



Water for the Future:
Rondout-West Branch Tunnel Repair
Draft Environmental Impact Statement

Town of Wawarsing
January 25, 2012

- ❖ Introductions by Ira Stern
- ❖ Overview of Proposed Project by Ted Dowey (15 min)
- ❖ EIS and Public Review Process by Mark Page (5 min)
- ❖ Draft EIS Assessment and Conclusions by Mark Page (10 min)
- ❖ Informal Question and Answer by DEP Team (15 min)
- ❖ Public Comments facilitated by Mark Page (until 9 PM)

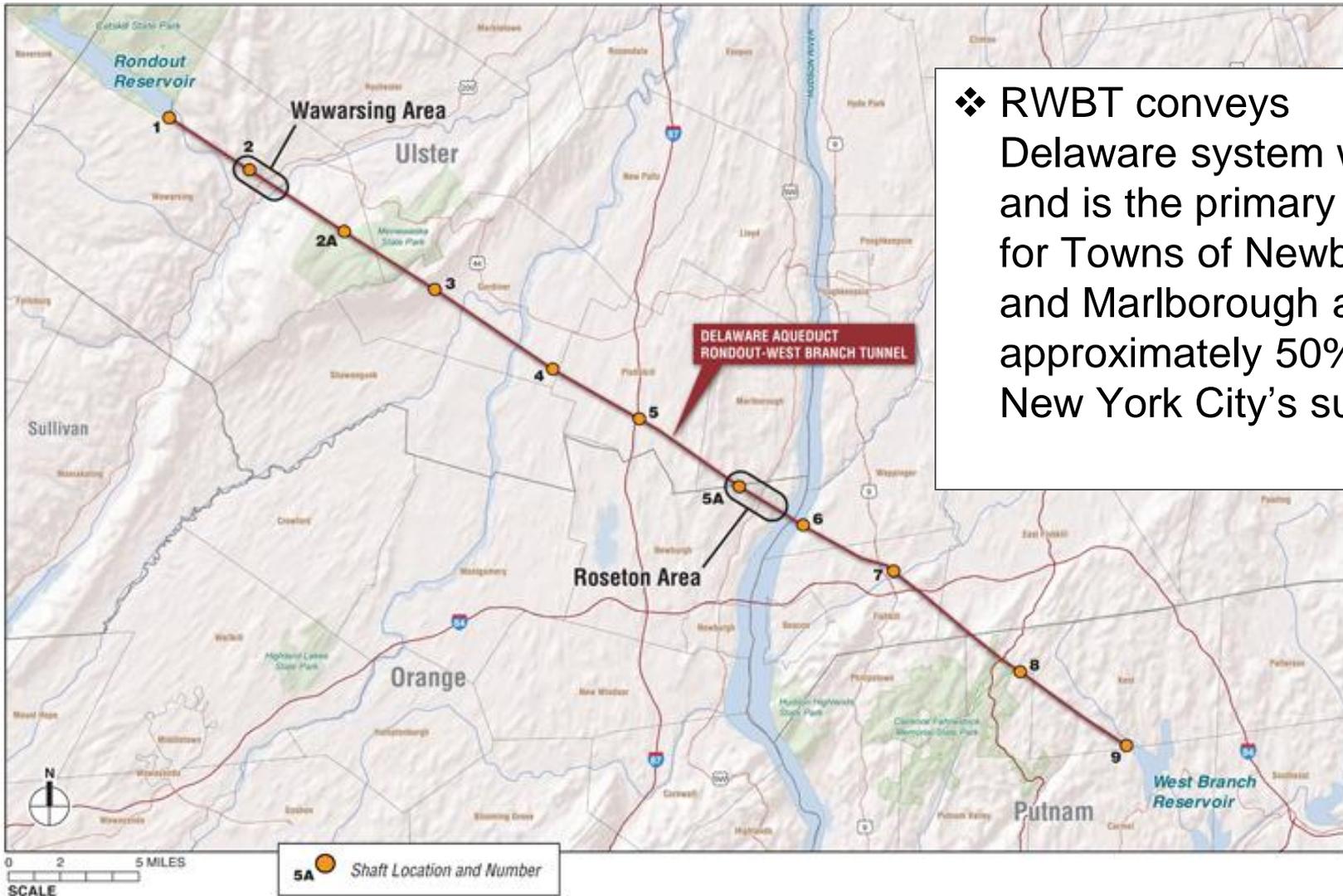
- ❖ NYC Water Supply System
- ❖ RWBT Primary Areas of Concern
- ❖ Proposed Program:
 - ❖ Bypass tunnel construction and connection and repairs in Wawarsing
 - ❖ Water supply system augmentation

Water Supply System

- ❖ RWBT currently leaking between 15 and 35 million gallons per day
- ❖ Proposed program would ensure the safe and reliable transmission of drinking water



RWBT Primary Areas of Concern



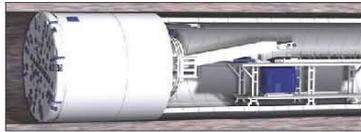
❖ RWBT conveys Delaware system water and is the primary source for Towns of Newburgh and Marlborough and approximately 50% of New York City's supply

- ❖ DEP plans to address the leaks in the RWBT by undertaking the Rondout-West Branch Tunnel Repair Program, which consists of two projects:
 - ❖ Constructing a bypass tunnel around the leaking areas in Roseton
 - ❖ Repair of Aqueduct in Wawarsing
 - ❖ Developing water supply augmentation projects
- ❖ The two projects are phased as follows:
 - ❖ Project 1: Shaft and Tunnel Construction
 - ❖ Project 2A: Water Supply System Augmentation
 - ❖ Project 2B: Bypass Tunnel Connection and RWBT Inspection and Repair, Including Wawarsing

