3.13 NOISE

3.13.1 INTRODUCTION

This section examines the potential for significant adverse noise impacts due to the construction of the Proposed Action. According to the *CEQR Technical Manual*, a noise analysis may be required when a project would generate mobile or stationary sources of noise. The analysis presented in this section focuses on potential noise impacts due to and during the construction of the Proposed Action in accordance with the *CEQR Technical Manual* and the Town of Mount Pleasant Municipal Code 139, *Noise*.

Sound from the operation of on-site construction equipment and on-road construction vehicles traveling to and from the Kensico Campus and KEC Eastview Site have the potential to affect community noise levels. Additionally, construction activities including controlled blasting during rock excavation have the potential to result in vibration levels that may result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. As such, a preliminary construction vibration assessment was also performed. The analyses summarized in this section are based on the projected construction equipment and volume of construction worker and truck trips at both the Kensico Campus and the KEC Eastview Site.

This section includes a description of acoustic fundamentals, noise impact thresholds, and analysis methodologies including the estimation of noise emissions, modeling, data, and assumptions used in the analyses. In addition, this section includes a description of existing conditions and baseline noise levels, a discussion of estimated noise emissions in the future without and with the Proposed Action, and a discussion of estimated vibration levels in the future with the Proposed Action.

3.13.2 ACOUSTIC FUNDAMENTALS

Sound is a fluctuation in air pressure. Sound pressure levels (SPL) are measured in units called "decibels" (dB). The character of the sound that we hear (a whistle compared with a French horn, for example) is determined by the speed or "frequency," at which the air pressure fluctuates or "oscillates." Frequency defines the oscillation of sound pressure in terms of cycles per second. One cycle per second is known as 1 Hertz (Hz). People can hear over a relatively limited range of sound frequencies, generally between 20 Hz and 20,000 Hz, and the human ear does not perceive all frequencies equally well. High frequencies (e.g., a whistle) are more easily discernible, and therefore more intrusive than many of the lower frequencies (e.g., the lower notes on the French horn).

3.13.2.1 A-Weighted Sound Level (dBA)

Noise, in its simplest definition, is unwanted sound. In order to establish a uniform noise measurement that simulates people's perception of loudness and annoyance, the decibel measurement is weighted to account for those frequencies most audible to the human ear. This is known as the A-weighted sound level, or "dBA," and it is the descriptor of noise levels most often used for community noise analyses.

As shown in **Table 3.13-1**, the threshold of human hearing is defined as 0 dBA; quiet conditions (e.g., inside a library) are approximately 40 dBA; levels between 50 dBA and 70 dBA define the range of noise levels generated by normal daily activity; levels above 70 dBA are considered noisy, and; levels that approach 130 dBA and higher are considered loud, intrusive, and deafening.

The dBA scale is logarithmic, meaning that each change of 10 dBA describes a doubling or halving of perceived loudness. Thus, the background noise in an office, at 50 dBA, is perceived as twice as loud as a library at 40 dBA. For most people to perceive an increase in noise, it must be at least 3 dBA. At 5 dBA, the change will be readily noticeable.

Table 3.13-1. Noise Levels of Common Sources

Sound Source	Sound Pressure Level, dBA
Air Raid Siren at 50 feet	120
Maximum Levels at Rock Concerts (Rear Seats)	110
On Platform by Passing Subway Train	100
On Sidewalk by Passing Heavy Truck or Bus	90
On Sidewalk by Typical Highway	80
On Sidewalk by Passing Automobiles with Mufflers	70
Typical Urban Area	60-70
Typical Busy Office	55-65
Typical Suburban Area	50-60
Typical Occupied School Classroom	45-55
Quiet Suburban Area at Night	40-50
Typical Rural Area at Night	30-40
Isolated Broadcast Studio	20
Audiometric (Hearing Testing) Booth	10
Threshold of Hearing	0

Note:
A change of 3 dBA is just a noticeable change in SPL. A change of 10 dBA is perceived as a doubling or halving in SPL

Sources: *CEQR Technical Manual, Chapter 19 Noise, Table 19-1, December 2021, Handbook of Environmental Acoustics, James P. Cowan, 1994*, *A Descriptive Analysis of Noise in Classrooms Across the U.S. and Canada, Michelle A. Gremp, Susan R. Easterbrooks, 2018*

3.13.2.2 Sound Level Descriptors

As the SPL unit of dBA describes a noise level at just one moment and few noises are constant, other ways of describing noise that fluctuates over extended periods have been developed. One way is to describe the fluctuating sound heard over a specific time period as if it were a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level," L_{eq}, can be computed. The L_{eq} is the constant sound level that, in a given situation and time period (e.g., one hour, denoted by $L_{eq(1)}$, or 24 hours, denoted by $L_{eq(24)}$), conveys the same sound energy as the actual time-varying sound.

Statistical sound level descriptors such as L_1, L_{10}, L_{50}, L_{90}, and L_x, are used to indicate noise levels that are exceeded 1, 10, 50, 90, and x percent of the time, respectively. The relationship between the L_{eq} and statistical descriptors depends on how the source of noise fluctuates over a given time period. If the noise fluctuates little, the L_{eq} will be approximately equal to the L_{50} or the median level. If the noise fluctuates broadly, the L_{eq} will be approximately equal to the L_{10} value. If extreme fluctuations occur, the L_{eq} will exceed the L_{90}, or the background level by 10 or more decibels. In community noise measurements, it has been observed that the L_{eq} is generally between the L_{10} and L_{50}.

The $L_{eq(1)}$ is the noise descriptor recommended for use in the *CEQR Technical Manual* for vehicular traffic and construction noise impact evaluation and is used to provide an indication of the highest expected sound levels. The $L_{10(1)}$ is the noise descriptor used to determine compliance with the Town of Mount Pleasant *Noise Control Law* (§139-18).

3.13.3 NOISE IMPACT THRESHOLDS

Noise levels associated with construction and operation within or undertaken by New York City are subject to *CEQR Technical Manual* standards and criteria and to the New York City Noise Code. Since the project site is located outside of New York City, specific local standards are also applicable, including those promulgated by the Town of Mount Pleasant.

3.13.3.1 CEQR Noise Criteria

The *CEQR Technical Manual* sets external noise exposure guidelines as shown in **Table 3.13-2**. Noise exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable. For projects with primarily construction-only components (i.e., there are minimal or no operational noise effects after construction), the *CEQR Technical Manual* breaks construction duration into "short-term" (less than two years) and "long-term" (more than two years). For short-term construction projects, a detailed analysis is typically not warranted. Since the construction duration for the Proposed Action would be greater than two years, and noise-sensitive receptors are located adjacent to the Kensico Campus and KEC Eastview Site, a detailed noise analysis was performed. In evaluating potential

Table 3.13-2. CEQR Noise Exposure Guidelines

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Exposure	Marginally Acceptable General External Exposure	Airport[3] Exposure	Marginally Unacceptable General External Exposure	Airport[3] Exposure	Clearly Unacceptable General External Exposure	Airport[3] Exposure
1. Outdoor area requiring serenity and quiet[2]		$L_{10} \leq 55$ dBA	---------DNL ≤ 60 dBA---------		----------60 < DNL ≤ 65 dBA----------		(I) 65 < DNL ≤ 75 dBA		--------- 75 dBA < DNL ---------
2. Hospital, nursing home		$L_{10} \leq 55$ dBA		55 < $L_{10} \leq 65$ dBA		65 < $L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
3. Residence, residential hotel, or motel	(7 AM to 10 PM)	$L_{10} \leq 65$ dBA		65 < $L_{10} \leq 70$ dBA		70 < $L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
	(10 PM to 7 AM)	$L_{10} \leq 55$ dBA		55 < $L_{10} \leq 70$ dBA		70 < $L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
4. School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
5. Commercial or office		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
6. Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Notes:

(i) In addition, any new activity shall comply with Impact Thresholds detailed in Section 410.

[1] Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

[2] Tracts of land where serenity and quiet are extraordinarily important and serve as important public need, and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and nursing homes.

[3] One may use the FAA-approved DNL contours supplied by the Port Authority of New York and New Jersey (PANYNJ), or the noise contours may be computed from the federally approved Aviation Environmental Design Tool (AEDT) Computer Model using flight data supplied by the PANYNJ.

[4] External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are listed by octave bands).

Sources: New York City Department of Environmental Protection (adopted policy 1983).

construction noise impacts, a construction noise analysis considers both the potential for construction of a project to create high noise levels (the "intensity") and whether construction noise would occur for an extended period of time (the "duration").

The *CEQR Technical Manual* (Chapter 19, Section 410) also provides criteria for the evaluation of potential operational impacts, using the future without the Proposed Action as the baseline:

- If the future without the Proposed Action noise level is less than 60 dBA $L_{eq}(1)$, a 5 dBA $L_{eq}(1)$ or greater increase would be considered significant.
- If the future without the Proposed Action noise level is between 60 dBA $L_{eq}(1)$ and 62 dBA $L_{eq}(1)$, a resultant $L_{eq}(1)$ of 65 dBA or greater would be considered a significant increase.
- If the future without the Proposed Action noise level is equal to or greater than 62 dBA $L_{eq}(1)$, or if the analysis period is a nighttime period (defined under the CEQR criteria as being between 10 PM and 7 AM), the incremental significant impact threshold would be 3 dBA $L_{eq(1)}$.

However, as potential effects associated with construction are typically short-term and/or intermittent, the use of the CEQR thresholds associated with the operation of a proposed action are not appropriate. As an example, the New York City Noise Control Code (Local Law 113 of 2005) typically does not allow noise levels in excess of 85 dBA for construction activities. As a result, for the assessment of potential stationary and cumulative construction noise impacts, an increase in noise levels of greater than 10 dBA above existing ambient noise levels and for an extended period of time may require further assessment. As the potential for noise effects due to the Proposed Action is primarily associated with construction, this criterion was applied.

3.13.3.2 Town of Mount Pleasant Noise Ordinance

Limits on construction activities are also regulated locally by the Town of Mount Pleasant Municipal Code 139, *Noise*. As per the Town of Mount Pleasant noise code, construction activities are allowed between the hours of 8 AM and 6 PM on weekdays and 8 AM and 5 PM on Saturdays. The Town of Mount Pleasant noise code also sets the following limits for all construction activities when measured at a distance of 400 feet from a construction site:

- Residential Uses
  - 70 dBA L_{10} during the hours of 8 AM and 6 PM
  - 55 dBA L_{10} during the hours of 6 PM and 8 AM
- Non-Residential Uses
  - 75 dBA L_{10} during normal business hours (for the purpose of this analysis, normal business hours were assumed to be 8 AM to 6 PM)
  - 80 dBA L_{10} during other than normal business hours

3.13.4 METHODOLOGY

The analyses within this section primarily follow the overall procedures and methodologies found in the *CEQR Technical Manual*.

Noise levels caused by construction activities typically vary widely, fluctuating dependent on the stage of construction, the equipment utilized, and the location of the construction activities relative to receptor locations. In order to determine the peak noise emissions that would be generated by the construction of the Proposed Action, a detailed projection of construction tasks and activities was developed for each month and quarter of the expected construction period. Construction of the Proposed Action would be initiated ~~in~~ around January 2024 and is anticipated to be completed in 2033. Start-up and commissioning for the Proposed Action would commence towards the end of construction and would last approximately 13 months. The phases, duration, and overlap of construction activities and construction equipment, and average daily worker and truck estimates, were identified for each month and quarter of construction for the Kensico Campus and KEC Eastview Site.

In order to provide a conservative assessment of potential noise impacts due to the construction of the Proposed Action, a construction schedule that includes an overlap of activities at the KEC Eastview Site was used to represent a reasonable worst-case scenario. While the current anticipated construction schedule would not include these overlaps, the analysis assumes these overlaps in order to provide a more conservative assessment of the potential for impacts. Potential impacts based upon the current anticipated construction schedule would therefore result in less potential impacts than those assessed as part of the reasonable worse-case scenario.

3.13.4.1 Selection of Noise Receptor Locations

Noise monitoring locations at sensitive receptors were selected based on the following criteria: (1) locations near construction activities and main construction vehicle routes; and (2) to provide comprehensive geographic coverage throughout the Kensico Campus and KEC Eastview Site study areas to provide an accurate picture of the ambient noise environment. The selected noise-sensitive receptors were considered representative of the land uses surrounding each receptor.

A total of 33 receptor locations were used to evaluate noise at residential and publicly-accessible open space in the vicinity of the Kensico Campus and KEC Eastview Site and along the construction vehicle routes. These locations are shown on **Figure 3.13-1** through **Figure 3.13-6** and detailed in **Table 3.13-3.**

