

Ulster & Delaware Corridor Revitalization Study Shandaken Section



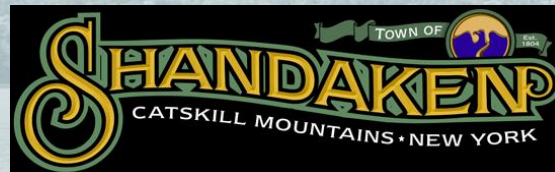
**Barton
& Loguidice**

April 29, 2021

Project Team & Introductions



Brian Slack & Dennis Doyle



Robert Stanley



Bill Rudge



Selina Guendel



**Andrew Emrich &
Aaron Bennett**



Kathy Nolan



Tom Baird, P.E. & Chris Hannett, P.E.



Kevin Smith

Ulster & Delaware Corridor Revitalization Study

Shandaken Section

Objectives of this study:

- Gather Data - Field Work, Inventory Existing Conditions
- Identify Potential Challenges – Culverts, Bridges, Access, etc.
- Discover Opportunities – Scenic, Historic, Recreation, etc.
- Develop planning level construction and design estimate
- Document the need for a trail and connection opportunities to established recreational facilities
- Investigate Economic Benefits to the surrounding communities
- Incorporate Resiliency based on modern storm data

Historic Ulster & Delaware Railroad Corridor

**U&D Corridor Use Policy
Resolution No. 488
December 2015**

Highmount

Study Location

Phoenicia

Boiceville

West Hurley

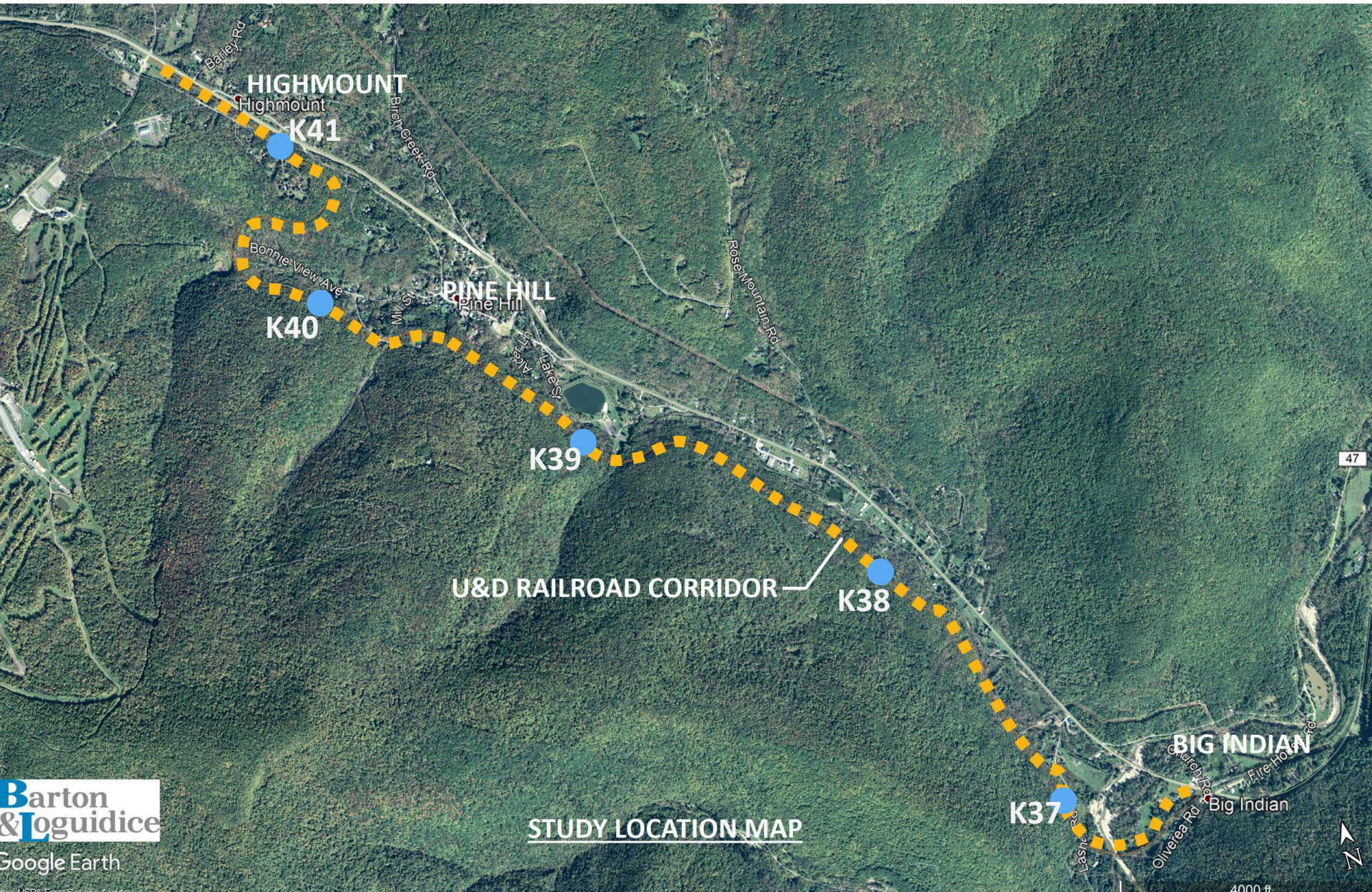
Kingston

Kingston Plaza
Existing Rail Yard
Cornell Street

Legend

-  Rail with Trail (where feasible)
-  Trail Only
-  To Be Determined
-  O & W Connector

U&D Corridor – Big Indian to Highmount



Summary of Findings

- Collected corridor field data in Fall of 2020
- Corridor is largely intact
 - However, two bridges are missing (Esopus Creek & Lasher Road)
- Development of a recreational trail is relatively straightforward
- Logical, feasible, and frequent access points
- Documented need and benefits to the conversion of a trail corridor
- No major environmental obstacles
- Benefit to the surrounding community
- Logical construction phases to complement available funding
- Remaining bridge structures can be rehabilitated for trail use
- Area is rich in history with several interpretation opportunities throughout the corridor
- Easily connect to existing and future trail system to enhance the Catskill Mountain recreation experience

