge #16

- Roadway Classification – Principal Arterial, National Highway System
- Bridge Type – 162' Long, Three span, Rolled Beam Bridge w/ Cast in Place Concrete Deck
- Ownership – State of Vermont
- Constructed in 1962

10/04/2018

Existing Conditions – Bridge #16

- The bridge is “structurally deficient”
 - Advanced deterioration of the deck
 - Steel plates have been placed over areas of deterioration.
 - Expansion joints have been replaced with asphaltic plug joints.
- The bridge has a substandard width (3'-12'-12'-3').
- The bridge railing is substandard.
- The abutments and piers have cracking and abrasion damage

Condition Ratings



Existing Conditions - Bridge #16

- Deck Rating 4 (Poor) 10/04/2018
- Superstructure Rating 7 (Good)
- Substructure Rating 6 (Satisfactory)

Deck Repairs



Existing Conditions - Bridge #16

- Steel plates installed over deck deterioration.

Resources – Looking Upstream

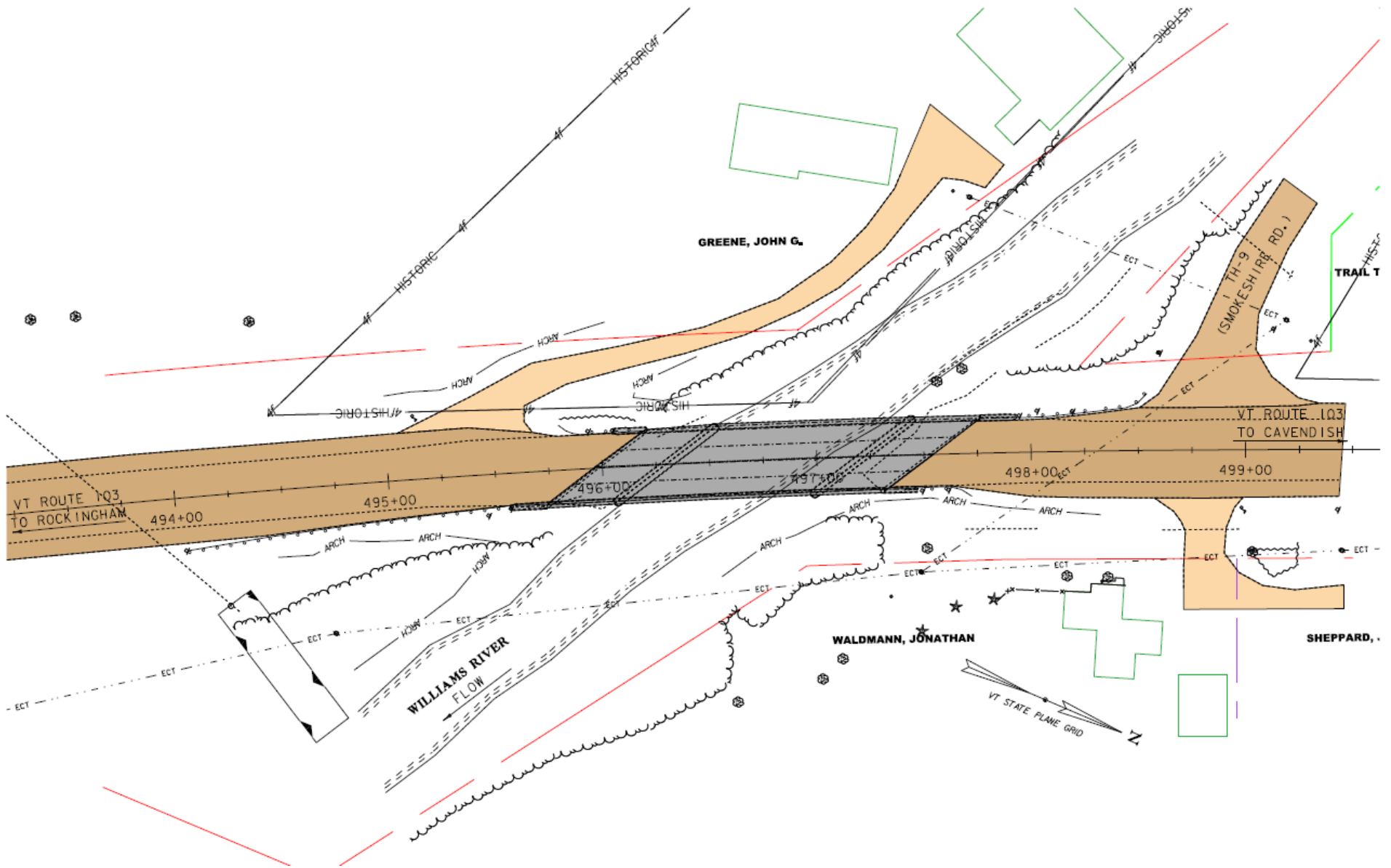


Existing Conditions - Bridge #16

- Class III Wetland
- Historic Resources
- No Archaeological Resources found during phase I study

