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Construction

Construction activities, although temporary in nature, can sometimes result in significant adverse impacts. A project's construction activities may affect a number of technical areas analyzed for the operational period, such as air quality, noise, and traffic. This chapter assesses the potential for the Proposed Project to result in significant adverse impacts during construction.

Introduction

This chapter provides an assessment of the potential for construction of the Proposed Project to result in significant adverse impacts during the construction period. The Proposed Project would consist of ten new buildings on the Development Site, including eight predominantly residential buildings[1] ranging in height from 12 to 15 stories. The Proposed Project would be constructed in five phases over a 96-month period. The CCC building would remain as the dominant feature of the Development Site and be part of a multi-faceted community facility core that includes the PAC, a trade school, a day care facility, a senior center, and a central green space. Ground floor retail and a grocery store providing opportunities for local businesses would be introduced along the public and private street frontages, creating economic opportunity and responding to the dearth of walkable local retail in the neighborhood. A seven-story parking garage, accommodating approximately 500 parking spots for these uses, would be located near Louisiana Avenue and would serve

[1] The ten buildings include eight residential buildings, the above grade parking garage, and the PAC. Residential buildings 7 and 8 are connected as one building and Buildings 9 and 10 are connected as one building, though they would have separate residential lobbies.

as a replacement for the surface parking that exists today. In total, the Proposed Project would result in approximately 2,200,538 gsf of development.

Principal Conclusions

Governmental oversight of construction in New York City is extensive and involves a number of City, State, and Federal agencies, each with specific areas of responsibility. Construction at the Development Site would be subject to government regulations and oversight described below in Construction Regulations and General Practices and would employ the general construction practices described below. The Proposed Project would also comply with the requirements of the New York City Noise Control Code.

Transportation

Traffic

The projected construction activities would yield less total traffic than the amount of traffic projected for the Proposed Project. However, significant traffic impacts could still occur at some of the study area locations during construction, similar to impacts identified in **Chapter 13, Transportation**. Construction activities would generate 184 construction worker auto trips and six construction truck trips during the AM construction peak hour, and 184 construction worker auto trips and two construction truck trips during the PM construction peak hour. Construction trucks would be required to use the New York City Department of Transportation (NYC DOT)-designated truck routes to get to the project area and would then use local streets to access the construction sites.

In addition to construction-related trips, trips generated by components of the Proposed Project that would be expected to be completed by the 2030 construction peak year. These operational trips were also incorporated into the construction traffic analysis.

Construction traffic impacts were identified at two of the seven intersections analyzed during the AM construction peak hour, and nine of the twelve intersections analyzed during the PM construction peak hour. Where impacts during construction may occur, measures similar to the ones recommended in **Chapter 20, Mitigation** could be implemented early to aid in alleviating congested traffic conditions. The two intersections that would be impacted during the AM peak hour could be fully mitigated with typical traffic improvement measures (i.e., signal timing modification and changing parking regulations to provide an additional travel lane). Significant impacts at the intersections of Pennsylvania Avenue with Flatlands Avenue, Stanley Avenue and Linden Boulevard, and Flatlands Avenue with Louisiana Avenue, East 108th Street, and Rockaway Parkway could not be fully mitigated during the PM peak hour. The PM construction peak hour findings are similar to operational With-Action conditions except for the intersections of Pennsylvania Avenue with Stanley Avenue, and the intersection of Flatlands Avenue and East 108th Street which could be mitigated under the operational With-Action conditions.

Parking

Construction workers would generate an estimated maximum daily parking demand of 285 spaces during the Q4 2025 peak construction quarter. This parking demand could be

accommodated by the approximately 385 on-site surface spaces used by the church (these spaces are used by the CCC Tuesday evenings and Sundays during the morning/midday period) and would be mostly vacant during construction. The on-site surface spaces would be replaced with a 500-space above ground parking garage after it is completed in the third quarter of 2026; construction workers would park in this garage after it is completed. Therefore, construction for the Proposed Project would not result in a parking shortfall.

Transit and Pedestrians

Based on census data for the construction industry, it is anticipated that approximately 35 percent of construction workers would commute to the Development Site by public transportation. During the Q4 2025 quarter when construction worker volumes would be highest, construction would be expected to generate 442 daily construction workers (154 workers would be expected to use public transportation). It is expected that the majority of construction workers (80 percent) would arrive during the AM construction peak hour and depart during the PM construction peak hour, and they would generate approximately 123 construction worker trips by public transportation during the AM and PM construction peak hours. The worker pedestrian trips would be below the 200 pedestrian CEQR thresholds for detailed analysis, therefore construction activities are not expected to result in transit or pedestrian impacts.

Air Quality

As described below, Phase 1B was determined to be the peak period for construction air quality emissions. Based on the results of the emissions intensity and quantitative construction air quality analysis for on-site emissions (construction equipment, trucks and fugitive dust from construction of foundations for building 3 and 4 (in phase 1B) and truck idling and moving on paved and unpaved roads) and based on a comparison to the operational mobile source impact analysis for off-site construction traffic, the Proposed Project would not result in significant adverse impacts on air quality during construction. The results of the quantitative on-site construction analysis indicate that the Proposed Project would not exceed NO_2 1-hour, PM_{10} 24-hour, and CO 1-hour and 8-hour NAAQS. In addition, the maximum predicted 8-hour CO concentration would be well below and incremental concentrations of $PM_{2.5}$ would not exceed the City's *de minimis* criteria. Finally, the emissions intensity analysis that compares conditions under construction conditions with operational conditions demonstrated no potential for significant adverse CO and $PM_{2.5}$ impacts from construction-related traffic.

Noise

Construction of the phased development would involve standard construction activities and practices for buildings in New York City. Foundation installation and superstructure phases of construction are typically when the noisiest activities occur. The exterior and interior fit-out phases of construction typically involve minimal exterior equipment and substantially quieter noise conditions. The Development Site is near existing residential, community facility, and commercial land uses, and the introduction of new residences would occur throughout construction of the phased development. Based on the proximity of these noise-

sensitive land uses, there is the potential for construction to cause significant adverse noise impacts.

Construction noise from mobile sources has been evaluated from 6:00 AM to 7:00 AM, when construction traffic would be greatest since this is the period that most worker vehicles and trucks arrive at the Development Site. This is a period prior to construction activities and noise from stationary construction equipment would occur. Construction noise from mobile sources would not increase by 3 dBA or more and there would be no significant adverse noise impact due to construction mobile sources.

Construction noise from stationary sources has been evaluated for 16 different phases of construction. For each phase of the Proposed Development (i.e., Phase 1A, Phase 1B, Phase 2A, Phase 2B, and Phase 2C) there would be foundation, superstructure, elevators, exterior construction, and interior fit-out phases of construction of the proposed buildings (i.e., Buildings 1, 2, 3, 4, 5, 6, 7/8, 9/10 and the PAC). See *Construction Schedule* and *Construction Noise Assessment Methodology* sections for further details on the period and duration of the different phases of construction.

The potential for significant adverse construction noise impact depends on the intensity and duration of construction activities. As it relates to the Public Health, construction noise would be a significant adverse noise impact if noise levels exceed 85 dBA for a prolonged period of time. If construction noise levels would occur continuously for 24 months or more, a detailed construction noise analysis is warranted and there is a potential for significant adverse noise impact. Construction noise occurring for shorter durations would not typically result in significant adverse noise impact unless there is a higher intensity of noise. For example, construction may cause significant adverse impact if exterior noise levels would increase by 15 dBA or more for 12 months or more or 20 dBA or more for a period of 3 months or more. These criteria apply to residential, community facility, and commercial office spaces, but do not apply to retail spaces. When looking at identified significant adverse construction noise impacts, the chapter also investigates interior L_{10} noise levels to compare with the CEQR interior noise guideline of 45 dBA (L_{10}) or residential and community facility uses and interior noise guideline of 50 dBA (L_{10}) for commercial office uses in order to determine if potential mitigation at the receptor is needed.

In total, exterior construction noise levels would exceed the exterior increase thresholds at seven buildings throughout the Development Site, including three existing buildings and four buildings that would be introduced by the Proposed Actions during the phased development. The following summarizes the results of the construction noise assessment at the closest receptors surrounding the Proposed Project.

- There would be a total of six buildings where construction noise levels would increase by 20 dBA or more over existing conditions for three months or longer including:
  - Proposed Building 2
  - Proposed Building 3
  - Proposed Building 4
  - 1180 Pennsylvania Avenue
  - 1170 Pennsylvania Avenue
  - 1 Vandalia Avenue

› There would be a total of six buildings where construction noise levels would increase between 15-20 dBA over existing conditions for 12 months or longer including:
  - Proposed Building 1
  - Proposed Building 2
  - Proposed Building 3
  - Proposed Building 4
  - 1180 Pennsylvania Avenue
  - 1170 Pennsylvania Avenue

With the adherence to existing construction noise regulations and the implementation of a Construction Noise Mitigation Plan, as required by the New York City Noise Code, including an 8-foot construction noise barrier, construction noise would be reduced but would still exceed the thresholds for significant construction noise impact prior to mitigation.

Vibration

Construction activities have the potential to generate ground-borne vibration that can potentially cause structural or architectural damage or annoy people in nearby vibration-sensitive spaces, such as residences. The most substantial sources of construction vibration are equipment associated with the excavation and foundation phase, such as pile drivers, drill rigs, bulldozers, and jack hammers.

There are no buildings within the Project Area listed by the New York City Landmarks Preservation Commission (LPC) or the State and/or National Register of Historic Places (S/NR) which would require special protections from potential damage due to vibration. There is the potential for construction vibration from some construction equipment, such as pile drivers, to cause annoyance in nearby residences. However, these construction activities would only occur for limited periods of time at any particular location and there would be no significant adverse impact as a result of construction vibration.

Other Technical Areas

Land Use and Neighborhood Character

While construction of the new buildings under the Proposed Actions would cause temporary disruption, particularly related to noise, it is expected that such effects in any given area would be relatively short in duration, even under the worst-case construction sequencing and, therefore, would not create a neighborhood character impact. Therefore, no significant adverse construction impacts to land use and neighborhood character are expected.

Socioeconomic Conditions

Construction could, in some instances, temporarily affect pedestrian and vehicular access on street frontages immediately adjacent to the Development Site. Long-term lane and/or sidewalk closures are not expected during construction and therefore, would not restrict access to any existing or planned retail businesses. Utility service would also be maintained to all businesses, although there may be very short-term interruptions. Overall, construction

resulting from the Proposed Actions is not expected to result in any significant adverse impacts on surrounding businesses.

Community Facilities

The construction site would be surrounded by construction fencing and barriers that would limit the potential for impacts of construction on nearby community facilities. Construction of the proposed buildings would not block or restrict access to any facilities in the area and would not affect emergency response times of the New York City Police Department (NYPD) and New York City Fire Department (FDNY) given the geographic distribution of the police and fire facilities and their respective coverage areas. Therefore, no construction impacts would be expected to community facilities as a result of the Proposed Actions.

Open Space

As described in **Chapter 5, Open Space** there are no existing publicly accessible open spaces on the Development Site. While Breukelen Ballfields is located near the site at the northwest corner of Flatlands Avenue and Louisiana Avenue, no access to this publicly accessible open space would be impeded during construction. In addition, measures would be implemented to control air emissions, dust, noise, and vibration on the construction site.

Historic and Cultural Resources

A request for an environmental review letter was sent to NYC Landmarks Preservation Commission (LPC) to determine if there were any architectural or archaeological resources on the Development Site or within an approximate 400-foot radius of the Project Area (coterminous with the rezoning area boundary). According to the response letter issued by LPC and dated September 6, 2019, the Development Site has no archeological significance and does not contain buildings or structures with architectural significance. In addition, no buildings or structures with architectural significance were identified within 400 feet of the Project Area. (Santucci September 6, 2019, **Appendix B**).

Hazardous Materials

As discussed in greater detail in **Chapter 10, Hazardous Materials**, the potential for significant adverse impacts related to hazardous materials resulting from the Proposed Actions would be precluded through the placement of institutional controls such as an (E) designation on the Development Site.

Methodology

This construction assessment follows the guidelines set forth in the *CEQR Technical Manual* and the Final Scope of Work. As discussed in **Chapter 1, Project Description** and above, the Applicant would construct ten new buildings on the Development Site over five primary phases. Construction resulting from the Proposed Actions is projected to last up to 96 months and the new development would be fully operational by the beginning of 2031, the build year. Therefore, because construction activities would cumulatively exceed a two-year period and would involve the simultaneous construction of multiple buildings, an assessment of the potential for construction activities to result in adverse environmental

effects was warranted to examine the potential construction effects in the areas of hazardous materials, transportation, air quality, and noise.

Construction Regulations and General Practices

Construction Oversight

Governmental oversight of construction in New York City is extensive and involves a number of City, State, and Federal agencies, each with specific areas of responsibility, as follows.

- The New York City Department of Buildings (DOB) has primary oversight of construction. DOB oversees compliance with the New York City Building Code to ensure that buildings are structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect both workers and the general public during construction. Areas of oversight include installation and operation of equipment such as cranes and lifts, sidewalk sheds, safety netting, and scaffolding.
- The New York City Department of Environmental Protection (DEP) enforces the New York City Noise Code, reviews and approves any needed Remedial Action Plans (RAPs) and associated Construction Health and Safety Plans (CHASPs) as well as the removal of fuel tanks and abatement of hazardous materials. DEP also regulates water disposal into the sewer system and reviews and approves any rerouting of wastewater flow.
- The New York City Fire Department (FDNY) has primary oversight of compliance with the New York City Fire Code and the installation of tanks containing flammable materials.
- The New York City Department of Transportation Office of Construction Mitigation and Coordination (DOT OCMC) reviews and approves any traffic lane and sidewalk closures.
- New York City Transit (NYCT) is responsible for bus stop relocations and subsurface construction within 200 feet of a subway, if needed.
- The New York City Landmarks Preservation Commission approves studies and testing to prevent loss of archaeological resources and to prevent damage to architectural resources.
- The New York State Department of Environmental Conservation (NYSDEC) regulates disposal of hazardous materials, and construction, operation, and removal of bulk petroleum and chemical storage tanks. NYSDEC also regulates discharge of water into rivers and streams.
- The New York State Department of Labor (DOL) licenses asbestos workers.
- The New York State Department of Transportation (NYSDOT) reviews and approves any traffic lane closures on its roadways, should any be necessary.
- The U.S. Environmental Protection Agency (EPA) has wide-ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons, however, much of its responsibility is delegated to the state level.
- The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

Construction Hours

New York City regulates the hours of construction work through the New York City Noise Control Code, as amended in December 2005 and effective July 1, 2007. Construction is limited to weekdays between the hours of 7:00 AM and 6:00 PM, and noise limits are set for certain specific pieces of construction equipment. The City may permit work outside of these hours to accommodate: (1) emergency conditions; (2) public safety; (3) construction projects by or on behalf of City agencies; (4) construction activities with minimal noise impacts; and (5) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. The DOB issues these work permits, and for new building construction, like the proposed development, approval of a noise mitigation plan from the DEP under the City's Noise Code is also required.

In New York City, construction work typically occurs on weekdays and begins at 7:00 AM, with most workers arriving between 6:00 AM and 7:00 AM. Work would typically end at 4:00 PM, with some exceptions when certain critical tasks (e.g., finishing a concrete pour for a floor deck, completing the drilling of piles, or completing the bolting of a steel frame erected that day) require that the workday be extended beyond normal work hours.

Construction Practices

Access, Deliveries and Staging Area

Access to construction sites would be controlled. Work areas would be fenced off, and limited access points for workers and construction-related trucks would be provided. Typically, worker vehicles would not be allowed into the construction area, and workers or trucks without a need to be on the site would not be allowed entry. After work hours, the gates would be closed and locked. Security guards may patrol the construction site after work hours and over weekends to prevent unauthorized access.

Material deliveries to the site would be controlled and scheduled. To aid in adhering to the delivery schedules, as is normal for building construction in New York City, flaggers would be employed at each of the construction site's access points. Flaggers are typically supplied by either the subcontractor on-site at the time or by the construction manager. The flaggers control trucks entering and exiting the project site so that they would not interfere with one another. In addition, they provide an additional traffic aid as trucks enter and exit the on-street traffic streams.

Lane and Walkway Closures

Temporary curb-lane and sidewalk closures are typical for construction projects in New York City. To manage such closures, a Maintenance and Protection of Traffic (MPT) plan is developed consistent with DOT requirements. DOT OCMC reviews and approves MPT plans, and the implementation of the closures would also be coordinated with DOT OCMC. In general, construction managers for major projects on adjacent sites also coordinate their activities to avoid delays and inefficiencies.

Public Safety

A variety of measures are employed to ensure public safety during construction at sites within New York City. Examples include the use of sidewalk bridges to provide overhead protection for pedestrians passing by the construction site and the employment of flaggers to control trucks entering and exiting the construction site, to provide guidance to pedestrians, and/or to alert or slow down the traffic. Other safety measures include following DOB requirements during the installation and operation of tower cranes to ensure safe operation of the equipment and the installation of safety nettings on the sides of the project as the superstructure advances upward to prevent debris from falling to the ground. These safety measures are required as part of a Site Safety Plan reviewed and approved by DOB.

Rodent Control

Construction projects in New York City typically include provisions for a rodent (i.e., mouse and rat) control program with provisions for this formalized in construction contracts for the development. Rodent control programs are typically carried out throughout construction, beginning with surveying and baiting appropriate areas prior to construction and providing for proper site sanitation and maintenance during construction. Signage is posted, and coordination is conducted with appropriate public agencies. Only EPA- and NYSDEC-registered rodenticides are permitted, and the contractor is required to implement the rodent control program in a manner that is not hazardous to the general public, domestic animals, and non-target wildlife.

Air Emissions Reduction Measures

In addition to the measures described above, the evaluation performed in this section assumes a combination of emission reduction measures that are mandated by law and are common practice in large-scale New York City construction projects, and follow the requirements included in NYC Law 77 and the NYC Air Pollution Control Code. These measures are listed below in the Air Quality section.

Noise Reduction Measures

Noise from construction activities and some construction equipment is regulated by the NYCDEP Noise Control Code. The NYCDEP Noise Code (Section 24-228) limits noise from non-impulsive construction equipment to a maximum of 85 dBA as measured 50 feet from the source. The code also limits noise from paving breakers, such as jackhammers, to 95 dBA at a distance of one (1) meter and requires that a pneumatic discharge muffler be used that provides an insertion loss of 5 dBA.

In addition, the NYCDEP Noise Control Code limits construction activities to weekdays between the hours of 7:00 AM and 6:00 PM and requires that a Construction Noise Mitigation Plan be implemented. For construction on weekends or weekdays between 6:00 PM and 7:00 AM, NYCDEP Noise Code requires after hours work authorization. In accordance with the NYCDEP Noise Code §24-223, the afterhours work must be conducted in compliance with the Construction Noise Mitigation Plan, shall not exceed 7 dBA above ambient sound levels within a residential receptor, and must involve activities with minimal noise impact. Project-specific noise control measures are described in the Construction

Noise Mitigation Plan and can include a variety of source and path controls, such as the following:

- The contractor would self-certify that all construction tools and equipment have been maintained to not generate excessive or unnecessary noise and that the noise emissions would not exceed the levels specified in Subchapter 5 of the NYC Noise Control Code and Table 22-1 of the *2021 CEQR Technical Manual*. Table 19-3 shows the noise levels for typical construction equipment.
- All construction equipment would be equipped with necessary noise reduction equipment, including mufflers. All equipment with internal combustion engines would be operated with the doors closed, including noise-insulating materials, and at the lowest engine speed allowable.
- Where feasible, practical, and safe, the use of back-up alarms would be minimized and/or quieter back-up alarms would be installed in accordance with OSHA standards.
- Vehicles would not be allowed to idle more than three minutes in accordance with New York City Administrative Code §24-163.
- The contractor shall utilize a training program to inform workers on methods that can minimize construction noise.
- For impact equipment, such as pile drivers and jackhammers, the quietest equipment shall be selected taking into consideration the structural and geotechnical conditions.
- In general, the quietest equipment and methods shall be used for excavators, dump trucks, cranes, auger drills, and concrete saws to the extent feasible and practical.

The following path noise controls would be implemented to the extent feasible, practical and safe as required by the New York City Noise Code:

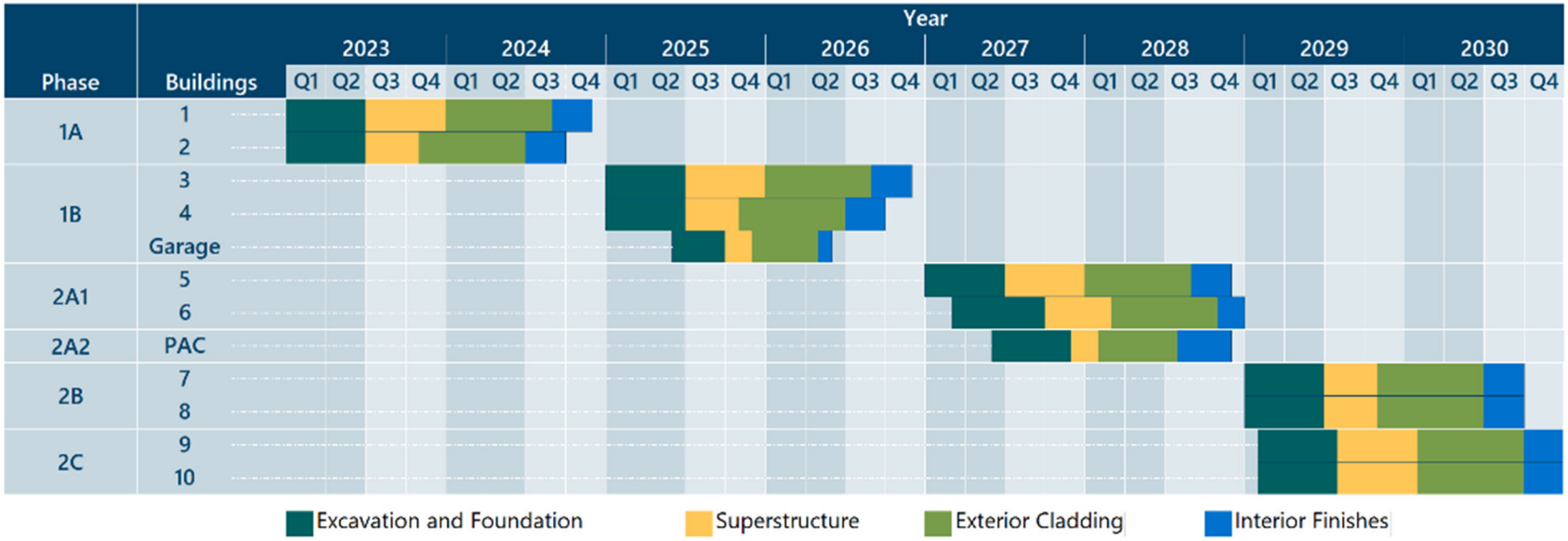
- The DOB regulations require a perimeter barrier or "construction noise barrier" at a height of at least 8-feet when the site is within 200 feet of a receptor, the barrier shall be constructed in a specific manner (as described in the New York City Noise Code) to provide sufficient sound attenuation. Section 3307.7 of the New York City Building Code requires a solid perimeter noise barrier made of wood or other suitable material be constructed where a new building is being constructed or a building is being demolished to grade.
- Should noise complaints occur during construction, the contractor shall use path noise control measures such as temporary noise barriers and jersey barriers.
- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations.

Construction Description

Construction Schedule

Figure 19-1 shows the anticipated construction schedule for the Proposed Project as well as the sequencing of construction stages as currently anticipated. The details of the construction schedule are described further below.

Figure 19-1 Anticipated Construction Schedule



No-Action Condition

Absent the Proposed Project, the Development Site would remain in its existing condition, with only the existing CCC operational on the site. No construction would occur under the No-Action Condition.

With-Action Condition

As discussed above and in **Chapter 1, Project Description**, in the future With-Action condition, the Applicant proposes to redevelop the Development Site with approximately 2.2 million gsf of development (4.29 FAR) of residential, commercial, and community facility space as well as parking uses and public and private open space.

As shown in **Figure 19-1**, construction of the Proposed Project under the With-Action condition is anticipated to begin in early 2023 (Q1 2023) and is expected to be completed in January 2031 (Q1 2031) with a 96-month total construction period. Construction would begin with Phase 1A which includes buildings 1 and 2 from Q1 2023 to Q4 2024. Phase 1B would start in Q1 2025 and continue through Q4 2026 and include buildings 3 and 4 as well as the public parking garage. Phase 2A1 would begin in Q1 2027 and end in Q1 2029 and include buildings 5 and 6. Phase 2A2 would begin in Q2 2027 and end in Q4 2028 and include the PAC. Phase 2B would begin in Q1 2029 and end in Q4 2030 and include buildings 7 and 8. Phase 2C would begin in Q1 2029 and end in Q1 2031 and include buildings 9 and 10.

Construction would begin in each of the phases with building foundations, which would take about six months for each building. Then, each building would enter the superstructure phase, which would be completed in approximately two to seven months after the foundation phase depending on the building. There is a small amount of overlap between the foundations and superstructure phases. Exterior construction would start between one to three months into the superstructure phase and end five to eight months after the superstructure phase depending on the building. Interior fit out would also begin one to three months after the start of exterior construction and be completed one to three months after the exterior construction is finished, depending on the building.

Construction Activities

For conservative analysis purposes it is assumed that no construction is proposed on-site in absence of the Proposed Actions. Construction of the Proposed Project would be subject to government regulations and oversight detailed above and would employ the general construction practices described above. No building demolition is required for the Proposed Project due to the location within a parking lot.

Excavation and Foundation

Excavation and Foundation is the first phase of construction to prepare the site for construction work. Regarding excavation activities, where necessary, sheeting is installed to stabilize soil around the excavation area and excavators are then used to excavate soil. The soil is loaded onto dump trucks with front-end loaders for transport to a licensed disposal facility or for reuse on any portion of the development site that needs fill.

Water from rain and snow collected in the excavation area during construction would be removed as necessary using a dewatering pump. If dewatering is required, testing would be performed to ensure compliance with DEP sewer discharge permit/approval requirements and, if necessary, pretreatment would be conducted prior to discharge to the sewer.

Alongside excavation, construction of the new building's foundation and below-grade elements begins. Foundation work for the larger Projected Development Sites would include pile driving and columns and concrete walls would be built to the grade level. As part of the foundation construction, concrete would be poured starting in select areas. Delivery trucks would enter the site from Pennsylvania Avenue, Flatlands Avenue, or Louisiana Avenue depending on the construction phase.

Superstructure and Exterior Construction (Core and Shell)

Construction of the core and shell involves construction of the building's framework, core, and exterior. The superstructure is the building's framework (beams and columns) and floor decks. Construction of the core, or interior structure, includes construction of the building's elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. Construction of the exterior involves the installation of the façade (exterior walls, windows, and cladding and the roof).

During this stage concrete plank and block would be installed or all concrete would be poured for the core and the superstructure. The podium for each building would be cast in place or steel. An electric hoist would be installed and operated to facilitate these activities, including the delivery of various materials to the site. A sidewalk shed also would be installed along the curb edge around the site.

Equipment used during this stage typically includes air compressors, generators, delivery and concrete trucks, concrete pumps, concrete trowels, welding equipment, and a variety of handheld tools. Space for concrete and spray fireproofing operations and other deliveries would be provided within the site with access from Pennsylvania Avenue, Flatlands Avenue, or Louisiana Avenue depending on the construction phase. Mobile Cranes would also be brought into the site, and temporary construction elevators (hoists) would also be constructed for the delivery of materials and vertical movement of workers when necessary. Superstructure activities would also require the use of mobile cranes, welders, and a variety of trucks. Two to three mobile cranes are needed in each construction phase for superstructure activities.

Interiors and Finishing

Interior fit-out activities include the construction of interior partitions, installation of lighting fixtures and interior finishes (i.e., flooring, painting, etc.); mechanical and electrical work; and lobby finishes. In addition, final cleanup and touchup of the proposed building and final building systems (i.e., electrical system, fire alarm, plumbing, etc.) testing and inspections are part of this stage of construction.

Equipment used during interior construction typically includes exterior hoists, compressors, delivery trucks, and a variety of small hand-held tools. This stage of construction is typically the quietest and does not generate fugitive dust since this work occurs within the building with the façades substantially complete.

This stage of construction is also when the construction protection measures (fencing, sidewalk enclosures, bridges, temporary sidewalks, remaining scaffolding, etc.) around the construction site would be removed. This stage of construction would also include punch list completion activities, which are typically small tasks that were not completely finished, and project commissioning to ensure compliance with contract requirements.

Number of Construction Workers and Material Deliveries

Construction is labor intensive, and the number of workers varies with the general construction task and/or building size. Likewise, material deliveries and removals generate truck trips, and the number also varies depending on the task and/or the building size. **Table 19-1** shows the estimated number of daily workers and trucks to the Development Site per quarter (i.e., three-month period) of each calendar year for the duration of construction activities. These represent the average number of daily workers and trucks within each quarter. During construction, the average number of workers would be approximately 197 workers per day, with a peak of 442 workers per day occurring in the fourth quarter of 2025. An average of 13 trucks per day is anticipated, and a maximum of 27 trucks per day are anticipated during the third quarter of 2025.

Table 19-1 Average Number of Daily Construction Workers and Trucks by Quarter

Year	2023				2024				2025				2026			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Workers	50	153	242	350	308	245	180	11	61	192	316	442	381	280	136	10
Trucks	15	17	18	16	11	11	10	2	18	22	27	23	16	14	8	2
Year	2027				2028				2029				2030			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Workers	24	86	157	292	374	295	201	49	37	113	197	327	356	260	146	44
Trucks	7	12	15	14	9	8	8	5	12	16	18	16	12	11	9	3

Source: Monadnock Construction

Assessment of Project Construction

In accordance with the *CEQR Technical Manual* guidelines, this preliminary assessment evaluates the effects associated with the Proposed Projects' construction related activities—including historic and cultural resources, transportation, air quality, noise, and vibration—on sensitive receptors located near the area of construction, as well as the construction related effects on the Project Site's existing nearby historic architectural resources.

Transportation

Construction activity would extend from 2023 through 2030 and would generate construction worker and truck traffic. Because of the lengthy duration of these activities, an evaluation of construction sequencing and worker and truck projections were completed in order to identify potential construction traffic impacts. Although the construction-related activities would generate less traffic than the Proposed Project, the combination of construction-generated traffic and operational traffic generated by components of the

Proposed Project that would have been completed could result in significant traffic impacts. Therefore, construction trip projections were developed and assigned through the study area through key access route to the Development Site, and a detailed traffic analysis was performed for seven key intersections for the AM construction peak hour and twelve key intersections for the PM construction peak hour within the traffic study area. The analysis also incorporates operational trips generated by components of the Proposed Project that would be completed by this peak quarter of construction. The conclusions of this analysis are presented below.

Construction Worker Modal Splits

The number of projected construction vehicles per day were developed for the construction quarters based on the 2000 Census reverse journey to work data for the construction industry (for Brooklyn census tracts 982, 1018, 1058, 11100, and 1102). Based on this information, it is anticipated that construction workers would primarily drive to the Development Site (approximately 65 percent with an average auto occupancy of 1.01), with a smaller percentage of construction workers traveling via bus or subway (approximately 35 percent).

Construction Peak Quarter and Peak Hour of Construction

Based on the above mode share and vehicle occupancy assumptions, the peak quarter for construction activities was identified. As shown in **Table 19-2**, the peak quarter of construction activity would occur during the fourth quarter of 2025 and construction activities would generate approximately 616 daily vehicle trips (662 daily PCE trips[2]). However, during this quarter only two of the twelve buildings would be completed and the increment of construction plus operational trips, which would be used to assess construction traffic impacts, could be higher in other quarters. The construction schedule was reviewed to determine if another peak quarter could result in a greater level of combined construction plus operational trips and a second peak quarter was identified – the first quarter of 2030. Although construction activities during the first quarter of 2030 is lower (484 daily vehicle trips, 508 daily PCE trips) than during the fourth quarter of 2025 (616 daily vehicle trips, 662 daily PCE trips), eight buildings would be completed and would generate more operational trips than during the fourth quarter of 2025. A comparison of peak hour volumes between these two peak quarter conditions is presented below in **Table 19-2**.

Table 19-2 Average Number of Daily Number of Construction PCE Trips by Quarter

Year	2023				2024				2025				2026			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Auto Trips	64	198	312	452	398	316	232	14	78	248	408	570	492	362	176	12
Truck Trips	30	34	36	32	22	22	20	4	36	44	54	46	32	28	16	4
Vehicle Trips	94	232	348	484	420	338	252	18	114	292	462	616	524	390	192	16
PCE Trips	124	266	384	516	442	360	272	22	150	336	516	662	556	418	208	20

[2] Since larger vehicles such as trucks typically make up a significant portion of construction traffic, a passenger car equivalent factor is applied to these vehicles to account for their size difference. It is assumed that truck trips would be comprised of trucks with three axles which per the *CEQR Technical Manual* is equivalent to two passenger cars.

Year	2027				2028				2029				2030			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Auto Trips	30	112	202	376	482	380	260	64	48	146	254	422	460	336	188	56
Truck Trips	14	24	30	28	18	16	16	10	24	32	36	32	24	22	18	6
Vehicle Trips	44	136	232	404	500	396	276	74	72	178	290	454	484	358	206	62
PCE Trips	58	160	262	432	518	412	292	84	96	210	326	486	508	380	224	68

Traffic Analysis

Peak Hour Construction Worker Vehicle and Truck Trips

Construction activities would be expected to occur on weekdays beginning at 7 AM and ending at 4 PM. Auto trips by with construction workers would typically occur during the hours before and after the daily work shift. Construction truck trips would typically be distributed throughout the day depending upon the specific types of construction activities taking place; most trucks would remain in the area for short durations. Each worker vehicle would arrive in the morning and depart in the evening, and each truck delivery was assumed to result in one "in" trip and one "out" trip during the same hour.

The estimated daily vehicle trips for the peak quarter of construction traffic were distributed throughout the workday based on projected arrival/departure patterns of construction workers, and the projected pattern of truck deliveries based on the types of construction activities that would occur during the peak quarters for the Proposed Project. For construction workers, typical arrival patterns show that most arrivals (approximately 80 percent) occur during the 6 AM to 7 AM hour (the hour before the beginning of a regular day shift) and the same percentage of departure trips occurs during the end of the shift (the 4 PM to 5 PM hour). For trucks, deliveries are usually spread throughout the day but the peak activity (approximately 25 percent) is anticipated to occur during the 6 AM to 7 AM hour.