Corridor Assessment

GPS inventory of all physical features within the corridor

Stormwater Management, Resiliency, local flooding

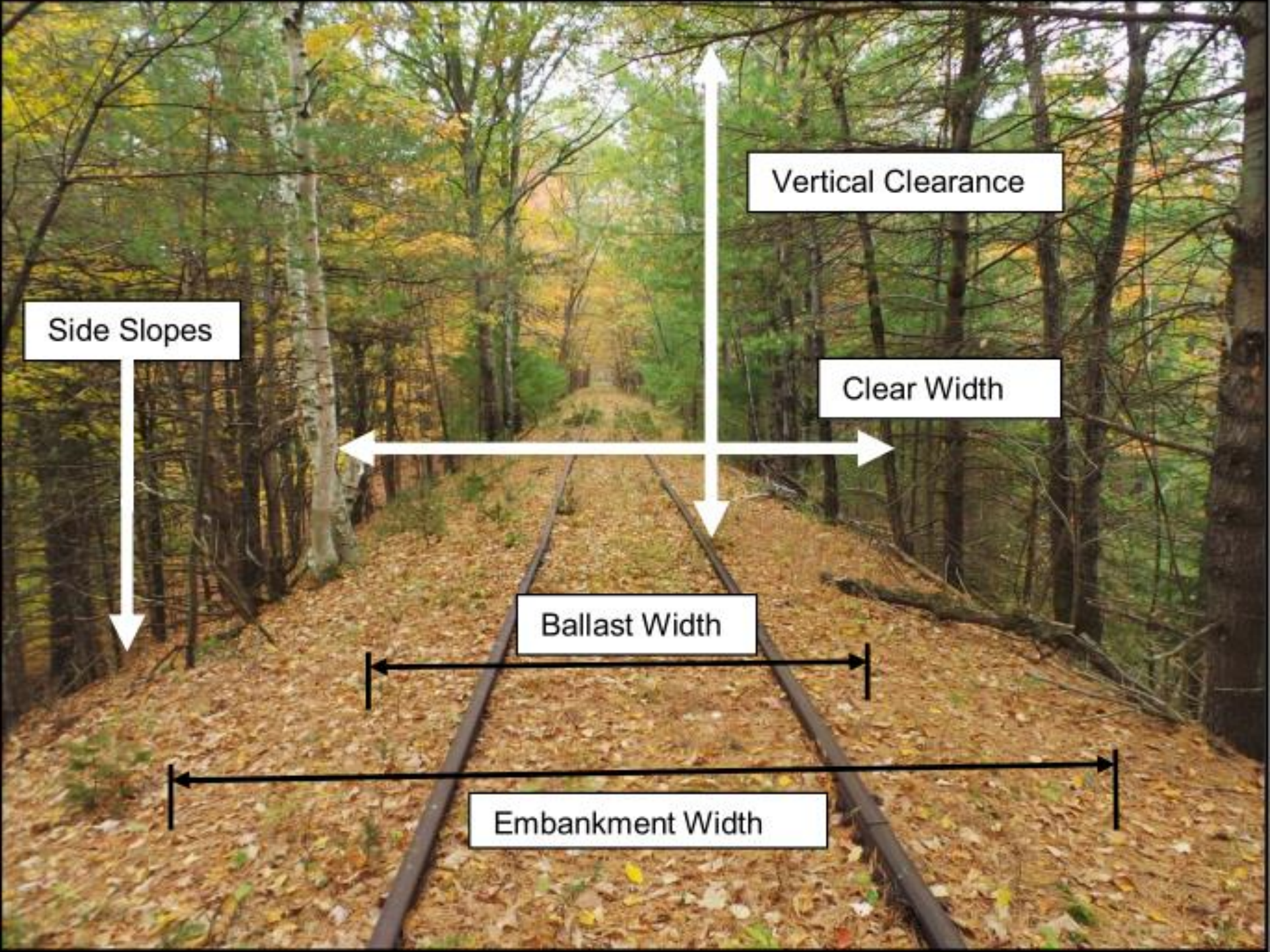
Environmental Balancing & Preservation

Safety – Balancing the need for pedestrian & bicyclist fence installation

Connections to public lands and community assets

Structural assessment of the bridge structures

Potential benefit to surrounding community



Side Slopes

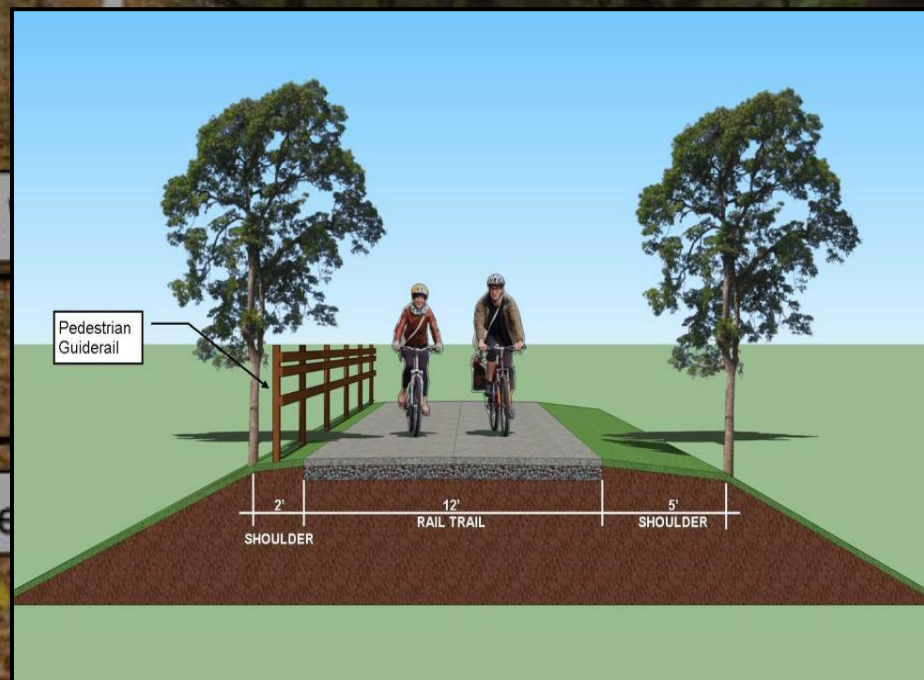
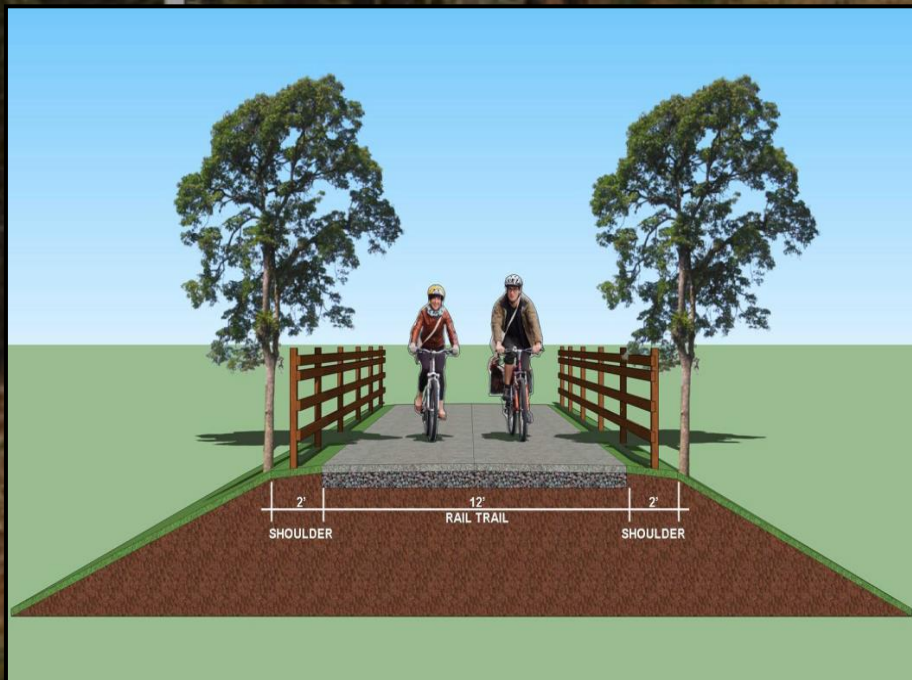
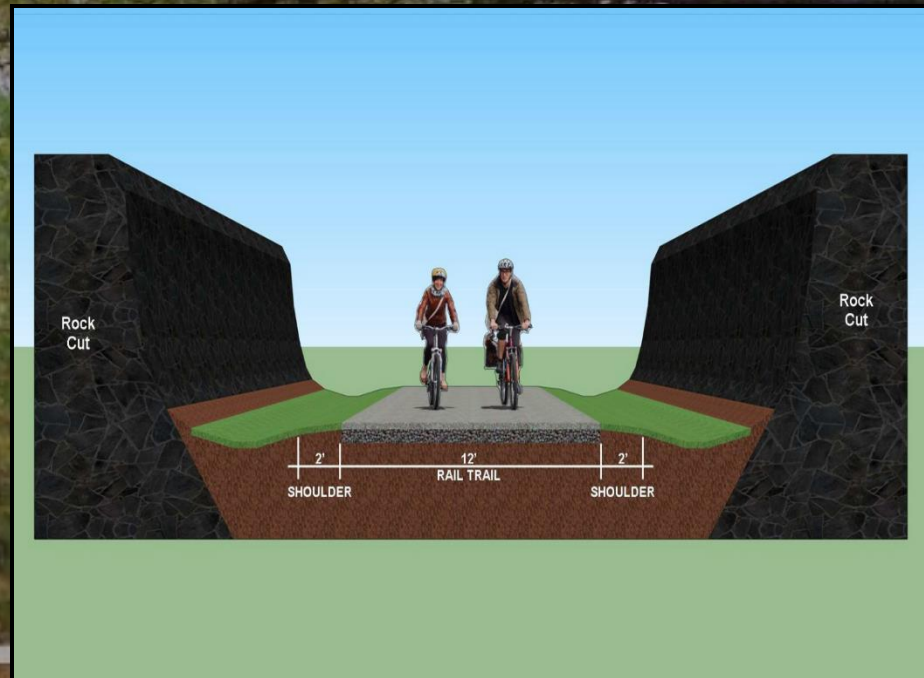
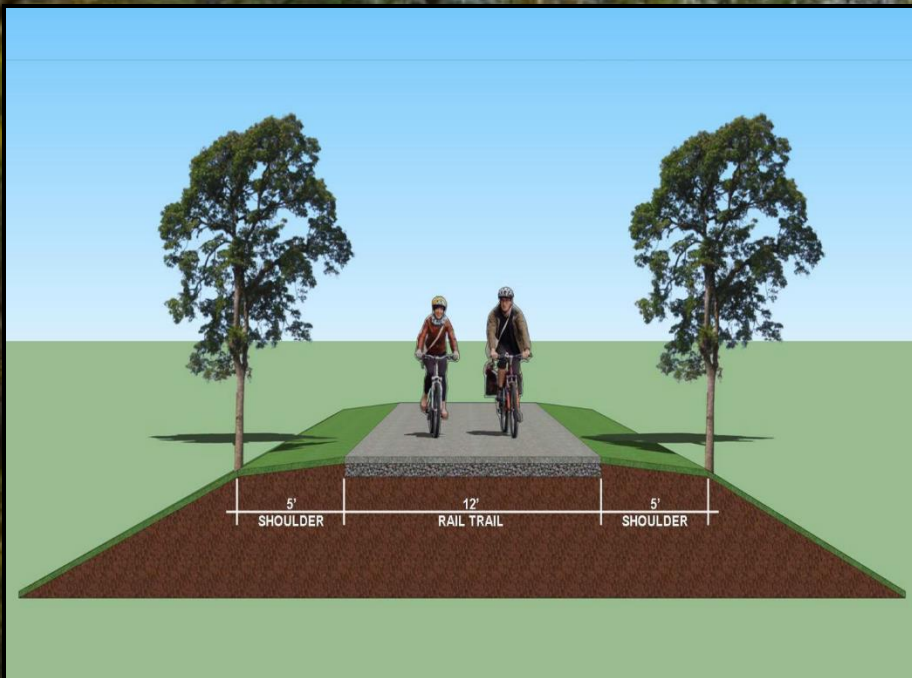
Vertical Clearance