04/19/2

Existing Conditions – Bridge 16



Design Criteria and Considerations – Bridge 14 & Bridge 16

- Average Daily Traffic of 6,000 to 6,400 veh/day
- Design Hourly Volume of 920 to 980 veh/hr
- % Trucks: 9.4 to 14.4
- Design Speed of 50 mph
- National Highway System Route

Alternatives Considered – Bridge 14 & Bridge 16

- No Action
 - Additional maintenance required within 10 years
- Deck Replacement
 - Widen to maximum width without new girders, 5'-12'-12'-5' typical
 - 30-year design life for Bridge 14
 - 40-year design life for Bridge 16
- Superstructure Replacement
 - Widen to standard, 8'-12'-12'-8' typical
 - 30-year design life for Bridge 14
 - 40-year design life for Bridge 16
- Full Bridge Replacement
 - Widen to standard, 10'-12'-12'-10' typical
 - 100-year design life

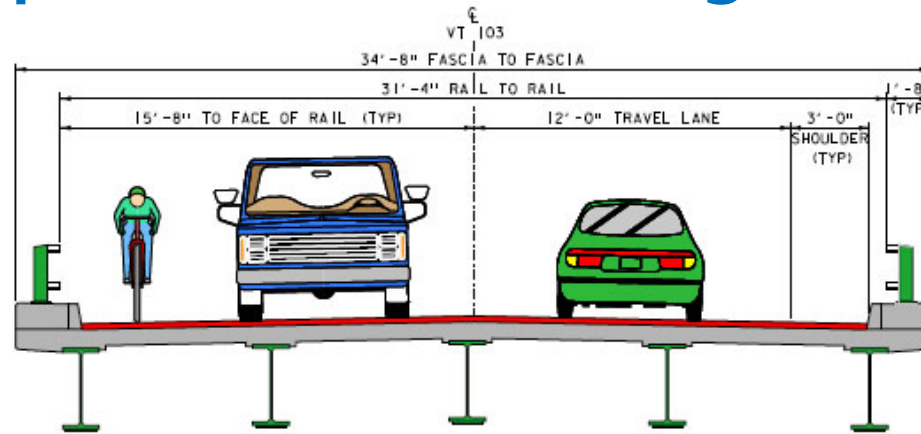
Selected Alternative - Bridge #14

- Full Bridge Replacement
 - 10'-12'-12'-10' typical
 - 100-year design life
 - Existing configuration or reduced number of spans

Selected Alternative - Bridge #16

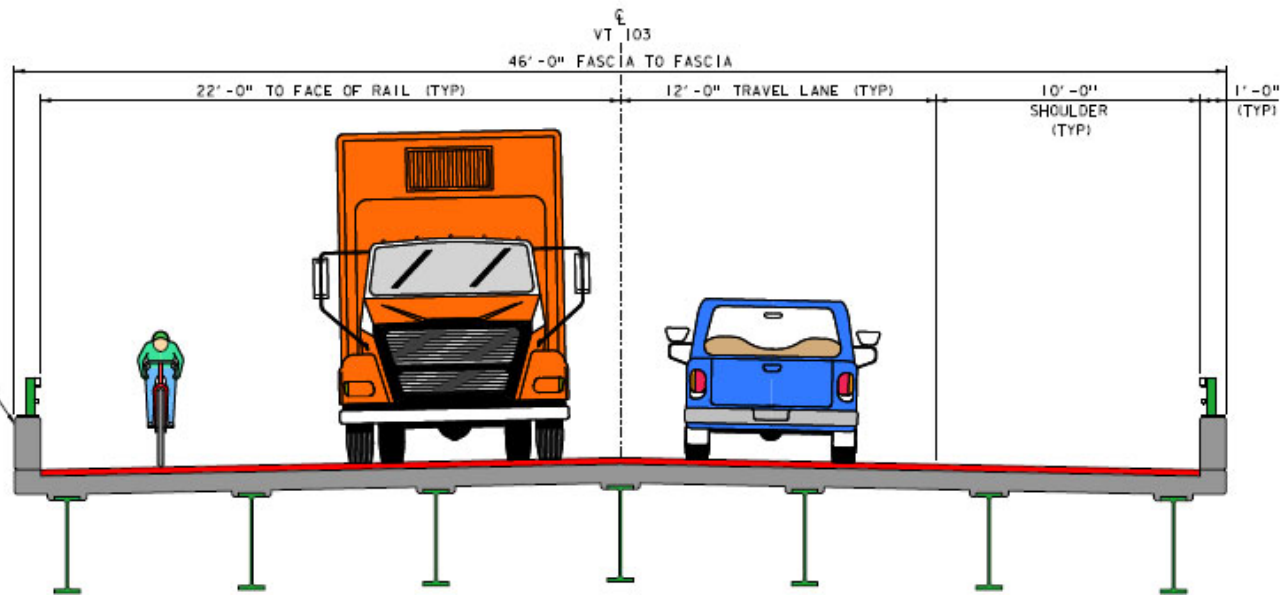
- Deck Replacement
 - 5'-12'-12'-5' typical
 - 40-year design life
 - Repairs to Abutments and Piers