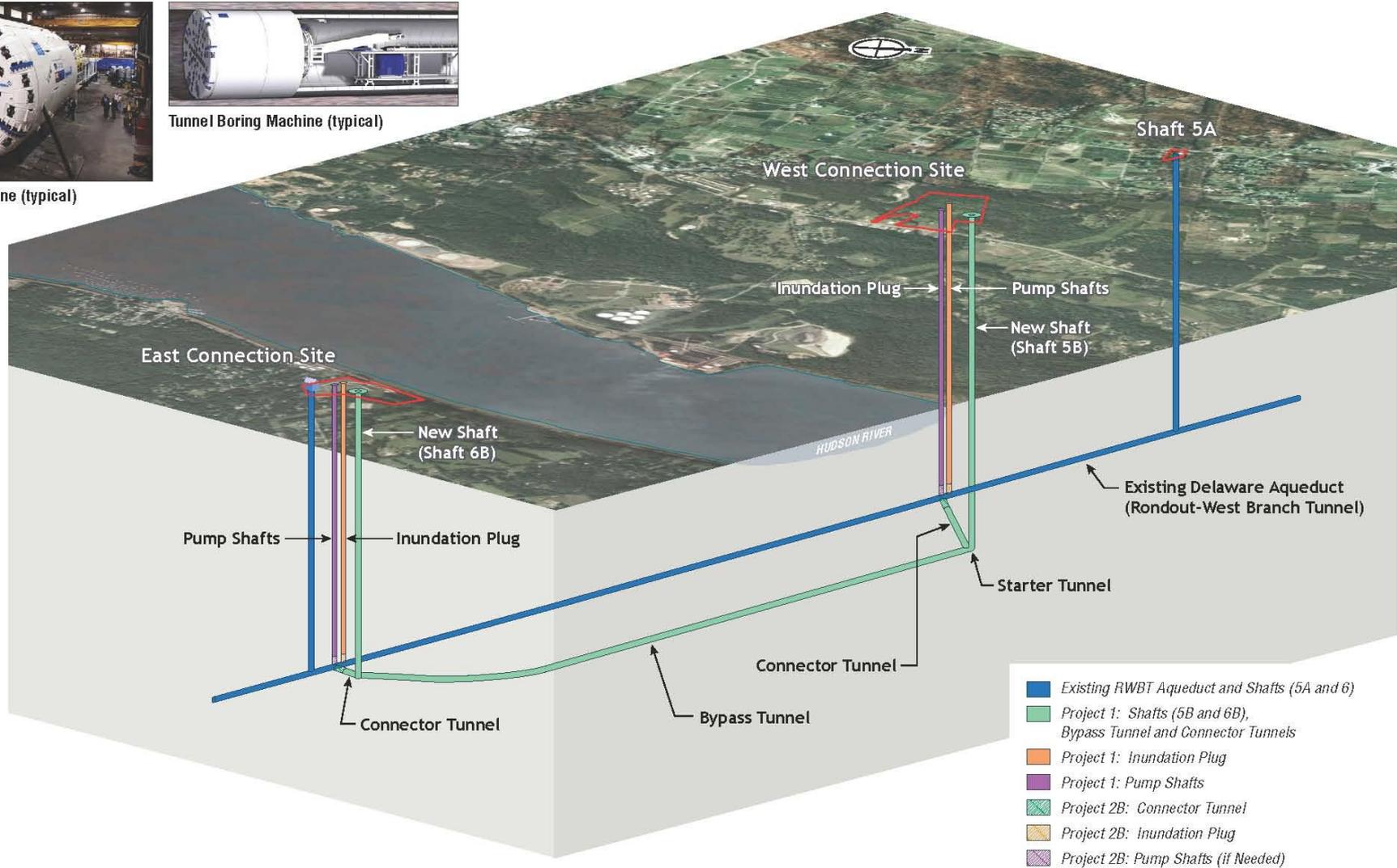
Bypass Tunnel Construction



Tunnel Boring Machine (typical)

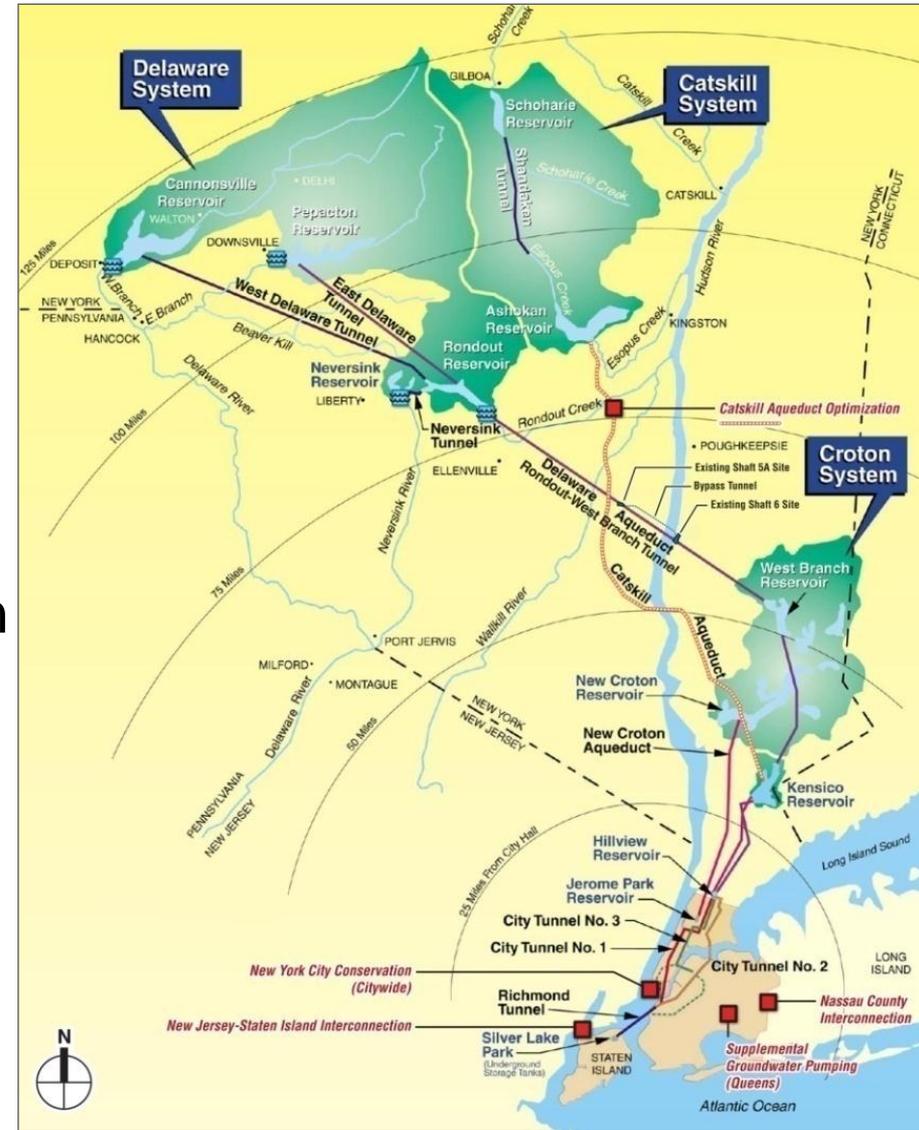


Tunnel Boring Machine (typical)



Water Supply System Augmentation and Improvement

- ❖ Conservation
- ❖ Upper Catskill Aqueduct Optimization
- ❖ Queens Groundwater Rehabilitation
- ❖ NJ-NYC Interconnection
- ❖ Nassau County Interconnection