Clear Width

Ballast Width

Embankment Width





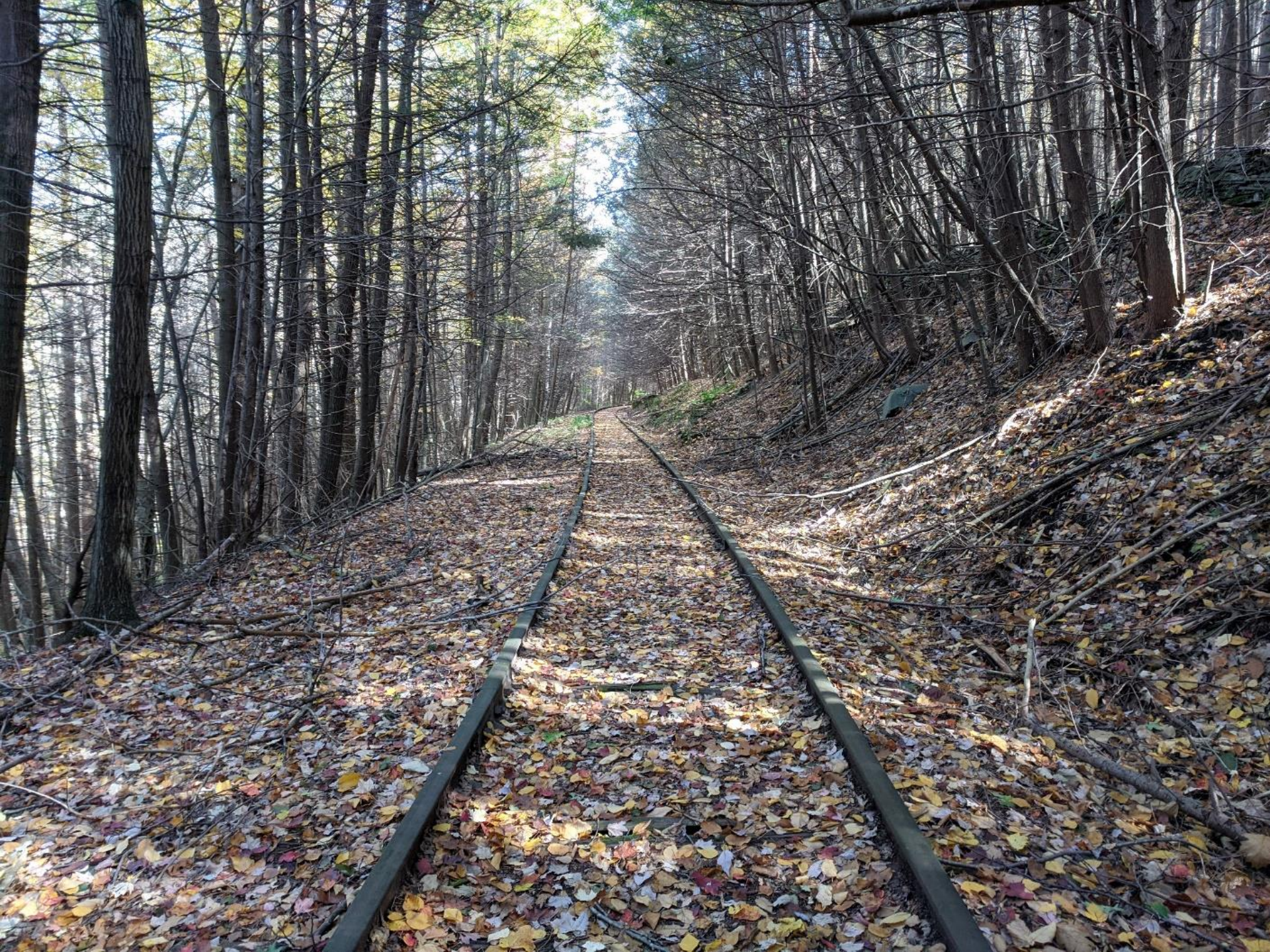


1 FT. BUFFER

10 FT. TRAIL WIDTH

2 FT. SHOULDER

IMPROVED DRAINAGE SWALE

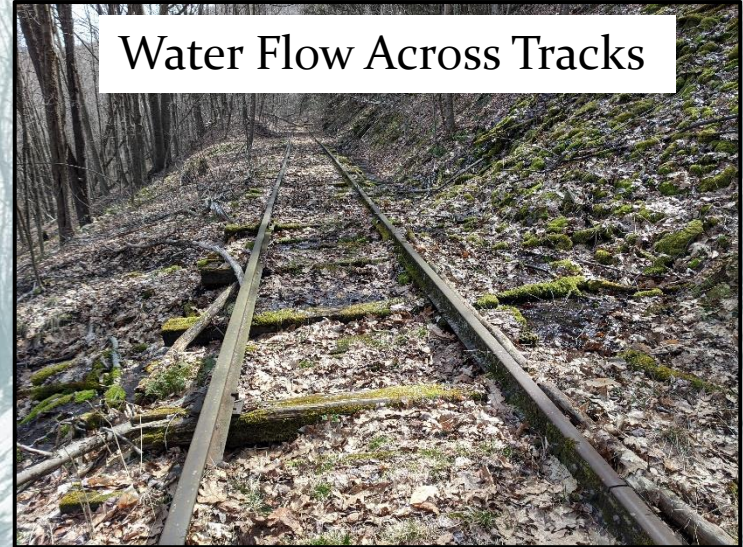




Drainage and Stormwater Management

- Stormwater Management is key to infrastructure resilience, longevity, and sustainability
- Developed feasible concepts based on previous experience in similar corridors
- Recommendations consistent with Ulster County, NYS DEC, US Army Corps, and the NYC DEP

Water Flow Across Tracks



Washouts



Undersized Culvert Pipe

Drainage and Stormwater Management



- Existing small culverts generally found to be in poor condition
- Replacement is recommended for most small culverts
- Close proximity to existing surface
- Size new pipes appropriately to accommodate design year stormwater flows