Proposed Typical Section – Bridge 14



EXISTING BRIDGE 14 TYPICAL SECTION

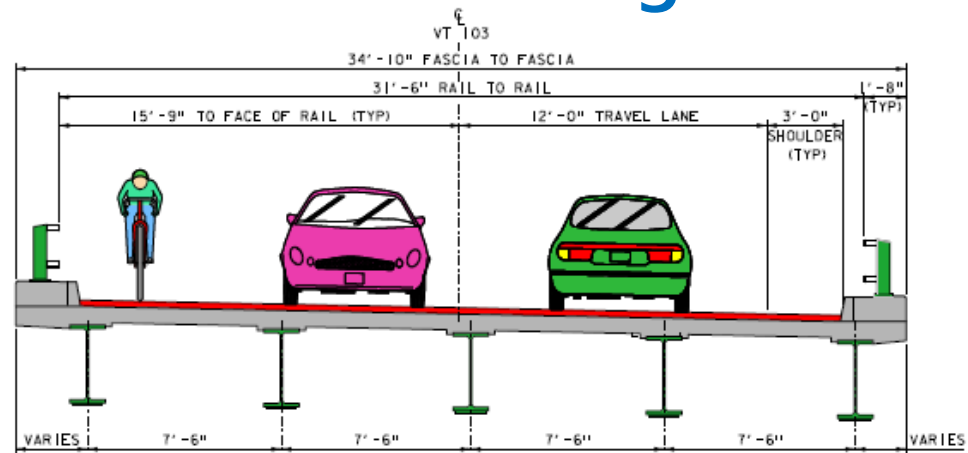
BRIDGE RAILING, GALVANIZED
STEEL TUBING/CONCRETE COMBO
SEE STANDARD S-352A