Construction Peak Quarter Selection

These assumptions were applied to the two potential construction peak quarters to determine the intensity of construction vehicle trips during the construction peak hours. The combination of peak hour construction vehicle trips plus operational vehicle trips from the partial project buildout were used to determine the peak quarter for traffic analysis.

The estimated number of vehicle trips generated by construction activities during the Q4 2025 peak quarter would be 238 vehicle trips (248 PCEs) during the AM peak hour (6 AM to 7 AM) and 230 vehicle trips (232 PCEs) during the PM peak hour (4 PM to 5 PM). The peak construction hourly trip projections for this peak quarter are summarized in **Table 19-3**.

Table 19-3 Construction Vehicle Trips by Hour (Q4 2025)

	Auto Trips		Truck Trips		Total Vehicle Trips			Total PCE Trips		
Hour	In	Out	In	Out	In	Out	Total	In	Out	Total
6 AM – 7 AM	228	0	5	5	233	5	238	238	10	248
7 AM – 8 AM	57	0	2	2	59	2	61	61	4	65
8 AM – 9 AM	0	0	2	2	2	2	4	4	4	8
9 AM – 10 AM	0	0	2	2	2	2	4	4	4	8
10 AM – 11 AM	0	0	2	2	2	2	4	4	4	8
11 AM – 12 PM	0	0	2	2	2	2	4	4	4	8
12 PM – 1 PM	0	0	2	2	2	2	4	4	4	8
1 PM – 2 PM	0	0	0	0	0	0	0	0	0	0
2 PM – 3 PM	0	0	1	1	1	1	2	2	2	4
3 PM – 4 PM	0	15	1	1	1	16	17	2	17	19
4 PM – 5 PM	0	228	1	1	1	229	230	2	230	232
5 PM – 6 PM	0	42	0	0	0	42	42	0	42	42

For the Q1 2030 peak quarter, construction activities would generate 190 vehicle trips (196 PCEs) during the AM peak hour and 186 vehicle trips (188 PCEs) during the PM peak hour. The peak construction hourly trip projections for this peak quarter are summarized in **Table 19-4Table 19-3**.

Table 19-4 Construction Vehicle Trips by Hour (Q1 2030)

	Auto Trips		Truck Trips		Total Vehicle Trips			Total PCE Trips		
Hour	In	Out	In	Out	In	Out	Total	In	Out	Total
6 AM – 7 AM	184	0	3	3	187	3	190	190	6	196
7 AM – 8 AM	46	0	1	1	47	1	48	48	2	50
8 AM – 9 AM	0	0	1	1	1	1	2	2	2	4
9 AM – 10 AM	0	0	1	1	1	1	2	2	2	4
10 AM – 11 AM	0	0	1	1	1	1	2	2	2	4
11 AM – 12 PM	0	0	1	1	1	1	2	2	2	4
12 PM – 1 PM	0	0	1	1	1	1	2	2	2	4
1 PM – 2 PM	0	0	0	0	0	0	0	0	0	0
2 PM – 3 PM	0	0	1	1	1	1	2	2	2	4
3 PM – 4 PM	0	12	1	1	1	13	14	2	14	16
4 PM – 5 PM	0	184	1	1	1	185	186	2	186	188
5 PM – 6 PM	0	34	0	0	0	34	34	0	34	34

The estimated number of vehicle trips generated by construction activities and buildings completed during the Q4 2025 peak quarter would be 277 vehicle trips (292 PCEs) during the 6 AM to 7 AM peak hour and 303 vehicle trips (323 PCEs) during the Q1 2030 6 AM to 7 AM peak hour. The increments for both peak quarters would be significantly lower than the

668 operational vehicle trips (695 PCEs) that would be generated by the Proposed Project during the AM peak hour.

For the 4 PM to 5 PM peak hour, the combined construction and operational trips generated during the Q4 2025 PM peak hour would be 423 vehicle trips (427 PCEs) and 755 vehicle trips (763 PCEs) for Q1 2030. The Proposed Project would generate 722 operational vehicle trips (730 PCEs) during its PM peak hour, which is higher than the trips generated during Q4 2025 but lower than Q1 2030. Based on this comparison, the peak quarter for construction traffic analysis was determined to be Q1 2030. **Table 19-5** shows the comparison of vehicle trips during the construction peak quarters and the Proposed Project.

Table 19-5 Vehicle Trips Comparison – Construction Peak Quarters vs. Proposed Project

	Q4 2025 Construction Quarter			Q1 2030 Construction Quarter			Proposed Project
	Construction Trips	Operational Trips	Total Trips	Construction Trips	Operational Trips	Total Trips	Total Trips
	6 AM – 7 AM			6 AM – 7 AM			7:30 AM – 8:30 AM
Autos	228	33	261	184	97	281	608
Taxis	0	0	0	0	0	0	22
Shuttles	0	2	2	0	4	4	22
Trucks	10	4	14	6	12	18	16
Total Vehicle Trips	**238**	**39**	**277**	**190**	**113**	**303**	**668**
PCE Trips	**248**	**44**	**292**	**196**	**127**	**323**	**695**
	4 PM – 5 PM			4 PM – 5 PM			4 PM – 5 PM
Autos	228	177	405	184	529	713	670
Taxis	0	12	12	0	28	28	36
Shuttles	0	4	4	0	12	12	16
Trucks	2	0	2	2	0	2	0
Total Vehicle Trips	**230**	**193**	**423**	**186**	**569**	**755**	**722**
PCE Trips	**232**	**195**	**427**	**188**	**575**	**763**	**730**

Construction Traffic Volumes and Levels of Service

As noted above and as shown in **Table 19-4**, the construction peak hours are 6 AM to 7 AM, and 4 PM to 5 PM. The existing AM background volumes for the Proposed Project (7:30 AM to 8:30 AM) are higher than the earlier construction peak hour. ATR volumes in the study area were reviewed and it was determined that traffic volumes during the earlier construction peak hour are about 23 percent lower than those during the Proposed Project's operational peak hour. Since the background volumes are lower and the combination of construction and operational trips during the construction peak quarter are lower than when the Proposed Project is completed, there would likely be fewer significant traffic impacts during the AM peak construction hour. The 4 PM to 5 PM construction peak hour is the

same as the Proposed Project's operational PM peak hour, therefore the PM construction peak hour baseline volumes will be the same as the operational analysis.

An assessment of traffic operations at the Proposed Project's 13 operational traffic analysis locations was conducted to confirm that roadway capacities during the AM construction peak hour would be consistent with the Proposed Project's operational peak hours. At signalized intersections, signal timings were confirmed to be consistent between the 6 AM to 7 AM and 7:30 AM to 8:30 AM peak hours. The number of travel lanes would also remain unchanged between the construction and operational peak hours during the construction period. During the peak quarter of construction, sidewalk and curbside parking lane closures are expected along the east side of Louisiana Avenue along the Development Site frontage south of Flatlands Avenue and will require DOT's OCMC's review and approval. The closure could potentially reduce the length of the northbound Louisiana Avenue through-right lane at Flatlands Avenue from approximately 240 feet to 95 feet. Pedestrians who would typically use this sidewalk segment would need to cross Louisiana Avenue at the crosswalks at Flatlands Avenue or at Vandalia Avenue and use the west sidewalk instead during this period of construction. The CCC's main entrance at the southeastern corner of Flatlands Avenue and Louisiana Avenue would remain open during construction. During the peak construction quarter, pedestrian access would be provided off of the Development Site's Flatlands Avenue frontage, where the vast majority of church trips arrive from, through the project's internal roadway network and pedestrian pathways.

Construction activities (construction-related trips plus operational trips from completed buildings) however would be slightly higher in the PM peak hour (763 construction PCEs compared to 730 operational PCEs, i.e., just four to five percent difference overall). Therefore, a screening assessment was conducted to determine whether construction-related vehicle trips would exceed the *CEQR Technical Manual* 50 PCE thresholds for an analysis intersection, and whether the combined construction and operational vehicles trips would be greater than the Proposed Project's operational trips. Additional locations where traffic impacts were identified in the operational condition were reviewed in order to determine whether impacts could still potentially occur during construction. Based on this assessment and in coordination with the Department of City Planning (DCP) and NYC DOT, the following intersections were identified for analysis during the AM (seven intersections) and PM (twelve intersections) construction peak hours:

- Pennsylvania Avenue and Seaview Avenue (AM and PM peak hours)
- Pennsylvania Avenue and Twin Pines Drive (PM peak hour)
- Pennsylvania Avenue and Vandalia Avenue (AM and PM peak hours)
- Pennsylvania Avenue and Flatlands Avenue (AM and PM peak hours)
- Pennsylvania Avenue and Cozine Avenue (AM and PM peak hours)
- Pennsylvania Avenue and Wortman Avenue (PM peak hour)
- Pennsylvania Avenue and Stanley Avenue (AM and PM peak hours)
- Pennsylvania Avenue and Linden Boulevard (AM and PM peak hours)
- Louisiana Avenue and Flatlands Avenue (AM and PM peak hours)
- Flatlands Avenue and East 108th Street (PM peak hour)
- Flatlands Avenue and Rockaway Parkway (PM peak hour)
- Flatlands Avenue and Georgia Avenue (PM peak hour)

Existing Conditions

Each of the seven intersections identified for analysis in the AM construction peak hour were evaluated and were found to operate at an overall acceptable level of service. Eleven of the twelve intersections analyzed during the PM construction peak hour operate at overall acceptable level of service; the intersection of Pennsylvania Avenue and Linden Boulevard operates at LOS E during this peak hour. Of the approximately 61 movements analyzed during the AM construction peak hour, five movements operate at unacceptable levels of service (i.e., LOS E or F). Of the 92 movements analyzed during the PM construction peak hour, 17 movements operate at unacceptable levels of service. Detailed traffic levels of service are provided in **Table 19-6**.

Table 19-6 Year 2020 Existing Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	AM V/C	AM Ctrl Delay[1]	AM LOS	PM Peak Hour Mvt	PM V/C	PM Ctrl Delay[1]	PM LOS
SIGNALIZED INTERSECTIONS									
Pennsylvania Avenue and Seaview Avenue									
Seaview Avenue	EB	LT	0.18	34.9	C	LT	0.22	36.0	D
		R	0.50	40.9	D	R	0.84	57.7	E
	WB	LTR	0.43	34.5	C	LTR	0.50	36.2	D
Pennsylvania Avenue	NB	L	0.47	57.7	E	L	0.29	55.6	E
		T	0.61	26.1	C	T	0.41	21.4	C
	SB	L	0.21	74.0	E	L	0.20	50.2	D
		TR	0.45	25.9	C	TR	0.70	12.2	B
Shore Parkway Westbound Off-Ramp	NB	TR	0.50	22.5	C	TR	0.37	20.3	C
Overall Intersection[2]		-	-	**28.1**	**C**	-	-	**24.7**	**C**
Pennsylvania Avenue and Twin Pines Drive									
Twin Pines Drive	EB					LR	0.68	41.4	D
Pennsylvania Avenue	NB					L	0.59	42.1	D
						T	0.38	28.8	C
	SB					T	0.49	8.5	A
						R	0.26	6.2	A
Overall Intersection[2]						-	-	**21.7**	**C**
Pennsylvania Avenue and Vandalia Avenue									
Vandalia Avenue	EB	LTR	0.22	31.6	C	LTR	0.39	42.5	D
	WB	LTR	0.52	39.4	D	LTR	0.77	54.9	D
Pennsylvania Avenue	NB	L	0.31	46.9	D	L	0.44	36.4	D
		T	0.67	5.5	A	T	0.53	13.8	B
		R	0.14	2.9	A	R	0.19	10.9	B
	SB	L	0.19	32.9	C	L	0.52	39.6	D
		T	0.33	21.8	C	T	0.57	18.7	B
		R	0.07	15.5	B	R	0.06	13.4	B
Overall Intersection[2]		-	-	**15.2**	**B**	-	-	**22.6**	**C**

Table 19-6 Year 2020 Existing Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	AM V/C	AM Ctrl Delay[1]	AM LOS	PM Peak Hour Mvt	PM V/C	PM Ctrl Delay[1]	PM LOS
Pennsylvania Avenue and Flatlands Avenue									
Flatlands Avenue	EB	L	0.36	32.7	C	L	0.50	44.8	D
		T	0.31	34.0	C	T	0.73	43.3	D
		R	0.08	23.8	C	R	0.34	28.0	C
	WB	L	0.16	28.6	C	L	0.43	47.1	D
		T	0.34	34.5	C	T	0.59	39.2	D
		R	0.20	25.6	C	R	0.25	26.4	C
Pennsylvania Avenue	NB	L	0.58	29.4	C	L	0.72	36.0	D
		T	0.73	19.4	B	T	0.53	24.5	C
		R	0.15	8.6	A	R	0.33	23.7	C
	SB	L	0.45	42.9	D	L	0.58	23.4	C
		T	0.45	38.4	D	T	0.69	14.6	B
		R	0.28	39.4	D	R	0.50	13.9	B
Overall Intersection[2]		-	-	**29.0**	**C**	-	-	**28.9**	**C**
Pennsylvania Avenue and Cozine Avenue									
Cozine Avenue	EB	LTR	0.60	36.9	D	LTR	0.90	58.3	E
	WB	LTR	0.37	30.4	C	LTR	0.61	36.8	D
Pennsylvania Avenue	NB	L	0.26	6.6	A	L	0.27	11.6	B
		TR	0.60	10.8	B	TR	0.52	10.3	B
	SB	L	0.17	8.1	A	L	0.29	8.7	A
		TR	0.46	7.5	A	TR	0.66	16.2	B
Overall Intersection[2]		-	-	**14.5**	**B**	-	-	**23.1**	**C**
Pennsylvania Avenue and Wortman Avenue									
Wortman Avenue	EB					LTR	0.84	56.8	E
	WB					LTR	0.60	41.4	D
Pennsylvania Avenue	NB					L	0.55	57.3	E
						TR	0.61	28.7	C
	SB					L	0.53	72.1	E
						TR	0.70	13.2	B
Overall Intersection[2]						-	-	**29.1**	**C**

Table 19-6 Year 2020 Existing Traffic Level of Service

Intersection & Approach		AM Peak Hour				PM Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Pennsylvania Avenue and Stanley Avenue									
Stanley Avenue	EB	LTR	0.58	48.4	D	LTR	0.71	52.3	D
	WB	LTR	0.58	47.6	D	LTR	0.83	65.0	E
Pennsylvania Avenue	NB	L	0.62	74.7	E	L	0.55	56.4	E
		TR	0.60	4.6	A	TR	0.52	11.4	B
	SB	L	0.18	31.1	C	L	0.48	59.6	E
		TR	0.46	36.9	D	TR	0.64	15.9	B
Overall Intersection[2]		-	-	**25.9**	**C**	-	-	**24.8**	**C**
Pennsylvania Avenue and Linden Boulevard									
Linden Boulevard Main Line	EB	L	0.51	65.3	E	L	0.73	79.4	E
		T	0.42	34.7	C	T	0.97	59.9	E
	WB	L	0.64	76.4	E	L	0.83	95.4	F
		T	0.71	39.0	D	T	0.56	37.0	D
Pennsylvania Avenue	NB	L	0.67	22.8	C	L	0.98	96.6	F
		T	0.82	41.1	D	T	0.67	48.2	D
		R	0.17	37.4	D	R	0.32	42.6	D
	SB	L	0.51	47.3	D	L	0.66	50.5	D
		TR	0.61	38.3	D	TR	0.79	44.4	D
Linden Boulevard Eastbound Service Rd	EB	T	0.42	36.5	D	T	0.76	48.4	D
		R	0.28	26.2	C	R	0.48	30.1	C
Linden Boulevard Westbound Service Rd	WB	TR	0.71	47.2	D	T	1.05	93.6	F
						R	0.17	31.9	C
Overall Intersection[2]		-	-	**39.0**	**D**	-	-	**56.1**	**E**

Table 19-6 Year 2020 Existing Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	AM V/C	AM Ctrl Delay[1]	AM LOS	PM Peak Hour Mvt	PM V/C	PM Ctrl Delay[1]	PM LOS
Louisiana Avenue and Flatlands Avenue									
Flatlands Avenue	EB	L	0.03	17.7	B	L	0.29	30.4	C
		T	0.33	21.5	C	T	0.63	27.1	C
		R	0.27	21.3	C	R	0.35	22.7	C
	WB	L	0.17	18.5	B	L	0.36	31.2	C
		TR	0.38	22.1	C	TR	0.58	25.7	C
Louisiana Avenue	NB	L	0.47	37.2	D	L	0.87	70.0	E
		TR	0.20	35.9	D	TR	0.34	38.2	D
	SB	L	0.02	28.3	C	L	0.08	31.3	C
		TR	0.10	34.5	C	TR	0.62	46.4	D
Overall Intersection[2]		-	-	**24.7**	**C**	-	-	**33.0**	**C**
Flatlands Avenue and East 108th Street									
Flatlands Avenue	EB					L	0.18	16.1	B
						TR	0.59	19.1	B
	WB					L	0.71	39.9	D
						TR	0.51	17.4	B
East 108th Street	NB					LTR	0.84	63.9	E
	SB					LTR	0.81	61.6	E
Overall Intersection[2]						-	-	**29.5**	**C**
Flatlands Avenue and Rockaway Parkway									
Flatlands Avenue	EB					L	0.30	42.6	D
						TR	0.85	45.5	D
	WB					L	0.14	38.2	D
						TR	0.79	41.5	D
Rockaway Parkway	NB					L	0.48	28.4	C
						TR	0.42	26.0	C
	SB					LT	0.69	43.3	D
						R	0.35	34.8	C
Overall Intersection[2]						-	-	**40.2**	**D**

Table 19-6 Year 2020 Existing Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	AM Peak Hour V/C	AM Peak Hour Ctrl Delay[1]	AM Peak Hour LOS	PM Peak Hour Mvt	PM Peak Hour V/C	PM Peak Hour Ctrl Delay[1]	PM Peak Hour LOS
UNSIGNALIZED INTERSECTIONS									
Flatlands Avenue and Georgia Avenue									
Flatlands Avenue	EB					LT	-	1.6	A
	WB					L	-	0.0	A
						TR	-	0.0	A
Overall Intersection[2]						-	-	**0.4**	**A**

[1] Control delay is measured in seconds per vehicle.
[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

No-Action without Construction Conditions

An annual growth rate of 0.50 percent per year was assumed for the first five years (years 2020 to 2025) and a growth rate of 0.25 percent per year was assumed for the subsequent five years (years 2025 to 2030) as per the *CEQR Technical Manual* in order to estimate the background volumes for the 2030 No-Action without Construction condition. Vehicle trips for No-Action background development sites discussed in **Chapter 9, Transportation,** expected to be developed in the area and completed by the year 2030, were assigned to the roadway network. It is expected that roadway improvements projects identified in **Chapter 9, Transportation**, would also be completed by the year 2030.

Under future No-Action conditions in year 2030, one intersection (Pennsylvania Avenue and Linden Boulevard) would operate at an unacceptable overall levels of service (LOS E) during the PM construction peak hour, the same as in the existing conditions. The seven intersections analyzed for the AM construction peak hour would operate at acceptable levels of service. Of the 61 movements analyzed during the AM construction peak hour, five movements would operate at unacceptable levels of service, the same as in existing conditions. Of the 92 movements analyzed during the PM construction peak hour, 23 movements would operate at unacceptable levels of service, compared to 17 movements in existing conditions. Detailed traffic levels of service are provided in **Table 19-7**.

Table 19-7 Year 2030 No-Action Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	AM V/C	AM Ctrl Delay[1]	AM LOS	PM Peak Hour Mvt	PM V/C	PM Ctrl Delay[1]	PM LOS
SIGNALIZED INTERSECTIONS									
Pennsylvania Avenue and Seaview Avenue									
Seaview Avenue	EB	LT	0.19	35.4	D	LT	0.23	36.2	D
		R	0.52	41.8	D	R	0.87	60.4	E
	WB	LTR	0.45	35.1	D	LTR	0.52	36.8	D
Pennsylvania Avenue	NB	L	0.49	58.0	E	L	0.31	55.8	E
		T	0.63	26.8	C	T	0.42	21.7	C
	SB	L	0.22	74.4	E	L	0.21	50.3	D
		TR	0.47	22.9	C	TR	0.72	14.2	B
Shore Parkway Westbound Off-Ramp	NB	TR	0.52	22.9	C	TR	0.38	20.5	C
Overall Intersection[2]		-	-	**27.7**	**C**	-	-	**26.0**	**C**
Pennsylvania Avenue and Twin Pines Drive									
Twin Pines Drive	EB					LR	0.84	57.7	E
Pennsylvania Avenue	NB					L	0.49	28.7	C
						T	0.39	25.2	C
	SB					T	0.56	10.0	A
						R	0.30	7.6	A
Overall Intersection[2]						-	-	**23.0**	**C**
Pennsylvania Avenue and Vandalia Avenue									
Vandalia Avenue	EB	LTR	0.24	31.9	C	LTR	0.40	42.9	D
	WB	LTR	0.54	40.2	D	LTR	0.81	58.6	E
Pennsylvania Avenue	NB	L	0.32	46.7	D	L	0.45	46.9	D
		T	0.67	5.3	A	T	0.53	6.0	A
		R	0.14	3.1	A	R	0.20	5.3	A
	SB	L	0.20	32.7	C	L	0.53	41.4	D
		T	0.34	23.1	C	T	0.59	18.1	B
		R	0.07	17.1	B	R	0.06	12.8	B
Overall Intersection[2]		-	-	**15.5**	**B**	-	-	**20.1**	**C**

Table 19-7 Year 2030 No-Action Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	AM V/C	AM Ctrl Delay[1]	AM LOS	PM Peak Hour Mvt	PM V/C	PM Ctrl Delay[1]	PM LOS
Pennsylvania Avenue and Flatlands Avenue									
Flatlands Avenue	EB	L	0.39	34.7	C	L	0.54	49.1	D
		T	0.40	37.5	D	T	0.94	61.0	E
		R	0.08	25.9	C	R	0.37	29.9	C
	WB	L	0.17	30.1	C	L	0.49	53.3	D
		T	0.43	38.3	D	T	0.71	44.1	D
		R	0.25	28.4	C	R	0.31	28.7	C
Pennsylvania Avenue	NB	L	0.62	31.4	C	L	0.78	39.0	D
		T	0.76	19.9	B	T	0.54	13.2	B
		R	0.15	8.6	A	R	0.35	13.0	B
	SB	L	0.50	42.0	D	L	0.74	28.1	C
		T	0.46	38.4	D	T	0.72	14.9	B
		R	0.29	38.3	D	R	0.52	14.3	B
Overall Intersection[2]		-	-	**30.4**	**C**	-	-	**32.1**	**C**
Pennsylvania Avenue and Cozine Avenue									
Cozine Avenue	EB	LTR	0.73	45.7	D	LTR	1.09	110.5	F
	WB	LTR	0.43	34.5	C	LTR	0.72	45.4	D
Pennsylvania Avenue	NB	L	0.30	8.6	A	L	0.36	17.1	B
		TR	0.68	13.7	B	TR	0.57	12.9	B
	SB	L	0.23	10.9	B	L	0.35	9.9	A
		TR	0.51	9.0	A	TR	0.74	16.8	B
Overall Intersection[2]		-	-	**17.7**	**B**	-	-	**33.2**	**C**
Pennsylvania Avenue and Wortman Avenue									
Wortman Avenue	EB					LTR	0.88	62.1	E
	WB					LTR	0.63	42.6	D
Pennsylvania Avenue	NB					L	0.57	60.8	E
						TR	0.64	27.2	C
	SB					L	0.55	73.4	E
						TR	0.75	13.5	B
Overall Intersection[2]						-	-	**29.4**	**C**

Table 19-7 Year 2030 No-Action Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	AM V/C	AM Ctrl Delay[1]	AM LOS	PM Peak Hour Mvt	PM V/C	PM Ctrl Delay[1]	PM LOS
Pennsylvania Avenue and Stanley Avenue									
Stanley Avenue	EB	LTR	0.61	49.6	D	LTR	0.75	54.8	D
	WB	LTR	0.60	48.7	D	LTR	0.88	71.9	E
Pennsylvania Avenue	NB	L	0.63	76.1	E	L	0.57	57.5	E
		TR	0.64	5.0	A	TR	0.54	12.2	B
	SB	L	0.18	33.9	D	L	0.50	62.7	E
		TR	0.48	36.7	D	TR	0.68	13.7	B
Overall Intersection[2]		-	-	**26.1**	**C**	-	-	**25.0**	**C**
Pennsylvania Avenue and Linden Boulevard									
Linden Boulevard Main Line	EB	L	0.53	66.1	E	L	0.75	82.3	F
		T	0.44	34.9	C	T	1.02	70.2	E
	WB	L	0.66	78.0	E	L	0.87	101.6	F
		T	0.74	39.8	D	T	0.58	37.4	D
Pennsylvania Avenue	NB	L	0.74	27.1	C	L	1.12	137.9	F
		T	0.86	45.6	D	T	0.70	48.8	D
		R	0.18	39.4	D	R	0.33	41.8	D
	SB	L	0.55	49.4	D	L	0.72	55.2	E
		TR	0.63	39.0	D	TR	0.84	47.0	D
Linden Boulevard Eastbound Service Rd	EB	T	0.44	36.8	D	T	0.79	50.4	D
		R	0.30	26.4	C	R	0.54	31.5	C
Linden Boulevard Westbound Service Rd	WB	TR	0.74	49.2	D	T	1.09	106.5	F
						R	0.18	32.0	C
Overall Intersection[2]		-	-	**40.6**	**D**	-	-	**62.8**	**E**

Table 19-7 Year 2030 No-Action Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	AM V/C	AM Ctrl Delay[1]	AM LOS	PM Peak Hour Mvt	PM V/C	PM Ctrl Delay[1]	PM LOS
Louisiana Avenue and Flatlands Avenue									
Flatlands Avenue	EB	L	0.03	18.6	B	L	0.33	34.1	C
		T	0.36	21.9	C	T	0.71	29.4	C
		R	0.28	21.4	C	R	0.36	22.9	C
	WB	L	0.18	19.6	B	L	0.45	38.8	D
		TR	0.42	22.7	C	TR	0.64	26.9	C
Louisiana Avenue	NB	L	0.49	37.8	D	L	0.92	80.2	F
		TR	0.21	36.1	D	TR	0.35	38.5	D
	SB	L	0.02	28.3	C	L	0.08	31.6	C
		TR	0.10	34.5	C	TR	0.65	47.7	D
Overall Intersection[2]		-	-	**25.0**	**C**	-	-	**35.2**	**D**
Flatlands Avenue and East 108th Street									
Flatlands Avenue	EB					L	0.20	17.8	B
						TR	0.68	21.3	C
	WB					L	0.85	56.8	E
						TR	0.55	18.2	B
East 108th Street	NB					LTR	0.87	68.2	E
	SB					LTR	0.88	70.5	E
Overall Intersection[2]						-	-	**32.8**	**C**
Flatlands Avenue and Rockaway Parkway									
Flatlands Avenue	EB					L	0.35	46.9	D
						TR	1.00	69.1	E
	WB					L	0.18	44.2	D
						TR	0.87	46.9	D
Rockaway Parkway	NB					L	0.51	29.8	C
						TR	0.44	26.4	C
	SB					LT	0.72	44.9	D
						R	0.37	35.4	D
Overall Intersection[2]						-	-	**50.6**	**D**

Table 19-7 Year 2030 No-Action Traffic Level of Service

Intersection & Approach		AM Peak Hour Mvt	V/C	Ctrl Delay[1]	LOS	PM Peak Hour Mvt	V/C	Ctrl Delay[1]	LOS
UNSIGNALIZED INTERSECTIONS									
Flatlands Avenue and Georgia Avenue									
Flatlands Avenue	EB					LT	-	1.8	A
	WB					L	-	0.0	A
						TR	-	0.0	A
Overall Intersection[2]						-	-	**0.5**	**A**

[1] Control delay is measured in seconds per vehicle.
[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

With-Action with Construction Condition

Construction activities would generate 184 construction worker auto trips and six construction truck trips during the AM construction peak hour, and 184 construction worker auto trips and two construction truck trips during the PM construction peak hour. Construction trucks would be required to use NYC DOT-designated truck routes to get to the project area and would then use local streets to access the construction site. In addition to construction-related trips, trips generated by the eight buildings expected to be completed as shown in **Table 19-5** were included in the With-Action with Construction condition analysis.

As indicated in **Table 19-8** and **Table 19-9** two of the seven analysis intersections would be significantly impacted during the AM construction peak hour, and nine of the twelve analysis intersections would be significantly impacted during the PM construction peak hour. The following intersections would be significantly impacted:

- The intersection of Pennsylvania Avenue and Flatlands Avenue would be significantly impacted during the AM and PM construction peak hours. Impacts during the AM construction peak hour could be fully mitigated with signal timing modifications but could only be partially mitigated during the PM construction peak hour.
- Significant impacts at the intersections of Pennsylvania Avenue with Vandalia Avenue, Cozine Avenue, and Wortman Avenue would be impacted during PM construction peak hour and could be fully mitigated with signal timing modifications.
- The intersection of Pennsylvania Avenue and Linden Boulevard would be significantly impacted during the AM and PM construction peak hours. Impacts during the AM construction peak hour could be fully mitigated with signal timing modifications but could not be mitigated during the PM construction peak hour.
- The intersection of Flatlands Avenue and East 108th Street would be significantly impacted during the PM construction peak hour and could be partially mitigated with parking regulation changes to gain an additional travel lane along the northbound East 108th Street approach.

- Significant impacts at the intersections of Pennsylvania Avenue with Stanley Avenue, and Flatlands Avenue with Louisiana Avenue and with Rockaway Parkway during the PM construction peak hour could not be fully mitigated.

Implementation of traffic improvements measures are subjected to NYC DOT's review and approval. Implementation of the traffic signal at the intersection of Flatlands Avenue and Georgia Avenue would be needed in the year 2026 after Buildings 1 and 2, the 500-space above ground parking garage, and internal roadway network would be expected to be completed. Implementation of the parking regulation changes to gain an additional travel lane along the northbound East 108th Street approach at Flatlands Avenue is anticipated to be needed at the end of year 2026 after Buildings 3 and 4 are completed. Implementation of signal timing improvements would be determined by NYC DOT based on future field conditions.

Detailed descriptions of the Construction traffic levels of service and traffic mitigation measures are presented in **Table 19-8** and **Table 19-9**.