Drainage and Stormwater Management

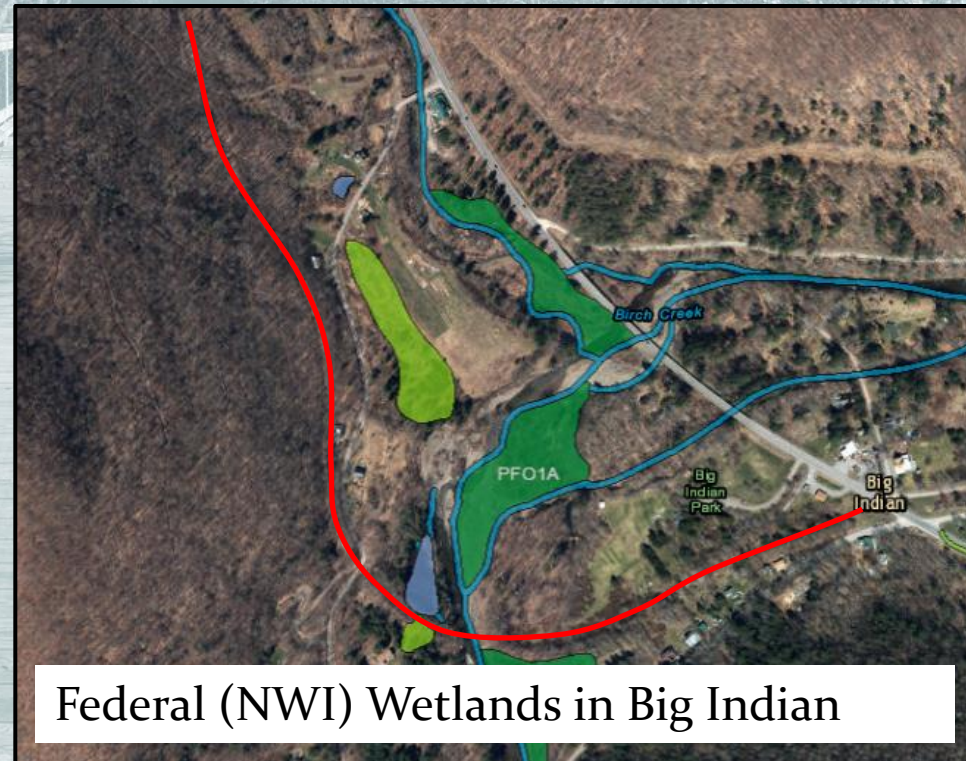
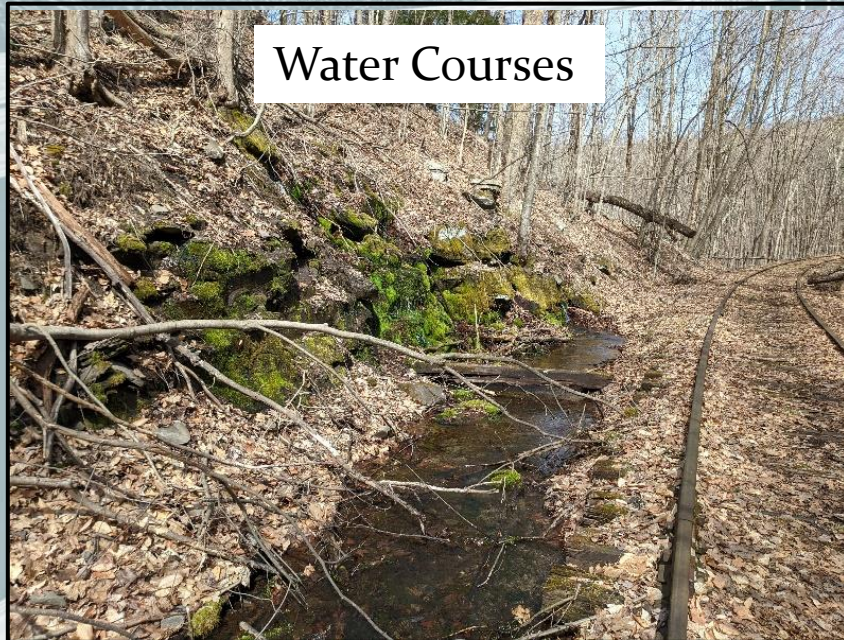


- Existing large culverts generally found to be in good condition
- Minor scour repair and debris removal
- One collapsed large culvert recommended for replacement

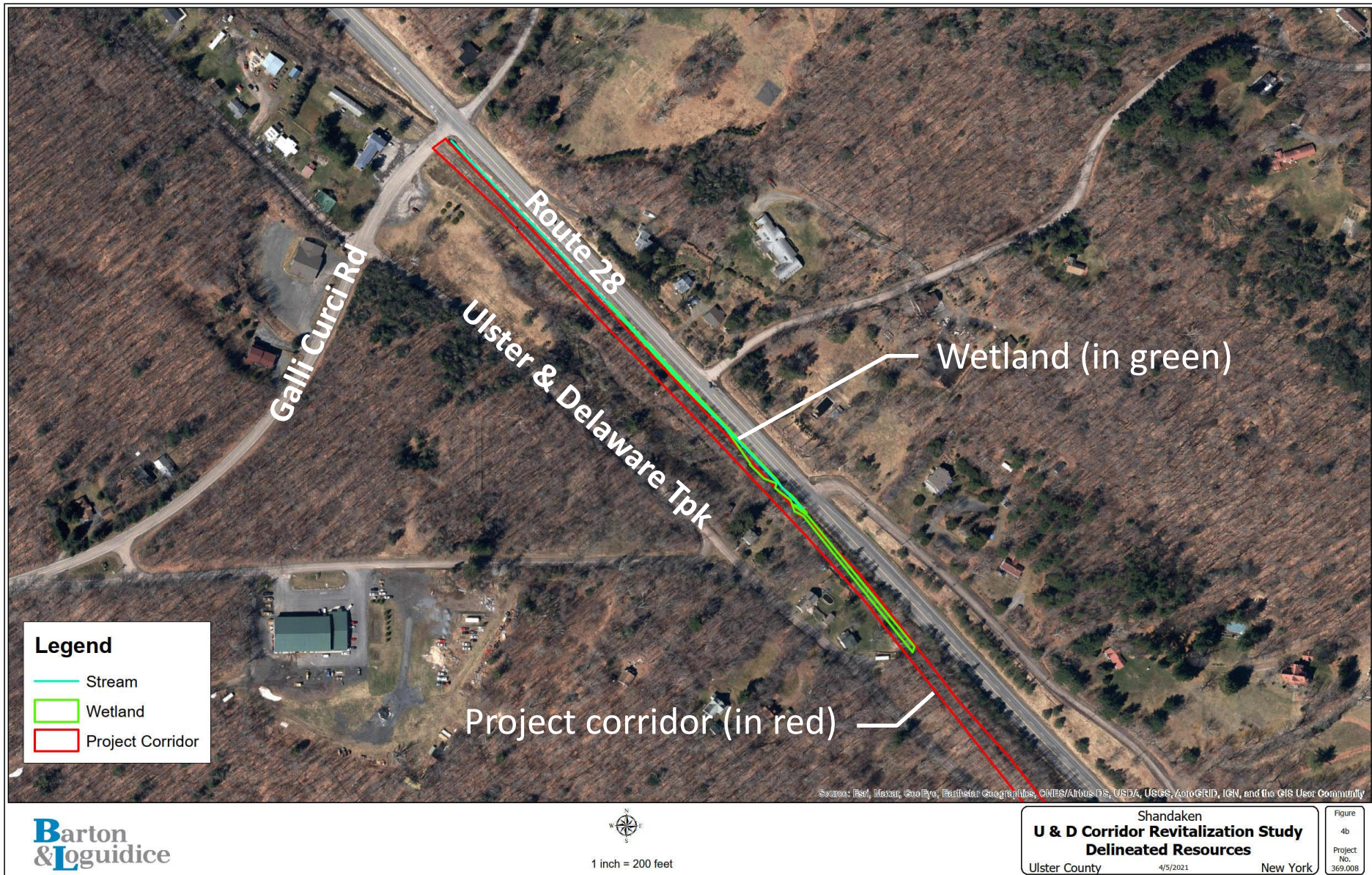


Environmental Assessment, Wetlands, Permits

- Wetland & Stream Delineations (DEC & USACE Standards)
- NYC DEP Watercourses
- Clean Water Rule – 6/22/2020
- T & E Species Habitat
- Historic / Cultural Resources (SHPO)



