Executive Summary

ES-1 INTRODUCTION

The New York City Department of Environmental Protection (DEP) provides drinking water to nearly 10 million people, roughly half the population of New York State. More than 90 percent of New York City's drinking water is supplied by the Catskill and Delaware watersheds located in upstate New York. The Catskill and Delaware aqueducts convey water by gravity from these upstate watersheds to Kensico Reservoir located in Westchester County, New York (see **Figure ES-1**).

Consistent with DEP's need to protect the long-term viability and overall resiliency of the water supply system, the City continues to make systematic and sustained investments in the system's critical infrastructure. The Kensico-Eastview Connection (KEC) Project would provide for the construction and operation of a new, additional water conveyance tunnel between Kensico Reservoir and the Catskill/Delaware Ultraviolet Disinfection (CDUV) Facility. The KEC Project represents a substantial multi-year construction effort that would largely occur at two project locations – the Kensico Campus and the KEC Eastview Site, located in the Town of Mount Pleasant, Westchester County, New York.

The KEC Project is comprised of the construction of a number of elements including, but not limited to, the construction of new downtake and uptake shafts, an approximately 2-mile-long deep rock tunnel, a screen chamber, connection chamber, an improved Catskill Upper Effluent Chamber (UEC), and additional supporting facilities. Upon the completion of construction, operation of the new facilities would not represent a substantive change in the level or type of activities that currently occur at the Kensico Campus and KEC Eastview Site. As a result, this ~~Draft~~ Final Environmental Impact Statement (EIS) is primarily focused on an assessment of potential impacts from construction with a more limited evaluation of potential effects due to operation, as applicable.

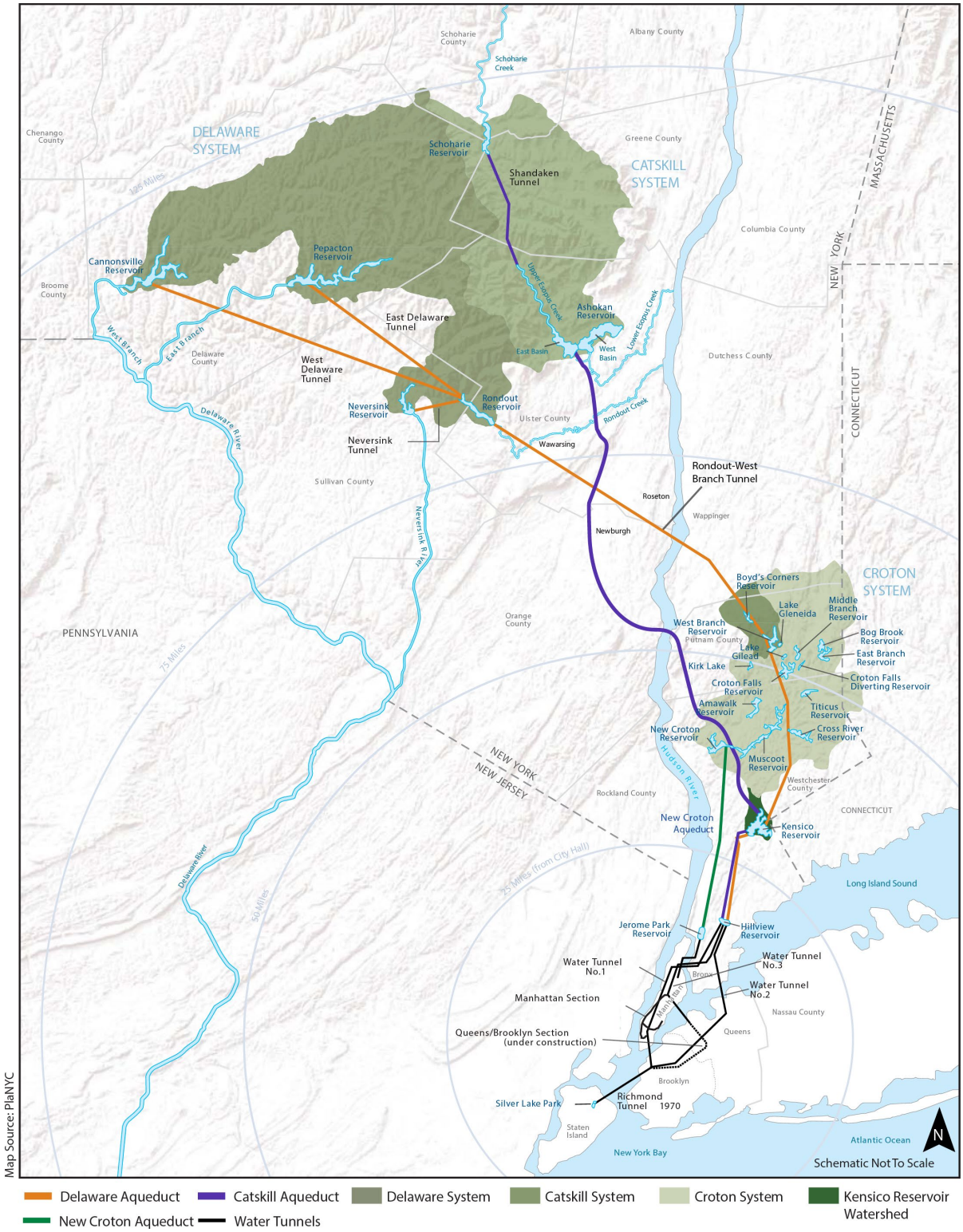

Figure ES-1. New York City Surface Water Supply System Map

ES-2 PURPOSE AND NEED

Since the activation of the CDUV Facility in 2012, DEP has used the Delaware Aqueduct to supply water to the CDUV Facility. To increase operational flexibility and system redundancy, DEP undertook a Master Planning and Facilities Planning effort to identify alternative water conveyance options from Kensico Reservoir to the CDUV Facility. A new tunnel (the KEC Tunnel) was identified as the preferred alternative to achieve this.

Completion of the KEC Project would increase flow to the CDUV Facility and improve DEP's ability to maintain Hillview Reservoir water surface levels within normal operating limits during single-basin operations at Hillview Reservoir during Hillview Cover construction in accordance with the Hillview Consent Decree and Judgment's mandates. Extended periods of single-basin operation of the Hillview Reservoir are anticipated during construction of the Hillview Cover. The reduction in storage capacity at Hillview Reservoir during this time would impact the City's ability to meet peak distribution demands and reduce operational flexibility. Completion of the KEC Project tie-in and sequencing with the future Hillview Reservoir Cover construction is critical to ensure sufficient transmission capacity to offset the reduction in storage capacity.

The goals and objectives identified by DEP for the proposed KEC Project include:

- Enhance operational resiliency and redundancy for the water supply system;
- Provide target capacity to the CDUV Facility;
- Preserve the potential for the Catskill Aqueduct to bypass Kensico Reservoir;
- Facilitate emergency and planned outages; and
- Provide compatibility with future infrastructure projects.

ES-3 PROJECT DESCRIPTION

ES-3.1 INTRODUCTION

The KEC Project would be located in the Town of Mount Pleasant as shown on **Figure ES-2**. The KEC Project would be comprised of several elements, as discussed in more detail below. In addition to the water conveyance tunnel, the KEC Project encompasses two distinct project sites, the Kensico Campus and the KEC Eastview Site.

