

# **KENSICO-EASTVIEW CONNECTION (KEC) PROJECT**

## **Application for Industrial Facilities State Pollutant Discharge Elimination System (SPDES) Permit**

### **KEC Eastview Site**

**Prepared for:**

**New York City Department of Environmental Protection**



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**TABLE OF CONTENTS**

**1.0 Introduction..... 1**

**2.0 Background ..... 3**

**3.0 Kensico-Eastview Connection Project ..... 3**

    3.1 Overview..... 3

    3.2 Purpose and Need ..... 4

    3.3 Other Permits ..... 5

    3.4 KEC Project Construction Schedule..... 5

**4.0 KEC Eastview Site..... 6**

    4.1 Proposed Project Elements ..... 6

    4.2 Construction Overview ..... 9

**5.0 Wastewater Generating Activities..... 11**

    5.1 Eastview Connection Chamber..... 11

    5.2 KEC Shaft 2C ..... 11

    5.3 Tail and Starter Tunnel ..... 11

    5.4 KEC Tunnel ..... 12

    5.5 Potential Pollutants of Concern ..... 12

**6.0 Proposed Treatment Processes ..... 12**

    6.1 Treatment System ..... 12

    6.2 Water Treatment Chemicals ..... 19

    6.3 Outfall/Discharge Location..... 20

    6.4 Anticipated Flows ..... 20

    6.5 Discharge Sequencing..... 27

**7.0 Proposed Effluent Limits and Monitoring Frequency ..... 27**

## LIST OF FIGURES

Figure 1: KEC Project Location .....	2
Figure 2: Kensico Campus and KEC Eastview Site Construction Contracts .....	6
Figure 3: KEC Eastview- Existing Conditions .....	7
Figure 4: KEC Eastview Site - Project Elements.....	8
Figure 5: KEC Shaft 2C - Profile.....	10
Figure 6: Location of Proposed Treatment System, Outfalls, and Contributing Activities.....	14
Figure 7: Outfall 001 Wastewater Treatment Schematic.....	15
Figure 8: Outfall 002 Wastewater Treatment Schematic.....	16
Figure 9: Outfall 001 Wastewater Flow Schematic .....	17
Figure 10: Outfall 002 Wastewater Treatment Schematic.....	18
Figure 11: Proposed Outfall Locations .....	21
Figure 12: Anticipated Maximum Flows – Combined and by Individual Activities .....	23
Figure 13: Anticipated Maximum Flows – Combined and by Individual Activities .....	24
Figure 14: Anticipated Average Flows – Combined and by Individual Activities.....	25
Figure 15: Anticipated Average Flows – Combined and by Individual Activities.....	26

## LIST OF TABLES

Table 3-1: Additional Environmental Permits at the KEC Eastview Site .....	5
Table 6-1: Anticipated Maximum Flows – Combined and by Individual Activities .....	22
Table 6-2: Anticipated Average Flows – Combined and by Individual Activities.....	22
Table 7-1: Proposed Effluent Limits for Wastewater Discharges .....	28
Table 7-2: Proposed Monitoring Frequencies for Wastewater Discharges .....	28

## **LIST OF ACRONYMS**

BWS	Bureau of Water Supply
CDUV	Catskill/Delaware Ultraviolet Disinfection
DEIS	Draft Environmental Impact Statement
DEP	New York City Department of Environmental Protection
ECC	Eastview Connection Chamber
EPA	U.S. Environmental Protection Agency
FEIS	Final Environmental Impact Statement
GPM	Gallons per Minute
KEC	Kensico Eastview Connection
LEC	Lower Effluent Chamber
MGD	Million Gallons per Day
NYSDEC	New York State Department of Environmental Conservation
SOE	Support of Excavation
SPDES	State Pollutant Discharge Elimination System
TBM	Tunnel Boring Machine
UEC	Upper Effluent Chamber
USACE	U.S. Army Corps of Engineers
WTC	Water Treatment Chemical

## 1.0 INTRODUCTION

The New York City Department of Environmental Protection (DEP) provides drinking water to nearly 10 million people, more than 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.

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, see **Figure 1**.

Completion of the KEC Project will 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.

As part of the proposed KEC Project, discharge of industrial wastewaters to surface waters would be required at the Kensico Campus and KEC Eastview Site. This application and supporting documentation have been prepared in support of the approval of a new proposed discharge to surface water that will occur as part of construction activities at the KEC Eastview Site. The application and supporting documentation for the Kensico Campus will be provide under a separate submittal.

In support of this application, the following has been included:

- Summary narrative
- NYSDEC Application Form NY-2C – New and Existing Industrial Facilities State Pollutant Discharge Elimination System Program
- NYSDEC SPDES Discharge Permit - Simple Mixing Zone Form
- Required figures, including
  - KEC Project Location

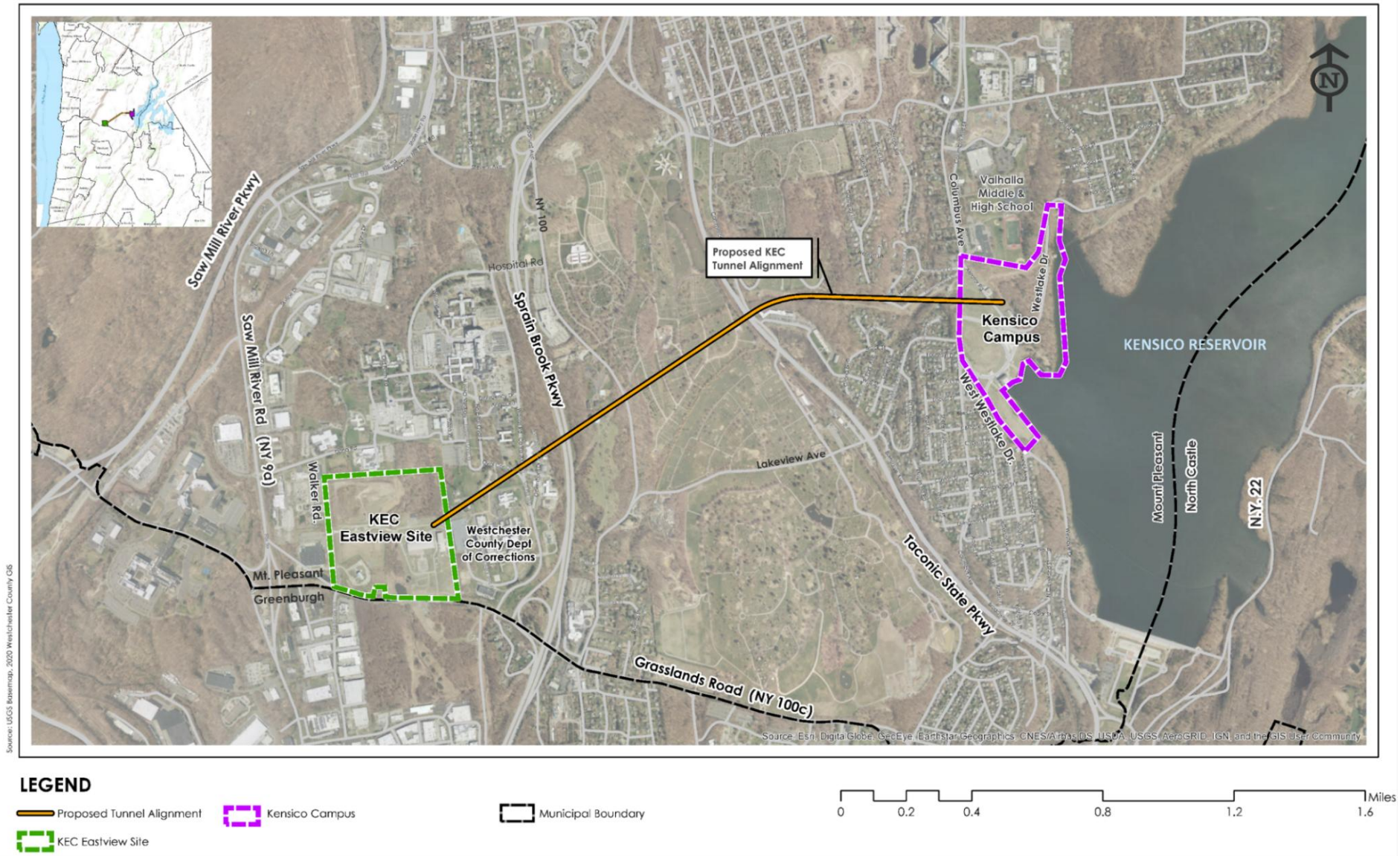


Figure 1: KEC Project Location

- KEC Eastview Site Location
- Outfall Location
- Line Diagrams
  - Wastewater Sources
  - Anticipated Treatment Regime

In addition to a proposed industrial discharge, construction at the KEC Eastview Site will also result in the generation of stormwater discharges associated with construction activities. These discharges are being addressed as part of a permitting process separate from those addressed in this application. Coverage of these construction stormwater discharges will be under the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-25-001).

## **2.0 BACKGROUND**

The KEC Project represents a significant, multi-year construction program undertaken by the DEP. The KEC Project will be constructed over a period of approximately 10 years with full operation of the new facilities anticipated in 2035 or before. The proposed KEC Project will involve the construction of a new water supply tunnel and ancillary infrastructure between two sites, the Kensico Campus located immediately adjacent and west of the Kensico Reservoir and the KEC Eastview Site located at the western terminus of the tunnel in DEP's Eastview campus (**Figure 1**). The KEC Project will result in the construction of new water supply infrastructure that would provide increased resiliency, redundancy, and flexibility for DEP to meet current and future water demands of the City and its upstate customers, while allowing DEP to provide a high-quality source of drinking water.

## **3.0 KENSICO-EASTVIEW CONNECTION PROJECT**

### **3.1 OVERVIEW**

Due to the complexity of the KEC Project, its overall duration, the involvement of more than one location, their geographic separation (more than two miles), and the sequencing of design and construction activities, two separate applications for industrial discharge approval will be required - one for the Kensico Campus and one for the KEC Eastview Site - both located within the Town of Mount Pleasant, New York. The KEC Project will provide for the construction and operation of a new, additional water conveyance tunnel between Kensico Reservoir, located at the Kensico Campus, and the Catskill/Delaware Ultraviolet Disinfection (CDUV) Facility, located at the KEC Eastview Site. The KEC Project comprises of several elements, as discussed in more detail below.

A more detailed discussion of the KEC Project was originally provided within a Draft Environmental Impact Statement (DEIS) prepared for the proposed action and issued on October 19, 2022. A public hearing to solicit comments on the DEIS was held on December 7, 2022. The

DEIS is available at <https://www.nyc.gov/site/dep/about/kensico-eastview-connection.page>. A Final EIS (FEIS) and Notice of Completion were subsequently published on August 16, 2023, and is also available on the same website.

