



# Legislature Public Hearing

PRESENTED TO  
House and Senate Transportation Committees

PRESENTED BY  
VTrans

January 18, 2018



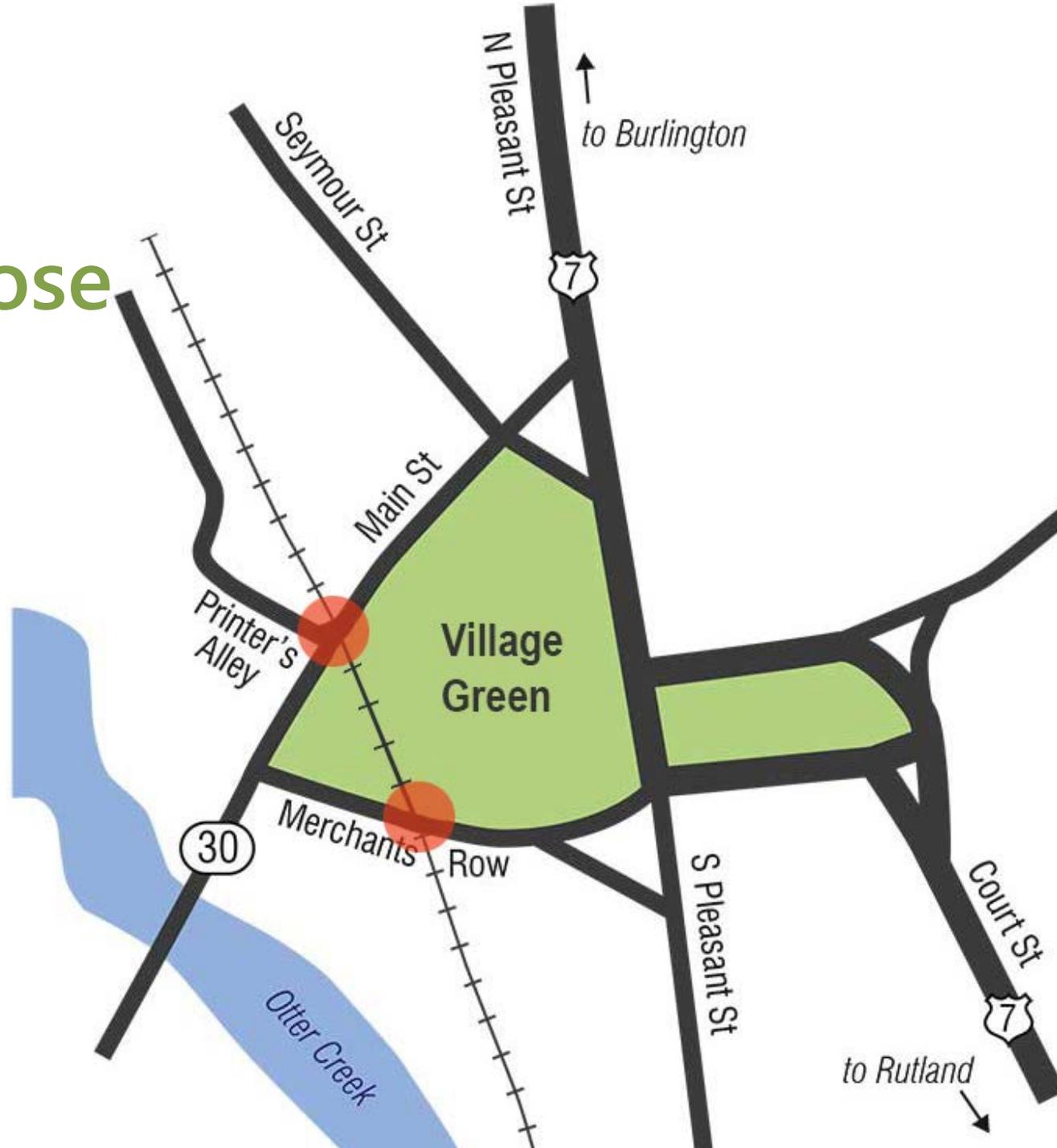


# Hearing Overview

- Purpose and Need
- Scope of Project and Timeline
- Project Status Update
- Estimated Project Costs
- Railroad Detour and Extended Work Windows



# Defining Purpose and Need



***“The purpose of the project** is to address the structural deficiencies of two rail-highway grade-separated bridges in downtown Middlebury where Main Street (VT 30/TH 2 Bridge 102) and Merchants Row (TH 8 Bridge 2) span the Vermont Western Rail Corridor track, to address rail safety concerns, and to provide appropriate vertical and horizontal rail clearances for the design service life of the structure(s) (100 years).”*

—Environmental Assessment  
Section 1.4, Project Purpose





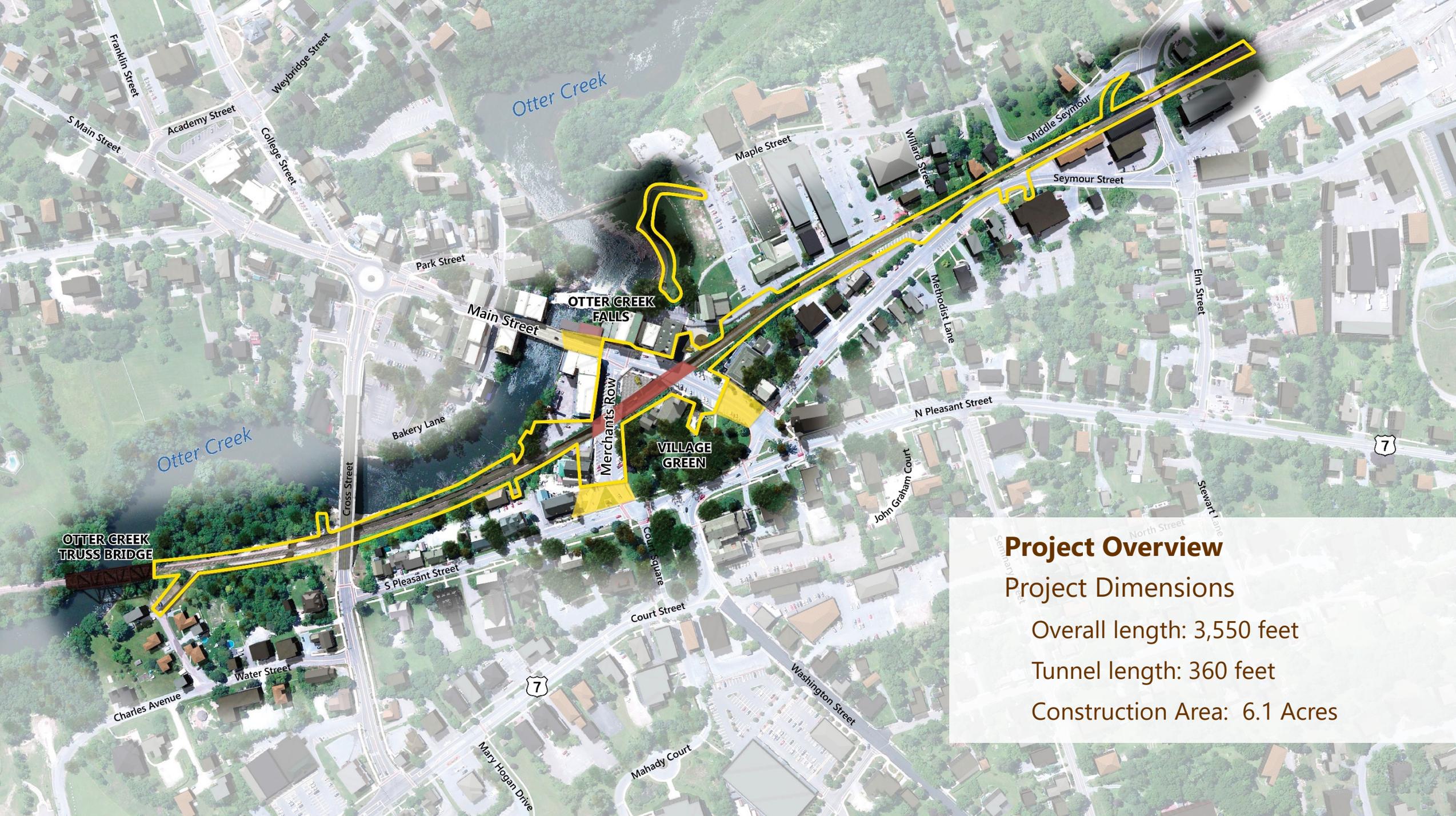
Project Need: *Existing Conditions*  
**Main Street Bridge**