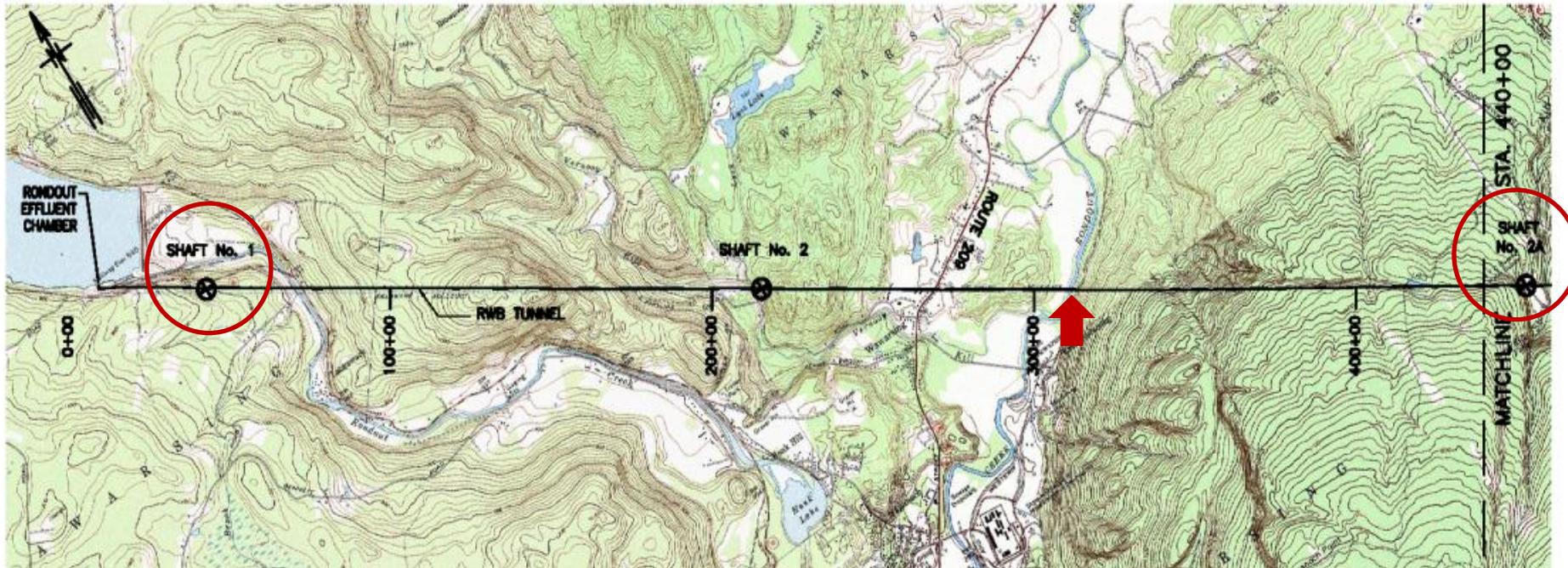


- ❖ Bypass Connection to RWBT, East and West Sites:
 - ❖ Unwatering of RWBT
 - ❖ Complete inundation plugs (only if necessary)
 - ❖ Complete connector tunnels and connection of bypass to RWBT
 - ❖ Demobilization and site restoration
- ❖ Repairs in Wawarsing
 - ❖ Access through Shaft 2A
 - ❖ Grouting, Lining, Patching
 - ❖ Steel reinforcements
 - ❖ Unwatering



Repairs at Wawarsing

- ❖ Repairs:
 - ❖ Crack repair
 - ❖ Contact grouting
 - ❖ Consolidation/cut-off grouting
- ❖ Liner strengthening:
 - ❖ Steel liner



- ❖ Work during repair:
 - ❖ Establish security
 - ❖ Remove Shaft cover
 - ❖ Ventilate tunnel
 - ❖ Provide standby power
 - ❖ Restore Shaft cover



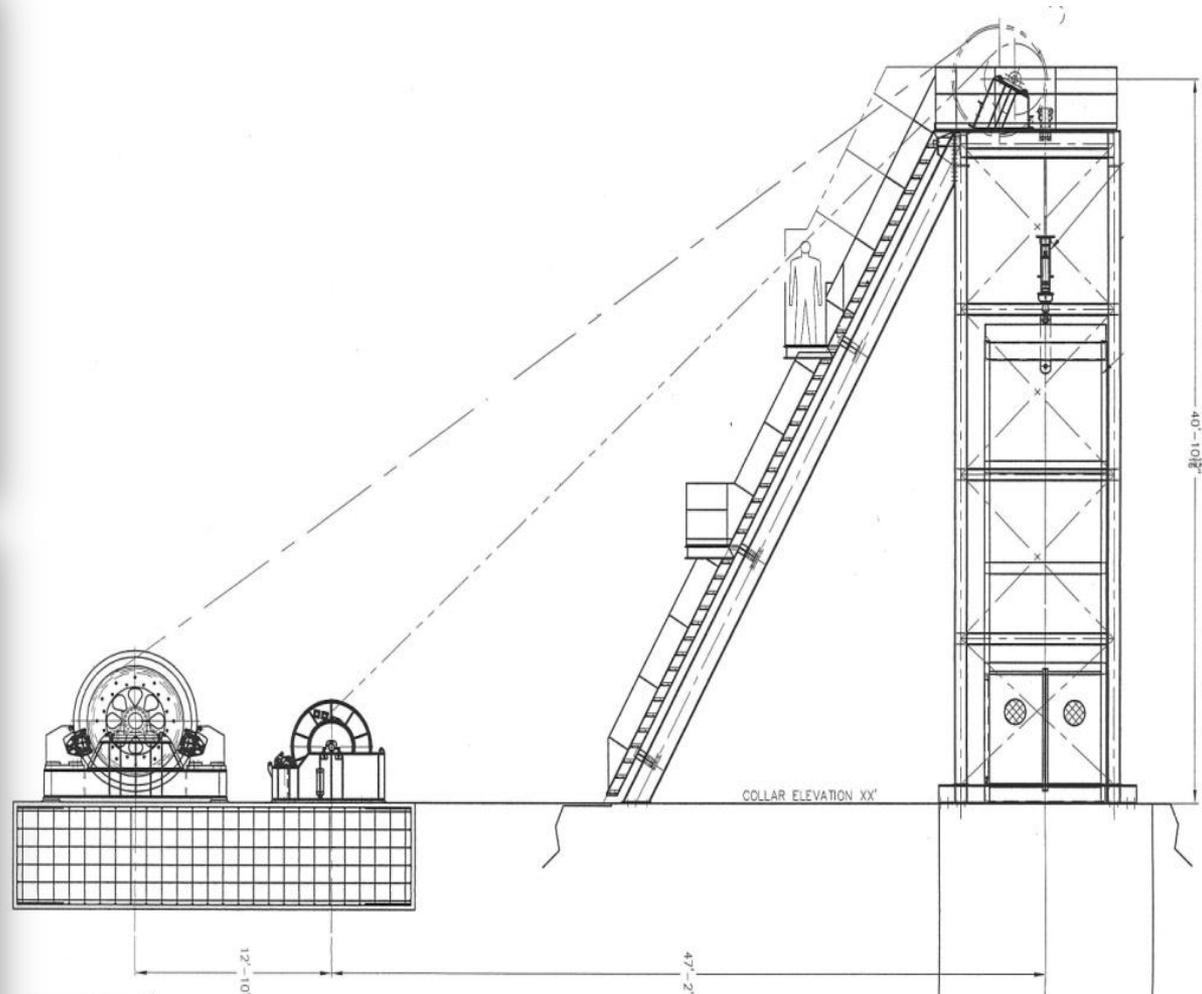
Shaft 2A – Personnel/Materials/Equipment