Table 19-8 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – AM Construction Peak Hour

Intersection & Approach		2030 No-Action				2030 With-Action				2030 Mitigation				Mitigation Measures
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	
SIGNALIZED INTERSECTIONS														
Pennsylvania Avenue and Seaview Avenue														
Seaview Avenue	EB	LT	0.19	35.4	D	LT	0.19	36.5	D	LT	0.19	36.5	D	-Mitigation not required.
		R	0.52	41.8	D	R	0.52	43.0	D	R	0.52	43.0	D	
	WB	LTR	0.45	35.1	D	LTR	0.45	35.1	D	LTR	0.45	35.1	D	
Pennsylvania Avenue	NB	L	0.49	58.0	E	L	0.49	58.0	E	L	0.49	58.0	E	
		T	0.63	26.8	C	T	0.63	26.8	C	T	0.63	26.8	C	
	SB	L	0.22	74.4	E	L	0.22	69.3	E	L	0.22	69.3	E	
		TR	0.47	22.9	C	TR	0.48	18.5	B	TR	0.48	18.5	B	
Shore Parkway Westbound Off-Ramp	NB	TR	0.52	22.9	C	TR	0.58	24.2	C	TR	0.58	24.2	C	
Overall Intersection[2]		-	-	**27.7**	**C**	-	-	**26.8**	**C**	-	-	**26.8**	**C**	
Pennsylvania Avenue and Vandalia Avenue														
Vandalia Avenue	EB	LTR	0.24	31.9	C	LTR	0.24	33.6	C	LTR	0.24	33.6	C	-Mitigation not required
	WB	LTR	0.54	40.2	D	LTR	0.54	40.2	D	LTR	0.54	40.2	D	
Pennsylvania Avenue	NB	L	0.32	46.7	D	L	0.37	47.8	D	L	0.37	47.8	D	
		T	0.67	5.3	A	T	0.72	5.9	A	T	0.72	5.9	A	
		R	0.14	3.1	A	R	0.14	2.9	A	R	0.14	2.9	A	
	SB	L	0.20	32.7	C	L	0.20	54.5	D	L	0.20	54.5	D	
		T	0.34	23.1	C	T	0.36	18.5	B	T	0.36	18.5	B	
		R	0.07	17.1	B	R	0.07	15.4	B	R	0.07	15.4	B	
Overall Intersection[2]		-	-	**15.5**	**B**	-	-	**14.7**	**B**	-	-	**14.7**	**B**	
Pennsylvania Avenue and Flatlands Avenue														

Table 19-8 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – AM Construction Peak Hour

Intersection & Approach		2030 No-Action				2030 With-Action				2030 Mitigation				Mitigation Measures
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	
Flatlands Avenue	EB	L	0.39	34.7	C	L	0.48	37.6	D	L	0.50	40.1	D	-Modify signal timing: Shift 2 sec of green time from EB/WB phase to NBL/SBL phase. [EB/WB green time shifts from 32 sec to 30 sec. NBL/SBL green time shifts from 11 sec to 13 sec.]
		T	0.40	37.5	D	T	0.40	37.6	D	T	0.43	39.5	D	
		R	0.08	25.9	C	R	0.13	26.5	C	R	0.13	26.5	C	
	WB	L	0.17	30.1	C	L	0.21	31.1	C	L	0.23	32.9	C	
		T	0.43	38.3	D	T	0.43	38.3	D	T	0.46	40.3	D	
		R	0.25	28.4	C	R	0.25	28.4	C	R	0.25	28.4	C	
Pennsylvania Avenue	NB	L	0.62	31.4	C	L	0.91	65.9	E	L	0.84	54.4	D	
		T	0.76	19.9	B	T	0.76	36.9	D	T	0.76	36.9	D	
		R	0.15	8.6	A	R	0.15	25.6	C	R	0.15	25.6	C	
	SB	L	0.55	42.0	D	L	0.50	43.0	D	L	0.45	36.9	D	
		T	0.46	38.4	D	T	0.52	39.7	D	T	0.52	39.6	D	
		R	0.29	38.3	D	R	0.30	38.3	D	R	0.30	38.2	D	
Overall Intersection[2]		-	-	**30.4**	**C**	-	-	**39.8**	**D**	-	-	**39.0**	**D**	
Pennsylvania Avenue and Cozine Avenue														
Cozine Avenue	EB	LTR	0.72	45.7	D	LTR	0.72	46.0	D	LTR	0.72	46.0	D	-Mitigation not required [Intersection delays change as a result of signal timing changes at nearby intersections.]
	WB	LTR	0.42	34.5	C	LTR	0.42	34.5	C	LTR	0.42	34.5	C	
Pennsylvania Avenue	NB	L	0.30	8.6	A	L	0.33	10.2	B	L	0.33	10.1	B	
		TR	0.66	13.7	B	TR	0.67	15.0	B	TR	0.67	15.1	B	
	SB	L	0.21	10.9	B	L	0.23	13.0	B	L	0.23	13.0	B	
		TR	0.50	9.0	A	TR	0.55	10.6	B	TR	0.55	10.6	B	
Overall Intersection[2]		-	-	**17.7**	**B**	-	-	**18.6**	**B**	-	-	**18.7**	**B**	

Table 19-8 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – AM Construction Peak Hour

Intersection & Approach		2030 No-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 With-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 Mitigation Mvt	V/C	Ctrl Delay[1]	LOS	Mitigation Measures
Pennsylvania Avenue and Stanley Avenue														
Stanley Avenue	EB	LTR	0.61	49.6	D	LTR	0.62	50.2	D	LTR	0.62	50.2	D	-Mitigation not required [Intersection delays change as a result of signal timing changes at nearby intersections.]
	WB	LTR	0.60	48.7	D	LTR	0.60	48.7	D	LTR	0.60	48.7	D	
Pennsylvania Avenue	NB	L	0.63	76.1	E	L	0.63	77.1	E	L	0.63	77.1	E	
		TR	0.64	5.0	A	TR	0.66	5.2	A	TR	0.66	5.2	A	
	SB	L	0.18	33.9	C	L	0.18	34.1	C	L	0.18	34.2	D	
		TR	0.48	36.7	D	TR	0.53	37.6	D	TR	0.53	37.3	D	
Overall Intersection[2]		-	-	**26.1**	**C**	-	-	**26.7**	**C**	-	-	**26.6**	**C**	
Pennsylvania Avenue and Linden Boulevard														
Linden Boulevard Main Line	EB	L	0.53	66.1	E	L	0.53	66.1	E	L	0.48	62.1	E	-Modify signal timing: Shift 1 sec of green time from EB/WB phase to EBL/WBL phase. [EB/WB green time shifts from 38 sec to 37 sec. EBL/WBL green time shifts from 12 sec to 13 sec.]
		T	0.44	34.9	C	T	0.44	34.9	C	T	0.45	35.8	D	
	WB	L	0.66	78.0	E	L	0.71	83.3	F	L	0.65	74.6	E	
		T	0.74	39.8	D	T	0.74	39.8	D	T	0.76	41.2	D	
Pennsylvania Avenue	NB	L	0.74	27.1	C	L	0.80	33.3	C	L	0.80	33.3	C	
		T	0.86	45.6	D	T	0.89	50.3	D	T	0.89	50.5	D	
		R	0.18	39.4	D	R	0.20	41.9	D	R	0.20	41.9	D	
	SB	L	0.55	49.4	D	L	0.56	50.6	D	L	0.56	50.6	D	
		TR	0.63	39.0	D	TR	0.71	41.4	D	TR	0.71	41.4	D	
Linden Boulevard Eastbound Service Rd	EB	T	0.44	36.8	D	T	0.44	36.8	D	T	0.45	37.9	D	
		R	0.30	26.4	C	R	0.30	26.4	C	R	0.30	27.2	C	
Linden Boulevard Westbound Service Rd	WB	TR	0.74	49.2	D	TR	0.74	49.2	D	TR	0.76	51.6	D	
Overall Intersection[2]		-	-	**40.6**	**D**	-	-	**42.3**	**D**	-	-	**42.8**	**D**	

Table 19-8 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – AM Construction Peak Hour

Intersection & Approach		2030 No-Action				2030 With-Action				2030 Mitigation				Mitigation Measures
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	
Louisiana Avenue and Flatlands Avenue														
Flatlands Avenue	EB	L	0.03	18.6	B	L	0.03	18.9	B	L	0.03	18.9	B	-Mitigation not required
		T	0.36	21.9	C	T	0.38	22.2	C	T	0.38	22.2	C	
		R	0.28	21.4	C	R	0.28	21.5	C	R	0.28	21.5	C	
	WB	L	0.18	19.6	B	L	0.19	20.3	C	L	0.19	20.3	C	
		TR	0.42	22.7	C	TR	0.43	23.0	C	TR	0.43	23.0	C	
Louisiana Avenue	NB	L	0.49	37.8	D	L	0.50	37.8	D	L	0.50	37.8	D	
		TR	0.21	36.1	D	TR	0.24	36.7	D	TR	0.24	36.7	D	
	SB	L	0.02	28.3	C	L	0.18	31.1	C	L	0.18	31.1	C	
		TR	0.10	34.5	C	TR	0.10	34.5	C	TR	0.10	34.5	C	
Overall Intersection[2]		-	-	**25.0**	**C**	-	-	**25.5**	**C**	-	-	**25.5**	**C**	

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

Denotes a significantly impacted movement

Table 19-9 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – PM Construction Peak Hour

Intersection & Approach		2030 No-Action				2030 With-Action				2030 Mitigation				Mitigation Measures
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	
SIGNALIZED INTERSECTIONS														
Pennsylvania Avenue and Seaview Avenue														
Seaview Avenue	EB	LT	0.23	36.2	D	LT	0.23	34.7	C	LT	0.23	34.6	C	-Mitigation not required
		R	0.87	60.4	E	R	0.87	58.0	E	R	0.87	57.8	E	[Intersection delays change as a result of signal timing changes at nearby intersections.]
	WB	LTR	0.52	36.8	D	LTR	0.52	36.8	D	LTR	0.52	36.8	D	
Pennsylvania Avenue	NB	L	0.31	55.8	E	L	0.31	55.8	E	L	0.31	55.8	E	
		T	0.42	21.7	C	T	0.42	21.7	C	T	0.42	21.7	C	
	SB	L	0.21	50.3	D	L	0.21	50.7	D	L	0.21	47.6	D	
		TR	0.72	14.2	B	TR	0.80	18.6	B	TR	0.80	16.0	B	
Shore Parkway Westbound Off-Ramp	NB	TR	0.38	20.5	C	TR	0.43	21.1	C	TR	0.43	21.1	C	
Overall Intersection[2]		-	-	**26.0**	**C**	-	-	**27.0**	**C**	-	-	**25.9**	**C**	
Pennsylvania Avenue and Twin Pines Drive														
Twin Pines Drive	EB	LR	0.84	57.7	E	LR	0.84	57.7	E	LR	0.84	57.7	E	- Mitigation not required
Pennsylvania Avenue	NB	L	0.49	28.7	C	L	0.64	35.6	D	L	0.64	35.7	D	[Intersection delays change as a result of signal timing changes at nearby intersections.]
		T	0.39	25.2	C	T	0.41	22.0	C	T	0.41	22.0	C	
	SB	T	0.56	10.0	A	T	0.63	8.4	A	T	0.63	7.0	A	
		R	0.30	7.6	A	R	0.30	6.3	A	R	0.30	5.4	A	
Overall Intersection[2]		-	-	**23.0**	**C**	-	-	**21.2**	**C**	-	-	**20.6**	**C**	

Table 19-9 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – PM Construction Peak Hour

Intersection & Approach		2030 No-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 With-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 Mitigation Mvt	V/C	Ctrl Delay[1]	LOS	Mitigation Measures
Pennsylvania Avenue and Vandalia Avenue														
Vandalia Avenue	EB	LTR	0.40	42.9	D	LTR	0.46	43.4	D	LTR	0.41	36.5	D	-Modify signal timing: Shift 4 sec of green time from NB/SB phase to NBL/SBL phase. Shift 3 sec of green time from NB/SB to EB/WB. [NB/SB green time shifts from 60 sec to 53 sec. NBL/SBL green time shifts from 9 sec to 13 sec. EB/WB green time shifts from 36 sec to 39 sec.].
	WB	LTR	0.81	58.6	E	LTR	0.93	80.7	F	LTR	0.84	61.7	E	
Pennsylvania Avenue	NB	L	0.45	46.9	D	L	0.82	77.1	E	L	0.64	53.9	D	
		T	0.53	6.0	A	T	0.54	7.1	A	T	0.59	9.1	A	
		R	0.20	5.3	A	R	0.23	6.5	A	R	0.27	8.1	A	
	SB	L	0.53	41.4	D	L	0.48	56.3	E	L	0.38	52.6	D	
		T	0.59	18.1	B	T	0.67	24.8	C	T	0.74	30.1	C	
		R	0.06	12.8	B	R	0.14	17.0	B	R	0.17	20.5	C	
Overall Intersection[2]		-	-	**20.1**	**C**	-	-	**27.2**	**C**	-	-	**27.0**	**C**	
Pennsylvania Avenue and Flatlands Avenue														
Flatlands Avenue	EB	L	0.54	49.1	D	L	0.98	95.4	F	L	0.91	76.9	E	**-Partially mitigated.** -Modify signal timing: Shift 2 sec of green time from NB/SB phase to NBL/SBL phase. Shift 1 sec of green time from NB/SB phase to EB/WB phase. Shift 1 sec of green time from NB/SB phase to EBL/WBL phase. [NB/SB green time shifts from 45 sec to 41 sec. NBL/SBL green time shifts from 11 sec to 13 sec. EB/WB green time shifts from 33 sec to 34 sec. EBL/WBL green time shifts from 11 sec to 12 sec.]
		T	0.94	61.0	E	T	0.98	69.5	E	T	0.95	62.6	E	
		R	0.37	29.9	C	R	0.79	47.7	D	R	0.74	41.8	D	
	WB	L	0.49	53.3	D	L	0.64	60.5	E	L	0.60	56.4	E	
		T	0.71	44.1	D	T	0.71	44.1	D	T	0.69	42.7	D	
		R	0.31	28.7	C	R	0.33	29.0	C	R	0.31	26.7	C	
Pennsylvania Avenue	NB	L	0.78	39.0	D	L	0.86	73.8	E	L	0.85	73.6	E	
		T	0.54	13.2	B	T	0.54	31.1	C	T	0.60	35.0	C	
		R	0.35	13.0	B	R	0.38	30.0	C	R	0.43	34.1	C	
	SB	L	0.74	28.1	C	L	0.75	26.0	C	L	0.75	26.8	C	
		T	0.72	14.9	B	T	0.79	17.5	B	T	0.87	24.6	C	
		R	0.52	14.3	B	R	0.59	16.8	B	R	0.66	23.3	C	
Overall Intersection[2]		-	-	**32.1**	**C**	-	-	**42.9**	**D**	-	-	**42.4**	**D**	

Table 19-9 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – PM Construction Peak Hour

Intersection & Approach		2030 No-Action				2030 With-Action				2030 Mitigation				Mitigation Measures
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	
Pennsylvania Avenue and Cozine Avenue														
Cozine Avenue	EB	LTR	1.09	110.5	F	LTR	1.14	126.9	F	LTR	1.09	111.0	F	-Modify signal timing: Shift 1 sec of green time from NB/SB phase to EB/WB phase. [NB/SB green time shifts from 64 sec to 63 sec. EB/WB green time shifts from 39 sec to 40 sec.]
	WB	LTR	0.72	45.4	D	LTR	0.75	47.2	D	LTR	0.73	44.8	D	
Pennsylvania Avenue	NB	L	0.36	17.1	B	L	0.43	17.9	B	L	0.45	18.9	B	
		TR	0.57	12.9	B	TR	0.64	11.4	B	TR	0.65	11.2	B	
	SB	L	0.35	9.9	A	L	0.42	11.0	B	L	0.43	11.5	B	
		TR	0.74	16.8	B	TR	0.79	16.6	B	TR	0.80	16.9	B	
Overall Intersection[2]		-	-	**33.2**	**C**	-	-	**34.3**	**C**	-	-	**31.8**	**C**	
Pennsylvania Avenue and Wortman Avenue														
Wortman Avenue	EB	LTR	0.88	62.1	E	LTR	0.92	69.1	E	LTR	0.89	62.9	E	-Modify signal timing: Shift 1 sec of green time from NB/SB phase to EB/WB phase. [NB/SB green time shifts from 56 sec to 55 sec. EB/WB green time shifts from 37 sec to 38 sec.]
	WB	LTR	0.63	42.6	D	LTR	0.66	44.5	D	LTR	0.64	42.5	D	
Pennsylvania Avenue	NB	L	0.57	60.8	E	L	0.57	63.1	E	L	0.57	62.5	E	
		TR	0.64	27.2	C	TR	0.72	25.0	C	TR	0.73	27.1	C	
	SB	L	0.55	73.4	E	L	0.55	74.8	E	L	0.55	74.4	E	
		TR	0.75	13.5	B	TR	0.80	15.1	B	TR	0.82	16.4	B	
Overall Intersection[2]		-	-	**29.4**	**C**	-	-	**29.9**	**C**	-	-	**30.2**	**C**	

Table 19-9 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – PM Construction Peak Hour

Intersection & Approach		2030 No-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 With-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 Mitigation Mvt	V/C	Ctrl Delay[1]	LOS	Mitigation Measures
Pennsylvania Avenue and Stanley Avenue														
Stanley Avenue	EB	LTR	0.75	54.8	D	LTR	0.84	64.2	E	LTR	0.84	64.2	E	**-Unmitigable** [Intersection delays change as a result of signal timing changes at nearby intersections.]
	WB	LTR	0.88	71.9	E	LTR	0.92	77.6	E	LTR	0.92	77.6	E	
Pennsylvania Avenue	NB	L	0.57	57.5	E	L	0.57	56.8	E	L	0.57	57.1	E	
		TR	0.54	12.2	B	TR	0.61	14.4	B	TR	0.61	14.1	B	
	SB	L	0.50	62.7	E	L	0.50	64.2	E	L	0.50	64.2	E	
		TR	0.68	13.7	B	TR	0.73	13.3	B	TR	0.73	13.3	B	
Overall Intersection[2]		-	-	**25.0**	**C**	-	-	**26.5**	**C**	-	-	**26.4**	**C**	
Pennsylvania Avenue and Linden Boulevard														
Linden Boulevard Main Line	EB	L	0.75	82.3	F	L	0.75	82.3	F	L	0.75	82.3	F	**-Unmitigable** [Intersection delays change as a result of signal timing changes at nearby intersections.]
		T	1.02	70.2	E	T	1.02	70.2	E	T	1.02	70.2	E	
	WB	L	0.87	101.6	F	L	0.88	102.9	F	L	0.88	102.9	F	
		T	0.58	37.4	D	T	0.58	37.4	D	T	0.58	37.4	D	
Pennsylvania Avenue	NB	L	1.12	137.9	F	L	1.23	182.4	F	L	1.23	182.3	F	
		T	0.70	48.8	D	T	0.83	56.3	E	T	0.83	55.6	E	
		R	0.33	41.8	D	R	0.33	42.5	D	R	0.33	42.0	D	
	SB	L	0.72	55.2	E	L	0.83	71.0	E	L	0.83	71.0	E	
		TR	0.84	47.0	D	TR	0.91	54.3	D	TR	0.91	54.3	D	
Linden Boulevard Eastbound Service Rd	EB	T	0.79	50.4	D	T	0.79	50.4	D	T	0.79	50.4	D	
		R	0.54	31.5	C	R	0.54	31.5	C	R	0.54	31.5	C	
Linden Boulevard Westbound Service Rd	WB	T	1.09	106.5	F	T	1.09	106.5	F	T	1.09	106.5	F	
		R	0.18	32.0	C	R	0.18	32.0	C	R	0.18	32.0	C	
Overall Intersection[2]		-	-	**62.8**	**E**	-	-	**66.9**	**E**	-	-	**66.8**	**E**	

Table 19-9 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – PM Construction Peak Hour

Intersection & Approach		2030 No-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 With-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 Mitigation Mvt	V/C	Ctrl Delay[1]	LOS	Mitigation Measures
Louisiana Avenue and Flatlands Avenue														
Flatlands Avenue	EB	L	0.33	34.1	C	L	0.39	39.8	D	L	0.39	39.8	D	**-Unmitigable**
		T	0.71	29.4	C	T	0.78	32.0	C	T	0.78	32.0	C	
		R	0.36	22.9	C	R	0.89	68.5	E	R	0.89	68.5	E	
	WB	L	0.45	38.8	D	L	0.52	46.0	D	L	0.52	46.0	D	
		TR	0.64	26.9	C	TR	0.71	29.1	C	TR	0.71	29.1	C	
Louisiana Avenue	NB	L	0.92	80.2	F	L	1.00	97.9	F	L	1.00	97.9	F	
		TR	0.35	38.5	D	TR	0.72	52.6	D	TR	0.72	52.6	D	
	SB	L	0.08	31.6	C	L	0.34	41.8	D	L	0.34	41.8	D	
		TR	0.65	47.7	D	TR	0.67	49.3	D	TR	0.67	49.3	D	
Overall Intersection[2]		-	-	**35.2**	**D**	-	-	**42.1**	**D**	-	-	**42.1**	**D**	
Flatlands Avenue and East 108th Street														
Flatlands Avenue	EB	L	0.20	17.8	B	L	0.22	20.1	C	L	0.22	20.1	C	-**Partially mitigated**
		TR	0.68	21.3	C	TR	0.74	23.0	C	TR	0.74	23.0	C	-Install "No Standing Anytime" regulations along the east curb of the NB approach for 75 feet to provide an additional travel lane.
	WB	L	0.85	56.8	E	L	0.98	84.5	F	L	0.98	84.5	F	
		TR	0.55	18.2	B	TR	0.61	19.4	B	TR	0.61	19.4	B	
East 108th Street	NB	LTR	0.87	68.2	E	LTR	0.90	73.0	E	LT	0.33	40.1	D	-Restripe the NB approach from one 20-foot-wide travel lane with parking to one 10-foot wide right turn lane and one 10-foot wide shared left-through lane.
		-	-	-	-	-	-	-	-	R	0.65	50.9	D	
	SB	LTR	0.88	70.5	E	LTR	0.91	77.3	E	LTR	0.71	51.9	D	
Overall Intersection[2]		-	-	**32.8**	**C**	-	-	**36.8**	**D**	-	-	**31.9**	**C**	

Table 19-9 Year 2030 No-Action vs. With-Action vs Mitigation Traffic Levels of Service – PM Construction Peak Hour

Intersection & Approach		2030 No-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 With-Action Mvt	V/C	Ctrl Delay[1]	LOS	2030 Mitigation Mvt	V/C	Ctrl Delay[1]	LOS	Mitigation Measures
Flatlands Avenue and Rockaway Parkway														
Flatlands Avenue	EB	L	0.35	46.9	D	L	0.37	49.4	D	L	0.37	49.4	D	- **Unmitigable**
		TR	1.00	69.1	E	TR	1.05	81.1	F	TR	1.05	81.1	F	
	WB	L	0.18	44.2	D	L	0.18	45.7	D	L	0.18	45.7	D	
		TR	0.87	46.9	D	TR	0.95	55.6	E	TR	0.95	55.6	E	
Rockaway Parkway	NB	L	0.51	29.8	C	L	0.55	31.7	C	L	0.55	31.7	C	
		TR	0.44	26.4	C	TR	0.44	26.4	C	TR	0.44	26.4	C	
	SB	LT	0.72	44.9	D	LT	0.83	54.5	D	LT	0.83	54.5	D	
		R	0.37	35.4	D	R	0.37	35.4	D	R	0.37	35.4	D	
Overall Intersection[2]		-	-	**50.6**	**D**	-	-	**59.0**	**E**	-	-	**59.0**	**E**	
UNSIGNALIZED INTERSECTIONS														
Flatlands Avenue and Georgia Avenue						**(SIGNALIZED)**				**(SIGNALIZED)**				
Flatlands Avenue	EB	LT	-	1.8	A	LT	0.76	20.1	C	LT	0.76	20.1	C	-Mitigation not required
	WB	L	-	0.0	A	L	0.00	0.0	A	L	0.00	0.0	A	
		TR	-	0.0	A	TR	0.55	14.9	B	TR	0.55	14.9	B	
Georgia Access	NB	-	-	-	-	LTR	0.78	50.8	D	LTR	0.78	50.8	D	
Overall Intersection[2]		-	-	**0.5**	**A**	-	-	**22.1**	**C**	-	-	**22.1**	**C**	

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

Denotes a significantly impacted movement

Deliveries

Construction trucks would be required to use NYCDOT-designated truck routes, including Pennsylvania Avenue and Flatlands Avenue and service the construction site at the designated loading zones. The location of the loading zones is dependent on location of the buildings under construction, and loading could potentially occur within the site or along the sections of the three street frontages closest to where construction activities would be happening.

Curb Lane Closures and Staging

During construction, parking lane closures may be required. In the case where a travel lane closure is necessary, the closure would not be in effect for the entire block length. Lane closures would be delineated such that there would be enough space for a travel lane at the intersection approach to maintain the roadway capacity. It is anticipated that sidewalk closures may be required to the extent practicable. Short-term roadway closures and temporary sidewalk narrowing could occur along the sides at Development Site during specific periods of construction. Sidewalk and lane closures will be finalized as the MPT plans are developed and reviewed with NYC DOT. All lane and sidewalk closures during construction will require DOT's OCMC's review and approval.

Parking

Construction workers would generate an estimated maximum daily parking demand for 285 spaces during the Q4 2025 peak quarter. This parking demand could be accommodated by the approximately 385 on-site surface spaces used by the church (these spaces are used by the CCC Tuesday evenings and Sundays during the morning/midday period and do not overlap with construction activities) and would be mostly vacant during the construction work shift. The on-site surface spaces will be replaced with a 500-space above ground parking garage after it is completed in the third quarter of 2026; construction workers would park in this garage after it is completed. Therefore, construction for the Proposed Project would not result in a parking shortfall.

Transit and Pedestrians

Based on census data for the construction industry, it is anticipated that approximately 35 percent of construction workers would commute to the Development Site by public transportation. During the fourth quarter of 2025 when construction worker volumes would be highest, construction would be expected to generate 442 daily construction workers (154 workers would be expected to use public transportation). It is expected that the majority of construction workers (80 percent) would arrive during the AM construction peak hour and depart during the PM construction peak hour, and they would generate approximately 123 construction worker trips by public transportation during the AM and PM construction peak hours. The worker pedestrian trips would be below the 200 pedestrian CEQR thresholds for detailed analysis, therefore construction activities are not expected to result in transit or pedestrian impacts.

Air Quality

Introduction

Construction impacts on air quality levels may occur because of particulate matter (fugitive dust) created by excavation, demolition, transfer of debris into trucks, emissions from on-site diesel equipment, and emissions from increased truck traffic to and from the construction site on local roadways. As discussed in the *2021 CEQR Technical Manual,* the determination of whether it is sufficient to conduct a qualitative analysis of these emissions or whether a quantitative analysis is required should take into account factors such as duration of construction activities, location of the project site in relation to existing residential uses and residential land uses created by the project or other sensitive receptors, the intensity of the construction activity, and the extent to which the project incorporates commitments to appropriate emission control measures.

The most intense construction activities in terms of emissions are typically from demolition, excavation, and foundation stages, since it is during these stages that the largest number of large, non-road diesel engines are employed, which combined with the fugitive dust from debris moving operations result in the highest levels of air emissions. The other stages of construction, including superstructure, exterior façades, interior finishes and site work, typically result in lower air emissions since they require fewer pieces of heavy-duty diesel equipment. Equipment used in the latter stages of construction generally involves use of small engines, with use of electric tools dispersed vertically throughout the building, resulting in very low concentration increments in adjacent areas. Additionally, the latter stages of construction do not involve soil disturbance activities and therefore result in significantly lower fugitive dust emissions. Construction activities associated with interior finishes are shielded from nearby sensitive receptors by the proposed structures themselves.

For the Proposed Project, the overall construction period would exceed two years. Given that multiple buildings would be constructed in each phase and the construction would occur within close proximity to sensitive receptors, a detailed quantitative analysis of construction air quality impacts was undertaken.

Air Quality Analysis Methodologies

On-Site and Off-Site Construction Impacts

Based on a conceptual construction schedule developed for each phase of the project, the peak cumulative short-term and annual $PM_{2.5}$ emissions were evaluated for the full construction process (foundations, superstructure, exterior construction through interior fit-out and site work) for each phase of construction. The phase with the highest $PM_{2.5}$ emissions was selected as the period with the highest potential $PM_{2.5}$ effects. This analysis, called the intensity assessment, was used to identify the peak construction phase and year for the dispersion impact modeling analysis.

A dispersion analysis—which considers the PM_{10}, $PM_{2.5}$, NO_x, and CO emissions from on-site sources (construction equipment, fugitive dust and trucks idling, loading and unloading and entering the site)—was performed to determine potential air quality effects during the peak emission construction phase.

The effects of the trucks approaching and departing the site on public or internal roadways for each construction phase were also included in the emission calculations for the emission intensity analysis. For the dispersion analysis, roadway access for the selected phase was included as line sources, representing the approach and departure from the site. Additionally, impacts of construction traffic emissions at intersections and streets elsewhere in the City were considered separately using *2021 CEQR Technical Manual* screening methodologies (see the **Off-Site Construction Impacts** subsection).

The following sections provide additional details relevant to the construction air quality analysis methodology. For a review of the applicable regulations, standards and criteria, and benchmarks for stationary and mobile source air quality analyses, refer to **Chapter 10, Air Quality**.

The analysis was performed following EPA and *2021 CEQR Technical Manual* procedures and analytical tools, as well as New York City Department of City Planning (DCP) recommendations to determine source emission rates. The estimated emission rates were then used as an input to the air quality dispersion model to determine potential impacts.

Emission Estimation Process

The construction analyses used an emission estimation method and a modeling approach previously developed for evaluating air quality impacts of construction projects in New York City in consultation with DCP. Because the level and types of construction activities would vary from month to month, the approach includes a determination of the worst-case emission period based on an estimated monthly construction work schedule, the number of on-site construction equipment types and rated horsepower of each unit, quantities of materials to be excavated, and number of trucks arriving, working, and leaving the site.

The worst-case short-term emissions (e.g., maximum daily emissions) and the maximum annual emissions (based on a 12-month rolling average) were determined based on the construction schedule activities and equipment projected to be required for the construction period. This information was provided by the overall project's construction manager. The assessment considered several main phases of construction: excavation/foundation, superstructure, exterior construction, interior fit-out, elevators and site work.

The specific construction information used to calculate emissions generated from the construction process included, but is not limited to, the following:

- The number of units and fuel-type of construction equipment to be used;
- Rated horsepower and load factors for each piece of equipment;
- Utilization rates for equipment;
- Hours of operation on-site; and
- Average distance to approach the site, on-site, and idling time by trucks.

Emissions Reduction Measures Considered

As discussed above, construction activities could affect air quality because of engine emissions from on-site construction equipment and dust-generating activities. In general, much of the heavy equipment used in construction has diesel-powered engines, which produce relatively high levels of nitrogen oxides and particulate matter. Gasoline engines

produce relatively high levels of carbon monoxide. Construction activities also generate fugitive dust emissions. As a result, the air pollutants analyzed for construction activities include nitrogen dioxide (NO_2), particulate matter with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}), particulate matter with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$), and carbon monoxide (CO).

Since ultra-low-sulfur diesel (ULSD) will be used for all diesel engines related to construction activities due to federal and state mandates, sulfur dioxides (SO_2) emitted from those construction activities would be negligible, and an analysis of SO_2 emissions is not warranted. For more details on a description of air pollutants and standards, see **Chapter 10, Air Quality**.

As stated above, construction activity in general, and large-scale construction in particular, has the potential to adversely affect air quality as a result of diesel emissions. The main component of diesel exhaust that has been identified as having an adverse effect on human health is fine particulates. To ensure that the construction of the Proposed Project results in the lowest feasible diesel particulate matter (DPM) emissions, a series of emissions reduction strategies required by DEP and state mandates would be implemented.

The evaluation performed in this section therefore assumes a combination of emission reduction measures that are mandated by law and are common practice in large-scale NYC construction projects, and follow the requirements included in NYC Law 77 and the NYC Air Pollution Control Code. These include the following:

- Fugitive Dust Control Plans. In compliance with the NYC Air Pollution Control Code provisions regarding control of fugitive dust, contractors would be required to ensure that all trucks carrying loose material use water as a dust suppression measure, that trucks hauling loose material be equipped with tight-fitting tailgates and their loads securely covered prior to leaving the site, that streets adjacent to the site be cleaned as frequently as needed by the construction contractor, and that water sprays be used for transfer of spoils to ensure that materials are dampened as necessary to avoid the suspension of dust into the air. These measures would be expected to reduce dust generation by more than 50 percent.
- Clean Fuel. Ultra-low sulfur diesel (ULSD) would be used exclusively for diesel engines related to construction activities for the Proposed Project. This is a federal requirement since 2010 that enables the use of tailpipe reduction technologies that reduce diesel particulate matter and SO_2 emissions.
- Diesel Equipment Reduction. Hoists and small equipment, such as lifts, compressors, welders, and pumps would use electric engines that operate on grid power instead of diesel power engines, to the extent practical. This is a common practice that has been achieving wider use as technology improves.
- Restrictions on Vehicle Idling. This would be required in compliance with local law to restrict unnecessary idling. On-site vehicle idle time would be restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or otherwise required for the proper operation of the engine.
- Given the construction timeframe for the Proposed Project (2023-2030), equipment meeting Tier 4 standards for diesel engines (model years 2011/12 and beyond) would be

expected to be in wide use and comprise the majority of contractors' fleets. If contractors choose to use older diesel equipment, the use of diesel particulate filters (DPF) in Tier 3 emission standard for diesel engines (model years 2006-2011 for engine sizes between 100 and 600 hp)[3] would be implemented. Tier 3 with DPF achieves the same $PM_{2.5}$ emission reductions as a newer Tier 4 emission standard for diesel engines. The combination of Tier 4 and Tier 3 engines with DPF would achieve DPM reductions of approximately 90 percent when compared to older uncontrolled engines.

› Source Location and Shielding. To reduce concentration increments at sensitive receptors, large emissions sources and activities such as concrete trucks, generators, and large compressors can be located away from the sensitive receptors to the extent practical.

Overall, these emission control measures would be expected to significantly reduce DPM emissions. In addition, as per *CEQR Technical Manual* recommendations, all necessary measures would be implemented to ensure that the NYC Air Pollution Control Code provisions regulating construction-related dust emissions are followed.

Engine Exhaust Emissions Estimation Process

Emission factors for NO_x, PM_{10}, $PM_{2.5}$, and CO from the combustion of fuel for on-site construction equipment were developed using the EPA MOVES3-NONROAD Emission Model.

The MOVES3-NONROAD model can generate unitary emission factors, in grams per horsepower/hour (g-hp/hr) by engine size (hp), equipment type, engine technology type, fuel type, and year of analysis. The model estimates emissions as the average emission factor by year for the county fleet sorted by the above-mentioned parameters. As an example, if New York County and the year 2022 were selected for diesel engines, the output generates emissions (g-hp/hr) for each type of equipment from 3 hp to 3,000 hp rating for each one of the model years of the County fleet going back up to 40 years. The model calculates how many pieces of equipment for each engine technology group and model year are present in the County fleet and produces the yearly average emission factor. Because the model years of the actual construction equipment to be used for the Proposed Development are unknown, emission factors for the different equipment types were estimated by using the weighted average (emission factor and activity level) of the model years 2008 to 2023 to account for the use of tier 4 engines (for model years 2012 to 2023) and tier 3 engines retrofitted with DPF to achieve a 90-percent removal rate of DPM (for model years 2008 to 2011).

Emission rates from combustion of fuel for on-site dump trucks, pickup trucks, and other heavy trucks, such as tractor-trailers, were developed using the EPA MOVES3 Emission Model. NYC restrictions placed on idling times were applied for heavy trucks, with the exception of concrete trucks where one hour of idling was assumed. Short-term and annual emission rates were adjusted from the peak-hour emissions by applying usage factors for each equipment unit.

[3] See Table 2-1 of the USEPA's Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b document

Fugitive Sources Emission Estimation Process

The western portion of Development Site surrounding the church is currently a paved parking lot. As such, construction vehicles will travel on paved roads except when going down into the foundation pit. Road dust (PM_{10} and $PM_{2.5}$) emissions from trucks moving (approach and departure from the construction site) were calculated using equations from EPA's AP-42, Section 13.2.1 for paved roads. For dump trucks traveling down the ramps into foundation areas, unpaved road dust emissions were calculated using EPA's AP-42 Section 13.2.2 equations. It was assumed that dump trucks travel part of the way on a paved surface and part on an unpaved surface. Average vehicle weights (i.e., unloaded going in and loaded going out) were used in the analysis and reasonably conservative travel distances was estimated for on-site travel on paved and unpaved roads. Fugitive emissions from removal of the excavated material were estimated using EPA's AP-42 Section 13.2.4 equations. Dust control measures (described above) would provide at least a 50-percent reduction in PM_{10} and $PM_{2.5}$ emissions.

Construction Activity Emissions Intensity Assessment

To determine which construction phase constitutes the worst-case period for the pollutants of concern, construction-related emissions were calculated throughout the duration of construction on a monthly basis using peak daily emissions for short term $PM_{2.5}$, and the rolling average for annual $PM_{2.5}$.

To determine the worst short-term emission and the worst annual emission, an emission intensity assessment (emission profiles) was conducted for each phase of construction. Based on the resulting multiyear profiles for a combination of all phases of construction by month, the worst-case short-term impact period was identified as August 2025 (month 32) in phase 1B (see **Figure 19-2**). The highest annual emission period was estimated for months 25 to 36 (January 2025 to December 2025), which is also in phase 1B (see **Figure 19-3**). Phase 1B includes construction of Buildings 3, 4 and the CCC garage.

