

# PUBLIC INFORMATION MEETING #2

*NYCDEP CAT-252 – Replacement of  
Esopus Creek and Rte. 28A Railroad  
Bridges*

*October 27, 2015*



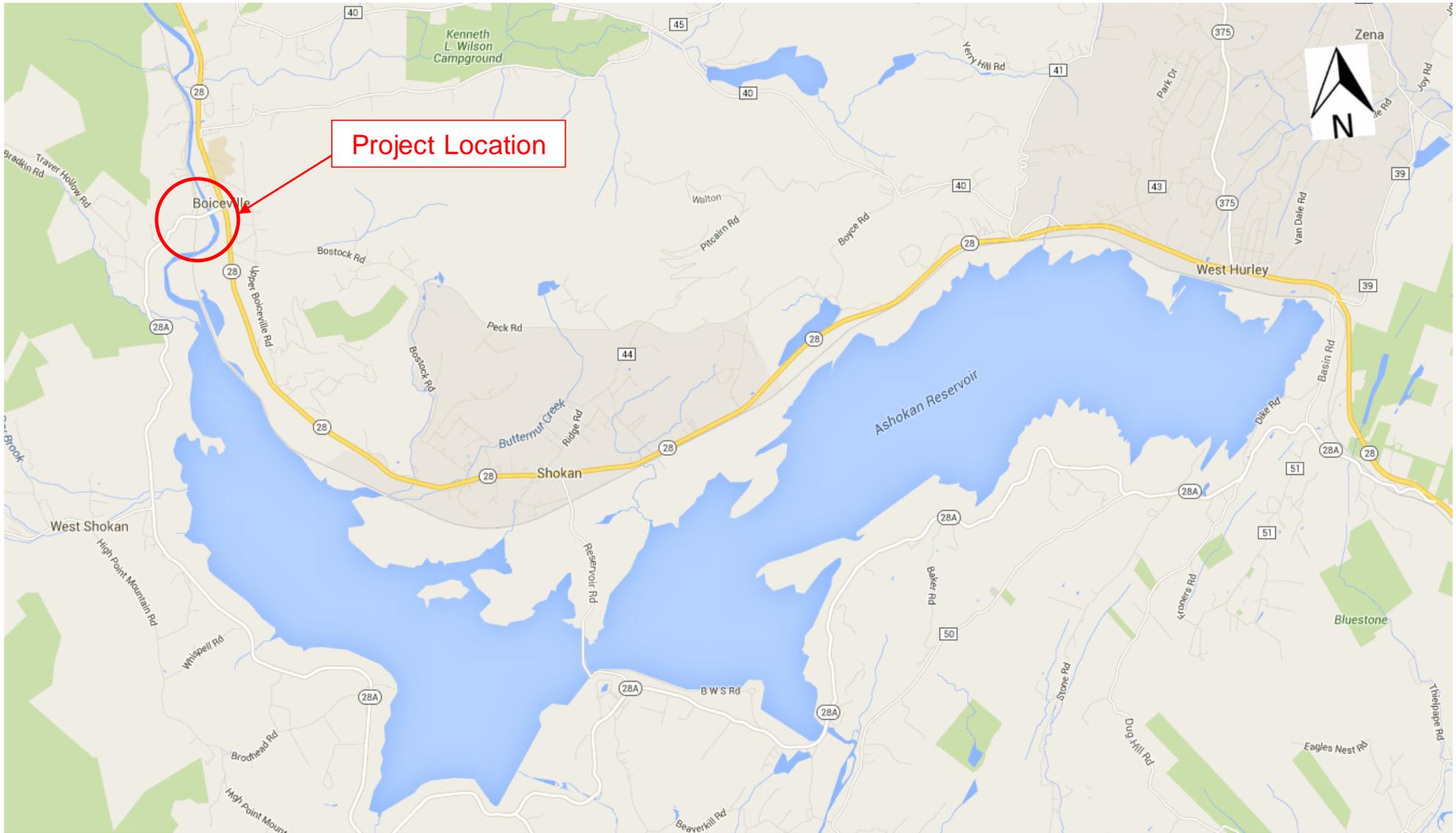
QUESTIONS?



# PRESENTATION OUTLINE

- Introductions
- Project History
- Existing Conditions
- Work Completed to Date
- Project Objectives
- Alternatives Analysis
- Project Schedule
- Next Steps
- Questions

# PROJECT LOCATION



# PROJECT HISTORY

- Bridges were constructed in the early 1900's
- Bridges are inspected every two years by NYSDOT
- Bridges are considered at the end of their useful life
- NYCDEP addressed Yellow Flag condition on the Esopus Creek Bridge in 2013
  - Repair to spalled concrete at Span 5 floorbeam
- NYCDEP initiated design of replacement project in July 2014