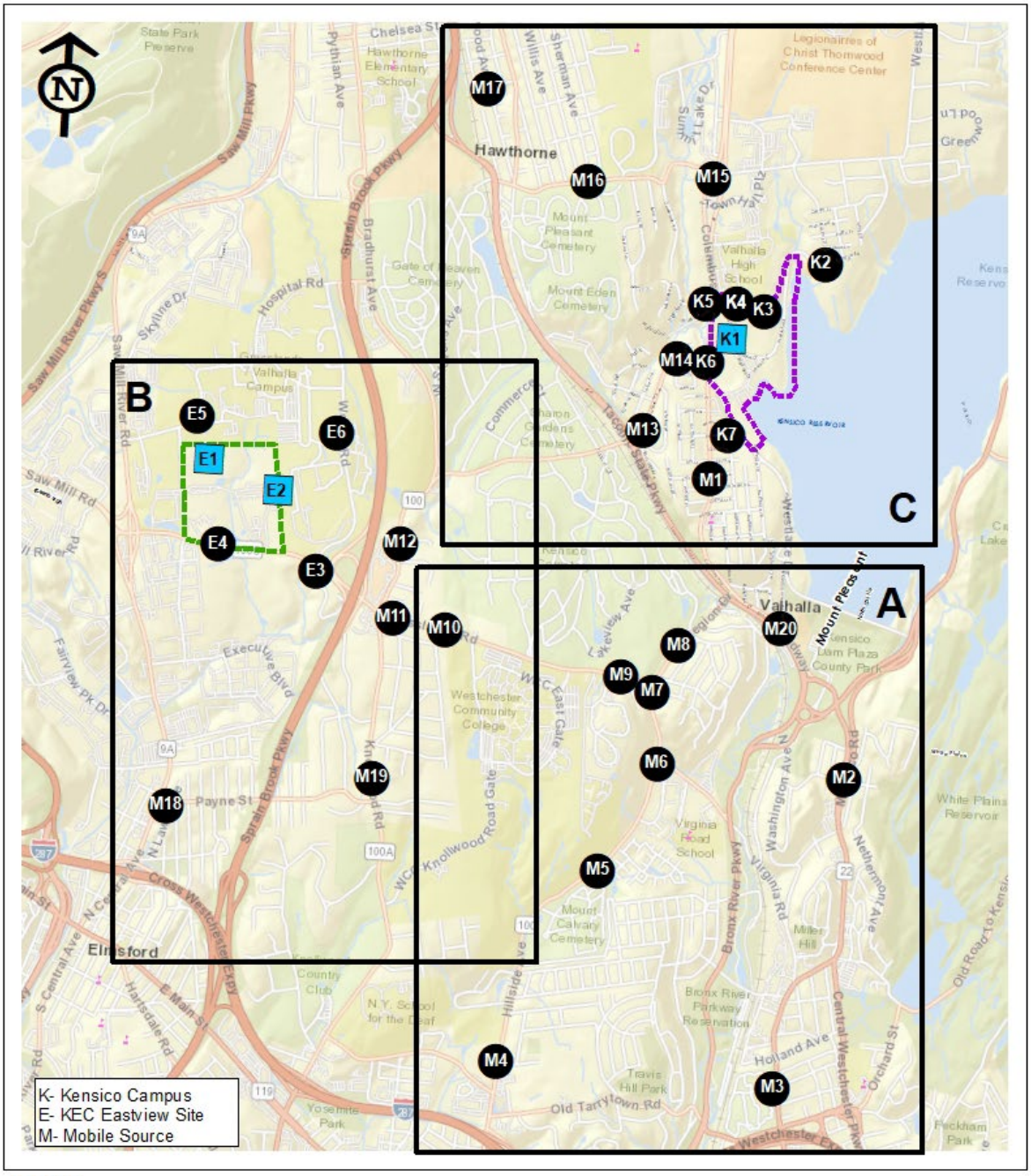


Figure 3.13-1. Noise Measurement Locations

Figure 3.13-2. Noise Measurement Locations – Kensico Campus

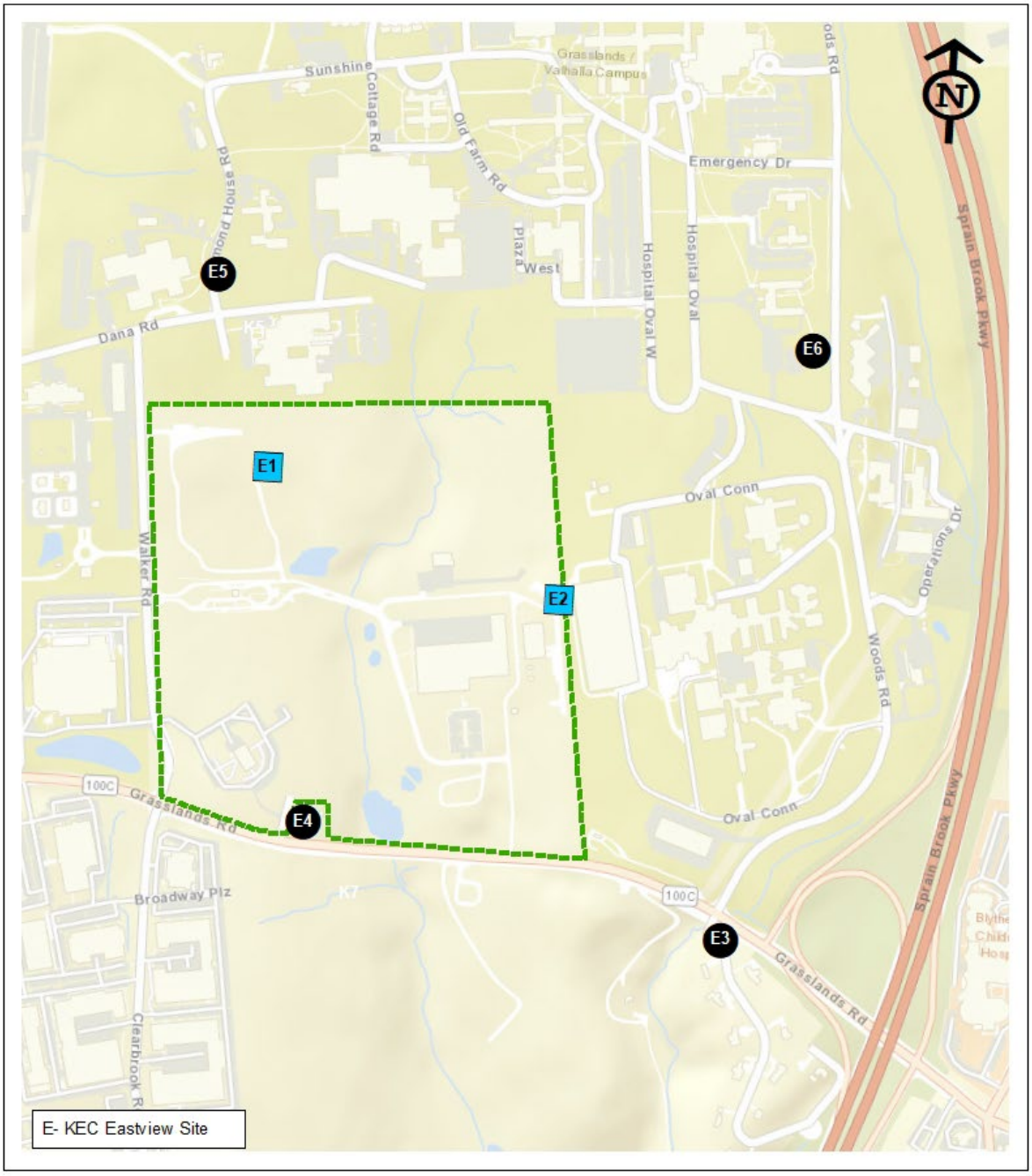


Figure 3.13-3. Noise Measurement Locations - KEC Eastview Site

Figure 3.13-4. Inset A - Mobile Noise Measurement Locations

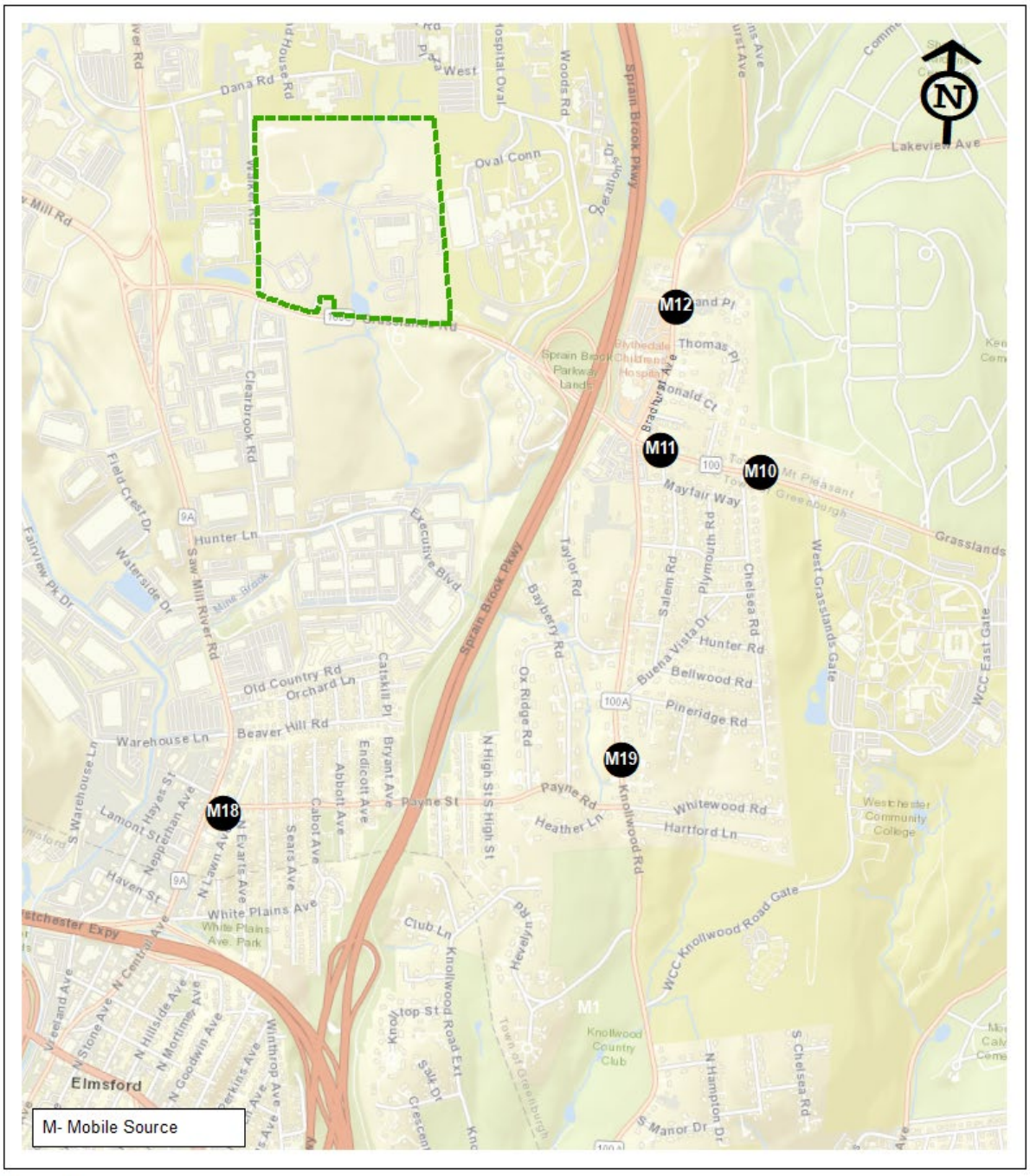


Figure 3.13-5. Inset B - Mobile Noise Measurement Locations

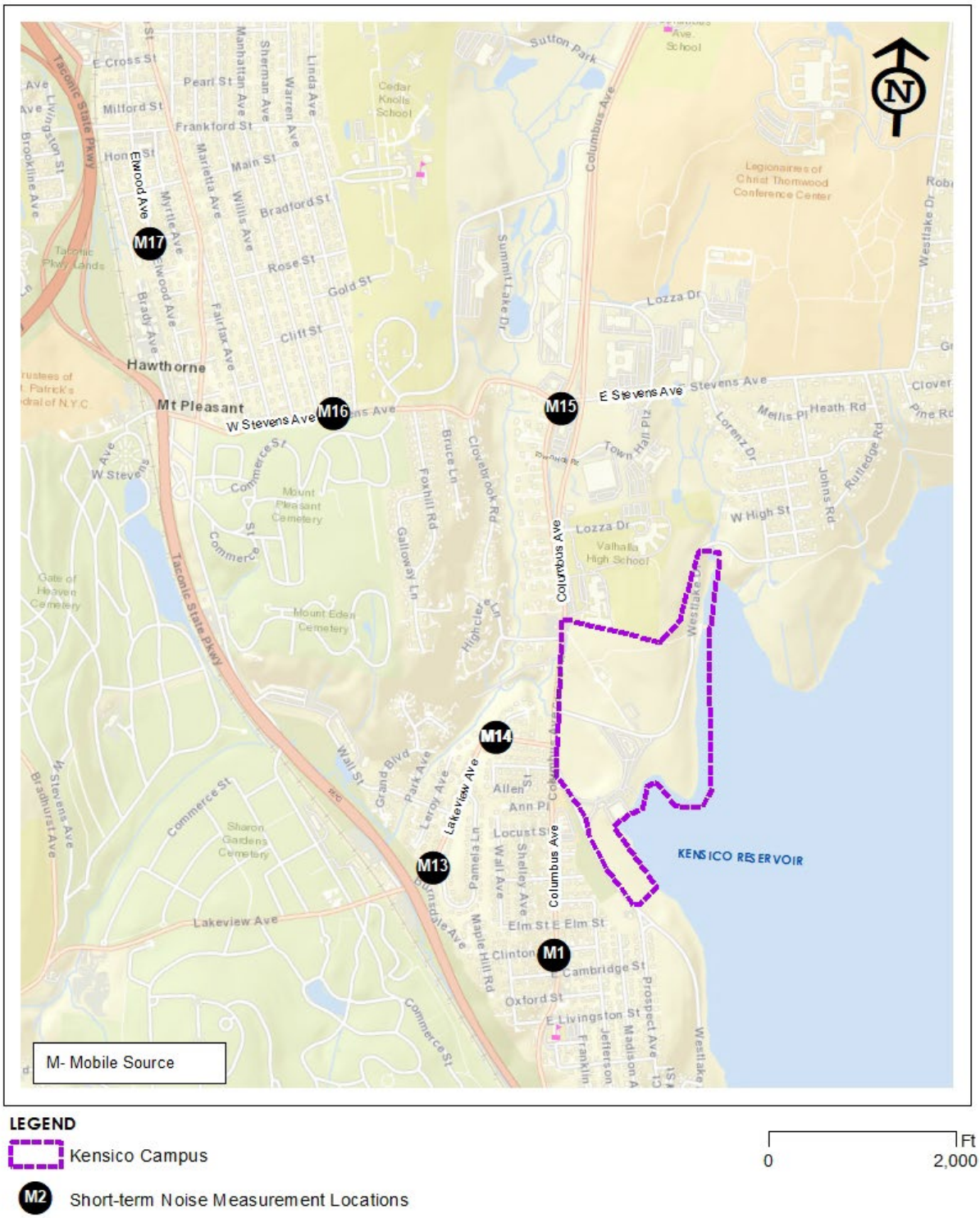


Figure 3.13-6. Inset C - Mobile Noise Measurement Locations

Table 3.13-3. Description of Noise Measurement Locations

Noise Receptor	Location	Land Use(s) Represented	Type of Measurement
Kensico Campus			
K1	Columbus Avenue at Westlake Drive, Valhalla	Government	24-hour continuous
K2	25 Westlake Drive, Valhalla	Residential	Short-term 20-minute
K3	Valhalla Middle and High Schools Baseball Field, Valhalla	Institutional	Short-term 20-minute
K4	Valhalla Middle and High Schools, Valhalla	Institutional	Short-term 20-minute
K5	2 Highclere Lane, Valhalla	Residential	Short-term 20-minute
K6	1 Fountain Lane, Valhalla	Residential	Short-term 20-minute
K7	8 East Maple Avenue, Valhalla	Residential	Short-term 20-minute
KEC Eastview Site			
E1	Walker Road, Valhalla	Government	24-hour continuous
E2	Eastern Perimeter of the KEC Eastview Site, Valhalla	Government	24-hour continuous
E3	40 Taylor Road, Valhalla	Residential	Short-term 20-minute
E4	111 Grasslands Road (Hammond House), Valhalla	Residential	Short-term 20-minute
E5	15 Hammond House Road, Valhalla	Government	Short-term 20-minute
E6	15 Oval Connector Road, Valhalla	Residential	Short-term 20-minute
Off-site Mobile Noise Locations			
M1	127 Columbus Avenue, Valhalla	Residential	Short-term 20-minute
M2	973 North Broadway, White Plains	Residential	Short-term 20-minute
M3	421 North Broadway, White Plains	Residential	Short-term 20-minute
M4	206 Hillside Avenue, White Plains	Residential	Short-term 20-minute
M5	575 Hillside Avenue, White Plains	Residential	Short-term 20-minute
M6	757 Hillside Avenue, White Plains	Residential	Short-term 20-minute
M7	160 Legion Drive, Valhalla	Residential	Short-term 20-minute
M8	106 Legion Drive, Valhalla	Residential	Short-term 20-minute
M9	55 Grasslands Road (The Knolls), Valhalla	Residential	Short-term 20-minute
M10	390 Grasslands Road, Valhalla	Residential	Short-term 20-minute
M11	2 Pleasant Ridge Road, Valhalla	Residential	Short-term 20-minute
M12	1 Armand Place, Valhalla	Residential	Short-term 20-minute
M13	185 Lakeview Avenue, Valhalla	Residential	Short-term 20-minute
M14	2 Colonial Lane, Valhalla	Residential	Short-term 20-minute
M15	1 Town Hall Plaza, Valhalla	Residential	Short-term 20-minute
M16	109 Sherman Avenue, Valhalla	Residential	Short-term 20-minute
M17	209 Elwood Avenue, Hawthorne	Residential	Short-term 20-minute
M18	210 Saw Mill River Road, Elmsford	Residential	Short-term 20-minute
M19	2 Whitewood Road, White Plains	Residential	Short-term 20-minute
M20	4 Broadway, Valhalla	Residential	Short-term 20-minute

3.13.4.2 Existing Noise Sources

The 33 noise receptor locations were selected due to their proximity to the proposed Kensico Campus and KEC Eastview Site and the construction vehicle routes, and they represent the range of existing noise levels.

Continuous 24-hour noise measurements were performed for several days during both weekday and weekend periods at the following locations to determine the quietest period of the day in the vicinity of the Kensico Campus and KEC Eastview Site:

- Site K1, Kensico Campus – March 5 to March 9, 2021
- Site E1, KEC Eastview Site – March 5 to March 9, 2021
- Site E2, KEC Eastview Site – March 19 to March 22, 2021

Locations K1, E1, and E2 were used for monitoring the hourly noise profile over a 24-hour period during a typical weekday and weekend at the Kensico Campus and the KEC Eastview Site, respectively. The quietest daytime and nighttime hours during the proposed construction hours (7 AM and 11:30 PM) were determined based on these 24-hour noise measurements. During these quietest hours, short-term (20-minute) measurements were obtained at the remaining noise-sensitive receptor locations immediately adjacent to each site boundary (K2 through K7, and E3 through E6), as listed in **Table 3.13-3**, to represent the following periods:

- Quietest daytime hour[35]; and

Quietest nighttime hour[36], if nighttime construction activities are anticipated at the site.

In addition, at noise measurement locations near affected roadways surrounding the Kensico Campus and KEC Eastview Site (K5, K6, K7, E3, and E4), noise measurements were also obtained during the:

- AM peak project-generated vehicles hour (based on noise PCEs)
- PM peak project-generated vehicles hour (based on noise PCEs)
- Late night peak project-generated vehicles hour (based on noise PCEs)

Noise measurements were also performed at 20 locations along the proposed construction vehicle routes. The measured ambient short-term noise levels at these mobile source locations were used to document existing conditions and to validate the mobile source noise prediction model. Short-term noise measurements at the mobile monitoring locations were performed

[35] Daytime hours, as defined in the *CEQR Technical Manual*, are the hours of 7 AM to 10 PM.
[36] Nighttime hours, as defined in the *CEQR Technical Manual*, are the hours of 10 PM to 7 AM.

between March 5 and April 10, 2021. Traffic volumes, speeds, and vehicle classifications were also documented during these measurement periods. For these locations, noise measurements were obtained during the:

- AM peak project-generated vehicles hour (based on noise PCEs)
- PM peak project-generated vehicles hour (based on noise PCEs)
- Late night peak project-generated vehicles hour (based on noise PCEs)

Noise measurements were performed using a Rion NL-52 Sound Level Meter (SLM) with a Rion UC-59 half-inch microphone. The Rion NL-52 SLM is a Type 1 instrument according to ANSI Standard S1.4-1983 (R2006). All the SLMs had a laboratory calibration date within the past one year at the time of use. All noise measurement locations were approximately five feet above grade. The SLMs were calibrated before and after readings with a Rion NC-74 or a Larsen Davis CAL200 Sound Level Calibrator using the appropriate adaptors. The data were digitally recorded by the SLMs and displayed at the end of the measurement period in units of dBA. Measured quantities included the L_{eq}, L_1, L_{10}, L_{50}, and L_{90}. Windscreens were used during all sound measurements except for calibration, in accordance with the *CEQR Technical Manual*. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.

3.13.4.3 Stationary Sources

Construction noise levels at a given location are dependent on the existing noise levels, the type and quantity of construction equipment and vehicles being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time a piece of equipment is operating at full power), the distance from the noise source to the noise receptor, and any shielding effects from structures such as buildings, walls, or barriers. Noise levels caused by construction activities vary widely, depending on the phase of construction and the location of construction activities relative to receptor locations.

Peak Construction Quarters

On-site construction activities are considered stationary source activities. Because these activities would occur over multiple years, a screening assessment using fundamental acoustic principles was performed to determine the reasonable worst-case construction quarters at the Kensico Campus and KEC Eastview Site over the entire construction duration for further noise modeling. These are the periods of construction that were expected to have the greatest potential to result in construction noise impacts.

Noise levels were estimated by positioning construction equipment centered within the construction work zone, attenuating the noise to the representative closest noise receptor and acoustically combining noise contributions at the receptor from the construction equipment. The following equation was used for estimating noise levels propagated to the closest sensitive

receptor(s) around the Kensico Campus and KEC Eastview Site from an individual piece of equipment:

$$L_{pi} = L_{pr} - 20\log(d_i/d_r)$$

where:

L_{pi} is the noise level predicted at the closest receptor location at d_i distance from the i equipment

L_{pr} is the noise reference level from i equipment

d_i is the distance from i equipment to the closest receptor

d_r is the reference distance where L_{pr} is measured for i equipment

The typical construction equipment for the Proposed Action is listed in **Table 3.13-4**. This list includes construction equipment that would be aboveground and therefore has the potential to affect airborne noise. For the majority of the equipment listed, **Table 3.13-4** reflects the CEQR noise emission reference levels at a reference distance of 50 feet. The CEQR noise emissions reference levels represent an average of one or more data samples (as presented in the FHWA's Road Construction Noise Model, 2006), and as such, actual noise levels for each equipment type may vary. As part of this peak construction period evaluation, the noisiest equipment were identified and the application of reasonably anticipated controls on these equipment were assumed in order to minimize overall potential construction noise exposure in the community. These controls reflect noise reduction measures applied to the individual equipment types to reduce their overall noise level, which can be achieved by installing equipment enclosures, shrouds, acoustical blankets, silencers, and/or other appropriate attenuation devices. In addition, lower reference noise levels from the manufacturer specifications may also be applied to achieve the reduced noise levels for the selected equipment. As such, reduced noise levels are included in **Table 3.13-4** for the following equipment: excavators, light towers, on-site dump trucks for transport of soil/rock, and ventilation fans. During advancement of the construction of the Proposed Action, a variety of different noise controls may be applied in order to achieve these reduced noise levels.

For Kensico Campus and KEC Eastview Site, the anticipated cumulative noise level that would be generated at the closest receptor location due to all construction equipment during each month was calculated by combining the noise contribution from each piece of equipment per the above equation. The calculation accounted for the noise controls and construction restrictions discussed above. This screening assessment was then used to develop a ranking of potential impact levels and durations at the closest receiving receptors adjacent to the Kensico Campus and KEC Eastview Site. Based on the predicted peak noise profiles, the peak stationary construction quarters considered for further detailed noise modeling are listed in **Table 3.13-5**.

Table 3.13-4. Typical On-Site Construction Equipment List[1]

Equipment	Usage Factor[2]	Modeled Noise Level, Lmax @ 50 feet[3]
Air Track Drill	20	85
Booster Pump	50	77
Chainsaws	20	85
Vibratory Hammer	20	95
Combination Roller	20	85
Compressors - Surface Tools	40	80
Concrete Pump - General	20	82
Concrete Pump - Tunnel Grout	20	82
Crane - All-Terrain (80 ton)	16	85
Crane - Crawler (100 tom)	16	85
Dewatering Pump	50	77
Bulldozer	40	85
Drill Rig	40	85
Elevator Hoist	50	70
Excavator - Long Reach, Tracked	40	75[4,5]
Excavator - Mini-Excavator	40	70[4]
Front-End Loader - Wheeled, Mid-size	40	80
Generator – Mid-size	50	70
Grinder	20	85
Grout Mixer and Pump	40	85
Jet Grout - Drill Rig	20	84
Jet Grout - High Pressure Pump	20	82
Light Tower (KEC Eastview Site)	100	54[4,6]
Light Tower (Kensico Campus)	100	49[4,6]
Miscellaneous Hand Tools	50	85
Paver	50	85
Pile Driving Hammer	20	95
Pneumatic Roller	20	85
Pump - General, Water	50	77
Push Boat	50	70
Scissor Lift	20	85
Shotcrete Pump	20	82
Skid Steer	40	80
Sludge Pump	50	77
Surface Conveyor	100	85
Telescopic Boom - Self-Propelled	20	85
Telescopic Forklift Handler	20	85
Truck - Delivery	40	84
On-site Dump Truck (KEC Eastview Site)	40	84

Table 3.13-4. Typical On-Site Construction Equipment List[1]

Equipment	Usage Factor[2]	Modeled Noise Level, Lmax @ 50 feet[3]
On-site Dump Truck (Kensico Campus)	40	74[4,5]
Utility Skiff	50	70
Ventilation Fans	100	65[4]
Welder	40	73
Wheel Wash	100	72

Notes:
(1) This equipment list includes anticipated aboveground construction equipment that would be used on the sites during construction based upon the currently anticipated design.
(2) The "Usage Factor" represents the estimated percentage of time that the piece of equipment is utilized at full load or maximum power.
(3) Except where indicated, modeled equipment source noise levels were based on the CEQR noise emission reference levels at a reference distance of 50 feet, as per the *CEQR Technical Manual* (Chapter 22, Table 22-1).
(4) Reduced source noise levels were assumed, which may require equipment controls, including installing equipment enclosures, shrouds, acoustical blankets, silencers, and/or other appropriate attenuation devices. Lower reference noise levels from the manufacturer specifications may also be applied to achieve this reduced equipment noise level.
(5) Equipment controls to be implemented at the Kensico Campus only.
(6) Modeled equipment source noise level was based on manufacturer data.

Table 3.13-5. Peak and Shoulder Peak Stationary Construction Quarters Selected for Detailed Noise Modeling

Construction Site	Peak and Shoulder Peak Quarters Analyzed	
Kensico Campus	1st Shift (7:00 AM to 3:30 PM)	Q2 2027
		Q4 2027
	2nd Shift (3:00 PM to 11:30 PM)	Q2 2027
		Q3 2029
KEC Eastview Site	1st Shift (7:00 AM to 3:30 PM)	Q1 2025
		Q2 2029
	2nd Shift (3:00 PM to 11:30 PM)	Q3 2025
		Q3 2029
	3rd Shift (11:00 PM to 7:30 AM)	Q2 2027

Notes:
Q1 = first quarter; Q2 = second quarter; Q3 = third quarter, Q4 = fourth quarter.

In addition to the peak stationary construction quarters, secondary peak or "shoulder peak" quarters were also evaluated for their likelihood to result in potential noise impacts as included in **Table 3.13-5**. Shoulder peak quarters represent the second-highest anticipated cumulative noise levels for each construction shift. The peak and shoulder peak quarters were considered to determine the duration of potential noise impacts during construction.

Stationary Source Analysis

Noise

Proposed construction hours would mainly occur during two working shifts, 7 AM to 3:30 PM and 3 to 11:30 PM at the Kensico Campus and KEC Eastview Site for up to seven days a week. In addition, a third shift (11 PM to 7:30 AM) would occur at the KEC Eastview Site for underground tunnel boring activities for the KEC Tunnel, associated tunnel lining, and ECC exterior and site work.

Potential noise effects from construction activities at each of the Kensico Campus and the KEC Eastview Site were evaluated using the SoundPLAN model for construction noise prediction and assessment. The SoundPLAN model is a state-of-the-art tool for noise analysis and is approved for construction noise level prediction by the *CEQR Technical Manual*. The model can be used for the analysis of a wide variety of noise sources, including stationary sources (e.g., construction equipment, industrial equipment, power generation equipment), transportation sources (e.g., roads, highways, railroad lines, busways, airports), and other specialized sources (e.g., sporting facilities). SoundPLAN considers the reference SPLs of the noise sources at 50 feet, distance propagation, ground attenuation effects, reflections from barriers and structures, shielding effects, etc. The SoundPLAN model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2.20.

Geographic input data used with the SoundPLAN model included geographic information system layers and computer-aided design (CAD) drawings that defined the anticipated site work areas, adjacent building footprints and heights, locations of streets, and locations of sensitive receptors. For each construction quarter analyzed, the geographic location and operational characteristics (such as equipment usage rates or percentage of time operating at full power for each piece of construction equipment operating at the Kensico Campus and KEC Eastview Site, as well as noise control measures) were input to the model. In addition, reflections and shielding from adjacent buildings were accounted for in the model. Construction equipment noise emission reference levels were obtained from CEQR, similar DEP shaft construction projects and the FHWA's Roadway Construction Noise Model for the analysis. Construction equipment usage factors used in the analysis are listed in **Table 3.13-4.** Based on this input data, the model produced A-weighted $L_{eq(1)}$ noise levels at each receptor location for each construction quarter analyzed, as well as the contribution from activity. The L_{10} noise levels were conservatively estimated by adding 3 dBA to the predicted $L_{eq(1)}$ noise levels.

Measured existing noise levels were logarithmically added to the SoundPLAN model predicted noise level for the project-related construction stationary sources to obtain the future with the Proposed Action noise level. For the construction stationary noise analysis, the future without the Proposed Action condition was assumed to be the same as existing conditions. Therefore, the future with the Proposed Action noise level was compared to the measured existing noise levels

to determine the potential for stationary noise impacts during construction of the Proposed Action.

Vibration

The buildings and structures of most concern with regard to the potential for structural or architectural damage due to vibration would be those structurally-weakened buildings within 90 feet from the construction activity per the *CEQR Technical Manual*. Ground-borne vibration associated with potential damage is typically described in velocity or inches per second (in/s). Similarly, vibration associated with human annoyance or equipment interference is usually characterized in terms of the "smoothed" root mean square vibration velocity level in decibels (VdB), with a reference quantity of one micro-inch per second.

In terms of potential vibration levels that would be perceptible and annoying, the pieces of equipment that would have the most potential for producing levels that exceed the 65 VdB limit are impact drivers, such as jack hammers, pile drivers, and/or rock blasting.

There is potential for impacts from vibration due to equipment and blasting to existing on-site non-residential buildings and underground structures, and any NRHP-eligible historic structures. As part of the Proposed Action, the contractor would need to conduct structural assessments for each structure to identify the existing condition and determine its sensitivity, establish equipment limitations, adjust the maximum instantaneous charge size, and determine their resultant allowable peak particle velocity (PPV) limits. As part of the Proposed Action, if protective measures may be required, the contractor would implement these measures, in consultation with SHPO as needed.

For purposes of assessing potential structural or architectural damage to nearby residential structures (or "receiver location"), the determination of a significant impact was based on the conservative PPV level of 0.50 in/s used by the New York City Landmarks Preservation Commission. The following equation is typically applied to estimate PPV from each equipment type:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

where:

PPV_{equip} - is the peak particle velocity in in/s of the equipment at the receiver location;

PPV_{ref} - is the reference vibration level in in/s at 25 feet; and

D - is the distance from the equipment to the received location in feet.

For purposes of evaluating potential annoyance or interference with vibration-sensitive activities, vibration levels greater than 65 VdB would have the potential to result in significant adverse impacts if they were to occur for a prolonged period of time. Vibration annoyance can be estimated using the following equation:

$$L_v(D) = L_v(ref) - 30\log(D/25)$$

where:

$L_v(D)$ - is the vibration level in VdB of the equipment at the receiver location;

$L_v(ref)$ - is the reference vibration level in VdB at 25 feet; and

D - is the distance from the equipment to the receiver location in feet.

3.13.4.4 Mobile Sources

Peak Construction Quarters

As noted previously, construction of the Proposed Action would be initiated ~~in~~ around January 2024 and is anticipated to be completed in 2033. Start-up and commissioning for the Proposed Action would commence during the third quarter of 2033 (Q3 2033) and would last approximately 13 months. Construction activities would generate trips from construction workers traveling to and from the Kensico Campus and the KEC Eastview Site, as well as construction trucks delivering materials and equipment and removing debris. These would be considered mobile sources of emissions for the Proposed Action. As discussed in Section 3.10, "Traffic and Transportation," it is anticipated that the peak construction quarter when traffic would be at its highest would occur during the fourth quarter of 2027 (Q4 2027) and the third quarter of 2029 (Q3 2029). The peak hours would be 6 to 7 AM (AM construction traffic peak hour) when the majority of workers would arrive at the Kensico Campus and the KEC Eastview Site and 3 to 4 PM (PM construction traffic peak hour) when the majority of workers would depart the Kensico Campus and the KEC Eastview Site.

Screening Assessment

The *CEQR Technical Manual* recommends a two-step approach – a mobile source noise screening assessment followed by a detailed mobile source noise analysis, if necessary.

In accordance with the *CEQR Technical Manual*, a mobile source noise screening assessment was conducted using the construction vehicle trip distribution data in terms of PCEs to determine if the Proposed Action would result in a doubling of noise PCEs and therefore would have the potential to increase existing (ambient) noise levels by 3 dBA or greater. The screening assessment was performed at the construction vehicle major convergence roadways with noise-sensitive receptors to determine the locations and the expected hour(s) at which the greatest change in traffic noise levels would occur due to the Proposed Action.

The screening assessment was performed at the 20 off-site mobile (M) source locations listed in **Table 3.13-3** and shown on **Figure 3.13-4**, **Figure 3.13-5**, and **Figure 3.13-6.**

In accordance with the *CEQR Technical Manual*, the noise PCEs were calculated for the hours when construction vehicles would be traveling to/from the Kensico Campus and KEC Eastview Site (6 to 12 AM) using the following scaling factors.

- Each automobile or light truck = 1 noise PCE
- Each medium truck = 13 noise PCEs
- Each bus = 18 noise PCEs
- Each heavy truck = 47 noise PCEs

Existing traffic volumes used for the mobile noise screening assessment were derived from the traffic analysis for the Proposed Action. As discussed in Section 3.10, "Traffic and Transportation," traffic counts were conducted in March 2021, during the COVID-19 pandemic. With guidance from NYSDOT and in consultation with DEP, these traffic counts were adjusted upward to "normalize" the traffic counts based on NYSDOT's historical ATR count data collected within the past five-year period to reflect pre-pandemic levels.

Using a threshold for the proposed condition of a 100-percent increase (or doubling) in noise PCE values over existing conditions, the screening assessment was performed for the hours when construction vehicles would be traveling to/from the Kensico Campus and the KEC Eastview Site (6 to 12 AM) to determine the locations along the construction vehicle routes and construction quarters that required a more detailed evaluation. Based on the screening assessment for the Q4 2027 and Q3 2029 construction traffic peak quarters, three out of the 20 locations, specifically M11, M12 and M13, exceeded the CEQR screening threshold for the AM Construction Traffic Peak Hour during the weekend in Q4 2027 and Q3 2029. However, Q4 2027 resulted in a greater exceedance of the CEQR screening threshold as compared to Q3 2029. Therefore, a further screening assessment for the AM Construction Traffic Peak Hour during the weekend in Q4 2027 was performed at these three locations based on the PCE comparisons between the future with and without the Proposed Action. A detailed mobile noise analysis was performed at the following two locations that failed the second round of screening for the Q4 2027 weekend AM Construction Traffic Peak Hour, as shown on **Figure 3.13-7**:

- M13 - Lakeview Avenue near Pamela Lane
- M14 - Lakeview Avenue near Colonial Lane

The remaining mobile source locations and construction hours did not warrant a detailed mobile noise analysis.

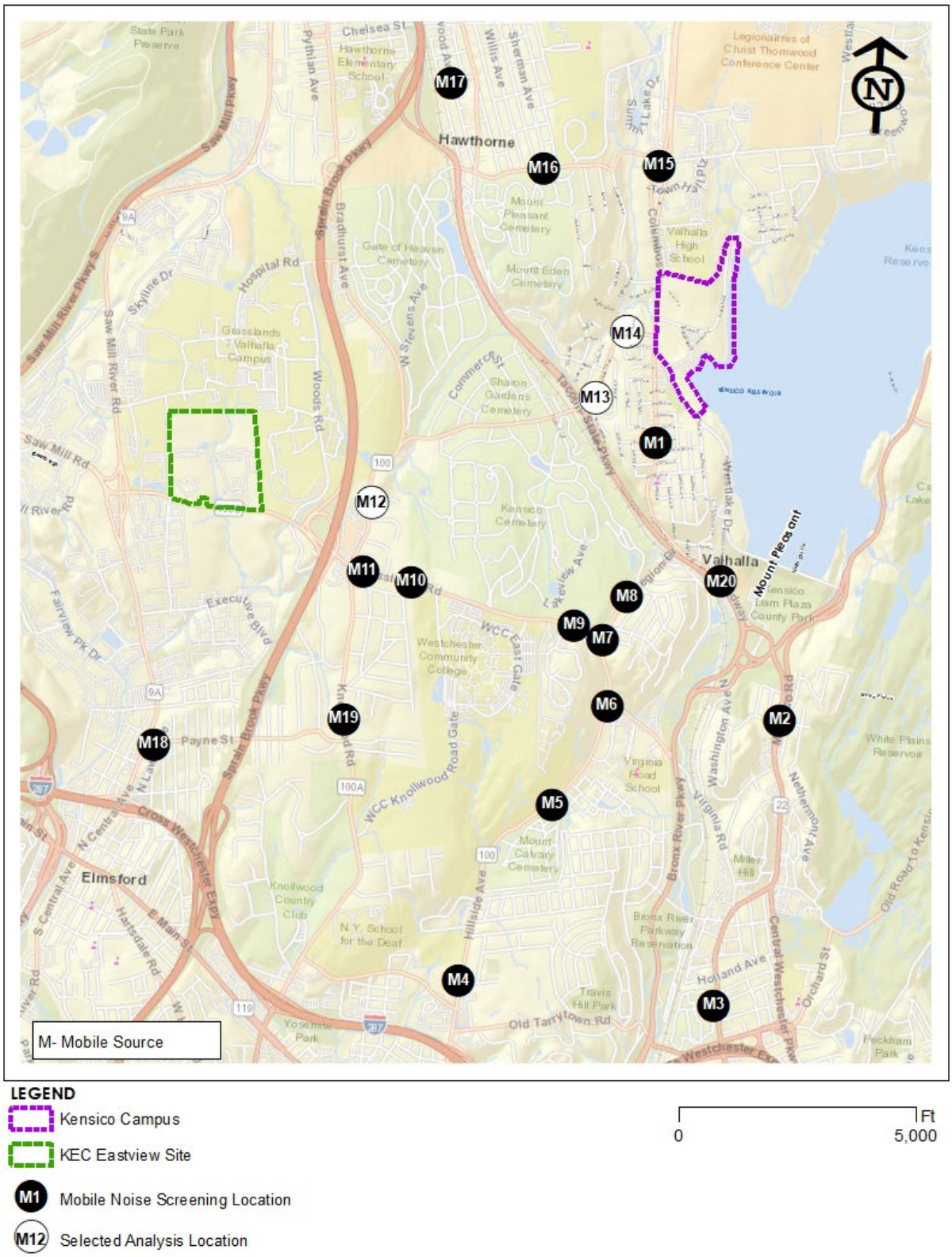


Figure 3.13-7. Selected Detailed Mobile Noise Analysis Locations

Mobile Source Analysis

In accordance with the *CEQR Technical Manual* and based on the results of the mobile noise screening assessment, a mobile source noise analysis was conducted at two mobile noise locations (M13 and M14) to determine if the construction vehicles would have the potential to cause a significant adverse impact at noise-sensitive receptors. On-road mobile source noise effects along construction vehicle routes to/from the Kensico Campus and the KEC Eastview Site were evaluated using the FHWA Traffic Noise Model (TNM, Version 2.5). TNM was used to assess the noise levels for mobile locations not adjacent to the Kensico Campus and KEC Eastview Site based on the screening assessment described above. As discussed in Section 3.13.4.5, "Cumulative Sources," the mobile noise locations adjacent to the Kensico Campus and the KEC Eastview Site were included in the SoundPLAN model and assessed along with the on-site stationary construction noise to determine the cumulative construction noise levels.