Environmental Assessment, Wetlands, Permits



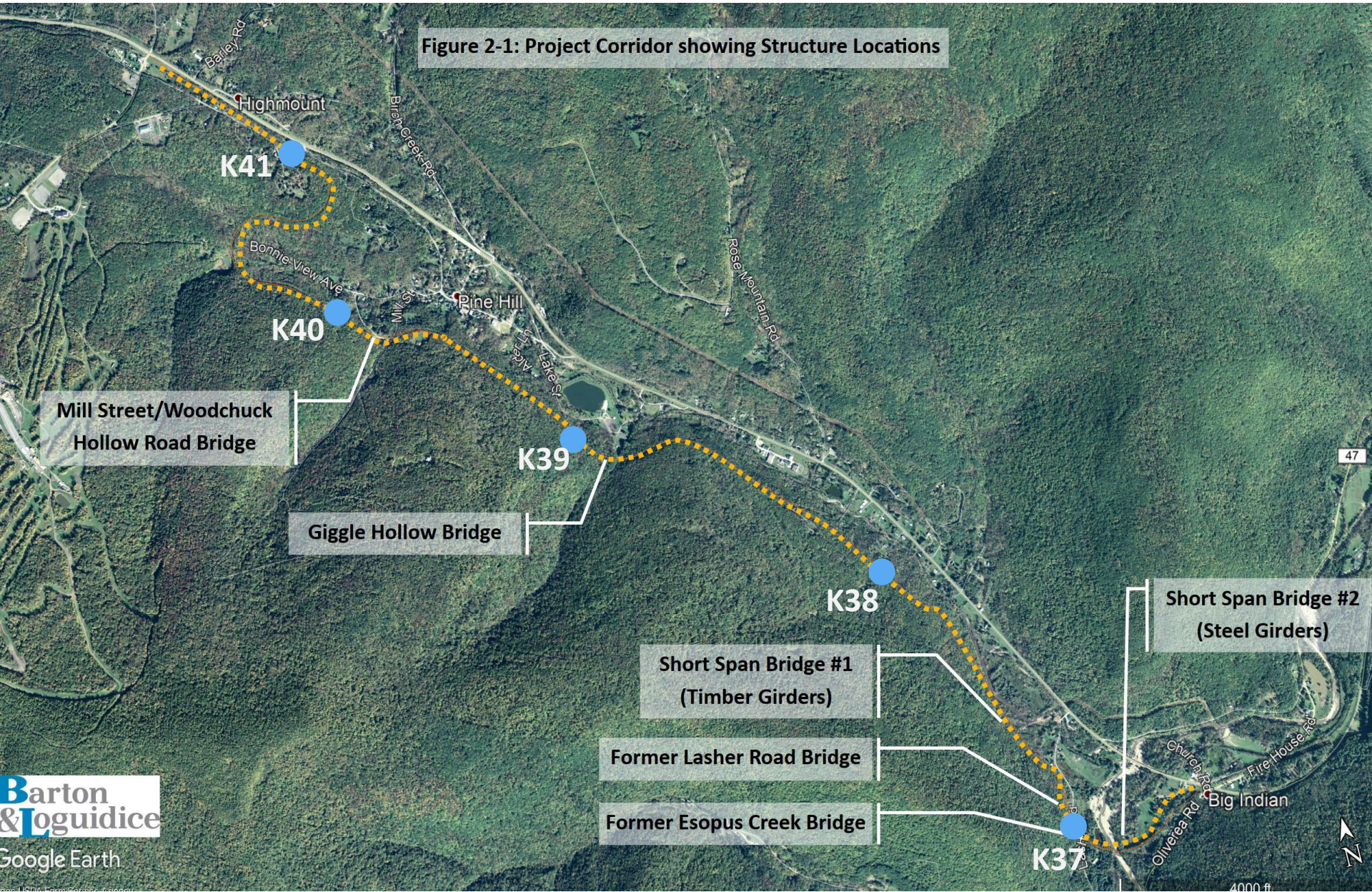
Environmental Assessment, Wetlands, Permits

Anticipated Permits & Approvals:

- USACE Stream Disturbance under Section 404 of the Clean Water Act – (NWP #14)
- NYSDEC Article 15 permit for in-stream disturbances
- Section 401 Water Quality Cert. from NYS DEC
- Statewide Pollution Discharge Elimination System (SPDES) Permit
- Stormwater Pollution Prevention Plan Approval from NYC DEP
- NYS DOT Highway Work Permit (HWP)
- Town of Shandaken Floodplain Permit
- State Historic Preservation Office (SHPO) coordination and approval



Structural (Bridge) Evaluations



Structural Evaluations – Woodchuck Hollow



Structural Evaluations – Woodchuck Hollow



Assessment and Recommendations:

- Bridge spans Woodchuck Hollow Creek and Mill Street
- Vertical and Horizontal Clearance over Mill Street of 12 ft. and 16.5 ft.
- Re-use existing steel girders for trail use
- Re-point and replace mortar between stacked stone abutments & wingwalls
- Remove steel rails and ties above girders and install new cast-in-place concrete deck and safety railings
- Estimated rehabilitation and re-purposing cost = \$430,000

Structural Evaluations – Giggle Hollow



Structural Evaluations – Giggle Hollow



Assessment and Recommendations:

- Bridge spans Giggle Hollow and the Giggle Hollow Trail
- Re-use existing steel girders for trail use
- Re-point and replace mortar between stacked stone abutments & wingwalls
- Remove and Reset stone that are rotating away from the abutments
- Remove steel rails and ties above girders and install new cast-in-place concrete deck and safety railings
- Estimated rehabilitation and re-purposing cost = \$510,000

Structural Evaluations – Small Bridges



Assessment and Recommendations:

- Bridges do not appear to span roadways or active streams
- Different alternatives for replacement include installing a new large pipe structure or rehabilitating the existing structure.
- May have been used as cattle passes in the early days of the Railroad
- One constructed with Timber Beams and the other with Steel Girders
- Minor stone masonry repairs to the abutments for both structures
- Costs range from \$50,000 to \$100,000

Structural Evaluations – Lasher Road Crossing



Assessment and Recommendations:

- Narrow 10'-6" width between abutments
- Assessed 4 different crossing alternatives:
 - New superstructure on existing abutments, maintain restrictions
 - Full replacement, no restrictions
 - At-grade crossing
 - Maintain one existing abutment and construct bridge with increase height and width
- Superstructure (bridge) removed by County in 1987 and stored off-site
- Alternatives should be fully vetted during design phase
- Cost estimates for the 4 alternatives are included in the Feasibility Study

Structural Evaluations – Esopus Creek Crossing



Structural Evaluations – Esopus Creek Crossing

National Flood Hazard Layer FIRMette



0 250 500 1,000 1,500 2,000 Feet 1:6,000
Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

| | | |
|-----------------------------|--|---|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE) Zone A, V, AO |
| | | With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X |
| | | Future Conditions 1% Annual Chance Flood Hazard Zone X |
| | | Area with Reduced Flood Risk due to Levee, See Notes, Zone X |
| | | Area with Flood Risk due to Levee Zone D |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard Zone X |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard Zone D |
| | | Channel, Culvert, or Storm Sewer |
| OTHER FEATURES | | Levee, Dike, or Floodwall |
| | | Cross Sections with 1% Annual Chance Water Surface Elevation |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
| | | The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location. |

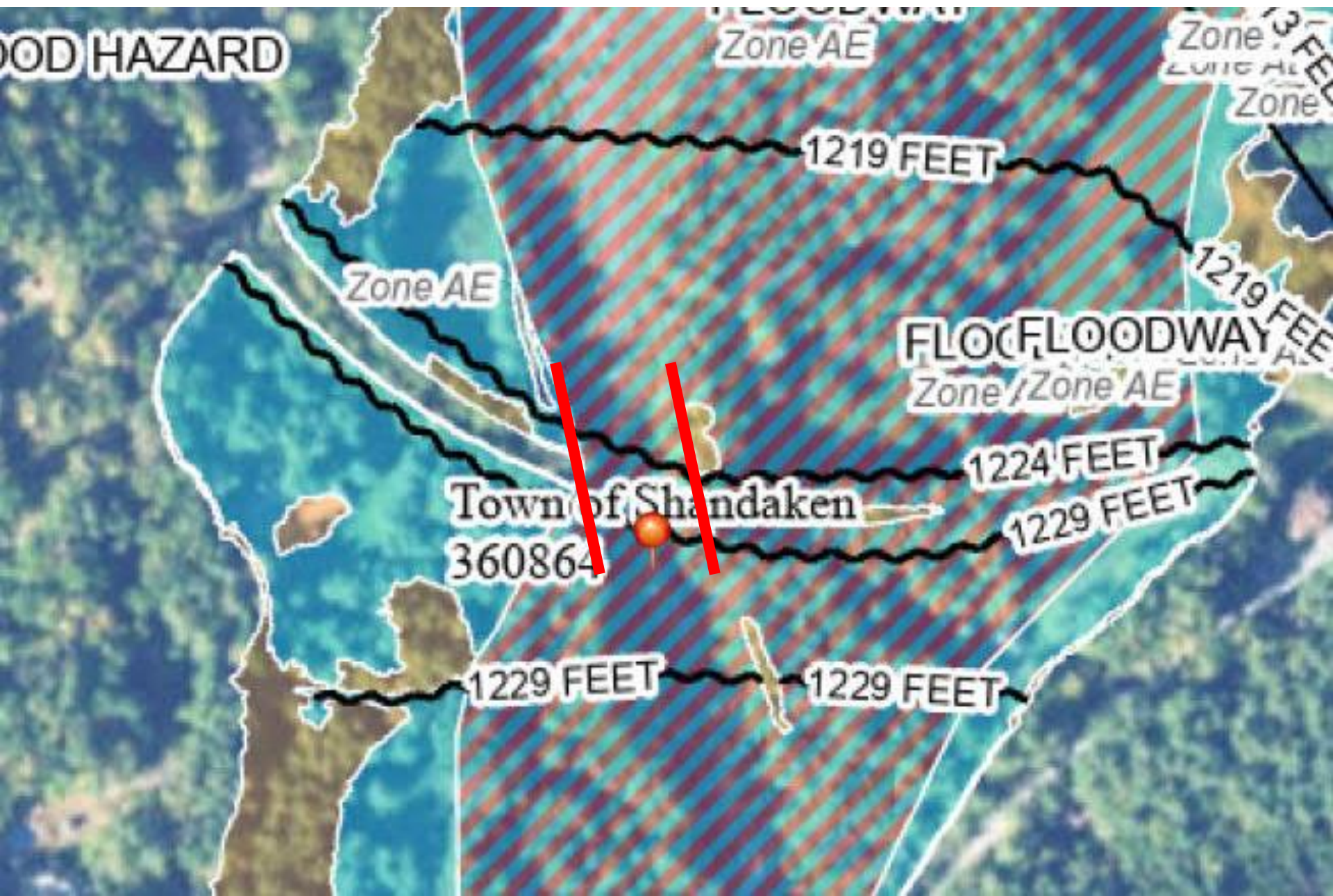
20.2
17.5
8
Coastal Transect
Base Flood Elevation Line (BFE)
Limit of Study
Jurisdiction Boundary
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/7/2021 at 3:01 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Structural Evaluations – Esopus Creek Crossing