Project Need: *Existing Conditions*  
**Merchants Row Bridge**



Project Need: *Existing Conditions*  
**Vermont Western Rail Corridor Tracks**



## Project Overview

### Project Dimensions

Overall length: 3,550 feet

Tunnel length: 360 feet

Construction Area: 6.1 Acres



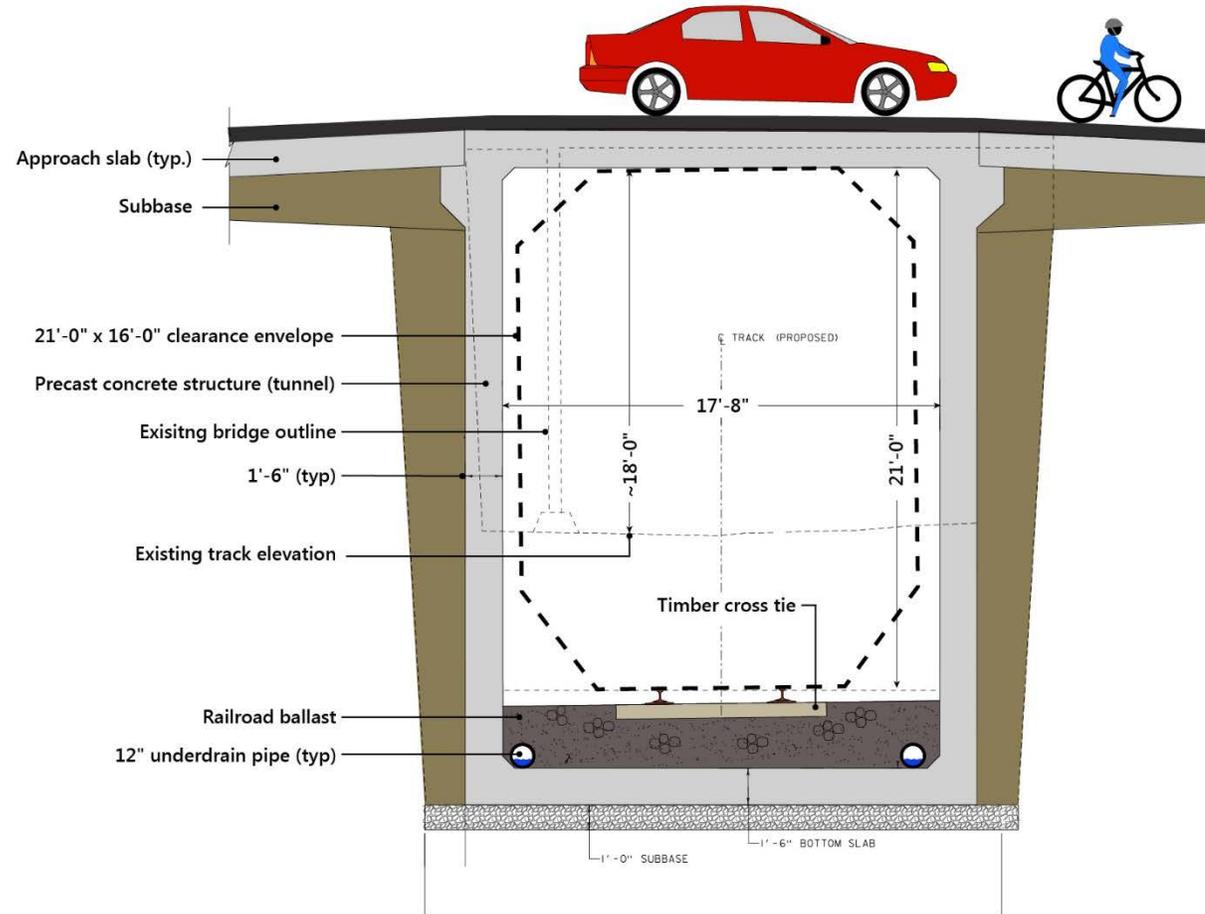
**Merchants Row**

**Main Street**

**Proposed Tunnel Location**



# New Tunnel Design





# New Tunnel Design

- Closed box structure
- 100-year design service life
- Design based on current design codes and standards
- Plan for future potential uses – highway and railroad

**Big question:**

Why not just replace the bridges with a 18'-0" RR clearance? Wouldn't that be easier and reduce the project impact on Middlebury?



# 2018 Construction Activity

- Tree Cutting
- Temporary access roads
- Drainage system
- Underground utility infrastructure