- ❖ Work during repair:
 - ❖ Establish security
 - ❖ Remove Shaft cover
 - ❖ Erect headframe
 - ❖ Access tunnel
 - ❖ Establish field offices
 - ❖ Provide standby power
 - ❖ Restore Shaft cover



Shaft 2A – Personnel/Materials/Equipment

- ❖ Headframes for a hoisting system to provide means of access and material transport in shafts





Transport vehicles for personnel and small equipment



Three rock drills to drill holes for grouting, drainage, and ground support



300 feet of steel liner sections for long term repair/strengthening of existing liner



Grout pumps and plant on the surface and in the tunnel



Pipe carriers to place the steel liner sections



Representative In-Tunnel Repair



- ❖ Bronx Tunnel
- ❖ Repairs undertaken from within Bronx Tunnel using:
 - ❖ Brokk Drill
 - ❖ Jack Leg Drill
 - ❖ Grouting

EIS and Public Review Process

- ❖ Meeting is being held in accordance with State and City legal requirements*
- ❖ DEIS must:
 - ❖ Disclose any potential significant adverse impacts, temporary or permanent, and develop mitigation to the greatest extent practicable
 - ❖ Disclose any potential significant adverse impacts that are not mitigated
 - ❖ Assess alternatives to the proposed project
- ❖ Public comments will be accepted into the record
 - ❖ DEP will respond to all comments in the Final EIS
 - ❖ All comments will be considered, and the Final EIS will be adjusted accordingly
 - ❖ A formal response to comments will be included in the Final EIS

*New York City's Environmental Quality Review (CEQR) as set forth in Executive Order 91 of 1977 and its amendments and the State Environmental Quality Review Act (SEQRA) and its implementing regulations (6NYCRR Part 617)

- ❖ A notification of the Draft EIS was sent to:
 - ❖ Every member of the public who commented on the Draft Scope of Work
 - ❖ Involved agencies (Local, State, and Federal)
 - ❖ Residents near the project site
 - ❖ General public:
 - ❖ Times Herald-Record
 - ❖ Shawangunk Journal
 - ❖ Kingston Daily Freeman
 - ❖ Mid-Hudson Times
 - ❖ Poughkeepsie Journal
 - ❖ Southern Dutchess News
 - ❖ Sentinel

Planned EIS Schedule

Draft Scope of Analysis	May 3, 2011
Public Scoping Meetings	June & July 2011
Final Scope of Analysis	August 31, 2011
Draft EIS	December 20, 2011
Public Hearings: Draft EIS	January 23, 2012 (Newburgh) January 24, 2012 (Wappinger) January 25, 2012 (Wawarsing)
Final EIS	March 2012
Second Draft EIS	Early 2014
Second Final EIS	Fall 2014

- ❖ First EIS will assess:
 - ❖ Project 1, Shaft and Bypass Tunnel Construction—IN DETAIL
 - ❖ Project 2A, Water Supply System Augmentation—GENERICALLY
 - ❖ Project 2B, Bypass Tunnel Connection and RWBT Inspection and Repair—GENERICALLY
 - ❖ Operation of the proposed program—IN DETAIL
- ❖ Second EIS will assess:
 - ❖ Projects 2A and 2B—IN DETAIL

Draft EIS Assessment and Conclusions

- ❖ Each technical area of the DEIS includes an analysis of:
 - ❖ Existing conditions
 - ❖ Conditions in the future without the proposed project
 - ❖ Conditions in the future with the proposed project
 - ❖ A comparison of the future without the project to the future with the project

- ❖ Any significant adverse impacts predicted are minimized or mitigated to the greatest extent practicable

- ❖ This DEIS assessed the following impact categories for Project 1
In detail:
 - ❖ Land Use
 - ❖ **Neighborhood Character**
 - ❖ Visual Character
 - ❖ Historic and Archeological Resources
 - ❖ Socioeconomic
 - ❖ Community Facilities
 - ❖ Natural Resources
 - ❖ Hazardous Materials
 - ❖ **Transportation**
 - ❖ Air Quality
 - ❖ Energy and Greenhouse Gas
 - ❖ **Noise**
 - ❖ Infrastructure
 - ❖ Solid Waste
 - ❖ Coastal Zone
 - ❖ Public Health
 - ❖ Growth Inducement

- ❖ Potential affects associated with the connection and repairs in Wawarsing, as well as augmentation projects was assessed generically.

- ❖ Shaft 1: Potential impacts likely to be minor and related to surface activity during the repair of the tunnel
- ❖ Shaft 2A:
 - ❖ In addition to construction activity, there is a potential for traffic and noise impacts associated with work at this location
 - ❖ Grout injections may affect ground or surface water
 - ❖ Possible that tunnel could be unwatered from this shaft, requiring permits and consent from local landowners
- ❖ A detailed assessment would be included in the Second EIS and will focus on:
 - ❖ Potential construction impacts associated with the repairs
 - ❖ Potential affects to groundwater levels and local wells (based on forthcoming USGS study)

Oral Comments

- ❖ Draft EIS available at the Town of Wawarsing Town Hall or online at www.nyc.gov/dep
- ❖ Draft EIS issued on December 20, 2011
- ❖ Written comments will be accepted until February 17, 2012
- ❖ Send comments to:

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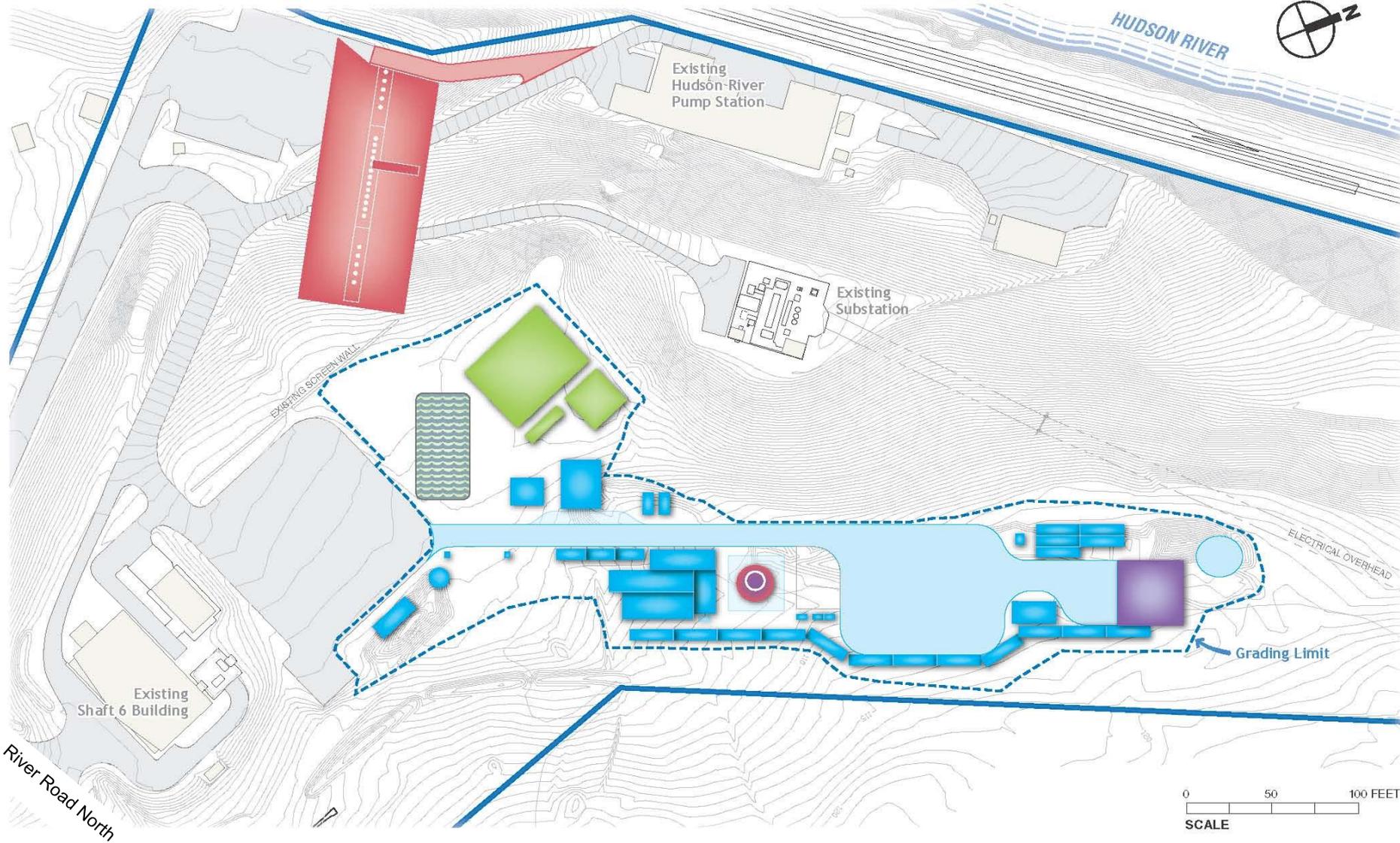