ES-3.1.1 KENSICO CAMPUS

The Kensico Campus encompasses an area immediately adjacent to and west of Kensico Reservoir and is bounded to the west by Columbus Avenue, the south by West Westlake Drive, and the north by Valhalla Middle and High Schools. DEP has a number of existing facilities and operations that are located within the Kensico Campus. The Kensico Campus includes Delaware Shaft 18 (DEL Shaft 18) that allows Kensico Reservoir waters to enter the Delaware Aqueduct for conveyance to the CDUV Facility, as well as the UEC that historically allowed reservoir waters to enter the Catskill Aqueduct. As part of historical UEC operations, waters would flow from the UEC through the existing Dike Grade Tunnel to the Catskill Lower Effluent Chamber (LEC), and then the existing Catskill Screen Chamber before continuing to Hillview Reservoir through the Catskill Aqueduct. Chemical addition facilities that provide disinfection and fluoridation to the aqueducts are located at DEL Shaft 18 (located at the Kensico Campus) and the Catskill Screen Chamber (located on City-owned property west of Columbus Avenue). DEP also maintains several other operations and structures including, but not limited to, the former Kensico Laboratory building, DEP police booth, and waterfowl management operations.

ES-3.1.2 KEC EASTVIEW SITE

The KEC Eastview Site is located north of Grasslands Road (NY State Route 100C), east of Walker Road, and west of the Westchester County Corrections complex. Facilities located at the KEC Eastview Site include the CDUV Facility, DEL Shaft 19, administrative offices, and the DEP Police 6th Precinct. The site has access from Walker Road to the west and emergency access from Grasslands Road to the south.

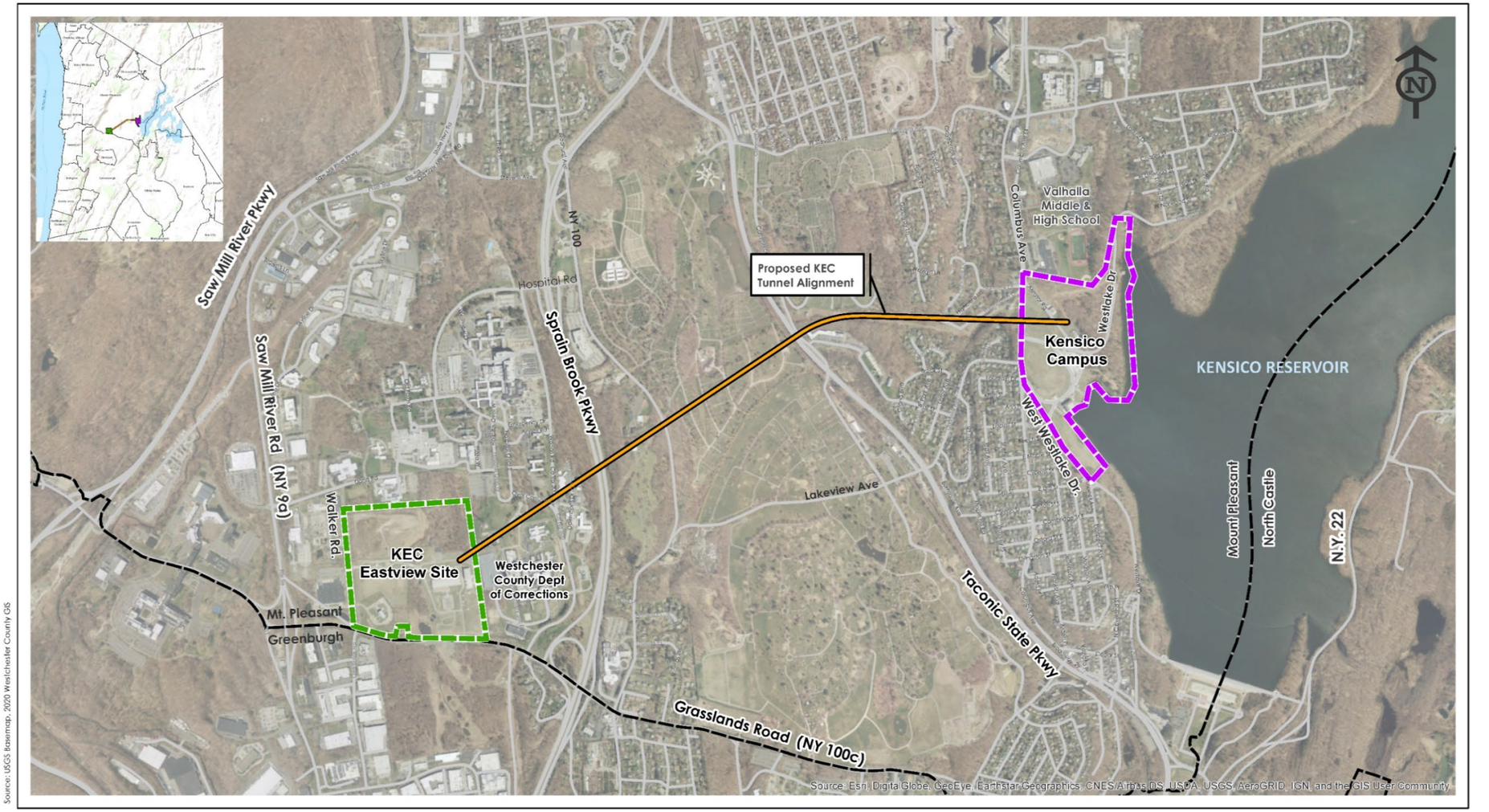

Figure ES-2. Project Overview

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ES-3.2 PROPOSED ACTION

The KEC Project would involve the construction and operation of a new, additional water conveyance tunnel between Kensico Reservoir and the CDUV Facility.

ES-3.2.1 KEC UPTAKE AND DOWNTAKE SHAFTS

Two new shafts, a downtake shaft (KEC Shaft 1C) and an uptake Shaft (KEC Shaft 2C) would be constructed as part of the Proposed Action. These shafts would facilitate the KEC Tunnel's construction and ultimately convey water to and from the KEC Tunnel once the Proposed Action is completed. KEC Shaft 1C would be located at the Kensico Campus. KEC Shaft 2C would be located at the KEC Eastview Site.

ES-3.2.2 DEEP ROCK TUNNEL

A new deep rock tunnel would be constructed between the Kensico Campus and the KEC Eastview Site (**Figure ES-2**). The proposed alignment of the KEC Tunnel would be approximately 2 miles. A tunnel boring machine would be used to construct the KEC Tunnel with initiation from the KEC Eastview Site and would then proceed eastward to the Kensico Campus.

A significant portion of the KEC Tunnel alignment would be located beneath property not currently owned by DEP. DEP would need to secure subsurface utility easements for the protection of the KEC Tunnel both during construction and operation. The easements for each applicable property along the tunnel alignment would protect a corridor 150 feet in width and require that the crown of the tunnel be at least 100 feet below the current ground surface. The proposed deep rock KEC Tunnel and corresponding utility easements would not result in any physical change to the current ground surface, subsurface structures, or land features, but would restrict certain subsurface development activities within the easement area.

ES-3.2.3 UPPER EFFLUENT CHAMBER IMPROVEMENTS

The UEC, which serves as an intake structure to the Catskill Aqueduct from Kensico Reservoir, was constructed between 1910 and 1918. The existing UEC is capable of withdrawing 600 to 800 mgd of water from Kensico Reservoir.

Modifications to the UEC to increase the capacity of the structure would be required as part of the KEC Project. These modifications would primarily accommodate the new intake design flow of 2,645 mgd. In order to accommodate the proposed KEC Project design flow, improvements and modifications to the UEC are required including structural strengthening of the internal sluiceways and the creation of an additional effluent portal, as well as mechanical improvements. Other work would include constructing a new shaft (UEC Shaft), just west of the UEC, to connect existing and proposed effluent portals to a new UEC Connection Tunnel that would

connect to the KEC Screen Chamber. Removal of accumulated sediment from Kensico Reservoir within the inlet channel leading to the face of the UEC would be completed prior to operation of the improved UEC to limit resuspension of sediments during future operation.

