VT 14 East Montpelier Bridge Project

October 23, 2014

Welcome & Introductions

- VTrans
  - Mark Sargent, Project Manager
  - Wayne Symonds, Structures Division Manager
- Project Consultant – Outreach & Communications
  - Jill Barrett, Fitzgerald & Halliday, Inc.
  - Michael Levine, Flywheel Communications
- Project Consultant - Design
  - Tom Knight, Stantec

Agenda

1. VTrans:
   - Overview of Project
   - What has changed since June 2014?
2. FHI:
   - Outreach and response to concerns
3. Stantec:
   - Detailed look at project constraints
   - What is planned and why?

4-5. VTrans:
   - Why accelerated bridge construction?
   - What are the next steps?

1. Project Overview…What has changed since June 2014?

What is the project?

- Replacement of VT 14 bridge over Winooski River in village of East Montpelier

- Reconstruction of 900 feet of US 2 in vicinity of the bridge

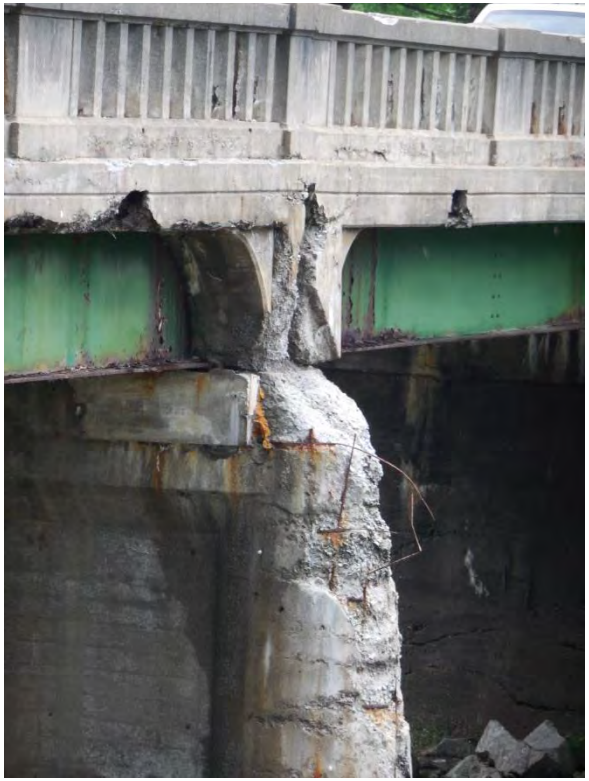
Why is the project needed?

The bridge is…

- Nearing the end of its design life

The VT14/US2 intersection …

- Meets multiple criteria for safety improvements

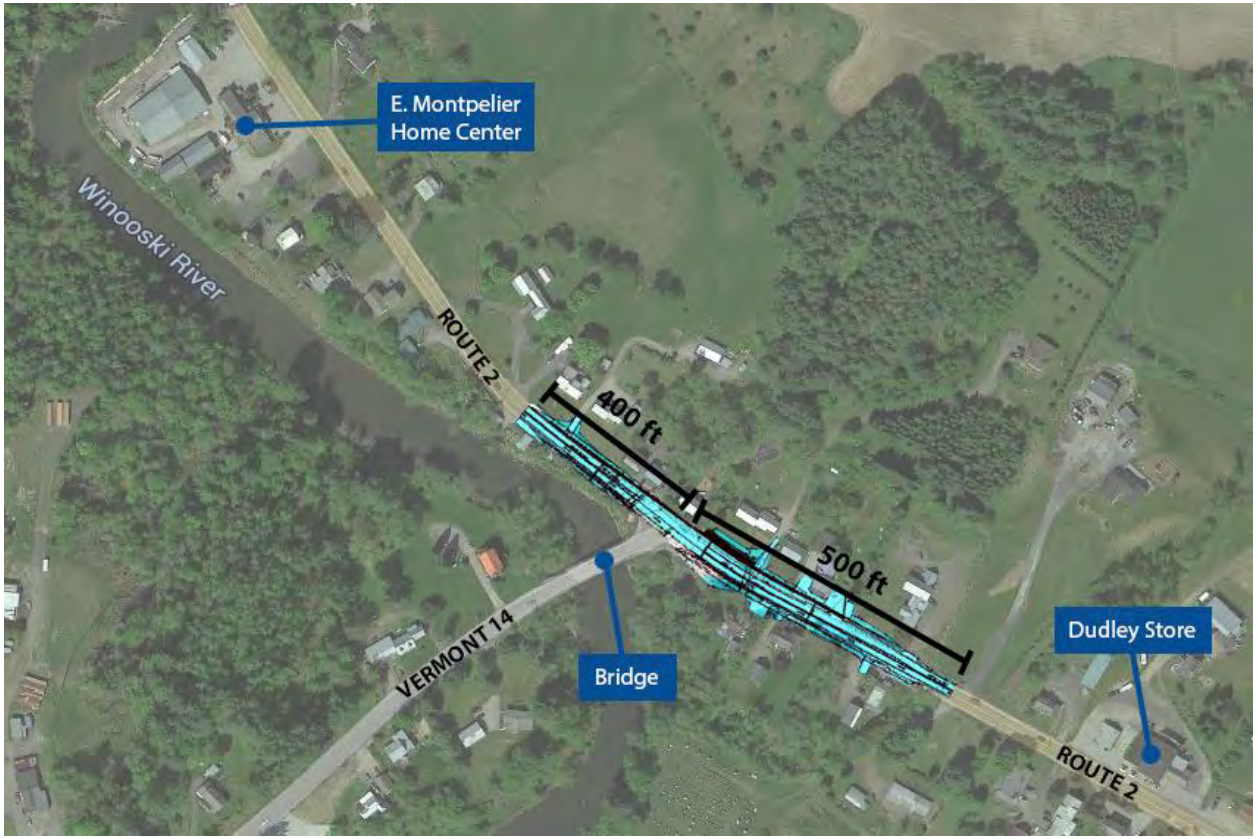


What are the proposed improvements?

- 3-lane replacement bridge with left turn lane
- New traffic signal at intersection
- 900-foot rebuild of US 2

What part of US 2 will be rebuilt?

- ~400 feet west of VT14/US 2 junction (near Johnson property)
- ~500 feet east of VT14/US 2 junction (slightly west of Dudley's Store)



What was proposed in June 2014?

June 2014

- 75 day Closure of VT 14 for bridge and US 2 Construction
- Closure Timing: June to August

Feedback

- 75 days is too long.
- Warmer months are prime season for many businesses
- Reduce impacts to business
- Consider impacts on schools, emergency services and local roads

We heard you!

What has VTrans done to address concerns?

VTrans Response

- Revised construction approach – maximum 40 day closure
- Closure timing: August/September
- Accelerate bridge construction

June 2014 Feedback

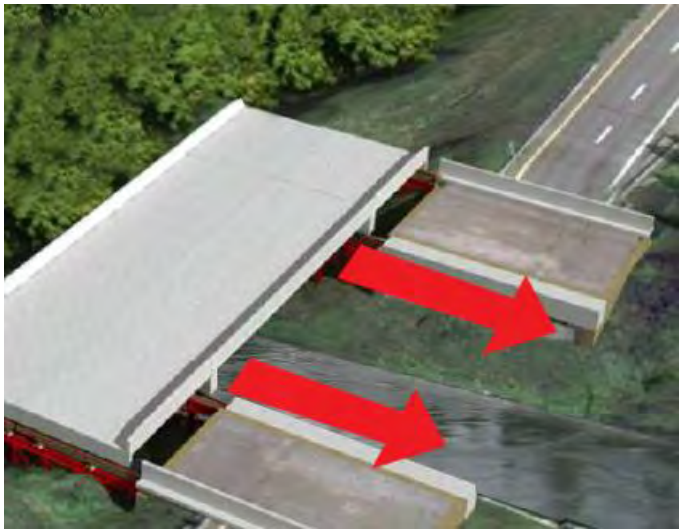
- 75 days is too long
- Warmer months prime season for many businesses
- Impacts on businesses could be significant

How can bridge construction be cut from 75 days to 40 days using lateral slide?