2017

2018

2019

2020

2021

Summer 2018 Temporary access road



**2018** Drainage system installation

Drainage outfall/  
receiving shaft 1

Drive 1

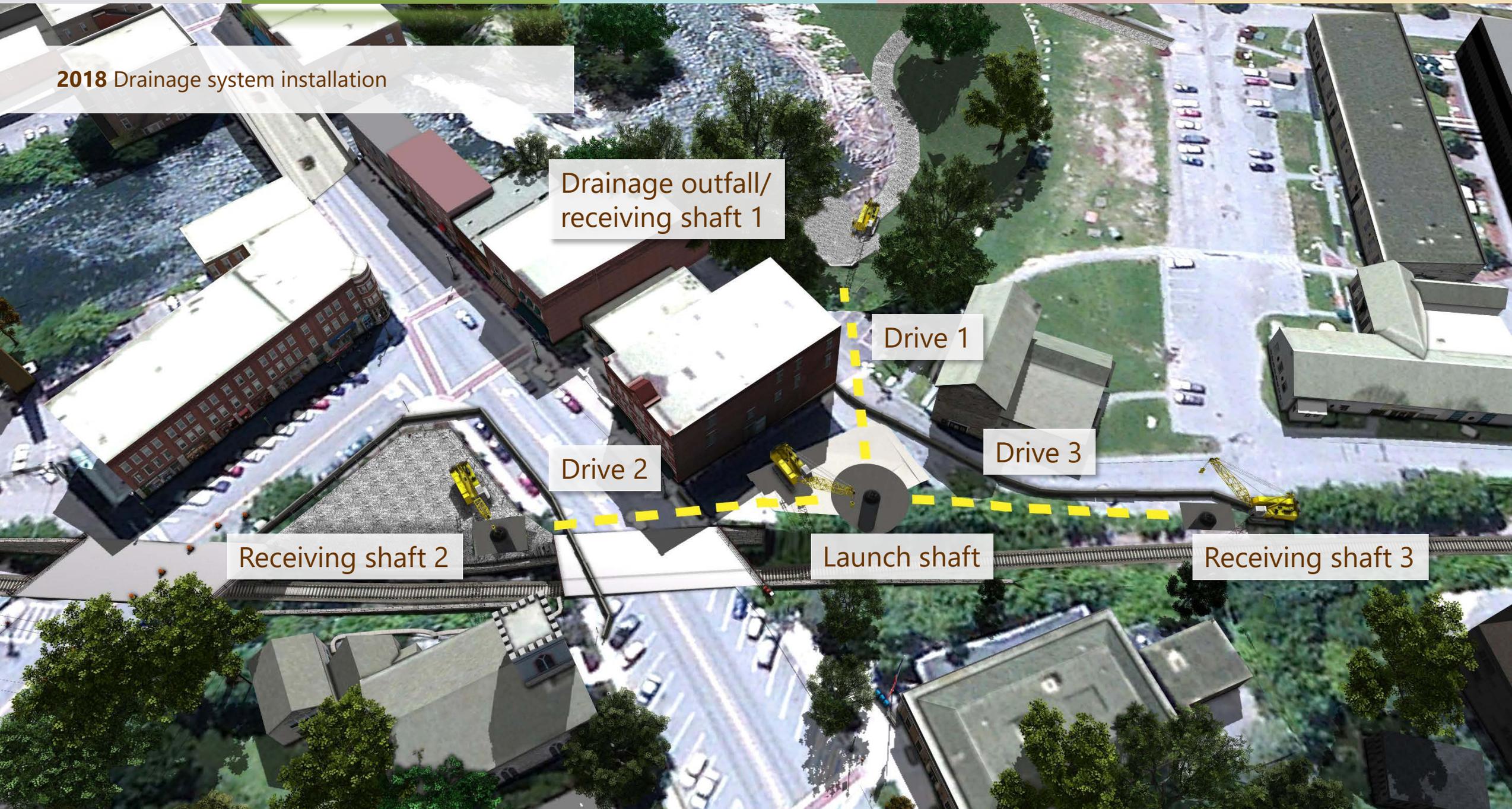
Drive 2

Drive 3

Receiving shaft 2

Launch shaft

Receiving shaft 3



2017

2018

2019

2020

2021

2018 Temporary outfall access road

Park area undisturbed during construction



2017

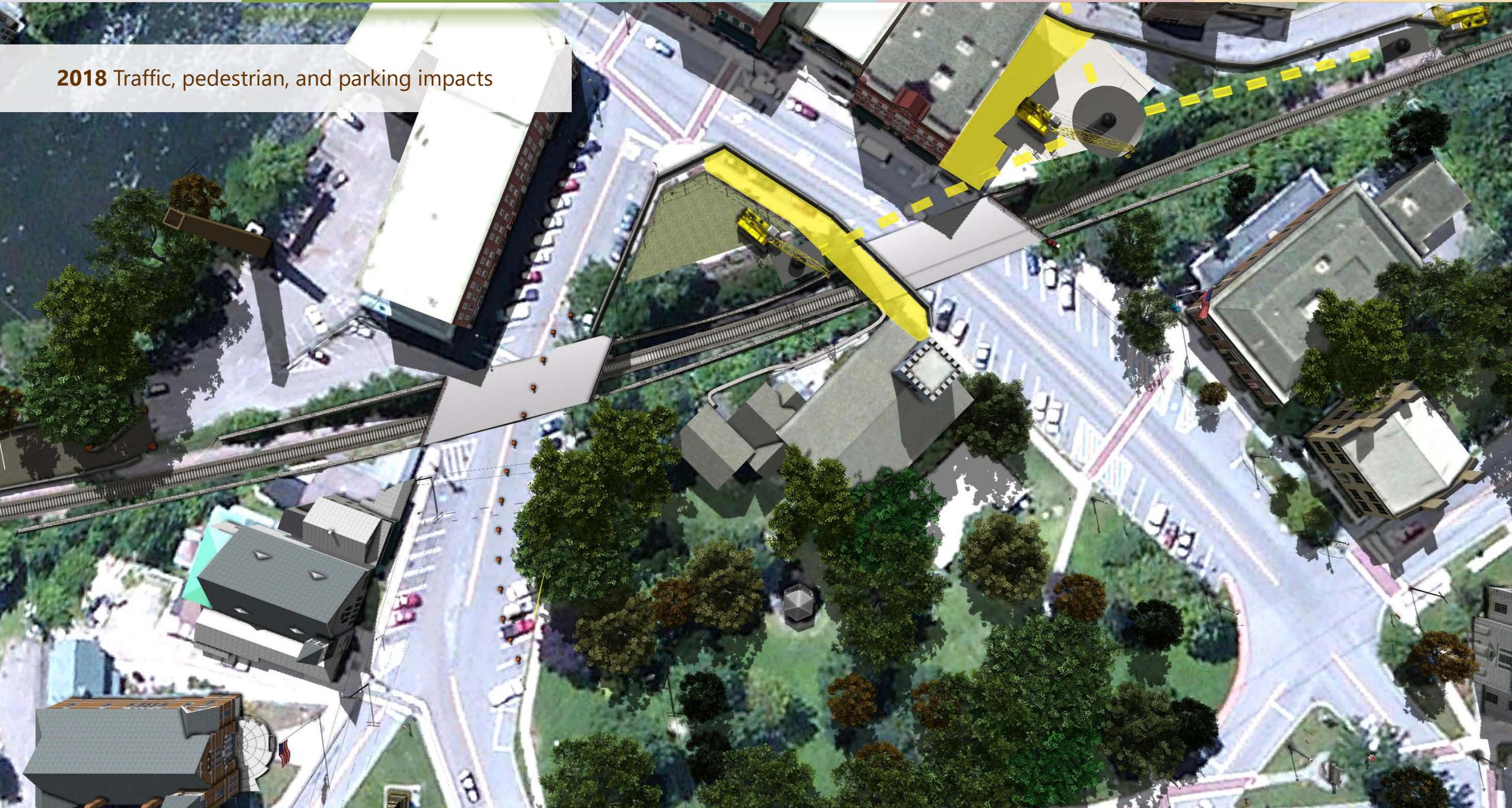
2018

2019

2020

2021

**2018** Traffic, pedestrian, and parking impacts



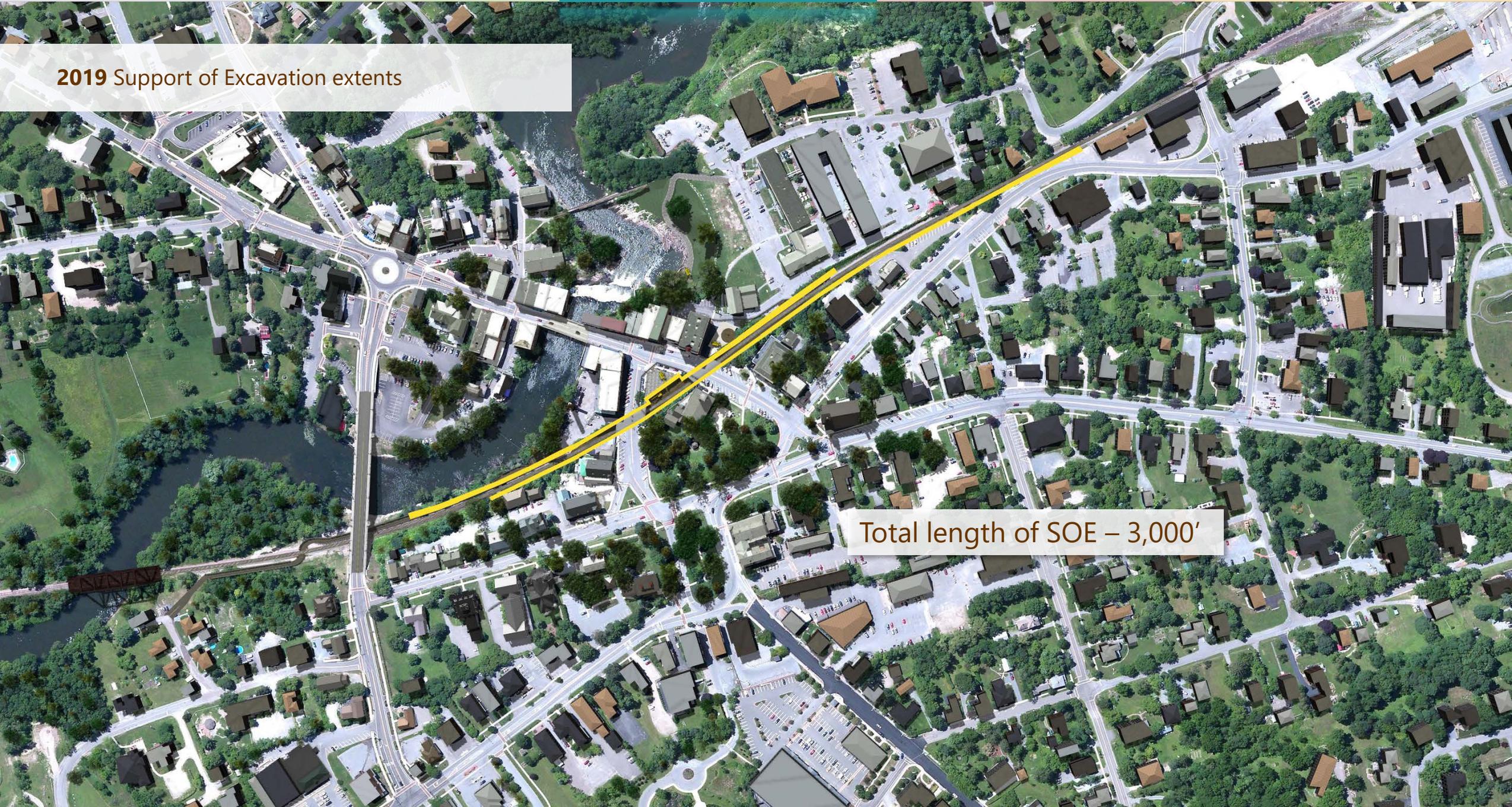
# 2018 Project Impacts

- Traffic, parking, pedestrian, and rail impacts
  - Main Street and Triangle Park area
  - Printer's Alley
  - Weekend railroad shutdowns
- Working hours
  - Anticipated weekday 7:00am–5:00pm
  - Isolated extended working hours