ES-3.2.4 KEC SCREEN CHAMBER

A new KEC Screen Chamber would be constructed to accommodate the increased UEC intake capacity as part of the KEC Project. The KEC Screen Chamber would remove debris from the raw water inflows to the facility. The KEC Screen Chamber would include three separate connections. Connections to the KEC Screen Chamber would be provided from the UEC to the KEC Screen Chamber (UEC Connection Tunnel); from the KEC Screen Chamber to the existing Dike Grade Tunnel to allow connection to the LEC and the Catskill Aqueduct (Dike Grade Return Tunnel); and a new Downtake Shaft Connection Tunnel from the KEC Screen Chamber to the KEC Tunnel.

ES-3.2.5 CONNECTION TUNNELS AND DIKE GRADE TUNNEL MODIFICATIONS

The KEC Project includes the modification and/or construction of several additional tunnels at the Kensico Campus. The three connection tunnels at the KEC Screen Chamber would be: (1) the UEC Connection Tunnel; (2) the Dike Grade Return Tunnel; and (3) the KEC Shaft 1C Connection Tunnel. The UEC Connection Tunnel would be an enlargement of a portion of the existing Dike Grade Tunnel from the UEC to the new KEC Screen Chamber. The Dike Grade Return Tunnel would be a new connection from the KEC Screen Chamber to the existing Dike Grade Tunnel in order to maintain use of the Catskill Aqueduct and bypass of the CDUV Facility in the event of an emergency. A new KEC Shaft 1C Connection Tunnel would be constructed between the new KEC Screen Chamber and KEC Shaft 1C. The KEC Shaft 1C Connection Tunnel would convey water from the screen chamber to KEC Shaft 1C and ultimately the new KEC Tunnel.

ES-3.2.6 MODIFICATION OF CHEMICAL ADDITION FACILITIES

Primary disinfection and fluoridation of water delivered through the KEC Tunnel would be required. The existing chlorination and fluoridation systems at DEL Shaft 18 and the Fluoride Building, respectively, would be used to provide the necessary chemical addition. Both the chlorine and fluoride systems at DEL Shaft 18 have been upgraded in the past 20 years. With relatively minor modifications, the chemical feed facilities that had previously been used for the Catskill Aqueduct segment between Kensico Campus and the KEC Eastview Site are considered suitable for use as part of the KEC Project. Modifications to existing chemical storage or handling facilities are not anticipated as part of the Proposed Action. In addition, no new storage facilities or capacity would be required. Flow metering would be provided to control chemical dosage.

ES-3.2.7 WESTLAKE DRIVE AND ADDITIONAL KENSICO CAMPUS SITE IMPROVEMENTS

Westlake Drive currently bisects the Kensico Campus and provides unrestricted access through the Kensico Campus to the public. Due to redevelopment of the overall Kensico Campus and to provide increased security and controlled access across the entire Kensico Campus, the KEC Project would result in the closure of the existing section of Westlake Drive from its intersection with Columbus Avenue to a location in the vicinity of the UEC. The existing roadway would be repurposed as a secured access point to the Kensico Campus.

Westlake Drive would be relocated to create a new connection between Westlake Drive and Columbus Avenue near the current intersection of Aerator Road and Columbus Avenue. In addition, to offset existing parking spaces on the current Westlake Drive that would no longer be available, a new parking lot with approximately 30 spaces would be constructed along the north side of the relocated Westlake Drive, near the intersection of Aerator Road and Columbus Avenue, with pedestrian access to Columbus Avenue.

The closure of the existing section of Westlake Drive would allow DEP to eliminate currently unrestricted public access in proximity to the City's critical water supply facilities. As part of the Proposed Action, DEP would install a new fence around the entire perimeter of the Kensico Campus. As part of overall security improvements for the KEC Project, a new DEP police booth and office would also be established along the closed section of Westlake Drive. This would provide a centralized location for on-site DEP Police and would include a secured access checkpoint for all entry into and out of the Kensico Campus.

A new electrical building would also be developed. This would serve as a local power feed during construction of the KEC Project but would also allow for the consolidation of existing and future electrical needs for overall operations at the Kensico Campus once construction is complete.

Additional activities at the Kensico Campus due to the Proposed Action would include tree clearing and regrading across a large portion of the Campus. The Proposed Action would disturb approximately ~~33~~ 36 acres of open land and would also result in the clearing of approximately 14 wooded acres at the Kensico Campus. Additional site improvements during construction would include construction staging, installation of temporary construction office trailers, soil stockpiling and management, dewatering, erosion and sediment control, stormwater management, and utility and water supply improvements. DEP would also incorporate appropriate landscaping across the campus including the addition of new trees.

ES-3.2.8 SHORELINE STABILIZATION

During Superstorm Sandy in October 2012, the western and cove shorelines and adjacent upland areas of Kensico Reservoir suffered severe erosion from wave action. This resulted in higher levels of sedimentation and suspended solids in reservoir waters, which caused turbidity issues in

areas near the existing Kensico Reservoir intakes, the UEC and DEL Shaft 18. In order to reduce the potential for a recurrence of these issues, the KEC Project would include stabilization of Kensico Reservoir's western shoreline which would extend approximately 1,600 linear feet from the UEC southward. Improvements would involve work above and below the waterline. Shoreline stabilization would involve a combination of regrading, excavation, riprap placement, concrete curb walls, and/or gabion walls.

The KEC Project would also reactivate the UEC intake to draw water from Kensico Reservoir into the new KEC Tunnel, including an increase from its original capacity of up to 800 mgd to a new proposed design capacity of 2,645 mgd. The increased level of water withdrawal, combined with the current potentially unstable conditions of the shoreline and nearby upland areas, are equally important issues that would be addressed by the proposed shoreline stabilization and improvements for the management of runoff from Malcolm Brook under the Proposed Action.

The Proposed Action would involve the replacement of existing structural control measures within the reservoir and west of the UEC intake to address ongoing runoff issues associated with Malcolm Brook. Malcolm Brook is located immediately northeast of the UEC and its intake channel and recurring storm events have historically presented challenges related to sediment runoff that can then affect water quality in proximity to the UEC in the form of suspended solids and turbidity. These present a challenge to DEP's need to provide high quality water from Kensico Reservoir and in particular the UEC. The Proposed Action would replace two existing curtains with a single new turbidity curtain. The new curtain would have an improved construction to limit leaks from individual panel segments and have a longer length of up to 1,300 feet which would be protective of water quality at the UEC and DEL Shaft 18.

ES-3.2.9 EASTVIEW CONNECTION CHAMBER

The KEC Tunnel would extend from the Kensico Campus to KEC Shaft 2C and the Eastview Connection Chamber (ECC), located at the KEC Eastview Site. Existing facilities located in proximity to KEC Shaft 2C and the ECC are the CDUV Facility, North Forebay, and DEL Shaft 19. The proposed ECC would connect KEC Shaft 2C and the CDUV Facility. The ECC would be generally centered above KEC Shaft 2C, located approximately 90 feet northwest of the North Forebay.

ES-3.2.10 ADDITIONAL KEC EASTVIEW SITE IMPROVEMENTS

Additional activities at the KEC Eastview Site would include off site removal of the remaining soil pile from the prior CDUV Facility construction in the northwest section of the KEC Eastview Site and removal and replacement of the existing temporary office trailer complex located north of the CDUV Facility. A new construction office complex would be located west of the CDUV Facility and Mine Brook and south of the existing interior access road and security booth. Access to the new office complex would be from Walker Road. The new

complex would consist of approximately nine trailers and an adjacent parking area. The existing office trailer complex would be removed.

