
Chapter 2: Analytical Framework

2.1 INTRODUCTION

In accordance with the processes described in SEQRA and CEQR, DEP (as Lead Agency) examined the potential for environmental impacts that could occur as a result of the KEC Project. This chapter provides a description of the analytical framework that forms the basis for determination of the potential for impacts associated with the Proposed Action and the applicable cumulative impacts, as described in [Chapter 6](#), “Cumulative Effects,” of this ~~Draft~~ Final EIS.

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, NY. As discussed in Chapter 1, “Project Description,” 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 UEC, and additional supporting facilities. Upon completion of construction, operation of the new facilities would not represent a substantive change (e.g., large changes in facility staffing, substantive increases in traffic) in the level or type of activities that currently occur at the Kensico Campus and KEC Eastview Site. As a result, and as described below, this ~~Draft~~ Final EIS impact analysis is primarily focused on potential impacts from construction with a more limited evaluation of potential effects due to operation.

The approach for assessing potential impacts for the project is described below.

2.1 ANALYTICAL FRAMEWORK

This ~~Draft~~ Final EIS was prepared in accordance with the guidelines presented in the *CEQR Technical Manual*, as applicable. For each technical area that warrants 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. 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. The future without the Proposed Action includes a discussion of projects expected to be completed by DEP or others, independent of the Proposed Action, by the proposed KEC Project analysis or Build Year, in

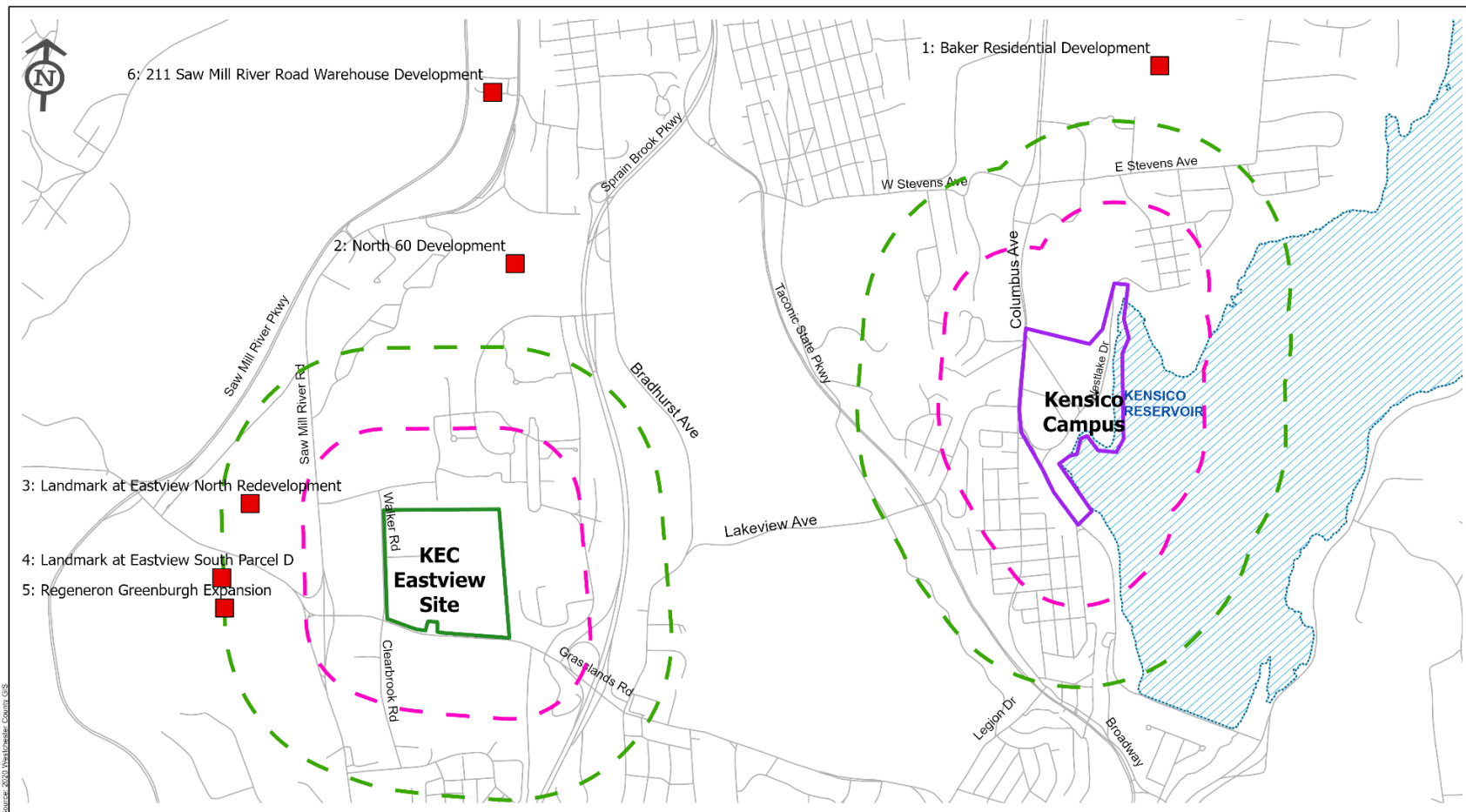
addition to the application of baseline growth for each applicable technical resource area, as necessary.