# 2019 Construction Activity

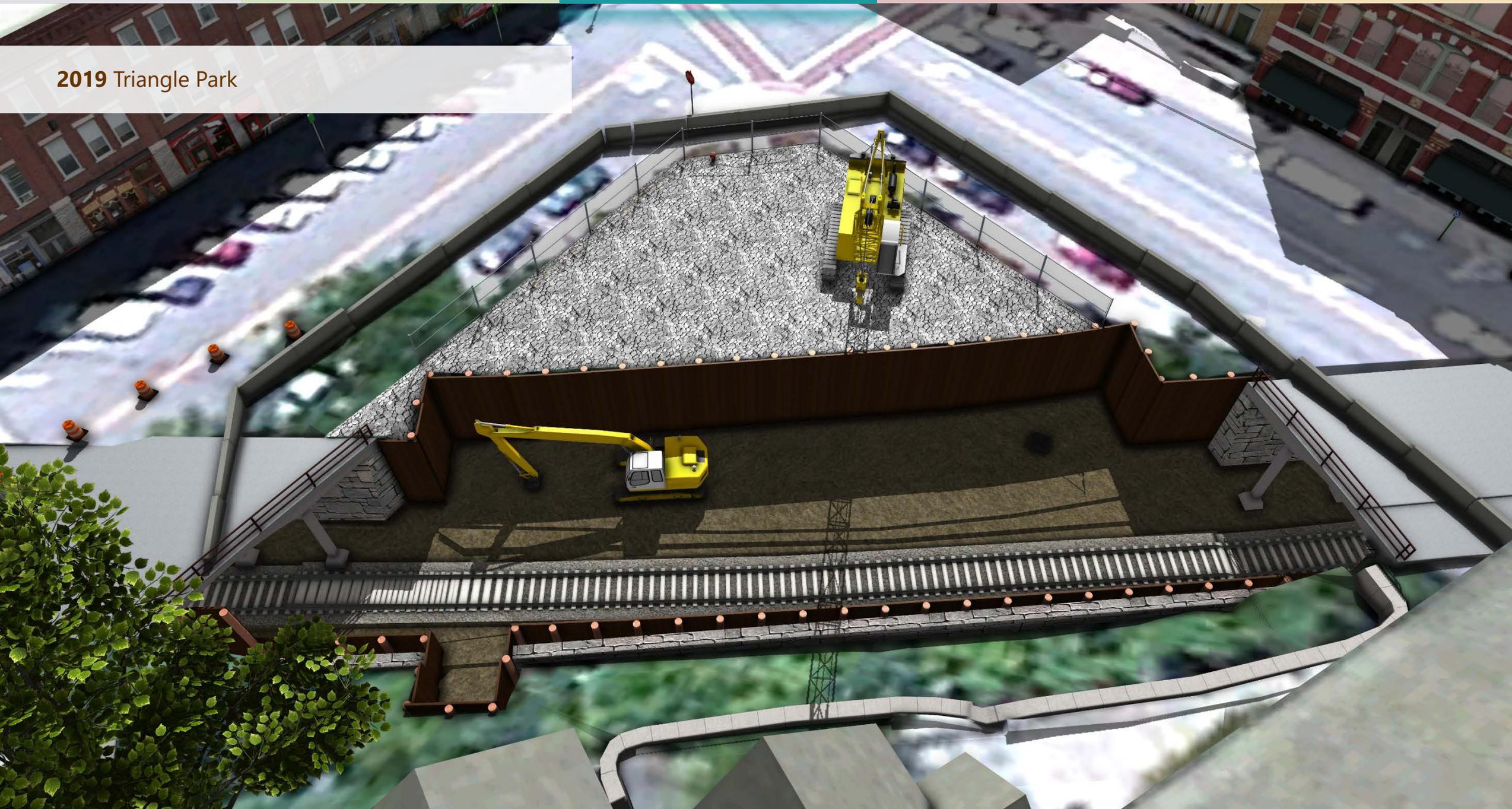
- Water, sewer, and storm drainage utility construction
- Support of excavation installation along railroad corridor
- Areas of initial excavation along railroad

**2019** Support of Excavation extents

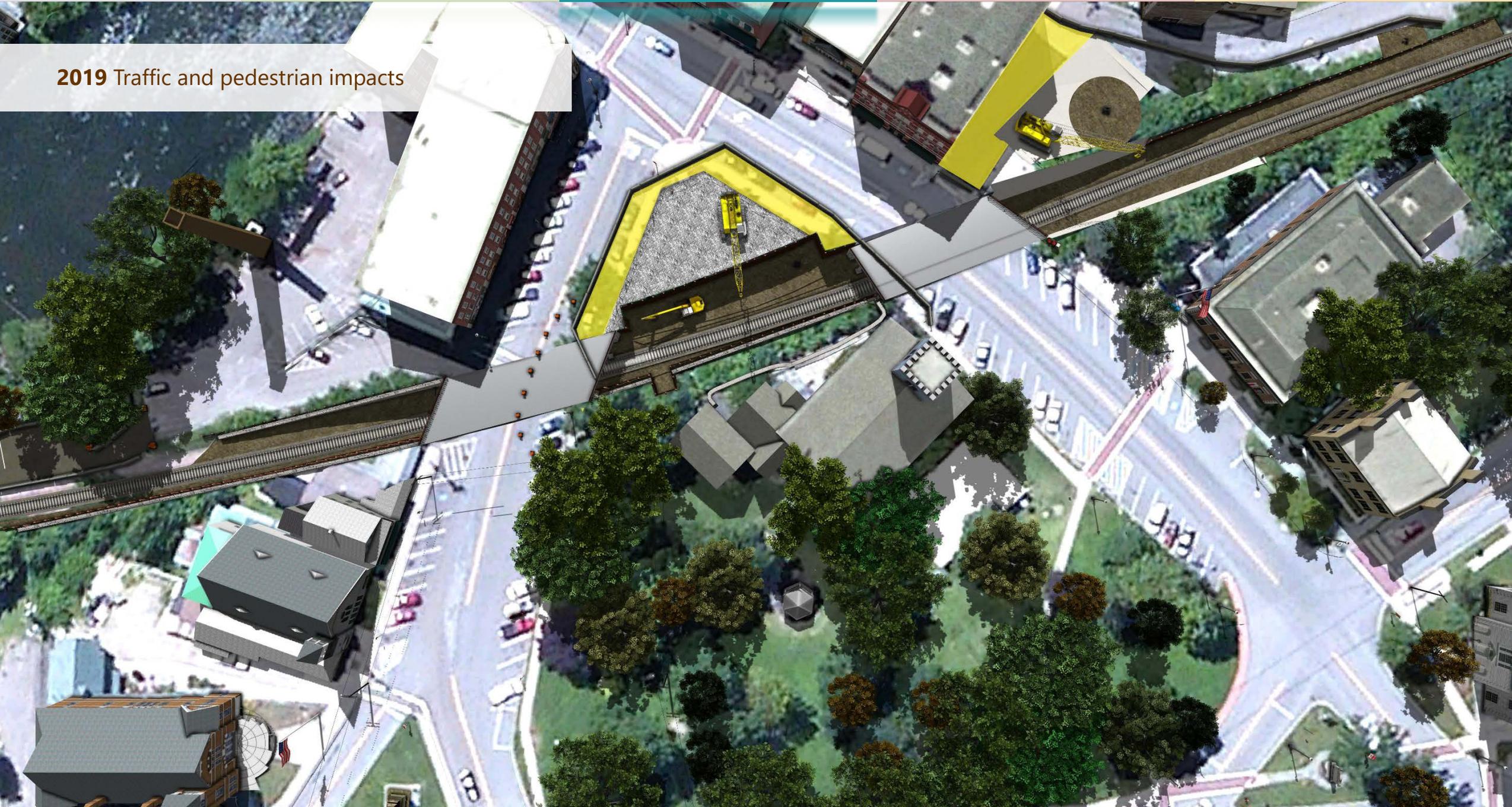


Total length of SOE – 3,000'