Improvements to interior access roads would also be implemented including in proximity to the new ECC and within the southeast corner of the KEC Eastview Site. Additional activities due to the Proposed Action would include tree clearing and regrading within portions of the KEC Eastview Site and development of construction staging areas. Excavated material from the shaft, ECC, and tunnel would be managed in the northwest corner of the site prior to off-site removal. Additional site activities would include dewatering, erosion and sediment control, stormwater management, and utility improvements.

ES-3.3 PROJECT SCHEDULE

Construction of the Proposed Action would be initiated ~~in~~ around January 2024 and would span over an approximately ten-year period (see **Figure ES-3**). The anticipated schedule for the Proposed Action would encompass the following major elements:

- Site preparation at the Kensico Campus and the KEC Eastview Site, as well as relocation of Westlake Drive at the Kensico Campus are anticipated to begin ~~in~~ on or about January 2024.

- Construction of the proposed electrical building at the Kensico Campus and KEC Shaft 2C rock excavation at the KEC Eastview Site are anticipated to begin in 2025.

- Shoreline stabilization at the Kensico Campus is anticipated to begin in 2025.

- Construction of KEC Shaft 1C and the KEC Screen Chamber rock excavation at the Kensico Campus is anticipated to begin in 2026.

- Construction of the KEC Tunnel, modifications of the UEC, and construction of the KEC Screen Chamber at the Kensico Campus, is anticipated to be initiated in 2027.

- Lining of the KEC Tunnel, KEC Shaft 1C, and KEC Shaft 2C at the Kensico Campus and KEC Eastview Site, is anticipated to be completed by 2030.

- Construction of the police booth at the Kensico Campus would occur in 2030 and 2031.

- The ECC construction is anticipated to begin in 2030.

Major construction is anticipated to be completed in 2034. Startup and commissioning of the Proposed Action would commence towards the end of construction and would last approximately 13 months. The Proposed Action is anticipated to be fully operational in 2035 or earlier.

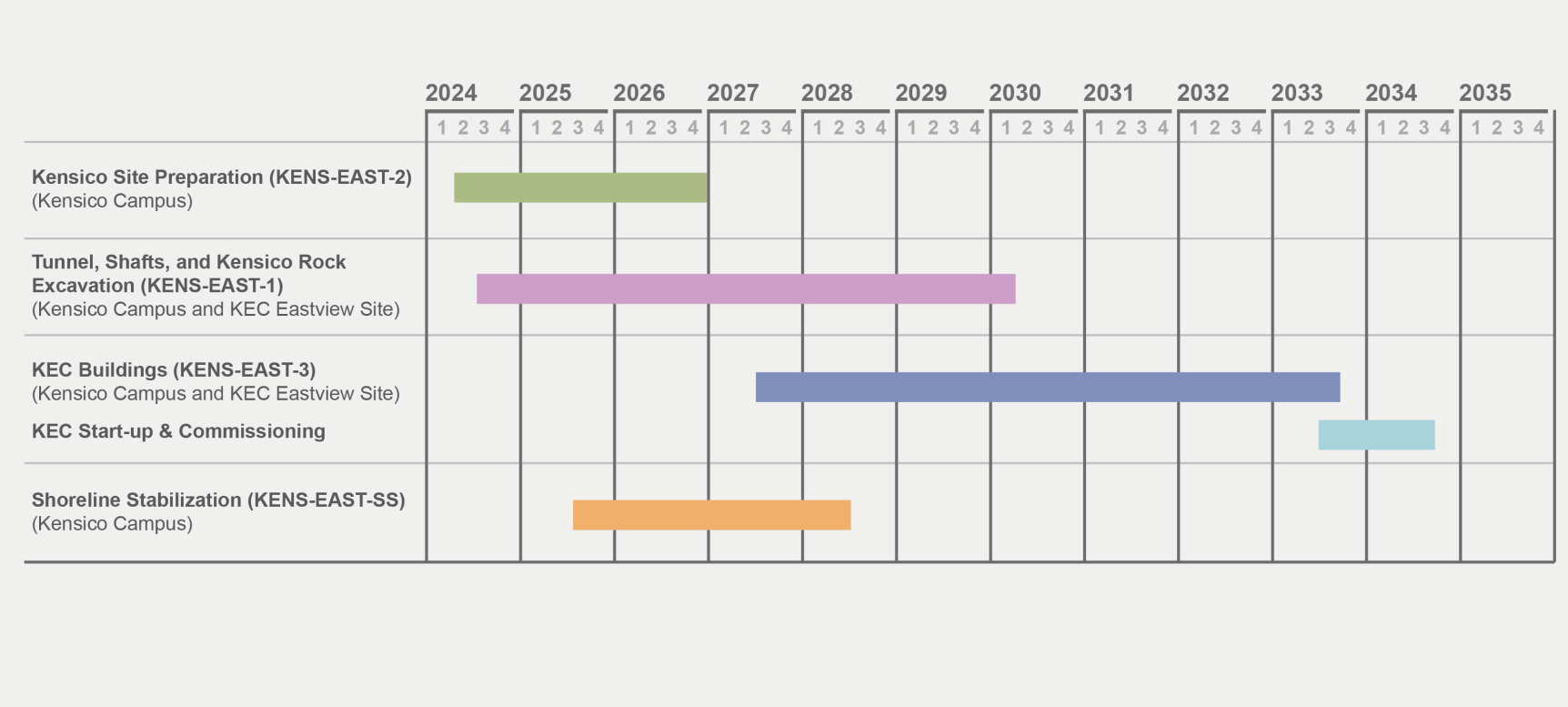

Figure ES-3. KEC Project - Projected Conceptual Construction Schedule

ES-4 POTENTIAL MAJOR PERMITS, APPROVALS, AND CONSULTATIONS

A number of major discretionary permits, approvals, and consultations with regulatory authorities would be required for the KEC Project. **Table ES-1** provides a summary of anticipated major discretionary permits and approvals. **Table ES-2** provides a summary of anticipated major non-discretionary permits and approvals. In addition, coordination with private property owners along the alignment of the KEC Tunnel would be required and ~~may~~ would involve the acquisition of property easements to support implementation of the KEC Project.

Table ES-1. Potential Major Discretionary Permits and Approvals

Agency	Permit/Approval	Applicability
Federal		
U.S. Army Corps of Engineers	Individual or Nationwide Permit	In-water work in Kensico Reservoir Tunnel or other crossings under or over surface water
U.S. Environmental Protection Agency	State Revolving Fund	State Revolving Fund administered by New York State Environmental Facilities Corporation
U.S. Fish and Wildlife Service	Federal Fish and Wildlife Permit	Construction activities within proximity to potential Bald Eagle nest
State		
New York State Department of Environmental Conservation	Beneficial Use Determination	Reuse of soil/rock removed from shaft, tunnel, and/or chamber construction
	Endangered and Threatened Species: Incidental Take Permit	Construction activities within proximity to potential Bald Eagle nest
	Chemical Bulk Storage	On-site storage of chemicals
	Freshwater Wetlands Permit	Disturbance within mapped freshwater wetlands or their designated buffers
	Mined Land Reclamation Exemption	Exemption for excavated material disposal during shaft, tunnel, and chamber construction
	Minor Facility Registration: Permit to Construct and Certificate to Operate	Use of fuel burning equipment during construction and/or operation
	Petroleum Bulk Storage	On-site storage of petroleum products