1. Build next to the existing bridge

2. Clear the old bridge &prepare for the new.

How can bridge construction be cut from 75 days to 40 days using lateral slide?



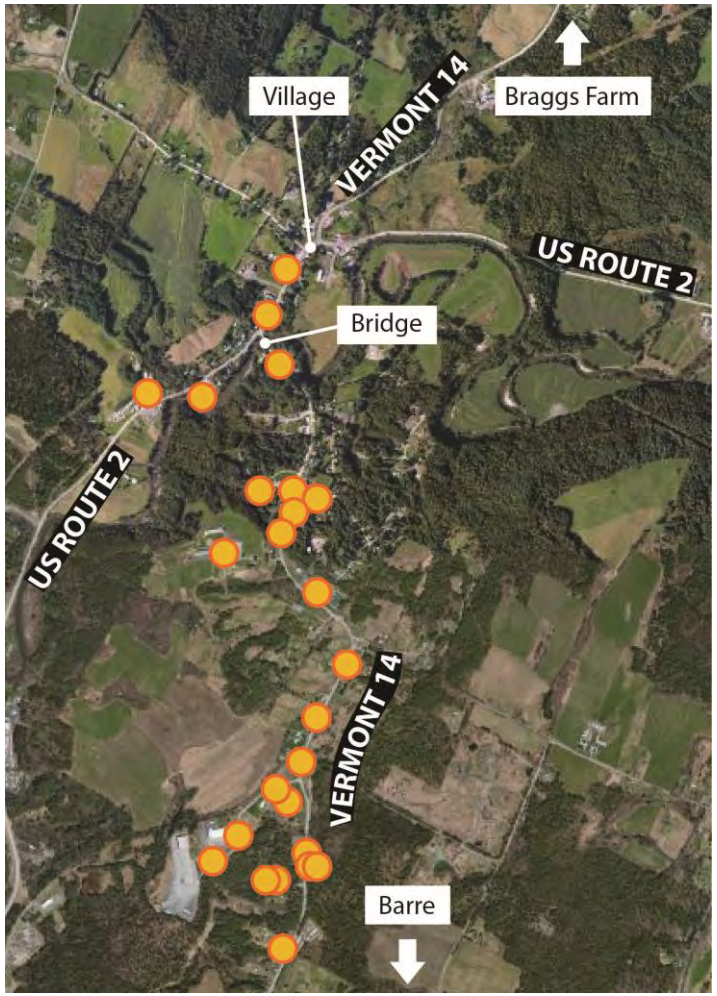
3. Move the new bridge into place

4. Reopen to traffic

2. Outreach and response to concerns

Where are businesses located?

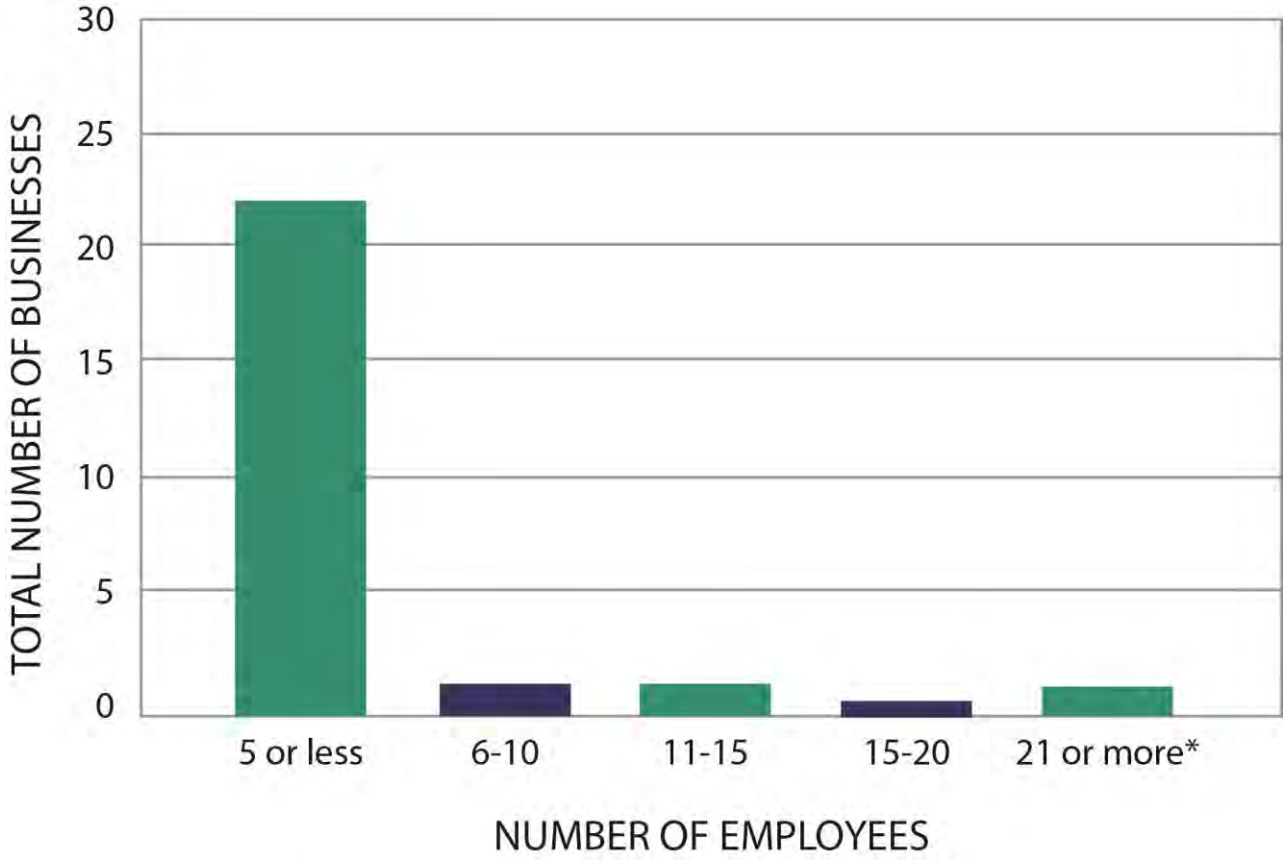
- 28 businesses identified
- 50% retail sales (vehicles – auto, boat, RV, snowmobile, ATV, food, bank, home building supplies)
- 50% service delivery (stone, landscaping, fuel, modular homes, food distribution, fireworks, farms)



Each business is unique

- Origin (VT 14 N or S) of customers & employees varied
- Wide range of response to impact of bridge closure
- Some with businesses identified strategies to cope with bridge closure, others expressed deep concerns

How many people do businesses employ?



*Huntington Homes 65 employees, North Star 100 seasonal (June & July)

What about emergency response?