TNM takes into account various factors that influence vehicular noise, including traffic volumes, vehicle classifications, source/receptor geometry, shielding (including barriers and terrain), and ground attenuation. Existing speeds were collected in March 2021 and were used for all modeled conditions.

According to the FHWA, TNM requires validation to verify the accuracy. A TNM validation assessment was performed through a comparison of the model predicted existing traffic noise levels using the existing (non-adjusted) traffic volumes and monitored ambient noise levels at the two mobile source locations that screened in. During a TNM validation assessment, the model is validated when differences between the measured and the modeled noise levels are within +/-3 dBA. **Table 3.13-6** presents the differences in measured and modeled noise levels for the two mobile noise locations.

Table 3.13-6. TNM Validation Results

Location	Measured Ambient Noise Level (dBA)(1)	Modeled Noise Level (dBA)	Noise Difference (dBA)	Distance to nearest Highway/Road
M13- Lakeview Avenue near Pamela Lane	65.6	57.6	-8.0	300 feet to Taconic State Parkway
M14- Lakeview Avenue near Colonial Lane	48.4	47.4	-1.0	75 feet to Lakeview Avenue
Note: (1) Measured ambient noise levels are based on the weekend between 5 and 7 AM.				

As shown in **Table 3.13-6**, TNM was validated for M14. However, due to the proximity of Taconic State Parkway near location M13 (300 feet away), the existing ambient noise level at M13 is dominated by other background noise from the nearby parkway, rather than the traffic

along the local truck route at this location. Therefore, TNM could not be validated at location M13. As such, the construction vehicle noise levels at M13 were predicted using TNM and then added to the measured ambient noise levels to determine the predicted overall net noise increments due to the construction of the Proposed Action.

3.13.4.5 Cumulative Sources

For locations that would potentially be affected by both stationary and mobile construction sources, the potential impacts from the combination of stationary and mobile sources were determined. Vehicles were assigned to the adjacent affected roadways surrounding the Kensico Campus and KEC Eastview Site based on the trip distribution forecasts. The affected roadways included in the cumulative analyses consisted of:

- Kensico Campus
    - Columbus Avenue (County Route [CR]64)
    - Westlake Drive
    - Lakeview Avenue
- KEC Eastview Site
    - Grasslands Road (State Route [SR]100C)
    - Woods Road (CR 300)
    - Walker Road

These roadways located adjacent to the Kensico Campus and the KEC Eastview Site were included in the SoundPLAN model and assessed along with the on-site stationary construction noise at the Kensico Campus and KEC Eastview Site to determine the cumulative construction noise levels and the potential for cumulative significant adverse impacts at noise-sensitive receptors during construction of the Proposed Action.

3.13.4.6 Impact Significance Evaluation

The predicted average hourly noise levels (or $L_{eq(1)}$) during construction at the analyzed receptors were compared to the measured existing noise levels to gauge the potential Proposed Action noise effects. In addition, the L_{10} noise levels during construction (estimated by adding 3 dBA to the predicted $L_{eq(1)}$ noise level) at the analyzed receptors were compared to the Town of Mount Pleasant noise code limits based on its land use, distance from the Kensico Campus and the KEC Eastview Site and time of day. At each analyzed receptor location where construction noise levels would have the potential to result in an exceedance of the CEQR construction noise screening threshold of 10 dBA above existing ambient noise levels or exceedances of the Town of Mount Pleasant noise code limits, the duration and magnitude of such exceedances according

to the construction schedule were determined and reviewed for purposes of determining potential impact significance.

3.13.5 EXISTING CONDITIONS

As stated above, a total of 33 receptor locations were used to evaluate noise impacts due to construction of the Proposed Action. Ambient noise monitoring was performed in March and April 2021 at the 33 locations to determine the existing noise levels. Of the 33 locations, 24-hour continuous noise measurements were obtained at three locations, one at the Kensico Campus and two within the KEC Eastview Site adjacent to noise-sensitive receptor locations. Twenty-minute noise measurements were obtained at the remaining 30 locations adjacent to noise-sensitive receptors. Supplemental noise measurements were also conducted in March 2022 in the Westlake Drive residential community northeast of the Kensico Campus.

The range of measured existing $L_{eq(1)}$ noise levels at each measurement location are summarized in **Table 3.13-7** for both the 24-hour continuous and the 20-minute measurement locations. The measured noise levels reflect the different land uses near the measurement locations and their respective distances to roadways and highways. Noise levels measured at the off-site mobile source monitoring locations are generally higher than the other locations around the proposed Kensico Campus and KEC Eastview Site due to exposure to traffic along local roadways. For example, ambient monitoring locations such as K2, K3, and K4 (which are located in neighborhoods away from commercial activity and local traffic) are significantly lower than monitoring locations such as M12 or M13 adjacent to the Sprain Brook Parkway and the Taconic Parkway, respectively. At ambient monitoring locations away from major transportation corridors, measured noise levels are fairly constant throughout the daytime and evening hours during both weekdays and weekends. At off-site mobile source monitoring locations and other receptors adjacent to heavily traveled roadways, existing noise levels reflect the daily diurnal traffic patterns that generally increase during peak periods and decrease during off-peak periods of the day.

Table 3.13-7. Measured Existing Noise Levels

Noise Receptor	Location	Type	Noise Level (L_{eq}) for the Quietest Period During Proposed Construction Working Hours (dBA)			
			Weekday 1st Shift(1)	Weekday 2nd Shift(2)	Weekend 1st Shift(1)	Weekend 2nd Shift(2)
Kensico Campus						
K1	Columbus Avenue at Westlake Drive, Valhalla	24-hour	49	45	49	42
K2	25 Westlake Drive, Valhalla	20-minute	NA	46	NA	39
K3	Valhalla Middle and High Schools Baseball Field, Valhalla	20-minute	NA	40	NA	43

Table 3.13-7. Measured Existing Noise Levels

Noise Receptor	Location	Type	Noise Level (L_{eq}) for the Quietest Period During Proposed Construction Working Hours (dBA)			
			Weekday 1st Shift(1)	Weekday 2nd Shift(2)	Weekend 1st Shift(1)	Weekend 2nd Shift(2)
K4	Valhalla Middle and High Schools, Valhalla	20-minute	NA	44	NA	46
K5	2 Highclere Lane, Valhalla	20-minute	65	57	65	58
K6	1 Fountain Lane, Valhalla	20-minute	65	54	62	54
K7	8 East Maple Avenue, Valhalla	20-minute	50	44	53	43
KEC Eastview Site						
E1	Walker Road, Valhalla	24-hour	48	48	49	47
E2	Eastern Perimeter of the KEC Eastview Site, Valhalla	24-hour	49	51	50	48
E3	40 Taylor Road, Valhalla	20-minute	59	55	56	56
E4	111 Grasslands Road (Hammond House), Valhalla	20-minute	62	57	58	55
E5	15 Hammond House Road, Valhalla	20-minute	58	56	NA	51
E6	15 Oval Connector Road, Valhalla	20-minute	60	57	NA	52
Off-site Mobile Source Monitoring						
M1	127 Columbus Avenue, Valhalla	20-minute	66	61	62	NA
M2	973 North Broadway, White Plains	20-minute	63	NA	54	NA
M3	421 North Broadway, White Plains	20-minute	72	NA	62	NA
M4	206 Hillside Avenue, White Plains	20-minute	63	NA	62	NA
M5	575 Hillside Avenue, White Plains	20-minute	70	NA	66	NA
M6	757 Hillside Avenue, White Plains	20-minute	61	56	56	NA
M7	160 Legion Drive, Valhalla	20-minute	61	54	58	NA
M8	106 Legion Drive, Valhalla	20-minute	69	56	65	NA
M9	55 Grasslands Road (The Knolls), Valhalla	20-minute	71	63	65	NA
M10	390 Grasslands Road, Valhalla	20-minute	73	65	68	NA
M11	2 Pleasant Ridge Road, Valhalla	20-minute	69	62	65	NA
M12	1 Armand Place, Valhalla	20-minute	71	62	68	NA
M13	185 Lakeview Avenue, Valhalla	20-minute	69	59	62	NA
M14	2 Colonial Lane, Valhalla	20-minute	63	56	61	NA
M15	1 Town Hall Plaza, Valhalla	20-minute	66	55	60	NA
M16	109 Sherman Avenue, Valhalla	20-minute	66	54	60	NA
M17	209 Elwood Avenue, Hawthorne	20-minute	64	57	59	NA
M18	210 Saw Mill River Road, Elmsford	20-minute	67	NA	64	NA
M19	2 Whitewood Road, White Plains	20-minute	70	NA	69	NA
M20	4 Broadway, Valhalla	20-minute	67	NA	65	NA

Table 3.13-7. Measured Existing Noise Levels

Noise Receptor	Location	Type	Noise Level (L_{eq}) for the Quietest Period During Proposed Construction Working Hours (dBA)			
			Weekday 1st Shift(1)	Weekday 2nd Shift(2)	Weekend 1st Shift(1)	Weekend 2nd Shift(2)

Notes:
(1) The 1st shift for the proposed construction would consist of the hours of 7 AM to 3:30 PM.
(2) The 2nd shift for the proposed construction would consist of the hours of 3 to 11:30 PM.
NA: Noise monitoring was not obtained during this shift since the quietest daytime hour and the quietest nighttime hour were both anticipated to be during the other shift.

3.13.6 FUTURE WITHOUT THE PROPOSED ACTION

Several DEP projects would be implemented in the future without the Proposed Action, primarily at the Kensico Campus. Construction of future DEP projects would likely overlap with the anticipated construction period for the Proposed Action as follows:

- Construction of the Waterfowl Management Program Building and the Kensico Regional Headquarters at the Kensico Campus would begin in 2023 or 2024, and various projects at DEL Shaft 18 at the Kensico Campus are currently under construction. These projects are scheduled to be completed in the 2025 or 2026 timeframe and would involve construction equipment and truck operations during building construction. Each of these projects are expected to generate two to four truck trips per day and three to 20 workers on site from time to time during the construction duration.
- The construction associated with the Manhole Cleanouts for Foundation Drain System project at the KEC Eastview Site is scheduled to occur between 2024 and 2025. The project would involve two to four truck trips per day and four to 20 workers on site from time to time during the construction duration.

In addition, DEP may also potentially implement a solar project at the KEC Eastview Site consisting of the placement of solar canopies within an existing parking area and solar panels on the CDUV Facility roof. Future without the Proposed Action noise levels around the Kensico Campus and KEC Eastview Site would be slightly affected by these DEP projects as compared to existing conditions.

For mobile sources, in addition to the background traffic growth rate, traffic volumes from notable background development projects were incorporated as part of the future without the Proposed Action traffic volumes, as discussed in Section 3.10, "Traffic and Transportation." Six non-DEP projects are expected to be completed by 2029 and would generate moderate to substantial traffic volumes in the 2027 and 2029 peak analysis year. These projects were incorporated into the analysis.

Given the scale and temporary nature of the construction activities associated with the DEP and non-DEP projects, potential significant changes to existing noise levels would be expected to be minimal and existing noise levels would be expected to remain largely the same.

3.13.7 FUTURE WITH THE PROPOSED ACTION

3.13.7.1 Stationary and Cumulative Sources

Kensico Campus

The on-site construction activities proposed at the Kensico Campus are shown on **Figure 3.13-8**. Detailed noise modeling analyses were performed to determine the potential maximum noise levels ($L_{eq(1)}$) that would be expected to occur during the peak stationary construction quarters as identified in **Table 3.13-5** due to on-site construction equipment and construction-related vehicles immediately adjacent to the Kensico Campus. The dominant construction noise is predicted to be associated with the following primary construction areas within the Kensico Campus:

- KEC Shaft 1C Excavation
- Excavation of the KEC Shaft 1C Connection Tunnel, Dike Grade Return Tunnel, and Upper Effluent Chamber Tunnel and Lining
- UEC Modifications
- Shoreline Stabilization
- Stockpile Areas
- On-site Construction Road

The peak and shoulder peak stationary construction quarters selected for detailed noise modeling for the Kensico Campus are listed in **Table 3.13-5**. These construction quarters resulted in the highest potential noise impacts for the surrounding receptors. Predicted worst-case noise contours resulting from these Kensico Campus on-site construction activities during the applicable peak and shoulder peak stationary construction quarters are shown graphically on **Figure 3.13-9** through **Figure 3.13-12.** The contours graphically show the extent of the predicted construction noise levels in the community beyond the representative sensitive noise-receptor sites.

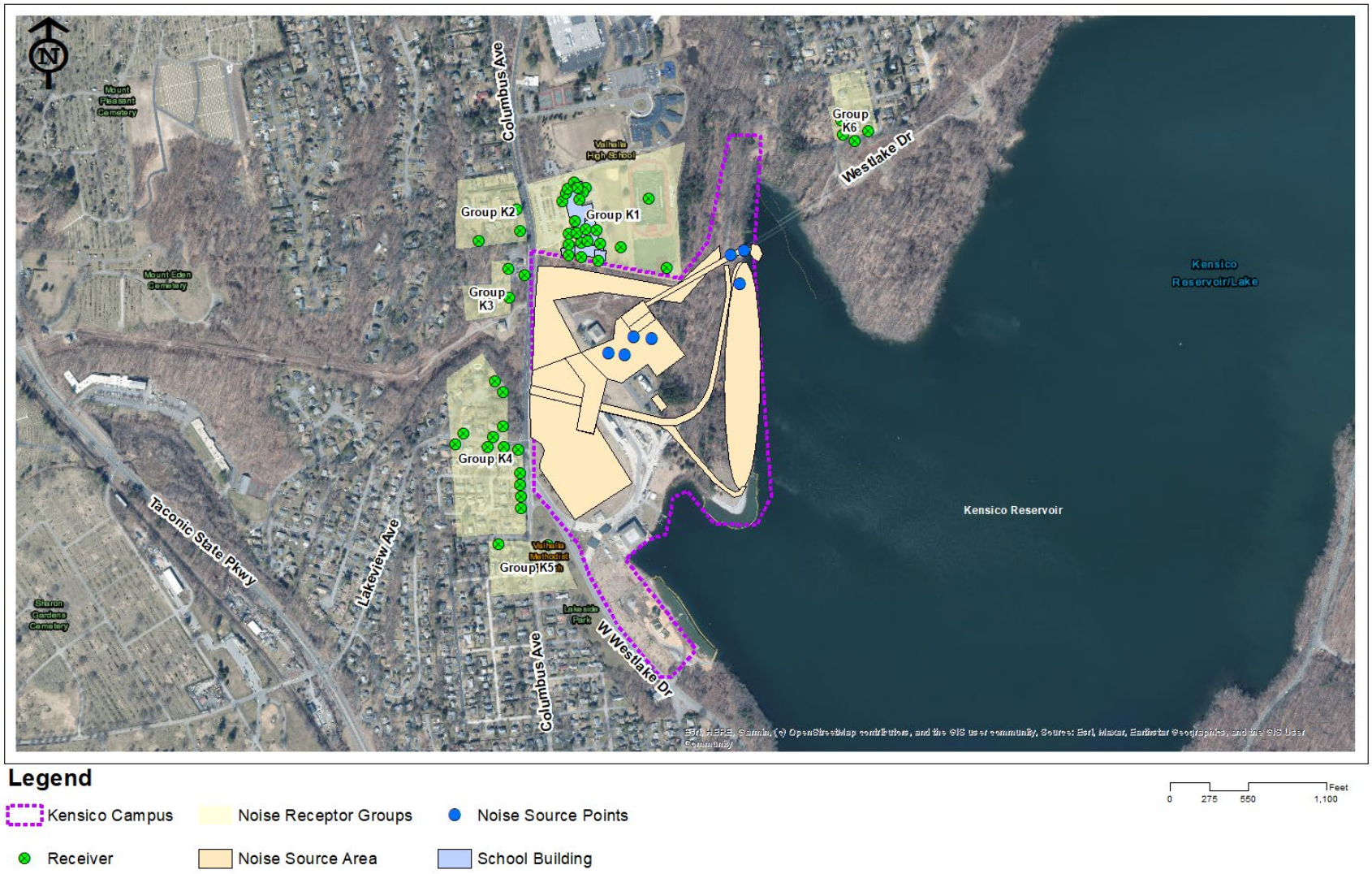


Figure 3.13-8. On-site Construction Activities – Kensico Campus

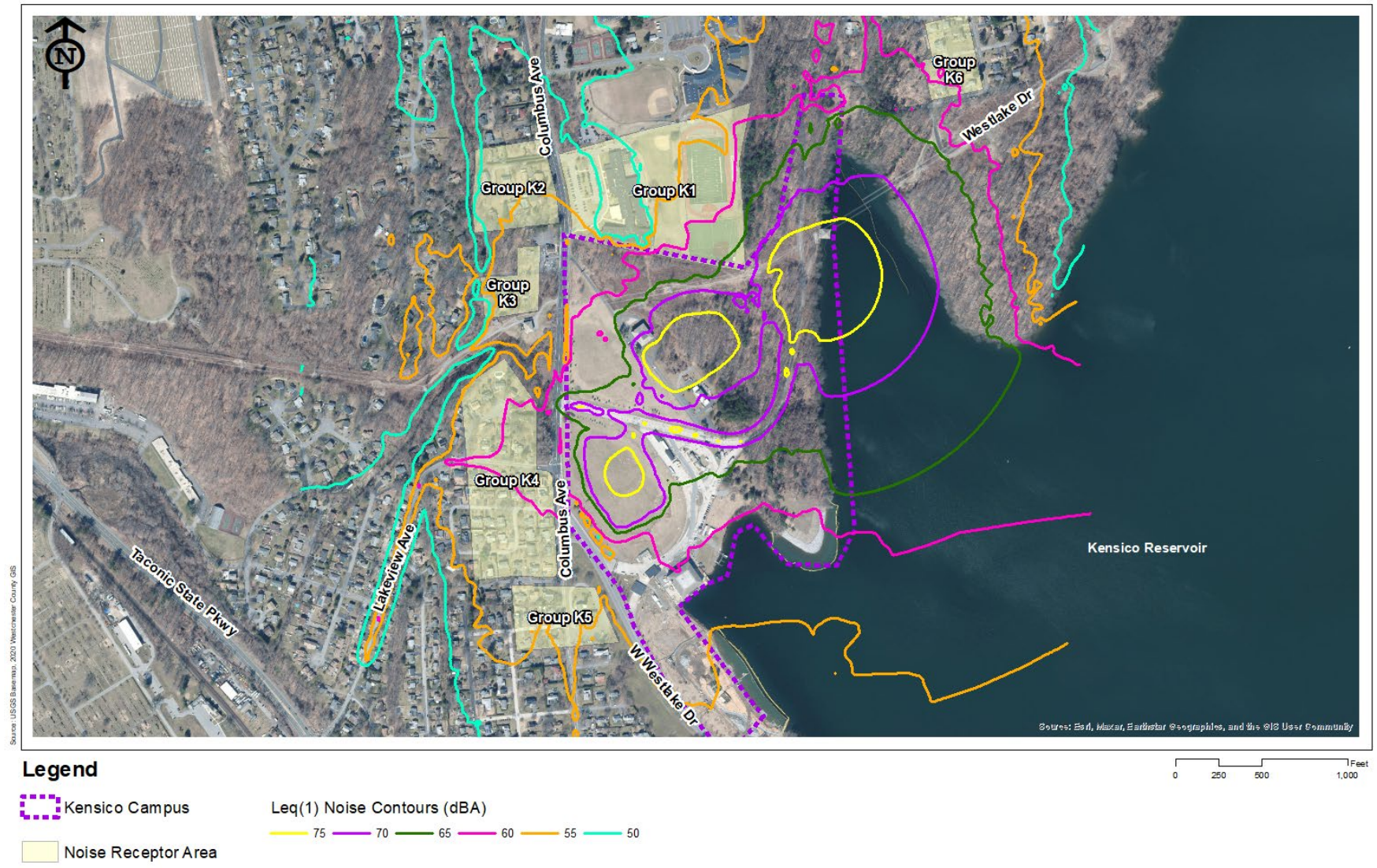


Figure 3.13-9. Peak Construction Noise Contours - 1st Shift, Second Quarter of 2027 – Kensico Campus

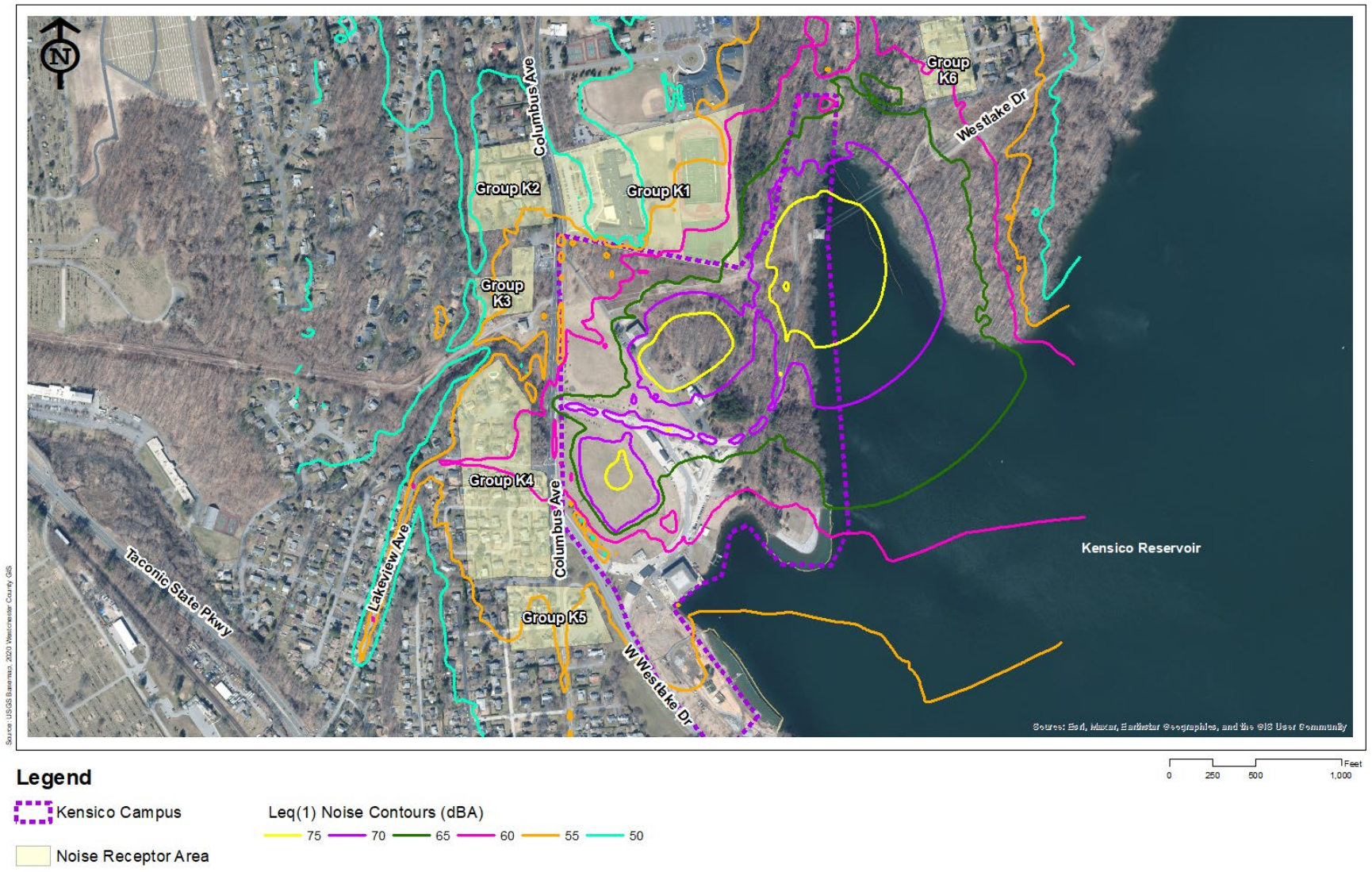


Figure 3.13-10. Secondary Peak Construction Noise Contours - 1st Shift, Fourth Quarter of 2027 – Kensico Campus