Table ES-1. Potential Major Discretionary Permits and Approvals

Agency	Permit/Approval	Applicability
New York State Department of Environmental Conservation	Protection of Waters and Section 401 Water Quality Certification	Potential in-water work in Kensico Reservoir, Mine Brook and/or Clove (Davis) Brook or their regulated buffers
	State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges Associated with Construction Activity (GP-0-20-001)	Discharge of construction stormwater to surface waters
	Individual SPDES Permit (NY-2C)	Discharge of treated industrial (shaft, tunnel, and chamber dewatering) wastewaters to surface waters
	Water Withdrawal Permit	Withdrawal of 100,000 gpd or more of surface water, groundwater, or both
New York State Department of Health	Approval of Public Water Supply Improvements	Approval of plans for changes to a public water supply
New York State Department of Transportation (NYSDOT)	Highway Work Permit	Activities on roadways/ property under NYSDOT jurisdiction
Local		
New York City Public Design Commission	Design Approval	Design approvals for structures on City property
New York City Department of Environmental Protection	Watershed Regulations[1]	Ground disturbance within New York City East of Hudson Watershed
Westchester County Approvals	Road Access/Opening	Activities affecting roadways/property under Westchester County jurisdiction
	Approval of Plans for Sewers; Approval of Plans for Public Water Supply Improvement	Activities affecting public water supply source in Westchester County

[1] Rules and Regulations for the Protection from Contamination, Degradation, and Pollution of the New York City Water Supply and its Sources.

Table ES-1. Potential Major Discretionary Permits and Approvals

Agency	Permit/Approval	Applicability
Town Approvals (Mount Pleasant/ North Castle)	Site Plan Approval	Activities that require approval by the Planning and Advisory Boards
	Municipal Separate Storm Sewer System (MS4) Approval	Discharges to a Municipal Separate Storm Water System
	Tree Removal	Planting, maintenance, or removal of trees
	Wetlands and Watercourses	Disturbance within regulated wetlands, watercourses, or their buffers
	Zoning Ordinance	Approvals for variances from the zoning ordinance

Table ES-2. Potential Major Non-Discretionary Permits and Approvals

Agency	Permit/Approval	Applicability
Town Approvals (Mount Pleasant/ North Castle)	Building	Construction, improvement, or demolition of a building or structure
	Blasting	Blasting operations for material removal
	Street Opening/Curb Cut	Cut, excavation or opening in or under any street, sidewalk or public place
	Electrical	Electrical wiring for the installation of any device, appliance or apparatus for the utilization of light, heat, power, or alarm system
	Excavation/Steep Slope	Excavation of soils and/or within slopes equal to or greater than 15%
	Plumbing	Installation, alteration, relocation, or permanent removal of any piping for water supply or wastewater
Utility Providers	Consultations	Connections to local utilities
NYSDOT	Oversized/Overweight/Special Hauling	Vehicle or cargo being transported on NYS highways or bridges exceeds size or weight thresholds

ES-5 ANALYTICAL FRAMEWORK

An initial screening was conducted to determine what impact categories were not applicable to the Proposed Action. If a screening threshold was exceeded and an impact analysis was warranted, a description of the analysis methodology and the results of this assessment are provided within the applicable sections of this ~~Draft~~ Final EIS. **Table ES-3** provides a summary that identifies those impact categories that required analysis for potential impacts related to construction and/or operation of the Proposed Action.

Only one impact category did not require any assessment: Shadows. The Proposed Action would include one permanent structure that would be greater than 50 feet in height, the new KEC Screen Chamber, which would be approximately 70 feet high. The KEC Screen Chamber would not cast new shadows or substantially increase existing shadows on any sunlight-sensitive resources, publicly-accessible open spaces or parks, historic landscapes or resources, or important natural features. As a result, no further assessment of potential shadow impacts due to construction or operation of the Proposed Action was required.

Table ES-3. Summary of Required Impact Analyses for Proposed Action

Impact Category	Construction Assessment(1)	Operational Assessment(1)
Land Use, Zoning, and Public Policy	-	√
Socioeconomic Conditions	-	√
Community Facilities and Services	√	-
Open Space and Recreation	√	-
Critical Environmental Areas	√	-
Urban Design and Visual Resources	√	√
Historic and Cultural Resources	√	√
Shadows	-	-
Natural Resources	√	√
Water Resources	√	√
Hazardous Materials	√	-
Traffic and Transportation	√	-
Air Quality	√	-
Greenhouse Gas Emissions and Climate Change	√	√
Noise	√	-
Water and Sewer Infrastructure	√	-
Solid Waste and Sanitation Services	√	-
Energy	√	√
Neighborhood Character	√	√
Public Health	√	√
Environmental Justice	√	-
Growth Inducement	-	√

Note:
(1) Impact categories not identified as requiring a construction or operational analysis were determined not to require a detailed analysis based upon an initial screening.

ES-6 POTENTIAL IMPACTS FROM CONSTRUCTION OF PROPOSED ACTION

The impact analyses for this ~~Draft~~ Final EIS have been tailored to the construction of the KEC Project. For each technical area that warranted assessment, this ~~Draft~~ Final EIS includes a description of existing conditions, an assessment of conditions in the future without the Proposed Action, and an assessment of conditions in the future with the Proposed Action for the Kensico Campus and KEC Eastview Site study area, as appropriate. The technical analysis and identification of potential significant impacts were based upon the incremental change to existing conditions that the proposed KEC Project would potentially create as compared to the future without the Proposed Action using criteria provided in the *City Environmental Quality Review* (*CEQR) Technical Manual*, under New York State Environmental Quality Review Act (SEQRA), or other appropriate and applicable criteria.

Based on the analyses conducted and described in Chapter 3 of this ~~Draft~~ Final EIS, the construction of the KEC Project would not result in significant adverse impacts to: community facilities and services; open space and recreation; critical environmental areas; urban design and visual resources; historic and cultural resources; water resources; hazardous materials; air quality; greenhouse gas emissions and climate change; noise; water and sewer infrastructure; solid waste and sanitation services; energy; neighborhood character; and public health.

The potential for significant adverse impacts from construction of the KEC Project to natural resources and traffic and transportation was identified, is summarized below, and is described in detail in Chapter 3 of this ~~Draft~~ Final EIS.

ES-6.1 NATURAL RESOURCES

Construction of the Proposed Action would require the removal of approximately 2,250 trees at Kensico Campus. Tree removal would occur over different construction phases ~~in~~ around January 2024 and/or 2025. The Proposed Action would include the replanting of trees within the campus that meets or exceeds the Town of Mount Pleasant's ordinance requirements. Of the 18.8 acres of existing forested area[2] on the Kensico Campus, approximately 5.6 acres would remain undisturbed, resulting in the removal of 13.2 acres of forested areas. New landscaping at the Kensico Campus as part of the Proposed Action would include areas of native trees and shrubs including approximately 3.9 acres of new reforestation. Therefore, a total of 9.5 acres of forested area would be in place upon completion of construction and the net loss of forested area due to the Proposed Action would be approximately 9.3 acres.

[2] The United Nations' FAO defines a forest as, "Land spanning more than 0.5 hectares (1.2 acres) with trees higher than 5 meters (16 feet) and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ."