Presented below is a description of the analytical framework used for this ~~Draft~~ Final EIS.

- **Analysis Year.** The analysis year refers to the future year for which an EIS analyzes a proposed project's likely effects on its environmental setting. For the assessment of potential impact, the KEC Project Build Year was assumed to be 2034 when construction would be complete and the new facilities would be operational. However, in order to provide a conservative assessment, the analysis year reflects peak construction conditions, where applicable.
- **Existing Conditions.** Existing or baseline conditions have been evaluated in order to establish a baseline against which future conditions can be projected.
- **Future Without the Proposed Action.** Using existing conditions as a baseline, conditions and/or projects known to occur or expected to occur in the future, regardless of the Proposed Action, have been evaluated for the analysis year (see **Table 2-1** and **Figure 2.1** for future without the Proposed Action projects). This future without the Proposed Action is the baseline condition against which the effects of the Proposed Action are measured.
- **Future With the Proposed Action.** Potential changes within the study area(s) known to occur or resulting from the construction and operation of the Proposed Action were compared to the future without the Proposed Action to assess the potential for significant adverse impacts for the KEC Project's Build Year of 2034 or the analysis year. This comparison provides an understanding of the potential impacts that could result with implementation of the Proposed Action. This comparison is presented for each impact analysis as well as the cumulative analysis, as applicable.

Table 2-1. Future Without the Proposed Action Projects

Project	Anticipated Build Year
DEP Waterfowl Management Program Building	2025
DEP Kensico Regional Headquarters (former Kensico Laboratory)	2025
DEP DEL Shaft 18 Improvements	2026
DEP CDUV Manhole Cleanouts for Foundation Drain System	2025
DEP CDUV Carport Canopy and Rooftop Solar	2023
Landmark at Eastview North Campus Redevelopment (Mount Pleasant)	2026
Landmark at Eastview South Campus (Greenburgh) Parcel D	2027
Regeneron Greenburgh Expansion	2028
North 60 Development	2024
Baker Residential Development	2027
211 Saw Mill River Road Warehouse Development	2022



Source: 2020, Healthier Communities GIS

Legend

- Future without the Proposed Action Projects
- ┌┐┌┐ 1/4-mile Radius
- ┌┐┌┐ 1/2-mile Radius

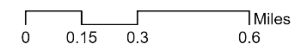


Figure 2.1. Future Without the Proposed Action Projects

2.2 DEFINITION OF STUDY AREAS

The KEC Project would provide for the construction and operation of a new water tunnel between Kensico Reservoir and the CDUV Facility and additional new and/or improved supporting infrastructure as discussed in Section 1.3, “Detailed Description of Proposed Action,” and noted in Section 2.1, “Introduction,” above. As the Proposed Action involves new construction and operations at two distinct locations, two study areas were established: (1) Kensico Campus study area; and (2) KEC Eastview Site study area. The ~~Draft~~ Final EIS, as applicable, therefore addresses each the Kensico Campus study area and KEC Eastview Site study area for those activities that would be anticipated at each location. In addition, potential impacts of the new, deep rock tunnel between these two locations were also evaluated for applicable resource categories. Similarly, the Proposed Action, upon completion, would potentially involve increased intake flows at the UEC that may result in potential impacts to specific resource categories. As a result, a discussion of this is presented within Section 2.5, “Proposed Operation.”

For each technical area in which a screening assessment and/or impact analysis was conducted, the applicable study area(s) are defined for analysis. This represents the geographic areas most likely to be affected by the Proposed Action for a specific technical area, or the area in which impacts of that type could potentially occur. The limits of the study areas may differ depending on the resource area of concern and/or the type of impact being analyzed and are identified in each section of this ~~Draft~~ Final EIS.