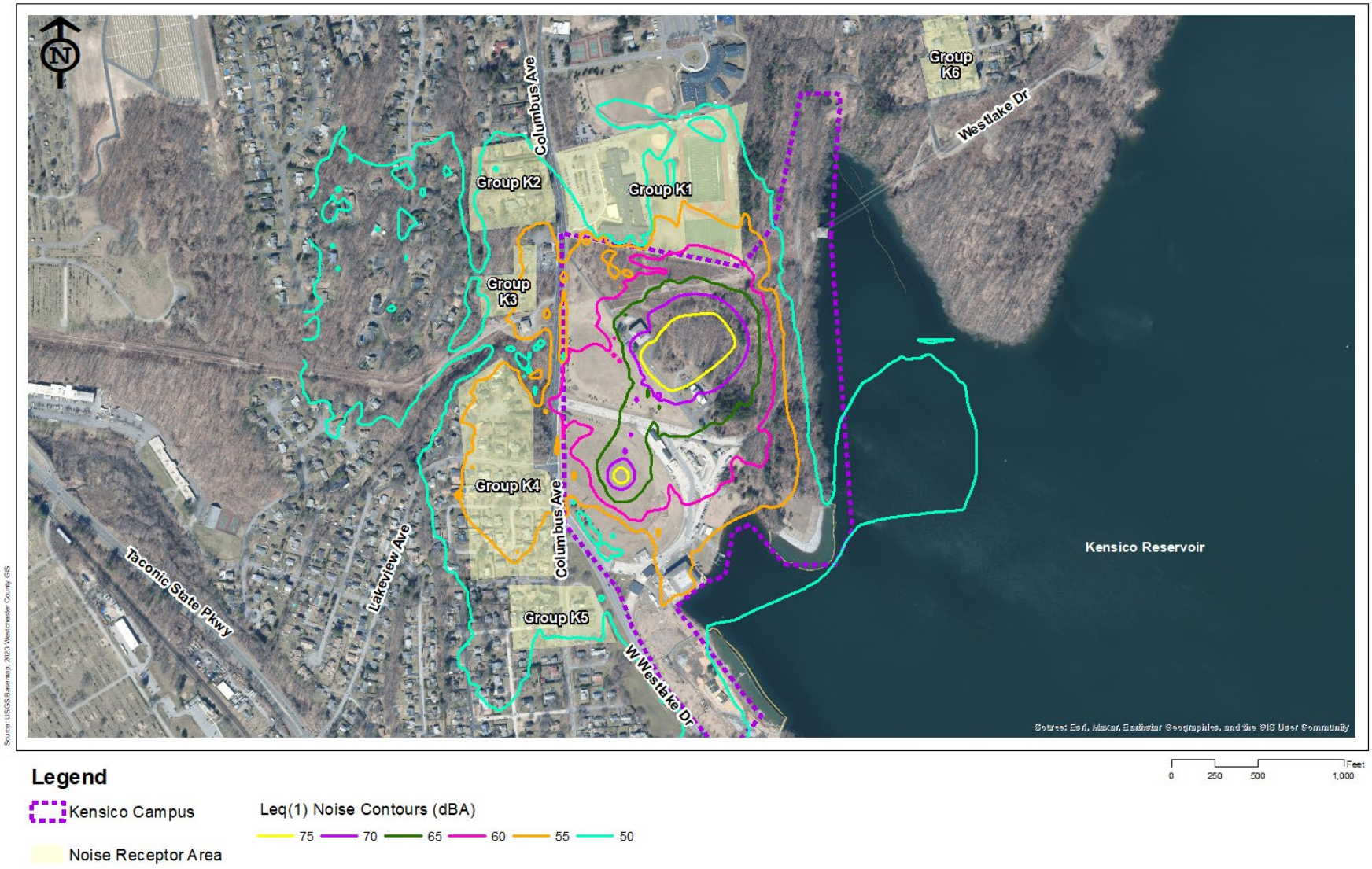


Figure 3.13-11: Peak Construction Noise Contours - 2nd Shift, Second Quarter of 2027 – Kensico Campus

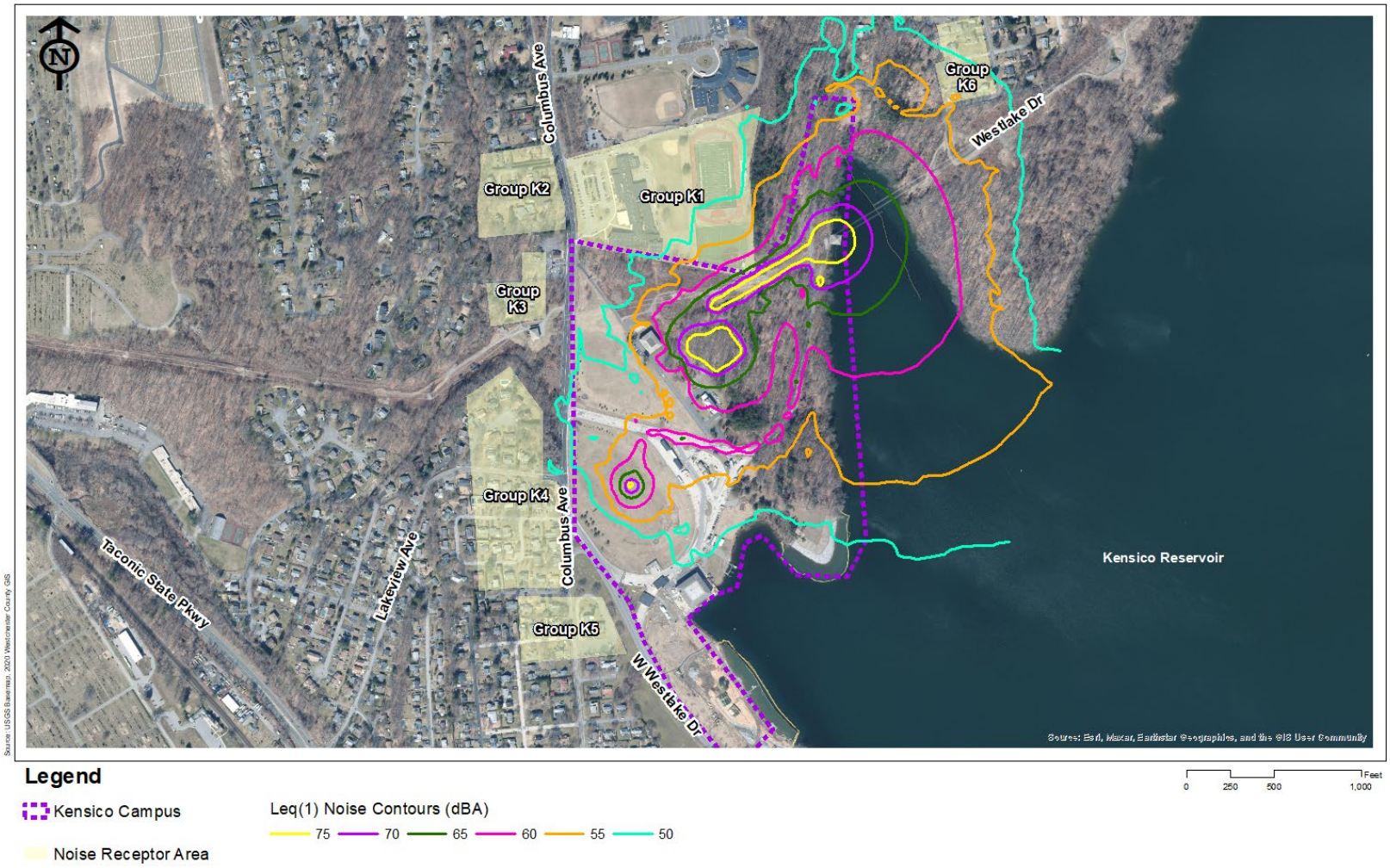


Figure 3.13-12: Secondary Peak Construction Noise Contours - 2nd Shift, Third Quarter of 2029 – Kensico Campus

CEQR Construction Noise

Predicted overall $L_{eq(1)}$ noise levels for peak and shoulder peak stationary construction quarters are listed separately for each of the six representative sensitive noise-receptor sites in **Table 3.13-8** to **Table 3.13-13.**

Table 3.13-8. Predicted Construction Noise Levels at Receptor K1, Valhalla Middle and High Schools(1)

Construction Quarter(2)	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action(3)	Difference(4)
Q2 2027 1st Shift	49	61.2	61.5	12.5
Q4 2027 1st Shift	49	60.7	61.0	12.0
Q2 2027 2nd Shift	45	60.2	60.3	15.3
Q3 2029 2nd Shift	45	52.8	53.5	8.5

Notes:

Gray highlighted cells represent the noise levels that were predicted to exceed the CEQR construction noise screening threshold of 10 dBA above existing ambient noise levels.

(1) Noise levels are reported for the Valhalla Middle and High Schools based on the most affected building façade immediately adjacent to the Kensico Campus.

(2) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM.

(3) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.

(4) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from the existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-9. Predicted Construction Noise Levels at Receptor K2, Residence at 315 Columbus Avenue

Construction Quarter[(1)]	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q2 2027 1st Shift	65	55.9	65.5	0.5
Q4 2027 1st Shift	65	55.2	65.4	0.4
Q2 2027 2nd Shift	57	54.2	58.8	1.8
Q3 2029 2nd Shift	57	46.0	57.3	0.3

Notes:
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-10. Predicted Construction Noise Levels at Receptor K3, Residence at 2 Highclere Lane

Construction Quarter[(1)]	Noise Levels, L_{eq}, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q2 2027 1st Shift	65	58.1	65.8	0.8
Q4 2027 1st Shift	65	57.3	65.7	0.7
Q2 2027 2nd Shift	57	56.3	59.7	2.7
Q3 2029 2nd Shift	57	48.3	57.5	0.5

Notes:
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-11. Predicted Construction Noise Levels at Receptor K4, Residence at 1 Fountain Drive

Construction Quarter[(1)]	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q2 2027 1st Shift	65	61.9	66.7	1.7
Q4 2027 1st Shift	65	61.1	66.5	1.5
Q2 2027 2nd Shift	54	58.0	59.5	5.5
Q3 2029 2nd Shift	54	49.1	55.2	1.2

Notes:
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-12. Predicted Construction Noise Levels at Receptor K5, Residence at 8 East Maple Street

Construction Quarter[(1)]	Noise Levels, L_{eq}, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q2 2027 1st Shift	50	57.2	58.0	8.0
Q4 2027 1st Shift	50	56.4	57.3	7.3
Q2 2027 2nd Shift	44	54.1	54.5	10.5
Q3 2029 2nd Shift	44	46.1	48.2	4.2

Notes:
Gray highlighted cells represent the noise levels that were predicted to exceed the CEQR construction noise screening threshold of 10 dBA above existing ambient noise levels.
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-13. Predicted Construction Noise Levels at Receptor K6, Residence at 25 Westlake Drive

Construction Quarter [(1)]	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q2 2027 1st Shift	55	62.8	63.5	8.5
Q4 2027 1st Shift	55	64.2	64.7	9.7
Q2 2027 2nd Shift	46	47.2	49.7	3.7
Q3 2029 2nd Shift	46	55.7	56.1	10.1

Notes:
Gray highlighted cells represent the noise levels that were predicted to exceed the CEQR construction noise screening threshold of 10 dBA above existing ambient noise levels.
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Construction Noise Profiles

As previously stated, noise levels caused by construction activities would vary widely, and fluctuate during the construction period. Quarterly noise profiles were therefore developed for the first shift (7 AM to 3:30 PM) and second shift (3 to 11:30 PM) of the overall construction period.

Maximum noise levels from the proposed construction at the Kensico Campus from the first and second shifts are summarized below for Receptor Groups K1, K5 and K6, and shown on the noise profiles on **Figure 3.13-13** through **Figure 3.13-16**. The noise profiles depict the predicted peak or maximum noise levels, as well as the shoulder peak noise levels for a longer construction duration (i.e., the duration of proposed construction versus the peak or shoulder peak quarter) than identified in **Table 3.13-8** to **Table 3.13-13**. Similarly, further evaluation for Receptor Groups K2, K3 and K4 are not warranted since the predicted noise levels at these receptor locations during peak construction activities are at or below the CEQR construction noise screening threshold of 10 dBA, as shown in **Table 3.13-9**, **Table 3.13-10**, and **Table 3.13-11**.

- Receptor Group K1

  Receptor Group K1 is located just north of the Kensico Campus and consists of the Valhalla Middle and High Schools. The noise analysis was performed for the multiple buildings and building façades of the Valhalla Middle and High Schools. The noise levels reported for this receptor group represent the maximum predicted noise levels due to construction of the Proposed Action, which would occur at the building façade

immediately adjacent to the Kensico Campus. As shown on **Figure 3.13-13**, the maximum predicted future with the Proposed Action noise levels at these receptors would range from 49 to 61.5 dBA $L_{eq(1)}$ during the first shift of construction. Similarly, the maximum future with the Proposed Action noise levels at these receptors would range from 45 to 60.3 dBA $L_{eq(1)}$ during the second shift of construction. The dominant construction activities contributing to these predicted maximum noise levels would be associated with the KEC Shaft 1C and KEC Screen Chamber construction areas, including connection tunnels, and the shoreline stabilization activities.

Based on the noise profile shown on **Figure 3.13-13**, the future with the Proposed Action noise levels would be above the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level of 49 dBA during the first shift of construction for approximately 30 months. The future with the Proposed Action noise levels would be above the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level of 45 dBA during the second shift of construction for approximately 21 months. Noise level increases during the remaining periods of construction would be below the CEQR construction noise screening threshold of 10 dBA.

Interior noise levels at the Valhalla Middle and High Schools under an open window condition, which would result in a transmission loss of only 10 dBA, are predicted to exceed the CEQR interior threshold of 45 dBA L_{10} by a maximum of 10 dBA and 8 dBA (**Figure 3.13-14**) during the first and second shifts of construction, respectively.

- Receptor Group K5

  Receptor Group K5 is located south of the Kensico Campus and includes single-family residences and the Valhalla United Methodist Church. As shown on **Figure 3.13-15**, the maximum future with the Proposed Action noise levels at these receptors would range from 50 to 58 dBA $L_{eq(1)}$ during the first shift of construction. Similarly, the maximum future with the Proposed Action noise levels at these receptors would range from 44 to 54.5 dBA $L_{eq(1)}$ during the second shift of construction. The dominant construction activities contributing to these predicted maximum noise levels would be those associated with the stockpile areas, and the KEC Shaft 1C and KEC Screen Chamber construction areas, including connection tunnels

  Based on the noise profile shown on **Figure 3.13-15**, the noise level increases in the future with the Proposed Action during first shift construction activities would be below the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level of 50 dBA. The future with the Proposed Action noise levels would be 0.5 dBA above the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level of 44 dBA during the second shift of construction. This would occur for approximately three months. Noise level increases during the

remaining periods of construction would be below the CEQR construction noise screening threshold of 10 dBA.

- Receptor Group K6

  Receptor Group K6 is located northeast of the Kensico Campus and includes single-family residences. As shown on **Figure 3.13-16**, the maximum future with the Proposed Action noise levels at these receptors would range from 55 to 64.7 dBA $L_{eq(1)}$ during the first shift of construction. Similarly, the maximum future with the Proposed Action noise levels at these receptors would range from 46 to 56.1 dBA $L_{eq(1)}$ during the second shift of construction. The dominant construction activities contributing to these predicted maximum noise levels would be those associated with the shoreline stabilization, and the KEC Shaft 1C and KEC Screen Chamber construction areas, including connection tunnels.

  Based on the noise profile shown on **Figure 3.13-16**, the future with the Proposed Action noise levels during the first shift construction activities would be below the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level of 55 dBA. The future with the Proposed Action noise levels would be slightly above (0.1 dBA) the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level of 46 dBA during the second shift of construction. This would occur for approximately three months. Noise level increases during the remaining periods of construction would be below the CEQR construction noise screening threshold of 10 dBA.

Town of Mount Pleasant Noise Code

As presented in **Table 3.13-14**, noise levels due to proposed construction activities are not predicted to exceed the Town of Mount Pleasant residential noise code limit of 70 dBA L_{10} at 400 feet from the perimeter of the Kensico Campus during the hours of 8 AM and 6 PM. Similarly, no exceedances of the non-residential noise code limits of 75 and 80 dBA L_{10} at 400 feet from the perimeter of the Kensico Campus are predicted during the hours of 8 AM to 6 PM and 6 PM to 8 AM, respectively. However, construction noise levels are predicted to exceed the Town of Mount Pleasant residential noise code limit of 55 dBA L_{10} at 400 feet from the perimeter of the Kensico Campus during the 7 to 8 AM hour (receptor areas to the south and west) and 6 to 11:30 PM (receptor area to the west). Although full construction operations were assumed as part of this conservative analysis, the 7 to 8 AM hour reflects the beginning of the daily work shift, a period before maximum noise generating activities would typically be anticipated. As noted, these predicted exceedances are located west and south of the Kensico Campus in proximity to the stockpile area.

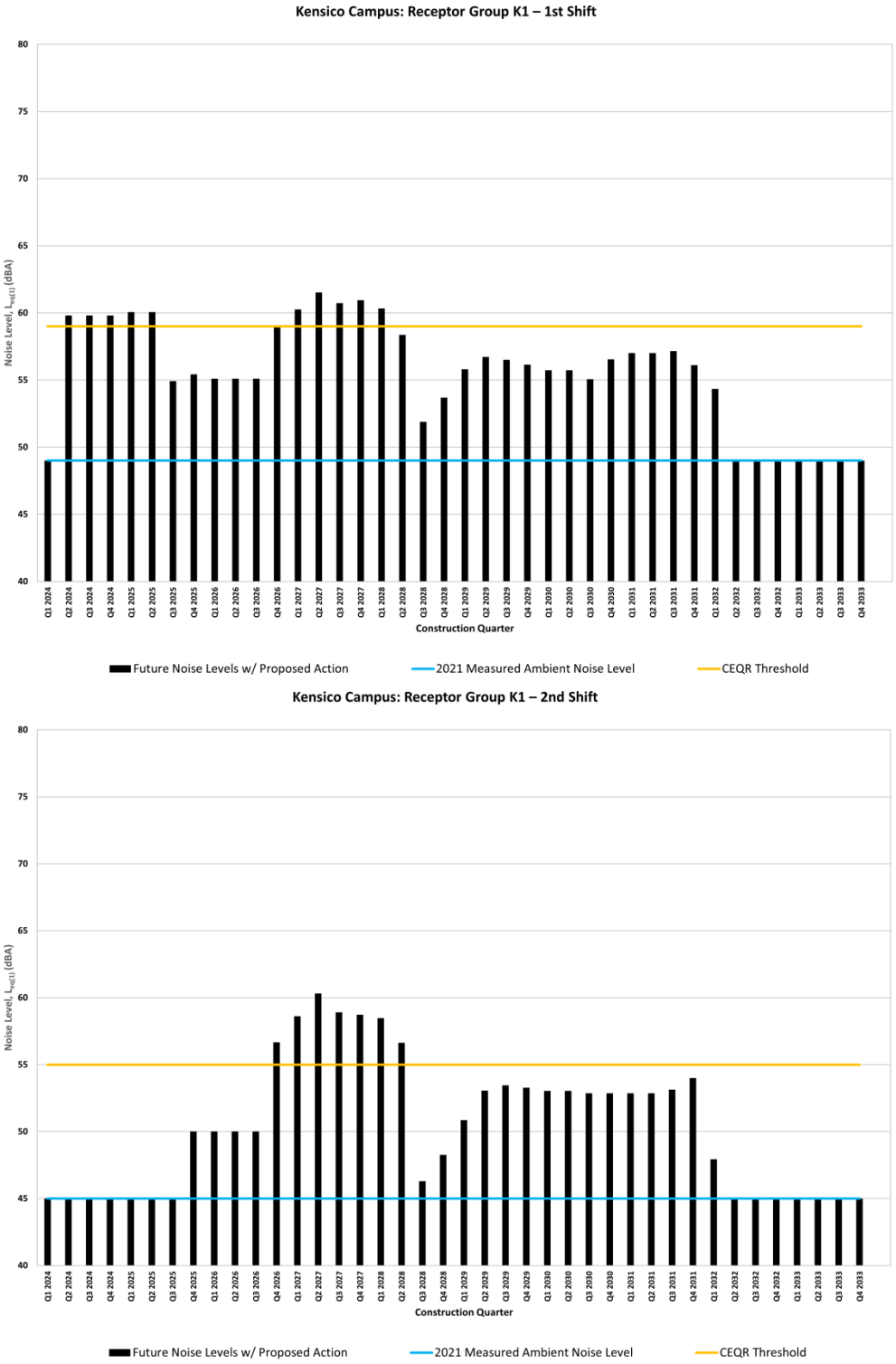
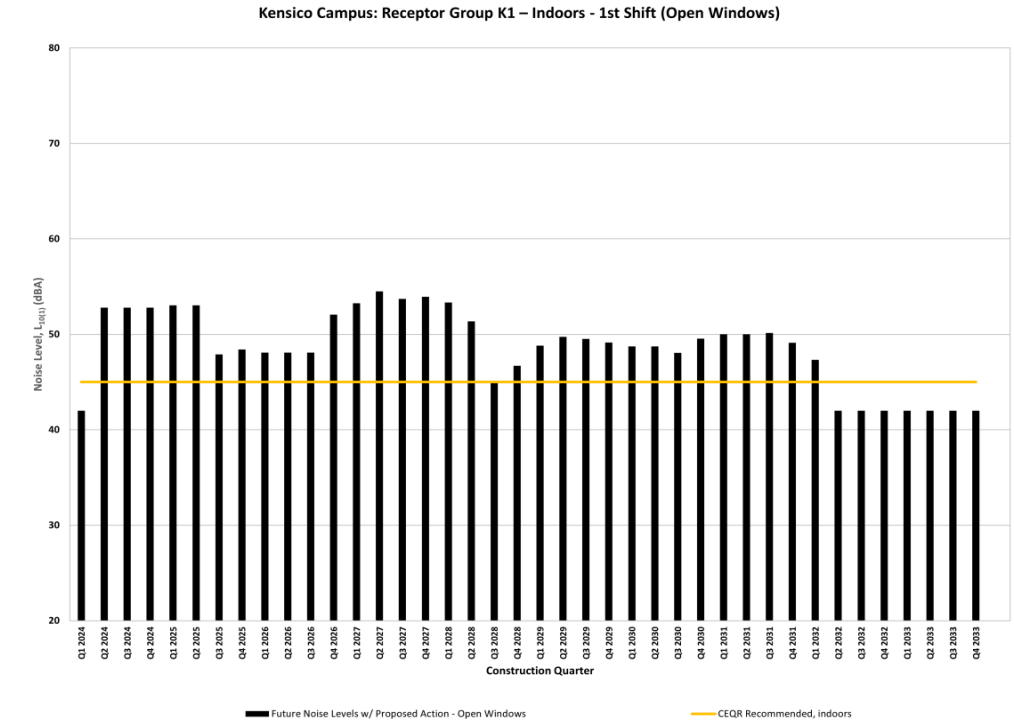


Figure 3.13-13. Future with Proposed Action Projected Noise Profile for Receptor Group K1



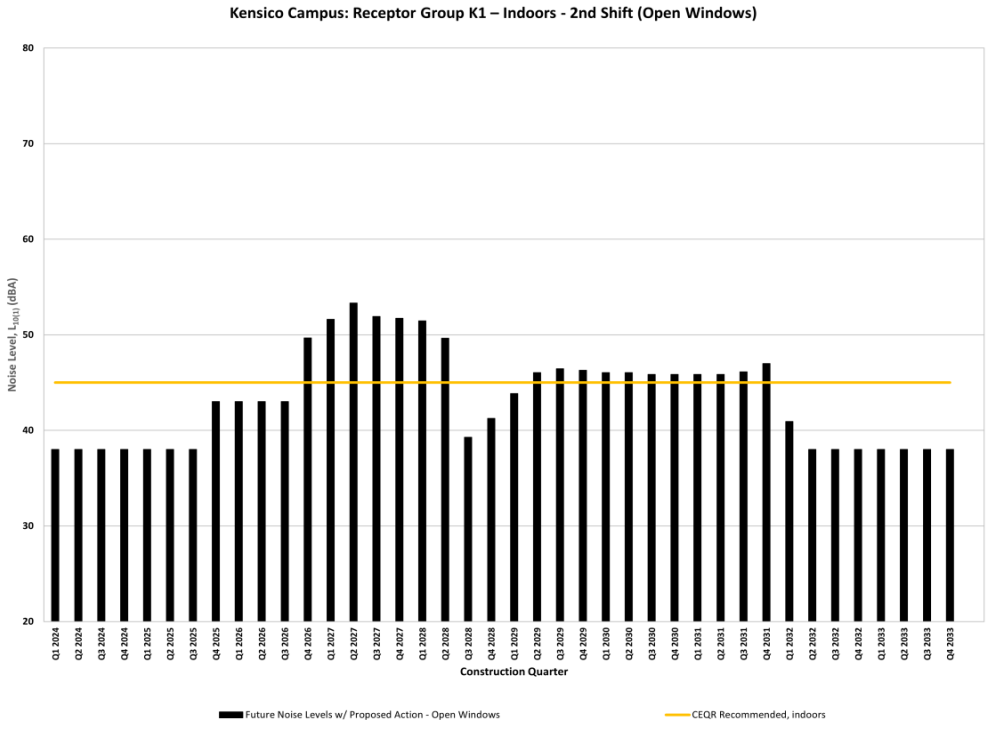
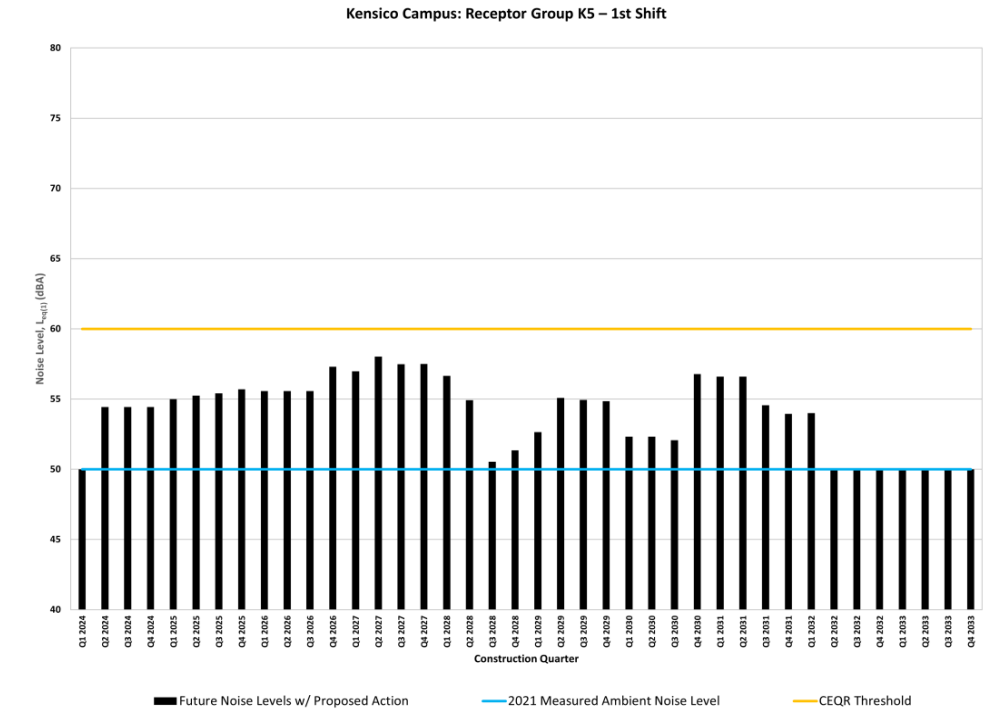