The Proposed Action would also result in impacts to wetlands and open waters primarily within or immediately adjacent to Kensico Reservoir. Impacts would occur due to regrading within portions of the upland areas of the Kensico Campus, proposed shoreline stabilization activities along the shoreline of the reservoir adjacent to the campus and removal of accumulated sediments required as part of UEC improvements. Proposed construction would impact open water and existing local submerged aquatic vegetation (SAV) populations. Impacts would primarily consist of the conversion of areas of open water and SAV to different communities as summarized in **Table ES-4**. SAV habitat loss would also occur in areas disturbed by the placement of temporary sheeting that would be utilized during shoreline stabilization construction. Permanent SAV loss would occur in areas where riprap would replace the natural reservoir bottom that currently contains SAV (0.8 acres) or where SAV areas are converted to upland (0.01 acres). Shoreline stabilization would therefore result in permanent impacts to approximately 0.81 acres of SAV.

Likewise, loss of existing open water would also occur due to shoreline stabilization through its conversion to upland or inundated riprap. The installation of riprap and/or regrading of the shoreline would result in a loss of approximately 0.01 acres of open water due to conversion to upland. An additional 1.3 acres of open water would be impacted through the conversion of open water to inundated riprap.

Removal of accumulated sediment within the UEC inlet channel is also required to limit potential resuspension of sediments during future operation of the improved UEC. The extent of required sediment removal was conservatively estimated at approximately 1,000 cubic yards over an area of approximately 0.2 acres within two areas. The first area is adjacent to the existing UEC and includes removal of accumulated sediments from existing riprap south of and adjacent to the UEC in the shoreline stabilization area. The second area is in the existing UEC intake channel adjacent to the UEC.

No permanent wetland impacts at the KEC Eastview Site are anticipated.

Table ES-4. Wetland and Open Water Impacts - Kensico Campus

Community	Construction Activity	Type of Disturbance	Approximate Area Impacted (Acres)
Open Water	Shoreline Stabilization	Open Water to Upland	0.01
Open Water	Shoreline Stabilization	Open Water to Inundated Riprap	1.33
SAV	Shoreline Stabilization	SAV to Upland	0.01
SAV	Shoreline Stabilization	SAV to Inundated Riprap	0.78
SAV	Removal of Accumulated Sediments	SAV to Open Water	0.2
		Total	2.33

ES-6.2 TRAFFIC AND TRANSPORTATION

The analysis of the future with the Proposed Action assessed the peak quarter of construction traffic and the potential for significant traffic impacts. Seven intersections were analyzed for the third quarter of 2029 (Q3 2029), which is the overall traffic peak quarter for Proposed Action construction and when activities at the KEC Eastview Site would be highest, and 11 intersections were analyzed for the fourth quarter of 2027 (Q4 2027) based on higher projected construction traffic at selected locations near the Kensico Campus.

Overall, the Proposed Action would not result in significant traffic impacts during the AM construction traffic peak hour for either Q3 2029 or Q4 2027. In the PM construction traffic peak hour, however, significant traffic impacts were identified at three intersections. As construction activities would occur over an extended period of time, the anticipated duration of potential traffic impacts at these three intersections is also discussed below.

Construction-related vehicles destined for the KEC Eastview Site would access the site from the site's entrance off of Walker Road between Grasslands Road (SR100C) and Dana Road. For the Kensico Campus, access would be provided at the intersection of Columbus Avenue and Westlake Drive. Under the future with the Proposed Action, Westlake Drive would be closed to the public and access would only be provided to construction-related vehicles. A new roadway (relocated Westlake Drive) would be constructed to the north and would connect Columbus Avenue with the existing section of Westlake Drive along Kensico Reservoir. The relocated Westlake Drive would be expected to be constructed and opened to the public in 2025 prior to the analysis peak quarters. The traffic volumes that would be diverted during the roadway closure are modest and would not be expected to result in traffic volumes exceeding the CEQR screening thresholds; therefore, significant traffic impacts are not anticipated due to the roadway closure and relocation. In addition, a new temporary driveway would be constructed along the east leg of the intersection of Columbus Avenue and Lakeview Avenue to provide dedicated access for some of DEP's operations staff during proposed construction; DEP's operations staff currently use Westlake Drive to access the Kensico Campus.

During Q4 2027, construction activities would add approximately 95 vehicle trips along Columbus Avenue south of the Kensico Campus site entrance at Westlake Drive and approximately 20 vehicle trips north of the site's entrance during the AM and PM construction traffic peak hours.

During Q3 2029, approximately 100 to 110 construction-related vehicles would be expected to travel along Grasslands Road (SR100C) east of Walker Road during both the AM and PM construction traffic peak hours. West of Walker Road, Grasslands Road traffic volumes would be expected to increase by approximately 55 to 70 vehicles during each analysis peak hour. The majority of these trips would be traveling to and from the KEC Eastview Site.

Based on the analysis results, the summary overview of the future with the Proposed Action indicates that:

- In the AM construction traffic peak hour, all 18 intersections analyzed would be expected to operate at overall acceptable levels of service, similar to the future without the Proposed Action. Two individual traffic movements out of the 93 movements analyzed would operate at unacceptable levels of service, similar to the future without the Proposed Action.

- In the PM construction traffic peak hour, all 18 intersections analyzed would be expected to operate at overall acceptable levels of service, similar to the future without the Proposed Action. Seven individual traffic movements of the 93 movements analyzed would operate at unacceptable levels of service compared to five movements under the future without the Proposed Action.

Based on the analysis results, the majority of traffic movements would continue to operate at acceptable levels of service under the future with the Proposed Action. Traffic movements that would operate at unacceptable levels of service under the future without the Proposed Action would continue to do so under the future with the Proposed Action; additional movements that would operate at unacceptable levels of service under the future with the Proposed Action are listed below when compared to the future without the Proposed Action.

- Intersection #7, Grasslands Road (SR100C) and Walker Road / Clearbrook Road (signalized) – northbound Clearbrook Road left-through turn movement (PM construction traffic peak hour) and southbound Walker Road left-through turn movement (PM construction traffic peak hour)

The future with the Proposed Action would not result in significant traffic impacts during the AM construction traffic peak hour. Significant traffic impacts would be expected during the PM construction traffic peak hour at three intersections (four movements). The impacted movements and expected duration of the impacts based on projected construction-related trips and future traffic conditions are listed below:

- Intersection #7, Grasslands Road (SR100C) and Walker Road / Clearbrook Road (signalized) – northbound Clearbrook Road left-through turn movement and southbound Walker Road left-through turn movement. These potential impacts would be a result of construction-related vehicles exiting the KEC Eastview Site and, in addition to the Q3 2029 analysis quarter, traffic impacts would be expected during the first and second quarters of 2025 (Q1 2025 and Q2 2025), the period between Q2 2027 and third quarter of 2030 (Q3 2030), the period between the fourth quarter of 2031 (Q4 2031) and the fourth quarter of 2032 (Q4 2032), and the third quarter of 2033 (Q3 2033).

- Intersection #13, Grasslands Road (SR100C/SR100) and Bradhurst Avenue (SR100) / Knollwood Road (SR100A) (signalized) – southbound Bradhurst Avenue through-right turn movement. The analysis determined that due to the traffic generated by future without the Proposed Action background development projects, the critical southbound Bradhurst Avenue through-right turn movement would operate at an unacceptable LOS E, and a modest number of additional trips due to the Proposed Action (an increase of approximately seven vehicle trips) would result in significant traffic impacts at this intersection. Significant traffic impacts are anticipated at this intersection during the period between the second quarter of 2024 (Q2 2024) and second quarter of 2028 (Q2 2028), and between Q4 2028 and the first quarter of 2032 (Q1 2032).

- Intersection #15, Hillside Avenue (SR100) and Virginia Road (CR51) (unsignalized) – westbound Virginia Road approach. This potential impact would be a result of construction-related vehicles exiting the KEC Eastview Site. In addition to the Q3 2029 analysis quarter, traffic impacts would be expected during the period between the third quarter of 2027 (Q3 2027) and Q1 2030, and Q1 2032.