2.3 SCOPE OF ENVIRONMENTAL ANALYSIS

The impact analyses have been tailored to the Proposed Action and are presented in this ~~Draft~~ Final EIS. For the purposes of this ~~Draft~~ Final EIS, the potential impacts of the Proposed Action were assessed in the following manner. An initial screening was conducted to determine what impact categories were not applicable to the Proposed Action. Those impact categories that did not warrant any further assessment consistent with *CEQR Technical Manual* guidance are discussed in Section 2.4 “Screening.” 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 [Chapter 3](#), “Potential Impacts from Construction of Proposed Action” and [Chapter 4](#), “Potential Impacts from Operation of Proposed Action.” Impact assessments are based upon the impact analysis year, study area(s), and criteria provided in the *CEQR Technical Manual*, under SEQRA, or other appropriate and applicable criteria. **Table 2-2** provides a summary that identifies those impact categories that required analysis for potential impacts related to construction and/or operation of the Proposed Action.

Table 2-2. 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.		

2.4 SCREENING

As part of preparation of the Final Scope of Work for the EIS, an initial screening was conducted for each impact category in order to form an initial characterization of existing conditions to determine which impact categories warranted an impact analysis. These screenings primarily relied on desktop evaluations (e.g., review of ArcGIS data, maps, aerial imagery, online databases, existing reports, and/or agency consultations).

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.

Provided below is a summary of those impact categories that, based on further review, did not warrant further impact analysis under the *CEQR Technical Manual*.

2.4.1 CONSTRUCTION ANALYSIS

Analysis of potential impacts associated with construction of the Proposed Action are discussed in [Chapter 3](#), “Potential Impacts from Construction of Proposed Action.” However, as noted in **Table 2-2**, it was determined that some impact categories did not warrant further assessment of potential impacts due to the construction associated with the Proposed Action under the *CEQR Technical Manual*, and these are described below:

- **Land Use, Zoning, and Public Policy:** The Proposed Action would not change the existing water supply use of the Kensico Campus and KEC Eastview Site, require a change of zoning designations, or result in any substantive change to any public policies or the compatibility with any public policies. A detailed assessment of the potential impact of the construction of the Proposed Action is therefore not warranted.
- **Socioeconomics:** Construction of new facilities at the Kensico Campus and KEC Eastview Site would not result in significant impacts to socioeconomics. No new residential or commercial space would be developed as part of the Proposed Action. Likewise, no displacement of residents, businesses, or employees would occur; nor would more than 200 new and permanent employees be required as part of the construction elements of the Proposed Action. As a result, no further impact analysis due to construction activities is required.
- **Growth Inducement:** Actual construction of the Proposed Action would not result in growth inducing activities as this would be temporary and would not, in and of itself, result in any long-term changes such as new population from development. A detailed assessment of construction was therefore not warranted.

2.4.2 OPERATIONAL ANALYSIS

Analysis of potential impacts associated with operation of the Proposed Action are discussed in [Chapter 4](#), “Potential Impacts from Operation of Proposed Action;” however, the Proposed Action is not anticipated to result in significant impacts due to the nature and operation of the new and improved facilities within the existing sites. Significant new levels of employees, major

changes in land use, or substantive increases in the need for certain services, as an example, would not be anticipated.

As noted in **Table 2-2**, it was determined that the following impact categories did not warrant further assessment of potential impacts due to the future operations associated with the Proposed Action under the *CEQR Technical Manual*, and these are described below.

- **Community Facilities and Services:** Operations associated with the Proposed Action would not result in a significant increase in the number of employees at either the Kensico Campus or KEC Eastview Site. No changes to existing or need for new community facilities and services would be required. The operation of the Proposed Action would also not physically displace or alter any community facilities or services. As a result, an operational assessment is not necessary.
- **Open Space and Recreation:** The Proposed Action does not involve the loss or limitation of access to public open space, a change in the use of any open space, or significant increases in noise or air emissions resulting from operation. New facilities associated with the Proposed Action would comply with applicable federal, State, and/or local requirements related to noise or air emissions that are protective of human health and the environment. Similarly, operation of the Proposed Action would not add a significant new or transient (e.g., employees) population or demand on the use of open space. As a result, an analysis of potential effects upon open space and recreation due to future operations is not warranted.
- **Critical Environmental Areas:** The operation of the Proposed Action would not change the existing water supply use of the two project sites, as it would continue to operate as such after construction of the Proposed Action is completed. Proposed operation would not affect the preservation of open space or the exceptional or unique character of CEAs within the area surrounding the Kensico Campus and KEC Eastview Site and, as a result, no detailed analysis is warranted.
- **Hazardous Materials:** Operation of the Proposed Action would involve the use of hazardous materials, primarily for the disinfection and fluoridation of a public water supply, similar to current operations at these sites. While the use of additional chemicals in these and other processes may be required, significant increases are not anticipated above current or historic use at the Kensico Campus where initial disinfection and fluoridation occurs. No substantive increase in the use of hazardous materials is anticipated at the KEC Eastview Site. Likewise, all use, storage, and management of these materials would be conducted in compliance with all applicable regulations and requirements. As a result, a detailed assessment of operational effects associated with hazardous materials is therefore not warranted.