**2019** Triangle Park



**2019** Traffic and pedestrian impacts



# 2019 Project Impacts

- Traffic, parking, pedestrian, and rail impacts
  - Main Street and Merchants Row/Triangle Park area
  - Printer's Alley
  - Short term lane closures
  - Limited railroad working hours (approx. 4 hours per day)
- Working hours
  - Anticipated weekday 7:00am–5:00pm
  - Isolated extended working hours

# 2020 Construction Activity

- **Pre-closure** (April and May)
- **Closure** (June, July, August)
  - Main Street and Merchants Row closures
  - Railroad detour
- **Post-closure** (September, October, November, December)

# Accelerated Bridge Construction (ABC)

- 10-week road closure with detour vs. 2-4 years of conventional construction
- New tunnel uses precast concrete pieces to rapidly replace the old bridges
- Project designed to be built quickly

## 2020 Closure Activity (10 Weeks)

- Track removal/temporary bridge removal
- Earth and rock excavation
- Precast tunnel placement
- Return traffic to Main Street and Merchants Row

2017

2018

2019

2020

2021

## 2020 Closure

- Removal of temporary bridges
- Railroad corridor excavation



2017

2018

2019

2020

2021

## 2020 Closure

- Precast tunnel placement
- Railroad approach excavation



2017

2018

2019

2020

2021

## 2020 Closure

- Tunnel backfill
- Continued excavation and tunnel construction at Main Street
- Final U-walls



2017

2018

2019

2020

2021

## 2020 Closure

- Tunnel complete
- Main Street and Merchants Row open to vehicle and pedestrian use
- Continued railroad approach work



# 2020 Closure Project Impacts (10 weeks)

- Traffic, parking, pedestrian, and rail impacts
  - Main Street and Merchants Row closed at bridge crossings
  - Printer's Alley closed
  - Complete railroad shutdown and detour for 10-weeks
- Working hours
  - 24 hours per day, 7 days per week

# 2021 Construction Activity

- Printers Alley Reconstruction
- Final Paving
- Landscaping
- Project Cleanup

2017

2018

2019

2020

2021

**2021** Project completion

Printer's Alley reconstruction

Improved vehicular and pedestrian access



2017

2018

2019

2020

2021



Renderings by LandWorks, 2013

# 2021 Project Impacts

- Traffic, parking, and pedestrian impacts
  - Phased lane and sidewalk closures
- Working hours
  - Anticipated 7:00am–5:00pm



## Summary of 2018 Downtown Impacts

- Short term closures of Printer's Alley
- Utility duct bank installation across Merchants Row
- Minor construction noise during daytime working hours

2017

2018

2019

2020

2021



## Summary of 2019 Downtown Impacts

- Short term closures of Printer's Alley
- Water and sewer relocation - trenching across Main Street and Merchants Row
- Minor construction noise from work "in the trench" during daytime working hours

2017

2018

2019

2020

2021



# Summary of 2020 Downtown Impacts

- Printer's Alley Closures
- Main Street and Merchants Row closure for up to 10 weeks
- Heavy construction activity 24 hours per day, 7 days per week during the 10 week closure
- Periods of heavy noise during the 10 week closure

2017

2018

2019

2020

2021

# What's happened in the last year?

- Demolition of existing bridges / temporary bridges
- NEPA Environmental Assessment
- Endangered Bats Biological Evaluation