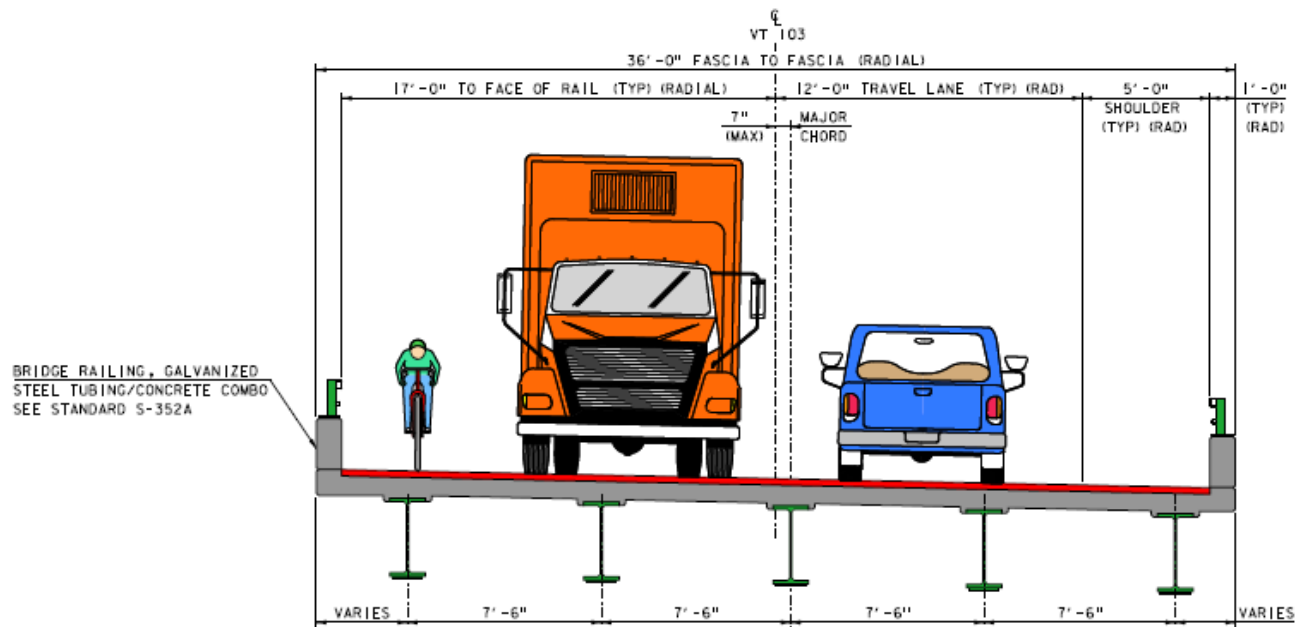
BRIDGE 14 REPLACEMENT TYPICAL SECTION

SUPERSTRUCTURE TO BE DETERMINED

Proposed Typical Section – Bridge 16

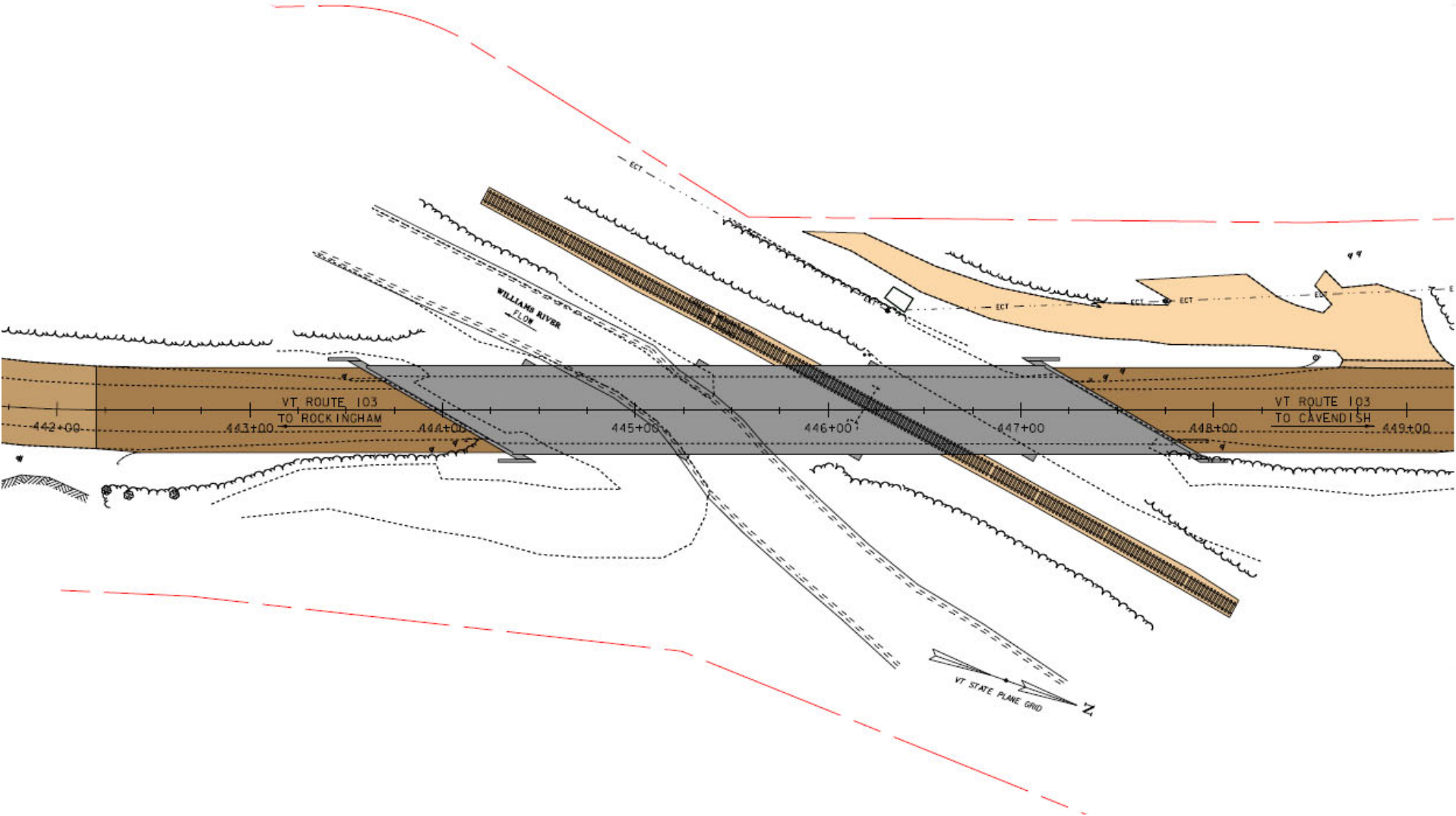


EXISTING BRIDGE 16 TYPICAL SECTION