Figure 19-2 Projected Peak Daily $PM_{2.5}$ Construction Emissions Profile

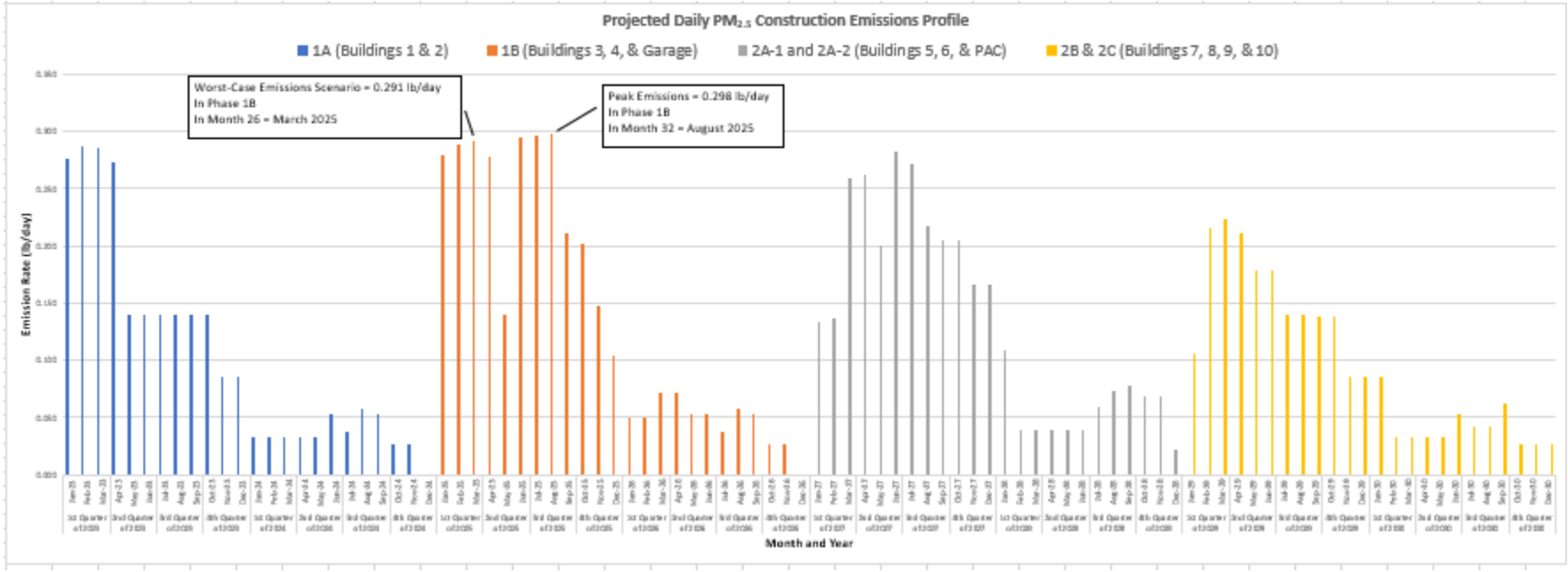
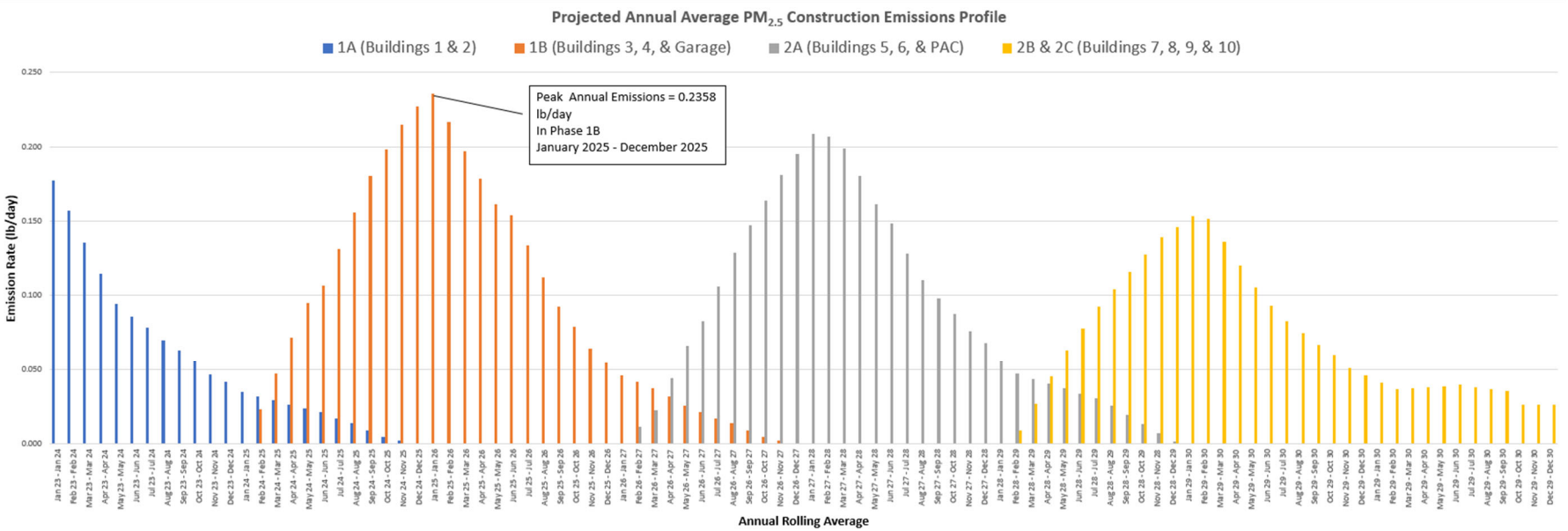


Figure 19-3 Projected Annual Average Daily $PM_{2.5}$ Construction Emissions Profile



Note: The overlap in emissions in phases do not constitute high emissions in any one location as each curve represents activities that will occur at separate areas of the overall site

Impact Assessment

Off-Site Construction Impacts

Construction activities would result in a number of generated truck and worker trips at the project-affected intersections. The total highest number of generated trips during construction was added to the operational trips from already occupied buildings and the total generated trips during construction would be similar to the number of generated trips under operations.

The highest number of construction trucks would be generated at the intersection of Louisiana Avenue and Flatlands Avenue in the 6 to 7 AM period. Six construction trucks would be generated during this hour at this intersection in addition to 55 worker trips and 2 truck, 3 shuttle bus and 34 auto trips from the buildings that would be constructed and occupied during this phase of construction. Conservatively assuming that worker vehicles are classified as LDGT1 and construction trucks as HDDV8B, CEQR $PM_{2.5}$ screening analysis fails for the northern leg of the intersection of Louisiana Avenue at Flatlands Avenue. This portion of Louisiana Avenue (north of Flatlands Avenue) is assigned a paved road functional class under NYSDOT functional classification. In the PM peak hour, only two construction trucks would be generated at the same intersection; these truck trips would be combined with 310 combined worker and operational trips. Using the same assumptions as for the AM hour, CEQR $PM_{2.5}$ screening also fails for the PM hour. Considering that the intersection at Louisiana Avenue and Flatland Avenue consists of arterial (Flatland Avenue), major collector (the south leg of Louisiana Avenue), and local paved road (the north leg of Louisiana), if the PM screening analysis takes into account the three roadway types, the HDDV equivalent of the AM peak hour and the PM peak hour of construction stage traffic would be lower than that of the operational stage for the AM and PM periods respectively. In addition, outside of the AM and PM peak hours for construction, which are generally earlier than those for operations, the construction generated traffic would be much lower than that of the operational stage. Therefore, the mobile source intersection impact analysis for the operational stage represents higher HDDV equivalent increase and higher potential air quality impact.

Since the CO and PM analyses conducted for this intersection under operations demonstrated no significant air quality impacts, it is assumed that there would not be any significant air quality impacts from this intersection during construction. Emissions from construction trucks travelling in the immediate vicinity of the site were included into the dispersion model to account for the cumulative effects of their emissions and emissions from construction activities on-site.

On-Site Construction Impacts

The effects of construction emissions on the surrounding environment for the relevant air pollutants were quantified using the latest version (21112) of the EPA's AERMOD dispersion model.

The emission intensity analysis indicated that the highest $PM_{2.5}$ emissions would result from construction activities between months 25 through 36. This is the most critical construction period because of the simultaneous construction of the two largest buildings, including

Building 4, and the CCC garage. This phase is expected to yield the highest levels of non-road equipment emissions and fugitive dust emissions from transfer operations and paved road dust.

The highest emissions month (August 2025) was estimated when emissions from the foundation of the CCC garage emissions overlap with emissions from equipment of the superstructure stage of construction for Buildings 3 and 4. However, emissions in the highest month would be dispersed between the ground level foundation work at the CCC garage structure and elevated superstructure construction at Buildings 3 and 4. Further, the proposed public parking garage would be located approximately 110 feet away from Buildings 3 and 4. In contrast, during foundation work for Buildings 3 and 4 during month 27, all equipment would be concentrated in one place horizontally and at ground level. This combination has the potential for the highest impact on the first floors of the existing nearby buildings.

As month 27 emissions would be approximately 2 percent lower than emissions in month 32 (which is anticipated to be the highest month) and would have emissions concentrated at the ground level in one location (not spread across the site as would be the case during month 32), the worst-case impacts were determined to be from month 27. Therefore, month 27 was selected for modeling to evaluate short-term air quality impact. The average $PM_{2.5}$ emissions and equipment usage from months 25 to 36 (January of 2025 to December of 2025) were used as the worst-case modeling scenario to evaluate annual air quality impact.

Dispersion Modeling – Source Simulation

Potential impacts from on-site construction equipment and off-site truck emissions were evaluated using the EPA's most current version of the AERMOD dispersion model (version 21112). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain, including updated treatment of the boundary layer theory, understanding of turbulence and dispersion; it also includes handling of terrain interaction. The AERMOD model calculates pollutant concentrations from one or more points (e.g., exhaust stacks) based on hourly meteorological data, and has the capability to calculate pollutant concentrations at locations where the plume from the exhaust stack is affected by the aerodynamic wakes and eddies (downwash) produced by the source building itself or by nearby structures. When plume gets entrapped in a wake, it could potentially result in excessive concentrations, especially close to the source. AERMOD can be run with and without building downwash (the downwash option accounts for the effects on plume dispersion created by the wake).

During construction, various types of construction equipment would be used throughout the site. Some of the equipment is mobile and would operate throughout the site, while some would remain stationary on-site at distinct locations during short-term periods (i.e., daily and hourly). Stationary emission sources include (but are not limited to) air compressors, generators, and concrete pumps. Equipment such as excavators and dump trucks would operate throughout the site.

The foundation and excavation emissions at ground level for the peak period were simulated as an area source for the purposes of dispersion analysis. The moving and idling trucks (e.g., delivery, dump, concrete) and paved road dust along the western edge of the site were

modeled as an elongated area source, while moving trucks to the north, on Flatlands Avenue were modeled as a line source.

Both the on-site source and sources adjacent to the site to the west and north were combined and modeled using one AERMOD model to account for cumulative effects. The on-site source represented more than 80 percent of the total sources for the most critical pollutants.

Receptor Locations

AERMOD was used to predict maximum pollutant concentrations at nearby residential, community use and commercial locations of likely public exposure ("sensitive receptors") such as operable windows and air intakes. Discrete receptors were placed along nearby sensitive receptor locations, such as the existing Pennsylvania Avenue buildings to the south and east, the CCC building and the newly constructed Buildings 1 and 2. Additional receptors are placed on facades of commercial buildings where appropriate and a hotel across Flatlands Avenue.

Meteorological Data

All analyses were conducted using five consecutive years of meteorological data (2016 to 2020). Surface data were obtained from JFK Airport and upper air data were obtained from Brookhaven station, New York.

Background Concentrations

Where needed to determine potential air quality impacts from the construction of the project, background ambient air quality data for criteria pollutants (See **Chapter 14, Air Quality, Table 14-2**) were added to the predicted site concentrations. The background data represent the latest available three years of data and were obtained from a nearby NYSDEC monitoring station that best represents the area surrounding the site. The latest three-year period (2018 to 2020) data were used for the 24-hour PM_{10} and years 2017-2019 for annual average NO_2 background concentration to account for pre-COVID conditions.

The 24-hour average $PM_{2.5}$ background concentration of 18.7 $\mu g/m^3$ from the latest three-year period (2018 to 2020) was used to establish the *de minimis* value, consistent with the guidance provided in the *2021 CEQR Technical Manual*. The annual average $PM_{2.5}$ impacts were assessed on an incremental basis and compared with the $PM_{2.5}$ *de minimis* criteria threshold, without considering the annual background.

Potential Impacts from Proposed Project Construction

This section provides a summary of the construction air quality results from the construction activities of the Proposed Project. The peak emissions for all pollutants were predicted to occur during foundation stage of phase 1B in 2025.

Table 19-10 presents the highest predicted total concentration (including background for appropriate pollutants) due to construction activities of the Proposed Project, including the on-site sources (construction equipment, unpaved dust, and activities) and sources adjacent to the site (construction trucks and fugitive dust on paved road).

As indicated in **Table 19-10**, the highest predicted total concentrations of 1-hour CO, 8-hour CO, annual NO_2, and 24-hour PM_{10} would not result in any concentrations that exceed the NAAQS. The highest predicted 8-hour CO concentration is well below the City's *de minimis* criteria. The highest predicted 24-hour and annual $PM_{2.5}$ incremental concentration (for a discrete receptor locations) would not exceed the City's *de minimis* criteria of 8.2 µg/m^3 and 0.3 µg/m^3 respectively.

Table 19-10 Highest Predicted Total Concentrations for Construction Activities

Pollutant	Averaging Period	Highest Modeled Concentration	Background Concentration	Total Concentration	NAAQS/De Minimis
CO	1-Hour[1]	0.40 ppm	2.1 ppm	2.5 ppm	35 ppm
	8-Hour[1]	0.22 ppm	1.6 ppm	1.8 ppm	9 ppm/3.7 ppm
NO_2	Annual[1]	0.8 ppb	14.6 ppb	15.5 ppb	53 ppb
PM_{10}	24-Hour	1.2 µg/m^3	34.3 µg/m^3	35.5 µg/m^3	150 µg/m^3
$PM_{2.5}$	24-Hour[2]	0.95 µg/m^3	---	0.95 µg/m^3	8.2 µg/m^3
	Annual[3]	0.07 µg/m^3	---	0.07 µg/m^3	0.3 µg/m^3

Notes:

[1] CO and NO_2 concentrations can be converted from ppm/ppb to µg/m^3 based on 1 ppm = 1145 µg/m^3 for CO and 1 ppb=1.88 µg/m^3 for NO_2.

[2] The 24-hour $PM_{2.5}$ background concentration is used to develop the *de minimis* criteria.

[3] Annual $PM_{2.5}$ impacts with discrete receptors modeling are compared with the $PM_{2.5}$ *de minimis* criteria of 0.3 µg/m^3, without considering the annual background.

The results of this quantitative analysis indicate that the Proposed Project would not result in any concentrations of NO_2, PM_{10}, and CO that exceed the NAAQS. In addition, the maximum predicted incremental concentrations of $PM_{2.5}$ would not exceed the City's *de minimis* criteria. No significant adverse air quality impacts are anticipated from the off-site mobile source emissions. Therefore, no significant adverse air quality impacts are expected from the construction-related sources.

Noise

Construction activities have the potential to affect the noise conditions of receptors near the Proposed Development. Construction noise can vary widely depending on the phase of construction (e.g., demolition, excavation, foundation, steel, and concrete erection, mechanical and interior fit out) and the specific equipment and methods being used. The most significant construction noise sources at a construction site are generally back-up alarms, and equipment such as excavators, drill rigs, and cranes. The noisiest phase of construction is typically during demolition, excavation, and foundation work. The superstructure phase of construction can also have higher noise levels associated with concrete trucks and cranes. Similar to air emissions, interior fit out typically results in lower noise emissions, since it requires fewer pieces of heavy-duty diesel equipment.

As discussed in the *2021 CEQR Technical Manual,* the need to conduct a qualitative analysis of construction noise emissions or a quantitative analysis is considered based on factors

such as the location of the Development Site in relation to existing residential uses or other sensitive receptors, the intensity of the construction activity, and the extent to which the project incorporates commitments to appropriate noise control measures.

Construction Noise Code

As described in Construction Regulations and General Practices, the project will follow guidelines set forth by the NYCDEP Noise Code (Section 24-228). The DOB regulations require a perimeter barrier or "construction noise barrier" and when the site is within 200 feet of a receptor, the barrier shall be constructed in a specific manner (as described in the New York City Noise Code) to provide sufficient sound attenuation. Section 3307.7 of the New York City Building Code requires a solid perimeter noise barrier made from wood or other suitable material be constructed where a new building is being constructed or a building is being demolished to grade.

For the Proposed Project, a perimeter noise barrier 8 feet in height has been included surrounding each phase of construction as each of the phases are constructed. During construction of Phase 1A (Buildings 1 and 2), an 8-foot-tall plywood perimeter wall would be located along Flatland Avenue and Pennsylvania Avenue as well as along the interior perimeter of the site. During construction of Phase 1B (Buildings 3, 4, and the Garage), an 8-foot-tall plywood perimeter wall would be located along Flatland Avenue and surrounding the site of Buildings 3 and 4. A perimeter wall would also be included surrounding the CCC garage during construction activities. During construction of Phase 2A (Buildings 5 and 6), an 8-foot-tall plywood perimeter wall would be located along Flatland Avenue and Louisiana Avenue as well as the interior of the site. A perimeter wall would also be included around the PAC during construction. During construction of Phase 2B/2C (Buildings 7/8 and 9/10), an 8-foot-tall plywood perimeter wall would be located along Louisiana Avenue as well as the interior of the site.

Construction Noise Criteria

The potential for construction noise impact depends on the intensity and duration of construction activities. As it relates to the Public Health, construction noise would be a significant adverse noise impact if noise levels exceed 85 dBA for a prolonged period of time, as indicated in the Public Health chapter of the *2021 CEQR Technical Manual*.

If construction noise would occur continuously for 24 months or more, a detailed construction noise analysis is warranted and there is a potential for significant adverse noise impact. Construction noise occurring for shorter durations would not typically result in significant impact unless there is a higher intensity of noise. For example, construction noise from mobile and stationary sources may cause significant adverse impact if exterior noise levels would increase by 15 dBA or more for 12 months or more or 20 dBA or more for a period of 3 months or more. These criteria apply to residential, community facility, and commercial office spaces, but do not apply to retail spaces. The potential effects of construction noise are also evaluated according to interior noise criteria which are 45 dBA (L_{10}) for residential spaces and 50 dBA (L_{10}) for commercial office spaces.

The detailed construction noise analysis evaluates the specific activities, types of equipment, duration of activities, and locations of nearby sensitive receptors.

The noise impact criteria described in Chapter 19, Section 410 of the CEQR Technical Manual serve as a screening-level threshold for potential construction noise impacts. If construction of a proposed project would not result in any exceedances of these criteria at a given receptor, then that receptor would not have the potential to experience a construction noise impact. However, as is the case with the Proposed Project, if construction would result in exceedances of these noise impact criteria, then further consideration of the intensity and duration of construction noise is warranted at that receptor to determine significant adverse construction noise impact. For the Proposed Project, there would be significant adverse construction noise impact according to the following criteria:

- Future noise levels exceed 85 dBA (L_{eq}) for a prolonged period of time, as indicated in the CEQR Technical Manual Public Health Chapter.
- Noise levels (L_{eq}) would increase by 15 dBA or more for 12 consecutive months or more or 20 dBA or more for three consecutive months or more.

Construction Noise Assessment Methodology

The detailed construction noise analysis includes both mobile and stationary construction noise sources. Stationary sources are based on typical equipment used during all phases of construction including foundation, superstructure, elevator installation, exterior construction, and interior fit-out. There would be overlapping construction activities during foundation and superstructure activities as well as during superstructure, elevators, exterior construction, and interior fit-out activities.

Construction mobile sources include worker vehicles and trucks. Construction noise has been evaluated for the construction mobile source peak period from 6:00 AM to 7:00 AM. During this period, there would be no construction noise from stationary sources. Construction noise from stationary sources has been evaluated for 16 different phases of construction. For each phase of the Proposed Development (i.e., Phase 1A, Phase 1B, Phase 2A, Phase 2B, and Phase 2C) there would be foundation, superstructure, elevators, exterior construction, and interior fit-out phases of construction of the proposed buildings (i.e., Buildings 1, 2, 3, 4, 5, 6, 7/8, 9/10 and the PAC). Construction noise from stationary sources has been evaluated for the following phases:

- From Month 1 through 4, the Foundation phase for Buildings 1 and 2 (Phase 1A) would occur. Construction has been evaluated based on Month 2 as this period has the highest construction sound emissions.
- From Month 5 through 12, the Foundation, Superstructure, Elevator and Exterior construction, and Interior fit-out phases for Buildings 1 and 2 (Phase 1A) would occur. Construction has been evaluated based on Month 8 as this period has the highest construction sound emissions.
- From Month 13 through 17, the Elevator and Exterior construction and Interior fit-out phases for Buildings 1 and 2 (Phase 1A) would occur. Construction has been evaluated based on Month 16 as this period has the highest construction sound emissions.
- From Month 18 through 23, the Elevator and Exterior construction and Interior fit-out phases for Buildings 1 and 2 (Phase 1A) would occur. Construction has been evaluated based on Month 21 as this period has the highest construction sound emissions.

- During Month 24, no construction activities are scheduled to occur, therefore, this month has not been analyzed for construction noise.
- From Month 25 through 28, the Foundation phase for Buildings 3 and 4 (Phase 2A) would occur. Construction has been evaluated based on Month 26 as this period has the highest construction sound emissions.
- From Month 29 through 36, the Foundation, Superstructure, Elevator and Exterior construction, and Interior fit-out phases for Buildings 3 and 4 and the Foundation, Superstructure, Elevator and Exterior construction, and Interior fit-out phases for the CCC Garage (Phase 2A) would occur. Construction has been evaluated based on Month 32 as this period has the highest construction sound emissions.
- From Month 37 through 43, the Elevator and Exterior construction and Interior fit-out phases for Buildings 3, 4 and the CCC Garage (Phase 2A) would occur. Construction has been evaluated based on Month 40 as this period has the highest construction sound emissions.
- From Month 44 through 47, the Exterior construction and Interior fit-out phases for Buildings 3 and 4 (Phase 2A) would occur. Construction has been evaluated based on Month 45 as this period has the highest construction sound emissions.
- During Month 48, no construction activities are scheduled to occur, therefore, this month has not been analyzed for construction noise emissions.
- From Month 49 through 55, the Foundation and Superstructure phases for Buildings 5, 6 and the Performing Arts Center (PAC) (Phase 1B) would occur. Construction has been evaluated based on Month 51 as this period has the highest construction sound emissions.
- From Month 56 through 61, the Foundation, Superstructure, Elevator and Exterior construction, and Interior fit-out phases for Buildings 5, 6 and the PAC (Phase 1B) would occur. Construction has been evaluated based on Month 58 as this period has the highest construction sound emissions.
- From Month 62 through 66, the Superstructure, Elevator and Exterior construction, and Interior fit-out phases for Buildings 5, 6 and the PAC (Phase 1B) would occur. Construction has been evaluated based on Month 62 as this period has the highest construction sound emissions.
- From Month 67 through 72, the Elevator and Exterior construction, and Interior fit-out phases for Buildings 5, 6 and the PAC (Phase 1B) would occur. Construction has been evaluated based on Month 70 as this period has the highest construction sound emissions.
- From Month 73 through 78, the Foundation and Superstructure phases for Buildings 7 through 10 (Phase 2B/2C) would occur. Construction has been evaluated based on Month 74 as this period has the highest construction sound emissions.
- From Month 79 through 85, the Foundation, Superstructure, Elevator and Exterior construction, and Interior fit-out phases for Buildings 7 through 10 (Phase 2B/2C) would occur. Construction has been evaluated based on Month 81 as this period has the highest construction sound emissions.

- From Month 86 through 89, the Superstructure, Elevator and Exterior construction, and Interior fit-out phases for Buildings 7 through 10 (Phase 2B/2C) would occur. Construction has been evaluated based on Month 88 as this period has the highest construction sound emissions.
- From Month 90 through 96, the Elevator and Exterior construction, and Interior fit-out phases for Buildings 7 through 10 (Phase 2B/2C) would occur. Construction has been evaluated based on Month 93 as this period has the highest construction sound emissions.

Construction Mobile Source Noise Assessment

The construction mobile source noise assessment evaluated the 13 intersections listed in the **Noise** section during the 6:00 to 7:00 AM period. Automated traffic recorder (ATR) data was collected over 24-hours at 13 locations throughout the study area. Between 6:00 AM and 7:00 AM the total traffic volumes across all 13 ATRs was 75.5 percent of the traffic volumes between 7:30 and 8:30 AM when the morning peak period traffic conditions occur. Therefore, the existing traffic volumes without construction vehicles were assumed to be 75.5 percent of the peak morning PCE values.

The potential for construction mobile sources to increase ambient sound conditions has been determined based on proportional modeling of noise PCEs. If construction mobile sources would result in a doubling or more of PCEs, it would result in a 3 dBA or greater increase in noise levels. If PCEs would not double during construction, there would not be a significant adverse vehicular noise impact, and no further mobile source noise analysis is warranted. The *2021 CEQR Technical Manual* describes the process to determine PCEs. Vehicle classes are defined to have the following PCEs based on typical vehicles speeds:

- 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

Increases in noise due to construction mobile sources are calculated using the following equation:

$$Sound\ Level\ Increase\ (Leq) = 10 * \log\left(\frac{Existing\ and\ Construction\ PCEs}{Existing\ PCEs}\right)$$

As described in the **Construction Traffic** section, the peak construction vehicle trips during the peak construction quarter (first quarter of 2030) would include 184 automobiles and 6 truck trips in the 6:00 AM to 7:00 AM period. These vehicle trips would be distributed throughout the study area.

As shown in **Table 19-11,** noise from construction mobile sources between 6:00 AM and 7:00 AM would typically increase an average of 0.4 dBA compared to the existing condition with a maximum of 0.7 dBA at three intersections: Flatlands Avenue and Georgia Avenue; Pennsylvania Avenue and Wortman Avenue; and Pennsylvania Avenue and Cozine Avenue. As the construction mobile source noise levels would not increase by 3 dBA or more, there would be no significant adverse noise impact.

Table 19-11 Construction Mobile Source Analysis

	Intersection	Existing PCEs (6:00 to 7:00 AM)	Existing with Construction PCEs	Construction Mobile Source Sound Increase (dBA)
1	Flatlands Avenue and Rockaway Parkway	4,509	4,737	0.2
2	Flatlands Avenue and East 108th Street	3,992	4,222	0.2
3	Louisiana Avenue and Flatlands Avenue	3,731	4,196	0.5
4	Flatlands Avenue and Georgia Avenue/Site Driveway	2,620	3,080	0.7
5	Pennsylvania Avenue and Flatlands Avenue	5,634	6,302	0.5
6	Pennsylvania Avenue and Linden Boulevard	10,105	10,933	0.3
7	Pennsylvania Avenue and Stanley Avenue	4,735	5,469	0.6
8	Pennsylvania Avenue and Wortman Avenue	4,324	5,057	0.7
9	Pennsylvania Avenue and Cozine Avenue	4,433	5,212	0.7
10	Pennsylvania Avenue and Vandalia Avenue	3,139	3,160	0.0
11	Pennsylvania Avenue and Twin Pines Drive	2,809	2,902	0.1
12	Pennsylvania Avenue and Seaview Avenue	3,571	3,664	0.1
13	Louisiana Avenue and Vandalia Avenue	806	813	0.0

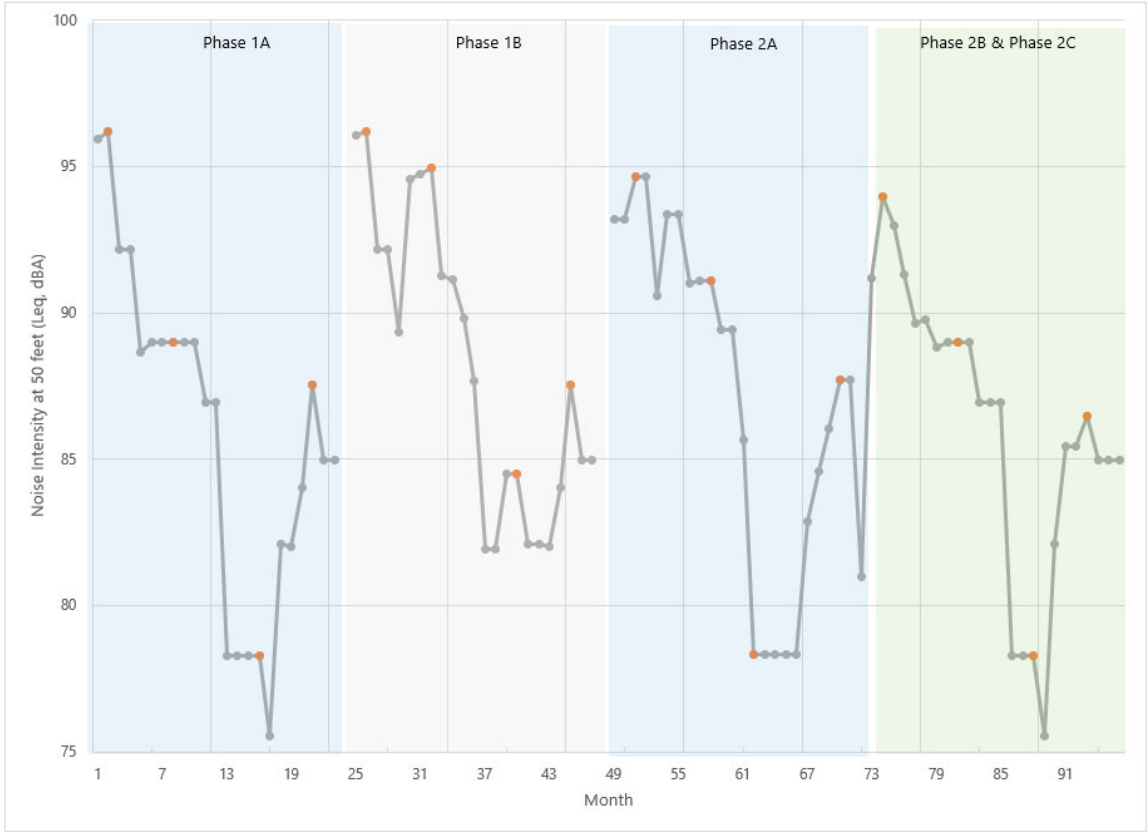
Source: VHB, 2022

Construction Equipment Noise Emissions

Figure 19-4 presents the cumulative sound emissions from stationary construction equipment during each month for With-Action conditions. The cumulative sound emissions represent the total energy-average (L_{eq}) level of all equipment operating at a distance of 50 feet. This sound emission is not the actual sound level that would exist on the Development Site since actual equipment is distributed throughout the site, but the cumulative emissions level indicates which periods of construction are expected to be the loudest and which months are used for analysis. This figure shows that the foundation phases of construction are generally the loudest and that the noise intensity levels typically range from the upper 70's to the mid 90's dBA. Based on this construction noise intensity analysis, noise has been evaluated during months:

- Phase 1A – Months 2, 8, 16, and 21.
- Phase 2A – Months 26, 32, 40, and 45.
- Phase 1B – Months 51, 58, 62, and 70.
- Phase 2B/2C – Months 74, 81, 88, and 93.

Figure 19-4 Cumulative Sound Emissions from Stationary Equipment during Each Month



Source: VHB, 2022.

Table 19-12 presents the type of equipment, the maximum sound level at 50 feet, the utilization factors (percentage of time the equipment is operating at full power), and the number of each piece of equipment that is used during each phase of construction based on the *2021 CEQR Technical Manual*. This table does not include trucks at the Development Site such as box trucks, pickup trucks, tractor trailers, packer trucks, container trucks, and dump trucks since they are not allowed to idle more than three minutes in accordance with New York City Administrative Code §24-163. These tables show that there will be up to six concrete mixer trucks during various phases of construction. However, this is the total number of vehicles operating and not the total number of concrete mixer trucks that would be at the site at any given time. The number of concrete mixer trucks that have been included in the analysis is based on those shown on the construction logistics plans and typically range from two to five on-site at any given time.

Table 19-12 Construction Equipment by Month of Analysis

Equipment	Maximum Sound Level at 50 feet (dBA, L_{max})	Utilization Factor (%)	Number of Construction Equipment Pieces by Analysis Month															
			2	8	16	21	26	32	40	45	51	58	62	70	74	81	88	93
Concrete Mixer Truck	85	40	2	4	0	2	2	5	0	2	2	4	0	1	1	4	0	1
Concrete Pump Truck	82	40	2	2	0	1	2	6	0	1	2	4	0	1	2	2	0	1
Excavator	85	40	6	0	0	2	6	3	1	2	6	2	0	3	4	0	0	2
Pile Rig/Drill	95	20	4	0	0	0	4	2	0	0	2	0	0	0	2	0	0	0
Compressor	80	40	4	0	0	0	4	2	0	0	4	1	0	0	4	0	0	0
Generator	82	50	4	0	0	0	4	2	0	0	4	1	0	0	4	0	0	0
Forklift	64	40	0	4	4	0	0	4	5	0	0	4	5	0	0	4	4	2
Mobile Crane	85	16	0	2	0	0	0	2	1	0	0	2	0	0	0	2	0	0
Hoists	75	50	0	4	4	0	0	6	6	0	0	4	4	0	0	4	4	0

Source: VHB, 2022.

Construction Noise Assessment

The Proposed Project is primarily near existing residential and commercial receptors. **Table 19-13** details all receptor locations and land use descriptions. As shown in **Figure 19-5**, construction noise has been evaluated at 69 existing columns of receptors with receptors on each floor of the building (if noise sensitive). As new buildings would be introduced with the phased development, additional columns of receptors have been included in the analysis for a total of 95 existing and new columns of receptors.