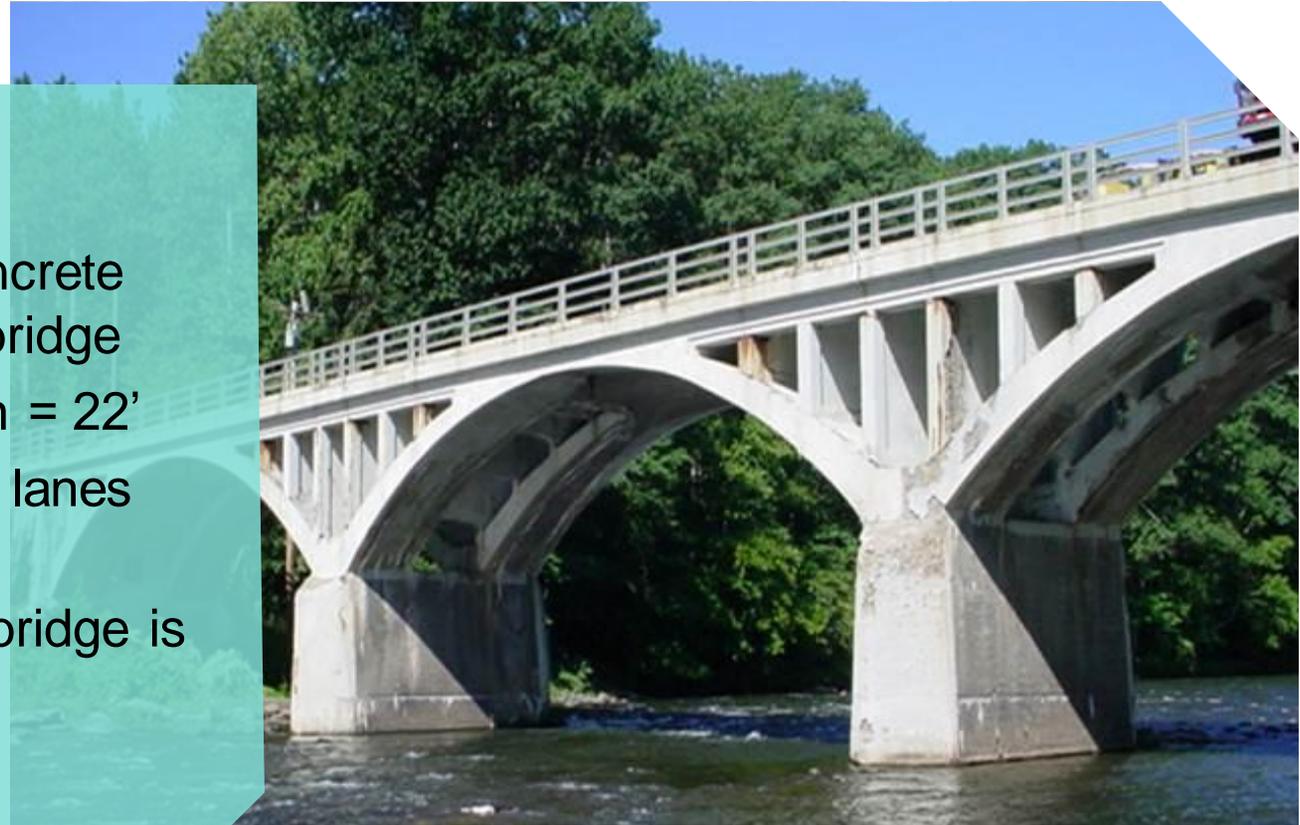


# EXISTING CONDITIONS



# EXISTING CONDITIONS

- Built in 1913
- 454' long, 5-span concrete open-spandrel arch bridge
- Bridge roadway width = 22'
- Carries two 11' travel lanes and no shoulders
- The condition of the bridge is beyond its useful life



Esopus Creek Bridge

# EXISTING CONDITIONS



- Spalling with exposed rebar throughout
- Cracking with efflorescence
- City performed repairs including joint replacement and Class A concrete repairs
- Posted no 'R' Permit Vehicles (no vehicles above legal weights permitted)

# EXISTING CONDITIONS

- Built in 1913
- 39' long, single span concrete thru-girder/floorbeam bridge
- Bridge roadway width = 22'
- Carries two 11' travel lanes and no shoulders
- The bridge is beyond its useful life



Rte. 28A Railroad Bridge

# EXISTING CONDITIONS



- Spalling with exposed rebar on primary members
- Underside of deck and abutments exhibit spalled and loose concrete
- No flag conditions

# NON-STANDARD ROADWAY GEOMETRY



Non-standard vertical sight distance



Non-standard bridge and shoulder width



# NON-STANDARD ROADWAY GEOMETRY



Non-standard horizontal S-curve



Non-standard Y-type intersection

# DESIGN WORK COMPLETED TO DATE

- Topographic and Boundary Survey
- Hydraulic Analysis
- Coordination with Woidt Engineering for Flood Study
- Traffic Study
- Environmental Screenings
- Subsurface Investigation (soil borings) - permitting
- Alternatives Analysis
- Public Outreach
- Agency Coordination



# PROJECT OBJECTIVES

- **Project Objective #1** – *Provide a new structure based on current NYSDOT standards with a service life of 75-years*
- **Project Objective #2** - *Improve bridge, approach roadway and intersection geometry*
- **Project Objective #3** – *Address / improve hydraulic performance in coordination with Town of Olive’s Flood Mitigation Study*
- **Project Objective #4** – *Provide for future bicycle / pedestrian accommodation per the Ulster County Inter-governmental Agreement*

# SUSTAINABLE DESIGN

*Goal to achieve a gold or higher sustainability rating*

## → **Natural Resource Management**

- Preservation of wetlands and surface waters
- Sediment and erosion control

## → **Sustainable Land Use**

- Provision of bicycling/pedestrian amenities
- Landscaping for restoration of native vegetation
- On-site stormwater management
- Climate change adaptation/ improved bridge hydraulics

## → **Waste Reduction/ Resource Conservation**

- Salvage/ recycling of existing structures and materials
- Use of recycled materials in bridge construction

## → **Energy conservation/ Reduction in Greenhouse Gas Emissions**

- Provide durable, low-maintenance structures
- Accelerated construction technology

# ALTERNATIVES ANALYSIS

## → No Build Option

- Retain existing structure in its current condition
- Bridge will receive additional structural flags
- Lead to reduced load-carrying capacity and eventual closure

## → Bridge Rehabilitation Option

- Work includes:
  - Repair of all deteriorated concrete bridge elements
  - Structural deck replacement
  - Bridge railing and transition rail replacement
- Repair not cost-effective option due to extent of deterioration
- Does not improve safety or hydraulic performance
- Does not permit for bicycles accommodation
- Does not allow for roadway geometric improvements