Structural Evaluations – Esopus Creek Crossing

Assessment and Recommendations:

- Assessed 2 different bridge crossing alternatives
- Preliminary assessment compared 150 ft. long truss bridge vs. steel girder bridge for estimating purposes
- Alternatives should be fully vetted during design phase after detailed hydraulic assessment is performed
- Design should be in accordance with current NYSDOT highway bridge standards to meet 50yr storm + 20% + 2 ft. freeboard
- Cost estimate:
 - Steel Girder Bridge: \$1.8 Million
 - Steel Truss Bridge: \$3.1 Million

Structural Evaluations – Esopus Creek Crossing



Trail Connections

- Improved Access - Existing Hiking, Biking, and XC Ski trails
- NYS DEC Belleayre Mountain Ridge – Expand User Base



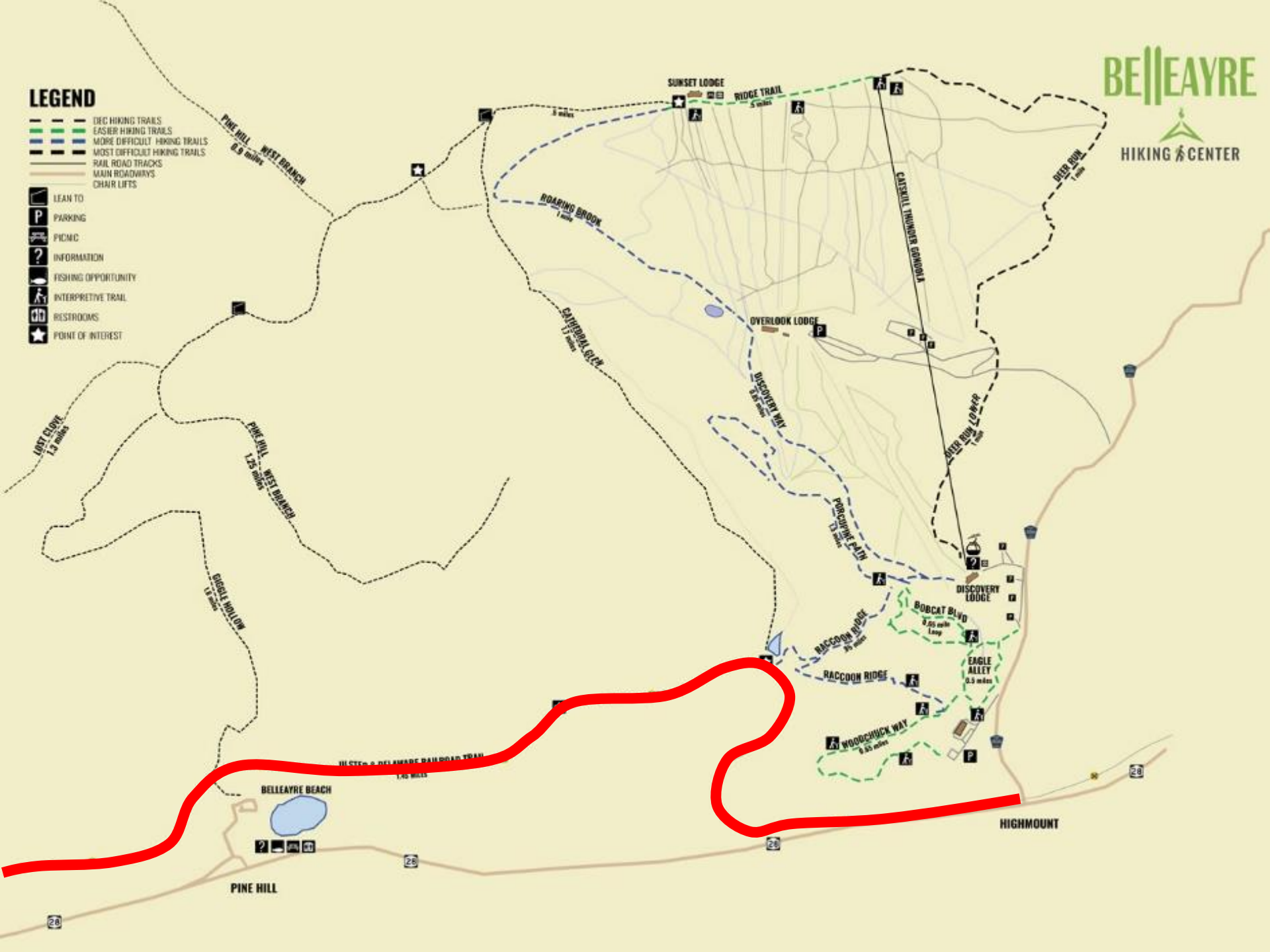
LEGEND

- DEC HIKING TRAILS
- EASIER HIKING TRAILS
- MORE DIFFICULT HIKING TRAILS
- MOST DIFFICULT HIKING TRAILS
- RAIL ROAD TRACKS
- MAIN ROADWAYS
- CHAIR LIFTS