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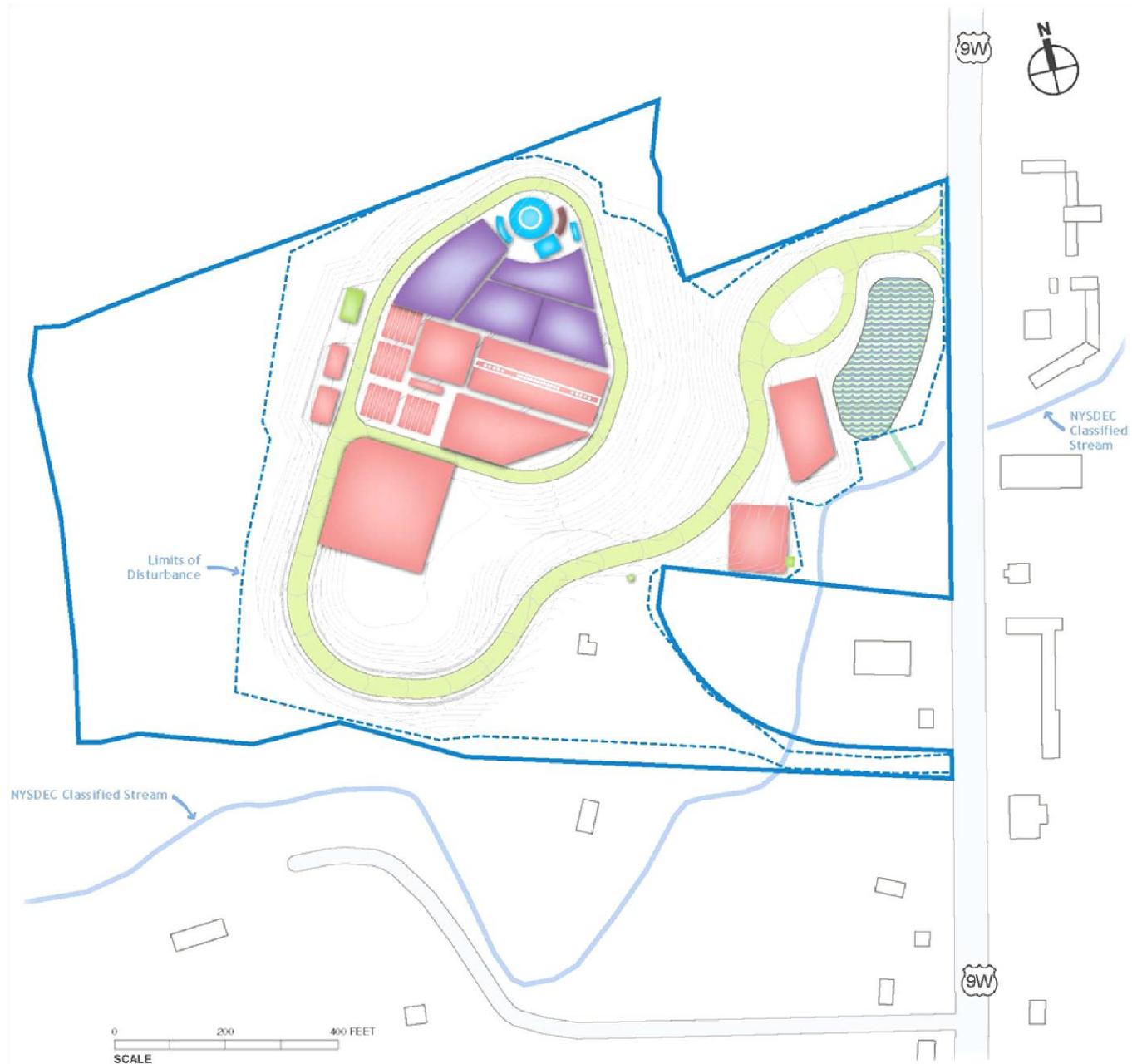
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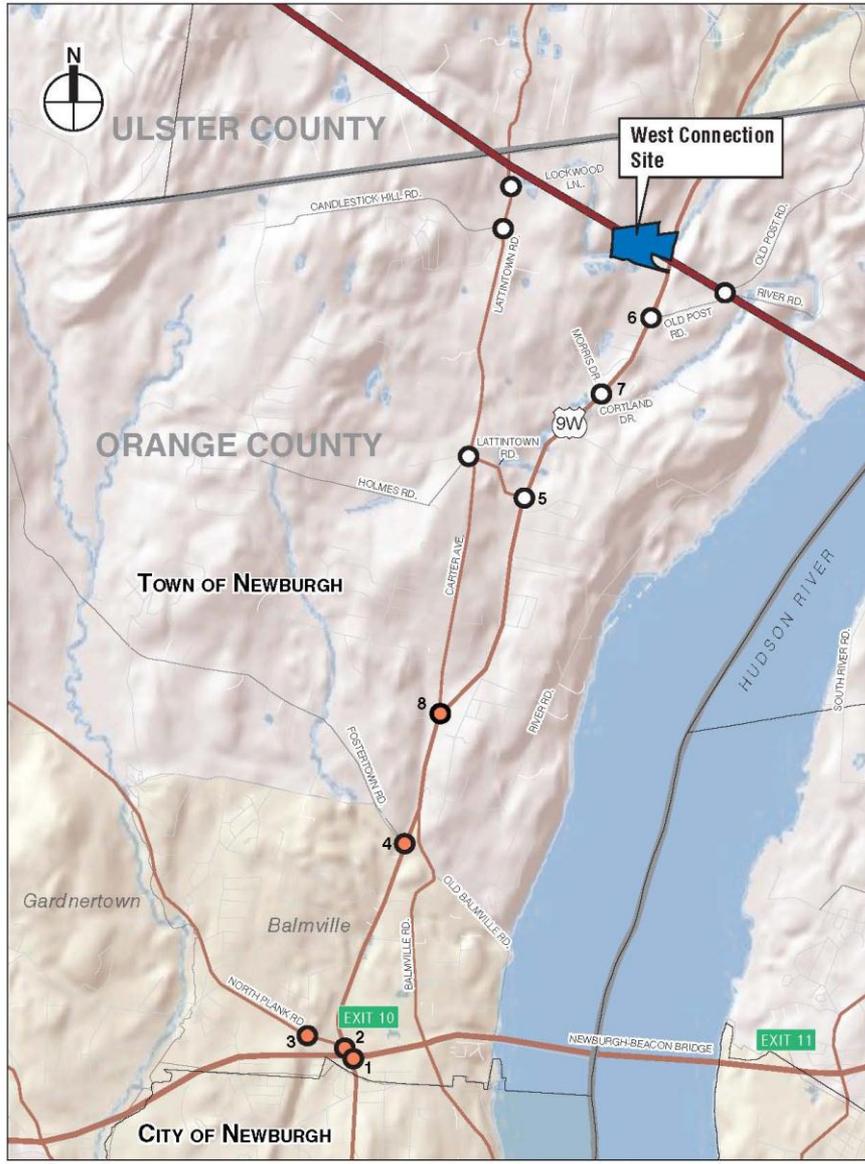
East Connection Site



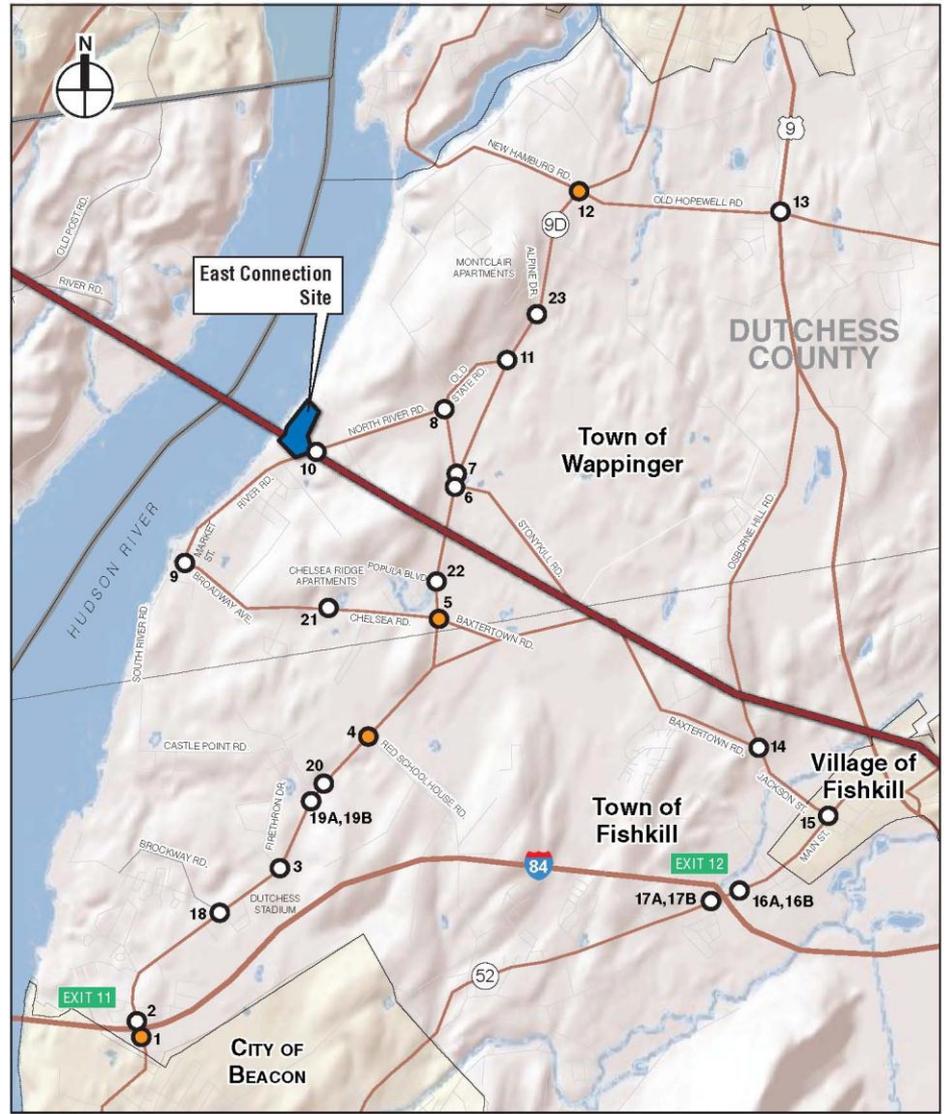
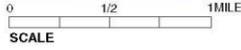
West Connection Site