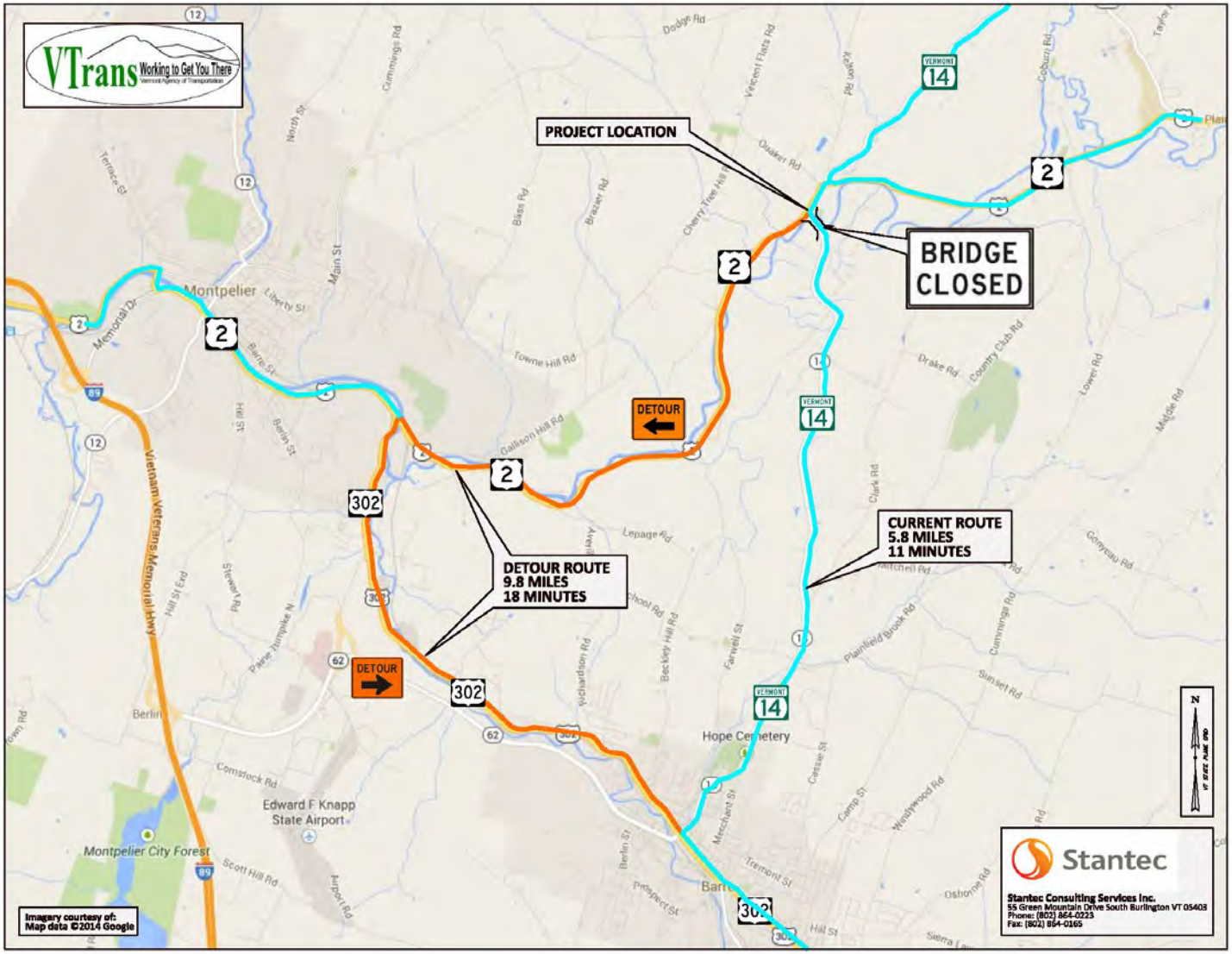
- During closure, EMFD proposes 24 hour staffing of the fire department in order to maintain response times.
- Traffic control at site will coordinate with EMFD and EMES to give priority to emergency response in the work zone.

What about school buses?

- Washington Central Supervisory Union (WCSU) says it can reroute buses on to Muddy Brook Road as it did when Route 14 was closed in 2011.
- With proper lead time to notify parents, WCSU can adapt to the closure.

What about impacts on local roads?

- Official detour route will direct vehicles to state roads – VT 14 South/US 302
- VTrans will meet with town officials to identify local bypass roads that may see increased traffic


VTrans Working to Get You There
PROJECT LOCATION
BRIDGE CLOSED
DETOUR
DETOUR ROUTE 9.8 MILES 18 MINUTES
CURRENT ROUTE 5.8 MILES 11 MINUTES
Montpelier
Berlin
Barre
Hope Cemetery
Edward F Knapp State Airport
Montpelier City Forest
Vietnam Veterans Memorial Hwy
Imagery courtesy of: Map data ©2014 Google
Stantec
Stantec Consulting Services Inc.
55 Green Mountain Drive South Burlington VT 05403
Phone: (802) 864-0223
Fax: (802) 864-0165

3. Constraints…what is planned and why?

From an Engineering Standpoint the problem can be broken down into 2 parts.

- Part 1: Reconstruction of US Route 2
- Part 2: Replace the bridge

What are the major challenges?

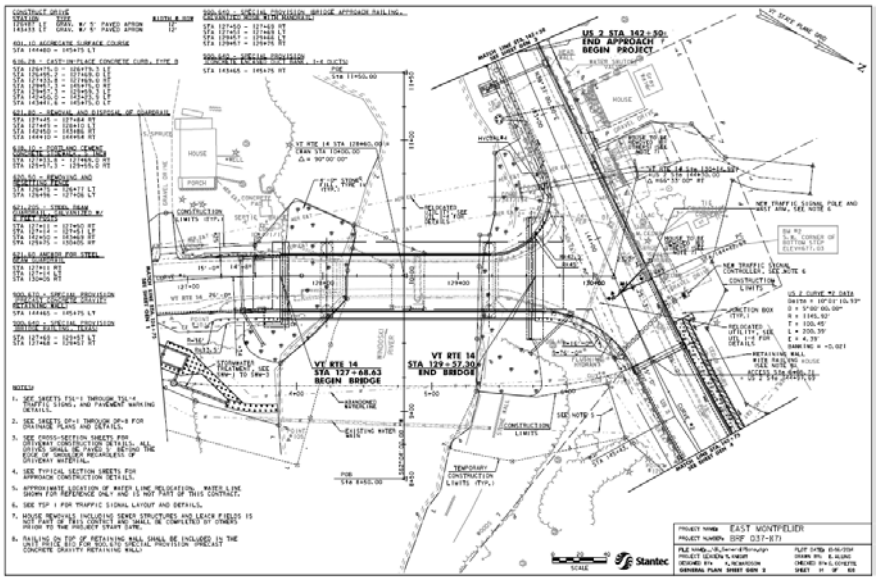
- Goal is to minimize community impacts
  - On residents
  - On businesses
  - On school bus routes
  - On emergency responders
  - On travelers – local & regional

Major Constraints:

- Heavy traffic volumes inhibit construction
- Narrow village setting
- Complex roadway rebuild