- **Water and Sewer Infrastructure:** New facilities operated as part of the Proposed Action would not result in significant changes in existing wastewater or stormwater flows upon completion. The Proposed Action would not result in a significant increase in the number of total employees above current levels. New facilities would also not generate significant new wastewater flows. Upon the completion of construction, some increased impervious areas would occur at the Kensico Campus and to a lesser degree at the KEC Eastview Site, but these are not expected to be significant and existing stormwater flows would not be expected to significantly change. Once completed, the operation of the Proposed Action would not be significantly changed from existing conditions and would not add a significant new demand on current water and sewer infrastructure. As a result, an operational assessment is not necessary.

In addition, several water districts surrounding the Kensico Campus and KEC Eastview Site are currently supplied by DEP. Implementation of the Proposed Action would therefore provide increased resiliency and redundancy to these districts, as well as the City, which would represent a positive impact of the Proposed Action.

- **Solid Waste and Sanitation Services:** Once constructed, the operation of the Proposed Action would not result in a significant increase in solid waste. New facilities would not entail significant increases in total employees over current levels. Likewise, the majority of new facilities would be focused on the conveyance of water without the generation of significant new or expanded waste streams. Operation of the new KEC Screen Chamber would result in the increased generation of waste removed from incoming flows from Kensico Reservoir, but these are anticipated to be well below the *CEQR Technical Manual* screening threshold of 50 tons of new waste per week. A detailed analysis of potential impacts associated with operation of the Proposed Action upon solid waste or sanitation services is therefore not warranted.
- **Traffic and Transportation:** Upon completion of the Proposed Action, significant impacts related to traffic and transportation would not be anticipated. A portion of the existing Westlake Drive, including the curbside parking, extending from Columbus Avenue to the UEC would be closed to the public and access would only be provided to DEP staff. As part of the Proposed Action, a new, relocated Westlake Drive would be constructed to the north and would connect Columbus Avenue with the existing Westlake Drive along Kensico Reservoir in proximity to the UEC. A new parking lot would be constructed along this new roadway which would provide off-street parking. Operation of the new facilities at the Kensico Campus and KEC Eastview Site would not result in significant increases above current employee levels. It is expected that few, if any, new employees would be assigned to the Kensico Campus and KEC Eastview Site as a result of the Proposed Action. Similarly, additional truck traffic would be associated with delivery of disinfection and fluoridation chemicals related to increases in flow capacity and new trucks may be required

to address increases in debris removed from intake flows at the new KEC Screen Chamber, but these increases would not be significant. These new truck trips would be limited and spread out over the week and month. As a result, an increase of 50 passenger car equivalents (PCEs) during any hour due to facility operation would not be anticipated and further analysis is not warranted for Kensico Campus. Similarly, potential increases in traffic at the KEC Eastview Site would primarily result from an increase in employees at the site, which is expected to be minimal. As a result, a detailed assessment of impacts to traffic and transportation during the operation of the KEC Eastview Site would also not be warranted.

- **Air Quality:** The Proposed Action would not involve the addition of any significant new emissions related to the new facilities for the conveyance and treatment of potable water. New emissions primarily associated with heating, ventilation, and air conditioning (HVAC) systems for new on-site facilities would be compliant with applicable codes, regulations, and/or permits as required and would not represent a significant impact. Likewise, while the operation of the Proposed Action would include emergency generators, these would only be used during periods of unexpected outages and for short periods of time and would therefore not represent a significant effect. Operations would also not result in substantive alterations to existing traffic conditions and would therefore not result in significant new sources of mobile air emissions. As a result, a detailed assessment of impacts to air quality would not be warranted for the operation of the Proposed Action.
- **Noise:** Upon operation, the Proposed Action would not result in significant new sources of noise emissions. New operations, after completion of construction, would primarily occur within enclosed structures and would not result in significant changes in noise levels at the property line or nearest noise sensitive uses at either the Kensico Campus or KEC Eastview Site. Operations would not result in substantive alterations to existing traffic conditions and would not result in significant new sources of mobile noise. As a result, a detailed assessment of impacts to noise would not be warranted for the operation of the Proposed Action.
- **Environmental Justice – Potential Environmental Justice communities** are located in proximity to the KEC Eastview Site. Upon completion of construction, however, no substantive impact to these communities would occur, as all new operations would be located within the limits of the existing KEC Eastview Site. No significant change to traffic would occur due to the Proposed Action, nor would any significant increase in air and noise emissions be anticipated. As a result, no assessment of potential impacts to Environmental Justice communities due to operation of the Proposed Action is warranted.