The KEC Project is comprised of the following major components:

- A new approximately 2-mile-long, deep rock tunnel between the Kensico Reservoir and the CDUV Facility;
- Two new shafts, a new uptake shaft (Shaft 2C) at the KEC Eastview Site and a new downtake shaft (Shaft 1C) and vent building at the Kensico Campus;
- Construction of a new KEC Screen Chamber;
- Modifications to the existing Catskill Upper Effluent Chamber (UEC) located within and adjacent to the Kensico Reservoir;
- Construction of a new Eastview Connection Chamber and interconnection to the CDUV Facility; and
- Additional upland and ancillary improvements;
  - Construction of connecting tunnels to the new Screen Chamber and Shaft 1C and modification of the existing Dike Grade Tunnel and UEC Connector Tunnel;
  - General site improvements (roads, grading, security); and
  - Shoreline stabilization efforts along Kensico Reservoir south of the UEC.

### **3.2 PURPOSE AND NEED**

Prior to the activation of the CDUV Facility, located within DEP's property at KEC Eastview Site, both the Catskill and Delaware aqueducts were used to convey water from Kensico Reservoir to Hillview Reservoir located in Yonkers, New York. However, when the CDUV Facility was activated in 2012 to comply with the United States Environmental Protection Agency's (EPA) Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule), the section of the Catskill Aqueduct that runs between Kensico Reservoir and the CDUV Facility was taken out of service because of hydraulic grade limitations that prohibited the gravitational conveyance of water to the new 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 the Kensico Reservoir to the CDUV Facility. A new tunnel was identified as the preferred alternative to achieve this.

Completion of the KEC Project will 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 during Hillview Cover construction in accordance with the Hillview Consent Decree and Judgment's mandates.

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 such as the Hillview Cover construction.

Some of the construction activities at the KEC Eastview Site will generate industrial wastewater and will require treatment prior to discharge, thus resulting in a regulated discharge. Wastewater generating activities, proposed pollutants of concern and the proposed treatment process are described in more detail in **Sections 5.0, 6.0 and 7.0**.

### 3.3 OTHER PERMITS

The KEC Project will require the acquisition of additional federal, state and local permits and approvals. The NYSDEC Form NY-2C Part I, Section 6 – Existing Environmental Permits, requests the identification of existing and in process permits and/or approvals associated with the discharge approval that is subject of this application. **Table 3-1** provides a summary of the currently anticipated environmental permits required for the KEC Eastview Site.

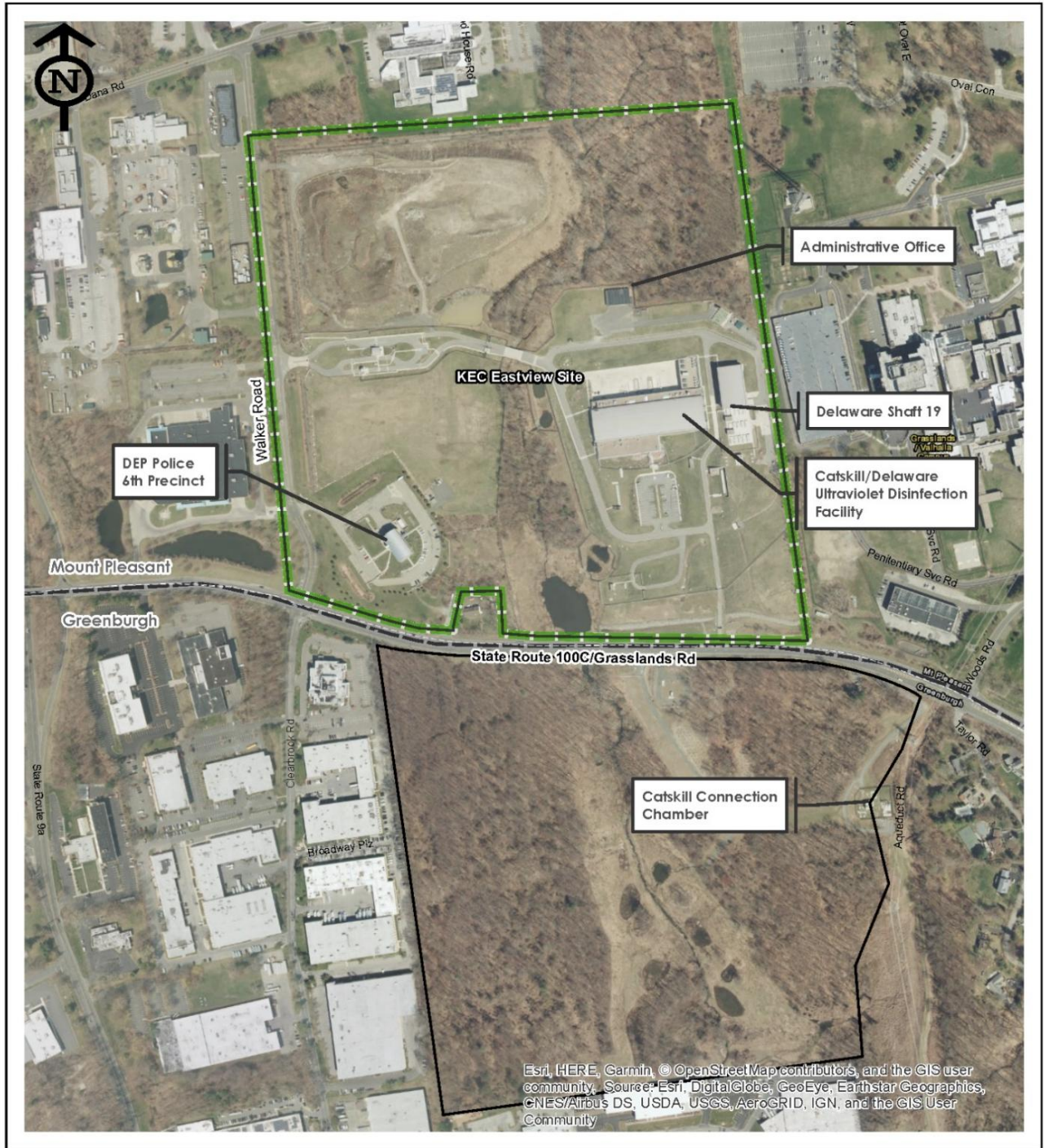
**Table 3-1: Additional Environmental Permits at the KEC Eastview Site**

Agency	Permit/Approval/Consultation
U.S. Army Corps of Engineers (USACE)	Nationwide Permits 58
NYSDEC	SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-25-001) Water Withdrawal Permit
Town of Mount Pleasant	Wetlands Permit Site Plan Approval

### 3.4 KEC PROJECT CONSTRUCTION SCHEDULE

Due to the complexity of the KEC Project, construction activities will occur under one of four separate contracts and at two distinct locations, the KEC Eastview Site and the Kensico Campus over a 10-year period, as shown in **Figure 2**. Construction at the KEC Eastview Site is anticipated to commence in 2025.



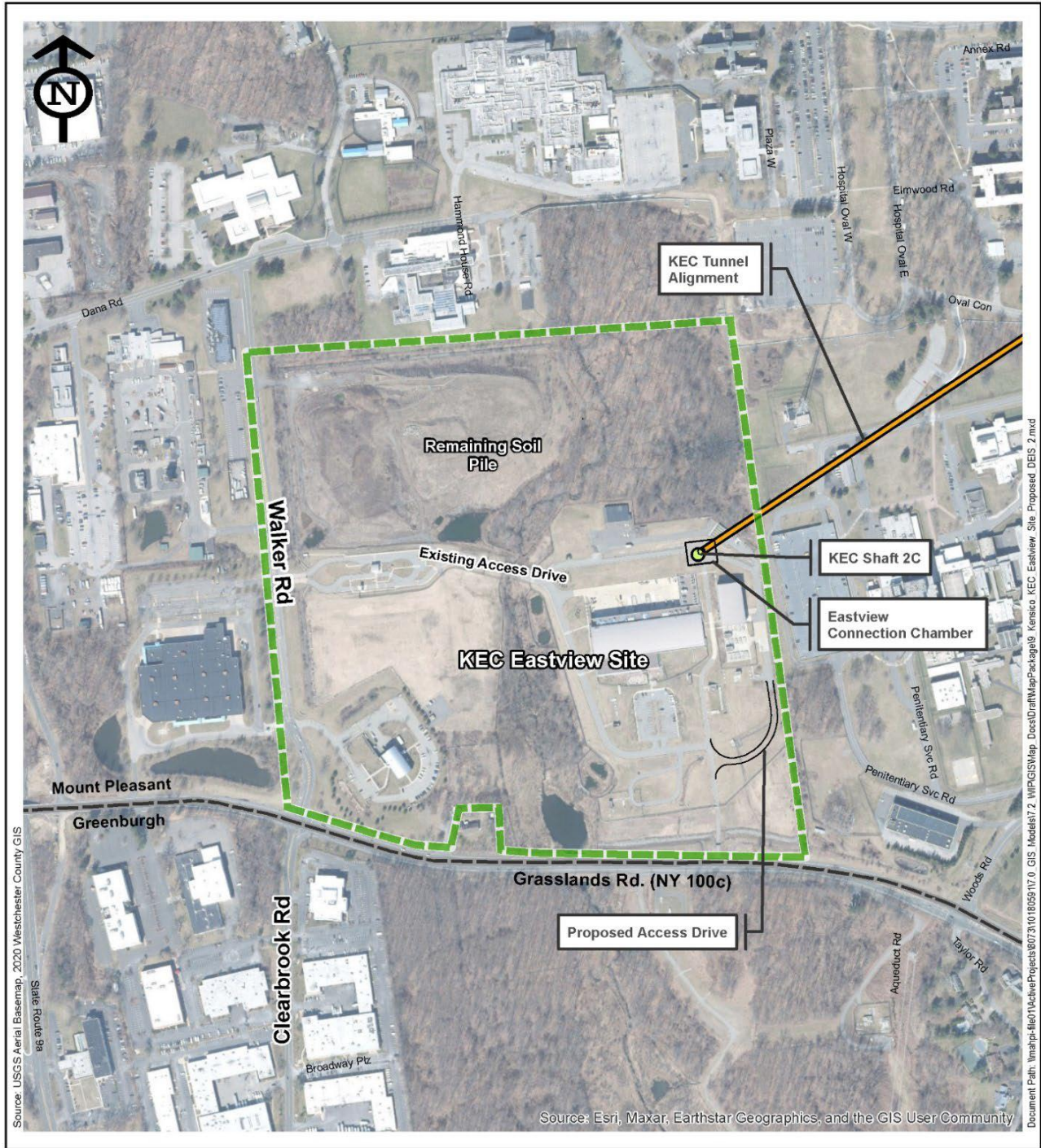


**LEGEND**

- KEC Eastview Site
- DEP Parcels
- Municipal Boundary

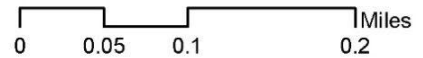


**Figure 3: KEC Eastview- Existing Conditions**



**Legend**

- KEC Shaft 2C
- Proposed Eastview Connection Chamber
- Tunnel Alignment
- KEC Eastview Site
- Municipal Boundary