Transportation



- West Connection Site
- Delaware Aqueduct Rondout-West Branch Tunnel
- Intersection Analyzed: No Impacts with Project
- Intersection Analyzed: Impacts with Project



- East Connection Site
- Delaware Aqueduct Rondout-West Branch Tunnel
- Intersection Analyzed

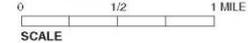


Figure 2.10-2
Traffic Study Area
East of Hudson Study Area

- ❖ The noise modeling program incorporates topography, background noise levels, on-site equipment and vehicles
- ❖ The model also accounted for traffic entering and exiting the site
- ❖ The model predicts 1-hour Leq noise levels
- ❖ A noise impact under CEQR occurs when there is an increase of 3-5 dBA during daytime hours or 3 dBA at night

Noise

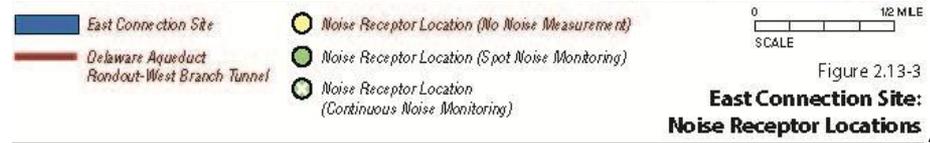
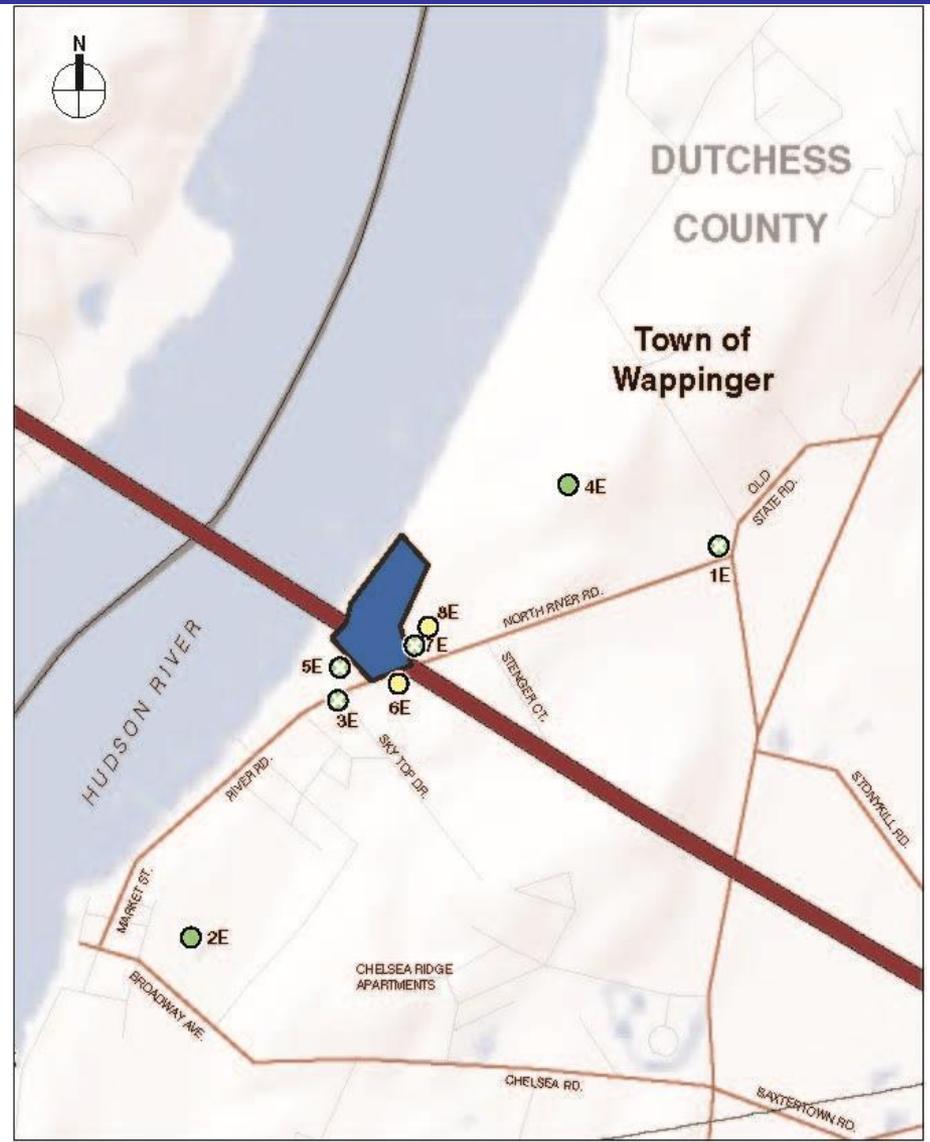
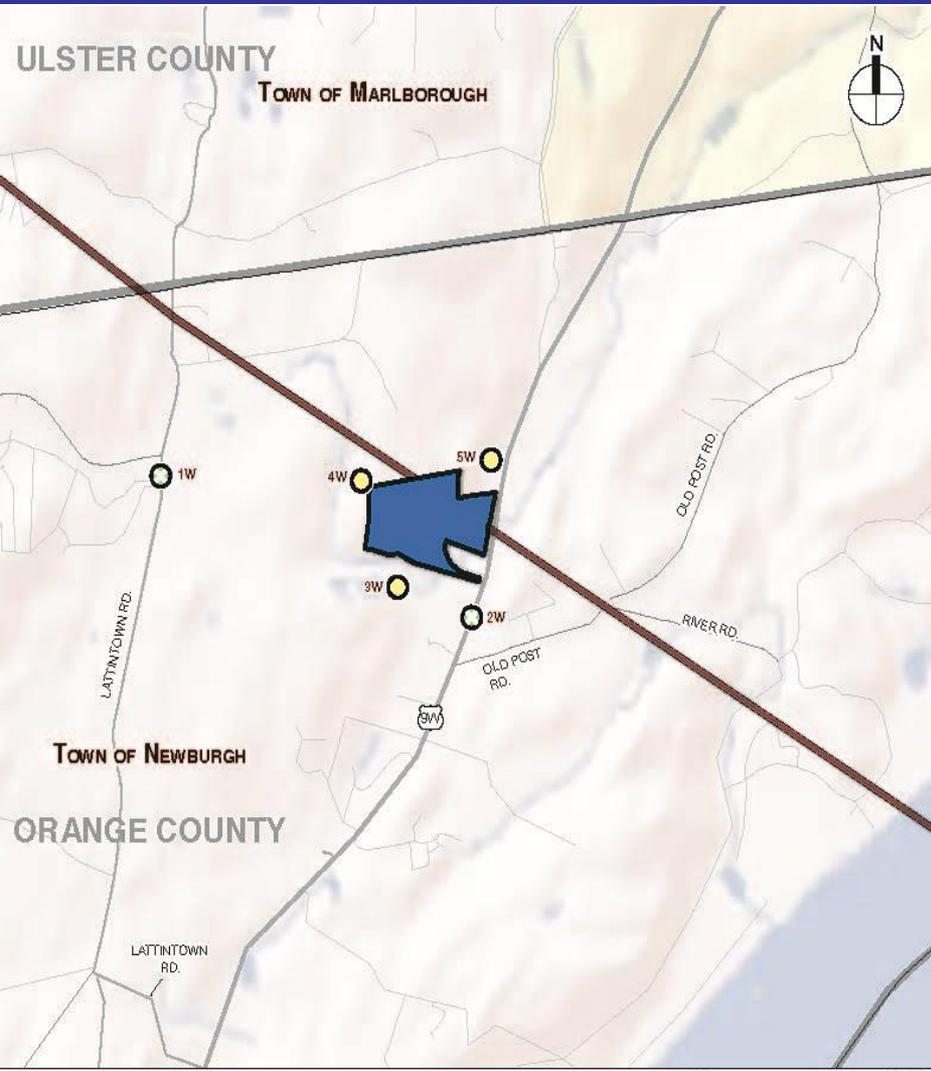
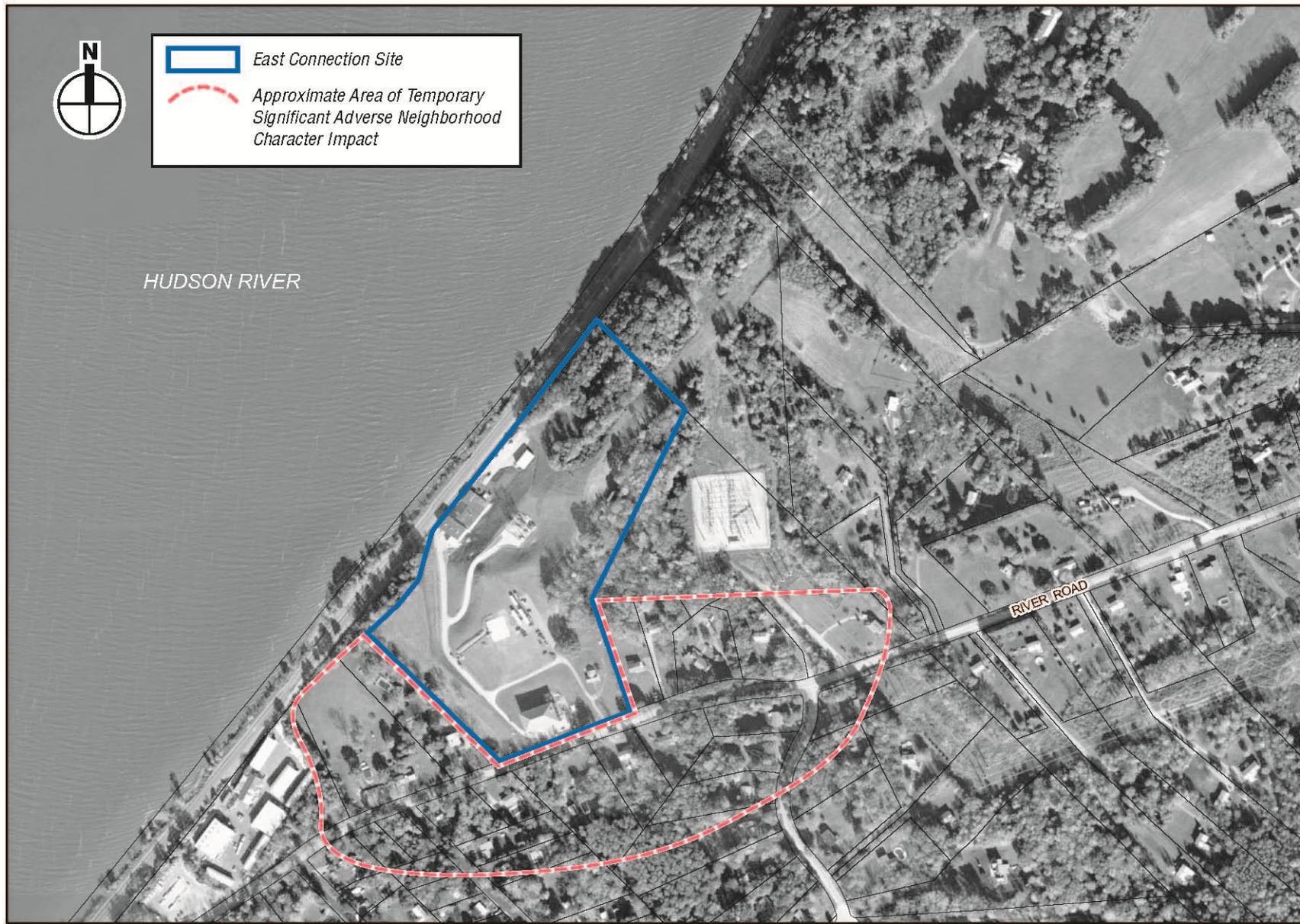


Figure 2.13-3
**East Connection Site:
Noise Receptor Locations**

Neighborhood Character – East Connection Site



HUDSON RIVER

RIVER ROAD

0 200 500 FEET



SCALE