## → Bridge Replacement Option

- Complete removal of existing structures and replace with new bridges on a parallel alignment
- Satisfies all Project Objectives
- Estimated Construction Cost = \$60 - 70 million

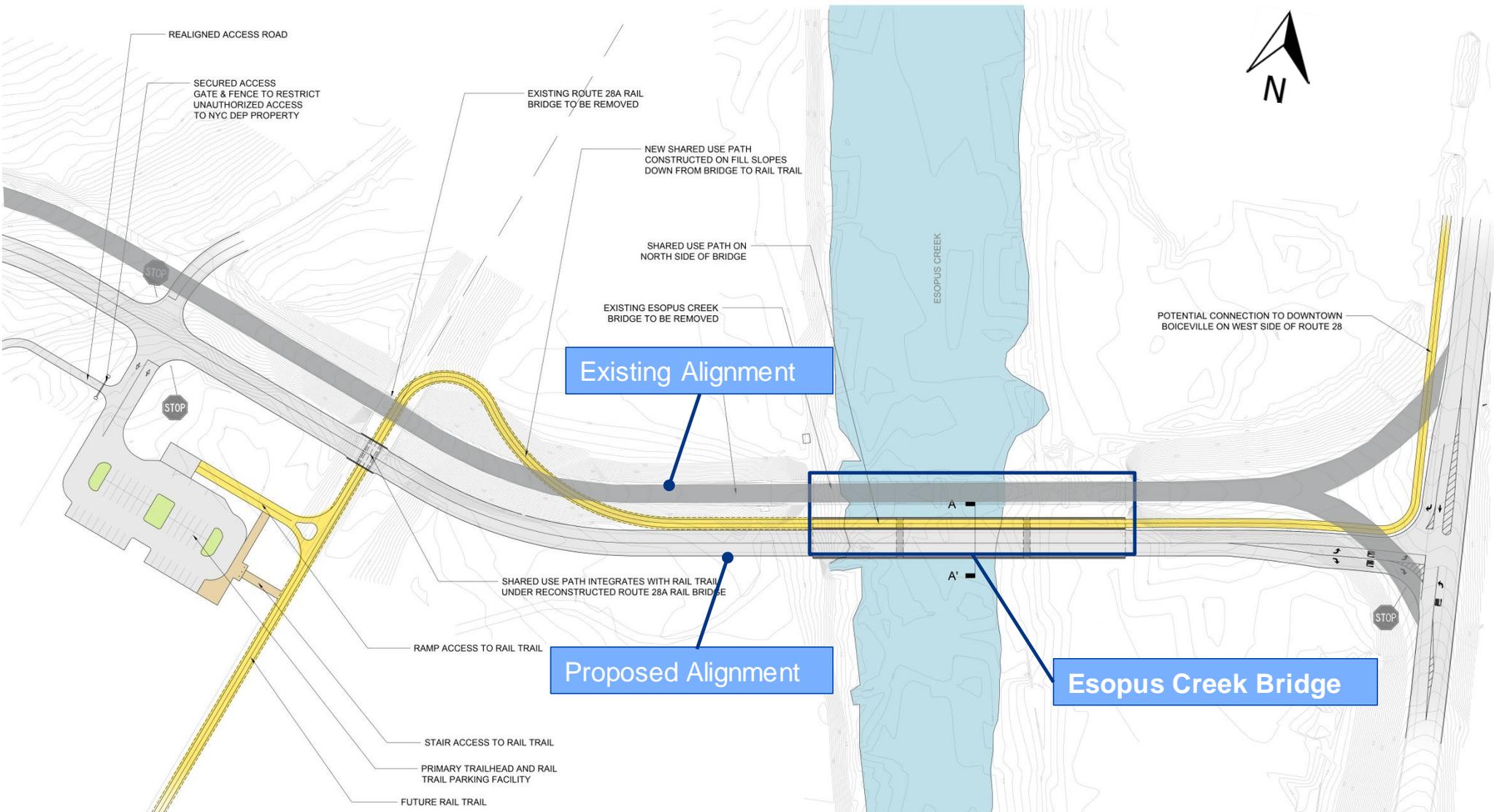
# ALTERNATIVES ANALYSIS

*Project Objective #1 - Provide a new structure based on current NYSDOT standards with a service life of 75-years*

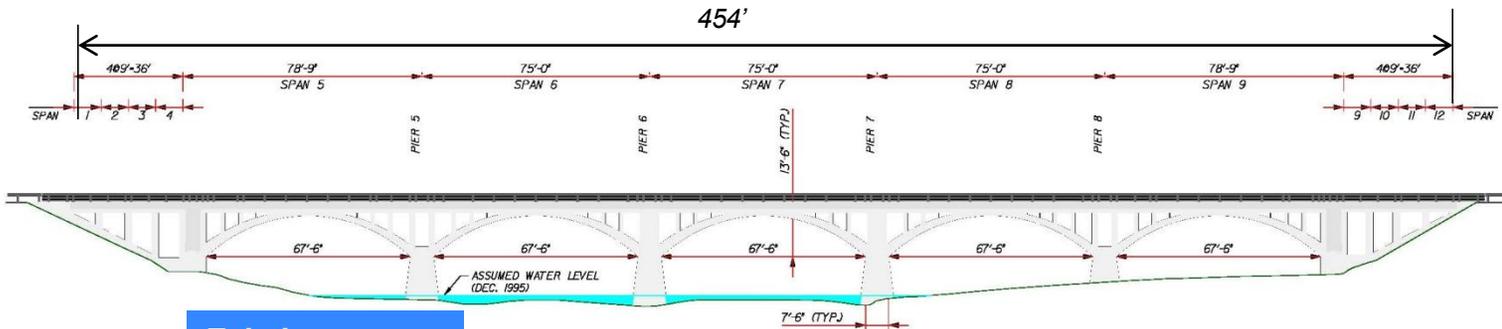
## ESOPUS CREEK BRIDGE:

- Complete removal and replacement of the existing structure
- Construct a new bridge on an off-line, parallel alignment to the south of the existing bridge to avoid lengthy detour route
- New bridge will consist of a multi-girder precast concrete bridge on precast concrete piers and abutments
  - Designed to meet current NYSDOT design standards
  - High-durability, high-quality, prefabricated bridge units (> 75-year service life)
  - Prefabricated bridge components to allow for accelerated construction
  - Reduced number of piers in the creek to reduce impact on waterway

# ALTERNATIVES ANALYSIS

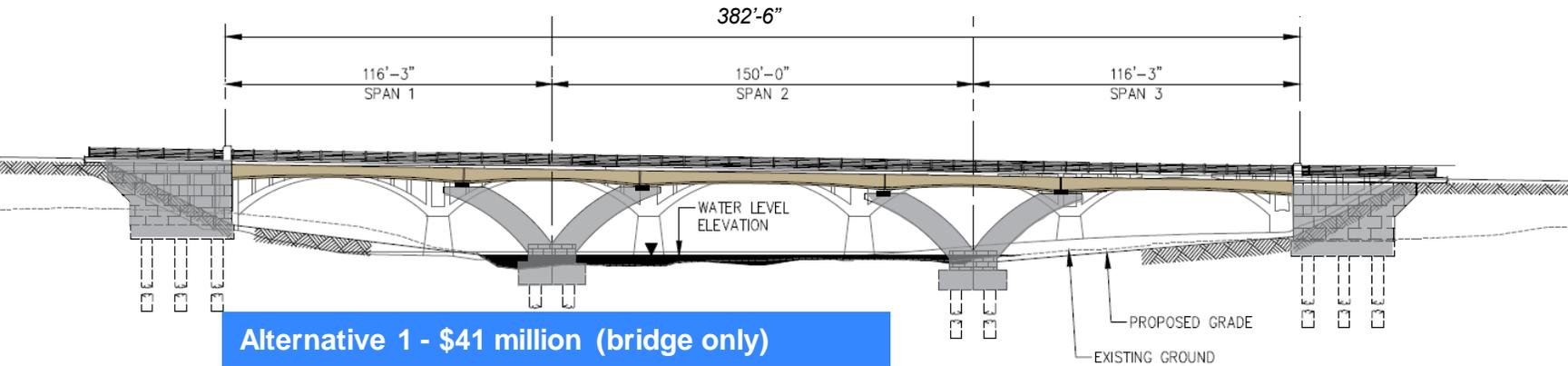


# ALTERNATIVES ANALYSIS

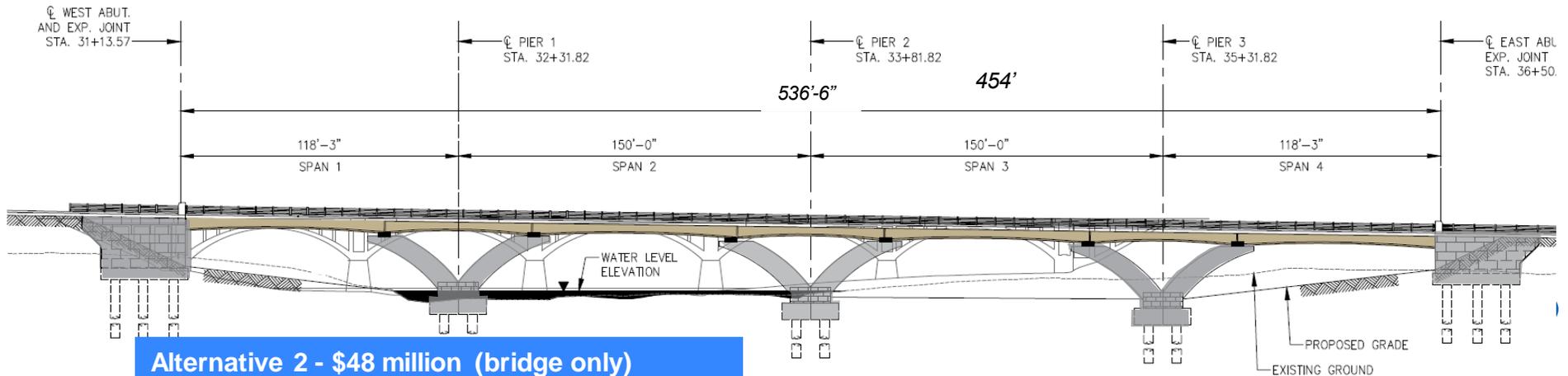


Existing

*ESOPUS BRIDGE EXISTING ELEVATION*  
SCALE: 1" = 40'



Alternative 1 - \$41 million (bridge only)



Alternative 2 - \$48 million (bridge only)