Figure 19-5 Construction Noise Receptor Locations

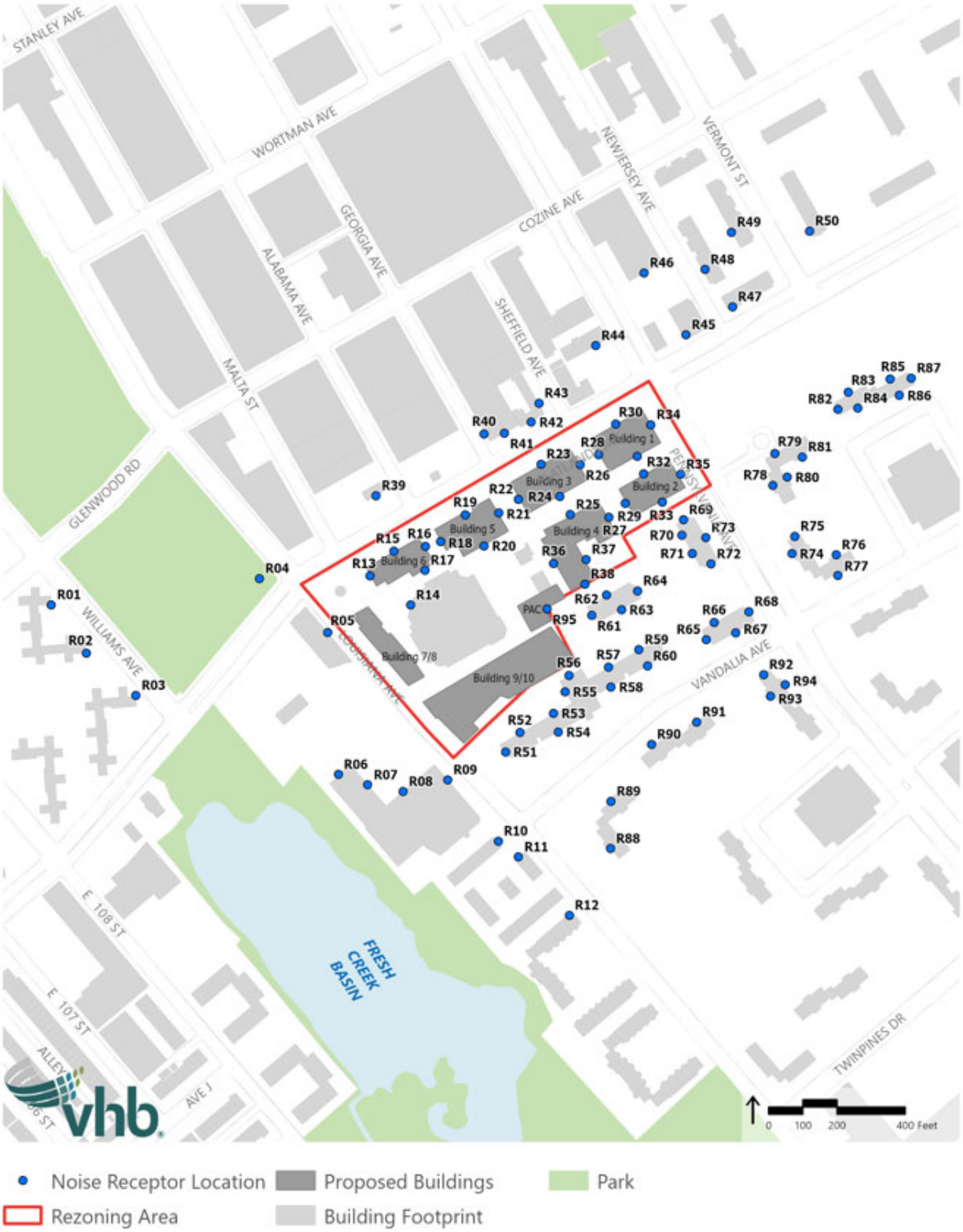


Table 19-13 Construction Noise Receptor Locations and Land Use Descriptions

Receptor	Location	Land Use Description
R01 - R03	10835 Flatlands Avenue	Residential
R04	Farragut Road	Outdoor Recreation
R05	11110 Flatlands Avenue	Commercial & Office Space
R06 - R09	730 Louisiana Avenue	Commercial & Office Space
R10	790 Louisiana Avenue	Residential
R11	508 Louisiana Avenue	Residential
R12	556 Louisiana Avenue	Residential
R14	12048 Flatlands Avenue	Community
R39	12041 Flatlands Avenue	Commercial & Office Space
R40, R41	12079 Flatlands Avenue	Commercial & Office Space
R42, R43	1036 Sheffield Avenue	Hotel
R44	1118 Pennsylvania Avenue	Commercial & Office Space
R45	1143 Flatlands Avenue	Community
R46	1111 Pennsylvania Avenue	Commercial & Office Space
R47 - R49	148 Cozine Avenue	Residential
R50	190 Cozine Avenue	Residential
R51 - R60	1 Vandalia Avenue	Residential
R61 - R64	1180 Pennsylvania Avenue	Residential
R65 - R68	99 Vandalia Avenue	Residential
R69 - R73	1170 Pennsylvania Avenue	Residential
R74 - R87	1155 Pennsylvania Avenue	Residential
R88 - R94	1260 Cronton Loop	Residential
R28, R30, R31, R34	Proposed Building 1	Residential & Retail
R29, R32, R33, R35	Proposed Building 2	Residential & Retail
R22 - R24, R26	Proposed Building 3	Residential & Retail
R25, R27, R36 - R38	Proposed Building 4	Residential & Community
R18 - R21	Proposed Building 5	Residential, Retail, & Community
R13, R15 - R17	Proposed Building 6	Residential & Retail
R95	Proposed PAC	Community

Source: VHB, 2022.

Existing Ambient Noise Levels

Existing ambient sound levels at all receptor locations have been determined based on measurements conducted in the study area and Cadna-A modeling of the traffic noise

conditions. Measurements include those conducted during the morning (9:00 AM to 11:00 AM) throughout the Development Site (Sites 1 through 6) as shown in **Table 19-14**.

Table 19-14 Ambient Sound Level Measurements

Site	Monitoring Location	Time Period	Duration	L_{eq}	L_{10}	L_{50}	L_{90}
1	Midblock Louisiana Ave	Morning	20 min	66.3	69.1	62.9	57.7
2	CCC Gazebo	Morning	20 min	62.8	63.9	60.6	56.0
3	Midblock Flatlands Ave	Morning	20 min	64.6	68.2	61.4	55.2
4	Parking Lot Interior	Morning	20 min	52.5	54.1	51.5	50.4
5	Penn Ave - Flatlands Ave	Morning	20 min	72.2	74.6	69.8	64.4
6	School bus lot off Penn Ave	Morning	20 min	62.0	59.9	55.2	52.4

Source: Noise measurements conducted by VHB on June 2, 2021.

The ambient sound level at each receptor was determined based on the measured sound level, similarity of acoustic context, and an adjustment based on the difference in modeled sound levels at the corresponding measurement location and each specific receptor location. The minimum morning background sound level assumed for any receptor was 56.0 dBA, which is the average L_{90} at all sites for morning time periods. Based on this analysis, the existing daytime ambient sound levels range from 56.0 to 71.5 dBA (L_{eq}).

Existing traffic conditions are based on the results of **Chapter 13, Transportation** and review of the ATR data. The traffic volumes between 6:00 AM and 7:00 AM are based on 75.5 percent of the morning peak period volumes (7:30 AM to 8:30 AM).

Construction Noise Levels

The construction noise predictions include the equipment described in **Table 19-12**. The 8-foot perimeter walls have been included at all sites throughout the phased development as indicated on the logistics plans (September 28, 2021). Due to the phased nature of the project, as each site is constructed, the previously constructed sites would be directly adjacent to active construction sites. Fully constructed portions of the project would shield some receptors from construction equipment noise emissions.

Based on street-level field observations, existing residential buildings located near the Development Site appear to have insulated glass windows and window or through-wall air-conditioning, which would be expected to provide 25 dBA window/wall attenuation. Existing commercial buildings appear to have insulated glass windows and central air-conditioning, which would be expected to provide 30 dBA window/wall attenuation.

The minimum composite window/wall attenuation required for some of the new buildings presented in Chapter 16, Noise, was used to assess interior construction noise levels for new receptors to be constructed as part of the Proposed Development. As such, receptors on the north and east facing facades of Proposed Building 1 and the east façade of Building 2 require 35 dBA window/wall attenuation. For all new receptors within the footprint of the Proposed Development, 30 dBA window/wall attenuation is assumed as the newly constructed buildings would have insulated glass windows and central air-conditioning.

The *2021 CEQR Technical Manual* defines 45 dBA (L_{10}) as an acceptable interior noise level limit for residential, community facility, and hotel spaces, as discussed in **Chapter 16**, **Noise**. Interior noise level of 50 dBA (L_{10}) is typically considered to be an acceptable interior noise level limit for commercial office spaces. As mentioned earlier, these acceptable interior L_{10} noise level limits were used to determine if additional mitigation measures are needed at receptors identified with significant adverse construction noise impact. The L_{10} metric is calculated by adding a 3-dBA adjustment factor to the calculated L_{eq} according to FHWA's Roadway Construction Noise Model (RCNM) guidance.

The assessment results in **Table 19-15** through **Table 19-30** present the range of construction noise levels at each building façade, including the results at all floors.

Table 19-15 Phase 1A – Foundation Construction Noise Levels: Months 1 through 4

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	53.2 - 54.6	66.0 - 66.5	0.3	44.0 - 44.5
R02	10835 Flatlands Avenue	65.0 - 65.4	56.2 - 56.4	65.5 - 65.9	0.5	43.5 - 43.9
R03	10835 Flatlands Avenue	69.1 - 69.7	57.6 - 59.1	69.4 - 70.1	0.4	47.4 - 48.1
R04	Farragut Road Park	71.5 - 71.5	59.5 - 59.5	71.8 - 71.8	0.3	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	57.2 - 57.2	67.7 - 67.7	0.4	40.7 - 40.7
R06	730 Louisiana Avenue	59.3 - 59.3	48.8 - 48.8	59.7 - 59.7	0.4	32.7 - 32.7
R07	730 Louisiana Avenue	56.0 - 56.0	54.5 - 54.5	58.3 - 58.3	2.3	31.3 - 31.3
R08	730 Louisiana Avenue	58.2 - 58.2	56.3 - 56.3	60.4 - 60.4	2.2	33.4 - 33.4
R09	730 Louisiana Avenue	62.4 - 62.4	59.9 - 59.9	64.3 - 64.3	1.9	37.3 - 37.3
R10	790 Louisiana Avenue	61.3 - 63.1	43.2 - 43.2	61.4 - 63.1	0.1	39.4 - 41.1
R11	508 Louisiana Avenue	59.8 - 61.2	40.3 - 40.3	59.8 - 61.2	0.0	37.8 - 39.2
R12	556 Louisiana Avenue	56.0 - 58.4	42.1 - 42.3	56.2 - 58.5	0.2	34.2 - 36.5
R14	12048 Flatlands Avenue	65.3 - 68.8	44.1 - 44.1	65.3 - 68.8	0.0	43.3 - 46.8
R39	12041 Flatlands Avenue	58.3 - 58.3	61.9 - 61.9	63.5 - 63.5	5.2	36.5 - 36.5
R40	12079 Flatlands Avenue	56.0 - 56.0	52.9 - 52.9	57.7 - 57.7	1.7	30.7 - 30.7
R41	12079 Flatlands Avenue	59.5 - 59.5	68.3 - 68.3	68.8 - 68.8	9.3	41.8 - 41.8
R42	1036 Sheffield Avenue	60.5 - 61.7	71.2 - 74.9	71.6 - 75.1	13.4	44.6 - 48.1
R43	1036 Sheffield Avenue	56.0 - 59.2	71.1 - 74.9	71.2 - 75.0	16.4	44.2 - 48.0
R44	1118 Pennsylvania Avenue	64.3 - 64.3	68.4 - 68.4	69.8 - 69.8	5.5	42.8 - 42.8
R45	1143 Flatlands Avenue	63.4 - 63.4	65.7 - 65.7	67.7 - 67.7	4.3	40.7 - 40.7
R46	1111 Pennsylvania Avenue	56.6 - 56.6	59.5 - 59.5	61.3 - 61.3	4.7	34.3 - 34.3
R47	148 Cozine Avenue	64.3 - 65.1	64.3 - 65.1	67.3 - 68.1	3.0	45.3 - 46.1
R48	148 Cozine Avenue	57.7 - 60.5	58.6 - 62.3	61.2 - 64.5	4.0	39.2 - 42.5
R49	148 Cozine Avenue	56.0 - 56.0	51.9 - 55.7	57.4 - 58.9	2.9	35.4 - 36.9
R50	190 Cozine Avenue	59.0 - 67.2	56.7 - 64.4	61.7 - 68.8	2.7	39.7 - 46.8
R51	1 Vandalia Avenue	58.8 - 64.5	43.2 - 55.4	60.1 - 64.6	1.3	38.1 - 42.6
R52	1 Vandalia Avenue	59.7 - 64.9	60.1 - 65.8	63.0 - 68.4	4.1	41.0 - 46.4
R53	1 Vandalia Avenue	56.0 - 58.1	56.0 - 65.7	59.0 - 66.4	8.3	37.0 - 44.4
R54	1 Vandalia Avenue	56.0 - 61.8	44.9 - 46.2	56.3 - 61.9	0.3	34.3 - 39.9
R55	1 Vandalia Avenue	56.0 - 56.0	47.5 - 47.5	56.6 - 56.6	0.6	34.6 - 34.6

Table 19-15 Phase 1A – Foundation Construction Noise Levels: Months 1 through 4

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R56	1 Vandalia Avenue	56.0 - 56.0	61.2 - 61.2	62.3 - 62.3	6.3	40.3 - 40.3
R57	1 Vandalia Avenue	56.0 - 56.8	48.0 - 64.0	56.6 - 64.8	8.0	34.6 - 42.8
R58	1 Vandalia Avenue	56.0 - 56.0	45.8 - 59.6	56.4 - 61.2	5.2	34.4 - 39.2
R59	1 Vandalia Avenue	56.0 - 56.7	59.8 - 68.7	61.3 - 68.9	12.5	39.3 - 46.9
R60	1 Vandalia Avenue	56.0 - 56.0	46.6 - 49.2	56.5 - 56.8	0.8	34.5 - 34.8
R61	1180 Pennsylvania Avenue	56.0 - 57.4	58.3 - 63.2	60.6 - 64.0	7.8	38.6 - 42.0
R62	1180 Pennsylvania Avenue	56.0 - 58.9	69.8 - 74.9	70.1 - 75.0	16.8	48.1 - 53.0
R63	1180 Pennsylvania Avenue	56.0 - 56.0	62.1 - 67.0	63.1 - 67.3	11.3	41.1 - 45.3
R64	1180 Pennsylvania Avenue	56.0 - 57.3	69.2 - 75.3	69.5 - 75.4	18.8	47.5 - 53.4
R65	99 Vandalia Avenue	56.0 - 56.0	58.7 - 67.2	60.6 - 67.5	11.5	38.6 - 45.5
R66	99 Vandalia Avenue	56.0 - 56.0	64.4 - 71.2	65.0 - 71.3	15.3	43.0 - 49.3
R67	99 Vandalia Avenue	56.0 - 57.9	46.9 - 48.9	56.5 - 58.4	0.7	34.5 - 36.4
R68	99 Vandalia Avenue	56.7 - 62.2	60.0 - 67.7	61.7 - 68.8	6.7	39.7 - 46.8
R69	1170 Pennsylvania Avenue	56.2 - 60.4	73.1 - 80.9	73.2 - 80.9	22.4	51.2 - 58.9
R70	1170 Pennsylvania Avenue	56.0 - 56.0	69.3 - 77.7	69.5 - 77.7	21.7	47.5 - 55.7
R71	1170 Pennsylvania Avenue	56.0 - 56.0	67.5 - 75.4	67.8 - 75.4	19.4	45.8 - 53.4
R72	1170 Pennsylvania Avenue	56.0 - 57.3	59.5 - 65.2	61.1 - 65.9	8.6	39.1 - 43.9
R73	1170 Pennsylvania Avenue	59.5 - 62.1	60.6 - 72.9	63.1 - 73.2	11.7	41.1 - 51.2
R74	1155 Pennsylvania Avenue	56.0 - 61.9	67.4 - 74.0	67.7 - 74.2	13.0	45.7 - 52.2
R75	1155 Pennsylvania Avenue	56.0 - 58.8	65.3 - 72.2	65.8 - 72.4	14.8	43.8 - 50.4
R76	1155 Pennsylvania Avenue	56.0 - 56.0	57.2 - 65.8	59.7 - 66.2	10.2	37.7 - 44.2
R77	1155 Pennsylvania Avenue	56.0 - 58.5	45.7 - 49.5	56.4 - 59.0	0.5	34.4 - 37.0
R78	1155 Pennsylvania Avenue	56.0 - 59.1	66.9 - 74.0	67.3 - 74.1	15.5	45.3 - 52.1
R79	1155 Pennsylvania Avenue	56.0 - 59.4	66.6 - 73.8	67.0 - 73.9	14.9	45.0 - 51.9
R80	1155 Pennsylvania Avenue	56.0 - 56.0	50.0 - 51.3	57.0 - 57.3	1.3	35.0 - 35.3
R81	1155 Pennsylvania Avenue	56.0 - 56.0	49.0 - 50.5	56.8 - 57.1	1.1	34.8 - 35.1
R82	1155 Pennsylvania Avenue	56.0 - 57.8	63.2 - 69.6	64.0 - 69.9	12.2	42.0 - 47.9
R83	1155 Pennsylvania Avenue	56.0 - 58.8	62.7 - 68.9	63.5 - 69.3	10.5	41.5 - 47.3
R84	1155 Pennsylvania Avenue	56.0 - 56.0	45.5 - 63.2	56.4 - 64.0	8.0	34.4 - 42.0
R85	1155 Pennsylvania Avenue	56.0 - 57.4	58.9 - 64.8	60.7 - 65.5	8.1	38.7 - 43.5
R86	1155 Pennsylvania Avenue	56.0 - 56.0	43.9 - 59.3	56.3 - 61.0	5.0	34.3 - 39.0
R87	1155 Pennsylvania Avenue	56.0 - 56.0	53.1 - 55.8	57.8 - 58.9	2.9	35.8 - 36.9
R88	1260 Cronton Loop	56.0 - 58.8	40.7 - 42.5	56.1 - 58.9	0.2	34.1 - 36.9
R89	1260 Cronton Loop	56.0 - 62.4	41.9 - 45.6	56.2 - 62.5	0.2	34.2 - 40.5
R90	1260 Cronton Loop	57.0 - 65.9	43.7 - 63.9	57.2 - 68.0	2.1	35.2 - 46.0
R91	1260 Cronton Loop	56.0 - 62.9	62.4 - 68.2	63.3 - 69.3	8.0	41.3 - 47.3
R92	1260 Cronton Loop	56.0 - 60.3	44.8 - 65.9	56.3 - 67.0	6.7	34.3 - 45.0
R93	1260 Cronton Loop	56.0 - 56.0	44.0 - 61.5	56.3 - 62.6	6.6	34.3 - 40.6
R94	1260 Cronton Loop	56.0 - 61.8	44.0 - 64.1	56.3 - 66.1	4.3	34.3 - 44.1

Source: VHB 2022

Table 19-16 Phase 1A – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 5 through 12

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	48.2 - 48.9	65.8 - 66.4	0.1	43.8 - 44.4
R02	10835 Flatlands Avenue	65.0 - 65.4	50.1 - 50.1	65.1 - 65.5	0.1	43.1 - 43.5
R03	10835 Flatlands Avenue	69.1 - 69.7	51.5 - 53.4	69.2 - 69.8	0.1	47.2 - 47.8
R04	Farragut Road Park	71.5 - 71.5	54.0 - 54.0	71.6 - 71.6	0.1	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	54.3 - 54.3	67.5 - 67.5	0.2	40.5 - 40.5
R06	730 Louisiana Avenue	59.3 - 59.3	42.8 - 42.8	59.4 - 59.4	0.1	32.4 - 32.4
R07	730 Louisiana Avenue	56.0 - 56.0	43.6 - 43.6	56.2 - 56.2	0.2	29.2 - 29.2
R08	730 Louisiana Avenue	58.2 - 58.2	51.6 - 51.6	59.1 - 59.1	0.9	32.1 - 32.1
R09	730 Louisiana Avenue	62.4 - 62.4	54.4 - 54.4	63.0 - 63.0	0.6	36.0 - 36.0
R10	790 Louisiana Avenue	61.3 - 63.1	36.4 - 36.6	61.3 - 63.1	0.0	39.3 - 41.1
R11	508 Louisiana Avenue	59.8 - 61.2	34.0 - 34.3	59.8 - 61.2	0.0	37.8 - 39.2
R12	556 Louisiana Avenue	56.0 - 58.4	36.8 - 37.5	56.1 - 58.4	0.1	34.1 - 36.4
R14	12048 Flatlands Avenue	65.3 - 68.8	38.7 - 39.9	65.3 - 68.8	0.0	43.3 - 46.8
R39	12041 Flatlands Avenue	58.3 - 58.3	58.3 - 58.3	61.3 - 61.3	3.0	34.3 - 34.3
R40	12079 Flatlands Avenue	56.0 - 56.0	48.9 - 48.9	56.8 - 56.8	0.8	29.8 - 29.8
R41	12079 Flatlands Avenue	59.5 - 59.5	65.1 - 65.1	66.2 - 66.2	6.7	39.2 - 39.2
R42	1036 Sheffield Avenue	60.5 - 61.7	67.5 - 71.3	68.3 - 71.8	10.1	41.3 - 44.8
R43	1036 Sheffield Avenue	56.0 - 59.2	67.9 - 70.9	68.2 - 71.2	14.3	41.2 - 44.2
R44	1118 Pennsylvania Avenue	64.3 - 64.3	62.7 - 62.7	66.6 - 66.6	2.3	39.6 - 39.6
R45	1143 Flatlands Avenue	63.4 - 63.4	60.5 - 60.5	65.2 - 65.2	1.8	38.2 - 38.2
R46	1111 Pennsylvania Avenue	56.6 - 56.6	57.4 - 57.4	60.0 - 60.0	3.4	33.0 - 33.0
R47	148 Cozine Avenue	64.3 - 65.1	59.1 - 59.2	65.4 - 66.1	1.1	43.4 - 44.1
R48	148 Cozine Avenue	57.7 - 60.5	55.5 - 58.8	59.7 - 62.7	2.2	37.7 - 40.7
R49	148 Cozine Avenue	56.0 - 56.0	46.4 - 51.7	56.5 - 57.4	1.4	34.5 - 35.4
R50	190 Cozine Avenue	59.0 - 67.2	48.8 - 59.9	60.4 - 67.9	1.4	38.4 - 45.9
R51	1 Vandalia Avenue	58.8 - 64.5	39.6 - 44.3	58.9 - 64.5	0.1	36.9 - 42.5
R52	1 Vandalia Avenue	59.7 - 64.9	57.1 - 60.2	61.7 - 66.2	2.1	39.7 - 44.2
R53	1 Vandalia Avenue	56.0 - 58.1	55.8 - 62.1	58.9 - 63.6	5.5	36.9 - 41.6
R54	1 Vandalia Avenue	56.0 - 61.8	38.9 - 39.9	56.1 - 61.8	0.1	34.1 - 39.8
R55	1 Vandalia Avenue	56.0 - 56.0	43.4 - 43.4	56.2 - 56.2	0.2	34.2 - 34.2
R56	1 Vandalia Avenue	56.0 - 56.0	59.9 - 59.9	61.4 - 61.4	5.4	39.4 - 39.4
R57	1 Vandalia Avenue	56.0 - 56.8	44.3 - 51.6	56.3 - 57.9	1.3	34.3 - 35.9
R58	1 Vandalia Avenue	56.0 - 56.0	42.8 - 46.4	56.2 - 56.5	0.5	34.2 - 34.5
R59	1 Vandalia Avenue	56.0 - 56.7	54.5 - 59.8	58.3 - 61.5	5.3	36.3 - 39.5
R60	1 Vandalia Avenue	56.0 - 56.0	39.7 - 42.3	56.1 - 56.2	0.2	34.1 - 34.2
R61	1180 Pennsylvania Avenue	56.0 - 57.4	53.7 - 58.9	58.5 - 60.8	4.6	36.5 - 38.8
R62	1180 Pennsylvania Avenue	56.0 - 58.9	65.0 - 68.9	65.8 - 69.2	11.3	43.8 - 47.2
R63	1180 Pennsylvania Avenue	56.0 - 56.0	55.3 - 59.7	58.7 - 61.2	5.2	36.7 - 39.2
R64	1180 Pennsylvania Avenue	56.0 - 57.3	64.0 - 68.6	64.8 - 68.9	12.8	42.8 - 46.9
R65	99 Vandalia Avenue	56.0 - 56.0	59.6 - 64.3	61.2 - 64.9	8.9	39.2 - 42.9

Table 19-16 Phase 1A – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 5 through 12

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R66	99 Vandalia Avenue	56.0 - 56.0	60.2 - 64.9	61.6 - 65.4	9.4	39.6 - 43.4
R67	99 Vandalia Avenue	56.0 - 57.9	39.3 - 41.7	56.1 - 58.0	0.2	34.1 - 36.0
R68	99 Vandalia Avenue	56.7 - 62.2	55.9 - 62.5	59.3 - 65.4	3.5	37.3 - 43.4
R69	1170 Pennsylvania Avenue	56.2 - 60.4	66.3 - 71.4	66.7 - 71.6	13.9	44.7 - 49.6
R70	1170 Pennsylvania Avenue	56.0 - 56.0	66.0 - 70.8	66.4 - 70.9	14.9	44.4 - 48.9
R71	1170 Pennsylvania Avenue	56.0 - 56.0	64.7 - 69.5	65.2 - 69.7	13.7	43.2 - 47.7
R72	1170 Pennsylvania Avenue	56.0 - 57.3	57.8 - 62.6	60.0 - 63.6	6.9	38.0 - 41.6
R73	1170 Pennsylvania Avenue	59.5 - 62.1	51.7 - 57.5	60.2 - 63.3	1.9	38.2 - 41.3
R74	1155 Pennsylvania Avenue	56.0 - 61.9	61.7 - 66.4	62.7 - 67.6	7.1	40.7 - 45.6
R75	1155 Pennsylvania Avenue	56.0 - 58.8	59.4 - 64.1	61.0 - 65.1	8.7	39.0 - 43.1
R76	1155 Pennsylvania Avenue	56.0 - 56.0	43.5 - 53.2	56.2 - 57.8	1.8	34.2 - 35.8
R77	1155 Pennsylvania Avenue	56.0 - 58.5	41.8 - 43.6	56.2 - 58.6	0.2	34.2 - 36.6
R78	1155 Pennsylvania Avenue	56.0 - 59.1	61.0 - 65.6	62.3 - 66.4	8.7	40.3 - 44.4
R79	1155 Pennsylvania Avenue	56.0 - 59.4	60.8 - 65.5	62.1 - 66.4	9.2	40.1 - 44.4
R80	1155 Pennsylvania Avenue	56.0 - 56.0	40.9 - 42.9	56.1 - 56.2	0.2	34.1 - 34.2
R81	1155 Pennsylvania Avenue	56.0 - 56.0	40.3 - 42.2	56.1 - 56.2	0.2	34.1 - 34.2
R82	1155 Pennsylvania Avenue	56.0 - 57.8	57.7 - 62.3	59.9 - 63.6	7.1	37.9 - 41.6
R83	1155 Pennsylvania Avenue	56.0 - 58.8	57.1 - 61.8	59.6 - 63.5	6.0	37.6 - 41.5
R84	1155 Pennsylvania Avenue	56.0 - 56.0	37.2 - 53.9	56.1 - 58.1	2.1	34.1 - 36.1
R85	1155 Pennsylvania Avenue	56.0 - 57.4	51.5 - 58.7	57.3 - 61.1	4.4	35.3 - 39.1
R86	1155 Pennsylvania Avenue	56.0 - 56.0	35.9 - 51.9	56.0 - 57.4	1.4	34.0 - 35.4
R87	1155 Pennsylvania Avenue	56.0 - 56.0	40.7 - 45.7	56.1 - 56.4	0.4	34.1 - 34.4
R88	1260 Cronton Loop	56.0 - 58.8	34.6 - 37.3	56.0 - 58.8	0.0	34.0 - 36.8
R89	1260 Cronton Loop	56.0 - 62.4	35.6 - 41.9	56.0 - 62.4	0.1	34.0 - 40.4
R90	1260 Cronton Loop	57.0 - 65.9	37.5 - 56.1	57.0 - 66.3	0.4	35.0 - 44.3
R91	1260 Cronton Loop	56.0 - 62.9	56.7 - 61.9	59.4 - 65.4	4.1	37.4 - 43.4
R92	1260 Cronton Loop	56.0 - 60.3	37.4 - 61.7	56.1 - 64.1	3.9	34.1 - 42.1
R93	1260 Cronton Loop	56.0 - 56.0	36.5 - 59.7	56.0 - 61.2	5.2	34.0 - 39.2
R94	1260 Cronton Loop	56.0 - 61.8	36.6 - 60.0	56.0 - 64.0	2.2	34.0 - 42.0

Source: VHB 2022

Table 19-17 Phase 1A – Fit-Out Construction Noise Levels: Months 13 through 17

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	38.0 - 41.1	65.7 - 66.3	0.0	43.7 - 44.3
R02	10835 Flatlands Avenue	65.0 - 65.4	38.5 - 38.7	65.0 - 65.4	0.0	43.0 - 43.4
R03	10835 Flatlands Avenue	69.1 - 69.7	41.7 - 42.0	69.1 - 69.7	0.0	47.1 - 47.7
R04	Farragut Road Park	71.5 - 71.5	42.1 - 42.1	71.5 - 71.5	0.0	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	33.8 - 33.8	67.3 - 67.3	0.0	40.3 - 40.3

Table 19-17 Phase 1A – Fit-Out Construction Noise Levels: Months 13 through 17

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R06	730 Louisiana Avenue	59.3 - 59.3	29.0 - 29.0	59.3 - 59.3	0.0	32.3 - 32.3
R07	730 Louisiana Avenue	56.0 - 56.0	34.1 - 34.1	56.0 - 56.0	0.0	29.0 - 29.0
R08	730 Louisiana Avenue	58.2 - 58.2	42.5 - 42.5	58.3 - 58.3	0.1	31.3 - 31.3
R09	730 Louisiana Avenue	62.4 - 62.4	42.4 - 42.4	62.4 - 62.4	0.0	35.4 - 35.4
R10	790 Louisiana Avenue	61.3 - 63.1	27.8 - 28.1	61.3 - 63.1	0.0	39.3 - 41.1
R11	508 Louisiana Avenue	59.8 - 61.2	25.3 - 25.6	59.8 - 61.2	0.0	37.8 - 39.2
R12	556 Louisiana Avenue	56.0 - 58.4	26.7 - 26.8	56.0 - 58.4	0.0	34.0 - 36.4
R14	12048 Flatlands Avenue	65.3 - 68.8	28.6 - 29.5	65.3 - 68.8	0.0	43.3 - 46.8
R39	12041 Flatlands Avenue	58.3 - 58.3	38.3 - 38.3	58.3 - 58.3	0.0	31.3 - 31.3
R40	12079 Flatlands Avenue	56.0 - 56.0	34.6 - 34.6	56.0 - 56.0	0.0	29.0 - 29.0
R41	12079 Flatlands Avenue	59.5 - 59.5	45.8 - 45.8	59.7 - 59.7	0.2	32.7 - 32.7
R42	1036 Sheffield Avenue	60.5 - 61.7	45.3 - 48.8	60.6 - 61.9	0.2	33.6 - 34.9
R43	1036 Sheffield Avenue	56.0 - 59.2	45.3 - 48.7	56.4 - 59.5	0.6	29.4 - 32.5
R44	1118 Pennsylvania Avenue	64.3 - 64.3	35.9 - 35.9	64.3 - 64.3	0.0	37.3 - 37.3
R45	1143 Flatlands Avenue	63.4 - 63.4	55.4 - 55.4	64.0 - 64.0	0.6	37.0 - 37.0
R46	1111 Pennsylvania Avenue	56.6 - 56.6	43.7 - 43.7	56.8 - 56.8	0.2	29.8 - 29.8
R47	148 Cozine Avenue	64.3 - 65.1	52.6 - 52.8	64.6 - 65.3	0.3	42.6 - 43.3
R48	148 Cozine Avenue	57.7 - 60.5	46.4 - 51.0	58.0 - 61.0	0.5	36.0 - 39.0
R49	148 Cozine Avenue	56.0 - 56.0	38.1 - 42.6	56.1 - 56.2	0.2	34.1 - 34.2
R50	190 Cozine Avenue	59.0 - 67.2	44.9 - 48.8	59.2 - 67.3	0.2	37.2 - 45.3
R51	1 Vandalia Avenue	58.8 - 64.5	27.6 - 30.3	58.8 - 64.5	0.0	36.8 - 42.5
R52	1 Vandalia Avenue	59.7 - 64.9	35.6 - 40.3	59.7 - 64.9	0.0	37.7 - 42.9
R53	1 Vandalia Avenue	56.0 - 58.1	37.5 - 44.7	56.1 - 58.3	0.3	34.1 - 36.3
R54	1 Vandalia Avenue	56.0 - 61.8	28.6 - 28.8	56.0 - 61.8	0.0	34.0 - 39.8
R55	1 Vandalia Avenue	56.0 - 56.0	31.1 - 31.1	56.0 - 56.0	0.0	34.0 - 34.0
R56	1 Vandalia Avenue	56.0 - 56.0	43.3 - 43.3	56.2 - 56.2	0.2	34.2 - 34.2
R57	1 Vandalia Avenue	56.0 - 56.8	31.2 - 33.4	56.0 - 56.8	0.0	34.0 - 34.8
R58	1 Vandalia Avenue	56.0 - 56.0	31.9 - 32.2	56.0 - 56.0	0.0	34.0 - 34.0
R59	1 Vandalia Avenue	56.0 - 56.7	35.3 - 39.3	56.0 - 56.8	0.1	34.0 - 34.8
R60	1 Vandalia Avenue	56.0 - 56.0	31.5 - 31.9	56.0 - 56.0	0.0	34.0 - 34.0
R61	1180 Pennsylvania Avenue	56.0 - 57.4	34.6 - 48.8	56.3 - 57.4	0.7	34.3 - 35.4
R62	1180 Pennsylvania Avenue	56.0 - 58.9	47.2 - 51.4	56.7 - 59.4	1.0	34.7 - 37.4
R63	1180 Pennsylvania Avenue	56.0 - 56.0	37.4 - 40.6	56.1 - 56.1	0.1	34.1 - 34.1
R64	1180 Pennsylvania Avenue	56.0 - 57.3	42.6 - 46.8	56.2 - 57.4	0.5	34.2 - 35.4
R65	99 Vandalia Avenue	56.0 - 56.0	36.5 - 40.0	56.0 - 56.1	0.1	34.0 - 34.1
R66	99 Vandalia Avenue	56.0 - 56.0	36.7 - 40.3	56.1 - 56.1	0.1	34.1 - 34.1
R67	99 Vandalia Avenue	56.0 - 57.9	32.0 - 33.3	56.0 - 57.9	0.0	34.0 - 35.9
R68	99 Vandalia Avenue	56.7 - 62.2	45.8 - 50.5	57.0 - 62.5	0.4	35.0 - 40.5
R69	1170 Pennsylvania Avenue	56.2 - 60.4	40.6 - 45.4	56.5 - 60.5	0.3	34.5 - 38.5
R70	1170 Pennsylvania Avenue	56.0 - 56.0	39.6 - 41.7	56.1 - 56.2	0.2	34.1 - 34.2