# 2017 Construction Activity

- Bridge Demolition
- Temporary Bridge Construction

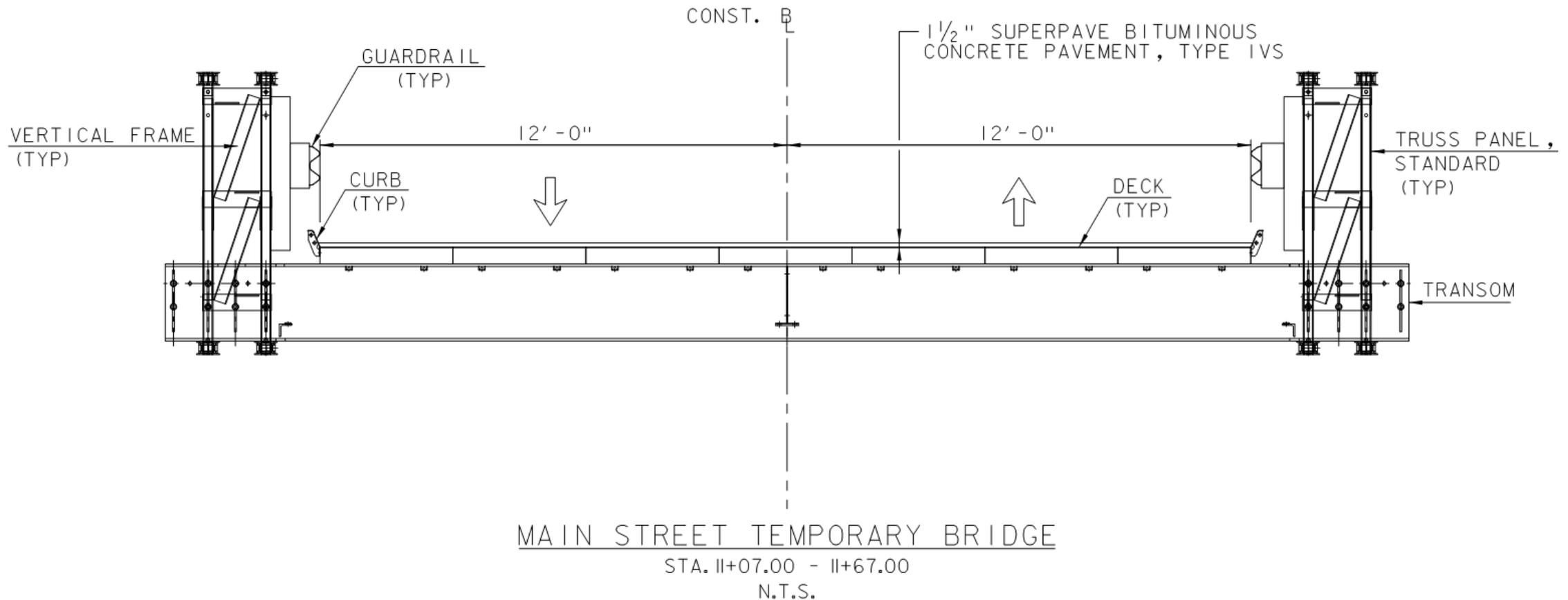


**Main Street Bridge Demolition**



**Merchants Row Bridge Demolition**

# Main Street Temporary Bridge



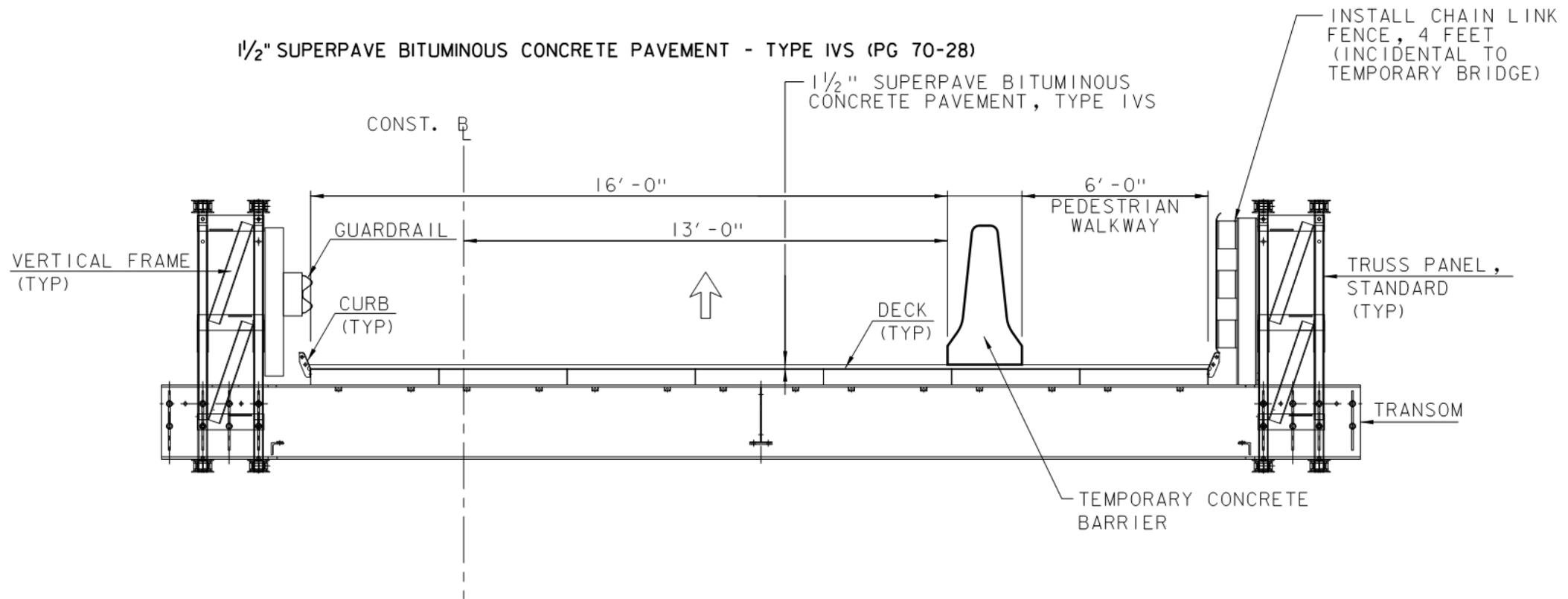


**Main Street Temporary Bridge**



**Main Street Temporary Bridge**

# Merchants Row Temporary Bridge



MERCHANTS ROW TEMPORARY BRIDGE

STA. 21+44.00- 22+04.00

N.T.S.



**Merchants Row Temporary Bridge**



**Merchants Row Temporary Bridge**



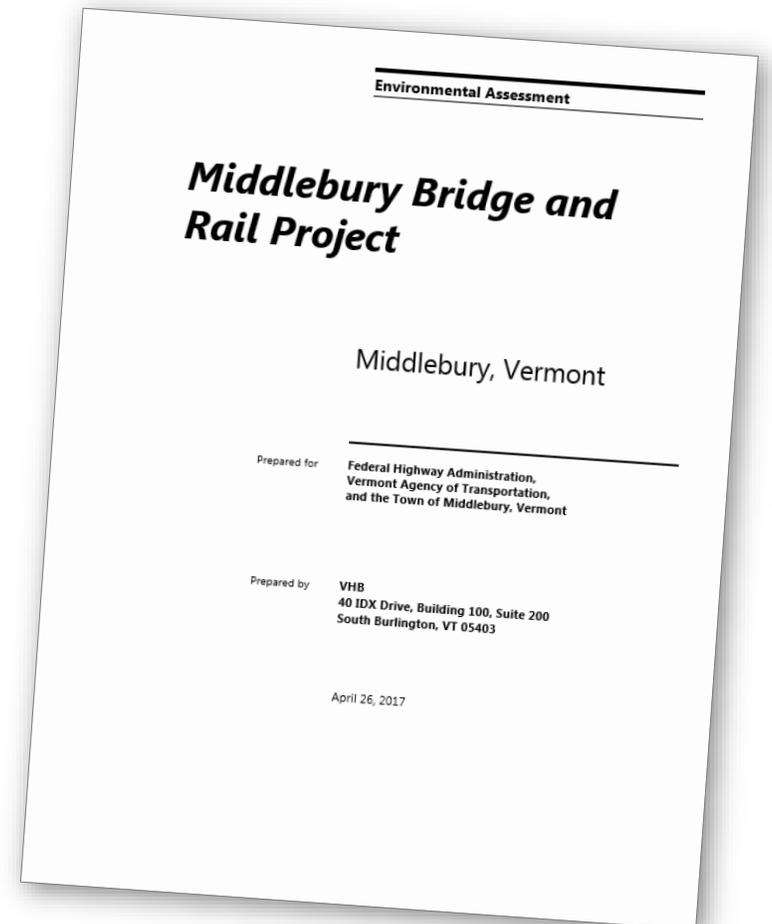
# National Environmental Policy Act (NEPA)

Federal requirement that federal agencies must assess the environmental effects of their proposed actions prior to undertaking major federal actions including expenditure of federal funds.



# National Environmental Policy Act (NEPA)

- Levels of NEPA environmental review
  - Categorical Exclusion (CE)
  - **Environmental Assessment (EA)**
  - Environmental Impact Statement (EIS)





# Environmental Assessment Process

- ✓ **Purpose and need**
- ✓ **Alternatives considered**
- ✓ **Identification of Proposed Action**
- ✓ **Resource assessment, effects & mitigation**
- ✓ **Public Hearing & Comment Period**
- ✓ **FHWA determination**
  - Finding of no significant impact (FONSI)





# Resources Effects Summary from EA: **Construction**

<b>Land use</b>		<b>Noise and vibration</b>	
<b>Traffic</b>		<b>Parks, recreation, and conservation land</b>	
<b>Wetlands</b>		<b>Historic resources</b>	
<b>Surface waters</b>		<b>Archaeological resources</b>	
<b>Groundwater and drinking water resources</b>		<b>Acquisitions</b>	
<b>Floodplains and floodways</b>		<b>Social and economic considerations</b>	
<b>Wildlife</b>		<b>Utilities and emergency services</b>	
<b>Threatened and endangered species</b>		<b>Hazardous/Contaminated materials</b>	
<b>Air quality</b>			

*Beneficial effect*

*No effect*

*Adverse effect*



# Resources Effects Summary from EA: **Completed Project**

<b>Land use</b>		<b>Noise and vibration</b>	
<b>Traffic</b>		<b>Parks, recreation, and conservation land</b>	
<b>Wetlands</b>		<b>Historic resources</b>	
<b>Surface waters</b>		<b>Archaeological resources</b>	
<b>Groundwater and drinking water resources</b>		<b>Acquisitions</b>	
<b>Floodplains and floodways</b>		<b>Social and economic considerations</b>	
<b>Wildlife</b>		<b>Utilities and emergency services</b>	
<b>Threatened and endangered species</b>		<b>Hazardous/Contaminated materials</b>	
<b>Air quality</b>			

*Beneficial effect*

*No effect*

*Adverse effect*



# Finding of No Significant Impact

- Federal Highway Administration Document
  - Summarized effects of the Proposed Action
  - Examination of significance criteria
  - Public involvement summary
  - Statement that the Proposed Action does not result in a significant impact on the human environment
  - Approval of the Proposed Action