Figure 3.13-14. Future with Proposed Action Projected Noise Profile for Receptor Group K1 (Indoors)



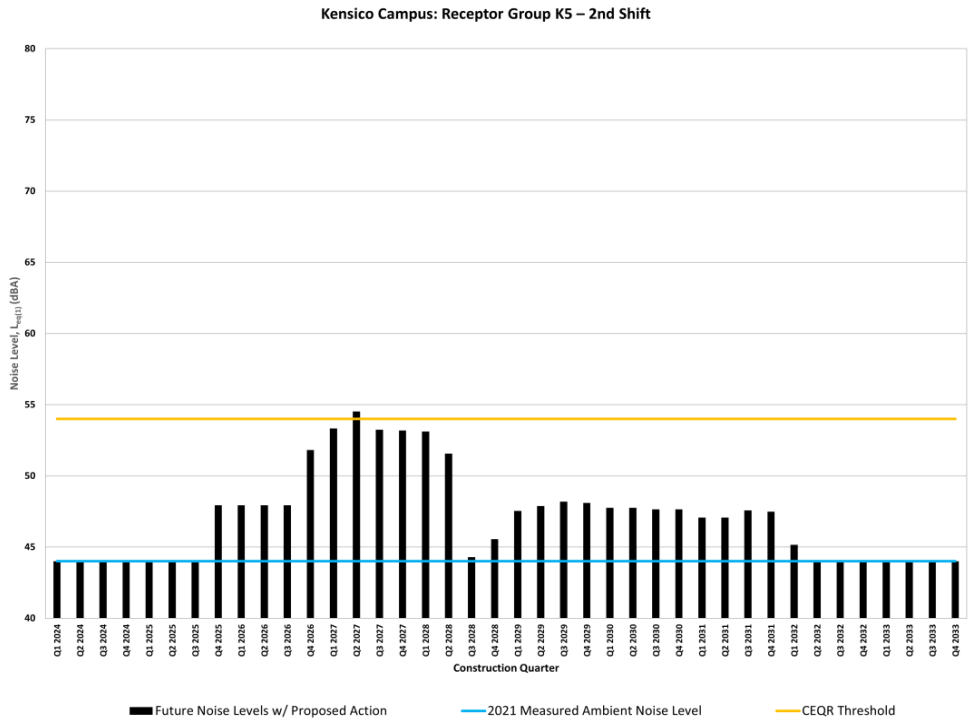


Figure 3.13-15. Future with Proposed Action Projected Noise Profile for Receptor Group K5

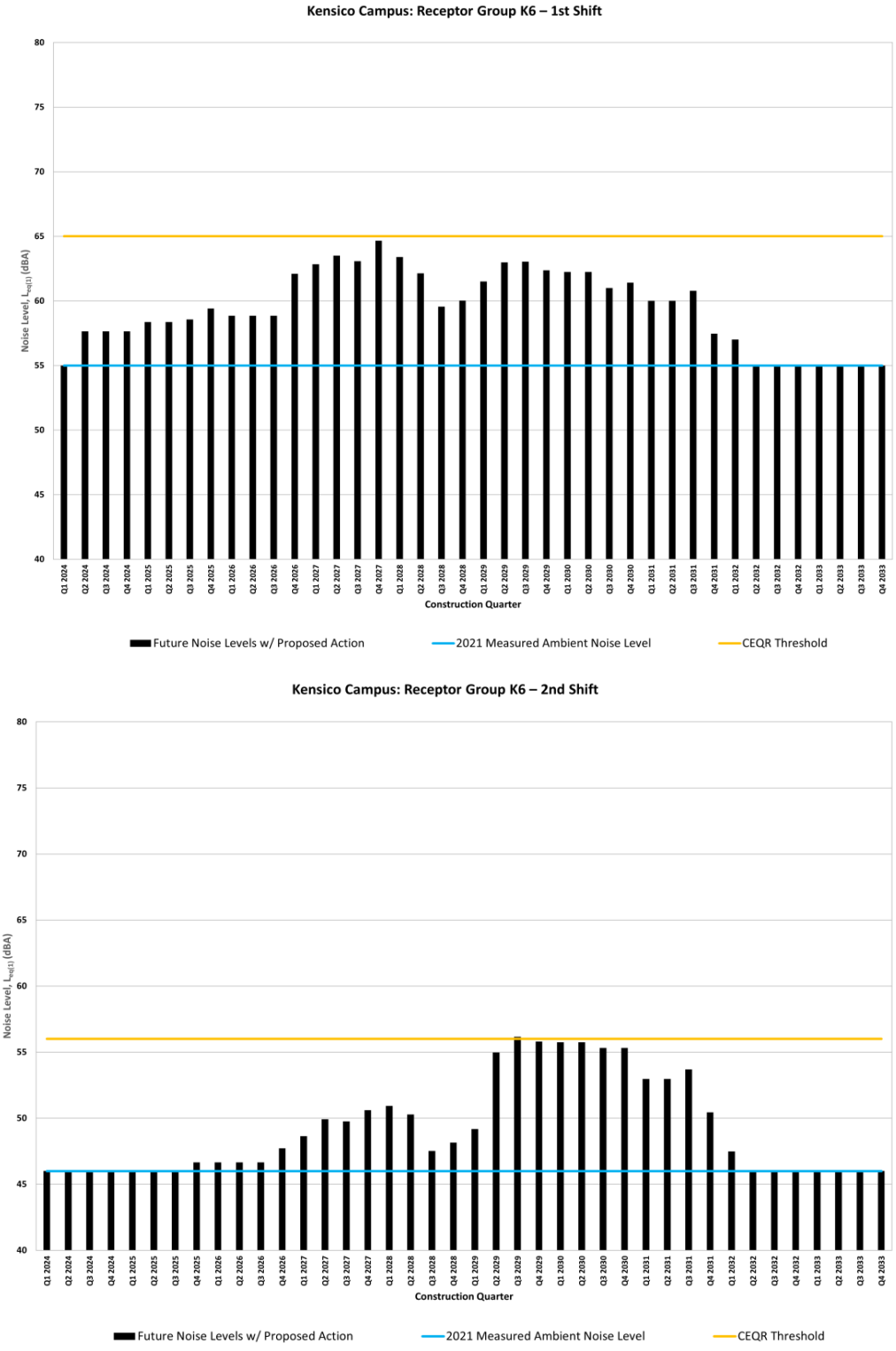


Figure 3.13-16. Future with Proposed Action Projected Noise Profile for Receptor Group K6

Table 3.13-14. Kensico Campus: Maximum Construction Noise Levels at 400 feet from the Construction Site Compared to the Town of Mount Pleasant Noise Code (L_{10}, dBA)

Receptor Area	Peak Construction Quarter[(1)]	Maximum Predicted Construction-Only Noise Level	Town of Mount Pleasant Noise Code Limit[(2)]	Exceedance
North	7 to 8 AM Q2 2027 Q4 2027	62	80	No
South		59	55	Yes
East		NA [(3)]	NA	NA
West		62	55	Yes
North	8 AM to 6 PM Q2 2027 Q4 2027	62	75	No
South		59	70	No
East		NA [(3)]	NA	NA
West		62	70	No
North	6 to 11:30 PM Q2 2027 Q3 2029	54	80	No
South		53	55	No
East		NA [(3)]	NA	NA
West		60	55	Yes

Notes:
Gray highlighted cells represent the noise levels that were predicted to exceed the Town of Mount Pleasant Noise Code limits.
(1) The analysis was performed for peak and shoulder peak construction quarters.
(2) The Town of Mount Pleasant noise code limits described in Section 3.13.3.2 have been established based upon the land use type (e.g., residential or non-residential) and the period of the day (e.g., daytime, nighttime, normal business hours).
(3) The Kensico Reservoir is located east of the proposed construction site. In addition, no residential receptors are present 400 feet from Kensico Campus to the north-northeast.

KEC Eastview Site

The on-site construction activities proposed at the KEC Eastview Site are shown on **Figure 3.13-17**. Detailed noise modeling analyses were performed to determine the potential maximum noise levels ($L_{eq(1)}$) that would be expected to occur during the peak stationary construction quarters identified in **Table 3.13-5** due to on-site construction equipment and construction-related vehicles located immediately adjacent to the KEC Eastview Site. The dominant construction noise is predicted to occur at the following three construction areas within the KEC Eastview Site:

- KEC Shaft 2C Area (including Eastview Connection Chamber)
- Stockpile Area
- KEC Eastview Site Remaining Soil Pile Removal Area

Figure 3.13-17. On-site Construction Activities – KEC Eastview Site

The peak and shoulder peak stationary construction quarters selected for detailed noise modeling for the KEC Eastview Site are listed in **Table 3.13-5**. The identified construction quarters result in the highest potential noise impacts for the surrounding noise receptors. Predicted worst-case noise contours resulting from these KEC Eastview Site on-site construction activities during the applicable peak and shoulder peak stationary construction quarters are shown graphically on **Figure 3.13-18** through **Figure 3.13-22**. The contours graphically show the extent of the predicted construction noise levels in the community beyond the representative sensitive noise-receptor sites.

CEQR Construction Noise

Predicted overall, $L_{eq(1)}$ noise levels for the peak and shoulder peak stationary construction quarters are provided separately for each of the six representative sensitive noise-receptor sites in **Table 3.13-15** to **Table 3.13-20**.

Construction Noise Profiles

As previously stated, noise levels caused by construction activities would vary widely and fluctuate during the construction period. Quarterly noise profiles were therefore developed for the first shift (7 AM to 3:30 PM) and second shift (3 to 11:30 PM) of the overall construction duration.

Maximum noise levels as a result of the proposed construction around the KEC Eastview Site from the first and second shifts are summarized below for Receptor Group E2 and shown on the noise profiles on **Figure 3.13-23** and **Figure 3.13-24**. Receptor Group E2 represented the only location with noise levels above the CEQR construction noise screening threshold of 10 dBA. The noise profiles depict the predicted peak or maximum noise levels as well as the shoulder peak noise levels for a longer construction duration (i.e., the duration of proposed construction versus the peak or shoulder peak quarter) than identified in **Table 3.13-15** to **Table 3.13-20**. Further evaluation for Receptors Groups E3 through E6 are not warranted since the predicted noise levels at these receptor locations during peak construction activities would be below the CEQR construction noise screening threshold of 10 dBA, as shown in **Table 3.13-15** and **Table 3.13-17** through **Table 3.13-20**.

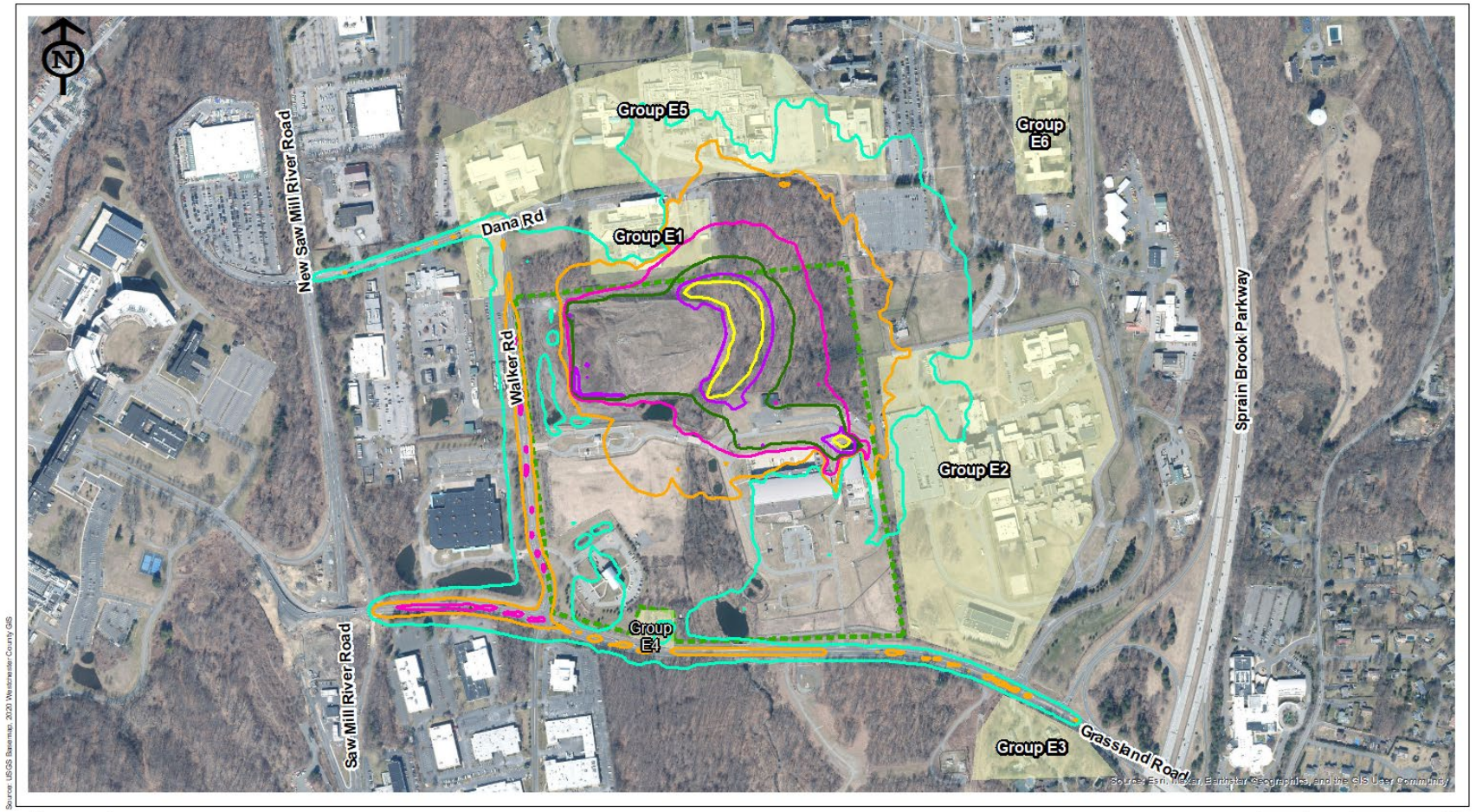


Figure 3.13-18. Peak Construction Noise Contours - 1st Shift, First Quarter of 2025 – KEC Eastview Site

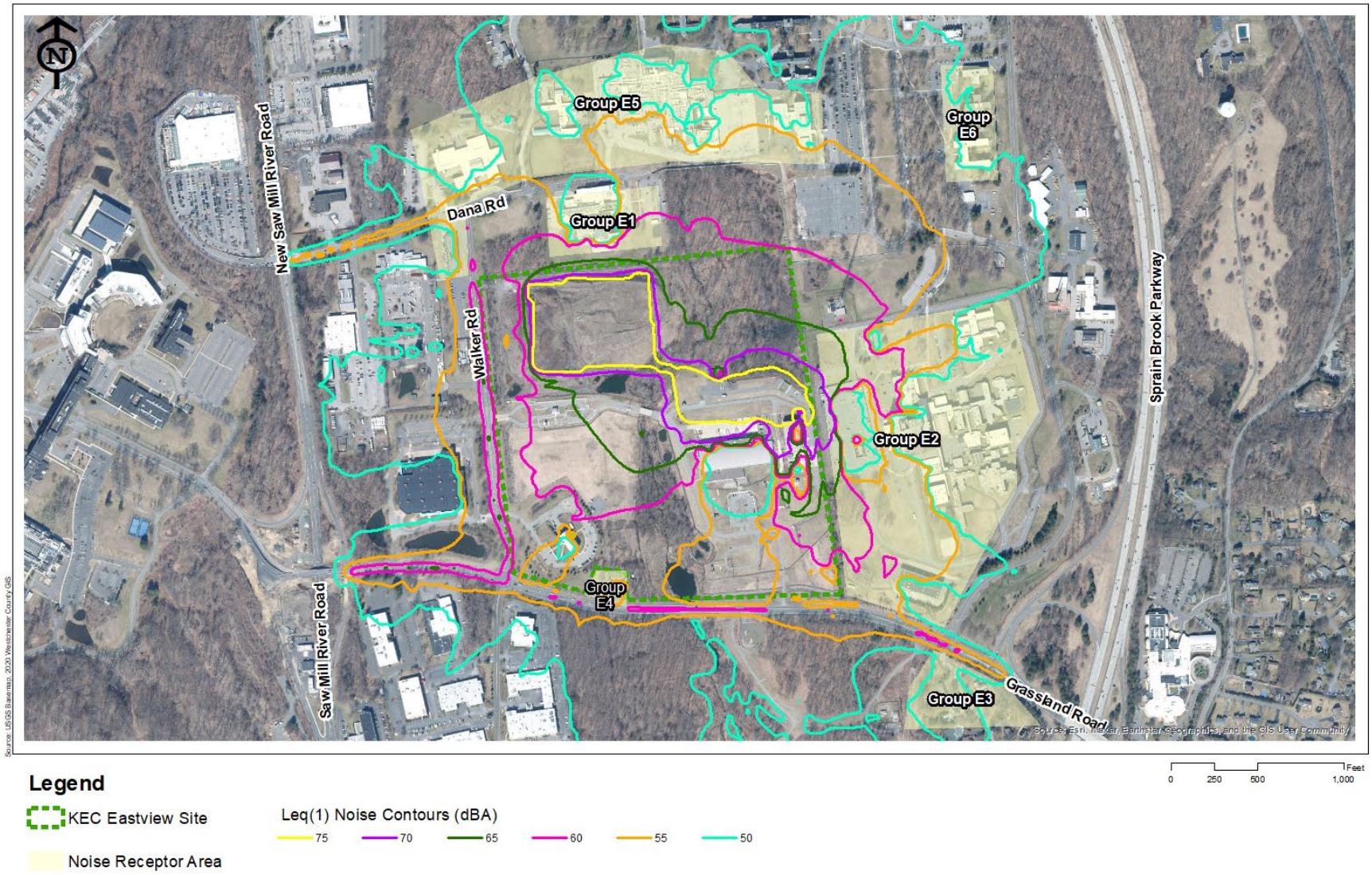


Figure 3.13-19. Secondary Peak Construction Noise Contours - 1st Shift, Second Quarter of 2029 –KEC Eastview Site

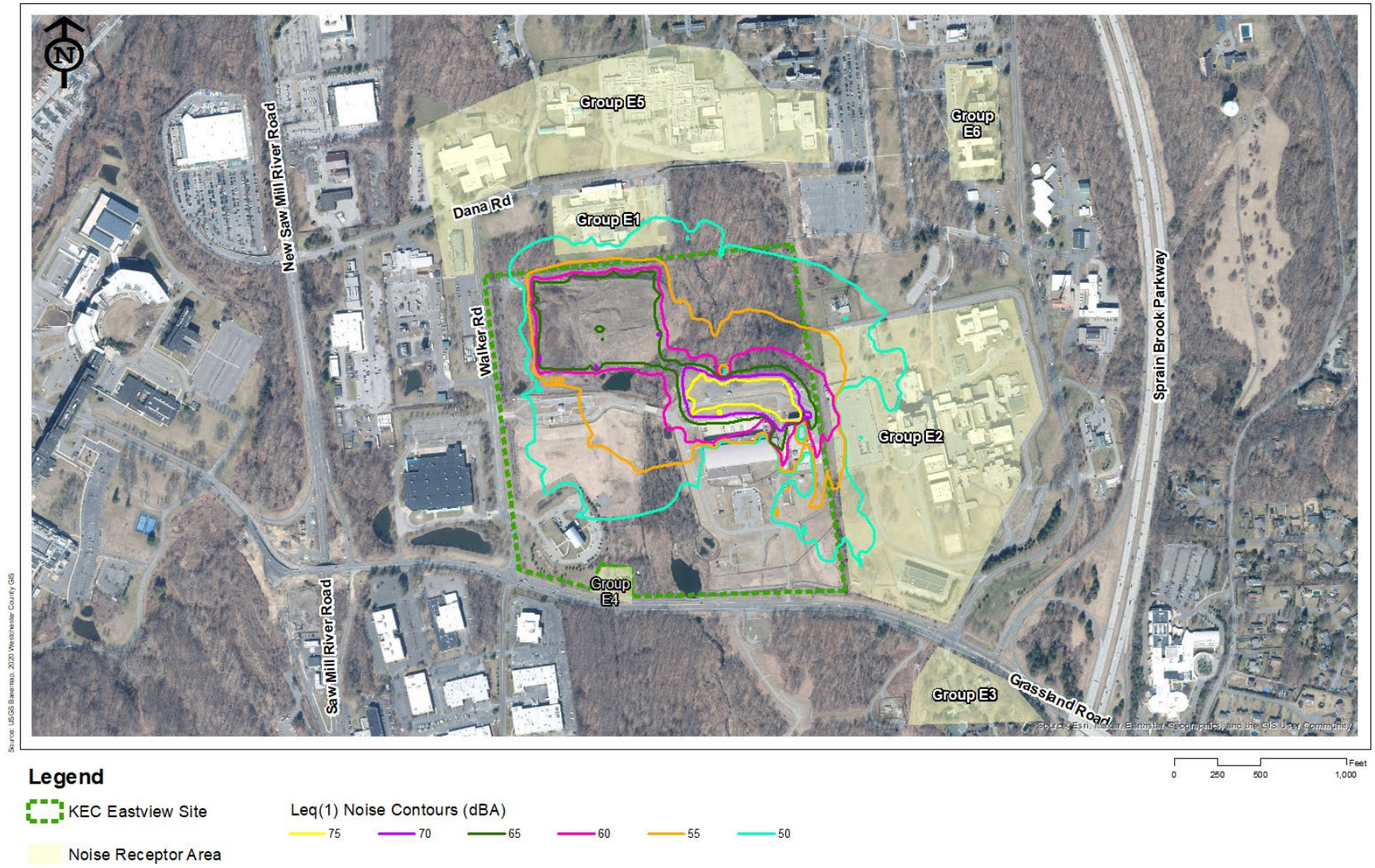


Figure 3.13-20. Peak Construction Noise Contours - 2nd Shift, Third Quarter of 2025 – KEC Eastview Site

Figure 3.13-21. Secondary Peak Construction Noise Contours - 2nd Shift, Third Quarter of 2029 – KEC Eastview Site

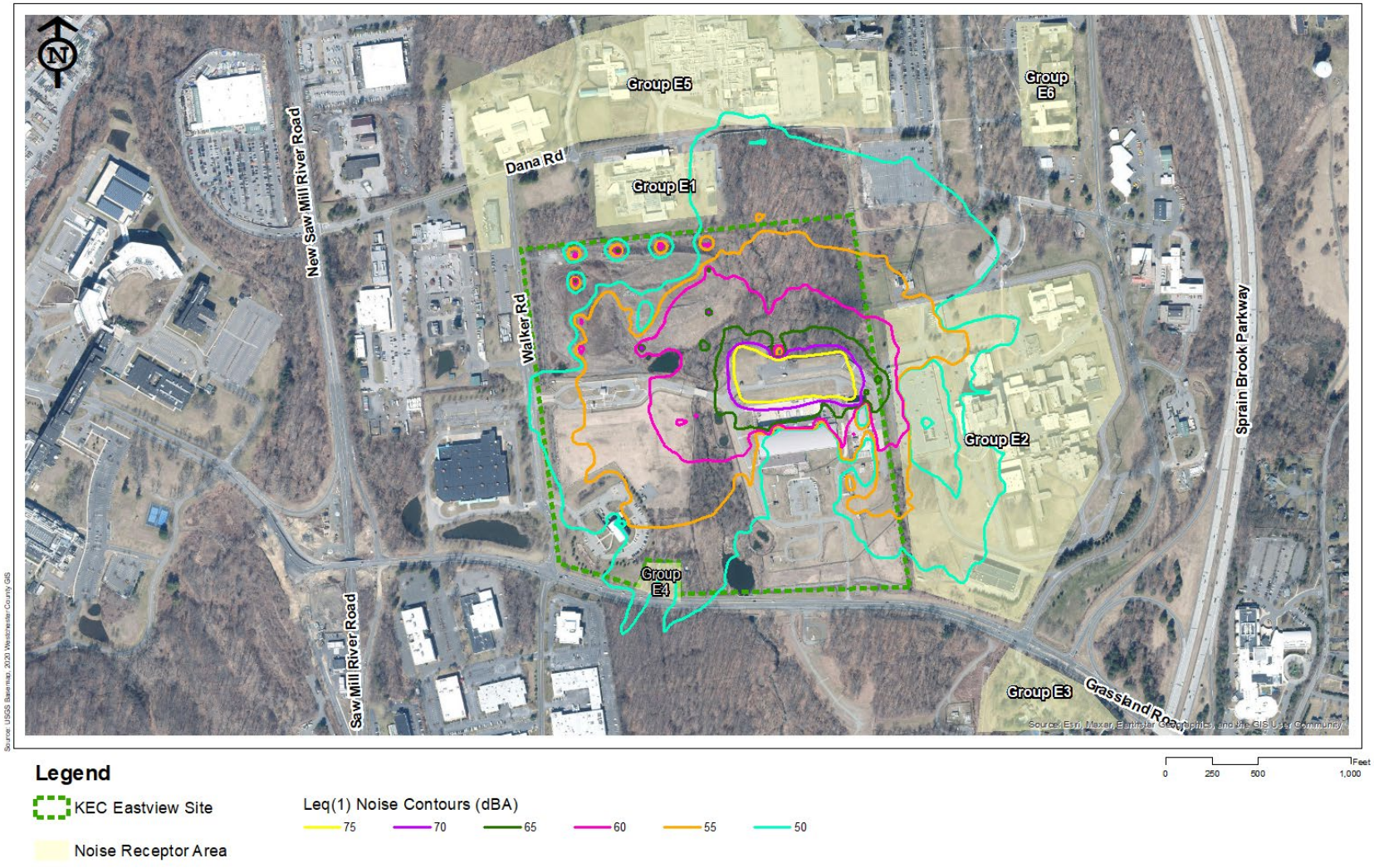


Figure 3.13-22. Peak Construction Noise Contours - 2nd Shift, Second Quarter of 2027 – KEC Eastview Site

Table 3.13-15. Predicted Construction Noise Levels at Receptor E1, Westchester County Department of Laboratories and Research

Construction Quarter[(1)]	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only[(2)]	Future with the Proposed Action[(3)]	Difference[(4)]
Q1 2025 1st Shift	48	55.9	56.6	8.6
Q2 2029 1st Shift	48	56.7	57.2	9.2
Q3 2025 2nd Shift	48	46.0	50.1	2.1
Q3 2029 2nd Shift	48	54.8	55.6	7.6
Q2 2027 3rd Shift	48	47.5	50.8	2.8

Notes:

(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM. The 3rd shift of construction would consist of the hours of 11 PM to 7:30 AM.