# ALTERNATIVES ANALYSIS

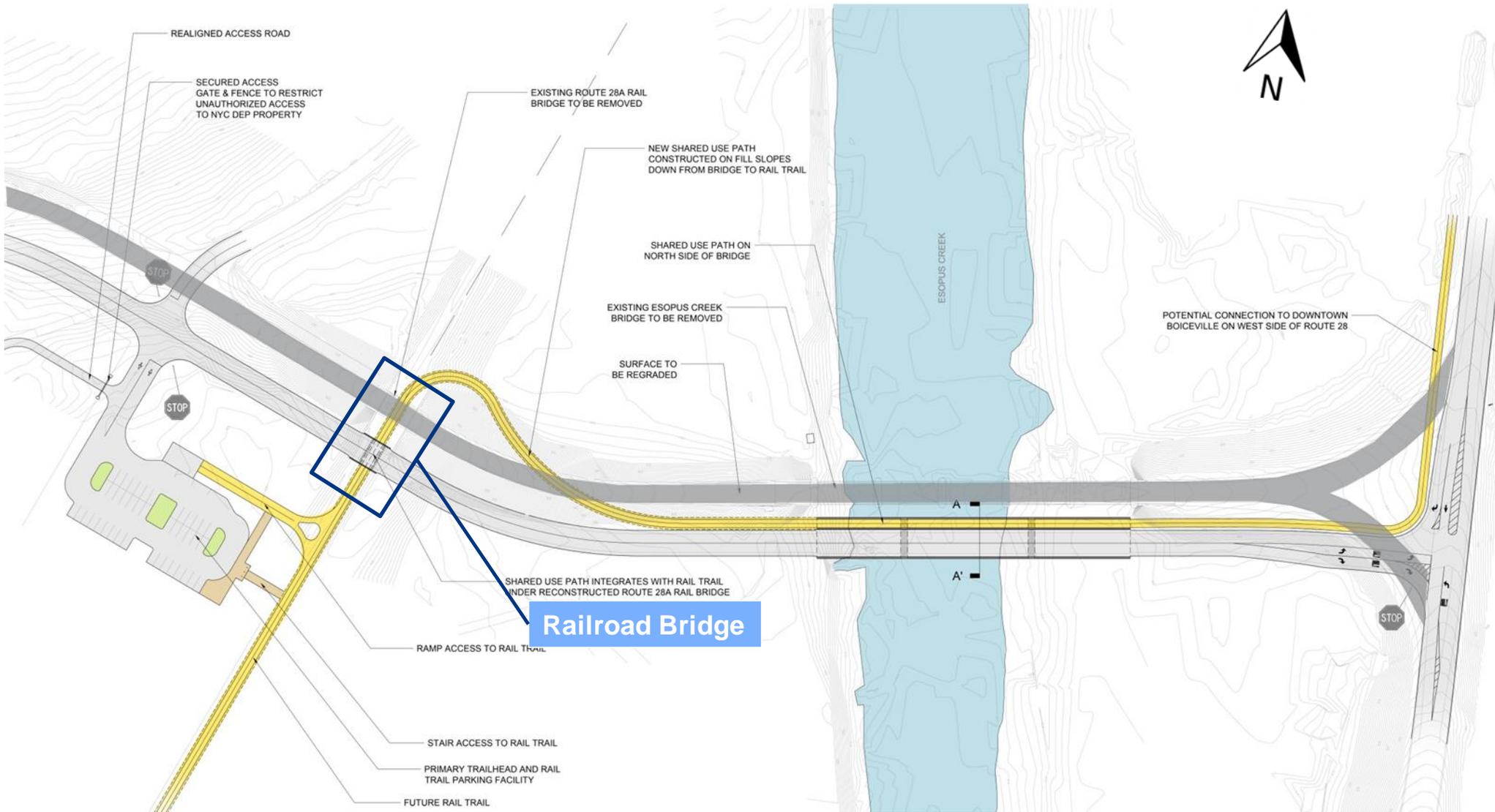


# ALTERNATIVES ANALYSIS

## RAILROAD BRIDGE:

- Complete removal and replacement of the existing structure
- Construct a new bridge on an off-line, parallel alignment to the south of the existing bridge
- New bridge will consist of a precast concrete components precast or cast-in-place concrete abutments
  - Designed to meet current NYSDOT design standards
  - High-durability, high-quality, prefabricated bridge units (> 75-year service life)
  - Prefabricated bridge components to allow for accelerated construction schedule
  - Vertical and horizontal clearances to accommodate future rail-trail

# ALTERNATIVES ANALYSIS



# ALTERNATIVES ANALYSIS



# ALTERNATIVES ANALYSIS

*Project Objective #2 - Improve bridge, approach roadway and intersection geometry*

- Provide standard width travel lanes and shoulders within project limits
- Correct non-standard sight distances caused by crest vertical curve
- Improve horizontal alignment at 'S-curve'
- Provide new intersection with Rte. 28/28A based on current design standards
- Install NYSDOT standard approach guide rail transitions and end assemblies