ES-7 POTENTIAL IMPACTS FROM OPERATION OF PROPOSED ACTION

The impact analyses for this ~~Draft~~ Final EIS have also been tailored to the operation of the KEC Project and are presented separately in their respective sections of this ~~Draft~~ Final EIS. For each technical area in which a screening assessment and/or impact analysis was conducted, the applicable study area(s) are defined for analysis.

For each technical area that warranted assessment, this ~~Draft~~ Final EIS includes a description of existing conditions and an assessment of conditions in the future with the Proposed Action for the Kensico Campus and KEC Eastview Site study area, as appropriate. The technical analysis and identification of potential significant impacts were based upon the incremental change to existing conditions that the proposed KEC Project would potentially create as compared to the future without the Proposed Action using criteria provided in the *CEQR Technical Manual*, under SEQRA, or other appropriate and applicable criteria.

Based on the analyses conducted and described in Chapter 4 of this ~~Draft~~ Final EIS, the operation of the KEC Project would not result in significant adverse impacts to: land use, zoning, and public policy; socioeconomics; urban design and visual resources; historic and cultural resources; natural resources; water resources; greenhouse gas emissions and climate change; energy; neighborhood character; and public health. No potential for significant adverse impacts was identified and is described in detail in Chapter 4 of this ~~Draft~~ Final EIS.

ES-8 MITIGATION

Construction of the KEC Project would result in significant adverse impacts to natural resources, specifically forested areas and wetlands, and temporary significant adverse traffic impacts. The CEQR guidelines stipulate that if a significant impact is identified, then measures to address these should also be identified. No other significant adverse impacts were identified for the construction and/or operation of the Proposed Action. For the significant adverse impacts that were identified, mitigation measures are discussed below.

ES-8.1 NATURAL RESOURCES

The KEC Project would result in significant adverse impacts to terrestrial communities, specifically forested areas (i.e., those areas consisting of areas spanning more than 1.2 acres with trees higher than 16 feet) and wetlands at the Kensico Campus. Proposed mitigation measures to address these impacts are discussed below.

ES-8.1.1 TERRESTRIAL COMMUNITIES

There are currently approximately 18.8 acres of forested areas on the Kensico Campus. Based on the disturbance anticipated as part of the KEC Project and the location and area of the planting that would be considered forested areas (and contiguous to existing forested areas at the Kensico Campus) as part of the Proposed Action, approximately 9.3 acres of forested area would be impacted as a result of the construction of the KEC Project.

DEP would therefore provide mitigation for the loss of forested areas on the Kensico Campus by completing forest restoration work, including invasive species control and underplanting, in other areas in the Kensico Reservoir watershed. While invasive species removal and the installation of native trees and shrubs would help to improve the quality of existing areas of mature forest, it would not replace the function of the mature forest that would be removed. Therefore, DEP proposes to perform forest restoration at a 2:1 acreage ratio in order to achieve a comparable benefit to a one for one replacement of impacted forested areas. DEP would perform forest restoration on 18.6 acres of suitable City-owned forested land in the Kensico Reservoir watershed. In the unlikely event that sufficient suitable acreage cannot be found within the Kensico Reservoir watershed, DEP would provide the rest of this mitigation within City-owned forested lands within the larger East of Hudson watershed. The proposed 18.6 acres of forest restoration would provide a comparable benefit to the forested resources lost as part of the KEC Project.

ES-8.1.2 WETLANDS

Construction of the KEC Project would result in impacts to approximately 2.33 acres of wetlands at Kensico Campus. No permanent impacts to wetlands would occur at the KEC Eastview Site. Anticipated impacts to submerged aquatic vegetation (SAV) and open water habitats would

occur as part of proposed shoreline stabilization work and removal of accumulated sediments in proximity to the UEC and its intake channel. Anticipated impacts associated with the conversion of SAV and open water habitats to upland, riprap, and/or new open water and the anticipated mitigation ratios are noted in **Table ES-4**. Mitigation ratios are consistent with previous DEP projects in the Kensico Reservoir watershed.

Compensation for wetland impacts at the Kensico Campus would be achieved through a new, off-site wetland mitigation project. The wetland mitigation site, known as Big Peninsula, is located on City-owned lands southwest of State Route 120 on a peninsula in the northeastern portion of Kensico Reservoir in the Town of North Castle (see **Figure ES-4)**. This site is within the Kensico Reservoir watershed.

The Big Peninsula site would provide mitigation for all permanent impacts to open waters and SAV habitat resulting from the KEC Project. The mitigation project would provide 2.34 acres of emergent and scrub shrub wetland habitat to meet the currently anticipated mitigation needs. The large size of the parcel provides DEP the flexibility to adjust the overall potential mitigation area, if required, due to regulatory requirements or other unforeseen needs. While the impacts of the Proposed Action are to open water and SAV, DEP would create an emergent and scrub shrub wetland. Due to the historic and widespread regional conversion of vegetated wetlands to ponds (and the creation of the reservoir itself), the acreage of open water wetlands is not limited in this basin. Additionally, a new vegetated wetland directly adjacent to the reservoir would help detain sediments and nutrients and convey water quality protection functions. The Big Peninsula site would also provide the benefit of a single site for required mitigation.

The Big Peninsula site is designated as water supply lands and is currently undeveloped. Multiple waterbodies are located in close proximity to the proposed wetland creation area. The potential wetland creation area is immediately adjacent to an existing 3.2-acre wetland and a NYSDEC-regulated watercourse that runs along the eastern portion of the Big Peninsula site and discharges to Kensico Reservoir.

The proposed wetland mitigation area would offset anticipated wetland impacts due to the KEC Project (see **Figure ES-5)**. The proposed wetland mitigation would create a large, contiguous wetland system of shallow emergent and scrub wetland habitats consisting of native plants. The use of native plants would support nutrient uptake and provide a sustainable, robust wetland ecosystem. This wetland system would also provide water quality benefits, as well as other ecological functions. In addition, the created wetlands would increase vegetative habitat diversity and provide additional habitat for aquatic fauna and herptiles.

Upland areas adjacent to the constructed wetland or disturbed during construction of the proposed mitigation would be vegetated with an appropriate mix of native trees, shrubs, herbaceous plugs, and seed mixes.