A complicated reconstruction

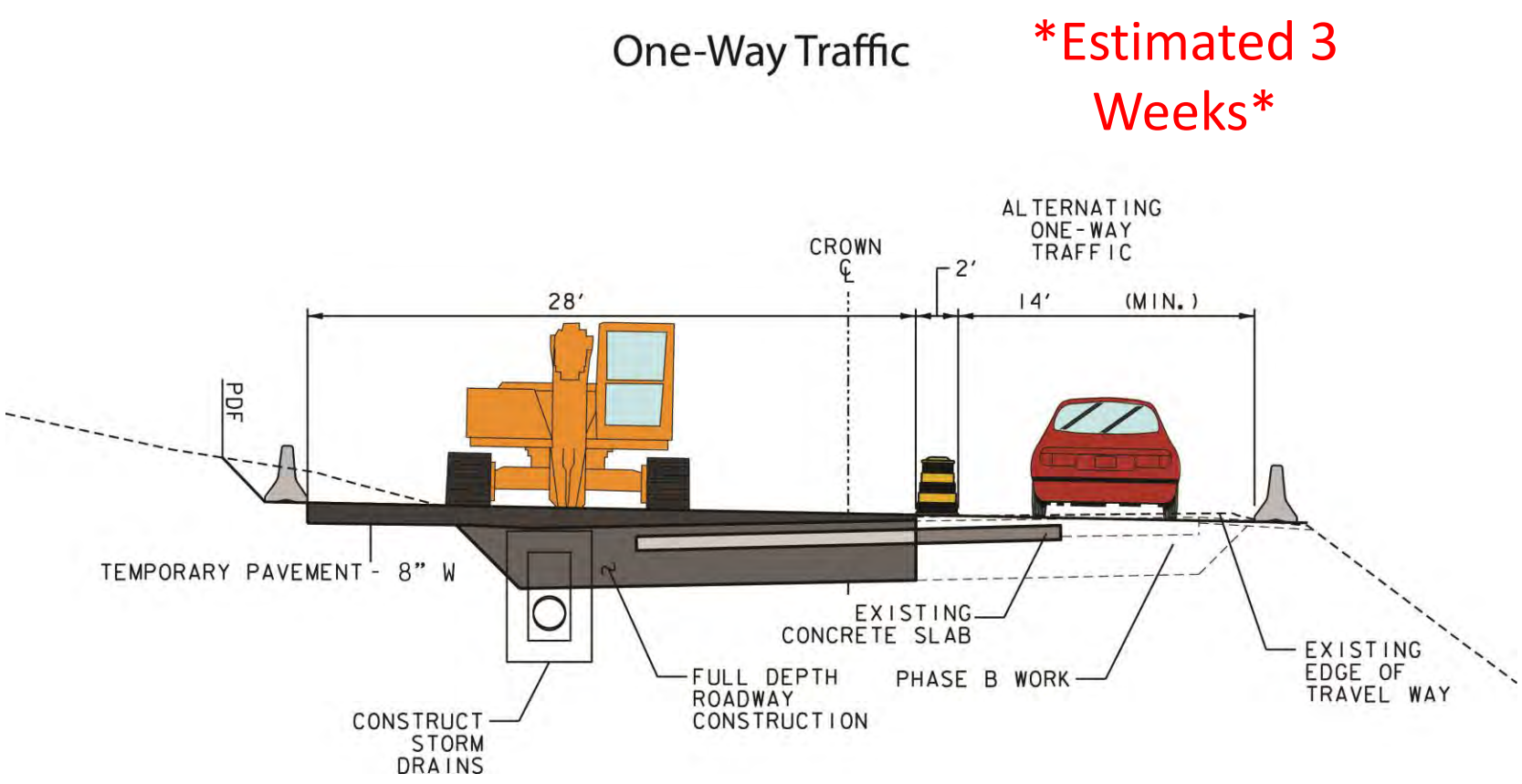
- Removal of 20’ concrete slab underneath road
- Installation of drainage
- Permanent retaining walls
- New utility conduits
- Connections to driveways
- Paving and curbing
- Traffic Signal
- Sidewalk



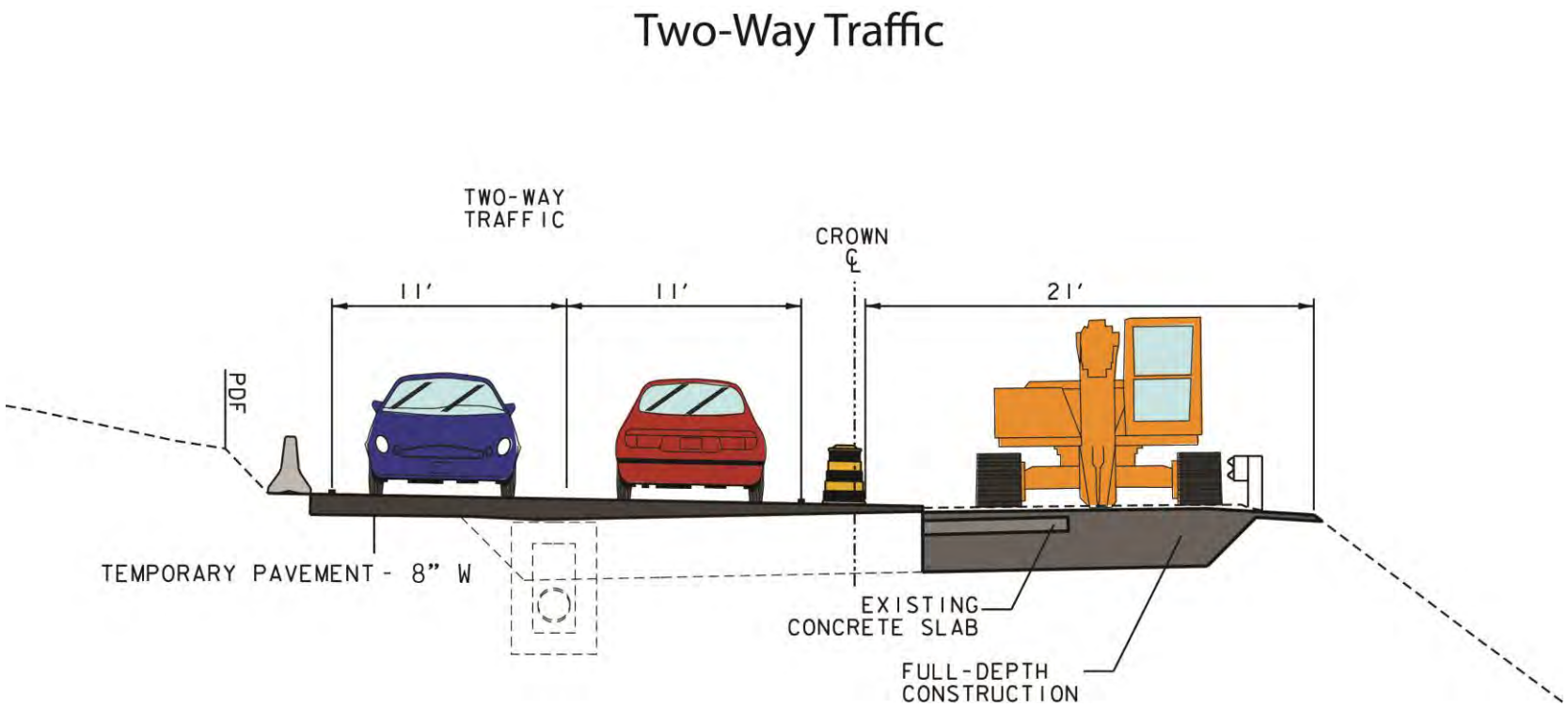
Route 2 Traffic

- 13,000 vehicles a day – peak hours ~1,500 vehicles
- Properties located close to street limit area for construction
- Periods of one-lane, alternating traffic will be needed to reconstruct US 2