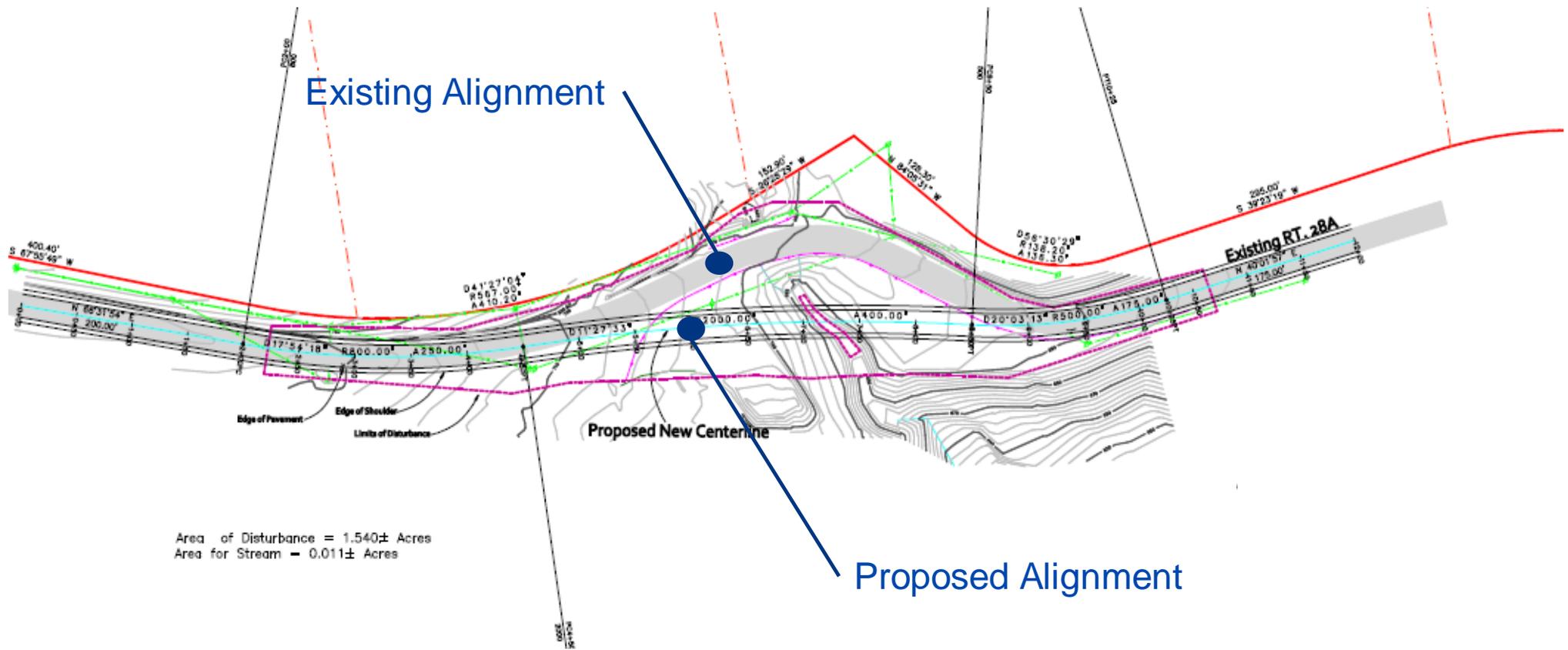
# ALTERNATIVES ANALYSIS

- S-Curve
- Vertical Curve
- Y-type Intersection



# ALTERNATIVES ANALYSIS

## S-Curve Correction



Area of Disturbance = 1.540± Acres  
Area for Stream = 0.011± Acres

Proposed Alignment

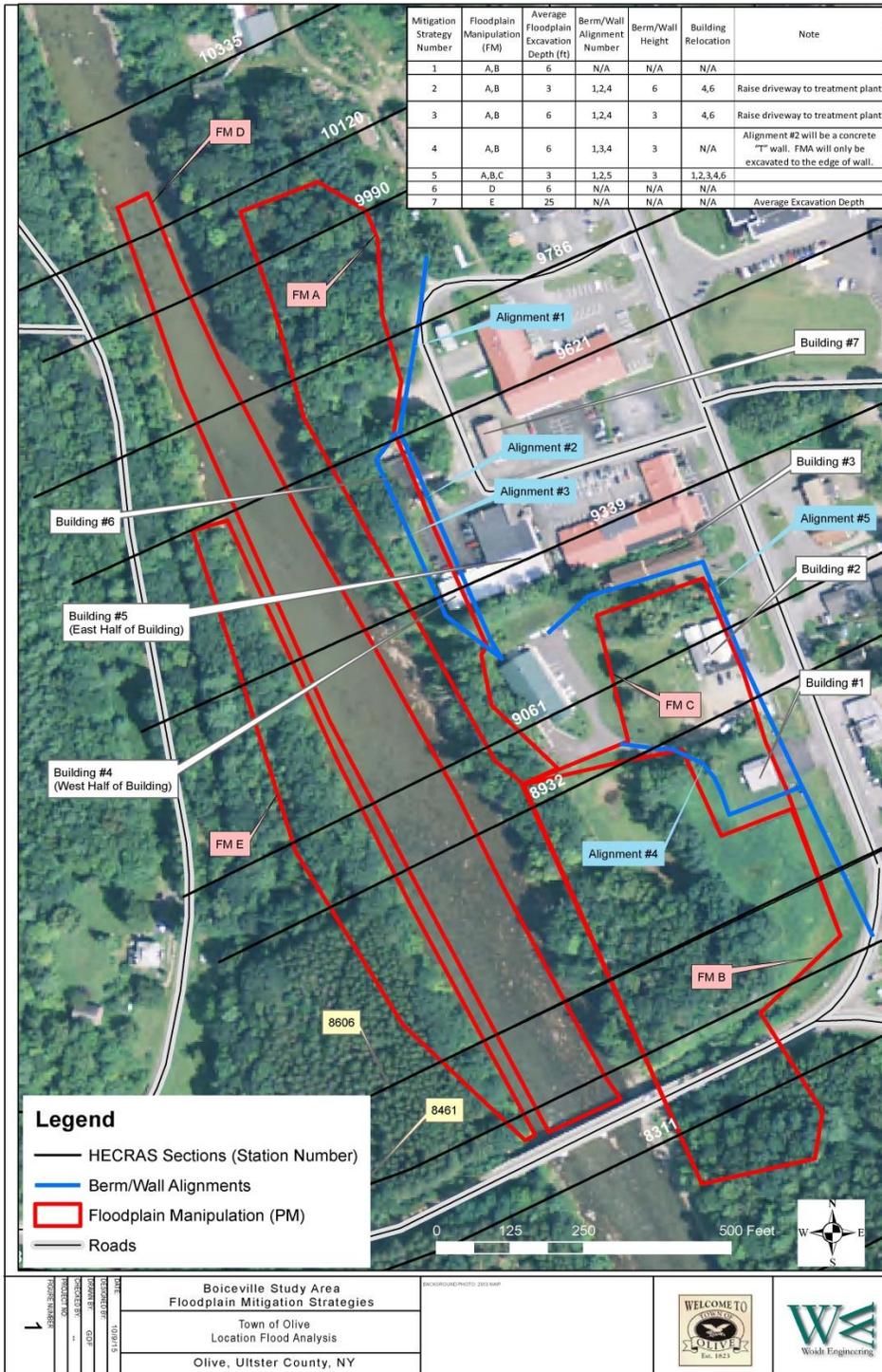
# ALTERNATIVES ANALYSIS

## *Route 28A / 28 Intersection*

- Non-conforming NYSDOT intersection geometry for the existing roadway
- Safety deficiencies
  - Acute angle inhibits line of sight
  - Lack of turn lanes
- Accidents are higher than statewide average
- NYSDOT conventional T-type intersection with dedicated turn lanes
- Stop sign control, signal not warranted