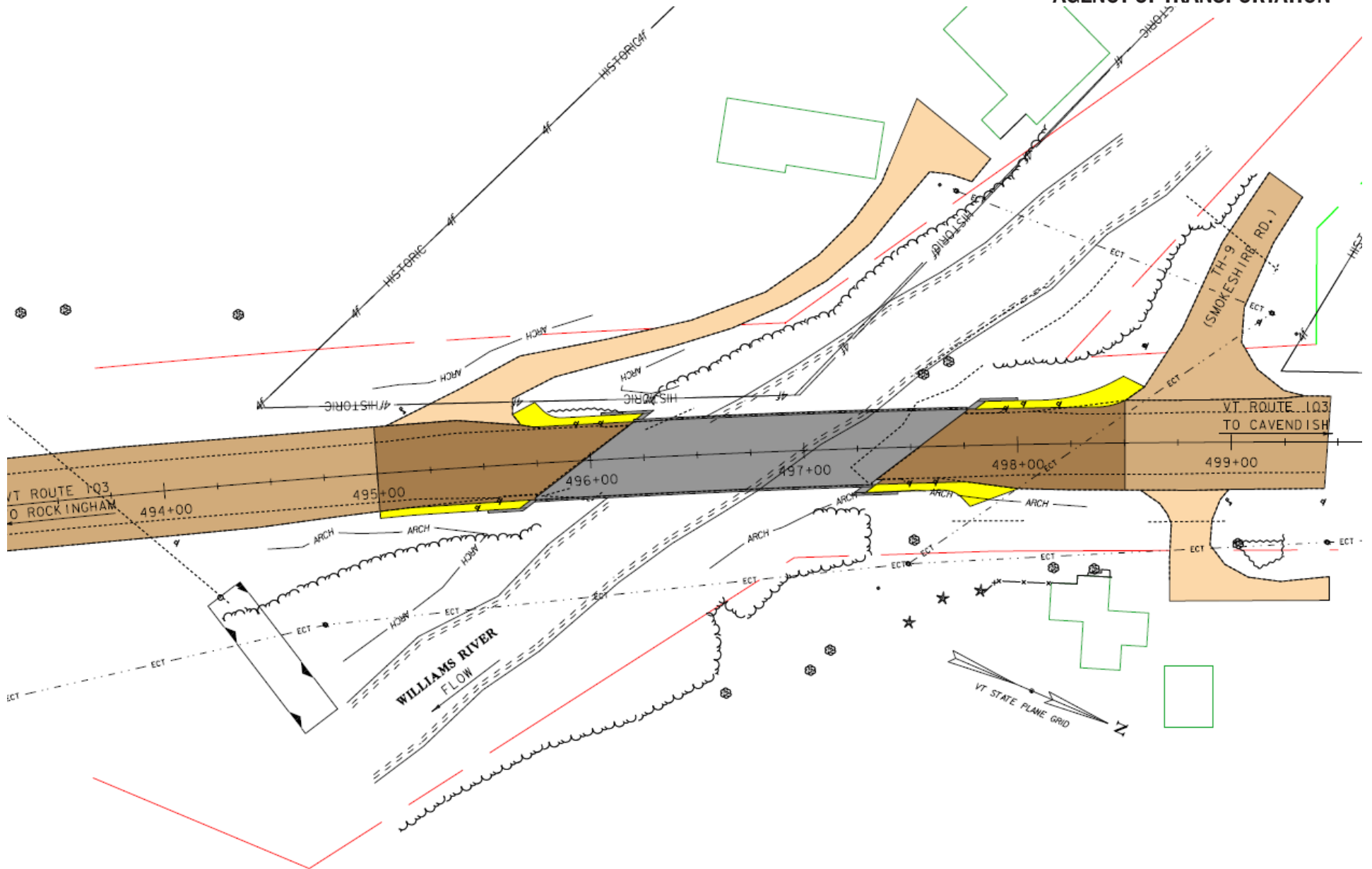


DECK REPLACEMENT TYPICAL SECTION

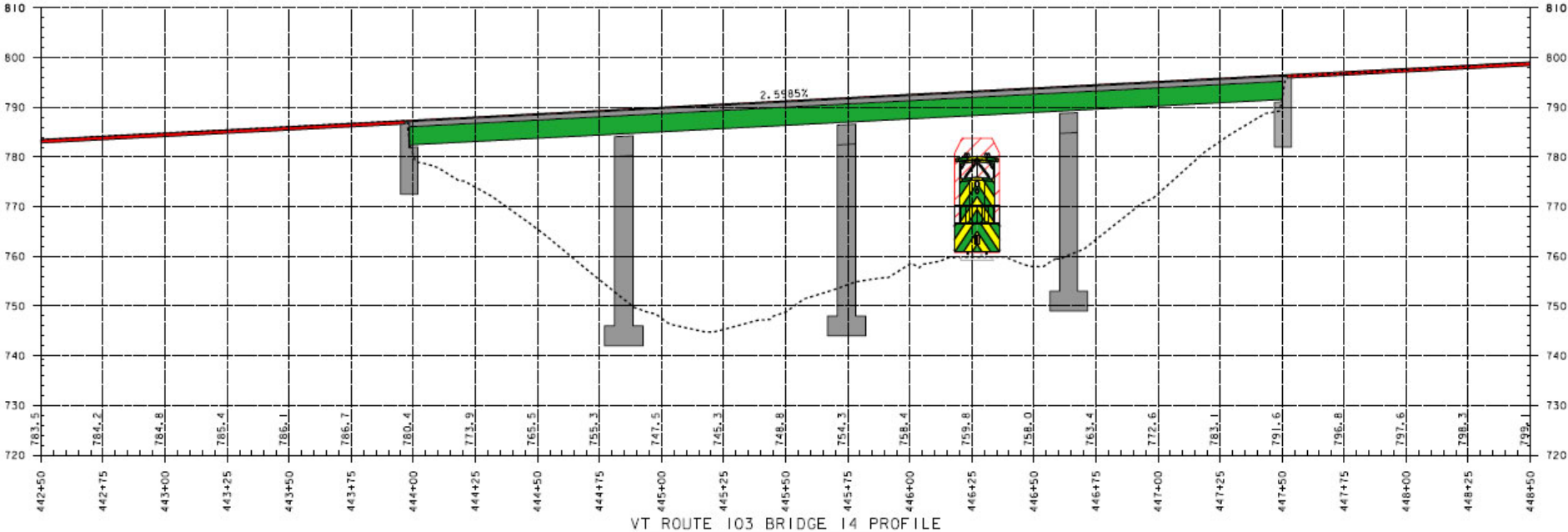
Proposed Layout – Bridge 14



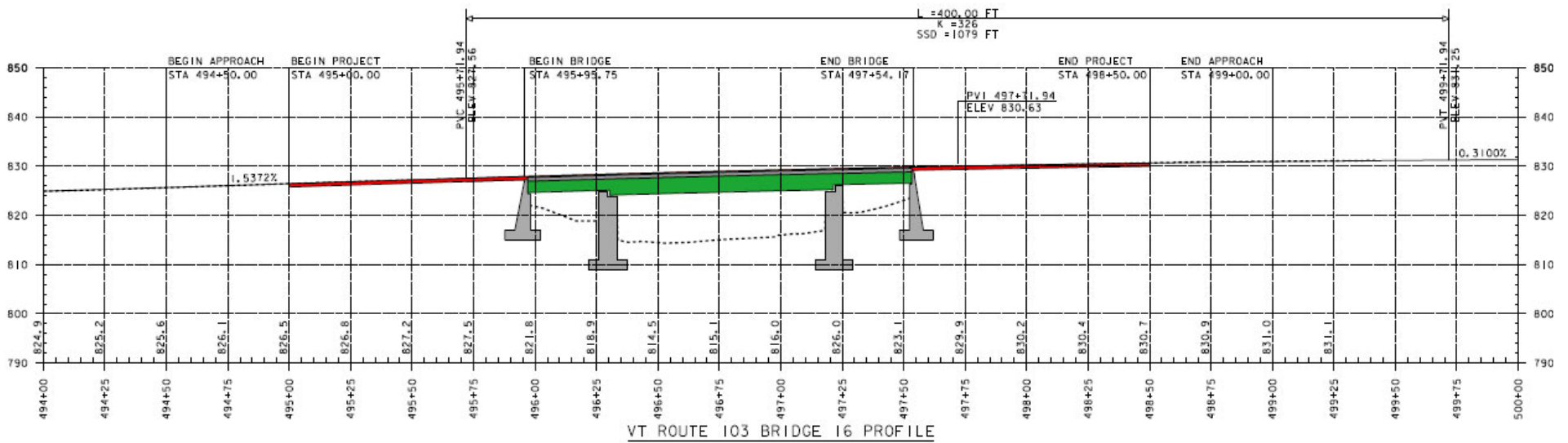
Proposed Layout – Bridge 16



Proposed Profile – Bridge 14



Proposed Profile – Bridge 16



Maintenance of Traffic Options Considered

- Offsite Detour
- Temporary Bridge
- Bridges are too narrow for phased construction