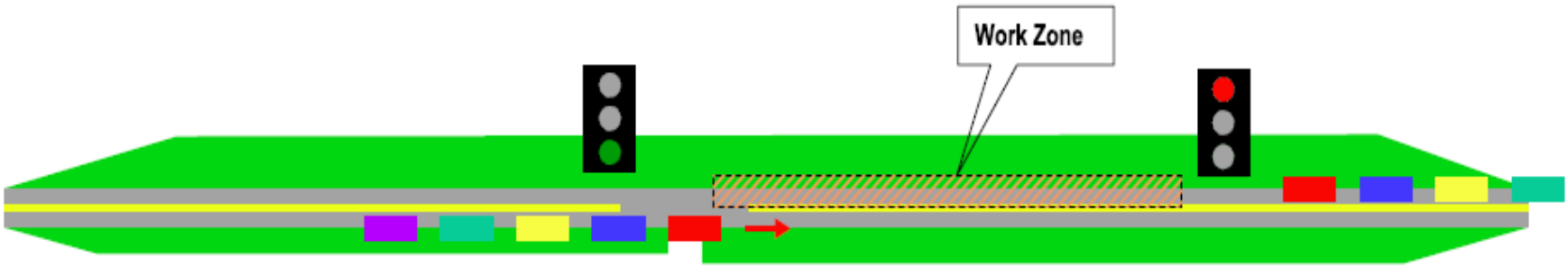
Travel on Route 2 during construction



Travel on Route 2 during construction

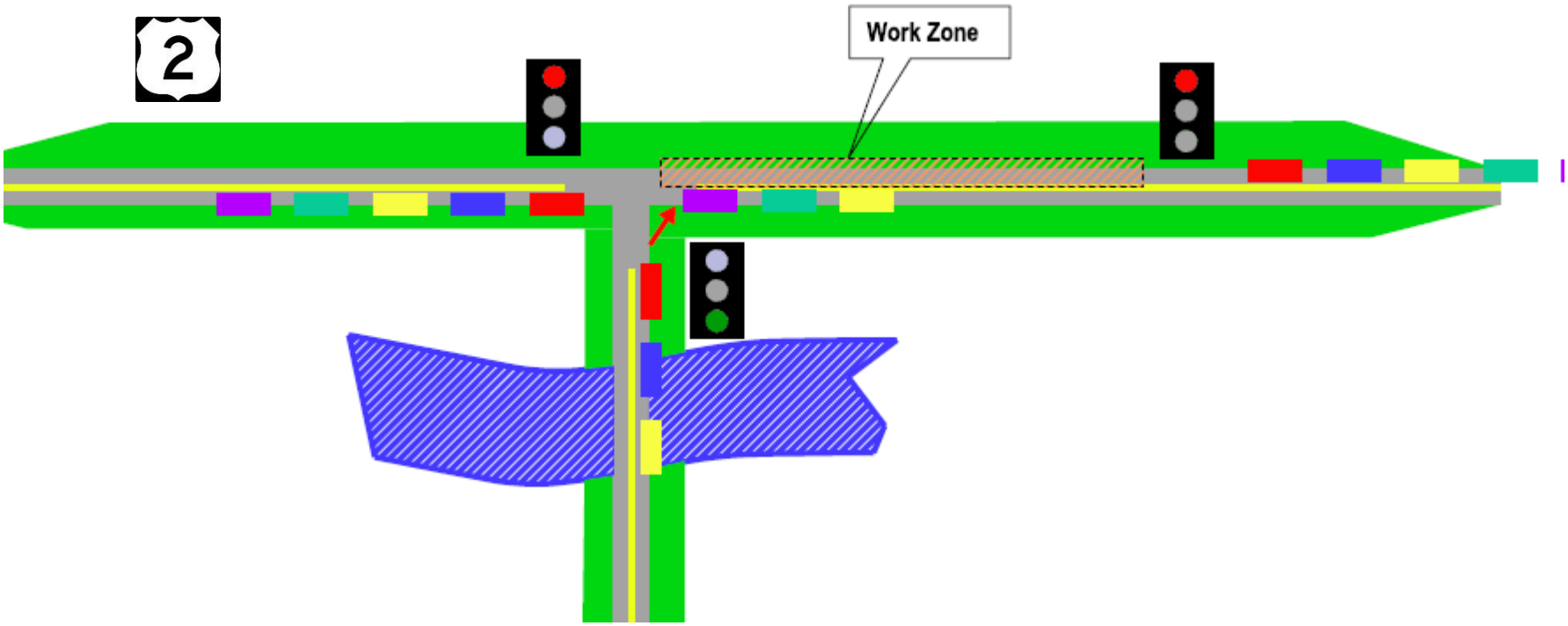


Single Lane on US 2 without traffic entering from VT 14



- 13,000 vehicles a day – peak hrs. ~1,500 vehicles VPH
- 25 vehicles per minute (13 each direction)
- **Estimated Delays = 2 to 15 minutes (peak hours)**

Single Lane on US 2 with VT 14



- **Estimated Delays = up to 45 minutes (peak hours)**

Single Lane Phase
US 2 – Delays

Safety, Mobility, Business impacts on Community

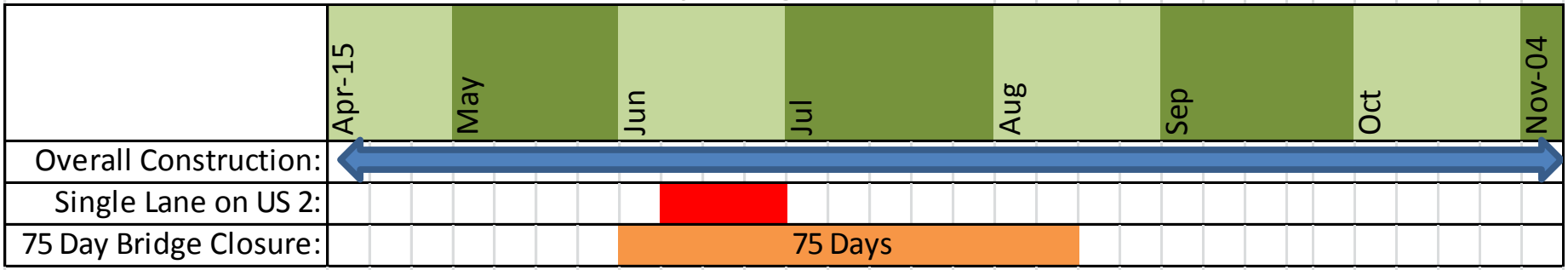
	VT 14 Open	VT 14 Closed
Estimated Peak Hour Delays	Up to 45+ Minutes	2-15 Minutes
Estimated Off Peak Delays	2-15 Minutes	1-2 Minutes

Manageable Delays

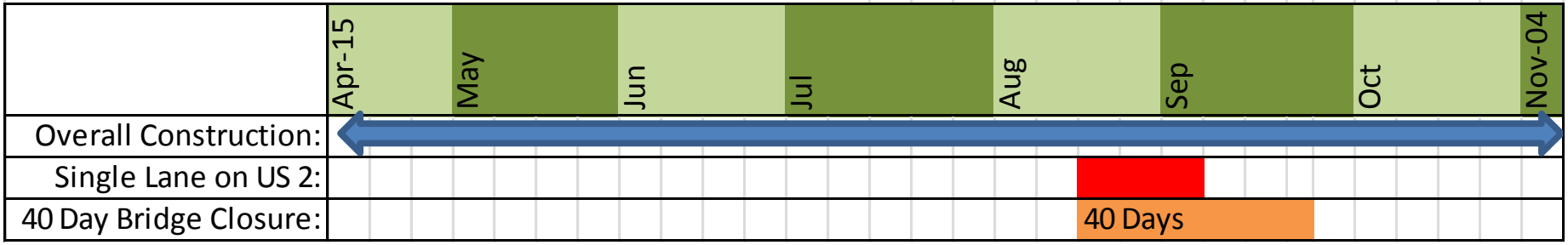
Recommendation: Close VT 14 during single lane phase.

When? - Timing of Closure

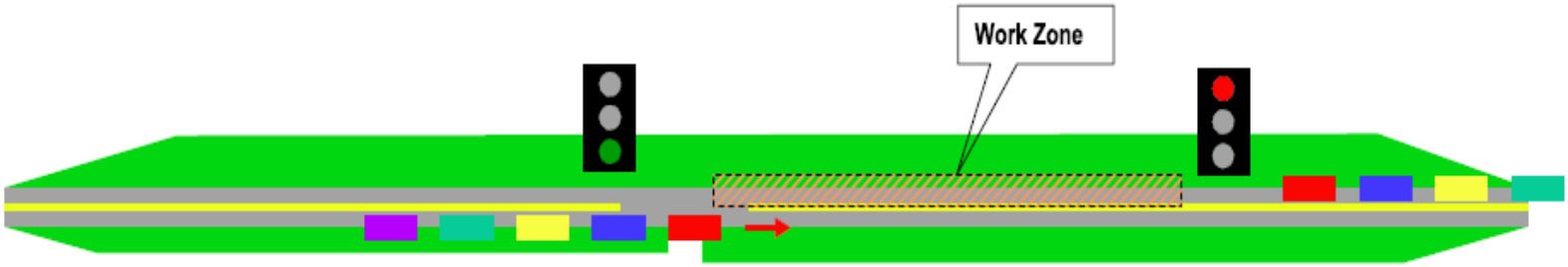
Previous Construction Timeline (75 Day Bridge Closure)



New Construction Timeline (40 Day Max. Bridge Closure)



How does this fit together?