# ALTERNATIVES ANALYSIS

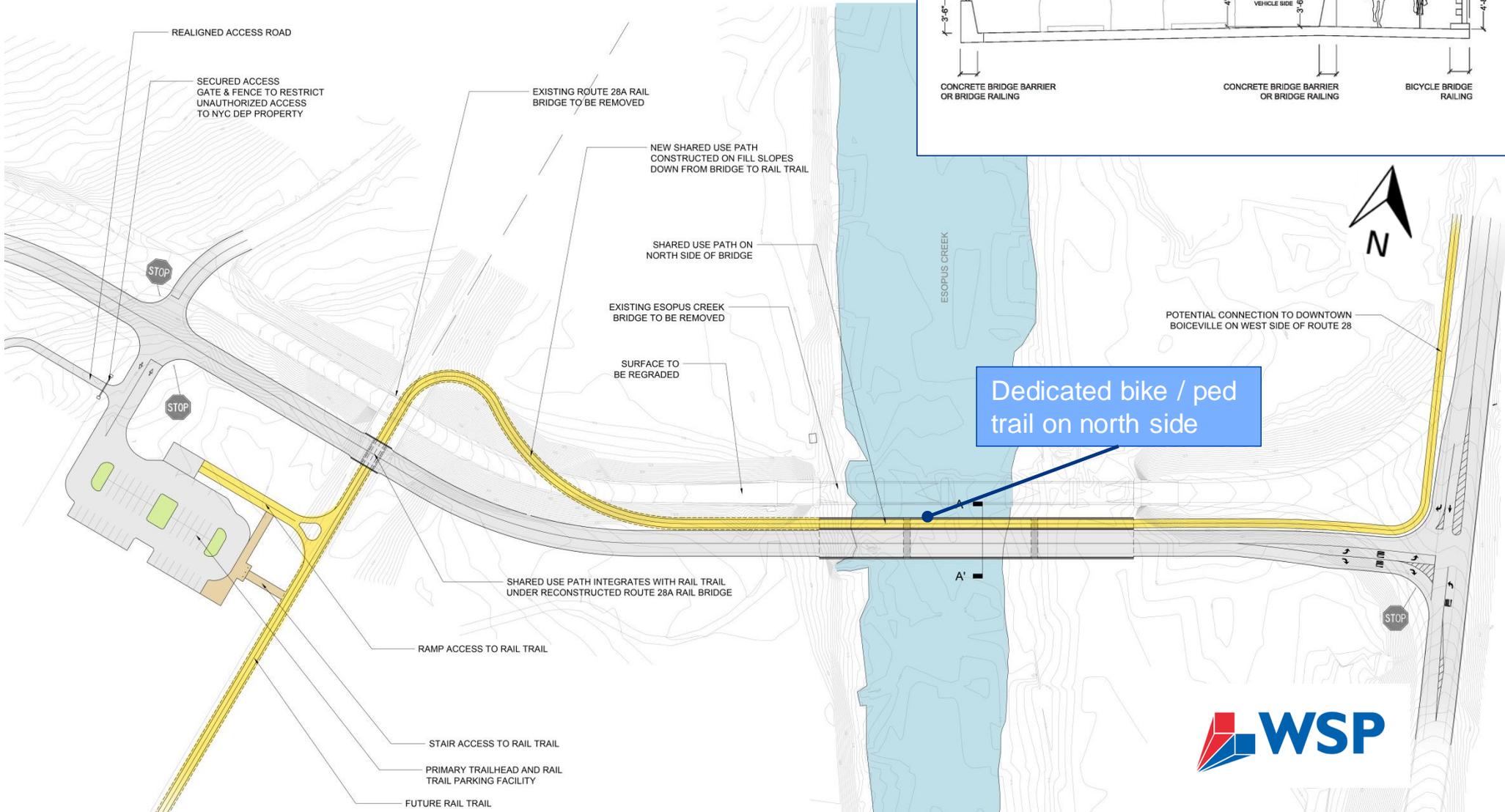
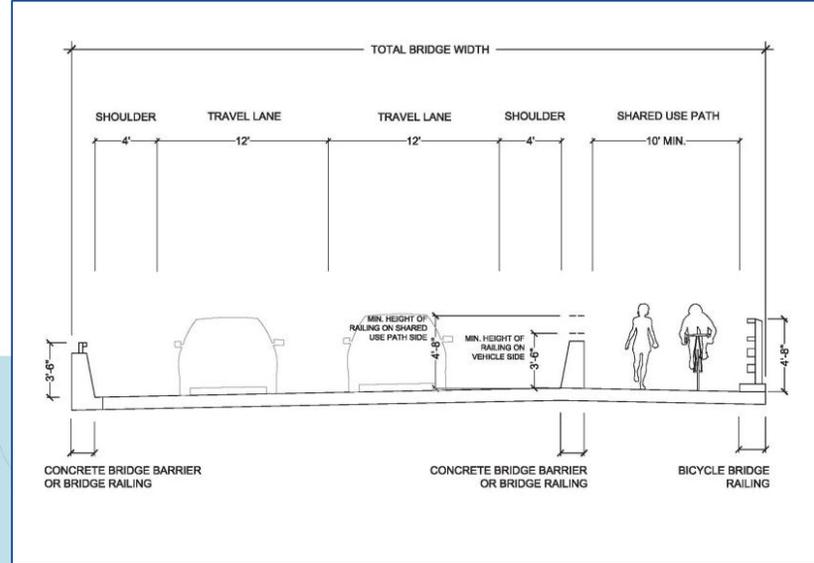