- LEAN TO
- PARKING
- PICNIC
- INFORMATION
- FISHING OPPORTUNITY
- INTERPRETIVE TRAIL
- RESTROOMS
- POINT OF INTEREST

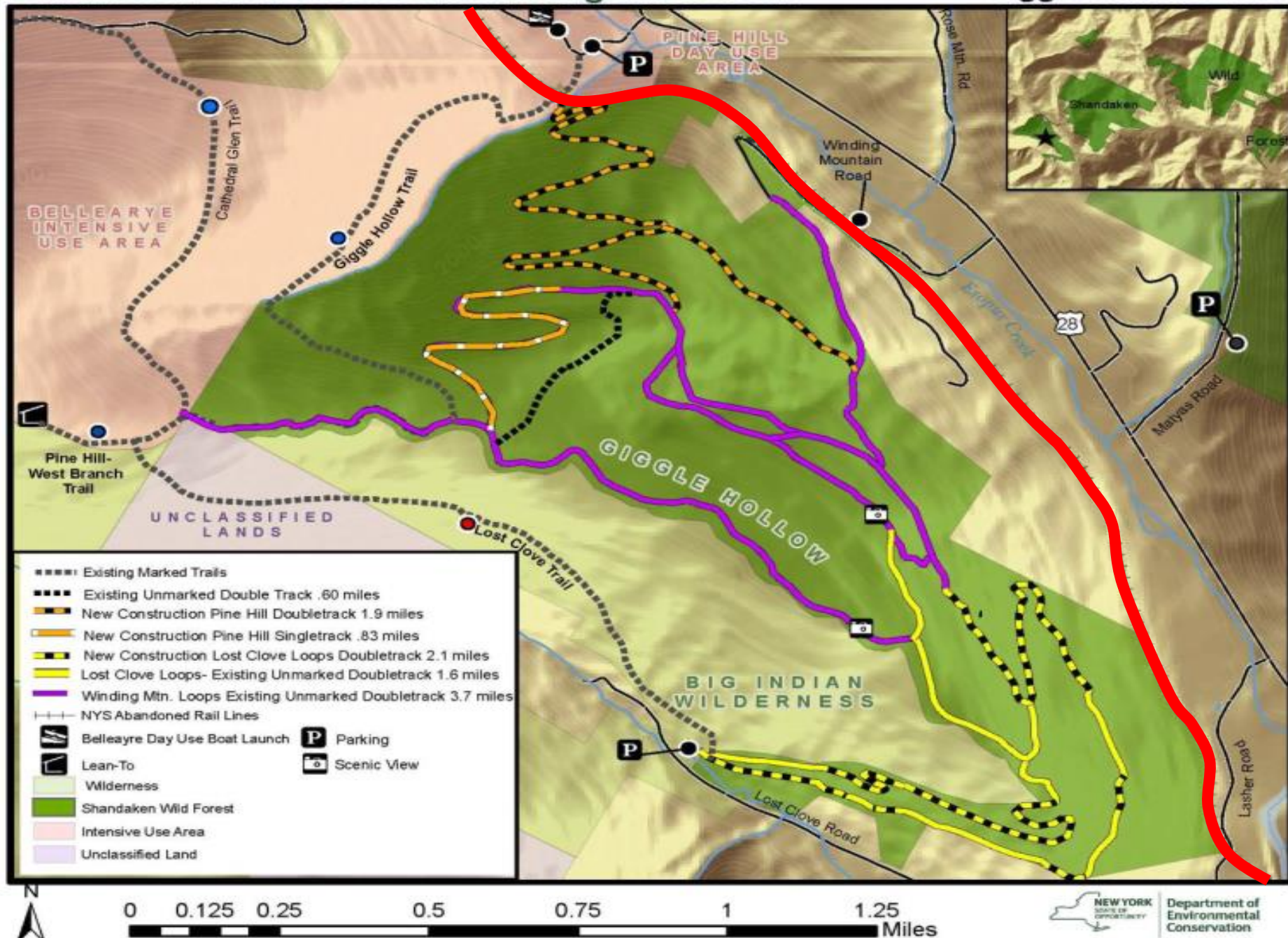
BELLEAYRE

HIKING CENTER



Shandaken Wild Forest Unit Management Plan

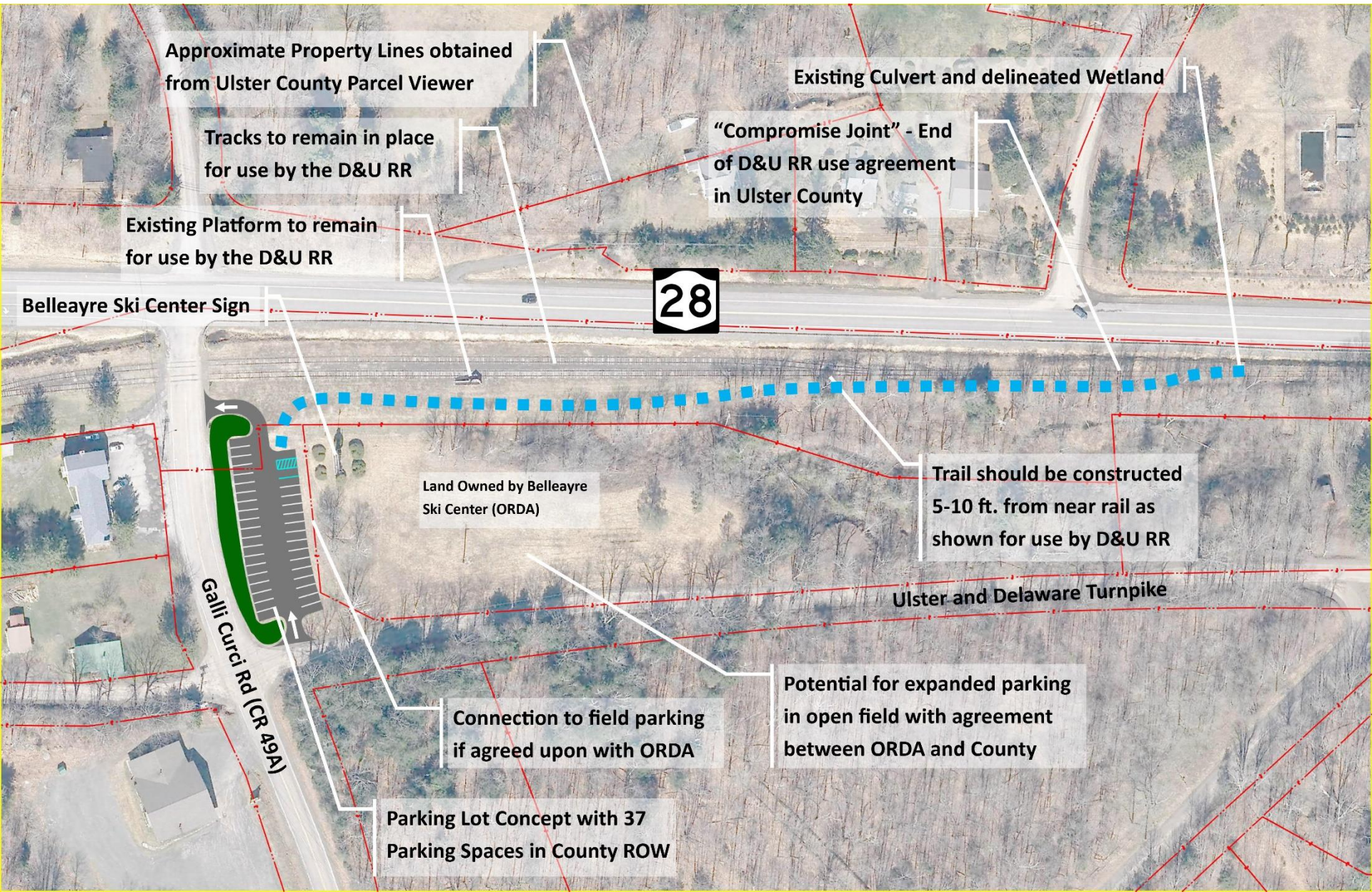
Giggle Hollow Parcel



Trailheads & Access



Highmount



Approximate Property Lines obtained from Ulster County Parcel Viewer

Tracks to remain in place for use by the D&U RR

Existing Platform to remain for use by the D&U RR

Belleayre Ski Center Sign

28

Existing Culvert and delineated Wetland

"Compromise Joint" - End of D&U RR use agreement in Ulster County

Land Owned by Belleayre Ski Center (ORDA)

Trail should be constructed 5-10 ft. from near rail as shown for use by D&U RR

Ulster and Delaware Turnpike

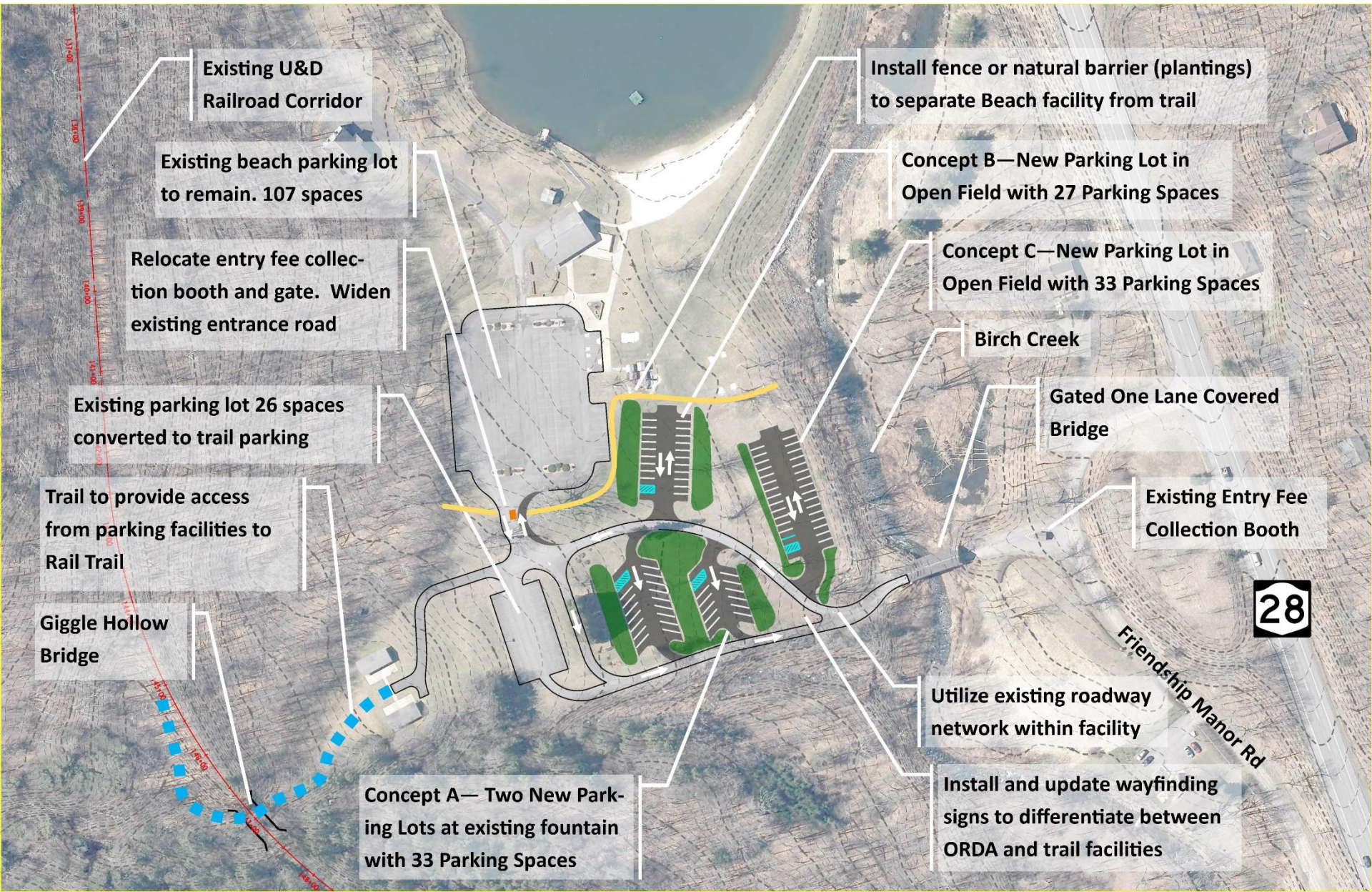
Potential for expanded parking in open field with agreement between ORDA and County