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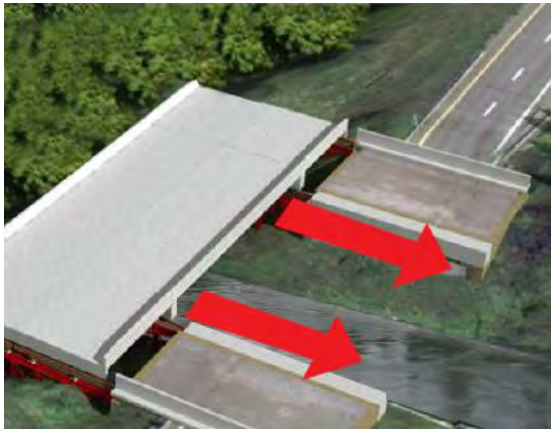


EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

2

2

Construct Access to River

VERMONT
14

Phase 1A

US 2 and VT 14
Open to Two-way Traffic

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Edge Work

2

2

Temporary Shoring

Temporary Shoring

VERMONT 14

Phase 1B

US 2 and VT 14
Open to Two-way Traffic

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Edge Work (continued)

2

2

Shafts

Girders

Phase 1C

US 2 and VT 14
Open to Two-way Traffic

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Edge Work (continued)

2

2

Bridge Deck

VERMONT 14

Phase 1D

US 2 and VT 14
Open to Two-way Traffic

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Construct Route 2

2

One-Way Alternating Traffic

ROAD
CLOSED

2

Remove Existing Bridge

ROAD
CLOSED

VERMONT
14

Phase 2A

US 2 Single Lane
VT 14 Closed

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Construct Route 2 (continued)

2

2

ROAD
CLOSED

Construct Pier Caps

One-Way Alternating Traffic

Construct Abutments

ROAD
CLOSED

VERMONT
14

Phase 2B

US 2 Single Lane
VT 14 Closed


CCS


08.19.2013 11:51

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Edge Work (continued)

Construct Route 2 (continued)

2

2

2

ROAD CLOSED

One-Way Alternating Traffic

Move Bridge Into Place

ROAD CLOSED

VERMONT 14

Phase 2C

US 2 Single Lane
VT 14 Closed

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Construct Route 2 (continued)

2

2

One-Way Alternating Traffic

ROAD
CLOSED

ROAD
CLOSED

VERMONT
14

Phase 2C

US 2 Single Lane
VT 14 Closed

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

2

Construct Route 2 (continued)

2

One-Way Alternating Traffic

ROAD
CLOSED

ROAD
CLOSED

VERMONT
14

Phase 2C

US 2 Single Lane
VT 14 Closed

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Construct Route 2 (continued)

2

2

One-Way Alternating Traffic

ROAD
CLOSED

Bridge Moved into Place

ROAD
CLOSED

VERMONT
14

Phase 2C

US 2 Single Lane
VT 14 Closed

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

Roadway Temporarily Widened

2

Construct Route 2

Bridge Rail and Flare

Bridge Open

2

VERMONT 14

Phase 3A

US 2 and VT 14
Open to Two-way Traffic

EAST MONTPELIER
BRIDGE NO. 68 ON VT 14

N

VT STATE PLANE GRID

2

Roadway Temporarily Widened

2

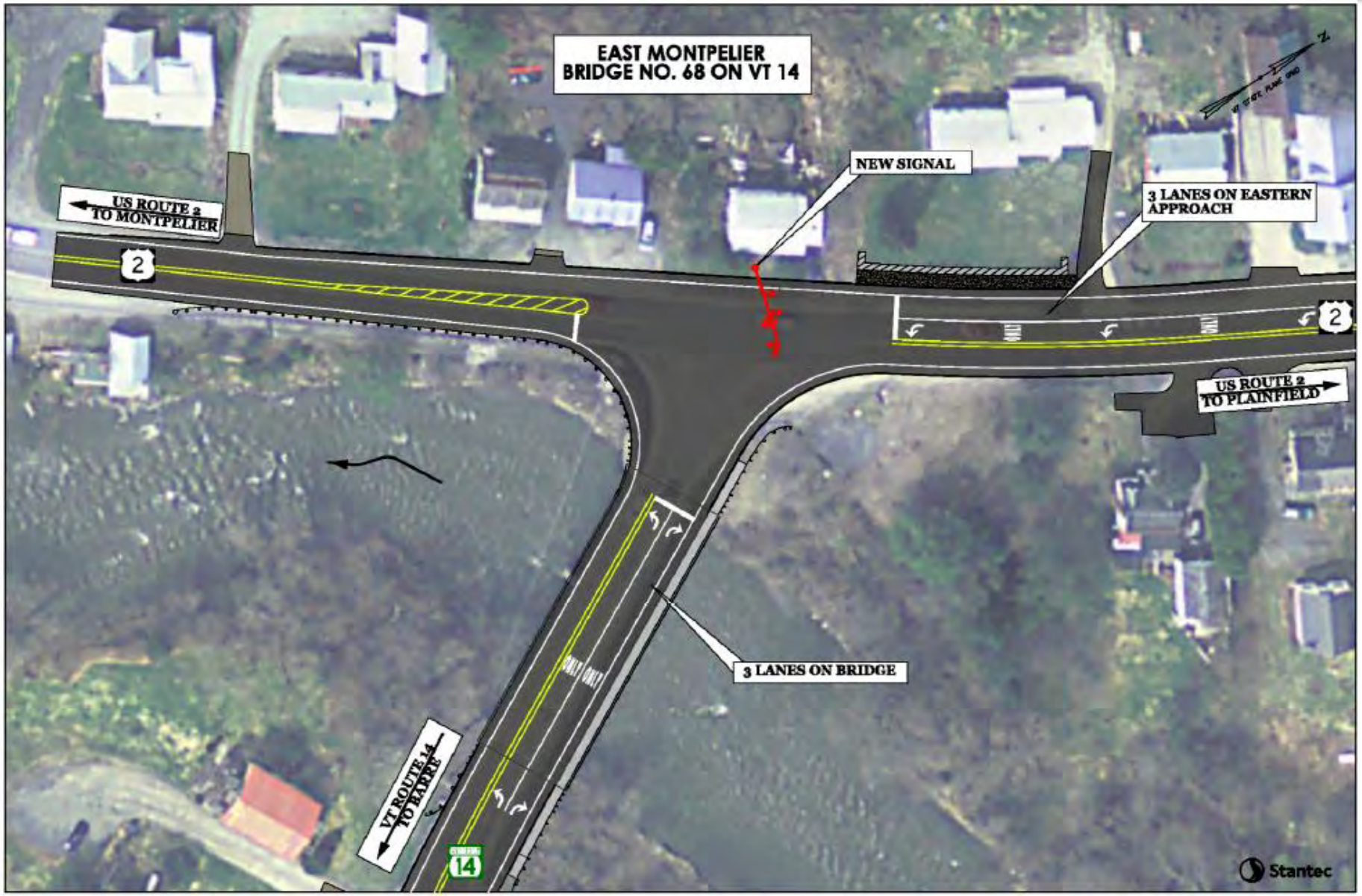
Construct Route 2 (continued)

Bridge Open

VERMONT 14

Phase 3B

US 2 and VT 14
Open to Two-way Traffic



VT14 Bridge
EAST MONTPELIER

VERMONT
AGENCY OF TRANSPORTATION

4. Accelerated Bridge Construction and Innovation

Why Do ABC in Vermont?