Figure ES-4. Big Peninsula Wetland Mitigation Site Location Map

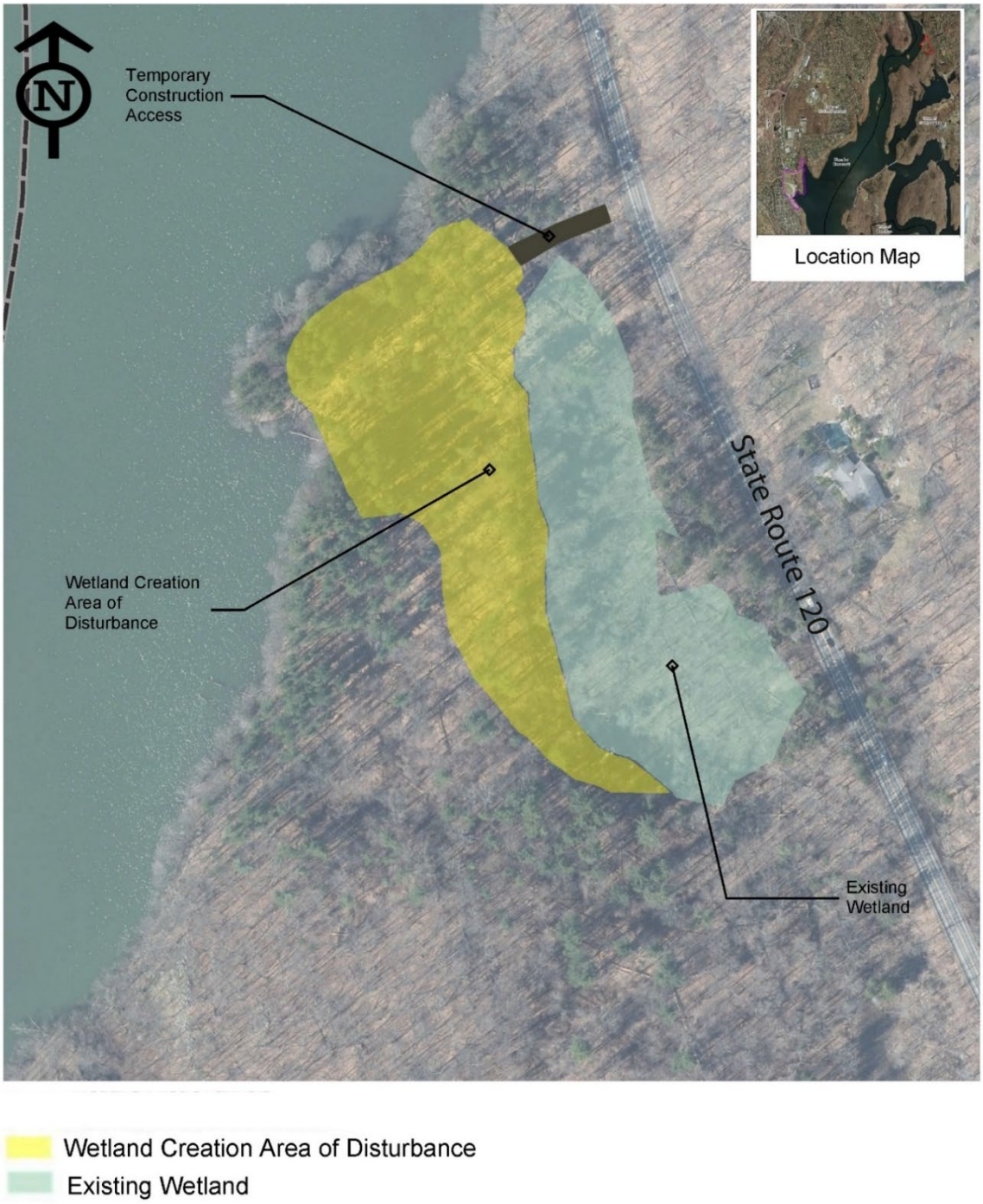

Figure ES-5. Conceptual Big Peninsula Wetland Mitigation Layout

ES-8.1.3 TRAFFIC AND TRANSPORTATION

Construction of the KEC Project would result in significant adverse traffic impacts at three of the 18 intersections analyzed (4 of the 93 individual traffic movements analyzed) during the PM construction traffic peak hour (3 to 4 PM). No significant adverse traffic impacts are expected during the AM construction traffic peak hour. All intersections with significant traffic impacts could be fully mitigated with standard traffic capacity improvements such as signal timing modifications and restriping of travel lanes. These significant impacts would be expected during specific periods of construction, are temporary in nature and would no longer be significantly impacted once construction is complete and the KEC Project is operational. Construction traffic activities during the remaining hours of the construction workday would be substantially lower than during the construction traffic peak hours; therefore, the potential for impacts would be similar or less than during the construction traffic peak hours. The impacted movements that would be impacted by the KEC Project and proposed mitigation are listed below:

- Intersection #7, Grasslands Road (SR100C) and Walker Road / Clearbrook Road (signalized)

  This intersection would be impacted during the PM construction traffic peak hour with traffic impacts anticipated along the northbound Clearbrook Road shared left-through movement and southbound Walker Road shared left-through movement. In the future without the Proposed Action, these movements would operate at LOS D, which is at the limit of what is considered acceptable traffic level of service, and a moderate increase in traffic along these movements or opposing movements would cause an increase in delay exceeding the thresholds for a significant traffic impact. These impacts could be mitigated by modifying the signal timing, shifting three seconds from the eastbound and westbound through-right turn phase and four seconds from the eastbound and westbound left turn phase to the northbound and southbound phase. The green time for the eastbound and westbound through-right turn phase would shift from 40 seconds to 37 seconds, the green time for the eastbound and westbound left turn phase would shift from 15 seconds to 11 seconds, and the green time for the northbound and southbound phase would shift from 30 seconds to 37 seconds.

- Intersection #13, Grasslands Road (SR100C/SR100) and Bradhurst Avenue (SR100) / Knollwood Road (SR100A) (signalized)

  This intersection would be significantly impacted during the PM construction traffic peak hour with impacts anticipated along the southbound Bradhurst Avenue shared through-right turn movement. In the future without the Proposed Action, this movement would be expected to operate at unacceptable LOS E, and a minimal increase in traffic would cause an increase in delay exceeding the thresholds for a significant traffic impact. This impact could be mitigated by modifying the signal timing, shifting three seconds

from the eastbound and westbound left turn phase to the northbound and southbound through-right turn phase. The green time for the eastbound and westbound left turn phase would shift from 15 seconds to 12 seconds, and the green time for the northbound and southbound through-right turn phases would shift from 20 seconds to 23 seconds.

- Intersection #15, Hillside Avenue (SR100) and Virginia Road (CR51) (unsignalized)

  This intersection would be significantly impacted during the PM construction traffic peak hour with impacts anticipated along the westbound Virginia Road approach which is stop controlled and yields to free-flowing traffic along Hillside Avenue. In the future without the Proposed Action, this movement would be expected to operate at unacceptable LOS F, and a minimal increase in traffic would cause an increase in delay exceeding the thresholds for a significant traffic impact. Impacts to this intersection could be mitigated by restriping the westbound approach from one 16-foot wide travel lane to one 11-foot wide right turn lane and one 15-foot wide left turn lane for 30 feet from the stop bar. A painted triangular island would be provided to separate the left turn lane from the right turn lane and would provide left turning vehicles with a better sight angle for finding gaps to complete the left turn movement. The intersection was found to not be significantly impacted in the AM construction traffic peak hour, and the proposed mitigation described above would not result in a significant impact in the AM construction traffic peak hour.

ES-9 ALTERNATIVES

SEQRA and CEQR require that alternatives to a proposed project or action be identified and evaluated in an EIS, including a No Action Alternative to present environmental conditions that would exist if the proposed project were not implemented. The alternatives evaluated in this ~~Draft~~ Final EIS included:

- No Action
- Pressurization of the Catskill Aqueduct - Raising the hydraulic grade line of the existing Catskill Aqueduct.
- Alternative Tunnel Drive - Constructing the proposed KEC Tunnel from Kensico Campus to the KEC Eastview Site.
- Alternative Tunnel Lining - Installation of lining of the KEC Tunnel from Kensico Campus to the KEC Eastview Site or simultaneously from both the Kensico Campus and KEC Eastview Site.

- Use of a Construction Drop Pipe - Installation of an eight-inch diameter pipe at the approximate mid-point of the KEC Tunnel alignment to deliver concrete to the KEC Tunnel depth during construction.

ES-10 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable significant adverse impacts are defined as those where there are no reasonably practicable mitigation measures to eliminate the impacts; and there are no reasonable alternatives that would meet the purpose and need of the Proposed Action, eliminate the impact, and not cause other or similar significant adverse impacts.

The KEC Project would not result in any unavoidable significant adverse impacts.