2.5 PROPOSED OPERATION

DEP, as part of its primary mission to provide a reliable and high-quality water supply, actively manages the overall water supply system and its upstate reservoirs in order to meet daily, peak, and seasonal needs. As part of this, DEP actively manages the reservoir system to meet these changes in demand, while also maintaining compliance with applicable and required drinking water requirements.

The operation of the Proposed Action would include the use of a new, deep rock tunnel between Kensico Reservoir and the CDUV Facility at the KEC Eastview Site, as well as the use of additional infrastructure and facilities to support the tunnel. The operation of the Proposed Action would provide DEP additional flexibility with regard to supply capacity, decrease the risk of potential supply disruption, and allow operating flexibility needed for system maintenance and water quality management. As part of the Proposed Action, and as described in Section 1.3, “Detailed Description of Proposed Action,” the existing UEC would be rehabilitated and improved to allow direct connection to the CDUV Facility, accommodate future intake flows up to 2,645 mgd, and maintain DEP’s ability to bypass Kensico Reservoir or the CDUV Facility when required.

Operation of the newly improved UEC is not anticipated to routinely or frequently operate at its design capacity of 2,645 mgd but would instead operate at lower intake flows. Historically, DEP utilized DEL Shaft 18 and the UEC in combination to meet the daily and long-term needs of its City and upstate customers until the use of the UEC was no longer possible. Restoration of the use of the two intakes would provide DEP with increased flexibility to maintain overall water quality, particularly during those periods when severe storm events or other factors could potentially affect water quality within Kensico Reservoir or within flows from the Catskill or Delaware Aqueducts.

Long term, DEP intends to use DEL Shaft 18 and the UEC in combination to provide water to the CDUV Facility or other downstream water supply facilities, such as Hillview Reservoir. As a result, the long-term use of the UEC at its new maximum intake design capacity is not expected. In certain instances, however, such as periods when maintenance or inspection of DEL Shaft 18 and/or its downstream infrastructure is required, DEP would rely upon the sole use of the newly improved UEC. At these times, flows from the UEC would be higher as it conveys required water supply flows normally accommodated by the combination of DEL Shaft 18 and UEC operation.

DEP operates its system and Kensico Reservoir in order to meet water supply demands, while providing a high-quality supply of water. DEP’s operation of its water supply system and reservoirs is necessarily dynamic as daily, hourly, and seasonal water supply needs are highly variable. As a result, flows from Kensico Reservoir are actively monitored and managed by DEP on an ongoing basis to meet these changes and therefore vary over time. In order to provide a

general context of flows from Kensico Reservoir, current overall daily demand ranges between 1,200 and 1,400 mgd. Current summer peaks (i.e., hourly need), a period when increased water use would be expected, have generally been on the order of 1,600 mgd. Upon completion of the Proposed Action, and consistent with prior use of DEL Shaft 18 and the UEC before completion of the CDUV Facility, flows from Kensico Reservoir would be split between the two facilities to supply water to the CDUV Facility or other downstream facilities. The exception to these normal flows would be related to future maintenance activities at DEL Shaft 18 or the UEC, due to adjustments required to meet changes in demand, and/or instances where maintenance of water supply quality would dictate changes in flows between DEL Shaft 18 and the UEC.

The design capacity of the existing UEC was approximately 800 mgd, while the new flow capacity could be up to 2,645 mgd. Increased flows above the prior design capacity of 800 mgd therefore have the potential to result in effects to several environmental resource areas, where changes in flows and their duration can result in different levels of potential effect. As part of the ~~Draft~~ Final EIS, a specific single or series of potential operating scenarios of the Proposed Action was not evaluated. Operations associated with the Proposed Action, including changes in flows, would not result in potential impacts to a broad range of resource categories under SEQRA/CEQR as noted above. Assessment of the potential impacts associated with the Proposed Action were instead analyzed for those resource categories where the potential for impacts associated with new flows due to the Proposed Action, and more specifically improvements to the intake capacity of the UEC, were possible. Within specific chapters of the ~~Draft~~ Final EIS, as applicable and appropriate, a discussion of the flow(s) that was used to represent a reasonable worst-case assessment of potential impacts due to operation of the Proposed Action is provided and the results of these analyses are presented therein.

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