Connection to field parking if agreed upon with ORDA

Parking Lot Concept with 37 Parking Spaces in County ROW

Galli Curci Rd (CR 49A)

Belleayre Beach



Existing U&D
Railroad Corridor

Existing beach parking lot
to remain. 107 spaces

Relocate entry fee collec-
tion booth and gate. Widen
existing entrance road

Existing parking lot 26 spaces
converted to trail parking

Trail to provide access
from parking facilities to
Rail Trail

Giggle Hollow
Bridge

Concept A— Two New Park-
ing Lots at existing fountain
with 33 Parking Spaces

Install fence or natural barrier (plantings)
to separate Beach facility from trail

Concept B—New Parking Lot in
Open Field with 27 Parking Spaces

Concept C—New Parking Lot in
Open Field with 33 Parking Spaces

Birch Creek

Gated One Lane Covered
Bridge

Existing Entry Fee
Collection Booth

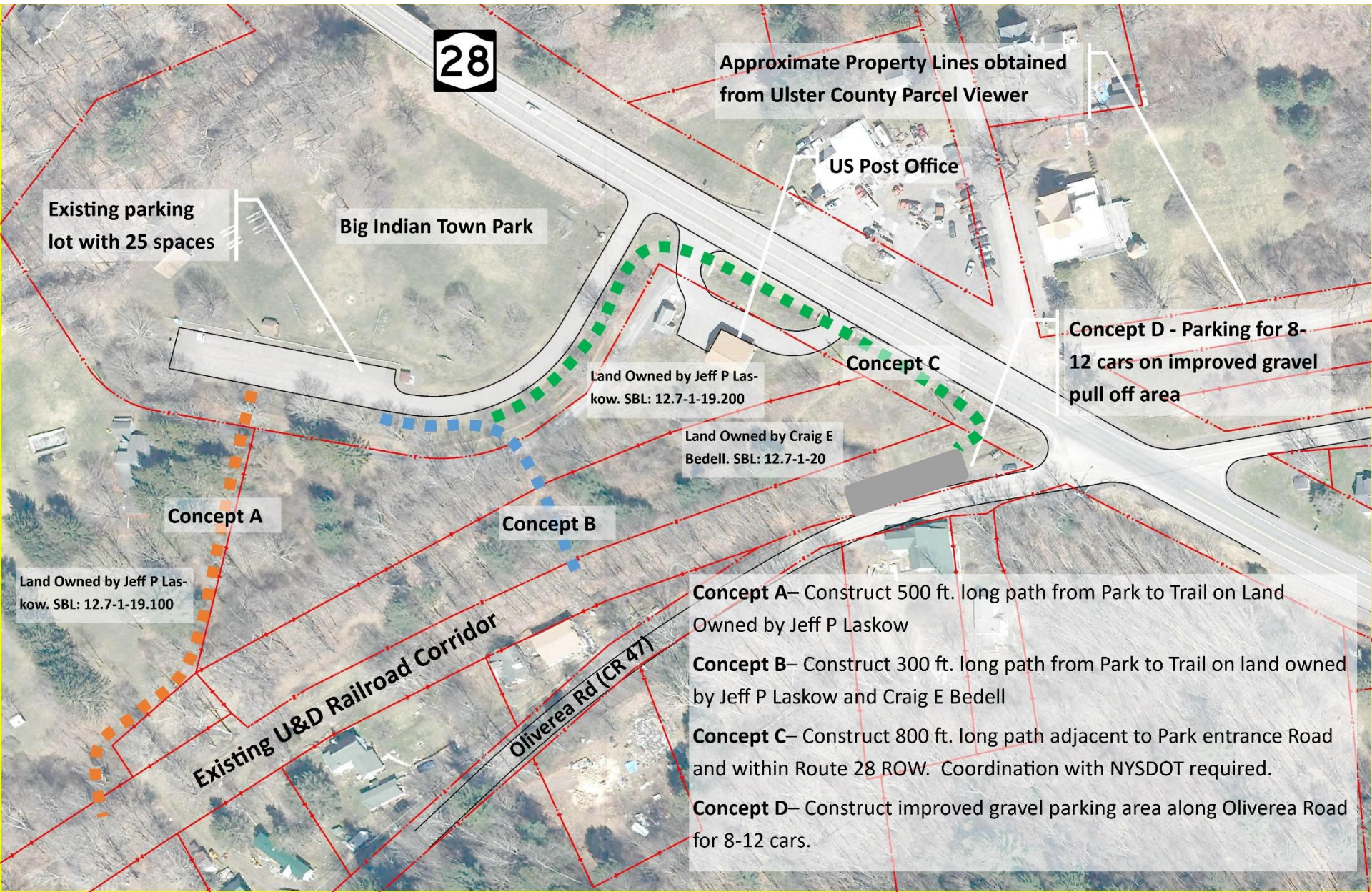
Utilize existing roadway
network within facility

Install and update wayfinding
signs to differentiate between
ORDA and trail facilities

28

Friendship Manor Rd

Big Indian



28

Approximate Property Lines obtained from Ulster County Parcel Viewer

US Post Office

Existing parking lot with 25 spaces

Big Indian Town Park

Land Owned by Jeff P Laskow. SBL: 12.7-1-19.200

Land Owned by Craig E Bedell. SBL: 12.7-1-20

Concept D - Parking for 8-12 cars on improved gravel pull off area

Concept C

Concept B

Concept A

Land Owned by Jeff P Laskow. SBL: 12.7-1-19.100

Existing U&D Railroad Corridor

Oliverea Rd (CR 47)

Concept A— Construct 500 ft. long path from Park to Trail on Land Owned by Jeff P Laskow

Concept B— Construct 300 ft. long path from Park to Trail on land owned by Jeff P Laskow and Craig E Bedell

Concept C— Construct 800 ft. long path adjacent to Park entrance Road and within Route 28 ROW. Coordination with NYSDOT required.

Concept D— Construct improved gravel parking area along Oliverea Road for 8-12 cars.

How much will this cost?

| | Highmount to Belleayre Beach | Belleayre Beach to Lasher Road | Lasher Road to Big Indian |
|--|------------------------------|--------------------------------|---------------------------|
| Trail & Trailhead Construction, Design & Incidentals | \$3,290,000 | \$2,750,000 | \$1,200,000 |
| Bridge Rehabilitation | \$430,000 | \$760,000 | \$1,850,000 |
| Section Total | \$3,720,000 | \$3,510,000 | \$3,050,000 |

Total project cost from Highmount to Big Indian:
\$10,280,000

Benefit to Local Communities

Town of Shandaken

Hamlet of Pine Hill

All recreational users (hiking, biking, walking, running, XC skiing, snoshoeing, etc.)

Local restaurants and shops

County tax base

Health benefit

Specific economic and health benefits documented in several different reports on this corridor including by Stone Consulting and Camoin Associates



Draft Feasibility Report

Ulster & Delaware Corridor Revitalization Study – Shandaken Section



Prepared for
Ulster County Transportation Council
244 Fair Street
Kingston, New York 12401

Revision 2
April 2021

Barton & Loguidice

<https://ulstercountyny.gov/transportation-council/active-studies/shandaken-ud-study>

Questions? Comments? Ideas?



Thank you for Attending!

To provide your thoughts on the project, please contact:

Brian Slack

Ulster County Transportation Council

Please reference the "U&D Corridor Study - Shandaken"

Email:

bsla@co.ulster.ny.us

Mailing Address:

UCTC

PO Box 1800

Kingston NY, 12402

Please visit the project website for more information:

<https://ulstercountyny.gov/transportation-council/active-studies/shandaken-ud-study>

****All Questions and Comments must be received by May 21, 2021****