**Figure 4: KEC Eastview Site - Project Elements**

## 4.2 CONSTRUCTION OVERVIEW

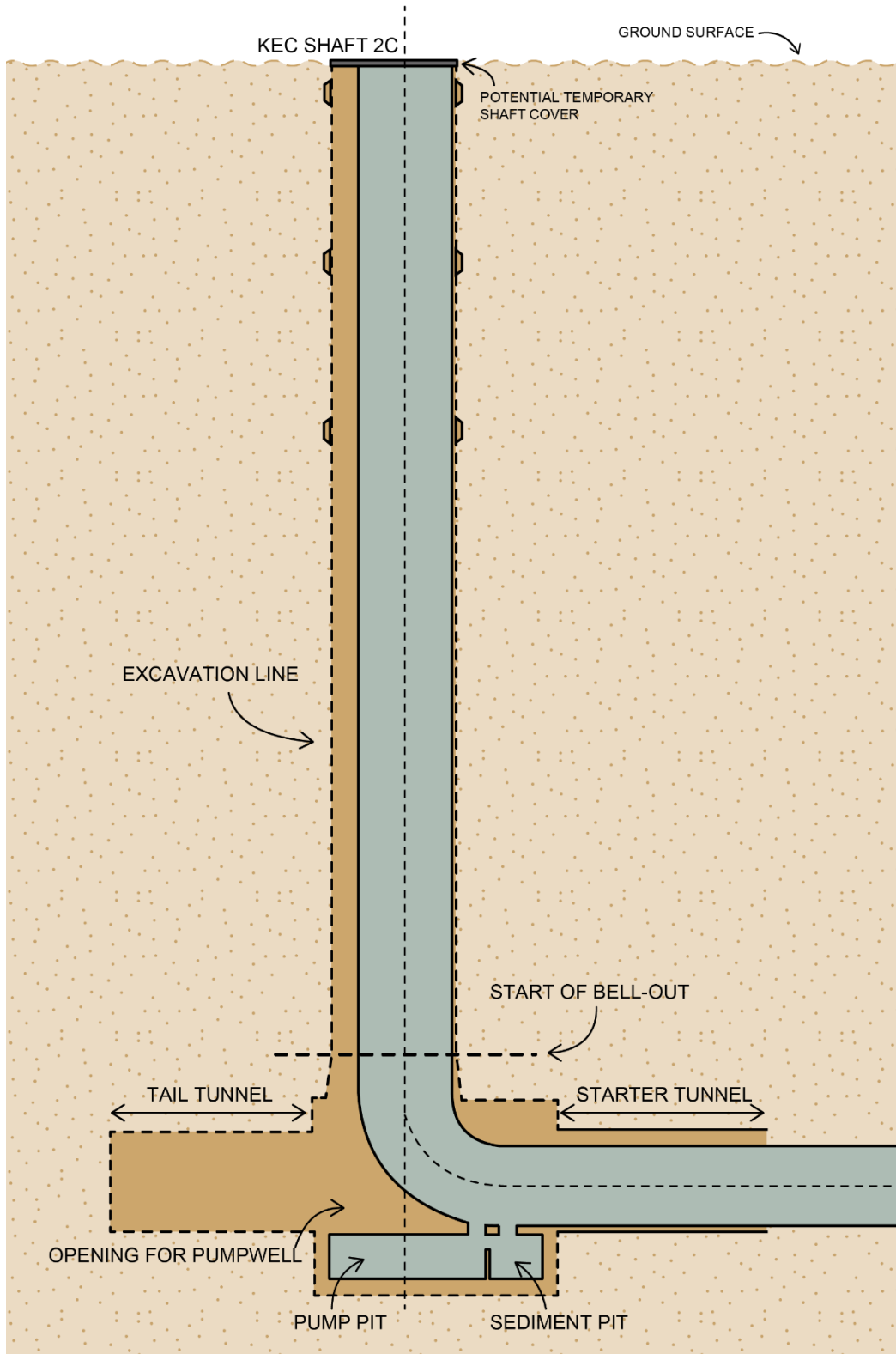
Construction activities at the KEC Eastview Site include the KEC Tunnel, KEC Shaft 2C, Tail and Starter Tunnel, and Support of Excavation (SOE) for the Eastview Connection Chamber (ECC). The proposed KEC Shaft 2C will be located directly below and connect to the ECC. This uptake shaft will allow potable flows from the tunnel to enter the ECC and then be directed to the CDUV Facility for disinfection.

As shown on **Figure 5**, the KEC Shaft 2C will be “belled out” at the base. This will involve drill and blasting to create a larger area at the base of the shaft. This process will allow the individual pieces of the Tunnel Boring Machine (TBM) to be lowered into KEC Shaft 2C and allow for the entire assembly underground. The belled-out base will also provide a larger “staging” area where soil and rock to be removed from the KEC Tunnel can be staged for removal and additional equipment or materials can be lowered and removed. KEC Shaft 2C will also be constructed to have a tail and starter tunnel. The tail tunnel will be located adjacent to the shaft in order to provide more room for moving and setting up equipment, in particular the TBM and its soil/rock conveying systems. The starter tunnel, east of the shaft will be constructed and will allow for the proper orientation and setup of the TBM prior to the installation of the larger KEC Tunnel. The tail and starter tunnels will be constructed through blasting, similar to the KEC Shaft 2C.

Rock and/or soil removed from the active face or front of the TBM will then be transported to the surface for removal. Once the KEC Tunnel is finished, the ECC Building will be constructed atop KEC Shaft 2C. The proposed ECC will connect the KEC Shaft 2C and the CDUV Facility.

The TBM will be used to construct the KEC Tunnel from KEC Eastview Site and will then proceed eastward, approximately 2 miles, to the Kensico Campus and interconnection with KEC Shaft 1C.

Several of these elements are anticipated to generate wastewater (i.e., non-construction stormwater). These wastewaters would require treatment, and the treated effluent would be discharged to surface waters. Additional detail is provided in **Section 5.0**.



**Figure 5: KEC Shaft 2C - Profile**

## **5.0 WASTEWATER GENERATING ACTIVITIES**

The primary source of industrial wastewater generated at the KEC Eastview Site will occur due to the construction of the ECC, shaft and tail/starter tunnel, and excavation and removal of materials from the KEC Tunnel. Wastewater produced at the site would consist of groundwater infiltration and wastewater from excavation and other construction. Construction wastewaters are anticipated to consist of liquid wastes generated from TBM operation, drilling and blasting, makeup waters for lining the tunnels and shafts with cast in place concrete, dust control, sealing the inner diameter of the tunnels and shafts, and the use of construction equipment within the ECC, excavation, tunnels, and shaft.

Additional discussion of those activities that may result in construction wastewaters are discussed below.

### **5.1 EASTVIEW CONNECTION CHAMBER**

The ECC will extend approximately 98 feet below finished grade to allow for connection to KEC Shaft 2C and facilitate alignment of the water conveyance connection between the ECC and the North Forebay of the CDUV facility. The ECC Building will be constructed atop KEC Shaft 2C. Anticipated wastewater associated with excavation and construction of the proposed ECC will include construction wastewater and groundwater infiltration. Pollutants of concern would consist of total suspended solids, settleable solids, oil & grease and pH. Dewatering of clean groundwater to reduce and/or control hydrostatic pressure would also be conducted as part of the ECC construction. These dewaterers however would consist of groundwaters uncontaminated by construction activities and would not be treated but may be discharged to Mine Brook. This discharge if required would be noted in the SPDES permit application as an administrative outfall, but one that would not be subject to monitoring or effluent limits.

### **5.2 KEC SHAFT 2C**

The shaft will have a depth of approximately 425 feet below the finished grade of the site. The KEC Shaft 2C will be initially constructed within an existing overburden and then rock. The shaft will be installed with a cast-in-place concrete lining. KEC Shaft 2C will act as the uptake shaft for the KEC Tunnel and will also serve as the working shaft where rock, potential groundwater infiltration, wastewaters and waste will be removed or pumped out of the shaft and tunnel during construction. Shaft construction would entail excavation and drill and blast. Anticipated wastewaters associated with the KEC Shaft 2C construction include construction wastewaters and groundwater infiltration. Potential pollutants of concern would be total suspended solids, settleable solid, oil & grease, and pH.

### **5.3 TAIL AND STARTER TUNNEL**

The base of the KEC Shaft 2C would have a belled-out area to allow for the construction of the required tail and starter tunnels. The tail tunnel would be used to provide room for moving or setting up equipment, in particular the TBM and its soil/rock conveying systems. The TBM will be

assembled and disassembled in this location. The starter tunnel would allow for the proper orientation and setup of the TBM prior to the initiation of the larger tunnel boring effort. The belled-out areas, tail tunnel, and starter tunnel would be constructed through drill and blast methods. Wastewaters associated with tail and starter tunnel construction would be primarily due to drill and blasting, construction wastewaters, and groundwater infiltration. Pollutants of concern would likewise consist of total suspended solids, settleable solids, oil & grease, and pH.

#### **5.4 KEC TUNNEL**

The proposed KEC Tunnel length will be approximately 2 miles. KEC Shaft 2C will serve as the working or receiving shaft where most of the soil and rock and construction wastewaters will be removed from the main KEC Tunnel, as well as the removal of potential groundwater infiltration that will be pumped out of the shaft and tunnel during construction. Similarly, it would be the primary location for lowering and raising construction equipment, as well as required fuels, lubricants and related materials. Wastewaters would be due to TBM operation and lining of the tunnel that would generate construction wastewaters inclusive of groundwater infiltration. Pollutants of concern would include total suspended solids, settleable solids, oil & grease, and pH.

#### **5.5 POTENTIAL POLLUTANTS OF CONCERN**

Below is a summary of the anticipated pollutants of concern associated with the wastewater generating activities proposed at the KEC Eastview Site.

- Settleable and total suspended solids associated with the generation of construction wastewaters (e.g. make-up water, dust control waters, etc.), and groundwater infiltration within the shafts, tunnels, and footprint of excavation for the ECC.
- Oil and grease associated with the use of construction equipment and the TBM.
- High pH from the use of various grouting compounds associated with cast in place concrete for lining and sealing the proposed tunnels and KEC Shaft 2C.
- Aluminum, flocculation through the addition of alum is required.