(2) Exterior uses at the facility include one bench for outdoor seating near the northeast façade of the building and an outdoor courtyard area in the middle of a donut-shaped building. Predicted noise levels for the facility are reported at the front bench. Predicted noise levels at the outdoor courtyard area would be less than those predicted at the bench due to the noise level reduction that would be provided by the building itself.

(3) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.

(4) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-16. Predicted Construction Noise Levels at Receptor E2, Westchester County Corrections Complex

Construction Quarter[(1)]	Noise Levels, L_{eq}, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q1 2025 1st Shift	49	52.8	54.3	5.3
Q2 2029 1st Shift	49	65.4	65.5	16.5
Q3 2025 2nd Shift	51	55.0	56.5	5.5
Q3 2029 2nd Shift	51	61.5	61.9	10.9
Q2 2027 3rd Shift	51	58.1	58.9	7.9

Notes:
Gray highlighted cells represent the noise levels that were predicted to exceed the CEQR construction noise screening threshold of 10 dBA above existing ambient noise levels.
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM. The 3rd shift of construction would consist of the hours of 11 PM to 7:30 AM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-17. Predicted Construction Noise Levels at Receptor E3, Residence at 40 Taylor Road

Construction Quarter[(1)]	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q1 2025 1st Shift	59	44.0	59.1	0.1
Q2 2029 1st Shift	59	51.8	59.8	0.8
Q3 2025 2nd Shift	55	40.5	55.2	0.2
Q3 2029 2nd Shift	55	47.6	55.7	0.7
Q2 2027 3rd Shift	55	43.0	55.3	0.3

Notes:
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM. The 3rd shift of construction would consist of the hours of 11 PM to 7:30 AM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-18. Predicted Construction Noise Levels at Receptor E4, Residence at 111 Grasslands Road (Hammond House)

Construction Quarter[(1)]	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q1 2025 1st Shift	62	50.7	62.3	0.3
Q2 2029 1st Shift	62	56.3	63.0	1.0
Q3 2025 2nd Shift	57	46.5	57.4	0.4
Q3 2029 2nd Shift	57	55.9	59.5	2.5
Q2 2027 3rd Shift	57	52.4	58.3	1.3

Notes:
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM. The 3rd shift of construction would consist of the hours of 11 PM to 7:30 AM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-19. Predicted Construction Noise Levels at Receptor E5, Westchester County Juvenile Detention Center near Dana Road

Construction Quarter[(1)]	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action[(2)]	Difference[(3)]
Q1 2025 1st Shift	58	49.3	58.5	0.5
Q2 2029 1st Shift	58	54.3	59.5	1.5
Q3 2025 2nd Shift	56	43.3	56.2	0.2
Q3 2029 2nd Shift	56	52.9	57.7	1.7
Q2 2027 3rd Shift	56	43.6	56.2	0.2

Notes:
(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM. The 3rd shift of construction would consist of the hours of 11 PM to 7:30 AM.
(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.
(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

Table 3.13-20. Predicted Construction Noise Levels at Receptor E6, New York Medical College Dormitory at 15 Oval Connector Road

Construction Quarter (1)	Noise Levels, $L_{eq(1)}$, dBA			
	2021 Measured Ambient	Predicted Construction-Only	Future with the Proposed Action(2)	Difference(3)
Q1 2025 1st Shift	60	45.9	60.2	0.2
Q2 2029 1st Shift	60	51.8	60.6	0.6
Q3 2025 2nd Shift	57	41.1	57.1	0.1
Q3 2029 2nd Shift	57	49.5	57.7	0.7
Q2 2027 3rd Shift	57	44.5	57.2	0.2

Notes:

(1) The analysis was performed for the peak and shoulder peak construction quarters. The 1st shift of construction would consist of the hours of 7 AM to 3:30 PM. The 2nd shift of construction would consist of the hours of 3 to 11:30 PM. The 3rd shift of construction would consist of the hours of 11 PM to 7:30 AM.

(2) The future with the Proposed Action noise level was based on the logarithmic addition of the measured ambient noise level and the predicted construction-only noise level.

(3) The noise level difference was calculated by subtracting the noise levels in the future with the Proposed Action from existing conditions (the measured ambient noise level); may differ slightly due to rounding.

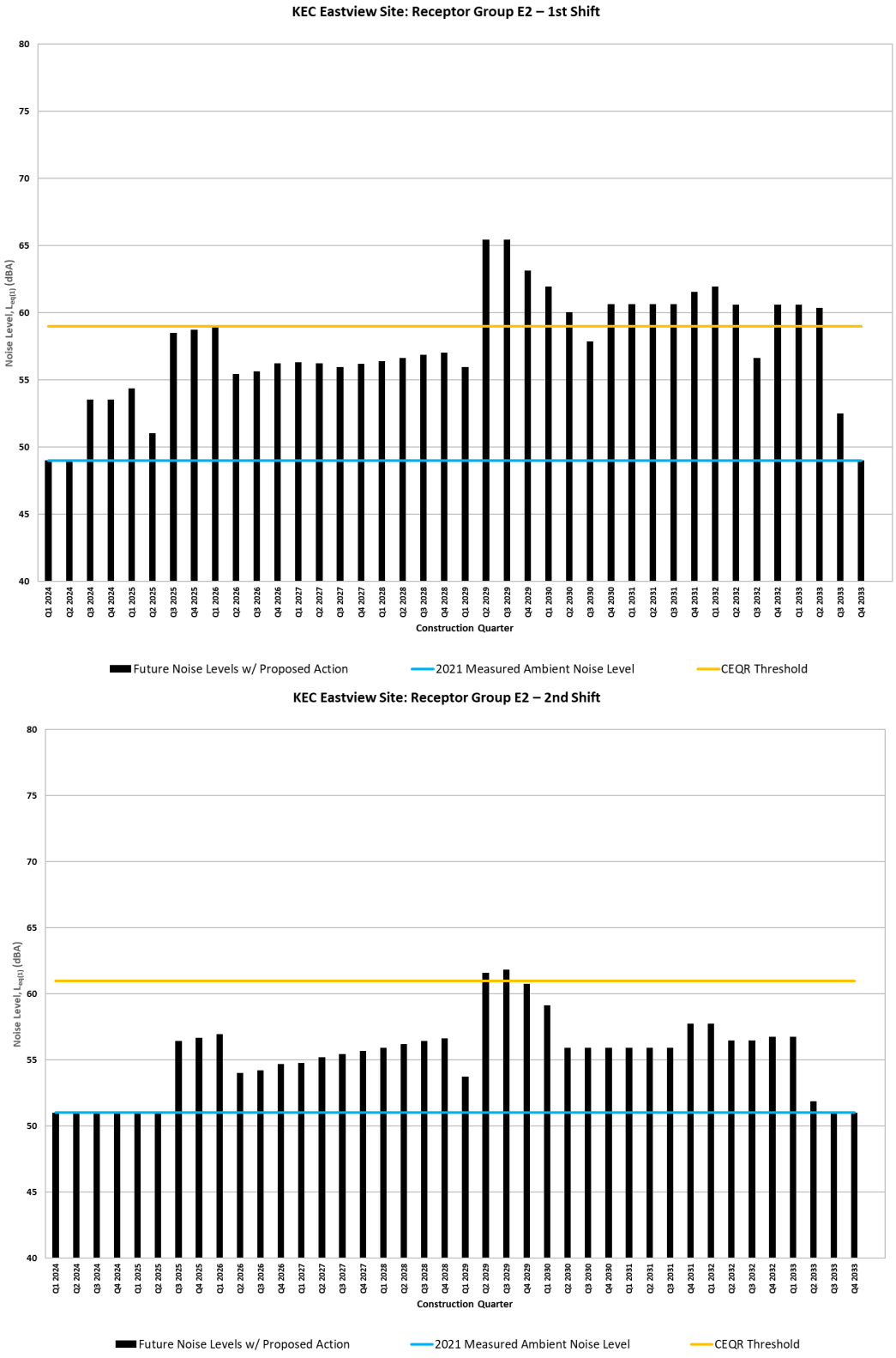


Figure 3.13-23. Future with Proposed Action Projected Noise Profile for Receptor Group E2

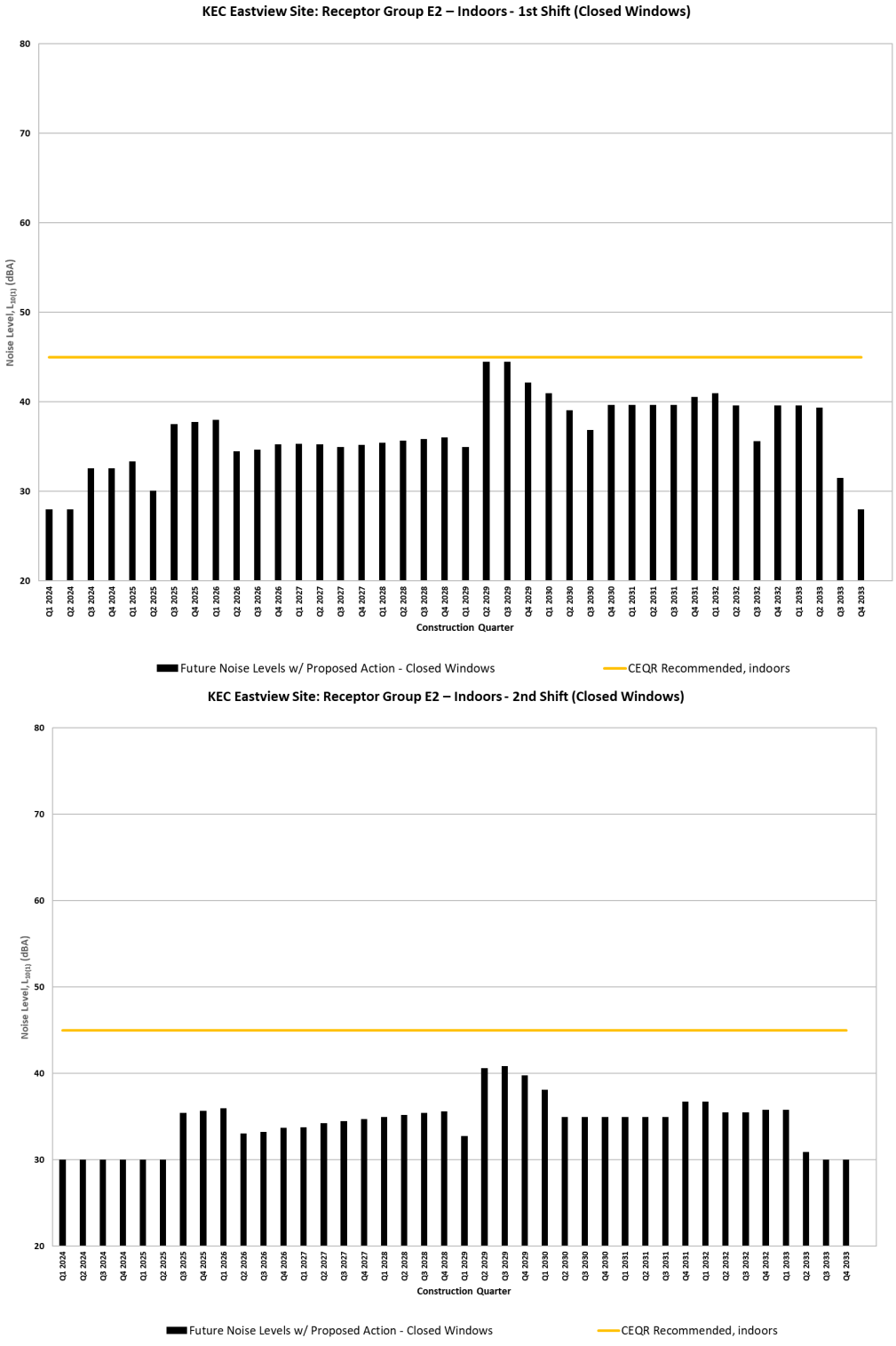


Figure 3.13-24. Future with Proposed Action Projected Noise Profile for Receptor Group E2

- Receptor Group E2

  Receptor Group E2 is located immediately east of the KEC Eastview Site and includes the Westchester County Corrections complex. As shown on **Figure 3.13-23**, the maximum future with the Proposed Action noise levels at these receptors during the first shift of construction would range from 49 to 65.5 dBA $L_{eq(1)}$. Maximum future with the Proposed Action noise levels at these receptors during the second shift of construction would range from 51 to 61.5 dBA $L_{eq(1)}$, and 51 to 58.9 dBA $L_{eq(1)}$ during the third shift of construction. The dominant construction activities contributing to these predicted maximum noise levels would be those associated with KEC Shaft 2C construction and the stockpile removal area at the northern edge of the KEC Eastview Site, as well as the ECC area to the east.

  Based on the noise profile shown on **Figure 3.13-23**, the future with the Proposed Action noise levels would be above the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level of 49 dBA during the first shift of construction for approximately 45 months. Future with the Proposed Action noise levels would be slightly (up to 0.9 dBA) above the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level of 51 dBA during the second shift of construction for approximately six months. Noise level increases during the remaining periods of construction, including the third shift of construction activities, would be below the CEQR construction noise screening threshold of 10 dBA.

  The highest future with the Proposed Action noise levels predicted at the Westchester County Corrections complex would be located at the main multi-level building that includes predominantly inmate housing, as well as support office spaces. Similar noise levels are predicted at the stand-alone building in the northeast area of the complex, which also functions as predominantly inmate housing and support office space. Both of these buildings have minimal operable windows (i.e., windows that can be opened); however, it is assumed that the operable windows are present in the office space of these buildings but not within the housing areas. All other buildings in the complex either have no operable windows, have non-critical area uses such as a staff training center and recreational areas, or are predicted to have lower noise levels than those buildings that would be exposed to worst-case noise levels in the complex due to shielding and distance loss.

  As shown on **Figure 3.13-24**, the worst-case interior noise levels at the inmate housing areas at the Westchester County Corrections complex are not predicted to exceed the CEQR interior threshold of 45 dBA L_{10} for interior land uses, based on a typical transmission loss of 24 dBA for closed double-glazed windows.

Town of Mount Pleasant Noise Code

As listed in **Table 3.13-21**, noise levels due to construction activities are not predicted to exceed the Town of Mount Pleasant residential and non-residential noise code limits at 400 feet from the KEC Eastview Site.

Table 3.13-21. KEC Eastview Site: Construction Noise Levels at 400 feet from the Construction Site Compared to the Town of Mount Pleasant Code (L_{10}, dBA)

Receptor Area	Peak Construction Quarter(1)	Maximum Predicted Construction-Only Noise Level	Town of Mount Pleasant Noise Code Limit(2)	Exceedance
North	7 to 8 AM Q1 2025 Q2 2029	59	80	No
South		54.8	55	No
East		65	80	No
West		56	80	No
North	8 AM to 6 PM Q1 2025 Q2 2029	59	75	No
South		55	70	No
East		65	75	No
West		56	75	No
North	6 to 11:30 PM Q3 2025 Q3 2029	58	80	No
South		51	55	No
East		61	80	No
West		55	80	No
North	11:00 PM to 7:30AM Q2 2027	50	80	No
South		46	55	No
East		57	80	No
West		49	80	No

Notes:
(1) The analysis was performed for peak and shoulder peak construction quarters.
(2) The Town of Mount Pleasant noise code limits described in Section3.13.3.2 have been established based upon the land use type (e.g., residential or non-residential) and the period of the day (e.g., daytime, nighttime, normal business hours).

Construction Control Measures

As part of the Proposed Action, various control measures would be routinely used to minimize construction-related noise emissions during construction, as applicable and appropriate.

Construction control measures may include, but not be limited to:

- Preparation and implementation of a Construction Noise Mitigation Plan
- Ensuring equipment is regularly and properly maintained
- Use of appropriate manufacturer's noise reduction device(s)

- Ensuring engine housing doors are kept closed, and using noise-insulating material mounted on the engine housing
- Covering portable compressors, generators, pumps, and other such devices with noise-insulating fabric to the maximum extent possible
- Limiting vehicle engine idling
- Operating equipment at lower speeds during the work to the maximum extent possible
- Using quieter back-up alarms

3.13.7.2 Mobile Sources

As described in Section 3.13.4.4, "Mobile Sources," based on the results of the mobile noise screening assessment, a detailed mobile source noise analysis was conducted for the Q4 2027 Weekend AM Construction Traffic Peak Hour (6 to 7 AM) at two mobile noise locations (M13 and M14). This analysis was undertaken to determine if construction vehicles associated with the Proposed Action would have the potential to cause a significant adverse impact at noise-sensitive receptors adjacent to roads leading to and from the Kensico Campus and KEC Eastview Site, as opposed to stationary noise produced during construction activities.

The TNM results for the Q4 2027 Weekend AM Construction Traffic Peak Hour are summarized in **Table 3.13-22**.

Table 3.13-22. Peak $L_{eq(1)}$ Mobile Noise Analysis Results

Location	Measured Ambient Noise Level (dBA)	Future without the Proposed Action Noise Level (dBA)	Future without the Proposed Action with Measured Ambient Noise Level (dBA)	Future with the Proposed Action Noise Level (dBA)	Future with the Proposed Action with Measured Ambient Noise Level (dBA)	Noise Difference (dBA)
M13 - Lakeview Avenue near Pamela Lane	65.6	52.6	65.8	55.9	66.4	0.6
M14 - Lakeview Avenue near Colonial Lane	48.4	47.9	51.2	52.2	53.7	2.5

As indicated in the *CEQR Technical Manual* (Chapter 19, Section 410), nighttime hours are considered to be from 10 PM to 7 AM and are a particularly critical time period relative to potential nuisance values for noise level increases. Therefore, an increase of 3 dBA $L_{eq(1)}$ or

greater above the existing ambient noise level is typically considered an impact during nighttime hours. The predicted future with the Proposed Action noise levels at M13 and M14 would not result in an increase greater than 3 dBA. Therefore the CEQR noise criteria would not be exceeded resulting in no significant noise impacts along construction truck routes.

3.13.7.3 Blasting and Vibration

Rock blasting proposed during construction would cause potential vibration and noise impacts to on-site structures, neighboring structures and sensitive receptors from the detonation of explosive charges. Blasting is proposed at several locations at the Kensico Campus including KEC Shaft 1C, KEC Screen Chamber, UEC Shaft, Dike Grade Return Tunnel, KEC Shaft 1C Connection Tunnel, and UEC Connection Tunnel. Blasting is also proposed at the KEC Eastview Site at KEC Shaft 2C.

Ground-borne vibration dominates structural vibration close to the source while airborne vibration (air overpressure) dominates at greater distances (Siskind et al. 1989). The U.S. Bureau of Mines recommends the structural vibration criteria below in its report entitled *Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting* (Siskind et al. 1989):

- 0.5 in/s for older homes
- 2.0 in/s for modern structures

Airborne vibration in terms of air overpressure can cause structural shaking and window rattling, which can concern and annoy occupants. A U.S. Bureau of Mines study, *Structure Response and Damage Produced by Airblast from Surface Coal Mining* (Siskind et al. 1980), correlated airborne vibration levels from the use of explosives.

Blasting events that would occur as a part of the Proposed Action at the Kensico Campus and KEC Eastview Site would potentially occur up to three times per day at each site. As part of this blasting, all feasible control measures including but not limited to full enclosure, covering open blasts with blast mats, monitoring and/or reducing net explosive weight would be considered and implemented as necessary to ensure no excessive ground-borne vibration and vibration noise in terms of air overpressure would occur. A vibration and noise monitoring program would also be implemented as part of the Proposed Action at nearby structures, as applicable, to monitor blast vibration and noise effects and to address potential vibration and noise complaints associated with the blasting activities.

Based upon the vibration analyses and predictions performed for rock blasting activities proposed at Kensico Campus, no exceedances of the 0.5 in/s vibration level were predicted at any off-site structures including school buildings and residential houses. Therefore, no potential significant vibration and noise impacts would occur. As the distances from off-site structures at

the KEC Eastview Site to potential shaft or tunnel blasting activities would be much greater than that at Kensico Campus, no potential significant vibration impacts are likewise anticipated at this site.

3.13.8 CONCLUSION

Based on the stationary noise analysis performed, the future with the construction of the Proposed Action noise levels would be below the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level for Receptor Groups K2 through K4 in proximity to the Kensico Campus and E1, and E3 through E6 in proximity to the KEC Eastview Site.

Receptor Group K1 is located immediately north of the Kensico Campus and consists of the Valhalla Middle and High Schools. The maximum predicted noise levels due to construction of the Proposed Action would occur at the building façade immediately adjacent to the Kensico Campus. The future with the Proposed Action exterior noise levels would be above the construction noise threshold of 10 dBA above the measured existing ambient noise level. Interior noise levels at the Valhalla Middle and High Schools are predicted to exceed the CEQR interior threshold of 45 dBA L_{10} during the first and second shifts of construction. It is anticipated that the second shift of construction activities would potentially affect after school activities, as typical school hours should occur during the first shift. Use of the classrooms in this area of the building during the second shift may be avoided during construction. While interior noise levels due to first shift construction activities are predicted to be up to 52 dBA with an open window condition, this would be comparable to typical noise levels associated with an office or classroom setting. However, windows could be closed temporarily to meet the CEQR interior threshold of 45 dBA L_{10} as needed, such as during colder weather or when quieter noise levels may be required during testing.

For Receptor Groups K5 and K6 located south and west of the Kensico Campus, future with the Proposed Action noise levels would be below the CEQR construction noise screening threshold of 10 dBA above the measured existing ambient noise level during the first shift of construction. Noise level increases during the second shift of construction at these receptor groups are predicted to be slightly above the construction noise threshold of 10 dBA above the measured existing ambient noise level. However, this would only occur for a period of approximately three months, which would represent a short-term construction effect.

For Receptor Group E2 in proximity to the KEC Eastview Site, the worst-case interior noise levels at the inmate housing areas at the Westchester County Corrections complex are not predicted to exceed the CEQR interior threshold of 45 dBA L_{10} for interior land uses, assuming operable windows are not located within sleeping quarters or other noise-sensitive living areas.

Construction activities typically generate noise levels that are noticeable and intrusive but are short-term, temporary and transient. Based on the noise analysis performed, construction of the Proposed Action would not result in significant adverse impacts at nearby noise-sensitive receptors due to on-site construction activities. In addition to the use of anticipated controls on certain construction-related equipment to minimize overall construction noise exposure in the community, various additional control measures would be routinely used to minimize construction-related noise emissions, as applicable and appropriate.

DEP, as part of the required Town of Mount Pleasant site plan approval process would seek required variances for overall construction hours and the Town of Mount Pleasant noise code limits for those periods that would not meet current noise code limits. Construction noise would meet applicable Town of Mount Pleasant noise code limits at the KEC Eastview Site. Construction noise levels at Kensico Campus are also predicted to meet Town of Mount Pleasant code requirements under most conditions, as noted in **Table 3.13-14**. Construction noise levels are predicted to exceed the Town of Mount Pleasant noise code limit of 55 dBA L_{10} at 400 feet from the perimeter of the Kensico Campus during the hours of 7 to 8 AM (south and west of Kensico Campus) and 6 to 11:30 PM (west of the Kensico Campus). The predicted exceedances located west and south of the proposed Kensico Campus are in the proximity to the stockpile area and are primarily due to the on-site transport of soil/rock to and from the stockpile area. While the predicted values represent peak noise levels, these noise sources would be temporary and transient as they would not remain constant during construction but would only occur when on-site transport of materials were occurring over the course of an individual day. In addition, as part of the construction of the Proposed Action, ongoing monitoring of noise levels during construction would be implemented in order to refine actual noise levels encountered during construction versus current projections and to adapt construction and noise control measures, as necessary, to eliminate or minimize potential noise level effects.

For construction vehicles traveling to and from the Kensico Campus and KEC Eastview Site, noise level increases associated with mobile sources at nearby noise-sensitive receptors would not exceed the CEQR noise criteria and would not be perceptible (less than 3 dBA). As such, the Proposed Action would not result in significant adverse impacts at noise-sensitive receptors due to off-site mobile noise sources.

In addition, no potential significant vibration impacts are anticipated at either the Kensico Campus and the KEC Eastview Site.

3.14 WATER AND SEWER INFRASTRUCTURE

The water and sewer infrastructure assessment consisted of identifying potential changes to the conveyance and demand for water supply and sewer infrastructure, sewer discharges associated with the construction of the Proposed Action, and whether these changes affect water and sewer infrastructure within the Kensico Campus and KEC Eastview Site and their one-half mile study areas. The KEC Tunnel itself would not result in a significant water or sewer infrastructure need, but would instead improve DEP's water supply system resiliency, redundancy, and flexibility; therefore, a detailed assessment of the effects to water and sewer infrastructure from construction of the Proposed Action was not conducted.

3.14.1 METHODOLOGY

The infrastructure impact analysis consisted of:

- describing existing conditions within the two project sites, the Kensico Campus and KEC Eastview Site, by identifying existing municipal drinking water supplies and sewer infrastructure locations, as applicable, based on a review of federal, State, and local databases;
- establishing conditions in the future without the Proposed Action by identifying proposed projects within the Kensico Campus and KEC Eastview Site study areas that are anticipated to be completed by the Proposed Action Build Year;
- establishing conditions in the future with the Proposed Action; and
- analyzing potential impacts due to construction of the Proposed Action to water and sewer infrastructure within the Kensico Campus and KEC Eastview Site study areas.