## Project Objective #3 - Address / improve hydraulic performance in coordination with Town of Olive's Flood Mitigation Study

- Coordination on-going with flood study
- Improvements to hydraulic performance at Esopus Creek Bridge includes:
  - Reduce number of piers in the waterway
  - Potential increase in bridge length (facilitate future floodplain improvement on east side)

# ALTERNATIVES ANALYSIS

*Project Objective #4 - Provide for future bicycle / pedestrian accommodation per the Ulster County Inter-governmental Agreement*

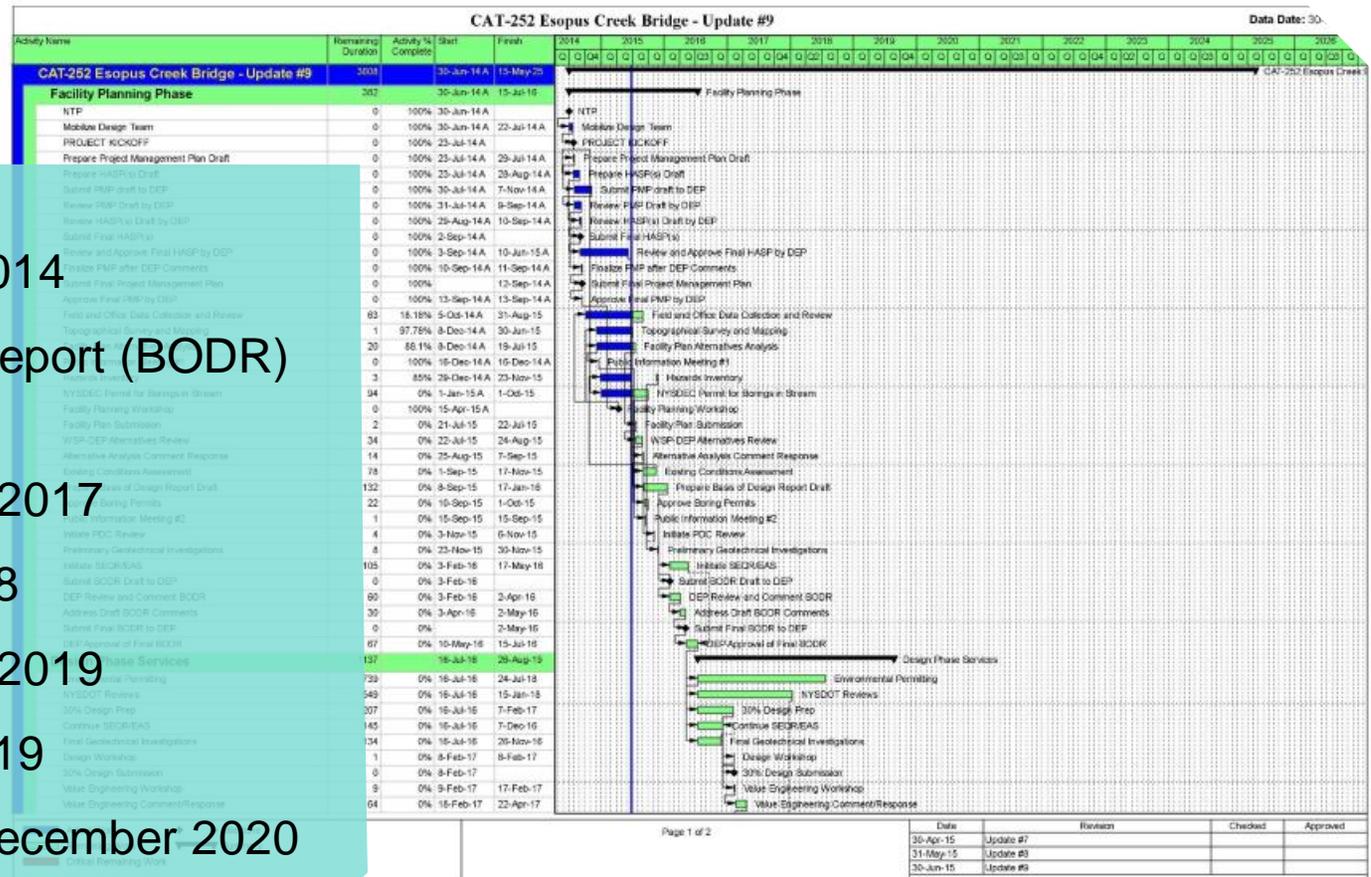


# ALTERNATIVES ANALYSIS



Drive thru Video

# PROJECT SCHEDULE



- Project Kickoff – July 2014
- Final Basis of Design Report (BODR) – August 2016
- 30% Design – October 2017
- 60% Design – July 2018
- 90% Design – January 2019
- 100% Design – July 2019
- Begin Construction – December 2020
- Complete Construction – November 2023
- Closeout - 2025

# NEXT STEPS

- Finalize Facility Plan
- Perform soil borings
- Prepare Basis of Design Report
- Initiate coordination with NYC Public Design Commission (PDC)
- Continue coordination with NYSDOT
- Continue State Environmental Quality Review (SEQR)
- Initiate 30% design



QUESTIONS?