# Endangered Bats Biological Evaluation

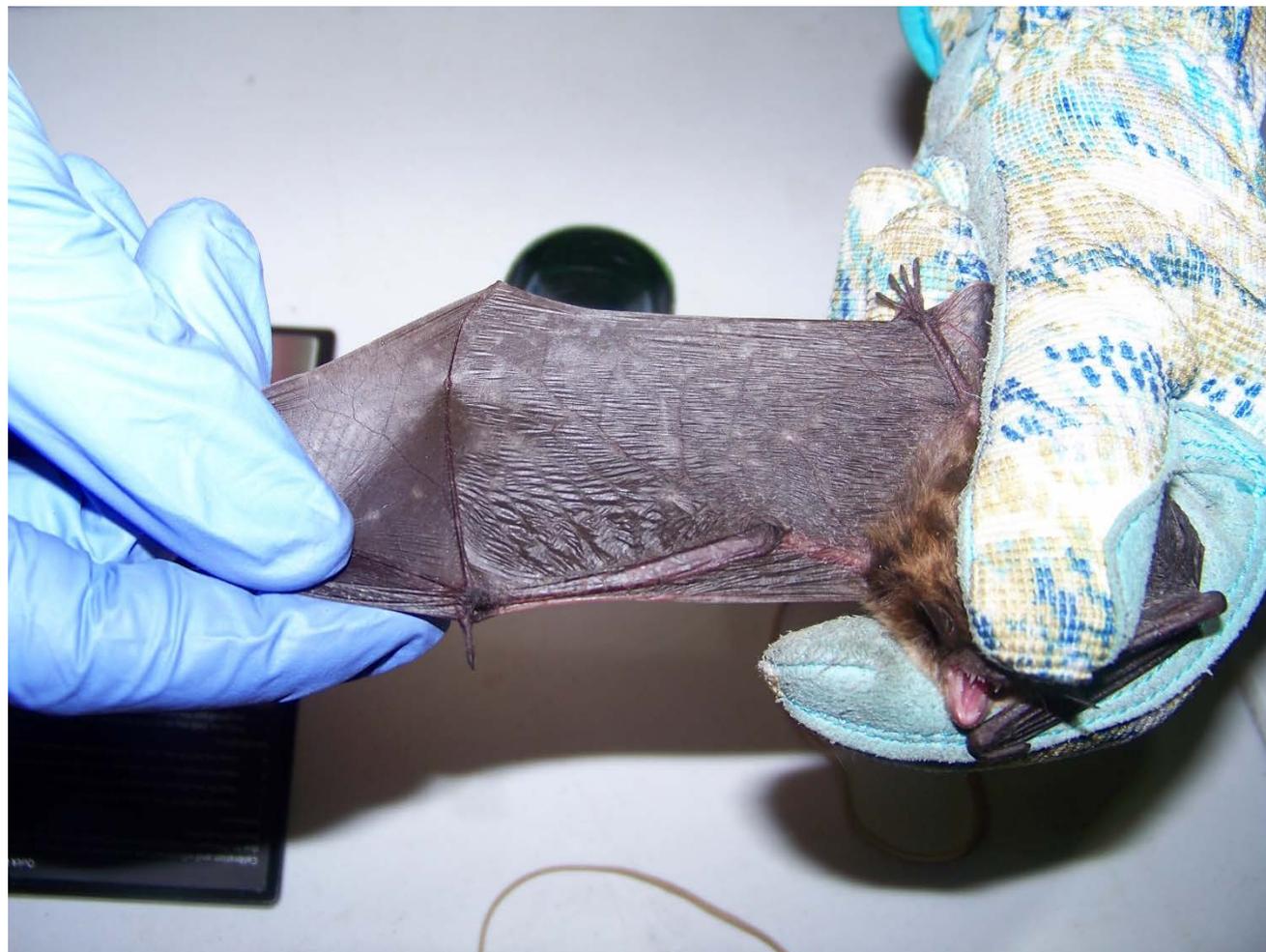
- Section 7 of the Federal Endangered Species Act
- Formal Consultation with US Fish and Wildlife Service





# Endangered Bats Mitigation Efforts

- Information Collection
  - Acoustic Monitoring
  - Mist Netting
  - Transmitter Tracking
- Installation of artificial bat houses
- Installation of artificial roosting poles





# Biological Evaluation Outcome

- US Fish and Wildlife Service Document
  - Information collection resulted in significant data related to the Northern Long Eared Bat
  - Approval to move forward with planned mitigation efforts
  - Allows current project scope to proceed without further consultation



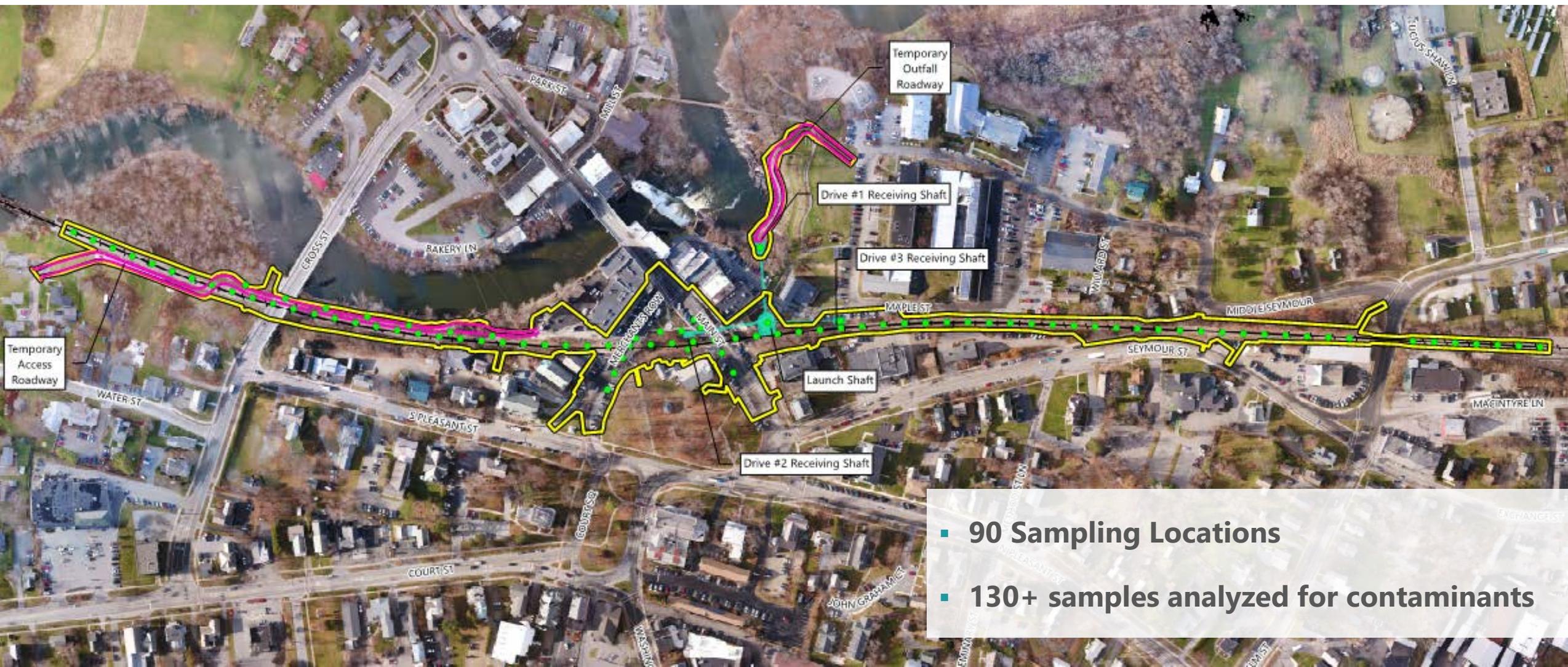
**Big question:**

Are contaminated soils a concern?





# Contaminated Soils – Site Characterization





## What's the concern?

- Gasoline/Diesel spills
- Herbicides/Pesticides
- Heavy metals



## Contaminated Soils

- Site characterization: Non-hazardous waste contaminated soils
- Regulated by State of Vermont Department of Environmental Conservation (DEC)
- DEC approval of formal “Corrective Action Plan” to excavate, transport, and dispose of contaminated soils properly



# Corrective Action Plan

- General work summary
- Identification of contaminants
- Identification of sensitive receptors
- Construction procedures – including requirement for onsite environmental manager to monitor excavation
- Identification of appropriate disposal sites



## Long-Term Soil Removal Benefits

- Results in removal and disposal of currently contaminated soils
- Results in overall decrease of contaminants in Middlebury downtown area

**Big question:**

Will the project effect groundwater?





## Current Day Groundwater

- Existing topography represents flow path from high gradient to low gradient and ultimately into Otter Creek
- Subsurface topography of bedrock is mapped and effects the groundwater flow paths
- Existing building foundations effect groundwater flow paths
- Current groundwater table is shallow



## What's the Concern?

- Proposed tunnel is a closed box designed to keep groundwater out, which is beneficial to maintaining current groundwater condition
- Concern over the tunnel structure creating a barrier to groundwater flow



# Groundwater Analysis Results

- Tunnel structure is proposed to be constructed with crushed rock base which allows for flow under the structure
- Initial groundwater flow analysis and comparison of existing vs proposed conditions results in no changes
- Further data collection and analysis is ongoing



## Estimated Project Costs

- Temporary Bridges (actual cost) - \$2,275,000
- Preliminary Engineering - \$7,850,000
- Construction - \$48,800,000
- Railroad Detour and Extended Work Windows - \$12,000,000
- **Total estimated construction cost for new tunnel = \$60,800,000**
- **Total estimated project cost = \$70,925,000**

**Big question:**

How much time and money could we save if we built the new tunnel to 18'-0" vertical clearance?