#### **6.0 PROPOSED TREATMENT PROCESSES**

##### **6.1 TREATMENT SYSTEM**

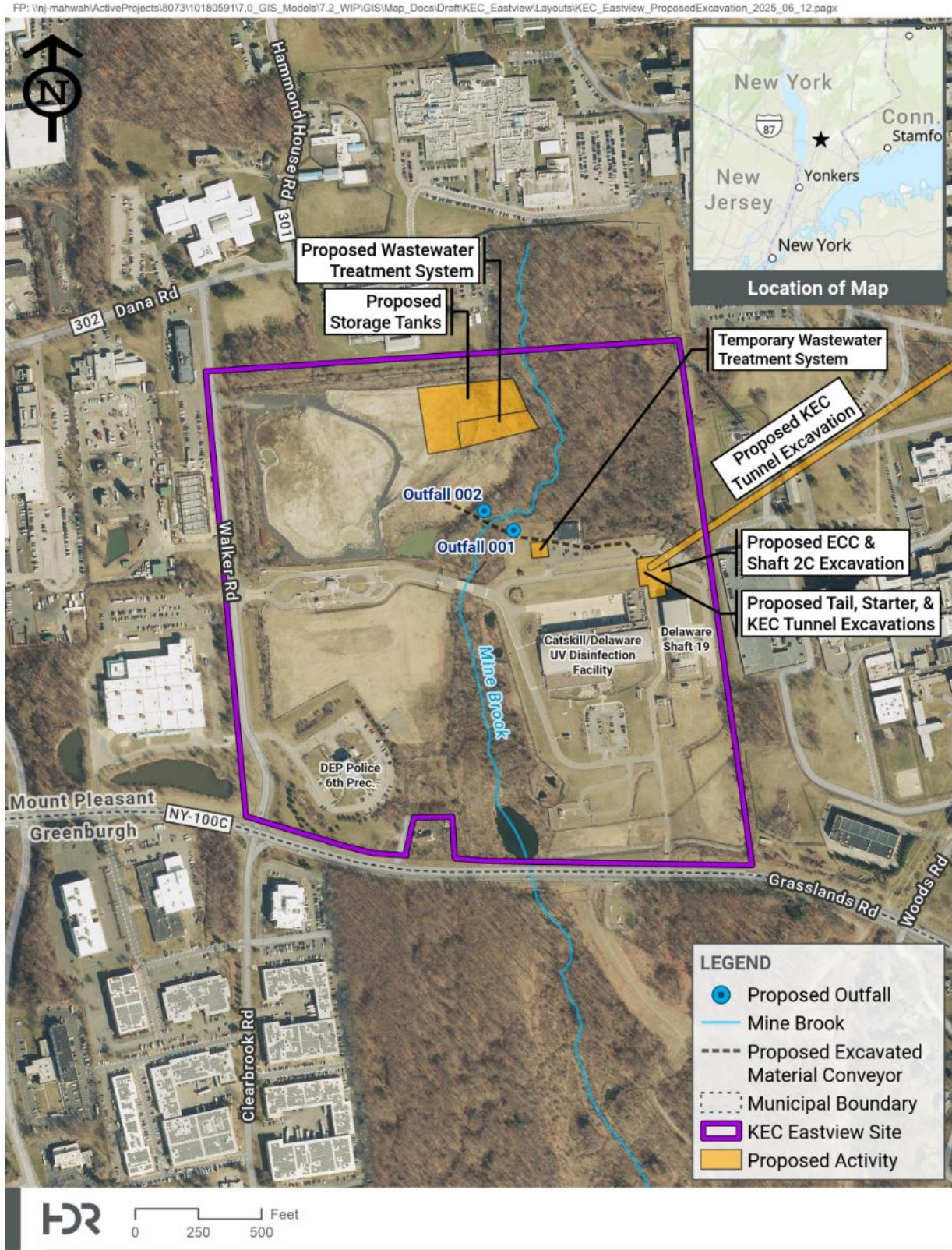
Industrial wastewaters generated at the KEC Eastview Site will require treatment prior to discharge to Mine Brook. Due to the location of the wastewater generating activities and their sequencing, two separate treatment systems and regulated outfalls are proposed. The intent is to use a smaller temporary treatment system for initial excavation work. Once the larger system is constructed and operational, the smaller system would be decommissioned and removed. The temporary treatment system and regulated outfall (Outfall 001) will be constructed on the east side of Mine Brook to treat wastewater associated with the initial excavation for the ECC and KEC Shaft 2C. This system will be in place and operational until the larger system is brought online. At that time, the larger

treatment system and regulated outfall (Outfall 002) will have been constructed on the west side of Mine Brook to treat wastewaters associated with the rest of the construction efforts. The location of the proposed outfalls and treatment systems are shown on **Figure 6**. The temporary treatment system will be decommissioned following startup of the treatment system on the west side of Mine Brook. The proposed outfalls and discharge sequencing are discussed in more detail in **Sections 6.3** and **6.5** respectively.

Based upon the current expectation of the characteristics of industrial wastewaters, the anticipated treatment systems would be expected to entail solids removal through physical (settling) and/or physico-chemical treatment (chemical flocculation/coagulation), pH adjustment (sulfuric acid), multimedia filtration and carbon filtration prior to discharge to Mine Brook. Wastewaters from the ECC, Shaft 2C and the Tail, Starter and KEC Tunnels would be removed from ECC construction site and eventually Shaft 2C.

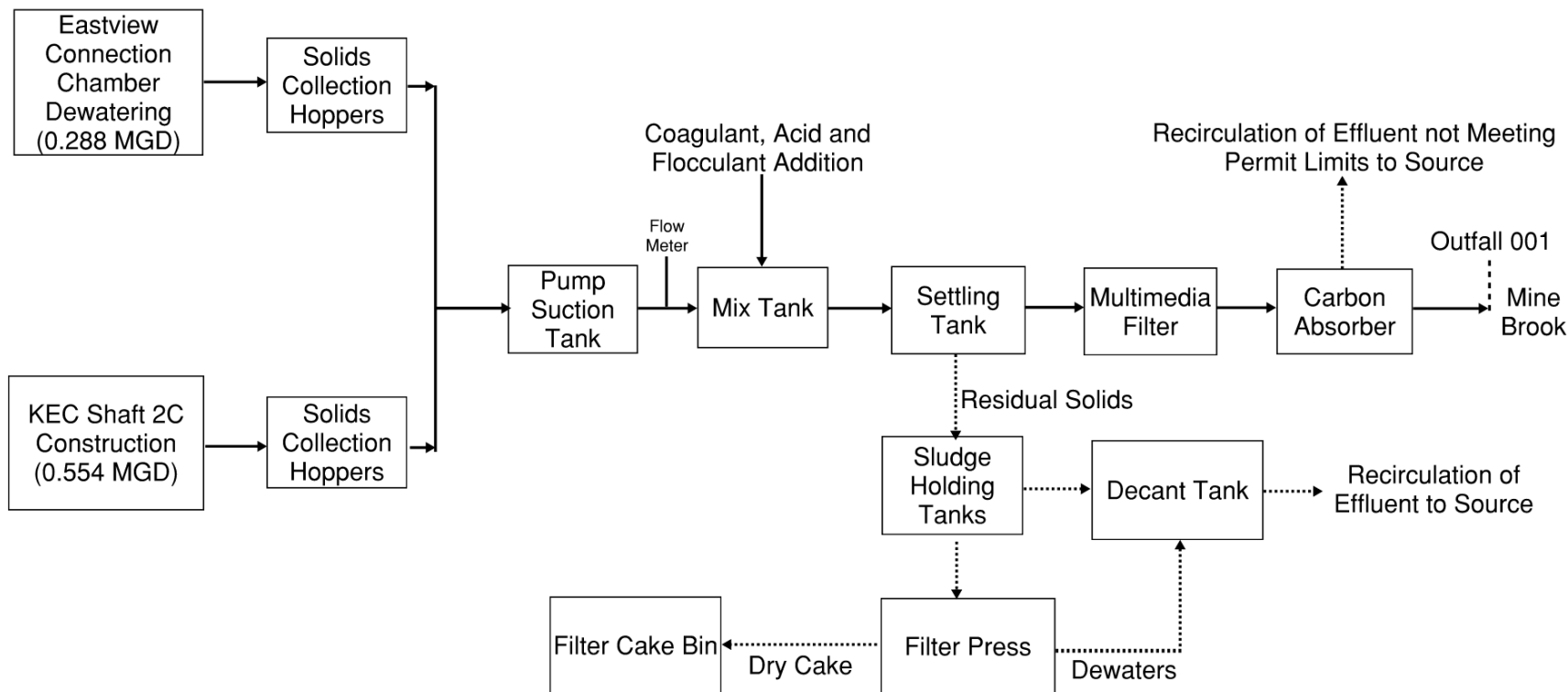
A summary of the expected major treatment process components is presented below and treatment system schematics are provided in **Figure 7** and **Figure 8**. Generalized wastewater flow schematics are shown in **Figure 9** and **Figure 10**.

- **Solids Collection Hoppers** - Solids hoppers will be provided to settle out solids from the wastewater flows at the head of the treatment system. These tanks will allow for the direct accumulation of wastewaters produced by each wastewater generating activity at the Kensico Eastview Site. The number of hoppers will be determined by the contractor and will be based upon the hydraulic capacity and residence time required to achieve sufficient solids settling.
- **Pump Suction Tank** – A pump suction tank will be installed downstream of the hoppers to pull wastewaters through the system prior to entering a mix tank. A flow meter will be installed on the effluent side of the tank to monitor flows.
- **Mix Tank** - Process water from the pump tank will flow to the chemical mix tank, which includes a coagulation chamber and a flocculation chamber, to begin the chemical agglomeration and pH adjustment process. A chemical storage and feed box will house the wastewater treatment chemicals (sulfuric acid, aluminum chlorohydrate and an anionic polymer).
- **Flocculant/Coagulant Addition** - One of several approved flocculent/coagulant chemicals may be injected into the wastewater treatment flow at the mix tank. Chemical addition will be based upon monitoring of influent turbidity. It is anticipated that a static mixer will be utilized in order to ensure proper mixing of added chemicals. Aluminum chlorohydrate and an anionic polymer are the anticipated flocculent/coagulant chemicals. DEP will submit the required NYSDEC Water Treatment Chemical (WTC) Notification Form (WTCFx form) prior to use of any proposed chemical. DEP would not allow use of any chemical addition without formal approval by NYSDEC.
- **pH Adjustment** – pH will be continuously monitored, and the results of this monitoring will inform pH adjustment through the addition of sulfuric acid.



**Figure 6: Location of Proposed Treatment System, Outfalls, and Contributing Activities**

**Wastewater  
Generating Activities**



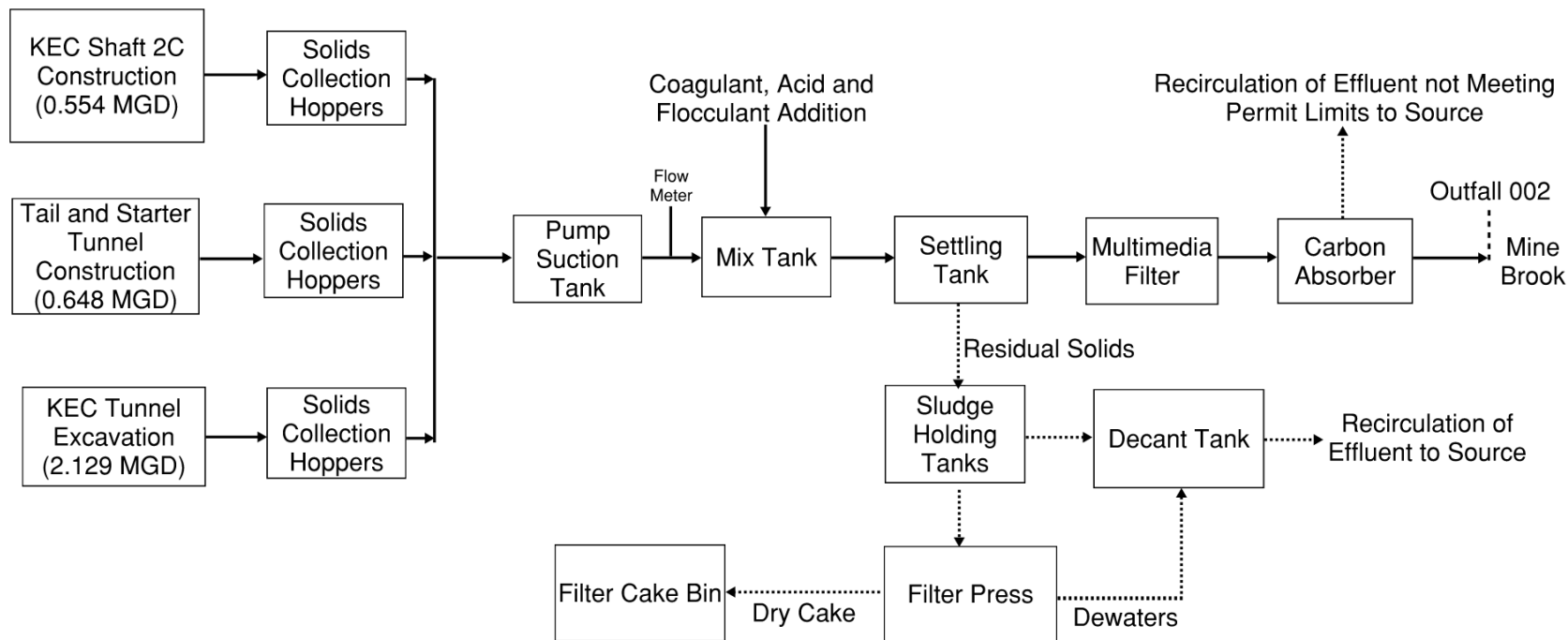
\* Maximum daily flows

\*\* Sample taps would be installed on the carbon absorbers. Samples collected would be used as a process check prior to the discharge of treated effluent to Outfall 001 and Mine Brook