3.14.2 EXISTING CONDITIONS

3.14.2.1 Kensico Campus

Water

Kensico Reservoir is an integral component of the City's water supply system. Water supply to the Kensico Campus and within the one-half mile Kensico Campus study area is provided by the Kensico Water District (see **Figure 3.14-1)**. The Kensico Water District is located in the Towns of Mount Pleasant and New Castle in Westchester County and is operated by the Town of Mount Pleasant Water Department. Water is purchased from the New York City Water Board and is

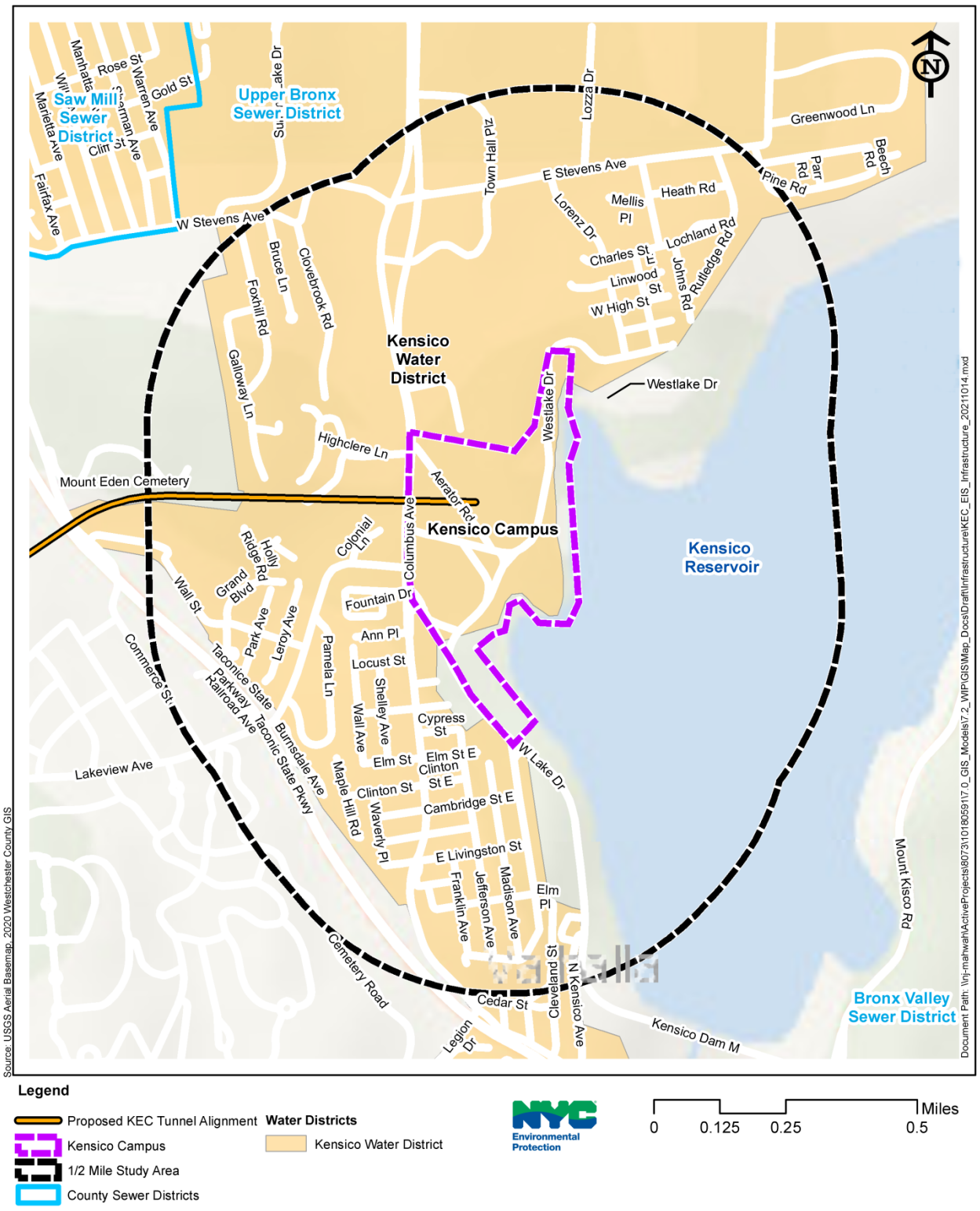


Figure 3.14-1. Water and Sewer Districts – Kensico Campus Study Area

drawn from the Delaware Aqueduct. The Kensico Water District serves over 18,000 people through approximately 5,164 service connections[37]. On an annual basis, the Kensico Water District consumes approximately 760 million gallons of water. There are no known drinking water wells within the Kensico Campus study area based upon a review of NYSDEC's water well inventory.

The Kensico Campus currently has three connections to an existing water main in Columbus Avenue, just north of its intersection with Westlake Drive. These water lines connect to various buildings on the Kensico Campus including, but not limited to, the former Kensico Laboratory building, LEC, and DEL Shaft 18. The UEC is not directly served by any water connections.

Sewer

Sanitary sewer infrastructure within the Kensico Campus and surrounding Kensico Campus study area is primarily provided by Westchester County's Upper Bronx Sewer District and to a lesser extent, private septic systems. The Upper Bronx Sewer District encompasses a large area that includes the Kensico Campus and the one-half mile study area (see **Figure 3.14-1).** The Upper Bronx Sewer District serves the Kensico Campus and connects to Westchester County's Yonkers Joint Wastewater Treatment Plant. In addition, the Town of Mount Pleasant maintains a separate storm sewer system that is currently permitted under a NYSDEC municipal separate storm sewer system (MS4) permit (NYSDEC Permit No. NYR20A188) that encompasses the Kensico Campus.

The Kensico Campus has three existing connections to a 24-inch vitrified clay pipe to the Upper Bronx Sewer District sewer main located in Columbus Avenue. Two connections exist at Westlake Drive consisting of two 6-inch sewer lines; one connects to the LEC, while the second connects to the former Kensico Laboratory building and chemical feed facility. DEL Shaft 18 is served by a separate existing 6-inch sewer line at West Westlake Drive before turning north to Columbus Avenue and connecting to the 24-inch sewer main discussed above. The UEC is not currently served by any sewer connections.

A total of 10 private septic systems were identified within the Kensico Campus study area based on a review of Westchester County's "Mapping Westchester County" ArcGIS database (2021). These septic systems are all located outside the limits of the Kensico Campus, to the south and west. A single residential parcel on Highclere Lane containing a septic system is located within the alignment of the KEC Tunnel.

The storm sewer system within the Kensico Campus study area consists of several 12-inch storm sewer lines that run along Aerator Road, Columbus Avenue, and Westlake Drive. Catch basins

[37] https://www.mtpleasantny.com/sites/g/files/vyhlif4741/f/uploads/2020_kensico_wd.pdf.

along these roadways convey stormwater to the storm sewer lines before their eventual discharge to streams on the western side of Columbus Avenue. These discharge locations are discussed in more detail within Section 3.8, "Water Resources."

3.14.2.2 KEC Eastview Site

Water

Water supply for the KEC Eastview Site and within the one-half mile study area are provided by Westchester County Water District No. 3 and Greenburgh Consolidated Water District No. 1 (see **Figure 3.14-2)**. Westchester County Water District No. 3 serves over 6,000 people through approximately 100 service connections. Westchester County Water District No. 3 obtains its water from the Catskill and Delaware aqueducts. The district also has the ability to source potable water from the Town of Greenburgh. On an annual basis, Westchester County Water District No. 3 consumes approximately 246 million gallons of water.

Greenburgh Consolidated Water District No. 1 encompasses the southern and western portion of the one-half mile study area. This district, however, does not provide any supply to the KEC Eastview Site, as illustrated on **Figure 3.14-2**. The Town of Greenburgh Water and Sewer Department operates Greenburgh Consolidated Water District No. 1. Water is sourced from the New York City Water Board and is drawn from the Catskill and Delaware aqueducts. Greenburgh Consolidated Water District No. 1 currently serves approximately 40,000 people through 10,500 service connections[38]. Approximately 2.6 billion gallons of water was consumed in 2020 within Greenburgh Consolidated Water District No. 1.

No drinking water wells within the KEC Eastview Site study area were identified based upon a review of NYSDEC's water well inventory.

Sewer

The KEC Eastview Site is served by the Saw Mill Sewer District and the KEC Eastview Site study area is served by the Saw Mill and Upper Bronx Sewer Districts. An existing 18-inch reinforced concrete pipe carries flows from the existing DEP Police booth and CDUV Facility to a Westchester County sewer main located just outside the eastern limits of the KEC Eastview Site. Both the Saw Mill and Upper Bronx Sewer Districts connect to Westchester County's Yonkers Joint Wastewater Treatment Plant.

[38] https://greenburghny.com/DocumentCenter/View/7972/2020-Greenburgh-Water-Quality-Report.

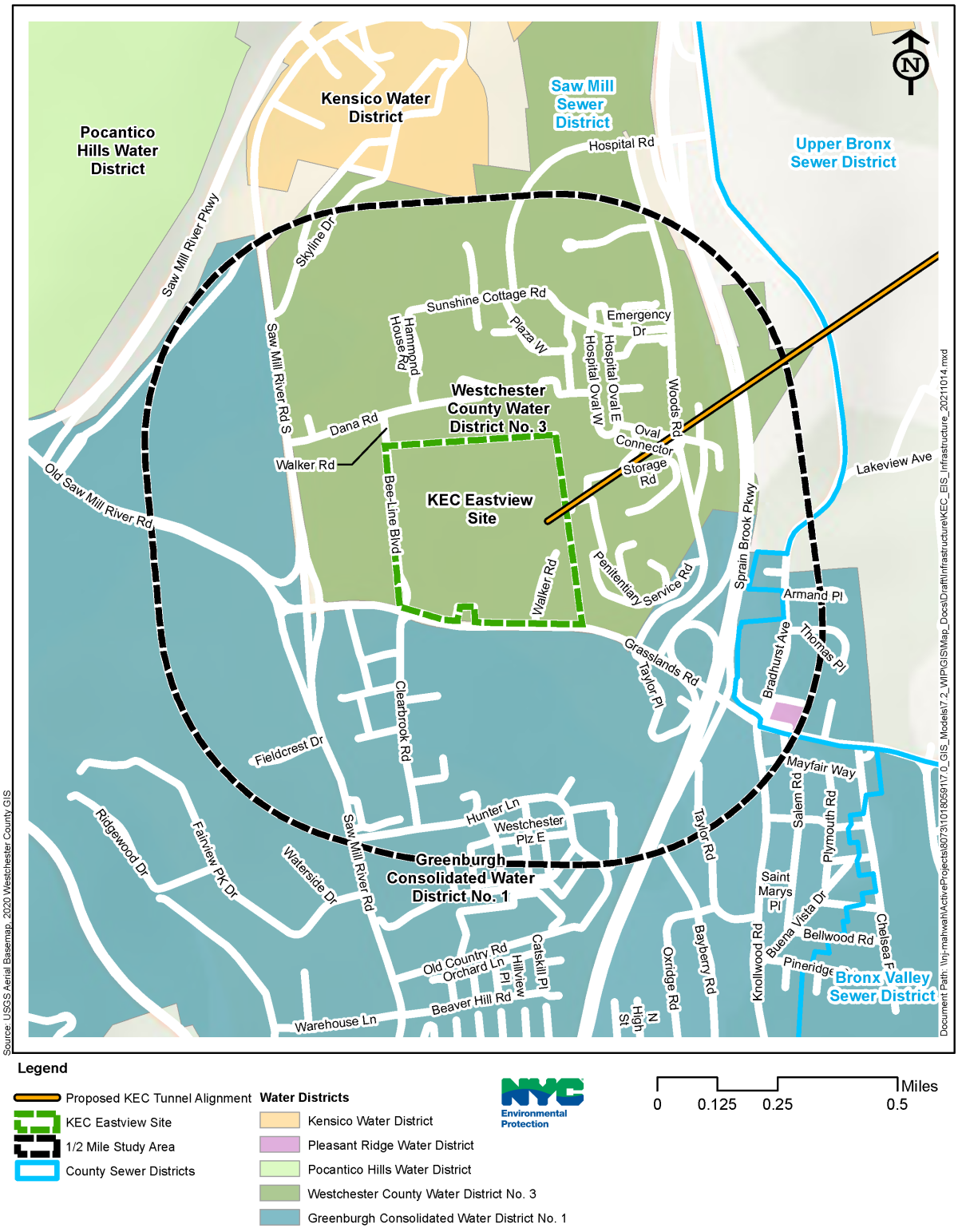


Figure 3.14-2. Water and Sewer Districts – KEC Eastview Site Study Area

Based upon a review of available databases, there are five septic systems within the KEC Eastview Site study area. These septic systems are all located significantly outside the limits of the KEC Eastview Site. One system is associated with a private parcel off Old Farm Road, one system serves a commercial parcel between Bradhurst Avenue and the northbound lane of the Sprain Brook Parkway, and three systems are associated with private parcels off Taylor Road.

The existing on-site storm sewer system consists of 18-inch reinforced concrete pipes that collect flows from across the KEC Eastview Site. The pipes connect to several existing on-site sedimentation basins, drainage swales and bioretention ponds located throughout the KEC Eastview Site. Stormwater basins are located in proximity to Mine Brook that traverses the KEC Eastview Site north to south. Ponds or basins are located west of the northwest corner of the CDUV Facility on the east and west side of Mine Brook, the southwest corner of the CDUV Facility to the east of Mine Brook, and at the northeast corner of the intersection of Walker Road and the access road to the CDUV Facility. An existing 24-inch reinforced concrete pipe runs down Walker Road. Catch basins located along Walker Road convey stormwater to the 24-inch pipe before their eventual discharge to existing off-site bioretention ponds.

3.14.3 FUTURE WITHOUT THE PROPOSED ACTION

Several DEP projects, independent of the Proposed Action, would be implemented in the future without the Proposed Action, primarily at the Kensico Campus. These include the Waterfowl Management Program Building, the Kensico Regional Headquarters, and several minor projects, repairs, and/or replacement efforts at DEL Shaft 18. DEP projects at the KEC Eastview Site include the installation of cleanouts and foundation drain modifications at the CDUV Facility and a potential solar project including carport canopies and rooftop solar. While the Waterfowl Management Program Building would include the installation of approximately 400 feet of new sanitary sewer piping, this new connection would not require modification to the existing sewer lines. None of these projects would result in any significant changes to water and sewer infrastructure needs over existing conditions.

Three non-DEP projects, all part of Regeneron Pharmaceuticals, located just under one-half mile west of the KEC Eastview Site, have also been planned: the Landmark at Eastview North Campus Redevelopment, Landmark at Eastview South Campus Parcel D, and the Regeneron Greenburgh Expansion. These projects include the expansion of laboratory/research buildings and office space and are within the Saw Mill Sewer District that encompasses the KEC Eastview Site. The EISs for these projects noted that the sewer district has the capacity to accommodate additional demand from these projects. Water supply for these projects would be provided by the Greenburgh Consolidated Water District No. 1, which does not include the KEC Eastview Site. No substantive changes to existing water and sewer infrastructure due to these future without the

Proposed Action projects are anticipated. It is assumed that water and sewer infrastructure needs would remain comparable to existing conditions.

3.14.4 FUTURE WITH THE PROPOSED ACTION

3.14.4.1 Kensico Campus

Water

Proposed construction at the Kensico Campus is not expected to result in significant new demand for water or additional infrastructure needs beyond that anticipated upon completion of the Proposed Action. To support the construction, temporary construction trailers would be required, which are currently anticipated to be located on the south side of the relocated Westlake Drive in the northwest portion of the Kensico Campus. A new water service line would be installed to connect the temporary construction trailers to existing water service. After construction is completed, the temporary construction trailers would be removed, and the new water service connection would be abandoned and/or removed. A new water service line would be installed to connect the KEC Screen Chamber to existing water service to allow the Town of Mount Pleasant to be able to eventually draw water from the KEC Screen Chamber. These connections may include temporary service interruptions but are not anticipated to cause a significant effect to the rest of the water district. As part of the Proposed Action, Westlake Drive would be closed to the public. However, DEP would coordinate with the Town of Mount Pleasant and/or Westchester County to allow continued access to their water lines located within Westlake Drive during and after construction. While construction activities would result in a temporary increase in the worker population at the Kensico Campus, this increase in staff would only be over the duration of construction of the Proposed Action at the Kensico Campus and would not represent a permanent change in population at the Kensico Campus, therefore, no significant adverse effect to water demand or infrastructure would occur. Likewise, other construction-related water needs for dust control or other purposes would also not result in significant or permanent increases in water demand.

Sewer

As part of construction of the Proposed Action at the Kensico Campus, a new sanitary sewer would also be installed to connect the temporary construction trailers to existing sanitary sewer lines. This may include temporary service interruptions but is not anticipated to cause a significant effect to the rest of the sewer district. No other changes to existing sewer infrastructure at the Kensico Campus for construction of the Proposed Action or within the larger sanitary sewer district are anticipated. No significant and long-term increase in the worker population at the Kensico Campus would occur. Temporary increases due to workers associated with construction of the Proposed Action are anticipated; however, these are not expected to result in wastewater flows that would represent a significant increase in discharges to the sanitary

sewer. Likewise, potential use of the municipal sewer system for other construction-related discharges (e.g., dewatering) would also not be expected to result in a significant adverse effect to the sewer system, the need for improvements to sewer district infrastructure, or the downstream treatment of wastewaters. In addition, all new and temporary connections to the municipal sewer would require prior approval and the proposed construction would meet the requirements associated with these approvals for connection to the sewer system related to use, flow, and/or wastewater quality including on-site treatment of these flows, if applicable. As part of the Proposed Action, Westlake Drive would be closed to the public. However, DEP would coordinate with the Town of Mount Pleasant and/or Westchester County to allow continued access to their sanitary sewers located within Westlake Drive during and after construction. After construction is completed, the temporary construction trailers would be removed, other construction-related wastewaters would cease, and the new sanitary sewer connection would be abandoned and/or removed. As a result, no adverse effect to sewer infrastructure due to construction of the Proposed Action at the Kensico Campus would occur. In addition, the single residential parcel on Highclere Lane containing a septic system located within the alignment of the KEC Tunnel would also not be affected by the proposed construction or future operation of the tunnel. Due to the depth of the tunnel, in relation to the septic that is located closer to the surface, no effects upon this septic system would occur.

Management of stormwater during construction at the Kensico Campus, discussed in more detail in Section 3.8, "Water Resources," would be in accordance with federal, State and local requirements including the acquisition of applicable permits and approvals and the implementation of a comprehensive SWPPP that would lay out the management of stormwater to meet quantity and quality requirements. DEP would coordinate with the Town of Mount Pleasant and/or Westchester County to allow continued access to their storm sewers located within Westlake Drive during and after construction.

3.14.4.2 KEC Eastview Site

Water

A new 6-inch ductile iron pipe (DIP) water service line would be installed to connect a new field office trailer complex to be constructed as part of the construction of the Proposed Action to an existing 8-inch DIP water service line within the KEC Eastview Site. This complex would be located south of the existing access road at the KEC Eastview Site. In addition, water for construction activities would also be required for on-site dust control and for operation of the TBM that would be used to construct the deep rock tunnel. While the proposed construction would result in an increase in on-site construction staffing, this would be temporary for the duration of construction and would not represent a permanent new population. Likewise, increased water use associated with construction is not anticipated to represent a significant new and permanent water demand. In addition, new infrastructure would not be required beyond that presently existing at the KEC Eastview Site or specifically associated with the proposed

construction at the KEC Eastview Site. After construction is completed at the KEC Eastview Site, the construction worker population would no longer be required, construction-related water uses would cease, the temporary construction trailers would be removed, and the new water service connection to these trailers would be abandoned and/or removed. No adverse effects to water demand or infrastructure would occur due to construction of the Proposed Action at the KEC Eastview Site.

Sewer

As part of the construction of the Proposed Action, a new 2-inch PVC sanitary force main and pump station would be installed to connect the temporary construction field office complex to an existing sanitary sewer manhole east of the existing police booth and ultimately to the existing the CDUV Facility pump station which then discharges to the municipal sewer. No other changes to the existing sewer infrastructure at the KEC Eastview Site or the larger sanitary sewer district are anticipated during construction. Temporary increases in construction worker staffing levels for the duration of the construction of the Proposed Action would occur but are not expected to result in any adverse effects and the existing sewer district would have sufficient capacity to address these. Construction is not expected to result in any significant new flows to the municipal sewer system. Wastewater from the KEC Shaft 2C, KEC Tunnel, and ECC construction are expected to be treated on site and then released to Mine Brook in accordance with the applicable regulatory requirements and/or the conditions of a discharge (SPDES) permit that will be acquired as part of the Proposed Action. As a result, significant, long-term, and permanent increases in discharges to the sanitary sewer system due to the construction of the Proposed Action are not anticipated. After construction is completed, the temporary field office would be removed, and the new sanitary sewer connection would be abandoned and/or removed.

Similar to the Kensico Campus, management of construction stormwater at the KEC Eastview Site, discussed in more detail in Section 3.8 “Water Resources,” would be conducted in accordance with applicable federal, State, and local requirements including the acquisition of required permits and approvals. This would include the implementation of a comprehensive SWPPP specific to the KEC Eastview Site that would lay out the management of stormwater to meet quantity and quality requirements and which would be in place for the duration of construction.

3.14.5 CONCLUSION

In conclusion, no long-term and permanent increase in water and sewer demand or the need for new significant infrastructure improvements due to construction work at the Kensico Campus and KEC Eastview Site would occur. Existing infrastructure has the available capacity and/or flexibility to accommodate the anticipated short-term increase in water usage and wastewater flows associated with the construction of the Proposed Action. Therefore, there are no

anticipated significant adverse effects to water and sewer infrastructure due to the Proposed Action.

3.15 SOLID WASTE AND SANITATION SERVICES

3.15.1 INTRODUCTION

A solid waste and sanitation assessment is intended to evaluate whether a project has the potential to cause a substantial increase in solid waste generation that could overburden existing solid waste management capacity or would otherwise be inconsistent with local or State goals and policies for the management of solid waste. The *CEQR Technical Manual* generally recommends a more detailed discussion of the potential solid waste impacts of a proposed action if a substantial amount of solid waste may be generated (generally 50 tons or more per week).

As discussed in Chapter 2, "Analytical Framework," and below, operation of the Proposed Action would not be anticipated to result in new solid waste generation exceeding 50 tons per week and as a result a more detailed discussion is not warranted. The *CEQR Technical Manual,* however, recommends that the solid waste and sanitation needs generated by a proposed action be disclosed. As construction of the Proposed Action would result in a temporary increase in waste generation over the duration of construction, this section presents an estimate of the solid waste that would be generated and the anticipated management of this waste (collection and management).

3.15.2 METHODOLOGY

The potential effects of the construction of the Proposed Action on solid waste and sanitation services was reviewed. This review includes:

- A qualitative discussion of existing sources of waste generation at the Kensico Campus and KEC Eastview Site due to current DEP staffing and operations.
- A discussion of conditions in the future without the Proposed Action through an identification of proposed projects (DEP and non-DEP) within the Kensico Campus and KEC Eastview Site study areas that are anticipated to be completed by the Build Year and a qualitative discussion of these with regard to effects on future solid waste and sanitation services.
- A discussion of future with the Proposed Action conditions. This includes an identification and estimation of the quantity of major sources of waste associated with the proposed construction activities at the Kensico Campus and KEC Eastview Site. Waste associated with excavation, demolition, and removal of accumulated sediment, as well as waste that would be generated by on-site construction workers, is provided. Discussion of the proposed management of these materials on site or off site and efforts to reduce,

reuse, recycle, and/or dispose of solid waste due to the construction of the Proposed Action is provided, as well as a qualitative discussion of the potential impact to solid waste and sanitation services.

3.15.3 EXISTING CONDITIONS

Due to the nature of on-site operations at the Kensico Campus and KEC Eastview Site, solid waste generation is limited. Current operations at both locations are limited to water supply activities, primarily associated with water conveyance and limited treatment. As a result, staffing levels at the Kensico Campus and KEC Eastview Site are limited and waste generation due to facility staff is minimal.

The Kensico Campus currently serves as the site for the conveyance of water from Kensico Reservoir via DEL Shaft 18 to the CDUV Facility and the chlorination and fluoridation of that water. Other activities based at the Kensico Campus include DEP's waterfowl management operations.

As part of the conveyance of water through DEL Shaft 18, DEP provides screening of intake waters for the removal of larger debris prior to the conveyance of water to the CDUV Facility. Screening is completed through a series of traveling screens and collected debris is then directed to dumpsters that are periodically transported for off-site disposal. Waste generation associated with screening operations is directly related to intake flows and can therefore be highly variable. Likewise, screening waste is generally larger in the fall when additional debris associated with leaf fall occurs. Screening waste is largely comprised of organic materials (leaves, wood, etc.). No other significant waste generation sources related to active water supply operations generally occur at the Kensico Campus. Overall waste generation due to on-site DEP staff and contractors, as well active on-site operation is therefore limited in scope and scale.

At the KEC Eastview Site, overall solid waste generation is also limited. DEP staff at the site include DEP 6th Precinct staff, operations staff at the CDUV Facility, and additional DEP staff that currently utilize the on-site trailer office complex. Waste generation by all on-site staff at the KEC Eastview Site is therefore limited. Operation of the CDUV Facility also generates limited waste. Process operations at the CDUV Facility are largely associated with ultraviolet (UV) disinfection of incoming water from Kensico Reservoir which generates limited solid waste. Additional general maintenance operations at the CDUV Facility also generate waste incidental to ongoing operations, but again is limited in scope and scale. Similar to Kensico Campus, waste generation due to on-site staff or operations is currently limited.

Waste generation at both the Kensico Campus and KEC Eastview Site is limited, transported periodically by private contractors to off-site solid waste management or disposal facilities, and does not represent a significant component of existing solid waste generation in the region.

3.15.4 FUTURE WITHOUT THE PROPOSED ACTION

In the future without the Proposed Action, waste generation within the Kensico Campus and KEC Eastview Site study areas would not be anticipated to substantively change from existing conditions. No significant changes to the existing solid waste and sanitation infrastructure would also be expected.

Several DEP projects would be implemented in the future without the Proposed Action. These include the Waterfowl Management Program Building (construction 2023 through 2025), the Kensico Regional Headquarters (construction 2023 through 2025), and various minor projects at DEL Shaft 18 at the Kensico Campus (estimated completion in 2026). At the KEC Eastview Site, future without the Proposed Action projects would include the Manhole Cleanouts for Foundation Drain System project and a potential solar project that would consist of the placement of solar canopies over an existing parking area and rooftop panels on the CDUV Facility. Significant changes in waste generation due to the operation of these future DEP projects is not expected. While construction waste would be generated, primarily at the Kensico Campus from excavation and grading, demolition, and rehabilitation activities, the volume of additional waste is not anticipated to be significant, would only occur over the duration of construction activities for each project, and would be transient in nature. The total volume of waste created by these projects would not be anticipated to exceed the *CEQR Technical Manual* thresholds of more than 50 tons per week during operation or construction and would be accommodated by existing waste management infrastructure. Each DEP project would also be required to meet DEP and City of New York sustainability goals for waste reduction, recycling and reuse to the maximum extent possible thereby reducing the use of landfills.