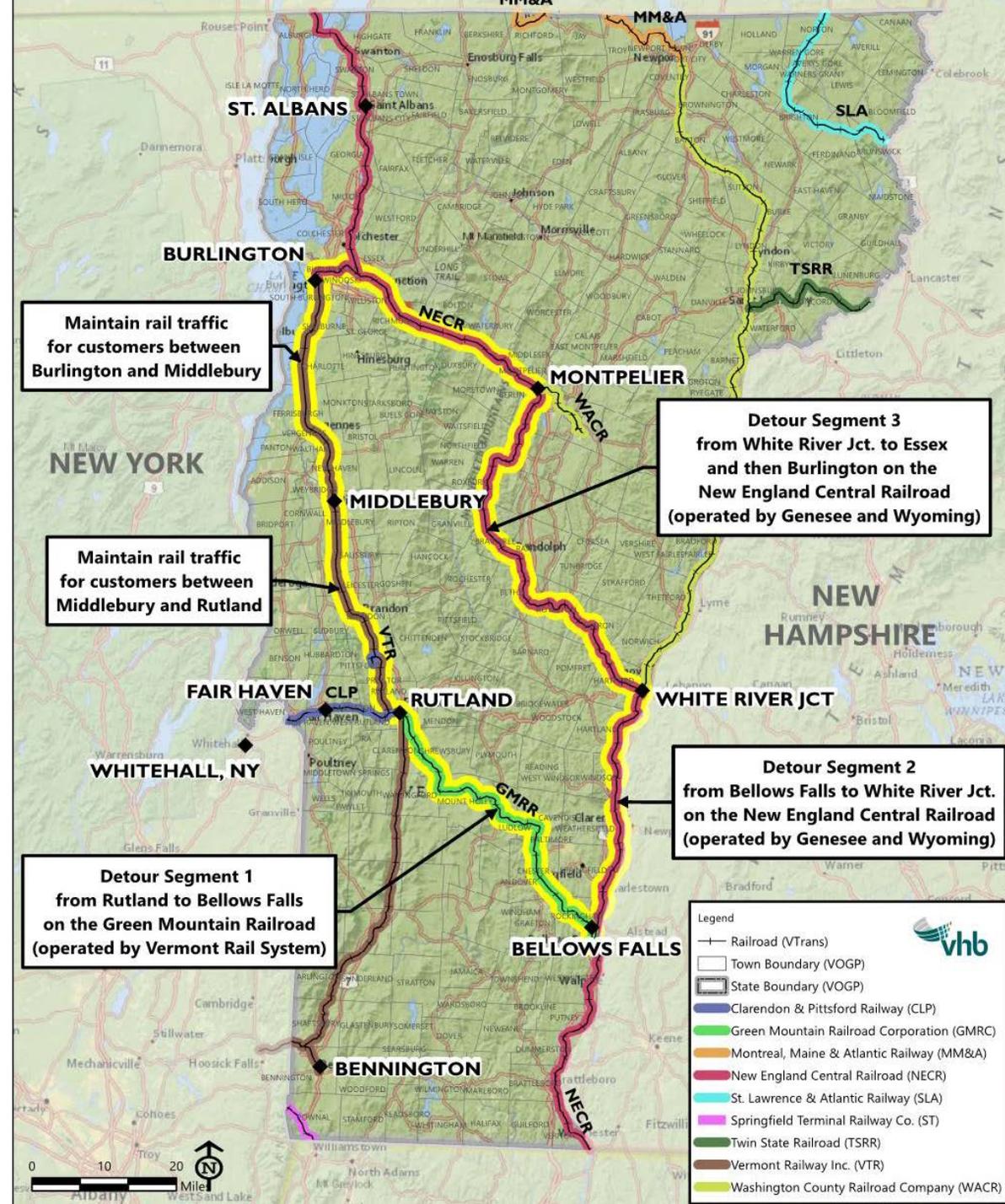
# Railroad Detour and Extended Work Windows

- Railroad Detour – June, July, August 2020
- Extended work windows – 2019, 2020, 2021



# Railroad Detour

- Rutland – Bellows Falls – White River Junction – Essex – Burlington
- 192 total miles = 128 additional miles over current route
- Requires additional 24 hours roundtrip of transport time for freight to Burlington
- Transportation fuel supply – over 25% of transportation fuel supplied to Vermont is transported to Burlington on the Western Rail Corridor





# Physical Railroad Infrastructure

- Sidings/switches
- Improvements to existing railroad track and bridge improvements to allow for increased speeds (25mph to ensure that only 24 additional hours are needed)
- Fuel delivery terminals for multicar loading and unloading



## Leased Railroad Equipment

- Additional fuel railcars to keep deliveries happening every day
- Additional locomotives to move additional cars on detour route
- Additional locomotives to move freight from Rutland to Middlebury and Burlington to Middlebury on either end



## Temporary Railroad Labor

- Train assembly in Rutland, Bellows Falls, and Burlington
- Operation of additional locomotives/freight transport
- Servicing of additional locomotives



# Additional Railroad Expenses

- Fuel costs
- Equipment maintenance
- Infrastructure maintenance
- Insurance to run on other railroads



## Railroad Detour – Long Term Benefits

- Vermont railroad network resiliency
- Improved operational efficiency
- Defined model for future railroad detour agreements



# Approach to Public Outreach

- Open and continuous communication
  - Project phone number (802) 272-1248
  - E-alerts/project updates
  - Meetings—large and small
  - Project website
- Identify opportunities to collaborate
  - Scheduling
  - Site tours/education programs



# vtrans.vermont.gov/projects/middlebury



VERMONT OFFICIAL STATE WEBSITE



STATE OF VERMONT

## Agency of Transportation

About the Project

Schedule

Documents Library

FAQs

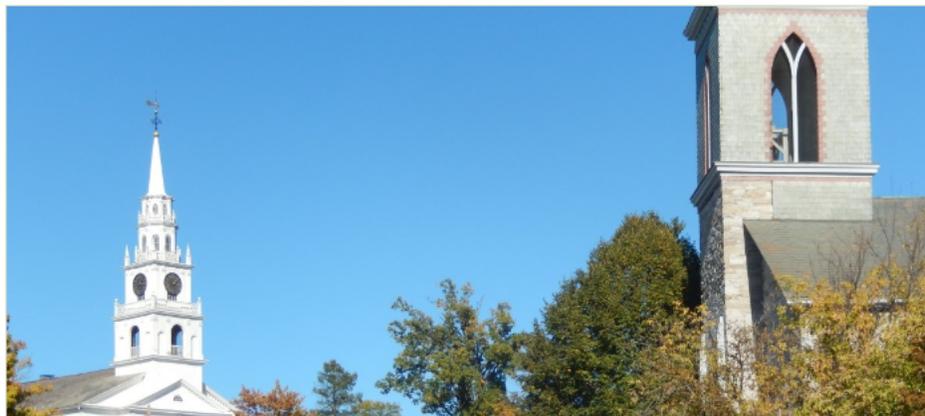
Contact Us



# Middlebury Bridge & Rail Project

### ABOUT THE PROJECT

The Vermont Agency of Transportation (VTrans), in collaboration with the Town of Middlebury, is undertaking a project to replace two nearly 100 year old rail bridges in the center of Middlebury with a tunnel by the summer of 2020. The two bridges are about 300 feet apart, with one located on Main Street/VT 30 and the other on Merchants Row.



### Project Status Update

**November:**

Public Meeting: November 17<sup>th</sup> at Town Hall Theater, Middlebury

**December:**

Tree clearing along rail line scheduled.



## Concluding Thoughts

- Without the railroad detour or extended work windows, the project estimate increases by \$30 million and the 10-week ABC period expands to 4 years
- Reducing the vertical clearance from 21-ft to 18-ft results in potential savings of approximately \$1 million and 7 calendar days of schedule savings



## Concluding Thoughts

- Timing is critical: small delays now could result in pushing the entire project back a full year due to the railroad shutdown timeframe
- Amtrak service from Rutland to Burlington will be ready to begin in 2020, however beginning that service will wait until after this project is completed