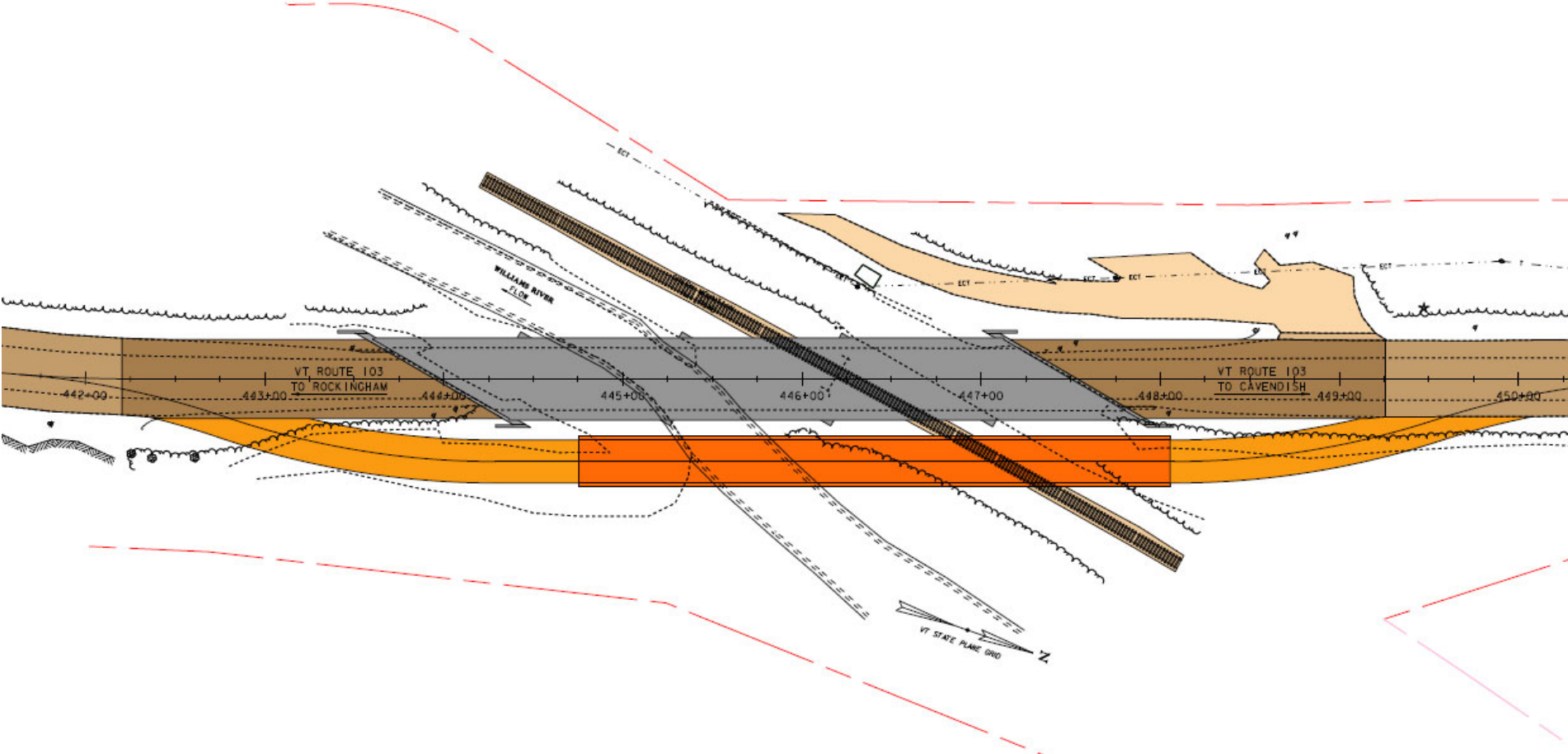
Selected Method of Traffic Maintenance



Temporary Bridge

- Upstream of Bridge 14
- Upstream of Bridge 16
- Two-Lane Temporary Bridge

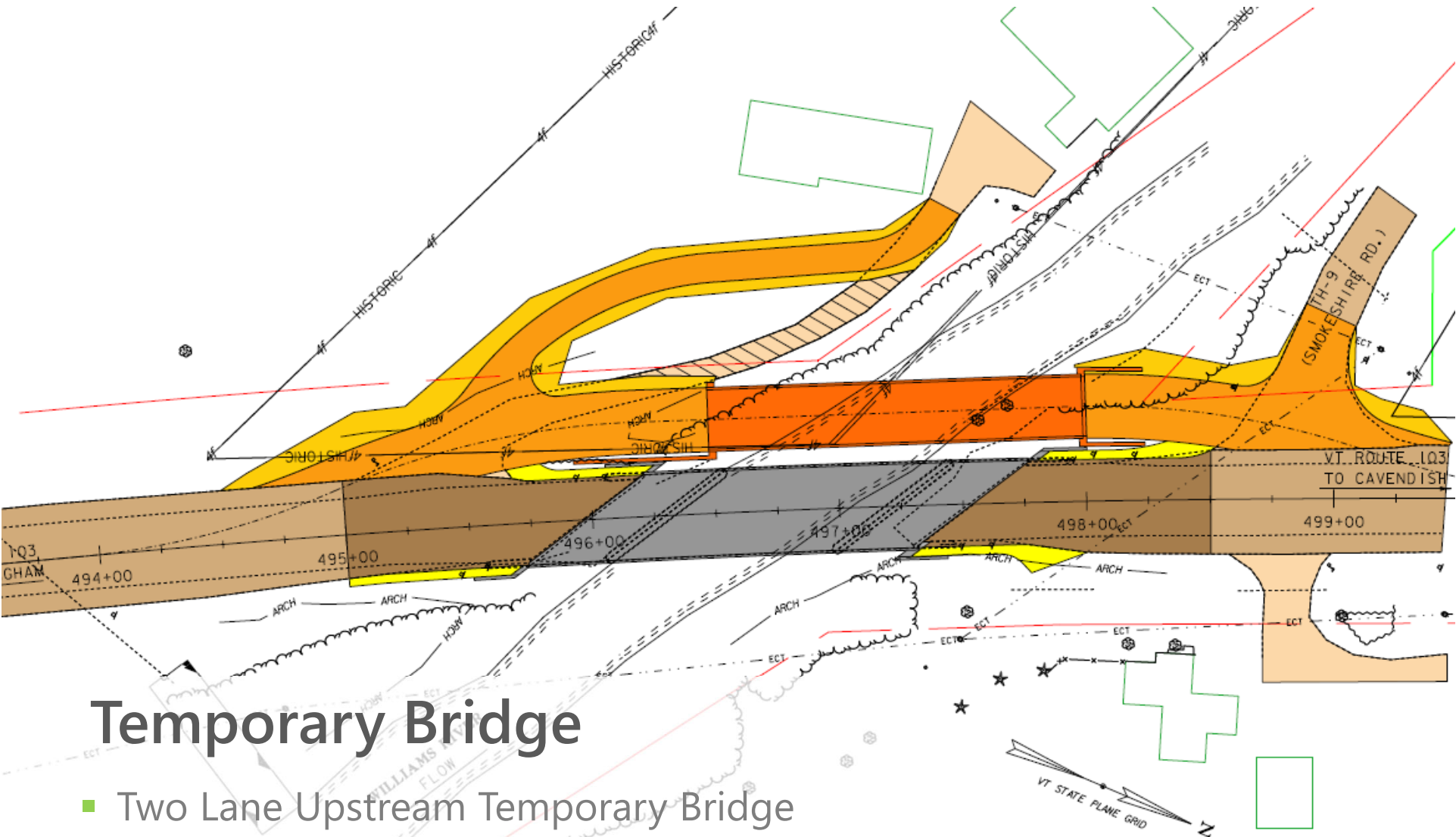
Upstream Temp Bridge Layout – Bridge 14



Temporary Bridge

- Two Lane Upstream Temporary Bridge

Upstream Temp Bridge Layout – Bridge 16



Temporary Bridge

- Two Lane Upstream Temporary Bridge
- Impacts to Historic Property
- Avoids Utility Relocation

Preliminary Project Schedule

- Bridge 14 Construction Start – 2023
 - Total Cost Estimate: \$10,210,000

- Bridge 16 Construction Start – 2021
 - Total Cost Estimate: \$2,470,000

Project Summary – Bridge 14

- Full Bridge Replacement with Traffic Maintained on a Temporary Bridge
 - 12'/10' typical
 - 100-year design life
 - Right of Way Needed

Project Summary – Bridge 16

- Deck Replacement with Traffic Maintained on a 2-way Upstream Temporary Bridge
 - 12'/5' typical
 - 40-year design life
 - Right-of-Way needed
 - Aerial utility relocation avoided

For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/12B580>



Chester BF 025-1(45) & Chester BF 025-1(46) Questions and Comments

**State Highway 103 – Bridge #14 over Williams River & The Green
Mountain Railroad**

August 29, 2019

10/04/2018



For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/16B002>



Chester BF 025-1(46)

Questions and Comments

State Highway 103 – Bridge #16 over Williams River

August 29, 2019



**Accelerated
Bridge
Program**
VTRANS