Several non-DEP projects are also expected to be advanced in the future without the Proposed Action and were previously summarized in **Table 2-1**. Major projects would include the Landmark at Eastview North Campus Redevelopment, Landmark at Eastview South Campus Parcel D, and Regeneron Greenburgh Expansion that would be used for office and research development. These projects are located approximately one-half mile west/southwest of the KEC Eastview Site. Additional projects would include the North 60 Development, a mixed used residential, retail and commercial project north of the KEC Eastview Site and the Baker Residential development which would be northeast of Kensico Campus. While these non-DEP projects would result in the generation of new solid waste in the future without the Proposed Action, the EISs for these projects noted no adverse impacts to solid waste services. It is assumed that the solid waste services would remain comparable to existing conditions and are not anticipated to result in a major effect upon the existing waste management infrastructure within the region.

In the future without the Proposed Action, no significant changes related to solid waste and sanitation services are expected. No substantive change or effect upon the existing solid waste

management infrastructure (e.g., collection, disposal and/or reuse/recycling) would be expected. Construction-related waste generated by DEP or non-DEP projects would be temporary and only for the duration of their construction. Similarly, solid waste generated by these projects during operation are also not anticipated to result in a substantive effect or change in existing solid waste and sanitation services within the Kensico Campus or KEC Eastview Site study areas or the larger region.

3.15.5 FUTURE WITH THE PROPOSED ACTION

3.15.5.1 Introduction

As noted in Chapter 2, "Analytical Framework," no significant new solid waste would be generated during operation of the Proposed Action. While the operation of the Proposed Action would require additional facility staff, these increases are not anticipated to be significant and additional waste generation associated with these new staffing levels would be limited. Likewise, operation of the new water supply facilities would also not be expected to result in significant increases above existing waste generation rates at the Kensico Campus or KEC Eastview Site. The KEC Screen Chamber would have the capacity to accommodate increased flows from Kensico Reservoir above the historic levels of the Catskill Screen Chamber and this would result in additional waste removed by the KEC Screen Chamber. This is not expected to represent a significant increase over the levels of waste generated from current (DEL Shaft 18) or historic (DEL Shaft 18 and Catskill Screen Chamber) screening operations. Operation of the Proposed Action, as noted in Section 2.4.2, "Operational Analysis," would not be expected to result in an increase above the *CEQR Technical Manual* threshold of 50 tons or more of new waste per week.

3.15.5.2 Construction Waste

The Proposed Action would result in a temporary increase in waste generation during construction. The majority of construction-related solid waste would be associated with required excavation and demolition activities. Excavation materials at the Kensico Campus and KEC Eastview Site would consist of soil and rock primarily removed as part of the construction of the new deep rock KEC Tunnel, KEC Shaft 1C and 2C, UEC Shaft, connection tunnels, KEC Screen Chamber, and the ECC. Additional materials would also be generated as a result of required clearing and grubbing (i.e., vegetation and tree removal) at the proposed construction areas, particularly at Kensico Campus. Finally, existing soils currently stored at the KEC Eastview Site would also be removed as part of the Proposed Action.

In addition, construction and demolition (C&D) waste would also be generated as a result of several activities at the Kensico Campus and KEC Eastview Site. This would include, but not be limited to, the modification and/or expansion of the existing Dike Grade Tunnel, roadway and utility construction and improvements, and demolition waste associated with the modification of

the UEC and connection of the ECC to the CDUV Facility. C&D waste would consist of a broad array of materials including asphalt, concrete, metals (e.g., copper piping, steel rebar, and cast iron), plastics (e.g., polyvinyl chloride [PVC] and high-density polyethylene [HDPE] piping), and other waste associated with the demolition and/or reconstruction of existing infrastructure and facilities.

The City of New York and DEP have implemented several policies and initiatives related to recycling, reuse, sustainable development, and reducing waste disposal in landfills that are considered as part of all actions advanced by the City including the KEC Project. Likewise, New York State's solid waste hierarchy emphasizes waste reduction/minimization, reuse, and recycling over landfilling and other disposal methods. The Proposed Action has therefore incorporated measures, to the extent practicable, to advance and/or achieve these goals. As part of the Proposed Action, DEP established a target of diverting up to 95 percent of excavated materials and C&D waste generated on site from landfills.

Table 3.15-1 presents current estimates of the amount of excavation waste (soil and rock) that would be generated by the Proposed Action. As part of DEP's goal to maximize diversion of waste from landfilling, opportunities to reuse excavated soils and rock on site to the extent possible have been identified. The estimated percent of soil and rock to be reused on site is shown in **Table 3.15-2**. As shown in **Table 3.15-3**, the Proposed Action would minimize the landfilling of waste, while promoting reuse and recycling consistent with City and State policies and goals.

Table 3.15-1. Estimated Construction Excavation-Derived Waste

Construction Activity	Soil (tons)	Rock (tons)	Plant/Organic Material (tons)	Estimated Weight (tons)
Site Preparation (Kensico Campus and KEC Eastview Site), KEC Tunnel, KEC Shaft 1C and 2C, Screen Chamber and Connection Tunnels	2,436,750(1)	11,232,168(1)	10,068(1)	13,678,987(1)
Upper Effluent Chamber	2,970(1)	-	1.1	2,971.1
Eastview Connection Chamber	182,730(1)	-	0	182,730
Shoreline Stabilization	11,350	-	484	11,834
KEC Eastview Site Remaining Soil Pile Removal	125,000	-	-	125,000
Note: (1) Estimates based upon 60% design.				

Table 3.15-2. Estimated On-Site Reuse and Diversion - Construction Excavation-Derived Waste

Construction Activity	Reused On Site (%)	Estimated Percentage Diverted from Landfills (%)
Site Preparation (Kensico Campus and KEC Eastview Site), KEC Tunnel, KEC Shaft 1C and 2C, Screen Chamber and Connection Tunnels(1)		
Soil	99	99
Rock	13	100
Plant/Organic Material	0	0
Upper Effluent Chamber(1,2)	25	100
Eastview Connection Chamber(1)	25	100
Shoreline Stabilization	35	100
KEC Eastview Site Remaining Soil Pile Removal	0	100

Notes:
(1) Estimates based upon 60% design.
(2) Plant/organic material of approximately 1.1 tons (see **Table 3.15-1**) would not be reused on site or off site.

Table 3.15-3 presents the current estimate of C&D waste that would be generated by the Proposed Action and the anticipated diversion rates (e.g., waste material that would be diverted from disposal through recycling and/or reuse).

Table 3.15-3. Estimated Construction and Demolition Waste

Construction Activity	Estimated Weight (tons)	Estimated Percentage Diverted (%)
Site Preparation Kensico Campus and KEC Eastview Site), KEC Tunnel, KEC Shaft 1C and 2C, Screen Chamber and Connection Tunnels(1)	96,330	96
Upper Effluent Chamber(1)	635	100
Eastview Connection Chamber(1)	2,485	100
Shoreline Stabilization	36	90
KEC Eastview Site Remaining Soil Pile Removal	NA	NA

Note:
(1) Estimates based upon 60% design.

3.15.5.3 Removal of Accumulated Sediments

In addition to the materials presented in **Table 3.15-1** and **Table 3.15-3**, the Proposed Action would also involve the removal of accumulated sediment in proximity to the UEC and in the UEC intake channel. Approximately 1,000 cubic yards of material would be removed from

Kensico Reservoir, dewatered on site, and the remaining material would then be transported to a licensed facility for reuse and/or disposal as applicable and appropriate. All removed materials would be managed in accordance with applicable regulations for the transport and management of this material. Potential reuse of these materials would be considered as part of the Proposed Action consistent with applicable regulations. This would include further assessment of the material to be removed from Kensico Reservoir including, but not limited to, the quality of the removed materials, organic content (e.g., plant debris), and physical characteristics (e.g., silty, sandy, cobbles). If reuse were not feasible, these materials would be disposed at a licensed facility consistent with applicable regulations and/or receiving facility requirements.

3.15.5.4 Construction Worker-Derived Waste

Finally, construction workers associated with the Proposed Action would also generate solid waste that would need to be properly managed. Conservatively using the maximum number of construction workers that would be on the Kensico Campus and KEC Eastview Site during one calendar quarter (i.e., approximately 469 workers) and the *CEQR Technical Manual* waste generation rate for office workers of 13 pounds per week (a conservative estimate in lieu of a *CEQR Technical Manual* construction worker waste generation value), the maximum waste generated by on-site construction workers would be 6,097 pounds per week (approximately 3.05 tons/week). This would represent a conservative estimate of worker-generated waste over the duration of construction, as staffing levels would be much less at other times. This would not represent a significant adverse impact to solid waste and sanitation services.

3.15.5.5 Conclusion

Construction of the Proposed Action would result in the generation of solid waste consisting of excavated materials (soil and rock), C&D waste, material associated with the removal of accumulated sediment near the UEC and in the intake channel, and waste generated by construction workers. This increase in waste would be temporary, the volume of waste generated would vary and would only occur over the duration of construction. All waste collection and transport as part of the Proposed Action would be conducted by private contractors; use of municipal waste collection services (public or private) is not anticipated.

While the Proposed Action would result in an increase in solid waste over the duration of construction, potential significant adverse effects to solid waste and sanitation services are also not anticipated. In order to achieve City and State requirements as discussed above, the Proposed Action would seek to minimize the landfilling of waste materials through reuse and/or recycling. Effects upon existing landfill capacity within the region or larger network would therefore be limited. In addition, the regional solid waste and sanitation infrastructure is robust and extensive. As part of the design and planning efforts for the Proposed Action, an initial review of C&D and recycling facilities within an approximately 50-mile radius of the Kensico Campus and KEC Eastview Site was completed. This survey indicated that a number of construction waste

recycling and disposal facilities are located within the region that currently accept the construction waste materials that would be generated by the Proposed Action. Waste management collection, recycling, and disposal facilities also routinely coordinate in order to maintain the ability to manage existing and future waste streams that can be highly variable, particularly with regard to the management of construction-related waste. The nature of the current waste management system is also regional as opposed to local with the majority of waste collection and recycling facilities relying on a larger network of waste processing, recycling, and disposal facilities outside the region. As an example, large volumes of solid waste collected in the New York metropolitan region are initially collected or handled locally but are then routinely transported by truck or rail to out-of-region or out-of-state locations for final processing, recycling, or reuse. It is expected that sufficient capacity, both locally and within the larger waste management network for the transport and management of solid waste generated as part of the Proposed Action, would be available over the duration of the construction period without any major effect to solid waste and sanitation services or the underlying infrastructure to support this.

Waste generated by construction workers would be more consistent with typical commercial (office)/residential waste streams. This would be approximately three tons per week based upon the peak quarterly staffing levels. This volume of new waste would not represent a significant increase and would not affect existing solid waste and sanitation services.

Potential impacts due to an increase in construction-related vehicles associated with the removal of solid waste, as well as other construction activities (e.g., construction worker vehicles, deliveries), is provided in Section 3.10, "Traffic and Transportation." With the implementation of mitigation measures, no unavoidable significant adverse impacts to traffic and transportation would be anticipated related to overall construction vehicles or the removal of solid waste.

3.16 ENERGY

3.16.1 INTRODUCTION

This section assesses the potential effects on energy sources and demand, the use of renewable energy, and energy conservation measures as a result of construction of the Proposed Action. It has been prepared in accordance with SEQRA, specifically 6 NYCRR 617.9(b)(5)(e), and the *CEQR Technical Manual,* which require that EISs include a discussion of the effects of a proposed project on the use and conservation of energy, if applicable and significant. The potential effects once construction is complete, and the proposed facilities are operational are discussed in Chapter 4, "Potential Impacts from Operation of Proposed Action."

3.16.2 METHODOLOGY

While it is recommended under the *CEQR Technical Manual* that the energy demand generated by a project be disclosed, further analysis is generally required only for projects that may

significantly affect or increase the demand for energy transmission and/or generation. The *CEQR Technical Manual* also recommends a discussion of the effects of the Proposed Action on the use and conservation of energy, as well as the benefit of energy efficiency measures.

In accordance with 6 NYCRR 617.9(b)(5)(e) and the *CEQR Technical Manual*, the Proposed Action's potential to result in changes in energy generation, demand, or distribution within the surrounding study area during construction are qualitatively discussed. Results of consultations with Con Edison regarding the need for additional load and service connections during construction of the Proposed Action are summarized.

3.16.3 EXISTING CONDITIONS

Con Edison is the current provider of electrical power and natural gas service to the Kensico Campus and the KEC Eastview Site, as well as the surrounding area. At the Kensico Campus and the immediately surrounding area, there have historically been six existing electrical services, consisting of services provided to the following Kensico Campus buildings: former Kensico Laboratory building, UEC, DEL Shaft 18, Kensico Fluoride Facility, LEC. However, the UEC is currently offline. An additional service has been provided to the Catskill Screen Chamber, located across Columbus Avenue. At the KEC Eastview Site existing electrical service is provided to the CDUV Facility and supporting facilities.

3.16.4 FUTURE WITHOUT THE PROPOSED ACTION

Several DEP projects would be implemented in the future without the Proposed Action. At the Kensico Campus these would include a new permanent building to house the Waterfowl Management Program, the rehabilitation of the existing former Kensico Laboratory building into the Kensico Regional Headquarters, and various minor projects at DEL Shaft 18 including electrical improvements. At the KEC Eastview Site, projects include the installation of new cleanout access locations and modifications to an existing manhole at the CDUV Facility and the potential to install a solar carport canopy and rooftop project. The estimated increase in energy demand as a result of these DEP projects would be limited and would be accommodated by Con Edison. Likewise, potential implementation of solar canopies at the KEC Eastview Site would supplement existing service provided to the site by Con Edison.

Several additional non-DEP projects are expected to be advanced in the future without the Proposed Action. More significant projects would include the Landmark at Eastview North Campus Redevelopment, Landmark at Eastview South Campus Parcel D, and Regeneron Greenburgh Expansion that would be used for office and research development. The Landmark at Eastview North Campus Redevelopment, Landmark at Eastview South Campus Parcel D, and Regeneron Greenburgh Expansion are located approximately one-half mile west of the KEC Eastview Site. The North 60 development would be a proposed mixed-use development including commercial, medical research, residential, and retail uses and would be located

approximately 0.6 miles north of the KEC Eastview Site. Finally, the Baker Residential development project would be located over one-half mile north of the Kensico Campus and would involve the development of a cluster subdivision with approximately 116 units located at the northeast corner of the intersection of Lozza Drive and Columbus Avenue. Con Edison routinely evaluates its energy infrastructure and needs and implements upgrades where necessary and required. Therefore, the estimated increase in energy demand as a result of these projects is not expected to result in major impacts to existing electric and gas service within the area in the future without the Proposed Action and would be accommodated by Con Edison.

3.16.5 FUTURE WITH THE PROPOSED ACTION

Construction of the Proposed Action would require energy use for on-site (stationary) equipment, mobile sources, and material extraction and management (e.g., shaft and tunnel spoils), and transport. The TBM, which would launch from the KEC Eastview Site, is the largest load and is electric. The TBM and other electric construction equipment would operate on electric power supplied by the existing electric transmission grid. However, temporary generators would be used for construction until the required electrical load is provided by Con Edison.

As part of the Proposed Action, DEP requested that Con Edison consolidate the six existing electrical services currently provided to the Kensico Campus into one high tension service with two 13.2 kilovolt (kV) feeders. The consolidated service is estimated to require a 5 megavolt-amp (MVA) service, which includes the load needed for construction activities and the additional new buildings at the Kensico Campus, including those described as part of the future without the Proposed Action. New service would ultimately be routed through a new dedicated electrical building that is being constructed as part of the Proposed Action.

New electrical service is also required at the KEC Eastview Site to facilitate construction activities, as the existing feeders were sized based on the CDUV Facility loads which would not be able to accommodate the additional estimated construction loads. The TBM and tunnel and shaft conveyor system are both electric powered and would represent the majority of new construction loads at the KEC Eastview Site. The new electric load service needs for proposed construction activities are estimated to require two 15 MVA feeders from Con Edison, one of which would be redundant. Based upon outreach to Con Edison, the electrical grid would be able to accommodate the increase in energy usage during construction of the Proposed Action with the implementation of the upgrades noted above.

In addition to the identification of new electrical load needs for the Proposed Action, DEP and the City of New York have sustainability goals that must be considered as part of proposed activities such as the KEC Project. As a result, DEP, to the extent possible, has evaluated energy conservation, efficiency, and reuse opportunities as part of the overall Proposed Action and its

construction. Opportunities to further reduce energy use during construction include, but are not limited to:

- Temporary photovoltaic (PV) panels or solar-powered lights
- Reuse of excavated materials on site, where possible, in order to limit truck trips and vehicle miles traveled
- Prefabrication of design elements for the police booth
- Minimum lighting efficiency standards with high efficiency lamps
- Compliance with vehicle idling restrictions

3.17 NEIGHBORHOOD CHARACTER

3.17.1 INTRODUCTION

The character of a neighborhood is a composite of elements that give it its identity, including land use, zoning, and public policy; socioeconomic conditions; open space and recreation; historic and cultural resources; urban design and visual resources; transportation; and noise. Neighborhood character is a combination of various elements that give a neighborhood its distinct "personality" and an assessment of neighborhood character is appropriate when a project would have the potential to result in any significant adverse impacts in the technical areas that relate to neighborhood character or a combination of moderate effects. A moderate effect is generally defined as an effect considered reasonably close to a significant adverse impact threshold for a particular technical area. Therefore, even if a project does not have the potential to result in a significant adverse impact on neighborhood character in a certain technical area, the project may result in a combination of moderate effects to several elements that, when considered together, may cumulatively alter an area's neighborhood character, warranting further analysis. Neighborhood character effects are rare, and only under unusual circumstances would a combination of moderate effects to a neighborhood result in an impact to neighborhood character.

Detailed analyses of the Proposed Action were completed for several of these technical areas (open space and recreation; historic and cultural resources; urban design and visual resources; transportation; and noise) and are discussed in more detail earlier in Chapter 3, "Potential Impacts from Construction of Proposed Action." Therefore, an assessment of neighborhood character is warranted.

This section describes the defining features of the existing neighborhood character in the area near the Kensico Campus and KEC Eastview Site and considers the potential effects from the construction of the Proposed Action on these features and discusses whether any potential changes to neighborhood character would be considered significant and adverse.

3.17.2 METHODOLOGY

A preliminary assessment of neighborhood character was performed to determine whether effects from the construction of the Proposed Action would be expected to result in substantive changes to neighborhood character at the Kensico Campus and KEC Eastview Site. The assessment identifies the defining features of the neighborhoods and assesses whether the Proposed Action has the potential to affect these features.

The assessment consisted of establishing the existing neighborhood character conditions for the Kensico Campus and KEC Eastview Site. The existing character of the Kensico Campus and KEC Eastview Site was characterized in Sections 3.3, "Open Space and Recreation," 3.5, "Urban Design and Visual Resources," 3.6, "Historic and Cultural Resources," 3.10, "Traffic and Transportation," and 3.13, "Noise".

Once existing conditions were established, the future conditions without the Proposed Action including proposed projects that may alter neighborhood character within the Kensico Campus and KEC Eastview Site study areas prior to the analysis year for the Proposed Action were identified. Using this as a baseline, a qualitative assessment of the potential impacts of the Proposed Action to neighborhood character was conducted. This assessment was based on a review of potential adverse effects from one or a combination of the technical areas that could cumulatively affect a neighborhood's defining features. If the Proposed Action would potentially result in significant direct or indirect change(s) to a factor contributing to the Kensico Campus' and KEC Eastview Site's neighborhood character, the degree and type of such change was evaluated.

3.17.3 DEFINING FEATURES

The neighborhood character of the Kensico Campus is partially defined by its history, which is directly associated with the operation of Kensico Reservoir and its relationship with the Catskill and Delaware Aqueduct systems. As detailed in Section 3.6, "Historic and Cultural ResourcesHistoric and Cultural Resources," the Kensico Campus was determined by SHPO/NYSOPRHP to be a NRHP-eligible district of six contributing buildings. The buildings within the NRHP-eligible district, encompass a 40-year period of construction and are predominantly in the Renaissance Revival style. The period of significance extends from 1915 to 1969 and the district has integrity of location, setting, materials, workmanship, feeling, and association.

The area surrounding the Kensico Campus as discussed in Section 4.1, "Land Use, Zoning, and Public Policy," primarily consists of residential (to the south, west and northeast), institutional (to the north) and public assembly and office and research uses (to the north). Likewise, as in any neighborhood, the area's character is partly defined by its design (the totality of components that contribute to a pedestrian's experience of public space). As described in Section 3.5, "Urban

Design and Visual Resources," the area's design reflects its primarily residential built environment, in particular, its low-density buildings and open yards, with limited visual resources. The area is also defined by the presence of Kensico Reservoir, and its limited views from the surrounding neighborhood.

In contrast, the neighborhood character of the KEC Eastview Site is defined by its surrounding commercial and institutional uses. As detailed in Section 3.6, "Historic and Cultural Resources," one feature of the neighborhood is the one-acre 1720's Hammond House property on Grasslands Road, which abuts the KEC Eastview Site on its east, north, and west property lines. The Hammond House was listed on the National Register in 1980. The remainder of the area's character reflects its primarily commercial and institutional built environment, with the presence of several adjacent County facilities and uses.

3.17.4 ASSESSMENT OF THE POTENTIAL TO AFFECT THE DEFINING FEATURES OF THE NEIGHBORHOOD

Using the findings from the respective sections of this ~~Draft~~ Final EIS, the assessment identifies whether the construction of the Proposed Action would result in any significant adverse effects or moderate adverse effects and whether these changes would have the potential to affect the defining features of the neighborhood character. The assessment focuses on the major characteristics of the neighborhood and their relative contribution to the area's overall character, and how these characteristics would potentially be affected by the Proposed Action.

As detailed in Section 3.6, "Historic and Cultural Resources," there would be no significant effects to historic resources due to the Proposed Action. Existing socioeconomic conditions of the surrounding area would also not be altered. Traffic on local roads would only be affected during construction. The construction activities at the Kensico Campus and KEC Eastview Site would extend over a period of approximately 10 years (2024 through 2033) and would result in a temporary increase in local traffic and noise. These temporary increases in traffic would not result in a density of activity or service conditions that would affect the overall character surrounding the Kensico Campus or KEC Eastview Site. As discussed in Section 3.13, "Noise," noise levels during construction would largely be less than the CEQR construction noise screening threshold of 10 dBA above existing ambient noise levels or, in those instances where changes in noise levels may be greater than the CEQR, construction noise screening threshold would be of limited duration. As a result, these temporary increases in noise levels would not be considered significant. Anticipated construction noise levels would exceed the Town of Mount Pleasant noise code limit outside of the Town's construction hours (8 AM to 6 PM). However, DEP would work with the Town to obtain a variance for the proposed construction hours and noise levels. Additional measures to reduce noise levels during construction would be implemented, as feasible and practicable. Following completion of the Proposed Action, construction equipment and vehicles would be removed, and traffic patterns and ambient noise conditions would return to levels comparable to existing or baseline conditions. Likewise, upon

completion, a majority of the Proposed Action facilities would be located below grade at the Kensico Campus and KEC Eastview Site.

Construction of the Proposed Action would not generate significant adverse and/or long-term unmitigated effects to land use, zoning, and public policy; socioeconomic conditions; open space and recreation; historic and cultural resources; urban design and visual resources; transportation; and noise. The Proposed Action would not generate significant changes from the combination of the various elements that contribute to the neighborhood around Kensico Campus and KEC Eastview Site and its character.

Construction of the Proposed Action therefore would not result in significant adverse impacts to neighborhood character within the Kensico Campus and KEC Eastview Site study areas.

3.18 PUBLIC HEALTH

Public health is the organized effort of society to protect and improve the health and well-being of the population through monitoring; assessment and surveillance; health promotion; prevention of disease, injury, disorder, disability and premature death; and reducing inequalities in health status.

This section addresses the potential public health impacts associated with the construction of the Proposed Action. For the purposes of this evaluation, public health was defined as those activities that society carries out in order to create and maintain an environment in which people can be healthy. According to the *CEQR Technical Manual*, the elements that combine to influence public health include air quality, hazardous materials, construction, and natural resources (e.g., water quality impacts). These elements have been analyzed in other sections of this ~~Draft~~ Final EIS and the conclusions of those sections have been used to determine if impacts to public health due to the Proposed Action would be anticipated.

3.18.1 AIR QUALITY

As discussed in Section 3.11, "Air Quality," the construction of the Proposed Action would not result in predicted concentrations above the NAAQS for CO, NO_2, PM_{10}, and $PM_{2.5}$ or *de minimis* criteria, where applicable due to stationary and/or mobile sources. No significant adverse air quality impacts are therefore anticipated as a result of the construction of the Proposed Action.

3.18.2 HAZARDOUS MATERIALS

As discussed in Section 3.9, "Hazardous Materials" the construction of the Proposed Action is not expected to result in significant adverse impacts related to hazardous materials. During construction, there is limited potential for exposure to hazardous materials at the Kensico Campus and KEC Eastview Site, such as during demolition of the UEC and other facilities, the excavation of on-site soils, and/or contact with on-site groundwater. Potential exposure to hazardous materials that may be required for construction may also occur. To avoid or minimize effects associated with these sources, a number of preventative measures would be implemented to minimize exposure (see Section 3.9, "Hazardous Materials" for further details). With these preventative measures in place, the construction of the Proposed Action is not expected to result in significant adverse impacts related to hazardous materials. Therefore, no significant adverse public health impacts during construction of the Proposed Action are expected.

3.18.3 NOISE

As discussed in Section 3.13, "Noise," although there would be a temporary increase in noise, construction of the Proposed Action would not result in significant adverse impacts at nearby noise-sensitive receptors due to on-site construction activities at Kensico Campus and the KEC Eastview Site. In addition to the use of anticipated controls on certain construction-related equipment to minimize overall construction noise exposure in the community, various additional control measures would be routinely used to minimize construction-related noise emissions, as applicable and appropriate. Construction vehicles traveling to and from the Kensico Campus and the KEC Eastview Site would not exceed the CEQR noise criteria and would not be perceptible (less than 3 dBA).

Potential effects to construction workers, where applicable, would be addressed through the development of site-specific construction worker health and safety plans and as appropriate noise protective equipment (e.g., ear protection) would be provided to workers.

3.18.4 WATER QUALITY

As discussed in Section 3.7, "Natural Resources," Section 3.8, "Water Resources," and Section 3.14, "Water and Sewer Infrastructure," the construction of the Proposed Action would not result in any significant adverse impacts to water quality and/or water supply resources. Therefore, no temporary significant adverse public health impacts associated with water quality and water supply resources within Kensico Reservoir during construction of the Proposed Action are anticipated.