\*\*\* Treatment system/schematic illustrated in this figure is for illustrative purposes only and may be modified by the contractor

**Figure 7: Outfall 001 Wastewater Treatment Schematic**

**Wastewater  
 Generating Activities**

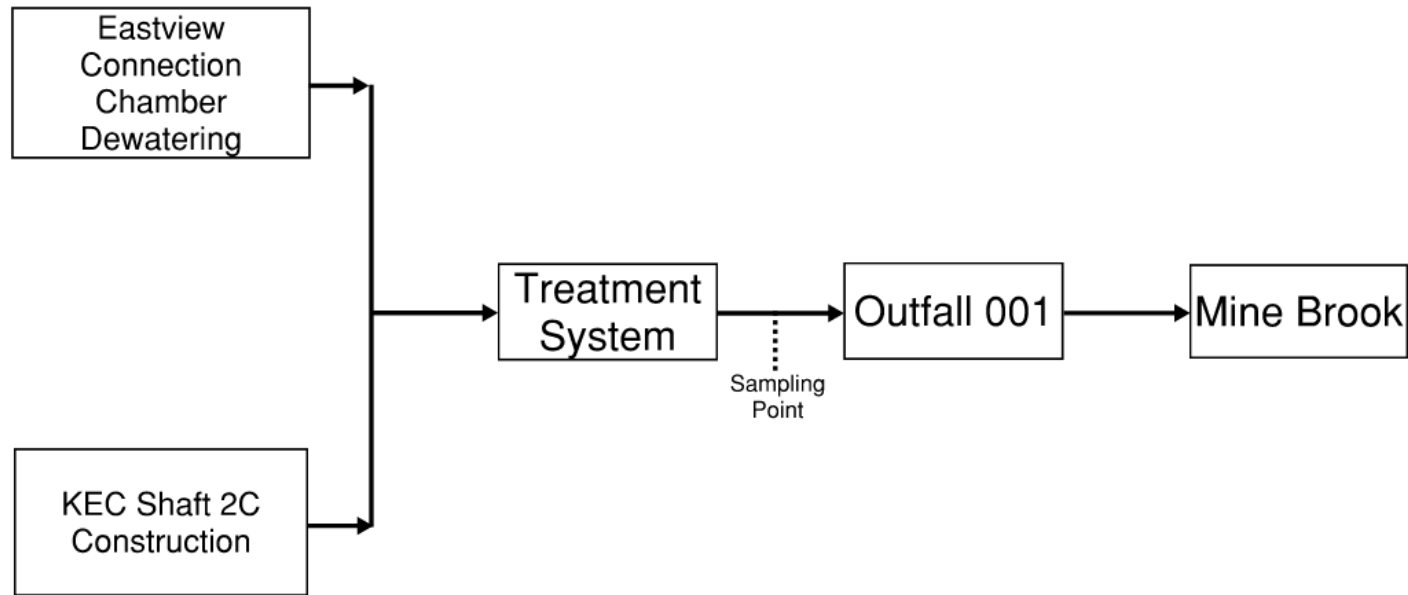


\* Maximum daily flows

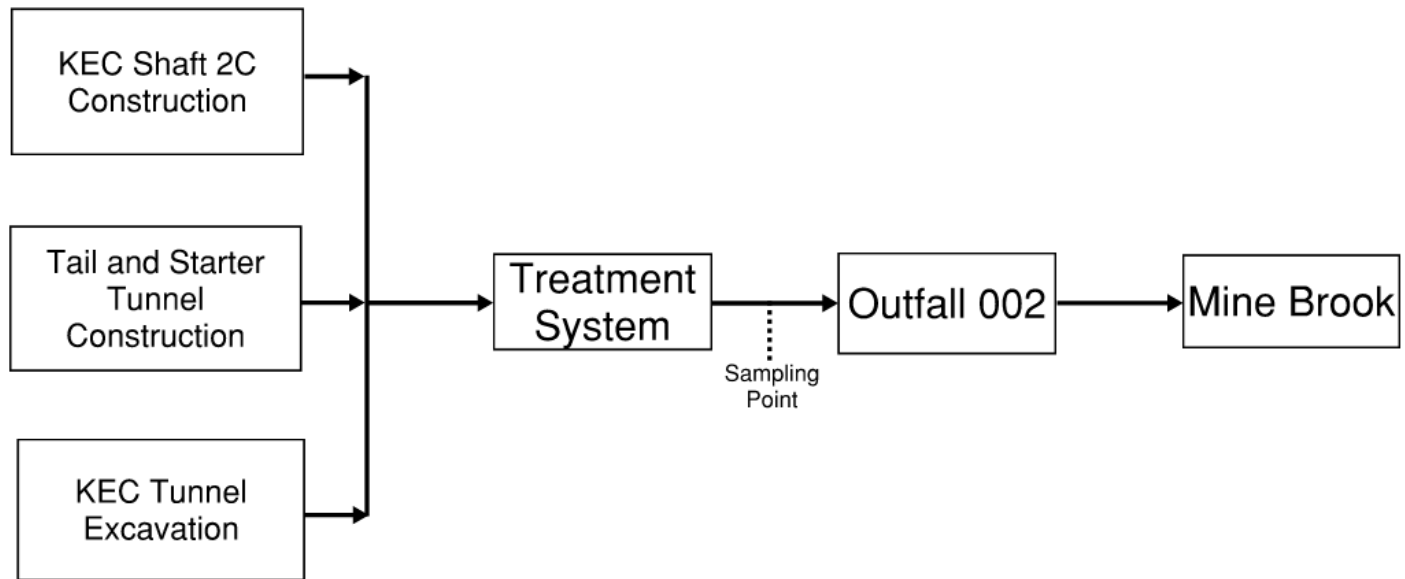
\*\* Sample taps would be installed on the carbon absorbers. Samples collected would be used as a process check prior to the discharge of treated effluent to Outfall 001 and Mine Brook

\*\*\* Treatment system/schematic illustrated in this figure is for illustrative purposes only and may be modified by the contractor

**Figure 8: Outfall 002 Wastewater Treatment Schematic**



**Figure 9: Outfall 001 Wastewater Flow Schematic**



**Figure 10: Outfall 002 Wastewater Treatment Schematic**

- **Multimedia Filter** - After settling, initial filtration will be routed through a 5-micron multimedia filter tank. The filter tank will incorporate an automated backwash system that will be programmed to maintain an appropriate level of filtration and recirculate backwash water to the wastewater source.
- **Settling Tanks** – Settling tanks will be provided to settle out solids/floc from the wastewater flows. The number of tanks will be determined by the contactor and will be based upon the hydraulic capacity and residence time required to achieve sufficient solids settling.
- **Carbon Absorber** – Two 10,000-pound reactivated carbon vessels will be installed at the back end of the treatment system for final polishing/treatment of wastewaters prior to discharge or recirculation of wastewaters to the source if effluent limits are not met.
- **Sludge Holding Tanks** – Residual solids that settle out from the settling tank will be directed to a series of sludge holding tanks. Water and solids will separate in the holding tanks where water will be decanted to a separate decant tank and solids will be pumped to a filter press.
- **Filter Press** – The filter press will receive solids from the sludge holding tanks and generate a dry filter cake that will be disposed of at a licensed and permitted disposal facility.
- **Decant Tank** – The decant tank will receive water from the sludge holding tanks and dewater from the filter press. Waters would then be pumped back to the head of the system and/or wastewater source.
- **Effluent Discharge** – A sample tap will be installed in the carbon vessels to monitor the parameters of concern and determine if the flows meet effluent limits. Wastewaters that meet effluent limits would be discharged to Mine Brook through Outfall 001 or 002. Outfall locations and discharge sequencing are discussed in **Sections 6.3** and **6.5** respectively.

## 6.2 WATER TREATMENT CHEMICALS

As noted in **Section 6.1**, DEP and/or its construction contractor intends to use one or more WTCs as part of the wastewater treatment system. Similar to the proposed treatment process, the specific WTCs used may be modified based on the characteristics of wastewater inflows and the ability to consistently meet effluent limits established as part of this permit application process. Current WTCs that can potentially be anticipated for treatment of wastewater flows generated during the KEC Project include:

- Flocculants and coagulants (aluminum chlorohydrate and an anionic polymer) to assist in the removal of solids (fine soils and rock debris) as a result of blasting or TBM operations
- pH adjustment (sulfuric acid) to lower pH levels that would be elevated from the use of cast-in-place concrete, grout and bentonite.

WTCFx forms and supporting documentation would be prepared for each of WTC, as applicable. In the event that field conditions present a need to add additional WTCs or modify their usage,

DEP and/or its contractor would prepare additional WTCFx forms and submit to NYSDEC for approval.

### 6.3      **OUTFALL/DISCHARGE LOCATION**

Two temporary outfalls will be constructed as part of construction at the KEC Eastview Site. Outfall 001 will be constructed on the east side of Mine Brook. Outfall 001 is associated with a temporary treatment plant that would be used to treat initial construction wastewaters generated from the excavation of the ECC and KEC Shaft 2C. An additional outfall (Outfall 002) will be constructed on the west side of Mine Brook and is associated with a larger treatment plant. Once the larger treatment plant and Outfall 002 are operational, discharges from Outfall 001 will cease and the larger system will be used to treat wastewaters generated from the remainder of construction, including the KEC Shaft 2C, the tail and starter tunnels and the KEC Tunnel. The location of the proposed outfalls are shown on **Figure 11**. Separate Simple Mixing Zone forms have been prepared for each of the proposed outfalls and have been included as part of this application. The NYSDEC classifies Mine Brook as a Class C tributary of the Sawmill River and runs in a north south direction through the KEC Eastview Site. Discharge monitoring for this outfall would be identified for compliance sampling in consultation between DEP and NYSDEC including upstream sampling as opposed to end of pipe sampling if possible.