Table 19-17 Phase 1A – Fit-Out Construction Noise Levels: Months 13 through 17

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R71	1170 Pennsylvania Avenue	56.0 - 56.0	37.5 - 38.8	56.1 - 56.1	0.1	34.1 - 34.1
R72	1170 Pennsylvania Avenue	56.0 - 57.3	36.8 - 38.1	56.1 - 57.3	0.1	34.1 - 35.3
R73	1170 Pennsylvania Avenue	59.5 - 62.1	37.6 - 52.7	59.5 - 62.5	0.8	37.5 - 40.5
R74	1155 Pennsylvania Avenue	56.0 - 61.9	52.8 - 57.5	57.7 - 63.2	1.7	35.7 - 41.2
R75	1155 Pennsylvania Avenue	56.0 - 58.8	50.2 - 55.2	57.0 - 60.3	2.4	35.0 - 38.3
R76	1155 Pennsylvania Avenue	56.0 - 56.0	48.2 - 53.2	56.7 - 57.8	1.8	34.7 - 35.8
R77	1155 Pennsylvania Avenue	56.0 - 58.5	38.2 - 40.1	56.1 - 58.5	0.1	34.1 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	51.7 - 57.9	57.5 - 61.2	2.7	35.5 - 39.2
R79	1155 Pennsylvania Avenue	56.0 - 59.4	53.2 - 58.7	57.9 - 61.8	3.0	35.9 - 39.8
R80	1155 Pennsylvania Avenue	56.0 - 56.0	35.1 - 36.3	56.0 - 56.0	0.0	34.0 - 34.0
R81	1155 Pennsylvania Avenue	56.0 - 56.0	34.4 - 35.2	56.0 - 56.0	0.0	34.0 - 34.0
R82	1155 Pennsylvania Avenue	56.0 - 57.8	49.1 - 54.0	56.8 - 59.3	1.5	34.8 - 37.3
R83	1155 Pennsylvania Avenue	56.0 - 58.8	48.4 - 53.5	56.7 - 59.9	1.1	34.7 - 37.9
R84	1155 Pennsylvania Avenue	56.0 - 56.0	30.2 - 40.4	56.0 - 56.1	0.1	34.0 - 34.1
R85	1155 Pennsylvania Avenue	56.0 - 57.4	45.2 - 48.4	56.3 - 57.9	0.5	34.3 - 35.9
R86	1155 Pennsylvania Avenue	56.0 - 56.0	28.5 - 37.4	56.0 - 56.1	0.1	34.0 - 34.1
R87	1155 Pennsylvania Avenue	56.0 - 56.0	28.0 - 30.2	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	26.1 - 26.4	56.0 - 58.8	0.0	34.0 - 36.8
R89	1260 Cronton Loop	56.0 - 62.4	27.2 - 27.7	56.0 - 62.4	0.0	34.0 - 40.4
R90	1260 Cronton Loop	57.0 - 65.9	28.9 - 36.6	57.0 - 65.9	0.0	35.0 - 43.9
R91	1260 Cronton Loop	56.0 - 62.9	36.0 - 40.7	56.0 - 62.9	0.0	34.0 - 40.9
R92	1260 Cronton Loop	56.0 - 60.3	30.0 - 41.8	56.0 - 60.4	0.1	34.0 - 38.4
R93	1260 Cronton Loop	56.0 - 56.0	29.2 - 34.4	56.0 - 56.0	0.0	34.0 - 34.0
R94	1260 Cronton Loop	56.0 - 61.8	29.3 - 47.3	56.0 - 62.0	0.2	34.0 - 40.0

Source: VHB 2022

Table 19-18 Phase 1A – Fit-Out Construction Noise Levels: Months 18 through 23

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	48.9 - 50.5	65.8 - 66.4	0.1	43.8 - 44.4
R02	10835 Flatlands Avenue	65.0 - 65.4	49.5 - 50.1	65.1 - 65.5	0.1	43.1 - 43.5
R03	10835 Flatlands Avenue	69.1 - 69.7	52.2 - 53.2	69.2 - 69.8	0.1	47.2 - 47.8
R04	Farragut Road Park	71.5 - 71.5	53.3 - 53.3	71.6 - 71.6	0.1	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	52.9 - 52.9	67.5 - 67.5	0.2	40.5 - 40.5
R06	730 Louisiana Avenue	59.3 - 59.3	44.0 - 44.0	59.4 - 59.4	0.1	32.4 - 32.4
R07	730 Louisiana Avenue	56.0 - 56.0	45.5 - 45.5	56.4 - 56.4	0.4	29.4 - 29.4
R08	730 Louisiana Avenue	58.2 - 58.2	54.1 - 54.1	59.6 - 59.6	1.4	32.6 - 32.6
R09	730 Louisiana Avenue	62.4 - 62.4	54.8 - 54.8	63.1 - 63.1	0.7	36.1 - 36.1
R10	790 Louisiana Avenue	61.3 - 63.1	38.2 - 38.4	61.3 - 63.1	0.0	39.3 - 41.1

Table 19-18 Phase 1A – Fit-Out Construction Noise Levels: Months 18 through 23

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R11	508 Louisiana Avenue	59.8 - 61.2	35.6 - 35.8	59.8 - 61.2	0.0	37.8 - 39.2
R12	556 Louisiana Avenue	56.0 - 58.4	37.9 - 38.2	56.1 - 58.4	0.1	34.1 - 36.4
R14	12048 Flatlands Avenue	65.3 - 68.8	37.8 - 41.0	65.3 - 68.8	0.0	43.3 - 46.8
R39	12041 Flatlands Avenue	58.3 - 58.3	57.3 - 57.3	60.8 - 60.8	2.5	33.8 - 33.8
R40	12079 Flatlands Avenue	56.0 - 56.0	47.6 - 47.6	56.6 - 56.6	0.6	29.6 - 29.6
R41	12079 Flatlands Avenue	59.5 - 59.5	62.6 - 62.6	64.3 - 64.3	4.8	37.3 - 37.3
R42	1036 Sheffield Avenue	60.5 - 61.7	64.6 - 68.7	66.0 - 69.5	8.2	39.0 - 42.5
R43	1036 Sheffield Avenue	56.0 - 59.2	64.3 - 68.2	64.9 - 68.5	11.7	37.9 - 41.5
R44	1118 Pennsylvania Avenue	64.3 - 64.3	45.3 - 45.3	64.4 - 64.4	0.1	37.4 - 37.4
R45	1143 Flatlands Avenue	63.4 - 63.4	58.3 - 58.3	64.6 - 64.6	1.2	37.6 - 37.6
R46	1111 Pennsylvania Avenue	56.6 - 56.6	47.7 - 47.7	57.1 - 57.1	0.5	30.1 - 30.1
R47	148 Cozine Avenue	64.3 - 65.1	57.8 - 57.9	65.2 - 65.9	0.9	43.2 - 43.9
R48	148 Cozine Avenue	57.7 - 60.5	51.1 - 55.3	58.6 - 61.6	1.1	36.6 - 39.6
R49	148 Cozine Avenue	56.0 - 56.0	44.2 - 48.8	56.3 - 56.8	0.8	34.3 - 34.8
R50	190 Cozine Avenue	59.0 - 67.2	52.4 - 56.4	59.9 - 67.5	0.9	37.9 - 45.5
R51	1 Vandalia Avenue	58.8 - 64.5	39.8 - 48.5	59.2 - 64.5	0.4	37.2 - 42.5
R52	1 Vandalia Avenue	59.7 - 64.9	56.4 - 61.3	61.4 - 66.5	1.7	39.4 - 44.5
R53	1 Vandalia Avenue	56.0 - 58.1	54.8 - 62.7	58.5 - 64.0	6.0	36.5 - 42.0
R54	1 Vandalia Avenue	56.0 - 61.8	40.2 - 40.4	56.1 - 61.8	0.1	34.1 - 39.8
R55	1 Vandalia Avenue	56.0 - 56.0	43.1 - 43.1	56.2 - 56.2	0.2	34.2 - 34.2
R56	1 Vandalia Avenue	56.0 - 56.0	57.5 - 57.5	59.8 - 59.8	3.8	37.8 - 37.8
R57	1 Vandalia Avenue	56.0 - 56.8	42.3 - 46.4	56.2 - 57.2	0.5	34.2 - 35.2
R58	1 Vandalia Avenue	56.0 - 56.0	41.7 - 42.2	56.2 - 56.2	0.2	34.2 - 34.2
R59	1 Vandalia Avenue	56.0 - 56.7	50.2 - 57.3	57.0 - 60.0	3.7	35.0 - 38.0
R60	1 Vandalia Avenue	56.0 - 56.0	41.9 - 42.7	56.2 - 56.2	0.2	34.2 - 34.2
R61	1180 Pennsylvania Avenue	56.0 - 57.4	49.7 - 59.6	57.5 - 61.2	5.0	35.5 - 39.2
R62	1180 Pennsylvania Avenue	56.0 - 58.9	63.6 - 67.7	64.6 - 68.1	11.0	42.6 - 46.1
R63	1180 Pennsylvania Avenue	56.0 - 56.0	55.9 - 60.5	59.0 - 61.8	5.8	37.0 - 39.8
R64	1180 Pennsylvania Avenue	56.0 - 57.3	62.4 - 67.1	63.6 - 67.4	11.4	41.6 - 45.4
R65	99 Vandalia Avenue	56.0 - 56.0	55.2 - 59.8	58.6 - 61.3	5.3	36.6 - 39.3
R66	99 Vandalia Avenue	56.0 - 56.0	46.8 - 57.6	56.5 - 59.9	3.9	34.5 - 37.9
R67	99 Vandalia Avenue	56.0 - 57.9	41.8 - 42.6	56.2 - 58.0	0.2	34.2 - 36.0
R68	99 Vandalia Avenue	56.7 - 62.2	43.0 - 45.1	56.9 - 62.3	0.2	34.9 - 40.3
R69	1170 Pennsylvania Avenue	56.2 - 60.4	50.3 - 52.7	57.5 - 61.0	1.6	35.5 - 39.0
R70	1170 Pennsylvania Avenue	56.0 - 56.0	49.7 - 52.8	56.9 - 57.7	1.7	34.9 - 35.7
R71	1170 Pennsylvania Avenue	56.0 - 56.0	50.4 - 54.8	57.1 - 58.5	2.5	35.1 - 36.5
R72	1170 Pennsylvania Avenue	56.0 - 57.3	46.7 - 47.9	56.5 - 57.8	0.6	34.5 - 35.8
R73	1170 Pennsylvania Avenue	59.5 - 62.1	47.2 - 49.7	59.7 - 62.3	0.4	37.7 - 40.3
R74	1155 Pennsylvania Avenue	56.0 - 61.9	59.2 - 64.6	60.9 - 66.3	5.5	38.9 - 44.3
R75	1155 Pennsylvania Avenue	56.0 - 58.8	57.6 - 62.4	59.9 - 63.8	7.0	37.9 - 41.8

Table 19-18 Phase 1A – Fit-Out Construction Noise Levels: Months 18 through 23

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R76	1155 Pennsylvania Avenue	56.0 - 56.0	54.0 - 58.7	58.1 - 60.6	4.6	36.1 - 38.6
R77	1155 Pennsylvania Avenue	56.0 - 58.5	39.7 - 44.9	56.1 - 58.6	0.2	34.1 - 36.6
R78	1155 Pennsylvania Avenue	56.0 - 59.1	60.0 - 65.2	61.7 - 66.0	7.8	39.7 - 44.0
R79	1155 Pennsylvania Avenue	56.0 - 59.4	59.3 - 65.8	61.1 - 66.5	8.1	39.1 - 44.5
R80	1155 Pennsylvania Avenue	56.0 - 56.0	43.0 - 43.4	56.2 - 56.2	0.2	34.2 - 34.2
R81	1155 Pennsylvania Avenue	56.0 - 56.0	42.1 - 42.7	56.2 - 56.2	0.2	34.2 - 34.2
R82	1155 Pennsylvania Avenue	56.0 - 57.8	56.4 - 61.2	59.2 - 62.8	5.5	37.2 - 40.8
R83	1155 Pennsylvania Avenue	56.0 - 58.8	55.7 - 60.5	58.9 - 62.7	4.2	36.9 - 40.7
R84	1155 Pennsylvania Avenue	56.0 - 56.0	37.9 - 50.6	56.1 - 57.1	1.1	34.1 - 35.1
R85	1155 Pennsylvania Avenue	56.0 - 57.4	48.8 - 55.7	56.8 - 59.6	2.5	34.8 - 37.6
R86	1155 Pennsylvania Avenue	56.0 - 56.0	35.9 - 47.7	56.0 - 56.6	0.6	34.0 - 34.6
R87	1155 Pennsylvania Avenue	56.0 - 56.0	35.5 - 40.1	56.0 - 56.1	0.1	34.0 - 34.1
R88	1260 Cronton Loop	56.0 - 58.8	36.3 - 37.2	56.0 - 58.8	0.1	34.0 - 36.8
R89	1260 Cronton Loop	56.0 - 62.4	37.3 - 38.9	56.1 - 62.4	0.1	34.1 - 40.4
R90	1260 Cronton Loop	57.0 - 65.9	39.5 - 55.0	57.1 - 66.2	0.4	35.1 - 44.2
R91	1260 Cronton Loop	56.0 - 62.9	54.1 - 58.8	58.2 - 64.3	2.6	36.2 - 42.3
R92	1260 Cronton Loop	56.0 - 60.3	39.9 - 54.1	56.1 - 61.2	1.1	34.1 - 39.2
R93	1260 Cronton Loop	56.0 - 56.0	39.1 - 51.3	56.1 - 57.3	1.3	34.1 - 35.3
R94	1260 Cronton Loop	56.0 - 61.8	39.6 - 46.1	56.1 - 61.9	0.1	34.1 - 39.9

Source: VHB 2022

Table 19-19 Phase 1B – Foundation Construction Noise Levels: Months 25 through 28

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	56.1 - 56.5	66.2 - 66.7	0.5	44.2 - 44.7
R02	10835 Flatlands Avenue	65.0 - 65.4	57.2 - 57.9	65.8 - 66.1	0.8	43.8 - 44.1
R03	10835 Flatlands Avenue	69.1 - 69.7	58.9 - 60.7	69.5 - 70.2	0.5	47.5 - 48.2
R04	Farragut Road Park	71.5 - 71.5	61.6 - 61.6	71.9 - 71.9	0.4	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	60.7 - 60.7	68.2 - 68.2	0.9	41.2 - 41.2
R06	730 Louisiana Avenue	59.3 - 59.3	49.2 - 49.2	59.7 - 59.7	0.4	32.7 - 32.7
R07	730 Louisiana Avenue	56.0 - 56.0	53.4 - 53.4	57.9 - 57.9	1.9	30.9 - 30.9
R08	730 Louisiana Avenue	58.2 - 58.2	57.8 - 57.8	61.0 - 61.0	2.8	34.0 - 34.0
R09	730 Louisiana Avenue	62.4 - 62.4	60.0 - 60.0	64.4 - 64.4	2.0	37.4 - 37.4
R10	790 Louisiana Avenue	61.3 - 63.1	47.3 - 49.0	61.5 - 63.2	0.2	39.5 - 41.2
R11	508 Louisiana Avenue	59.8 - 61.2	44.3 - 50.9	59.9 - 61.6	0.4	37.9 - 39.6
R12	556 Louisiana Avenue	56.0 - 58.4	43.6 - 44.5	56.2 - 58.6	0.3	34.2 - 36.6
R14	12048 Flatlands Avenue	65.3 - 68.8	49.2 - 50.0	65.4 - 68.8	0.1	43.4 - 46.8
R28	Proposed Building 1	62.9 - 65.9	75.1 - 82.5	75.4 - 82.6	17.9	48.4 - 55.6
R29	Proposed Building 2	56.0 - 57.6	76.5 - 83.2	76.5 - 83.2	26.1	49.5 - 56.2

Table 19-19 Phase 1B – Foundation Construction Noise Levels: Months 25 through 28

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R30	Proposed Building 1	67.2 - 71.2	63.6 - 72.6	68.8 - 74.7	4.2	39.8 - 42.7
R31	Proposed Building 1	56.0 - 56.0	65.2 - 75.0	65.7 - 75.1	19.1	38.7 - 48.1
R32	Proposed Building 2	56.0 - 56.3	67.3 - 75.9	67.6 - 75.9	19.8	40.6 - 48.9
R33	Proposed Building 2	56.0 - 56.2	67.6 - 72.7	67.9 - 72.8	16.8	40.9 - 45.8
R34	Proposed Building 1	66.3 - 70.4	51.5 - 53.5	66.4 - 70.5	0.1	35.7 - 38.5
R35	Proposed Building 2	59.1 - 63.9	52.3 - 54.8	59.9 - 64.4	0.8	29.4 - 32.4
R39	12041 Flatlands Avenue	58.3 - 58.3	65.3 - 65.3	66.1 - 66.1	7.8	39.1 - 39.1
R40	12079 Flatlands Avenue	56.0 - 56.0	68.1 - 68.1	68.4 - 68.4	12.4	41.4 - 41.4
R41	12079 Flatlands Avenue	59.5 - 59.5	70.9 - 70.9	71.2 - 71.2	11.7	44.2 - 44.2
R42	1036 Sheffield Avenue	60.5 - 61.7	72.5 - 75.6	72.8 - 75.8	14.1	45.8 - 48.8
R43	1036 Sheffield Avenue	56.0 - 59.2	65.7 - 67.8	66.1 - 68.4	10.3	39.1 - 41.4
R44	1118 Pennsylvania Avenue	64.3 - 64.3	57.8 - 57.8	65.2 - 65.2	0.9	38.2 - 38.2
R45	1143 Flatlands Avenue	63.4 - 63.4	47.5 - 47.5	63.5 - 63.5	0.1	36.5 - 36.5
R46	1111 Pennsylvania Avenue	56.6 - 56.6	52.9 - 52.9	58.1 - 58.1	1.5	31.1 - 31.1
R47	148 Cozine Avenue	64.3 - 65.1	55.5 - 56.4	64.8 - 65.6	0.5	42.8 - 43.6
R48	148 Cozine Avenue	57.7 - 60.5	53.4 - 58.0	59.1 - 62.4	1.9	37.1 - 40.4
R49	148 Cozine Avenue	56.0 - 56.0	47.1 - 50.8	56.5 - 57.1	1.1	34.5 - 35.1
R50	190 Cozine Avenue	59.0 - 67.2	46.1 - 56.4	59.4 - 67.5	0.5	37.4 - 45.5
R51	1 Vandalia Avenue	58.8 - 64.5	49.8 - 59.8	61.8 - 64.7	3.0	39.8 - 42.7
R52	1 Vandalia Avenue	59.7 - 64.9	64.0 - 69.7	65.4 - 70.9	6.5	43.4 - 48.9
R53	1 Vandalia Avenue	56.0 - 58.1	63.0 - 70.6	63.8 - 70.8	13.4	41.8 - 48.8
R54	1 Vandalia Avenue	56.0 - 61.8	46.2 - 48.4	56.4 - 62.0	0.4	34.4 - 40.0
R55	1 Vandalia Avenue	56.0 - 56.0	52.1 - 52.1	57.5 - 57.5	1.5	35.5 - 35.5
R56	1 Vandalia Avenue	56.0 - 56.0	66.4 - 66.4	66.8 - 66.8	10.8	44.8 - 44.8
R57	1 Vandalia Avenue	56.0 - 56.8	62.9 - 69.0	63.7 - 69.3	13.1	41.7 - 47.3
R58	1 Vandalia Avenue	56.0 - 56.0	48.7 - 50.4	56.7 - 57.1	1.1	34.7 - 35.1
R59	1 Vandalia Avenue	56.0 - 56.7	62.1 - 67.4	63.1 - 67.7	11.3	41.1 - 45.7
R60	1 Vandalia Avenue	56.0 - 56.0	49.3 - 50.7	56.8 - 57.1	1.1	34.8 - 35.1
R61	1180 Pennsylvania Avenue	56.0 - 57.4	67.5 - 73.4	67.8 - 73.5	16.9	45.8 - 51.5
R62	1180 Pennsylvania Avenue	56.0 - 58.9	74.0 - 79.0	74.1 - 79.0	22.4	52.1 - 57.0
R63	1180 Pennsylvania Avenue	56.0 - 56.0	56.5 - 58.9	59.3 - 60.7	4.7	37.3 - 38.7
R64	1180 Pennsylvania Avenue	56.0 - 57.3	65.4 - 74.0	66.0 - 74.1	17.9	44.0 - 52.1
R65	99 Vandalia Avenue	56.0 - 56.0	64.1 - 70.3	64.7 - 70.5	14.5	42.7 - 48.5
R66	99 Vandalia Avenue	56.0 - 56.0	65.0 - 70.7	65.5 - 70.8	14.8	43.5 - 48.8
R67	99 Vandalia Avenue	56.0 - 57.9	46.9 - 49.1	56.5 - 58.4	0.7	34.5 - 36.4
R68	99 Vandalia Avenue	56.7 - 62.2	48.4 - 62.2	57.3 - 65.2	3.5	35.3 - 43.2
R69	1170 Pennsylvania Avenue	56.2 - 60.4	67.7 - 73.3	68.0 - 73.5	14.1	46.0 - 51.5
R70	1170 Pennsylvania Avenue	56.0 - 56.0	68.5 - 74.3	68.7 - 74.4	18.4	46.7 - 52.4
R71	1170 Pennsylvania Avenue	56.0 - 56.0	68.5 - 74.4	68.7 - 74.5	18.5	46.7 - 52.5
R72	1170 Pennsylvania Avenue	56.0 - 57.3	62.6 - 68.0	63.5 - 68.4	11.3	41.5 - 46.4

Table 19-19 Phase 1B – Foundation Construction Noise Levels: Months 25 through 28

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R73	1170 Pennsylvania Avenue	59.5 - 62.1	50.8 - 52.9	60.0 - 62.6	0.6	38.0 - 40.6
R74	1155 Pennsylvania Avenue	56.0 - 61.9	52.6 - 63.9	57.6 - 66.0	4.1	35.6 - 44.0
R75	1155 Pennsylvania Avenue	56.0 - 58.8	54.2 - 60.7	58.2 - 62.7	4.5	36.2 - 40.7
R76	1155 Pennsylvania Avenue	56.0 - 56.0	44.1 - 47.2	56.3 - 56.5	0.5	34.3 - 34.5
R77	1155 Pennsylvania Avenue	56.0 - 58.5	45.8 - 50.1	56.4 - 59.1	0.6	34.4 - 37.1
R78	1155 Pennsylvania Avenue	56.0 - 59.1	61.7 - 67.1	63.0 - 67.7	9.2	41.0 - 45.7
R79	1155 Pennsylvania Avenue	56.0 - 59.4	59.3 - 65.5	61.1 - 66.5	7.4	39.1 - 44.5
R80	1155 Pennsylvania Avenue	56.0 - 56.0	47.3 - 47.9	56.5 - 56.6	0.6	34.5 - 34.6
R81	1155 Pennsylvania Avenue	56.0 - 56.0	46.3 - 47.1	56.4 - 56.5	0.5	34.4 - 34.5
R82	1155 Pennsylvania Avenue	56.0 - 57.8	57.3 - 63.5	59.7 - 64.5	6.8	37.7 - 42.5
R83	1155 Pennsylvania Avenue	56.0 - 58.8	57.3 - 63.7	59.7 - 64.8	6.4	37.7 - 42.8
R84	1155 Pennsylvania Avenue	56.0 - 56.0	43.3 - 47.8	56.2 - 56.6	0.6	34.2 - 34.6
R85	1155 Pennsylvania Avenue	56.0 - 57.4	48.8 - 54.7	56.8 - 59.3	2.0	34.8 - 37.3
R86	1155 Pennsylvania Avenue	56.0 - 56.0	42.3 - 45.9	56.2 - 56.4	0.4	34.2 - 34.4
R87	1155 Pennsylvania Avenue	56.0 - 56.0	42.2 - 43.9	56.2 - 56.3	0.3	34.2 - 34.3
R88	1260 Cronton Loop	56.0 - 58.8	42.1 - 46.0	56.2 - 59.0	0.3	34.2 - 37.0
R89	1260 Cronton Loop	56.0 - 62.4	43.8 - 56.6	56.3 - 63.4	1.5	34.3 - 41.4
R90	1260 Cronton Loop	57.0 - 65.9	49.6 - 62.6	57.7 - 67.6	2.3	35.7 - 45.6
R91	1260 Cronton Loop	56.0 - 62.9	45.5 - 59.6	56.4 - 64.6	1.7	34.4 - 42.6
R92	1260 Cronton Loop	56.0 - 60.3	45.0 - 66.8	56.3 - 67.7	7.4	34.3 - 45.7
R93	1260 Cronton Loop	56.0 - 56.0	57.3 - 65.6	59.7 - 66.1	10.1	37.7 - 44.1
R94	1260 Cronton Loop	56.0 - 61.8	43.7 - 59.5	56.2 - 63.8	2.0	34.2 - 41.8

Source: VHB 2022

Table 19-20 Phase 1B – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 29 through 36

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	54.0 - 55.4	66.0 - 66.5	0.4	44.0 - 44.5
R02	10835 Flatlands Avenue	65.0 - 65.4	54.7 - 55.6	65.4 - 65.8	0.4	43.4 - 43.8
R03	10835 Flatlands Avenue	69.1 - 69.7	58.7 - 59.5	69.5 - 70.1	0.4	47.5 - 48.1
R04	Farragut Road Park	71.5 - 71.5	59.7 - 59.7	71.8 - 71.8	0.3	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	58.7 - 58.7	67.9 - 67.9	0.6	40.9 - 40.9
R06	730 Louisiana Avenue	59.3 - 59.3	53.7 - 53.7	60.4 - 60.4	1.1	33.4 - 33.4
R07	730 Louisiana Avenue	56.0 - 56.0	60.9 - 60.9	62.1 - 62.1	6.1	35.1 - 35.1
R08	730 Louisiana Avenue	58.2 - 58.2	61.2 - 61.2	63.0 - 63.0	4.8	36.0 - 36.0
R09	730 Louisiana Avenue	62.4 - 62.4	62.5 - 62.5	65.5 - 65.5	3.1	38.5 - 38.5
R10	790 Louisiana Avenue	61.3 - 63.1	60.5 - 62.5	64.6 - 65.7	3.3	42.6 - 43.7
R11	508 Louisiana Avenue	59.8 - 61.2	54.0 - 56.5	60.8 - 62.5	1.3	38.8 - 40.5
R12	556 Louisiana Avenue	56.0 - 58.4	46.9 - 47.8	56.5 - 58.8	0.6	34.5 - 36.8

Table 19-20 Phase 1B – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 29 through 36

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R14	12048 Flatlands Avenue	65.3 - 68.8	50.1 - 50.9	65.5 - 68.9	0.2	43.5 - 46.9
R28	Proposed Building 1	62.9 - 65.9	72.0 - 77.4	72.5 - 77.6	13.7	45.5 - 50.6
R29	Proposed Building 2	56.0 - 57.6	72.1 - 77.3	72.2 - 77.3	21.0	45.2 - 50.3
R30	Proposed Building 1	67.2 - 71.2	63.1 - 65.4	68.7 - 72.0	1.5	38.8 - 40.0
R31	Proposed Building 1	56.0 - 56.0	65.6 - 70.9	66.1 - 71.0	15.0	39.1 - 44.0
R32	Proposed Building 2	56.0 - 56.3	66.1 - 71.1	66.5 - 71.2	15.2	39.5 - 44.2
R33	Proposed Building 2	56.0 - 56.2	62.4 - 69.6	63.3 - 69.8	13.8	36.3 - 42.8
R34	Proposed Building 1	66.3 - 70.4	46.8 - 50.3	66.3 - 70.4	0.1	35.7 - 38.4
R35	Proposed Building 2	59.1 - 63.9	47.9 - 53.7	59.4 - 64.3	0.5	29.0 - 32.3
R39	12041 Flatlands Avenue	58.3 - 58.3	64.0 - 64.0	65.0 - 65.0	6.7	38.0 - 38.0
R40	12079 Flatlands Avenue	56.0 - 56.0	68.1 - 68.1	68.4 - 68.4	12.4	41.4 - 41.4
R41	12079 Flatlands Avenue	59.5 - 59.5	70.5 - 70.5	70.8 - 70.8	11.3	43.8 - 43.8
R42	1036 Sheffield Avenue	60.5 - 61.7	71.6 - 73.1	71.9 - 73.4	12.1	44.9 - 46.4
R43	1036 Sheffield Avenue	56.0 - 59.2	63.8 - 64.2	64.5 - 65.4	8.5	37.5 - 38.4
R44	1118 Pennsylvania Avenue	64.3 - 64.3	57.8 - 57.8	65.2 - 65.2	0.9	38.2 - 38.2
R45	1143 Flatlands Avenue	63.4 - 63.4	44.3 - 44.3	63.5 - 63.5	0.1	36.5 - 36.5
R46	1111 Pennsylvania Avenue	56.6 - 56.6	53.4 - 53.4	58.3 - 58.3	1.7	31.3 - 31.3
R47	148 Cozine Avenue	64.3 - 65.1	52.1 - 55.5	64.6 - 65.6	0.5	42.6 - 43.6
R48	148 Cozine Avenue	57.7 - 60.5	51.8 - 54.4	58.7 - 61.5	1.0	36.7 - 39.5
R49	148 Cozine Avenue	56.0 - 56.0	44.8 - 49.1	56.3 - 56.8	0.8	34.3 - 34.8
R50	190 Cozine Avenue	59.0 - 67.2	44.2 - 53.1	59.3 - 67.4	0.3	37.3 - 45.4
R51	1 Vandalia Avenue	58.8 - 64.5	54.3 - 63.5	63.2 - 65.6	4.7	41.2 - 43.6
R52	1 Vandalia Avenue	59.7 - 64.9	67.1 - 76.0	67.8 - 76.3	14.3	45.8 - 54.3
R53	1 Vandalia Avenue	56.0 - 58.1	68.2 - 76.8	68.5 - 76.9	19.9	46.5 - 54.9
R54	1 Vandalia Avenue	56.0 - 61.8	53.5 - 56.2	57.9 - 62.8	1.9	35.9 - 40.8
R55	1 Vandalia Avenue	56.0 - 56.0	69.9 - 69.9	70.1 - 70.1	14.1	48.1 - 48.1
R56	1 Vandalia Avenue	56.0 - 56.0	72.8 - 72.8	72.9 - 72.9	16.9	50.9 - 50.9
R57	1 Vandalia Avenue	56.0 - 56.8	68.8 - 78.3	69.0 - 78.3	22.0	47.0 - 56.3
R58	1 Vandalia Avenue	56.0 - 56.0	54.9 - 58.2	58.5 - 60.2	4.2	36.5 - 38.2
R59	1 Vandalia Avenue	56.0 - 56.7	66.3 - 72.9	66.7 - 73.0	16.6	44.7 - 51.0
R60	1 Vandalia Avenue	56.0 - 56.0	54.7 - 59.8	58.4 - 61.3	5.3	36.4 - 39.3
R61	1180 Pennsylvania Avenue	56.0 - 57.4	71.7 - 77.9	71.8 - 77.9	20.7	49.8 - 55.9
R62	1180 Pennsylvania Avenue	56.0 - 58.9	69.4 - 74.6	69.7 - 74.7	17.4	47.7 - 52.7
R63	1180 Pennsylvania Avenue	56.0 - 56.0	65.1 - 71.6	65.6 - 71.7	15.7	43.6 - 49.7
R64	1180 Pennsylvania Avenue	56.0 - 57.3	61.7 - 66.7	63.0 - 67.1	10.9	41.0 - 45.1
R65	99 Vandalia Avenue	56.0 - 56.0	61.4 - 66.7	62.5 - 67.1	11.1	40.5 - 45.1
R66	99 Vandalia Avenue	56.0 - 56.0	63.5 - 69.3	64.2 - 69.5	13.5	42.2 - 47.5
R67	99 Vandalia Avenue	56.0 - 57.9	46.4 - 49.6	56.5 - 58.4	0.8	34.5 - 36.4
R68	99 Vandalia Avenue	56.7 - 62.2	56.9 - 61.5	59.8 - 64.9	3.1	37.8 - 42.9
R69	1170 Pennsylvania Avenue	56.2 - 60.4	61.5 - 68.0	62.7 - 68.7	9.2	40.7 - 46.7

Table 19-20 Phase 1B – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 29 through 36

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R70	1170 Pennsylvania Avenue	56.0 - 56.0	66.4 - 71.2	66.8 - 71.3	15.3	44.8 - 49.3
R71	1170 Pennsylvania Avenue	56.0 - 56.0	65.3 - 70.2	65.8 - 70.4	14.4	43.8 - 48.4
R72	1170 Pennsylvania Avenue	56.0 - 57.3	60.2 - 64.4	61.6 - 65.2	8.0	39.6 - 43.2
R73	1170 Pennsylvania Avenue	59.5 - 62.1	47.8 - 53.1	59.8 - 62.4	0.6	37.8 - 40.4
R74	1155 Pennsylvania Avenue	56.0 - 61.9	60.0 - 65.7	61.5 - 67.2	5.5	39.5 - 45.2
R75	1155 Pennsylvania Avenue	56.0 - 58.8	52.5 - 61.7	57.6 - 63.5	4.7	35.6 - 41.5
R76	1155 Pennsylvania Avenue	56.0 - 56.0	41.7 - 47.9	56.2 - 56.6	0.6	34.2 - 34.6
R77	1155 Pennsylvania Avenue	56.0 - 58.5	42.2 - 56.9	56.2 - 60.7	2.6	34.2 - 38.7
R78	1155 Pennsylvania Avenue	56.0 - 59.1	54.6 - 62.7	59.0 - 64.3	5.2	37.0 - 42.3
R79	1155 Pennsylvania Avenue	56.0 - 59.4	45.9 - 57.6	56.8 - 61.6	2.2	34.8 - 39.6
R80	1155 Pennsylvania Avenue	56.0 - 56.0	43.5 - 55.2	56.2 - 58.6	2.6	34.2 - 36.6
R81	1155 Pennsylvania Avenue	56.0 - 56.0	41.9 - 44.8	56.2 - 56.3	0.3	34.2 - 34.3
R82	1155 Pennsylvania Avenue	56.0 - 57.8	51.0 - 58.7	57.2 - 61.3	3.7	35.2 - 39.3
R83	1155 Pennsylvania Avenue	56.0 - 58.8	51.9 - 59.7	57.4 - 62.3	3.5	35.4 - 40.3
R84	1155 Pennsylvania Avenue	56.0 - 56.0	40.2 - 46.8	56.1 - 56.5	0.5	34.1 - 34.5
R85	1155 Pennsylvania Avenue	56.0 - 57.4	46.6 - 52.1	56.5 - 58.5	1.2	34.5 - 36.5
R86	1155 Pennsylvania Avenue	56.0 - 56.0	39.7 - 46.6	56.1 - 56.5	0.5	34.1 - 34.5
R87	1155 Pennsylvania Avenue	56.0 - 56.0	39.4 - 41.3	56.1 - 56.1	0.1	34.1 - 34.1
R88	1260 Cronton Loop	56.0 - 58.8	44.2 - 45.6	56.3 - 59.0	0.4	34.3 - 37.0
R89	1260 Cronton Loop	56.0 - 62.4	46.2 - 57.8	56.4 - 63.7	1.5	34.4 - 41.7
R90	1260 Cronton Loop	57.0 - 65.9	57.5 - 67.6	60.3 - 69.8	6.1	38.3 - 47.8
R91	1260 Cronton Loop	56.0 - 62.9	53.1 - 59.0	57.9 - 64.1	2.4	35.9 - 42.1
R92	1260 Cronton Loop	56.0 - 60.3	53.4 - 63.3	57.9 - 65.1	5.0	35.9 - 43.1
R93	1260 Cronton Loop	56.0 - 56.0	52.2 - 61.5	57.5 - 62.6	6.6	35.5 - 40.6
R94	1260 Cronton Loop	56.0 - 61.8	43.6 - 54.9	56.2 - 62.6	0.8	34.2 - 40.6