- ABC supports short term road closures.
- Narrow existing bridges and roads make phased construction limited option
- Avoid use of Temporary Bridges
- Improved Safety in the workzone
- Reduce Community Disruption due to multi-year projects.
- Improve mobility through the workzone

Accelerated Bridge Construction

- Accelerated Bridge Construction – ABC
  - Been used in Vermont for 10 years
  - Began Programmatic use in 2012

- ABC = Innovative Bridge Systems
  - New Construction techniques and expectations
  - New materials
  - Prefabricated Elements and Systems (PBES)
  - Standard designs
  - *Projects Designed for ABC*

We have done this before!

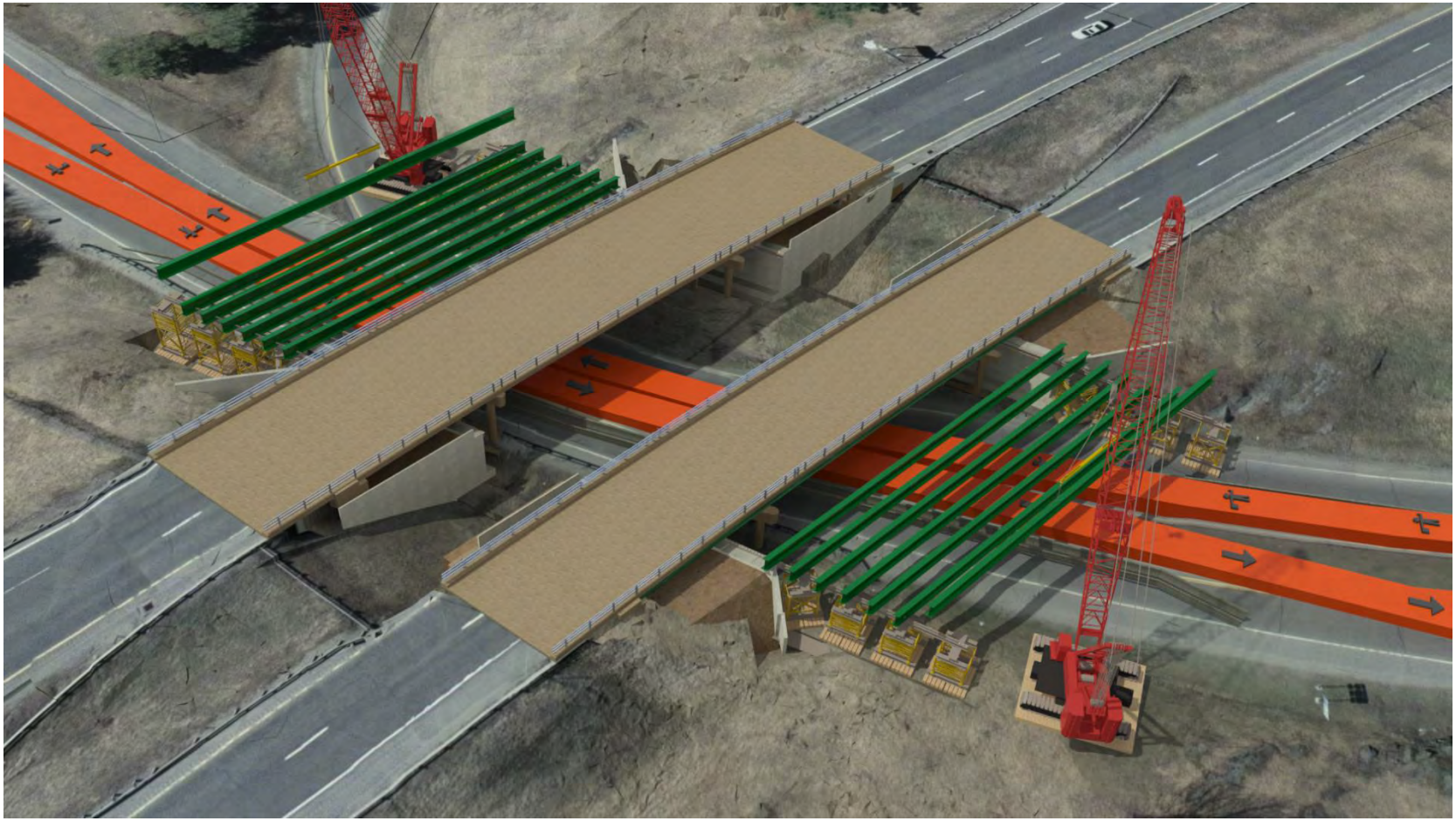
Project	Year	Target Closure	Actual Closure
Addison STP CULV (14)	2013	60 hrs.	44 hrs.
Brighton ER STP 034-3(25)	2013	21 days	18 days
Brighton STP 034-3(21)	2013	60 hrs.	42 hrs.
Woodstock BRO 1444(55)	2013	21 days	18 days
Barnard ER BRF 0241(39)	2014	28 days	28 days
Cavendish ER BRF 0146(13)	2014	35 days	28 days
Enosburg BRO 1448(40)	2014	28 days	25 days
Middlebury RS 0174(8)	2014	45 days	43 days
Rochester BRF 0162(16)	2014	84 hrs.	70 hrs.
Rochester BRF 0162(17)	2014	60 hrs.	54 hrs.
Rochester ER STP 0162(19)	2014	14 days	12 days
Wardsboro BF 013-1(21)	2014	60 hrs.	48 hrs.
Warren BRF 013-4(32)	2014	14 days	12 days
Wilmington STP 013-1(14)	2014	60 hrs.	60 hrs.

Lateral Slides…

- Cavendish Completed in 2014
- Hartford VT Interstate 91
  - Two Weekend Closures Scheduled August 2015
  - Replace two bridges in two weekends
- East Montpelier VT 14