### 6.4      **ANTICIPATED FLOWS**

Flows from each of the wastewater generating activities will be directed to a single wastewater treatment system and combined prior to undergoing treatment, thus representing a single regulated discharge to Mine Brook. While two treatment systems and outfalls are proposed, they are not intended to be operational at the same time (the temporary system and Outfall 001 will be decommissioned and removed once the larger treatment system and Outfall 002 are operational). Flow rates associated with each wastewater generating activity and flows to the wastewater treatment system would likely vary over the duration of construction at the KEC Eastview Site. If flows are directed to the wastewater treatment system concurrently, the flow would be equalized within the treatment system prior to discharge to Mine Brook.

Maximum and average flows by activity are shown in **Table 6-1** and **Table 6-2**, respectively. These tables reflect estimated maximum and average flows in million gallons per day (MGD) and gallons per minute (GPM) for individual wastewater generating activities, including periods of construction activity overlap.

For the purpose of this application and the attached NY-2C forms, the estimated maximum flows represent the highest combined flow shown in **Figure 12** and **Figure 13** which would be 2.129 MGD (1,478 GPM). Similarly, the average projected flow shown in **Figure 14** and **Figure 15** based upon overlapping activities would be 0.662 MGD (460 GPM). Treated wastewaters would be discharged to Mine Brook through one outfall, Outfall 001 initially, and Outfall 002 for a majority of construction (see **Figure 11**).

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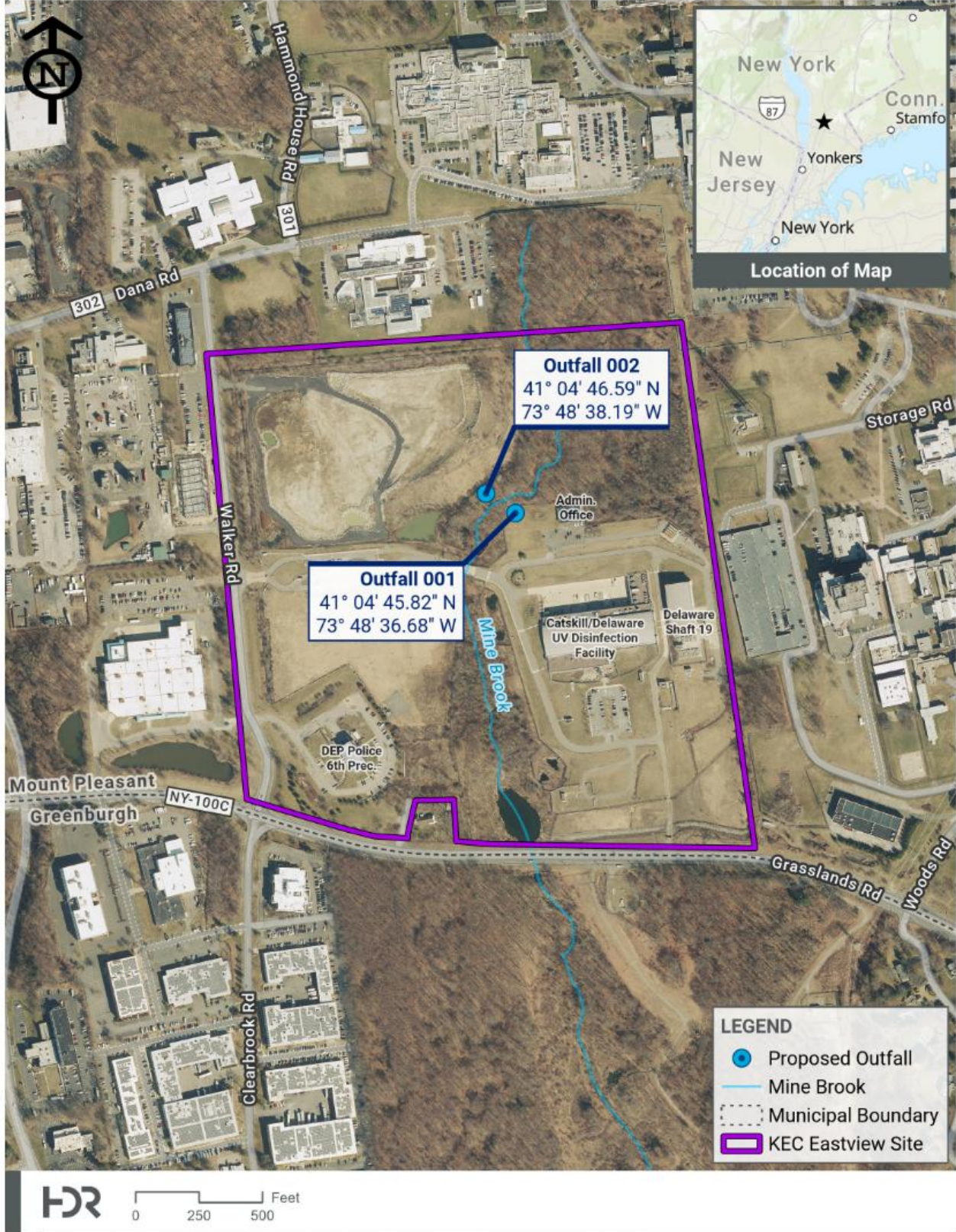


Figure 11: Proposed Outfall Locations

**Table 6-1: Anticipated Maximum Flows – Combined and by Individual Activities**

Wastewater Generating Activity	Maximum Flow	
	Million Gallons Per Day (MGD)	Gallons Per Minute (GPM)
Eastview Connection Chamber	0.288	200
KEC Shaft 2C	0.554	385
Tail and Starter Tunnel	0.648	450
KEC Tunnel	2.129	1,478
<b>Highest Maximum Combined Flows</b>	<b>2.129</b>	<b>1,478</b>

**Table 6-2: Anticipated Average Flows – Combined and by Individual Activities**

Wastewater Generating Activity	Average Flow	
	Million Gallons Per Day (MGD)	Gallons Per Minute (GPM)
Eastview Connection Chamber	0.086	60
KEC Shaft 2C	0.086	60
Tail and Starter Tunnel	0.288	200
KEC Tunnel	0.288	200
<b>Highest Average Combined Flows</b>	<b>0.662</b>	<b>460</b>