Source: VHB 2022

Table 19-21 Phase 1B – Superstructure/Fit-Out Construction Noise Levels: Months 37 through 43

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	47.6 - 48.2	65.8 - 66.4	0.1	43.8 - 44.4
R02	10835 Flatlands Avenue	65.0 - 65.4	50.4 - 50.7	65.2 - 65.5	0.2	43.2 - 43.5
R03	10835 Flatlands Avenue	69.1 - 69.7	51.6 - 52.7	69.2 - 69.8	0.1	47.2 - 47.8
R04	Farragut Road Park	71.5 - 71.5	54.7 - 54.7	71.6 - 71.6	0.1	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	49.4 - 49.4	67.4 - 67.4	0.1	40.4 - 40.4
R06	730 Louisiana Avenue	59.3 - 59.3	40.7 - 40.7	59.4 - 59.4	0.1	32.4 - 32.4
R07	730 Louisiana Avenue	56.0 - 56.0	46.9 - 46.9	56.5 - 56.5	0.5	29.5 - 29.5
R08	730 Louisiana Avenue	58.2 - 58.2	44.5 - 44.5	58.4 - 58.4	0.2	31.4 - 31.4
R09	730 Louisiana Avenue	62.4 - 62.4	40.9 - 40.9	62.4 - 62.4	0.0	35.4 - 35.4

Table 19-21 Phase 1B – Superstructure/Fit-Out Construction Noise Levels: Months 37 through 43

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R10	790 Louisiana Avenue	61.3 - 63.1	38.8 - 41.9	61.3 - 63.1	0.0	39.3 - 41.1
R11	508 Louisiana Avenue	59.8 - 61.2	34.6 - 48.5	59.8 - 61.4	0.2	37.8 - 39.4
R12	556 Louisiana Avenue	56.0 - 58.4	34.4 - 43.4	56.0 - 58.5	0.1	34.0 - 36.5
R14	12048 Flatlands Avenue	65.3 - 68.8	40.3 - 40.5	65.3 - 68.8	0.0	43.3 - 46.8
R28	Proposed Building 1	62.9 - 65.9	69.7 - 74.5	70.5 - 75.0	10.6	43.5 - 48.0
R29	Proposed Building 2	56.0 - 57.6	62.9 - 70.1	63.7 - 70.3	13.0	36.7 - 43.3
R30	Proposed Building 1	67.2 - 71.2	54.4 - 63.3	68.7 - 71.4	1.5	38.3 - 39.4
R31	Proposed Building 1	56.0 - 56.0	62.0 - 66.7	63.0 - 67.1	11.1	36.0 - 40.1
R32	Proposed Building 2	56.0 - 56.3	64.3 - 69.0	64.9 - 69.2	13.2	37.9 - 42.2
R33	Proposed Building 2	56.0 - 56.2	44.3 - 49.8	56.3 - 56.9	0.9	29.3 - 29.9
R34	Proposed Building 1	66.3 - 70.4	42.7 - 44.7	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	43.3 - 45.0	59.2 - 63.9	0.1	28.7 - 31.9
R39	12041 Flatlands Avenue	58.3 - 58.3	56.3 - 56.3	60.4 - 60.4	2.1	33.4 - 33.4
R40	12079 Flatlands Avenue	56.0 - 56.0	59.5 - 59.5	61.1 - 61.1	5.1	34.1 - 34.1
R41	12079 Flatlands Avenue	59.5 - 59.5	65.8 - 65.8	66.7 - 66.7	7.2	39.7 - 39.7
R42	1036 Sheffield Avenue	60.5 - 61.7	68.9 - 69.1	69.5 - 69.8	9.0	42.5 - 42.8
R43	1036 Sheffield Avenue	56.0 - 59.2	58.8 - 59.3	60.7 - 62.3	4.7	33.7 - 35.3
R44	1118 Pennsylvania Avenue	64.3 - 64.3	49.7 - 49.7	64.4 - 64.4	0.1	37.4 - 37.4
R45	1143 Flatlands Avenue	63.4 - 63.4	38.5 - 38.5	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	50.6 - 50.6	57.6 - 57.6	1.0	30.6 - 30.6
R47	148 Cozine Avenue	64.3 - 65.1	50.3 - 53.9	64.5 - 65.4	0.3	42.5 - 43.4
R48	148 Cozine Avenue	57.7 - 60.5	44.7 - 46.2	57.9 - 60.7	0.2	35.9 - 38.7
R49	148 Cozine Avenue	56.0 - 56.0	38.1 - 40.9	56.1 - 56.1	0.1	34.1 - 34.1
R50	190 Cozine Avenue	59.0 - 67.2	49.1 - 51.5	59.5 - 67.3	0.5	37.5 - 45.3
R51	1 Vandalia Avenue	58.8 - 64.5	37.8 - 43.7	58.9 - 64.5	0.1	36.9 - 42.5
R52	1 Vandalia Avenue	59.7 - 64.9	39.7 - 58.6	59.8 - 65.7	0.9	37.8 - 43.7
R53	1 Vandalia Avenue	56.0 - 58.1	39.9 - 57.2	56.1 - 60.6	2.6	34.1 - 38.6
R54	1 Vandalia Avenue	56.0 - 61.8	38.1 - 47.6	56.1 - 61.8	0.5	34.1 - 39.8
R55	1 Vandalia Avenue	56.0 - 56.0	40.4 - 40.4	56.1 - 56.1	0.1	34.1 - 34.1
R56	1 Vandalia Avenue	56.0 - 56.0	41.3 - 41.3	56.1 - 56.1	0.1	34.1 - 34.1
R57	1 Vandalia Avenue	56.0 - 56.8	52.7 - 57.8	57.7 - 60.0	4.0	35.7 - 38.0
R58	1 Vandalia Avenue	56.0 - 56.0	39.6 - 41.2	56.1 - 56.1	0.1	34.1 - 34.1
R59	1 Vandalia Avenue	56.0 - 56.7	49.0 - 53.8	56.8 - 58.2	1.9	34.8 - 36.2
R60	1 Vandalia Avenue	56.0 - 56.0	39.7 - 44.1	56.1 - 56.3	0.3	34.1 - 34.3
R61	1180 Pennsylvania Avenue	56.0 - 57.4	60.7 - 64.9	62.0 - 65.4	9.4	40.0 - 43.4
R62	1180 Pennsylvania Avenue	56.0 - 58.9	54.2 - 59.9	58.7 - 62.1	5.3	36.7 - 40.1
R63	1180 Pennsylvania Avenue	56.0 - 56.0	46.9 - 51.2	56.5 - 57.2	1.2	34.5 - 35.2
R64	1180 Pennsylvania Avenue	56.0 - 57.3	46.3 - 49.2	56.5 - 57.6	0.8	34.5 - 35.6
R65	99 Vandalia Avenue	56.0 - 56.0	49.3 - 54.2	56.8 - 58.2	2.2	34.8 - 36.2
R66	99 Vandalia Avenue	56.0 - 56.0	54.0 - 58.7	58.1 - 60.6	4.6	36.1 - 38.6

Table 19-21 Phase 1B – Superstructure/Fit-Out Construction Noise Levels: Months 37 through 43

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R67	99 Vandalia Avenue	56.0 - 57.9	38.0 - 41.2	56.1 - 58.0	0.1	34.1 - 36.0
R68	99 Vandalia Avenue	56.7 - 62.2	47.3 - 52.2	57.2 - 62.6	0.5	35.2 - 40.6
R69	1170 Pennsylvania Avenue	56.2 - 60.4	48.3 - 53.2	57.0 - 61.1	0.8	35.0 - 39.1
R70	1170 Pennsylvania Avenue	56.0 - 56.0	52.8 - 58.3	57.7 - 60.3	4.3	35.7 - 38.3
R71	1170 Pennsylvania Avenue	56.0 - 56.0	52.1 - 57.7	57.5 - 59.9	3.9	35.5 - 37.9
R72	1170 Pennsylvania Avenue	56.0 - 57.3	51.7 - 57.1	57.4 - 59.9	3.2	35.4 - 37.9
R73	1170 Pennsylvania Avenue	59.5 - 62.1	41.1 - 53.9	59.6 - 62.1	0.8	37.6 - 40.1
R74	1155 Pennsylvania Avenue	56.0 - 61.9	39.3 - 52.5	56.1 - 62.0	0.7	34.1 - 40.0
R75	1155 Pennsylvania Avenue	56.0 - 58.8	38.4 - 42.9	56.1 - 58.9	0.1	34.1 - 36.9
R76	1155 Pennsylvania Avenue	56.0 - 56.0	32.9 - 33.8	56.0 - 56.0	0.0	34.0 - 34.0
R77	1155 Pennsylvania Avenue	56.0 - 58.5	33.9 - 36.1	56.0 - 58.5	0.0	34.0 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	39.2 - 42.7	56.1 - 59.2	0.1	34.1 - 37.2
R79	1155 Pennsylvania Avenue	56.0 - 59.4	39.8 - 44.8	56.2 - 59.5	0.2	34.2 - 37.5
R80	1155 Pennsylvania Avenue	56.0 - 56.0	36.6 - 36.9	56.0 - 56.1	0.1	34.0 - 34.1
R81	1155 Pennsylvania Avenue	56.0 - 56.0	37.0 - 37.3	56.1 - 56.1	0.1	34.1 - 34.1
R82	1155 Pennsylvania Avenue	56.0 - 57.8	49.2 - 53.9	56.8 - 59.3	1.6	34.8 - 37.3
R83	1155 Pennsylvania Avenue	56.0 - 58.8	49.4 - 54.3	56.9 - 60.1	1.4	34.9 - 38.1
R84	1155 Pennsylvania Avenue	56.0 - 56.0	33.7 - 34.0	56.0 - 56.0	0.0	34.0 - 34.0
R85	1155 Pennsylvania Avenue	56.0 - 57.4	37.1 - 40.3	56.1 - 57.5	0.1	34.1 - 35.5
R86	1155 Pennsylvania Avenue	56.0 - 56.0	32.7 - 32.9	56.0 - 56.0	0.0	34.0 - 34.0
R87	1155 Pennsylvania Avenue	56.0 - 56.0	33.7 - 34.1	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	33.1 - 34.3	56.0 - 58.8	0.0	34.0 - 36.8
R89	1260 Cronton Loop	56.0 - 62.4	34.4 - 47.4	56.0 - 62.5	0.1	34.0 - 40.5
R90	1260 Cronton Loop	57.0 - 65.9	37.3 - 50.3	57.0 - 66.0	0.1	35.0 - 44.0
R91	1260 Cronton Loop	56.0 - 62.9	36.3 - 46.7	56.0 - 63.0	0.1	34.0 - 41.0
R92	1260 Cronton Loop	56.0 - 60.3	36.9 - 56.1	56.1 - 61.6	1.7	34.1 - 39.6
R93	1260 Cronton Loop	56.0 - 56.0	36.3 - 55.1	56.0 - 58.6	2.6	34.0 - 36.6
R94	1260 Cronton Loop	56.0 - 61.8	34.4 - 45.0	56.0 - 61.9	0.1	34.0 - 39.9

Source: VHB 2022

Table 19-22 Phase 1B – Fit-Out Construction Noise Levels: Months 44 through 47

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	52.0 - 52.5	65.9 - 66.5	0.2	43.9 - 44.5
R02	10835 Flatlands Avenue	65.0 - 65.4	52.4 - 52.4	65.2 - 65.6	0.2	43.2 - 43.6
R03	10835 Flatlands Avenue	69.1 - 69.7	54.9 - 55.5	69.3 - 69.9	0.2	47.3 - 47.9
R04	Farragut Road Park	71.5 - 71.5	56.9 - 56.9	71.6 - 71.6	0.1	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	57.9 - 57.9	67.8 - 67.8	0.5	40.8 - 40.8
R06	730 Louisiana Avenue	59.3 - 59.3	42.8 - 42.8	59.4 - 59.4	0.1	32.4 - 32.4

Table 19-22 Phase 1B – Fit-Out Construction Noise Levels: Months 44 through 47

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R07	730 Louisiana Avenue	56.0 - 56.0	46.6 - 46.6	56.5 - 56.5	0.5	29.5 - 29.5
R08	730 Louisiana Avenue	58.2 - 58.2	48.9 - 48.9	58.7 - 58.7	0.5	31.7 - 31.7
R09	730 Louisiana Avenue	62.4 - 62.4	45.0 - 45.0	62.5 - 62.5	0.1	35.5 - 35.5
R10	790 Louisiana Avenue	61.3 - 63.1	41.4 - 42.9	61.4 - 63.1	0.1	39.4 - 41.1
R11	508 Louisiana Avenue	59.8 - 61.2	36.9 - 38.0	59.8 - 61.2	0.0	37.8 - 39.2
R12	556 Louisiana Avenue	56.0 - 58.4	36.9 - 37.7	56.1 - 58.4	0.1	34.1 - 36.4
R14	12048 Flatlands Avenue	65.3 - 68.8	43.5 - 48.8	65.4 - 68.8	0.1	43.4 - 46.8
R28	Proposed Building 1	62.9 - 65.9	66.3 - 71.8	67.9 - 72.6	8.6	40.9 - 45.6
R29	Proposed Building 2	56.0 - 57.6	67.0 - 72.2	67.3 - 72.3	15.9	40.3 - 45.3
R30	Proposed Building 1	67.2 - 71.2	46.4 - 53.8	67.2 - 71.3	0.1	37.4 - 39.3
R31	Proposed Building 1	56.0 - 56.0	63.3 - 68.2	64.0 - 68.5	12.5	37.0 - 41.5
R32	Proposed Building 2	56.0 - 56.3	63.2 - 68.4	64.0 - 68.6	12.6	37.0 - 41.6
R33	Proposed Building 2	56.0 - 56.2	45.4 - 58.6	56.4 - 60.5	4.5	29.4 - 33.5
R34	Proposed Building 1	66.3 - 70.4	43.7 - 45.3	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	43.1 - 45.0	59.2 - 64.0	0.1	28.7 - 32.0
R39	12041 Flatlands Avenue	58.3 - 58.3	61.3 - 61.3	63.1 - 63.1	4.8	36.1 - 36.1
R40	12079 Flatlands Avenue	56.0 - 56.0	64.6 - 64.6	65.2 - 65.2	9.2	38.2 - 38.2
R41	12079 Flatlands Avenue	59.5 - 59.5	63.4 - 63.4	64.9 - 64.9	5.4	37.9 - 37.9
R42	1036 Sheffield Avenue	60.5 - 61.7	62.4 - 63.3	64.6 - 65.6	4.1	37.6 - 38.6
R43	1036 Sheffield Avenue	56.0 - 59.2	46.7 - 50.2	56.5 - 59.7	0.5	29.5 - 32.7
R44	1118 Pennsylvania Avenue	64.3 - 64.3	48.6 - 48.6	64.4 - 64.4	0.1	37.4 - 37.4
R45	1143 Flatlands Avenue	63.4 - 63.4	39.9 - 39.9	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	40.8 - 40.8	56.7 - 56.7	0.1	29.7 - 29.7
R47	148 Cozine Avenue	64.3 - 65.1	41.8 - 45.9	64.3 - 65.2	0.1	42.3 - 43.2
R48	148 Cozine Avenue	57.7 - 60.5	45.7 - 49.2	58.0 - 60.8	0.3	36.0 - 38.8
R49	148 Cozine Avenue	56.0 - 56.0	40.2 - 42.8	56.1 - 56.2	0.2	34.1 - 34.2
R50	190 Cozine Avenue	59.0 - 67.2	46.5 - 53.4	59.3 - 67.4	0.3	37.3 - 45.4
R51	1 Vandalia Avenue	58.8 - 64.5	40.3 - 47.0	58.9 - 64.5	0.1	36.9 - 42.5
R52	1 Vandalia Avenue	59.7 - 64.9	42.1 - 63.2	59.8 - 67.1	2.2	37.8 - 45.1
R53	1 Vandalia Avenue	56.0 - 58.1	42.0 - 64.4	56.2 - 65.3	7.3	34.2 - 43.3
R54	1 Vandalia Avenue	56.0 - 61.8	40.1 - 47.0	56.1 - 61.8	0.2	34.1 - 39.8
R55	1 Vandalia Avenue	56.0 - 56.0	42.1 - 42.1	56.2 - 56.2	0.2	34.2 - 34.2
R56	1 Vandalia Avenue	56.0 - 56.0	42.8 - 42.8	56.2 - 56.2	0.2	34.2 - 34.2
R57	1 Vandalia Avenue	56.0 - 56.8	55.7 - 62.4	58.9 - 63.4	7.1	36.9 - 41.4
R58	1 Vandalia Avenue	56.0 - 56.0	41.2 - 50.1	56.1 - 57.0	1.0	34.1 - 35.0
R59	1 Vandalia Avenue	56.0 - 56.7	50.8 - 60.6	57.7 - 62.0	5.7	35.7 - 40.0
R60	1 Vandalia Avenue	56.0 - 56.0	42.0 - 48.4	56.2 - 56.7	0.7	34.2 - 34.7
R61	1180 Pennsylvania Avenue	56.0 - 57.4	61.1 - 66.1	62.3 - 66.6	9.9	40.3 - 44.6
R62	1180 Pennsylvania Avenue	56.0 - 58.9	56.3 - 62.4	60.1 - 63.9	5.4	38.1 - 41.9
R63	1180 Pennsylvania Avenue	56.0 - 56.0	48.4 - 56.4	56.7 - 59.2	3.2	34.7 - 37.2

Table 19-22 Phase 1B – Fit-Out Construction Noise Levels: Months 44 through 47

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R64	1180 Pennsylvania Avenue	56.0 - 57.3	45.0 - 48.7	56.4 - 57.5	0.7	34.4 - 35.5
R65	99 Vandalia Avenue	56.0 - 56.0	51.0 - 55.4	57.2 - 58.7	2.7	35.2 - 36.7
R66	99 Vandalia Avenue	56.0 - 56.0	41.7 - 46.7	56.2 - 56.5	0.5	34.2 - 34.5
R67	99 Vandalia Avenue	56.0 - 57.9	39.8 - 48.7	56.1 - 58.0	0.7	34.1 - 36.0
R68	99 Vandalia Avenue	56.7 - 62.2	39.7 - 40.1	56.8 - 62.2	0.1	34.8 - 40.2
R69	1170 Pennsylvania Avenue	56.2 - 60.4	52.2 - 56.9	57.9 - 62.0	2.2	35.9 - 40.0
R70	1170 Pennsylvania Avenue	56.0 - 56.0	56.5 - 60.8	59.3 - 62.0	6.0	37.3 - 40.0
R71	1170 Pennsylvania Avenue	56.0 - 56.0	52.6 - 57.0	57.6 - 59.5	3.5	35.6 - 37.5
R72	1170 Pennsylvania Avenue	56.0 - 57.3	44.0 - 49.2	56.3 - 57.5	0.8	34.3 - 35.5
R73	1170 Pennsylvania Avenue	59.5 - 62.1	43.9 - 44.1	59.6 - 62.2	0.1	37.6 - 40.2
R74	1155 Pennsylvania Avenue	56.0 - 61.9	42.3 - 50.3	56.2 - 62.1	0.5	34.2 - 40.1
R75	1155 Pennsylvania Avenue	56.0 - 58.8	40.0 - 49.0	56.1 - 59.2	0.5	34.1 - 37.2
R76	1155 Pennsylvania Avenue	56.0 - 56.0	37.6 - 38.4	56.1 - 56.1	0.1	34.1 - 34.1
R77	1155 Pennsylvania Avenue	56.0 - 58.5	38.4 - 44.4	56.1 - 58.5	0.2	34.1 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	40.1 - 50.2	56.4 - 59.6	0.5	34.4 - 37.6
R79	1155 Pennsylvania Avenue	56.0 - 59.4	49.2 - 54.4	56.9 - 60.6	1.6	34.9 - 38.6
R80	1155 Pennsylvania Avenue	56.0 - 56.0	38.4 - 38.6	56.1 - 56.1	0.1	34.1 - 34.1
R81	1155 Pennsylvania Avenue	56.0 - 56.0	38.7 - 38.9	56.1 - 56.1	0.1	34.1 - 34.1
R82	1155 Pennsylvania Avenue	56.0 - 57.8	50.1 - 55.2	57.0 - 59.7	2.3	35.0 - 37.7
R83	1155 Pennsylvania Avenue	56.0 - 58.8	51.6 - 57.2	57.3 - 61.0	2.7	35.3 - 39.0
R84	1155 Pennsylvania Avenue	56.0 - 56.0	34.6 - 34.8	56.0 - 56.0	0.0	34.0 - 34.0
R85	1155 Pennsylvania Avenue	56.0 - 57.4	45.1 - 50.2	56.3 - 58.2	0.8	34.3 - 36.2
R86	1155 Pennsylvania Avenue	56.0 - 56.0	33.7 - 33.8	56.0 - 56.0	0.0	34.0 - 34.0
R87	1155 Pennsylvania Avenue	56.0 - 56.0	34.5 - 35.3	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	35.5 - 37.6	56.0 - 58.8	0.0	34.0 - 36.8
R89	1260 Cronton Loop	56.0 - 62.4	37.1 - 51.4	56.1 - 62.7	0.4	34.1 - 40.7
R90	1260 Cronton Loop	57.0 - 65.9	38.7 - 56.0	57.1 - 66.3	0.4	35.1 - 44.3
R91	1260 Cronton Loop	56.0 - 62.9	38.4 - 46.8	56.1 - 63.0	0.1	34.1 - 41.0
R92	1260 Cronton Loop	56.0 - 60.3	38.1 - 43.5	56.1 - 60.4	0.1	34.1 - 38.4
R93	1260 Cronton Loop	56.0 - 56.0	37.3 - 45.7	56.1 - 56.4	0.4	34.1 - 34.4
R94	1260 Cronton Loop	56.0 - 61.8	37.1 - 37.6	56.1 - 61.8	0.1	34.1 - 39.8

Source: VHB 2022

Table 19-23 Phase 2A – Foundation/Superstructure Construction Noise Levels: Months 49 through 55

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	55.9 - 56.5	66.2 - 66.7	0.5	44.2 - 44.7
R02	10835 Flatlands Avenue	65.0 - 65.4	55.4 - 56.8	65.5 - 66.0	0.6	43.5 - 44.0
R03	10835 Flatlands Avenue	69.1 - 69.7	59.8 - 60.9	69.6 - 70.2	0.5	47.6 - 48.2

Table 19-23 Phase 2A – Foundation/Superstructure Construction Noise Levels: Months 49 through 55

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R04	Farragut Road Park	71.5 - 71.5	62.6 - 62.6	72.0 - 72.0	0.5	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	65.3 - 65.3	69.4 - 69.4	2.1	42.4 - 42.4
R06	730 Louisiana Avenue	59.3 - 59.3	56.8 - 56.8	61.2 - 61.2	1.9	34.2 - 34.2
R07	730 Louisiana Avenue	56.0 - 56.0	58.1 - 58.1	60.2 - 60.2	4.2	33.2 - 33.2
R08	730 Louisiana Avenue	58.2 - 58.2	57.3 - 57.3	60.8 - 60.8	2.6	33.8 - 33.8
R09	730 Louisiana Avenue	62.4 - 62.4	53.8 - 53.8	63.0 - 63.0	0.6	36.0 - 36.0
R10	790 Louisiana Avenue	61.3 - 63.1	55.2 - 55.9	62.3 - 63.8	1.0	40.3 - 41.8
R11	508 Louisiana Avenue	59.8 - 61.2	50.2 - 50.8	60.3 - 61.6	0.5	38.3 - 39.6
R12	556 Louisiana Avenue	56.0 - 58.4	42.0 - 45.4	56.2 - 58.6	0.2	34.2 - 36.6
R14	12048 Flatlands Avenue	65.3 - 68.8	69.2 - 74.1	72.0 - 74.6	9.3	50.0 - 52.6
R22	Proposed Building 3	56.0 - 56.0	68.7 - 76.6	68.9 - 76.6	20.6	47.3 - 49.6
R23	Proposed Building 3	60.0 - 61.8	60.2 - 68.8	63.1 - 69.5	8.1	39.4 - 42.5
R24	Proposed Building 3	56.0 - 56.0	62.7 - 70.6	63.5 - 70.7	14.7	36.5 - 43.7
R25	Proposed Building 4	56.0 - 56.0	67.9 - 74.2	68.2 - 74.3	18.3	41.2 - 47.3
R26	Proposed Building 3	58.8 - 64.6	50.7 - 63.7	59.4 - 66.9	3.0	35.0 - 39.9
R27	Proposed Building 4	56.0 - 56.0	53.9 - 58.8	58.1 - 60.6	4.6	31.1 - 33.6
R28	Proposed Building 1	62.9 - 65.9	50.5 - 61.0	63.1 - 67.1	1.2	36.1 - 40.1
R29	Proposed Building 2	56.0 - 57.6	56.6 - 64.6	59.4 - 65.4	7.8	32.4 - 38.4
R30	Proposed Building 1	67.2 - 71.2	44.3 - 58.9	67.2 - 71.4	0.2	37.5 - 39.4
R31	Proposed Building 1	56.0 - 56.0	58.1 - 66.0	60.2 - 66.4	10.4	33.2 - 39.4
R32	Proposed Building 2	56.0 - 56.3	59.0 - 66.0	60.8 - 66.4	10.3	33.8 - 39.4
R33	Proposed Building 2	56.0 - 56.2	44.0 - 49.4	56.3 - 56.9	0.9	29.3 - 29.9
R34	Proposed Building 1	66.3 - 70.4	43.4 - 45.8	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	43.8 - 46.8	59.2 - 64.0	0.1	28.7 - 32.0
R36	Proposed Building 4	56.0 - 57.9	66.5 - 75.9	66.9 - 76.0	18.2	39.9 - 49.0
R37	Proposed Building 4	56.0 - 56.0	51.2 - 51.7	57.2 - 57.4	1.4	30.2 - 30.4
R38	Proposed Building 4	56.0 - 56.0	49.8 - 55.2	56.9 - 58.6	2.6	29.9 - 31.6
R39	12041 Flatlands Avenue	58.3 - 58.3	68.7 - 68.7	69.1 - 69.1	10.8	42.1 - 42.1
R40	12079 Flatlands Avenue	56.0 - 56.0	69.0 - 69.0	69.2 - 69.2	13.2	42.2 - 42.2
R41	12079 Flatlands Avenue	59.5 - 59.5	66.0 - 66.0	66.9 - 66.9	7.4	39.9 - 39.9
R42	1036 Sheffield Avenue	60.5 - 61.7	65.1 - 67.1	66.4 - 68.2	6.5	39.4 - 41.2
R43	1036 Sheffield Avenue	56.0 - 59.2	47.2 - 52.3	56.5 - 60.0	0.8	29.5 - 33.0
R44	1118 Pennsylvania Avenue	64.3 - 64.3	51.6 - 51.6	64.5 - 64.5	0.2	37.5 - 37.5
R45	1143 Flatlands Avenue	63.4 - 63.4	41.9 - 41.9	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	46.1 - 46.1	57.0 - 57.0	0.4	30.0 - 30.0
R47	148 Cozine Avenue	64.3 - 65.1	50.9 - 54.7	64.5 - 65.5	0.4	42.5 - 43.5
R48	148 Cozine Avenue	57.7 - 60.5	53.2 - 54.9	59.0 - 61.6	1.3	37.0 - 39.6
R49	148 Cozine Avenue	56.0 - 56.0	46.9 - 51.2	56.5 - 57.2	1.2	34.5 - 35.2
R50	190 Cozine Avenue	59.0 - 67.2	49.0 - 56.0	59.7 - 67.5	0.7	37.7 - 45.5
R51	1 Vandalia Avenue	58.8 - 64.5	44.4 - 47.0	59.0 - 64.6	0.2	37.0 - 42.6

Table 19-23 Phase 2A – Foundation/Superstructure Construction Noise Levels: Months 49 through 55

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R52	1 Vandalia Avenue	59.7 - 64.9	46.2 - 59.9	60.0 - 66.1	1.2	38.0 - 44.1
R53	1 Vandalia Avenue	56.0 - 58.1	45.4 - 61.1	56.4 - 62.9	4.8	34.4 - 40.9
R54	1 Vandalia Avenue	56.0 - 61.8	45.0 - 47.7	56.3 - 62.0	0.3	34.3 - 40.0
R55	1 Vandalia Avenue	56.0 - 56.0	47.5 - 47.5	56.6 - 56.6	0.6	34.6 - 34.6
R56	1 Vandalia Avenue	56.0 - 56.0	46.4 - 46.4	56.5 - 56.5	0.5	34.5 - 34.5
R57	1 Vandalia Avenue	56.0 - 56.8	55.6 - 63.3	58.8 - 64.2	7.4	36.8 - 42.2
R58	1 Vandalia Avenue	56.0 - 56.0	44.7 - 46.5	56.3 - 56.5	0.5	34.3 - 34.5
R59	1 Vandalia Avenue	56.0 - 56.7	55.3 - 62.8	58.7 - 63.8	7.1	36.7 - 41.8
R60	1 Vandalia Avenue	56.0 - 56.0	43.9 - 45.6	56.3 - 56.4	0.4	34.3 - 34.4
R61	1180 Pennsylvania Avenue	56.0 - 57.4	60.6 - 66.8	61.9 - 67.3	10.0	39.9 - 45.3
R62	1180 Pennsylvania Avenue	56.0 - 58.9	54.6 - 59.5	59.3 - 61.9	3.8	37.3 - 39.9
R63	1180 Pennsylvania Avenue	56.0 - 56.0	55.2 - 59.5	58.6 - 61.1	5.1	36.6 - 39.1
R64	1180 Pennsylvania Avenue	56.0 - 57.3	47.9 - 48.5	56.7 - 57.8	0.7	34.7 - 35.8
R65	99 Vandalia Avenue	56.0 - 56.0	49.3 - 54.9	56.8 - 58.5	2.5	34.8 - 36.5
R66	99 Vandalia Avenue	56.0 - 56.0	42.6 - 50.7	56.2 - 57.1	1.1	34.2 - 35.1
R67	99 Vandalia Avenue	56.0 - 57.9	42.2 - 43.3	56.2 - 58.0	0.2	34.2 - 36.0
R68	99 Vandalia Avenue	56.7 - 62.2	43.0 - 43.7	56.9 - 62.3	0.2	34.9 - 40.3
R69	1170 Pennsylvania Avenue	56.2 - 60.4	43.8 - 49.6	56.5 - 60.7	0.4	34.5 - 38.7
R70	1170 Pennsylvania Avenue	56.0 - 56.0	46.1 - 50.9	56.4 - 57.2	1.2	34.4 - 35.2
R71	1170 Pennsylvania Avenue	56.0 - 56.0	42.9 - 47.1	56.2 - 56.5	0.5	34.2 - 34.5
R72	1170 Pennsylvania Avenue	56.0 - 57.3	42.9 - 45.5	56.2 - 57.6	0.3	34.2 - 35.6
R73	1170 Pennsylvania Avenue	59.5 - 62.1	42.6 - 44.5	59.6 - 62.2	0.1	37.6 - 40.2
R74	1155 Pennsylvania Avenue	56.0 - 61.9	42.5 - 49.2	56.2 - 62.1	0.2	34.2 - 40.1
R75	1155 Pennsylvania Avenue	56.0 - 58.8	39.6 - 46.3	56.1 - 59.0	0.2	34.1 - 37.0
R76	1155 Pennsylvania Avenue	56.0 - 56.0	38.5 - 39.5	56.1 - 56.1	0.1	34.1 - 34.1
R77	1155 Pennsylvania Avenue	56.0 - 58.5	38.3 - 38.7	56.1 - 58.5	0.1	34.1 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	40.1 - 48.7	56.1 - 59.5	0.4	34.1 - 37.5
R79	1155 Pennsylvania Avenue	56.0 - 59.4	41.0 - 50.2	56.1 - 59.9	0.5	34.1 - 37.9
R80	1155 Pennsylvania Avenue	56.0 - 56.0	39.7 - 39.9	56.1 - 56.1	0.1	34.1 - 34.1
R81	1155 Pennsylvania Avenue	56.0 - 56.0	39.2 - 39.8	56.1 - 56.1	0.1	34.1 - 34.1
R82	1155 Pennsylvania Avenue	56.0 - 57.8	38.2 - 51.7	56.1 - 58.7	1.0	34.1 - 36.7
R83	1155 Pennsylvania Avenue	56.0 - 58.8	37.8 - 55.0	56.1 - 60.3	1.5	34.1 - 38.3
R84	1155 Pennsylvania Avenue	56.0 - 56.0	37.5 - 37.6	56.1 - 56.1	0.1	34.1 - 34.1
R85	1155 Pennsylvania Avenue	56.0 - 57.4	50.0 - 53.6	57.0 - 58.9	1.6	35.0 - 36.9
R86	1155 Pennsylvania Avenue	56.0 - 56.0	36.8 - 37.0	56.1 - 56.1	0.1	34.1 - 34.1
R87	1155 Pennsylvania Avenue	56.0 - 56.0	36.6 - 38.6	56.0 - 56.1	0.1	34.0 - 34.1
R88	1260 Cronton Loop	56.0 - 58.8	39.9 - 42.2	56.1 - 58.9	0.1	34.1 - 36.9
R89	1260 Cronton Loop	56.0 - 62.4	41.0 - 55.1	56.1 - 63.1	0.7	34.1 - 41.1
R90	1260 Cronton Loop	57.0 - 65.9	43.1 - 59.9	57.2 - 66.9	1.0	35.2 - 44.9
R91	1260 Cronton Loop	56.0 - 62.9	41.3 - 58.6	56.2 - 64.3	1.4	34.2 - 42.3

Table 19-23 Phase 2A – Foundation/Superstructure Construction Noise Levels: Months 49 through 55

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R92	1260 Cronton Loop	56.0 - 60.3	39.8 - 53.1	56.1 - 61.1	0.8	34.1 - 39.1
R93	1260 Cronton Loop	56.0 - 56.0	39.7 - 53.5	56.1 - 57.9	1.9	34.1 - 35.9
R94	1260 Cronton Loop	56.0 - 61.8	39.1 - 42.8	56.1 - 61.9	0.1	34.1 - 39.9