Abutment Construction

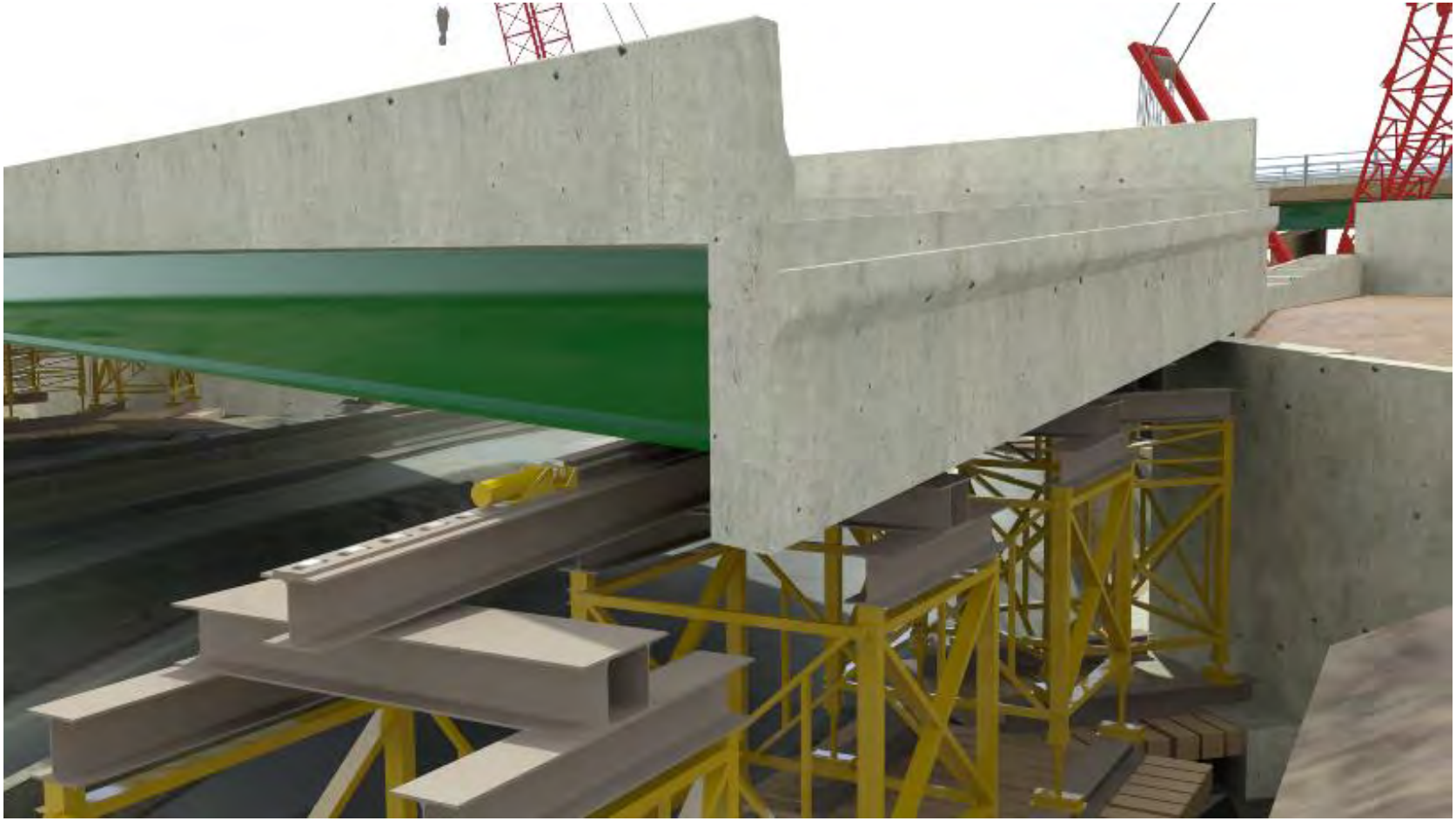
New Bridge Construction



I-91 NB Removal

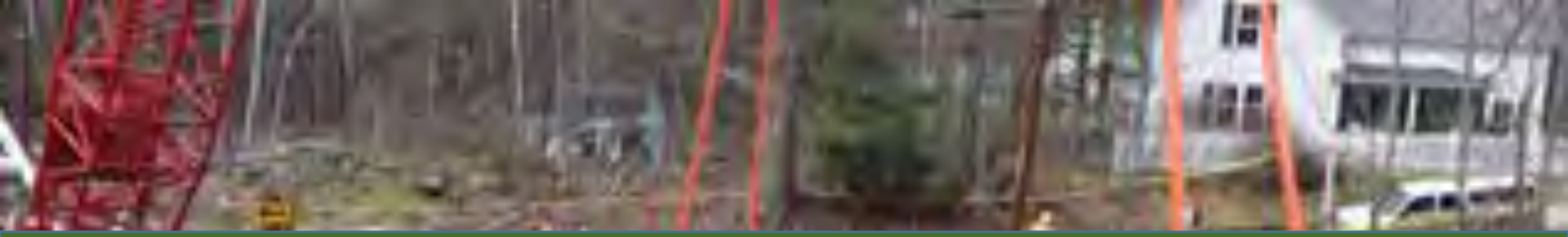
Bridge Lateral Slide

Bridge Lateral Slide



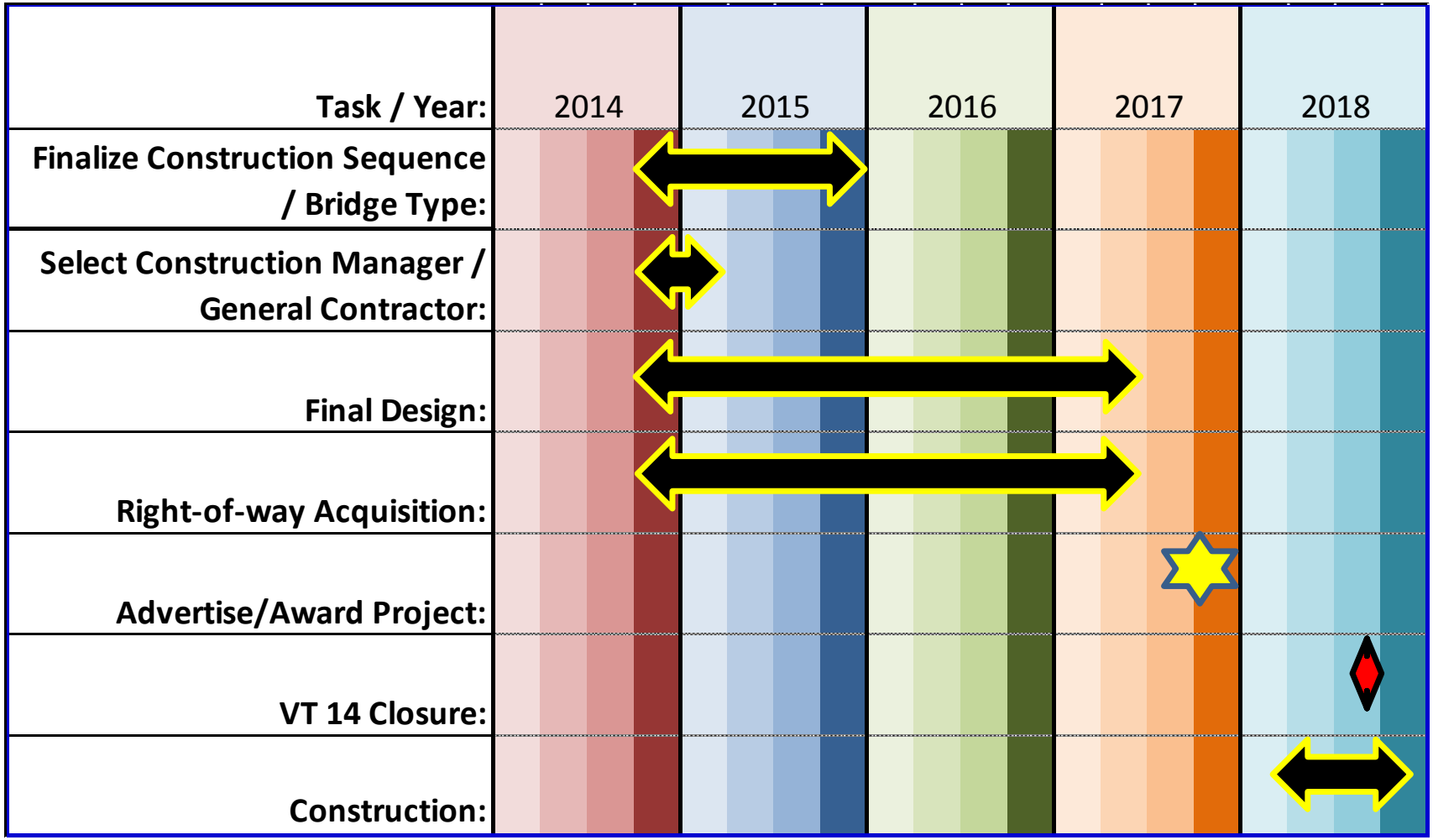
Approach And Roadway Work

Final Bridge



5. What are the next steps?

Project Schedule…



Discussion

Why is VT 14 stop bar set back from intersection?

To allow trucks turning into VT 14 from US 2 east room to make turn.