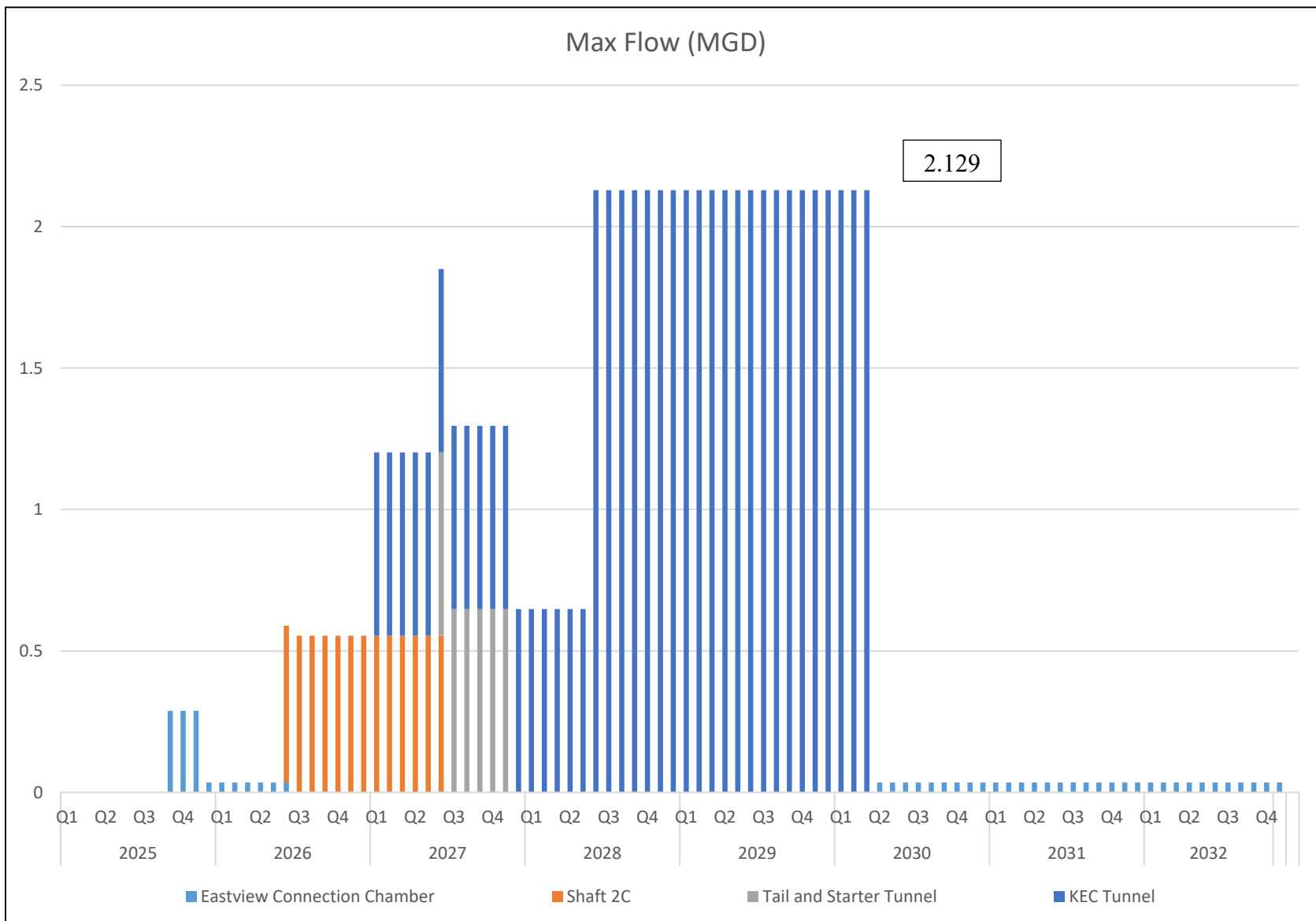


Figure 12: Anticipated Maximum Flows – Combined and by Individual Activities

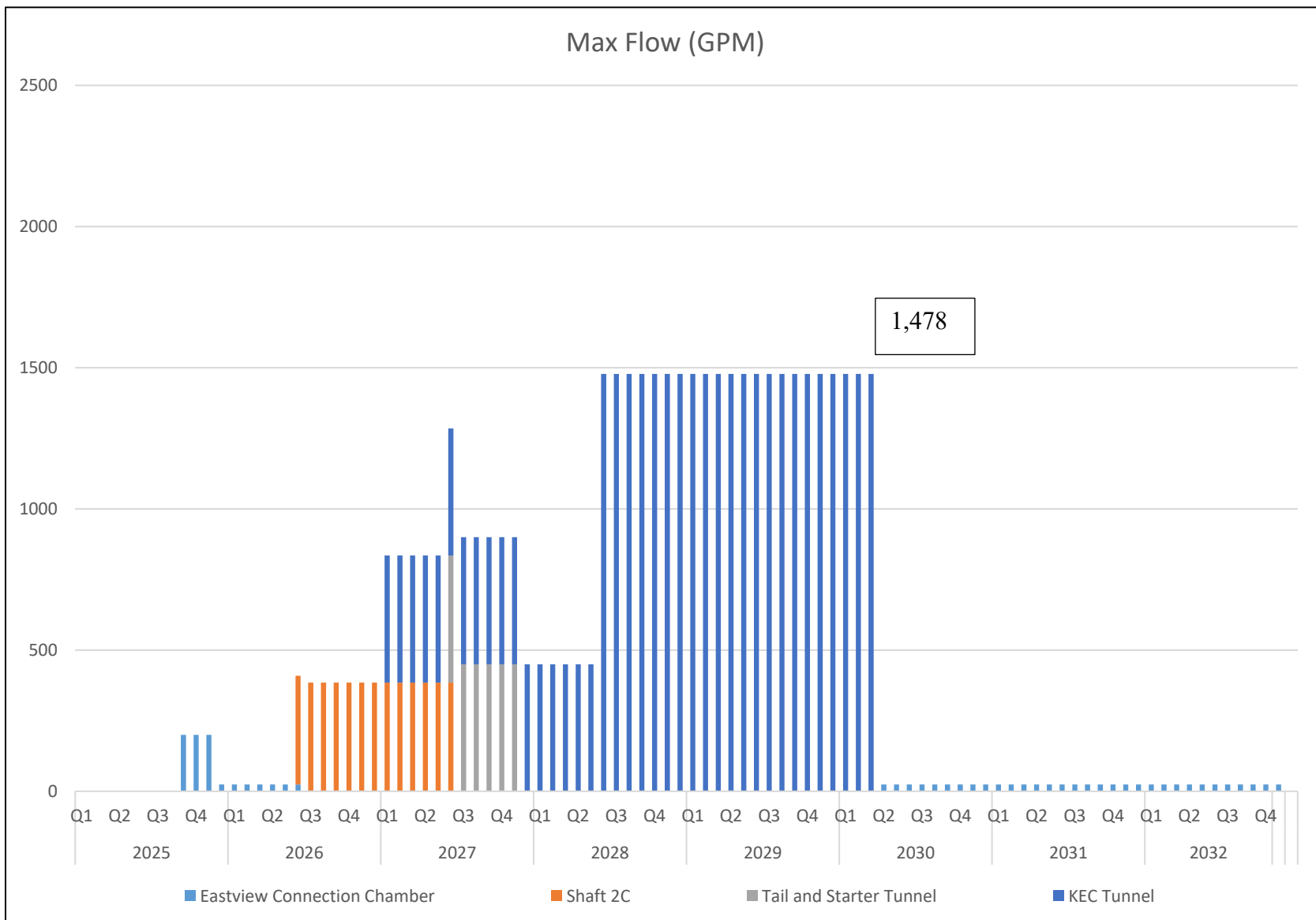


Figure 13: Anticipated Maximum Flows – Combined and by Individual Activities

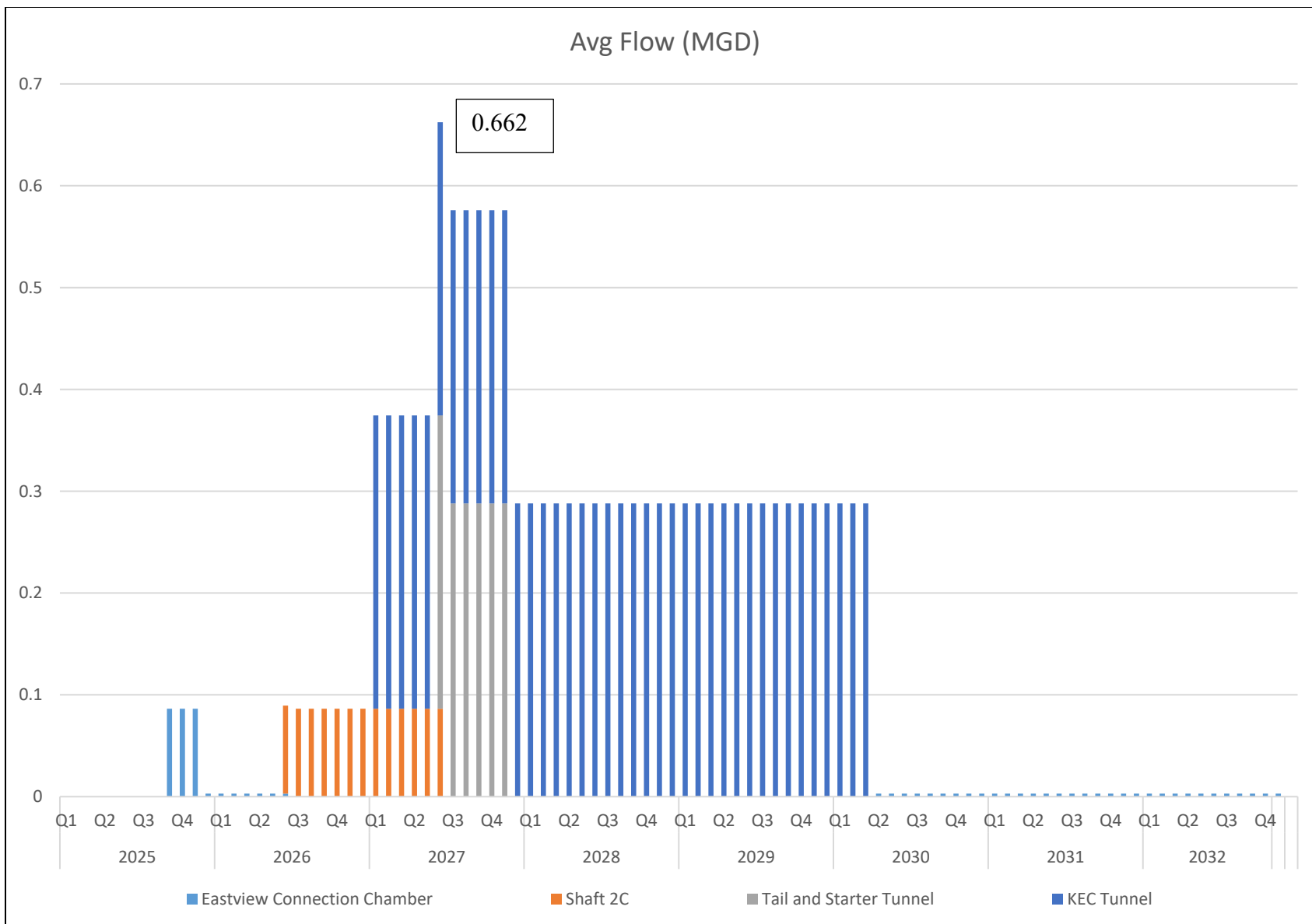
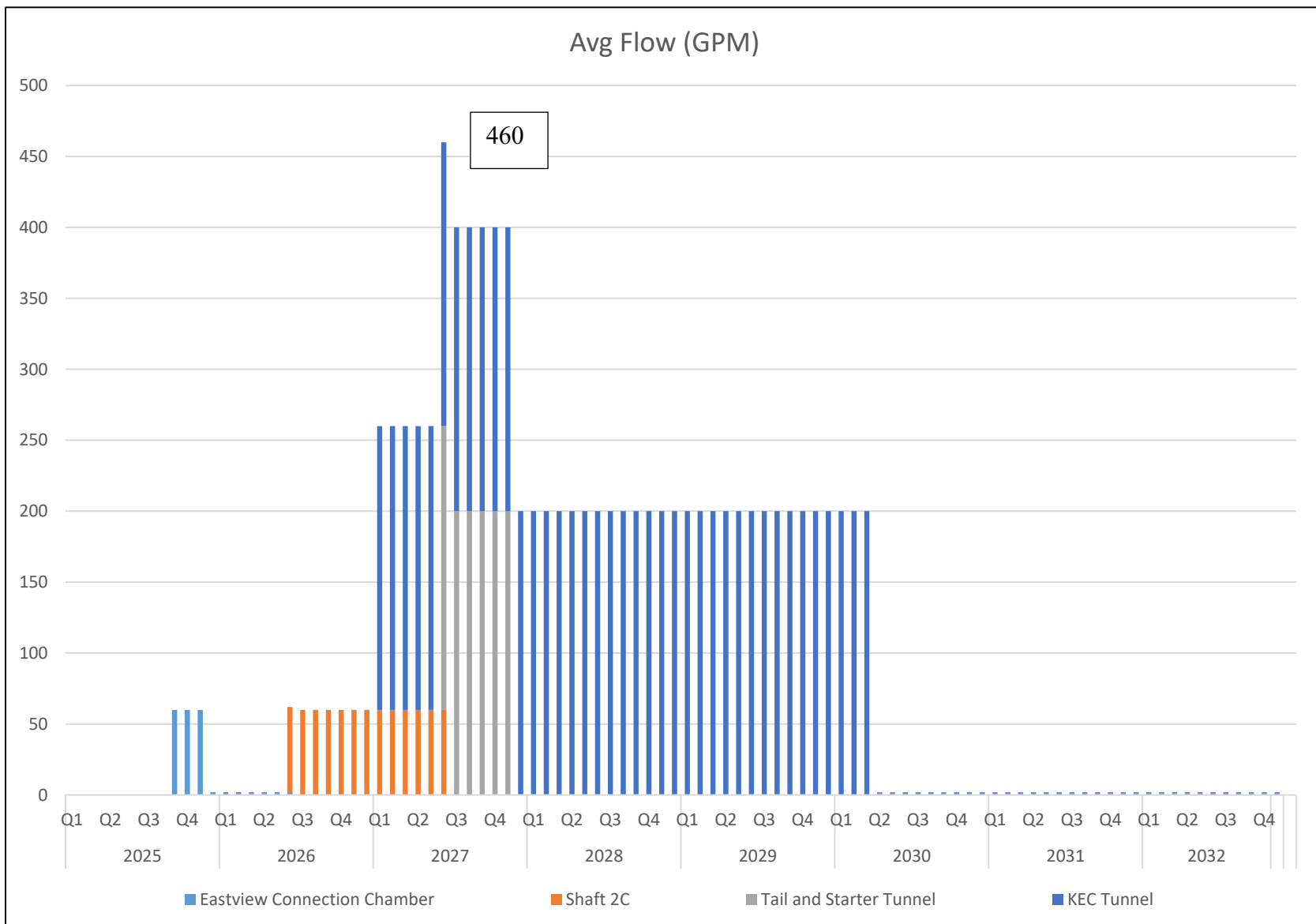


Figure 14: Anticipated Average Flows – Combined and by Individual Activities



**Figure 15: Anticipated Average Flows – Combined and by Individual Activities**

## 6.5 DISCHARGE SEQUENCING

The nature of the anticipated industrial wastewater generating activities at the KEC Eastview Site is expected to be largely sequential as opposed to concurrent. As discussed in **Section 6.1**, the treatment systems will be configured and sized accordingly to ensure consistent compliance with the requirements and effluent limits established as part of this application for permit. Activities are primarily expected to be sequential however potential overlap of industrial wastewater generating activities may occur concurrently. Excavation for the ECC would occur first, followed by construction and lining of KEC Shaft 2C, construction of the tail/starter tunnels, followed by the KEC Tunnel, and finally construction of the ECC building. The temporary treatment system associated with Outfall 001 will be used during early construction efforts until a larger treatment system is operational. At that point, discharges from Outfall 001 will cease and all wastewaters will be directed to the treatment plant associated with Outfall 002.

## 7.0 PROPOSED EFFLUENT LIMITS AND MONITORING FREQUENCY

The construction components discussed above will generate liquid wastes from construction wastewaters and groundwater infiltration. As discussed in **Section 5.0**, the pollutants of concern associated with these activities will consist of total suspended solids, settleable solids, oil and grease, pH and aluminum. Proposed effluent limits for wastewater discharges are presented in **Table 7-1**. Proposed effluent limits are based upon recent and prior DEP discharge permits acquired from NYSDEC for similar waste streams over the past several years.

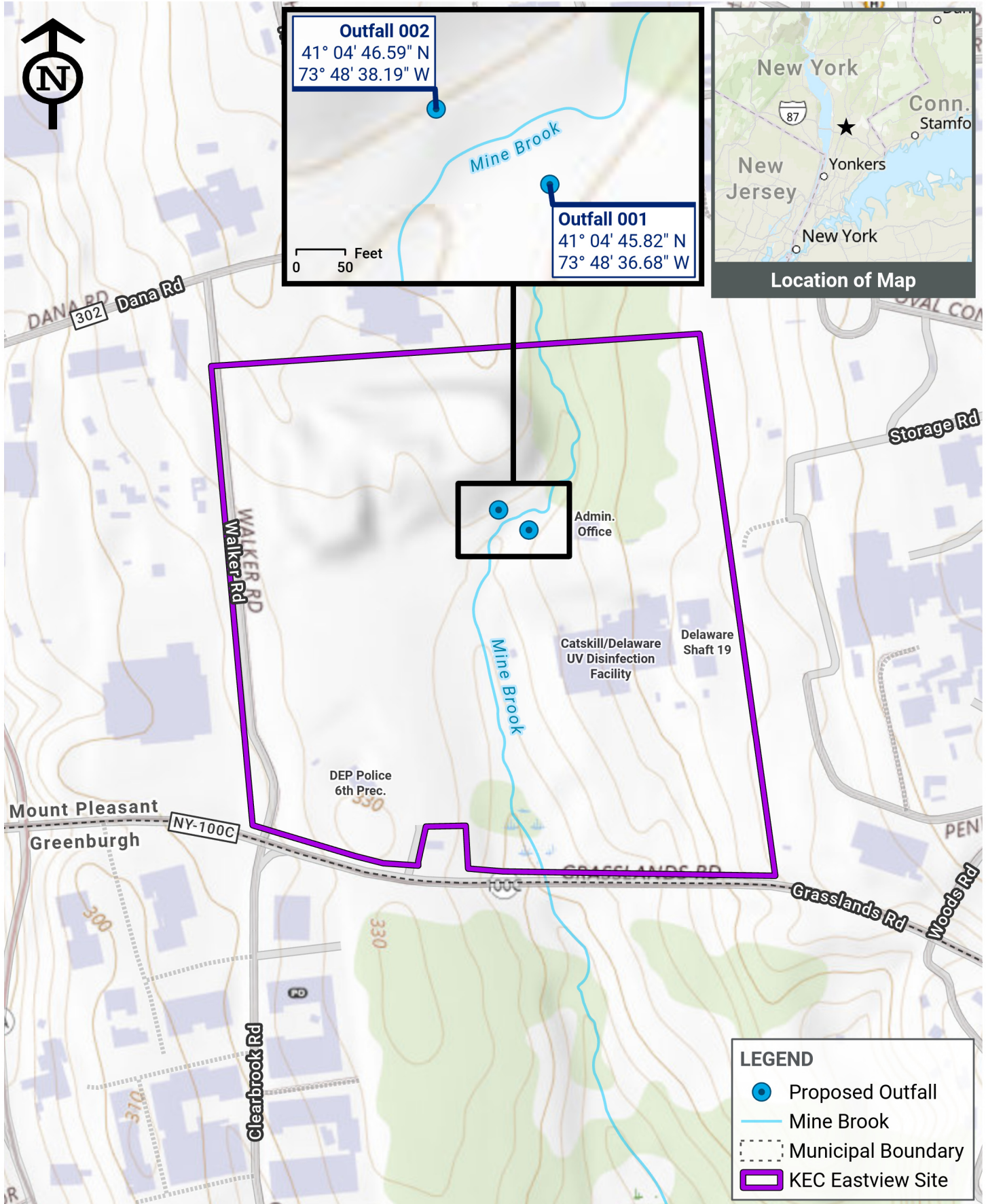
**Table 7-1: Proposed Effluent Limits for Wastewater Discharges**

Parameter/Pollutant	Proposed Permit Limit	
	Monthly Average	Daily Maximum
Flow	Monitor	Monitor
Total Suspended Solids	25 mg/L	45 mg/L
Settleable Solids	-	0.3 ml/L
Oil and Grease	-	15 mg/L
pH	-	6.5-8.5
Aluminum	-	2.0-4.0 mg/L

Proposed monitoring frequencies are provided in **Table 7-2** and are based upon the currently estimated maximum discharge flows discussed previously and a review of suggested monitoring frequency provided in Table 5 of NYSDEC TOGS 1.2.1 – Industrial Permit Writing.

**Table 7-2: Proposed Monitoring Frequencies for Wastewater Discharges**

Parameter/Pollutant	Monitoring Frequency
Flow	Monitor
Total Suspended Solids	3/week
Settleable Solids	3/week
Oil and Grease	3/week
pH	3/week
Aluminum	3/week



0 50 Feet

0 250 500 Feet



# SPDES Permit Application Supplemental Information Form

§ 70-0117 Demonstration: Consideration of Future Physical Climate Risk

Following the 2019 Climate Leadership and Community Protection Act (Climate Act), which amended the 2014 Community Risk and Resiliency Act (CRRRA), SPDES permit applicants for “major” projects<sup>1</sup> are required to demonstrate consideration of future physical climate risks, including those due to sea level rise, storm surges, and flooding. This form has been developed to assess relevant information to comply with the requirements to consider climate risks.

Applicants should review the [Flood Risk Management Guidance](#) or [Asset Management Guide for Publicly Owned Treatment Works](#) to identify current and future flood elevations, and to review examples of risk mitigation strategies. The community Floodplain Administrator may be a good resource and can be found by emailing DEC at [floodplain@dec.ny.gov](mailto:floodplain@dec.ny.gov).

For all fields provided below, applicants may attach additional sheets as necessary.

<b>Facility</b>			
1. a. Facility name		b. SPDES No.	
2. a. Does the facility discharge to a tidal waterbody? (Y/N)		b. If yes, what is the high projection for sea level rise (SLR) in <a href="#">6 NYCRR 490</a> for the regional area? (feet)	
3. Please describe the type and extent of any past flooding events at the facility.			
4. What are the applicable <a href="#">Flood Insurance Rate Map</a> (FIRM) Nos. and effective dates?			
5. a. Is any portion of the facility located in a FEMA designated flood zone? If yes, what is the zone type? If no, are there adjacent flood zones that could be considered or skip to question 6.			
b. What is the <a href="#">lowest ground elevation</a> at the facility? (ft)			
c. What is the <a href="#">Base Flood Elevation</a> (BFE) at the facility? (ft)			
d. What is the <b>Future BFE</b> for the facility based on the <a href="#">NYS Flood Risk Management Guidance</a> ? <i>Tidal Areas: BFE + SLR (Method 4)</i> <i>Non-Tidal Areas: Q100 (Method 3 or use available flood profiles from Flood Insurance maps)</i>			
e. What is the target elevation for <u>critical</u> equipment? <b>Future BFE + 3 feet</b>			
f. Compare questions <b>5.b.</b> and <b>5.e.</b> Is the <u>target elevation</u> greater than the <u>lowest ground elevation</u> ?			
6. What climate risk mitigation measures are in place at the facility? Are any future projects anticipated that provide further opportunity to address climate risk?			
7. For applications involving facility changes, have any other types of future physical climate risks been considered, including tropical and extratropical cyclones, wind, and changes in average/peak precipitation and temperature?			

<sup>1</sup> “Major” projects are those identified in Uniform Procedures Act regulations at 6 NYCRR 621.4.

Pump/Lift Station(s)	
8. Are there pump/lift station(s) owned by the permittee? If yes, how many? If no, skip to Certification	
9. Please describe the type and extent of any past flooding events at the pump/lift station(s).	
10. What are the applicable <a href="#">Flood Insurance Rate Map (FIRM)</a> Nos. and effective dates?	
11. a. Are any pump/lift stations located in a FEMA designated flood zone? If yes, which stations and what zone type? If no, skip to question 11	
b. What is the <a href="#">lowest ground elevation</a> at each pump/lift station? (ft)	
c. What are the <a href="#">BFEs</a> , future BFEs, and target elevations for critical equipment (future BFE + 3 ft) for each pump/lift station?	
d. Compare questions <b>10.b.</b> and <b>10.c.</b> Are any pump/lift stations below the target elevation?	
12. What climate risk mitigation strategies are in place at the pump/lift stations? Are any future projects anticipated that provide further opportunity to address climate risk?	
Certification Statement	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	
I have demonstrated consideration of current and future physical climate risk.	
<b>Name</b> (print or type first and last name)	<b>Official Title</b>
<b>Signature</b> <i>Ana Barrio</i>	<b>Date Signed</b>
List of Attachments	
Additional Resources/Information	
<ul style="list-style-type: none"> <li>Flood Risk Management Guidance - <a href="https://www.dec.ny.gov/energy/102559.html">https://www.dec.ny.gov/energy/102559.html</a></li> <li>Estimating Guideline Elevations - <a href="https://www.dec.ny.gov/docs/administration_pdf/craestelevguidelines.pdf">https://www.dec.ny.gov/docs/administration_pdf/craestelevguidelines.pdf</a></li> <li>Asset Management Guide - <a href="https://www.dec.ny.gov/chemical/101412.html">https://www.dec.ny.gov/chemical/101412.html</a></li> <li>Sea Level Rise Projections - <a href="https://www.dec.ny.gov/regulations/103877.html">https://www.dec.ny.gov/regulations/103877.html</a></li> <li>Ground Elevations - <a href="https://ngmdb.usgs.gov/topoview/viewer/#13/43.2885/-74.4839">https://ngmdb.usgs.gov/topoview/viewer/#13/43.2885/-74.4839</a></li> <li>Flood Insurance Rate Maps - <a href="https://msc.fema.gov/portal/home">https://msc.fema.gov/portal/home</a></li> <li>Ten State Standards – <a href="https://www.health.state.mn.us/communities/environment/water/docs/tenstates/tenstatestan2014.pdf">https://www.health.state.mn.us/communities/environment/water/docs/tenstates/tenstatestan2014.pdf</a></li> <li>TR-16 – <a href="https://neiwpc.org/learning-center/tr-16-guides-design-wastewater-treatment-works/">https://neiwpc.org/learning-center/tr-16-guides-design-wastewater-treatment-works/</a></li> </ul>	