Source: VHB 2022

Table 19-24 Phase 2A – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 56 through 61

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	55.0 - 55.5	66.1 - 66.6	0.4	44.1 - 44.6
R02	10835 Flatlands Avenue	65.0 - 65.4	55.3 - 56.1	65.5 - 65.9	0.5	43.5 - 43.9
R03	10835 Flatlands Avenue	69.1 - 69.7	58.5 - 58.8	69.5 - 70.0	0.4	47.5 - 48.0
R04	Farragut Road Park	71.5 - 71.5	62.0 - 62.0	72.0 - 72.0	0.5	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	63.6 - 63.6	68.8 - 68.8	1.5	41.8 - 41.8
R06	730 Louisiana Avenue	59.3 - 59.3	56.8 - 56.8	61.2 - 61.2	1.9	34.2 - 34.2
R07	730 Louisiana Avenue	56.0 - 56.0	57.9 - 57.9	60.1 - 60.1	4.1	33.1 - 33.1
R08	730 Louisiana Avenue	58.2 - 58.2	57.5 - 57.5	60.9 - 60.9	2.7	33.9 - 33.9
R09	730 Louisiana Avenue	62.4 - 62.4	51.9 - 51.9	62.8 - 62.8	0.4	35.8 - 35.8
R10	790 Louisiana Avenue	61.3 - 63.1	50.2 - 51.0	61.7 - 63.3	0.4	39.7 - 41.3
R11	508 Louisiana Avenue	59.8 - 61.2	45.3 - 45.8	60.0 - 61.3	0.2	38.0 - 39.3
R12	556 Louisiana Avenue	56.0 - 58.4	39.1 - 41.5	56.1 - 58.5	0.1	34.1 - 36.5
R14	12048 Flatlands Avenue	65.3 - 68.8	68.5 - 72.0	71.7 - 72.8	7.5	49.7 - 50.8
R22	Proposed Building 3	56.0 - 56.0	64.8 - 71.9	65.3 - 72.0	16.0	43.7 - 45.0
R23	Proposed Building 3	60.0 - 61.8	59.1 - 64.6	62.6 - 66.3	5.2	38.1 - 39.3
R24	Proposed Building 3	56.0 - 56.0	62.1 - 67.8	63.1 - 68.1	12.1	36.1 - 41.1
R25	Proposed Building 4	56.0 - 56.0	66.5 - 70.6	66.9 - 70.7	14.7	39.9 - 43.7
R26	Proposed Building 3	58.8 - 64.6	50.7 - 54.7	59.4 - 65.0	0.7	32.9 - 38.0
R27	Proposed Building 4	56.0 - 56.0	54.5 - 57.8	58.3 - 60.0	4.0	31.3 - 33.0
R28	Proposed Building 1	62.9 - 65.9	50.2 - 58.8	63.1 - 66.7	0.8	36.1 - 39.7
R29	Proposed Building 2	56.0 - 57.6	56.0 - 61.8	59.1 - 63.2	5.6	32.1 - 36.2
R30	Proposed Building 1	67.2 - 71.2	53.5 - 58.8	67.4 - 71.4	0.3	37.5 - 39.4
R31	Proposed Building 1	56.0 - 56.0	60.2 - 63.9	61.6 - 64.6	8.6	34.6 - 37.6
R32	Proposed Building 2	56.0 - 56.3	59.9 - 63.5	61.4 - 64.3	8.0	34.4 - 37.3
R33	Proposed Building 2	56.0 - 56.2	48.8 - 61.4	56.8 - 62.5	6.5	29.8 - 35.5
R34	Proposed Building 1	66.3 - 70.4	42.5 - 44.2	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	42.8 - 44.7	59.2 - 63.9	0.1	28.7 - 31.9
R36	Proposed Building 4	56.0 - 57.9	68.3 - 79.1	68.5 - 79.1	22.0	41.5 - 52.1
R37	Proposed Building 4	56.0 - 56.0	50.7 - 51.5	57.1 - 57.3	1.3	30.1 - 30.3
R38	Proposed Building 4	56.0 - 56.0	61.5 - 69.9	62.6 - 70.1	14.1	35.6 - 43.1
R39	12041 Flatlands Avenue	58.3 - 58.3	68.9 - 68.9	69.3 - 69.3	11.0	42.3 - 42.3

Table 19-24 Phase 2A – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 56 through 61

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R40	12079 Flatlands Avenue	56.0 - 56.0	66.6 - 66.6	67.0 - 67.0	11.0	40.0 - 40.0
R41	12079 Flatlands Avenue	59.5 - 59.5	63.3 - 63.3	64.8 - 64.8	5.3	37.8 - 37.8
R42	1036 Sheffield Avenue	60.5 - 61.7	61.2 - 64.3	63.9 - 66.0	4.8	36.9 - 39.0
R43	1036 Sheffield Avenue	56.0 - 59.2	46.1 - 47.9	56.4 - 59.5	0.4	29.4 - 32.5
R44	1118 Pennsylvania Avenue	64.3 - 64.3	48.1 - 48.1	64.4 - 64.4	0.1	37.4 - 37.4
R45	1143 Flatlands Avenue	63.4 - 63.4	39.0 - 39.0	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	42.7 - 42.7	56.8 - 56.8	0.2	29.8 - 29.8
R47	148 Cozine Avenue	64.3 - 65.1	47.7 - 52.3	64.4 - 65.3	0.2	42.4 - 43.3
R48	148 Cozine Avenue	57.7 - 60.5	50.9 - 52.9	58.5 - 61.2	0.8	36.5 - 39.2
R49	148 Cozine Avenue	56.0 - 56.0	44.2 - 47.8	56.3 - 56.6	0.6	34.3 - 34.6
R50	190 Cozine Avenue	59.0 - 67.2	46.3 - 52.6	59.4 - 67.3	0.4	37.4 - 45.3
R51	1 Vandalia Avenue	58.8 - 64.5	43.2 - 45.9	59.0 - 64.5	0.2	37.0 - 42.5
R52	1 Vandalia Avenue	59.7 - 64.9	45.9 - 62.9	60.0 - 67.0	2.1	38.0 - 45.0
R53	1 Vandalia Avenue	56.0 - 58.1	45.0 - 64.0	56.3 - 65.0	6.9	34.3 - 43.0
R54	1 Vandalia Avenue	56.0 - 61.8	44.0 - 49.1	56.3 - 62.0	0.3	34.3 - 40.0
R55	1 Vandalia Avenue	56.0 - 56.0	47.4 - 47.4	56.6 - 56.6	0.6	34.6 - 34.6
R56	1 Vandalia Avenue	56.0 - 56.0	52.6 - 52.6	57.6 - 57.6	1.6	35.6 - 35.6
R57	1 Vandalia Avenue	56.0 - 56.8	58.6 - 66.6	60.5 - 67.0	10.3	38.5 - 45.0
R58	1 Vandalia Avenue	56.0 - 56.0	44.6 - 47.1	56.3 - 56.5	0.5	34.3 - 34.5
R59	1 Vandalia Avenue	56.0 - 56.7	59.5 - 66.1	61.1 - 66.6	10.0	39.1 - 44.6
R60	1 Vandalia Avenue	56.0 - 56.0	44.0 - 45.6	56.3 - 56.4	0.4	34.3 - 34.4
R61	1180 Pennsylvania Avenue	56.0 - 57.4	66.0 - 73.3	66.4 - 73.4	16.7	44.4 - 51.4
R62	1180 Pennsylvania Avenue	56.0 - 58.9	62.5 - 68.9	64.0 - 69.3	11.1	42.0 - 47.3
R63	1180 Pennsylvania Avenue	56.0 - 56.0	57.8 - 62.8	60.0 - 63.6	7.6	38.0 - 41.6
R64	1180 Pennsylvania Avenue	56.0 - 57.3	47.7 - 53.7	56.8 - 58.5	1.8	34.8 - 36.5
R65	99 Vandalia Avenue	56.0 - 56.0	53.4 - 57.8	57.9 - 60.0	4.0	35.9 - 38.0
R66	99 Vandalia Avenue	56.0 - 56.0	49.2 - 51.9	56.8 - 57.4	1.4	34.8 - 35.4
R67	99 Vandalia Avenue	56.0 - 57.9	41.6 - 42.6	56.2 - 58.0	0.2	34.2 - 36.0
R68	99 Vandalia Avenue	56.7 - 62.2	41.8 - 42.9	56.8 - 62.3	0.1	34.8 - 40.3
R69	1170 Pennsylvania Avenue	56.2 - 60.4	46.1 - 55.3	57.0 - 61.6	1.3	35.0 - 39.6
R70	1170 Pennsylvania Avenue	56.0 - 56.0	51.9 - 55.6	57.4 - 58.8	2.8	35.4 - 36.8
R71	1170 Pennsylvania Avenue	56.0 - 56.0	43.3 - 59.3	56.2 - 61.0	5.0	34.2 - 39.0
R72	1170 Pennsylvania Avenue	56.0 - 57.3	42.9 - 50.8	56.2 - 58.2	1.0	34.2 - 36.2
R73	1170 Pennsylvania Avenue	59.5 - 62.1	43.0 - 43.8	59.6 - 62.2	0.1	37.6 - 40.2
R74	1155 Pennsylvania Avenue	56.0 - 61.9	49.6 - 56.1	56.9 - 62.9	1.0	34.9 - 40.9
R75	1155 Pennsylvania Avenue	56.0 - 58.8	38.6 - 50.0	56.1 - 59.3	0.6	34.1 - 37.3
R76	1155 Pennsylvania Avenue	56.0 - 56.0	37.1 - 37.5	56.1 - 56.1	0.1	34.1 - 34.1
R77	1155 Pennsylvania Avenue	56.0 - 58.5	37.0 - 37.9	56.1 - 58.5	0.1	34.1 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	39.9 - 54.2	56.1 - 60.3	1.2	34.1 - 38.3
R79	1155 Pennsylvania Avenue	56.0 - 59.4	39.6 - 51.1	56.1 - 60.0	0.6	34.1 - 38.0

Table 19-24 Phase 2A – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 56 through 61

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R80	1155 Pennsylvania Avenue	56.0 - 56.0	38.5 - 39.0	56.1 - 56.1	0.1	34.1 - 34.1
R81	1155 Pennsylvania Avenue	56.0 - 56.0	37.8 - 38.5	56.1 - 56.1	0.1	34.1 - 34.1
R82	1155 Pennsylvania Avenue	56.0 - 57.8	38.7 - 46.6	56.1 - 58.0	0.3	34.1 - 36.0
R83	1155 Pennsylvania Avenue	56.0 - 58.8	46.0 - 50.9	56.4 - 59.5	0.9	34.4 - 37.5
R84	1155 Pennsylvania Avenue	56.0 - 56.0	35.7 - 36.2	56.0 - 56.0	0.0	34.0 - 34.0
R85	1155 Pennsylvania Avenue	56.0 - 57.4	40.2 - 44.8	56.1 - 57.6	0.2	34.1 - 35.6
R86	1155 Pennsylvania Avenue	56.0 - 56.0	35.2 - 36.0	56.0 - 56.0	0.0	34.0 - 34.0
R87	1155 Pennsylvania Avenue	56.0 - 56.0	35.6 - 36.1	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	37.7 - 39.3	56.1 - 58.8	0.1	34.1 - 36.8
R89	1260 Cronton Loop	56.0 - 62.4	39.0 - 49.8	56.1 - 62.6	0.2	34.1 - 40.6
R90	1260 Cronton Loop	57.0 - 65.9	41.6 - 58.1	57.1 - 66.6	0.8	35.1 - 44.6
R91	1260 Cronton Loop	56.0 - 62.9	41.0 - 59.8	56.2 - 64.6	1.7	34.2 - 42.6
R92	1260 Cronton Loop	56.0 - 60.3	41.4 - 56.8	56.1 - 61.9	1.6	34.1 - 39.9
R93	1260 Cronton Loop	56.0 - 56.0	38.2 - 56.2	56.1 - 59.1	3.1	34.1 - 37.1
R94	1260 Cronton Loop	56.0 - 61.8	38.4 - 43.0	56.1 - 61.9	0.1	34.1 - 39.9

Source: VHB 2022

Table 19-25 Phase 2A – Superstructure/Fit-Out Construction Noise Levels: Months 62 through 66

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	36.0 - 38.1	65.7 - 66.3	0.0	43.7 - 44.3
R02	10835 Flatlands Avenue	65.0 - 65.4	33.3 - 39.5	65.0 - 65.4	0.0	43.0 - 43.4
R03	10835 Flatlands Avenue	69.1 - 69.7	46.7 - 46.9	69.1 - 69.7	0.0	47.1 - 47.7
R04	Farragut Road Park	71.5 - 71.5	40.3 - 40.3	71.5 - 71.5	0.0	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	53.1 - 53.1	67.5 - 67.5	0.2	40.5 - 40.5
R06	730 Louisiana Avenue	59.3 - 59.3	46.0 - 46.0	59.5 - 59.5	0.2	32.5 - 32.5
R07	730 Louisiana Avenue	56.0 - 56.0	45.1 - 45.1	56.3 - 56.3	0.3	29.3 - 29.3
R08	730 Louisiana Avenue	58.2 - 58.2	46.2 - 46.2	58.5 - 58.5	0.3	31.5 - 31.5
R09	730 Louisiana Avenue	62.4 - 62.4	37.1 - 37.1	62.4 - 62.4	0.0	35.4 - 35.4
R10	790 Louisiana Avenue	61.3 - 63.1	37.8 - 38.4	61.3 - 63.1	0.0	39.3 - 41.1
R11	508 Louisiana Avenue	59.8 - 61.2	33.3 - 33.8	59.8 - 61.2	0.0	37.8 - 39.2
R12	556 Louisiana Avenue	56.0 - 58.4	30.6 - 31.8	56.0 - 58.4	0.0	34.0 - 36.4
R14	12048 Flatlands Avenue	65.3 - 68.8	59.0 - 62.4	67.1 - 69.2	1.8	45.1 - 47.2
R22	Proposed Building 3	56.0 - 56.0	45.9 - 53.3	56.4 - 57.9	1.9	29.4 - 30.9
R23	Proposed Building 3	60.0 - 61.8	34.7 - 37.6	60.0 - 61.8	0.0	33.4 - 34.8
R24	Proposed Building 3	56.0 - 56.0	47.7 - 55.6	56.6 - 58.8	2.8	29.6 - 31.8
R25	Proposed Building 4	56.0 - 56.0	55.7 - 60.4	58.9 - 61.7	5.7	31.9 - 34.7
R26	Proposed Building 3	58.8 - 64.6	35.3 - 36.4	58.8 - 64.6	0.0	32.2 - 37.6
R27	Proposed Building 4	56.0 - 56.0	37.3 - 39.1	56.1 - 56.1	0.1	29.1 - 29.1

Table 19-25 Phase 2A – Superstructure/Fit-Out Construction Noise Levels: Months 62 through 66

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R28	Proposed Building 1	62.9 - 65.9	38.0 - 41.6	62.9 - 65.9	0.0	35.9 - 38.9
R29	Proposed Building 2	56.0 - 57.6	37.8 - 42.6	56.1 - 57.7	0.1	29.1 - 30.7
R30	Proposed Building 1	67.2 - 71.2	29.1 - 31.6	67.2 - 71.2	0.0	37.3 - 39.2
R31	Proposed Building 1	56.0 - 56.0	45.7 - 50.7	56.4 - 57.1	1.1	29.4 - 30.1
R32	Proposed Building 2	56.0 - 56.3	45.8 - 51.8	56.4 - 57.6	1.4	29.4 - 30.6
R33	Proposed Building 2	56.0 - 56.2	30.3 - 40.0	56.0 - 56.2	0.1	29.0 - 29.2
R34	Proposed Building 1	66.3 - 70.4	27.7 - 31.1	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	30.9 - 33.9	59.1 - 63.9	0.0	28.6 - 31.9
R36	Proposed Building 4	56.0 - 57.9	56.2 - 65.9	59.1 - 66.4	9.3	32.1 - 39.4
R37	Proposed Building 4	56.0 - 56.0	37.8 - 38.4	56.1 - 56.1	0.1	29.1 - 29.1
R38	Proposed Building 4	56.0 - 56.0	37.7 - 43.1	56.1 - 56.2	0.2	29.1 - 29.2
R39	12041 Flatlands Avenue	58.3 - 58.3	52.3 - 52.3	59.3 - 59.3	1.0	32.3 - 32.3
R40	12079 Flatlands Avenue	56.0 - 56.0	50.3 - 50.3	57.0 - 57.0	1.0	30.0 - 30.0
R41	12079 Flatlands Avenue	59.5 - 59.5	43.5 - 43.5	59.6 - 59.6	0.1	32.6 - 32.6
R42	1036 Sheffield Avenue	60.5 - 61.7	38.2 - 40.9	60.5 - 61.7	0.0	33.5 - 34.7
R43	1036 Sheffield Avenue	56.0 - 59.2	30.5 - 31.1	56.0 - 59.2	0.0	29.0 - 32.2
R44	1118 Pennsylvania Avenue	64.3 - 64.3	28.0 - 28.0	64.3 - 64.3	0.0	37.3 - 37.3
R45	1143 Flatlands Avenue	63.4 - 63.4	25.3 - 25.3	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	25.5 - 25.5	56.6 - 56.6	0.0	29.6 - 29.6
R47	148 Cozine Avenue	64.3 - 65.1	28.4 - 31.6	64.3 - 65.1	0.0	42.3 - 43.1
R48	148 Cozine Avenue	57.7 - 60.5	28.8 - 28.9	57.7 - 60.5	0.0	35.7 - 38.5
R49	148 Cozine Avenue	56.0 - 56.0	26.1 - 27.2	56.0 - 56.0	0.0	34.0 - 34.0
R50	190 Cozine Avenue	59.0 - 67.2	26.6 - 32.7	59.0 - 67.2	0.0	37.0 - 45.2
R51	1 Vandalia Avenue	58.8 - 64.5	34.7 - 45.2	58.8 - 64.5	0.1	36.8 - 42.5
R52	1 Vandalia Avenue	59.7 - 64.9	37.7 - 49.9	59.7 - 65.0	0.1	37.7 - 43.0
R53	1 Vandalia Avenue	56.0 - 58.1	34.9 - 52.4	56.0 - 59.1	1.0	34.0 - 37.1
R54	1 Vandalia Avenue	56.0 - 61.8	33.3 - 35.8	56.0 - 61.8	0.0	34.0 - 39.8
R55	1 Vandalia Avenue	56.0 - 56.0	37.0 - 37.0	56.1 - 56.1	0.1	34.1 - 34.1
R56	1 Vandalia Avenue	56.0 - 56.0	35.8 - 35.8	56.0 - 56.0	0.0	34.0 - 34.0
R57	1 Vandalia Avenue	56.0 - 56.8	34.3 - 49.8	56.0 - 57.6	0.8	34.0 - 35.6
R58	1 Vandalia Avenue	56.0 - 56.0	32.7 - 34.4	56.0 - 56.0	0.0	34.0 - 34.0
R59	1 Vandalia Avenue	56.0 - 56.7	36.1 - 49.8	56.0 - 57.5	0.8	34.0 - 35.5
R60	1 Vandalia Avenue	56.0 - 56.0	32.6 - 34.2	56.0 - 56.0	0.0	34.0 - 34.0
R61	1180 Pennsylvania Avenue	56.0 - 57.4	46.4 - 57.3	56.5 - 60.3	3.0	34.5 - 38.3
R62	1180 Pennsylvania Avenue	56.0 - 58.9	38.1 - 44.5	56.2 - 59.0	0.2	34.2 - 37.0
R63	1180 Pennsylvania Avenue	56.0 - 56.0	36.4 - 46.0	56.0 - 56.4	0.4	34.0 - 34.4
R64	1180 Pennsylvania Avenue	56.0 - 57.3	35.2 - 39.5	56.0 - 57.3	0.1	34.0 - 35.3
R65	99 Vandalia Avenue	56.0 - 56.0	33.0 - 41.2	56.0 - 56.1	0.1	34.0 - 34.1
R66	99 Vandalia Avenue	56.0 - 56.0	30.4 - 40.1	56.0 - 56.1	0.1	34.0 - 34.1
R67	99 Vandalia Avenue	56.0 - 57.9	30.6 - 31.4	56.0 - 57.9	0.0	34.0 - 35.9

Table 19-25 Phase 2A – Superstructure/Fit-Out Construction Noise Levels: Months 62 through 66

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R68	99 Vandalia Avenue	56.7 - 62.2	31.3 - 31.4	56.7 - 62.2	0.0	34.7 - 40.2
R69	1170 Pennsylvania Avenue	56.2 - 60.4	32.3 - 35.6	56.2 - 60.4	0.0	34.2 - 38.4
R70	1170 Pennsylvania Avenue	56.0 - 56.0	32.5 - 35.7	56.0 - 56.0	0.0	34.0 - 34.0
R71	1170 Pennsylvania Avenue	56.0 - 56.0	30.4 - 33.8	56.0 - 56.0	0.0	34.0 - 34.0
R72	1170 Pennsylvania Avenue	56.0 - 57.3	31.1 - 32.8	56.0 - 57.3	0.0	34.0 - 35.3
R73	1170 Pennsylvania Avenue	59.5 - 62.1	30.7 - 39.5	59.5 - 62.1	0.0	37.5 - 40.1
R74	1155 Pennsylvania Avenue	56.0 - 61.9	29.9 - 36.1	56.0 - 61.9	0.0	34.0 - 39.9
R75	1155 Pennsylvania Avenue	56.0 - 58.8	26.9 - 33.4	56.0 - 58.8	0.0	34.0 - 36.8
R76	1155 Pennsylvania Avenue	56.0 - 56.0	26.1 - 26.4	56.0 - 56.0	0.0	34.0 - 34.0
R77	1155 Pennsylvania Avenue	56.0 - 58.5	25.9 - 26.2	56.0 - 58.5	0.0	34.0 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	27.8 - 32.5	56.0 - 59.1	0.0	34.0 - 37.1
R79	1155 Pennsylvania Avenue	56.0 - 59.4	27.6 - 33.5	56.0 - 59.4	0.0	34.0 - 37.4
R80	1155 Pennsylvania Avenue	56.0 - 56.0	25.5 - 25.8	56.0 - 56.0	0.0	34.0 - 34.0
R81	1155 Pennsylvania Avenue	56.0 - 56.0	25.1 - 25.4	56.0 - 56.0	0.0	34.0 - 34.0
R82	1155 Pennsylvania Avenue	56.0 - 57.8	24.2 - 34.5	56.0 - 57.8	0.0	34.0 - 35.8
R83	1155 Pennsylvania Avenue	56.0 - 58.8	23.8 - 37.4	56.0 - 58.8	0.0	34.0 - 36.8
R84	1155 Pennsylvania Avenue	56.0 - 56.0	23.4 - 23.6	56.0 - 56.0	0.0	34.0 - 34.0
R85	1155 Pennsylvania Avenue	56.0 - 57.4	24.1 - 31.2	56.0 - 57.4	0.0	34.0 - 35.4
R86	1155 Pennsylvania Avenue	56.0 - 56.0	22.6 - 22.8	56.0 - 56.0	0.0	34.0 - 34.0
R87	1155 Pennsylvania Avenue	56.0 - 56.0	22.5 - 23.8	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	28.4 - 30.6	56.0 - 58.8	0.0	34.0 - 36.8
R89	1260 Cronton Loop	56.0 - 62.4	29.8 - 37.6	56.0 - 62.4	0.0	34.0 - 40.4
R90	1260 Cronton Loop	57.0 - 65.9	30.9 - 49.7	57.0 - 66.0	0.1	35.0 - 44.0
R91	1260 Cronton Loop	56.0 - 62.9	29.5 - 48.9	56.0 - 63.1	0.2	34.0 - 41.1
R92	1260 Cronton Loop	56.0 - 60.3	27.5 - 38.6	56.0 - 60.3	0.0	34.0 - 38.3
R93	1260 Cronton Loop	56.0 - 56.0	26.1 - 38.4	56.0 - 56.1	0.1	34.0 - 34.1
R94	1260 Cronton Loop	56.0 - 61.8	25.7 - 28.9	56.0 - 61.8	0.0	34.0 - 39.8

Source: VHB 2022

Table 19-26 Phase 2A – Fit-Out Construction Noise Levels: Months 67 through 72

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	47.7 - 47.8	65.8 - 66.4	0.1	43.8 - 44.4
R02	10835 Flatlands Avenue	65.0 - 65.4	51.6 - 52.4	65.2 - 65.6	0.2	43.2 - 43.6
R03	10835 Flatlands Avenue	69.1 - 69.7	51.3 - 54.1	69.2 - 69.8	0.1	47.2 - 47.8
R04	Farragut Road Park	71.5 - 71.5	54.8 - 54.8	71.6 - 71.6	0.1	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	61.4 - 61.4	68.3 - 68.3	1.0	41.3 - 41.3
R06	730 Louisiana Avenue	59.3 - 59.3	56.8 - 56.8	61.2 - 61.2	1.9	34.2 - 34.2
R07	730 Louisiana Avenue	56.0 - 56.0	56.4 - 56.4	59.2 - 59.2	3.2	32.2 - 32.2

Table 19-26 Phase 2A – Fit-Out Construction Noise Levels: Months 67 through 72

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R08	730 Louisiana Avenue	58.2 - 58.2	56.6 - 56.6	60.5 - 60.5	2.3	33.5 - 33.5
R09	730 Louisiana Avenue	62.4 - 62.4	43.5 - 43.5	62.5 - 62.5	0.1	35.5 - 35.5
R10	790 Louisiana Avenue	61.3 - 63.1	47.3 - 48.5	61.5 - 63.2	0.2	39.5 - 41.2
R11	508 Louisiana Avenue	59.8 - 61.2	43.0 - 44.6	59.9 - 61.3	0.1	37.9 - 39.3
R12	556 Louisiana Avenue	56.0 - 58.4	38.2 - 40.0	56.1 - 58.5	0.1	34.1 - 36.5
R14	12048 Flatlands Avenue	65.3 - 68.8	70.8 - 73.5	72.9 - 74.1	8.8	50.9 - 52.1
R22	Proposed Building 3	56.0 - 56.0	60.4 - 66.0	61.7 - 66.4	10.4	36.8 - 39.4
R23	Proposed Building 3	60.0 - 61.8	45.4 - 59.3	60.1 - 63.6	2.5	35.9 - 36.6
R24	Proposed Building 3	56.0 - 56.0	58.0 - 62.8	60.1 - 63.6	7.6	33.1 - 36.6
R25	Proposed Building 4	56.0 - 56.0	62.2 - 66.7	63.1 - 67.1	11.1	36.1 - 40.1
R26	Proposed Building 3	58.8 - 64.6	46.9 - 50.2	59.1 - 64.7	0.3	32.5 - 37.7
R27	Proposed Building 4	56.0 - 56.0	50.6 - 54.7	57.1 - 58.4	2.4	30.1 - 31.4
R28	Proposed Building 1	62.9 - 65.9	56.4 - 61.0	63.8 - 67.0	1.3	36.8 - 40.0
R29	Proposed Building 2	56.0 - 57.6	54.5 - 59.6	58.4 - 61.7	4.2	31.4 - 34.7
R30	Proposed Building 1	67.2 - 71.2	41.4 - 52.4	67.2 - 71.2	0.1	37.4 - 39.2
R31	Proposed Building 1	56.0 - 56.0	43.9 - 49.1	56.3 - 56.8	0.8	29.3 - 29.8
R32	Proposed Building 2	56.0 - 56.3	45.2 - 53.3	56.4 - 57.9	1.9	29.4 - 30.9
R33	Proposed Building 2	56.0 - 56.2	42.6 - 52.1	56.2 - 57.5	1.5	29.2 - 30.5
R34	Proposed Building 1	66.3 - 70.4	39.8 - 47.0	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	40.4 - 50.5	59.2 - 64.0	0.2	28.6 - 32.0
R36	Proposed Building 4	56.0 - 57.9	66.6 - 74.3	67.0 - 74.4	18.3	40.0 - 47.4
R37	Proposed Building 4	56.0 - 56.0	46.7 - 51.9	56.5 - 57.4	1.4	29.5 - 30.4
R38	Proposed Building 4	56.0 - 56.0	47.1 - 55.5	56.5 - 58.8	2.8	29.5 - 31.8
R39	12041 Flatlands Avenue	58.3 - 58.3	63.5 - 63.5	64.6 - 64.6	6.3	37.6 - 37.6
R40	12079 Flatlands Avenue	56.0 - 56.0	62.0 - 62.0	63.0 - 63.0	7.0	36.0 - 36.0
R41	12079 Flatlands Avenue	59.5 - 59.5	60.1 - 60.1	62.8 - 62.8	3.3	35.8 - 35.8
R42	1036 Sheffield Avenue	60.5 - 61.7	58.1 - 60.9	62.5 - 64.3	2.6	35.5 - 37.3
R43	1036 Sheffield Avenue	56.0 - 59.2	43.1 - 44.2	56.2 - 59.3	0.2	29.2 - 32.3
R44	1118 Pennsylvania Avenue	64.3 - 64.3	41.2 - 41.2	64.3 - 64.3	0.0	37.3 - 37.3
R45	1143 Flatlands Avenue	63.4 - 63.4	40.1 - 40.1	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	38.3 - 38.3	56.7 - 56.7	0.1	29.7 - 29.7
R47	148 Cozine Avenue	64.3 - 65.1	50.3 - 51.8	64.5 - 65.3	0.2	42.5 - 43.3
R48	148 Cozine Avenue	57.7 - 60.5	49.9 - 50.2	58.4 - 60.9	0.7	36.4 - 38.9
R49	148 Cozine Avenue	56.0 - 56.0	42.9 - 46.7	56.2 - 56.5	0.5	34.2 - 34.5
R50	190 Cozine Avenue	59.0 - 67.2	49.1 - 55.0	59.5 - 67.5	0.5	37.5 - 45.5
R51	1 Vandalia Avenue	58.8 - 64.5	42.0 - 47.8	58.9 - 64.6	0.1	36.9 - 42.6
R52	1 Vandalia Avenue	59.7 - 64.9	45.5 - 57.5	59.9 - 65.6	0.7	37.9 - 43.6
R53	1 Vandalia Avenue	56.0 - 58.1	43.5 - 60.1	56.2 - 62.2	4.1	34.2 - 40.2
R54	1 Vandalia Avenue	56.0 - 61.8	43.0 - 52.9	56.2 - 62.0	0.6	34.2 - 40.0
R55	1 Vandalia Avenue	56.0 - 56.0	46.0 - 46.0	56.4 - 56.4	0.4	34.4 - 34.4

Table 19-26 Phase 2A – Fit-Out Construction Noise Levels: Months 67 through 72

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R56	1 Vandalia Avenue	56.0 - 56.0	44.6 - 44.6	56.3 - 56.3	0.3	34.3 - 34.3
R57	1 Vandalia Avenue	56.0 - 56.8	44.4 - 59.4	56.3 - 61.3	4.5	34.3 - 39.3
R58	1 Vandalia Avenue	56.0 - 56.0	42.1 - 45.1	56.2 - 56.3	0.3	34.2 - 34.3
R59	1 Vandalia Avenue	56.0 - 56.7	44.8 - 57.5	56.3 - 60.1	3.4	34.3 - 38.1
R60	1 Vandalia Avenue	56.0 - 56.0	41.4 - 48.9	56.1 - 56.8	0.8	34.1 - 34.8
R61	1180 Pennsylvania Avenue	56.0 - 57.4	55.4 - 64.7	58.7 - 65.4	8.1	36.7 - 43.4
R62	1180 Pennsylvania Avenue	56.0 - 58.9	46.3 - 55.3	56.5 - 60.4	2.0	34.5 - 38.4
R63	1180 Pennsylvania Avenue	56.0 - 56.0	44.7 - 53.5	56.3 - 57.9	1.9	34.3 - 35.9
R64	1180 Pennsylvania Avenue	56.0 - 57.3	44.0 - 54.3	56.3 - 58.4	2.2	34.3 - 36.4
R65	99 Vandalia Avenue	56.0 - 56.0	41.8 - 51.0	56.2 - 57.2	1.2	34.2 - 35.2
R66	99 Vandalia Avenue	56.0 - 56.0	39.7 - 50.2	56.1 - 57.0	1.0	34.1 - 35.0
R67	99 Vandalia Avenue	56.0 - 57.9	39.1 - 45.4	56.1 - 58.0	0.3	34.1 - 36.0
R68	99 Vandalia Avenue	56.7 - 62.2	39.0 - 39.1	56.8 - 62.2	0.1	34.8 - 40.2
R69	1170 Pennsylvania Avenue	56.2 - 60.4	42.0 - 51.4	56.4 - 60.9	0.5	34.4 - 38.9
R70	1170 Pennsylvania Avenue	56.0 - 56.0	41.5 - 51.8	56.2 - 57.4	1.4	34.2 - 35.4
R71	1170 Pennsylvania Avenue	56.0 - 56.0	42.2 - 49.4	56.2 - 56.9	0.9	34.2 - 34.9
R72	1170 Pennsylvania Avenue	56.0 - 57.3	39.5 - 47.6	56.1 - 57.7	0.5	34.1 - 35.7
R73	1170 Pennsylvania Avenue	59.5 - 62.1	40.5 - 48.5	59.6 - 62.1	0.2	37.6 - 40.1
R74	1155 Pennsylvania Avenue	56.0 - 61.9	39.7 - 48.0	56.1 - 62.1	0.2	34.1 - 40.1
R75	1155 Pennsylvania Avenue	56.0 - 58.8	37.4 - 45.6	56.1 - 59.0	0.2	34.1 - 37.0
R76	1155 Pennsylvania Avenue	56.0 - 56.0	35.8 - 37.1	56.0 - 56.1	0.1	34.0 - 34.1
R77	1155 Pennsylvania Avenue	56.0 - 58.5	35.4 - 35.6	56.0 - 58.5	0.0	34.0 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	37.6 - 47.6	56.1 - 59.3	0.3	34.1 - 37.3
R79	1155 Pennsylvania Avenue	56.0 - 59.4	36.7 - 40.2	56.1 - 59.5	0.1	34.1 - 37.5
R80	1155 Pennsylvania Avenue	56.0 - 56.0	35.9 - 36.1	56.0 - 56.0	0.0	34.0 - 34.0
R81	1155 Pennsylvania Avenue	56.0 - 56.0	35.3 - 35.5	56.0 - 56.0	0.0	34.0 - 34.0
R82	1155 Pennsylvania Avenue	56.0 - 57.8	34.5 - 39.2	56.0 - 57.8	0.1	34.0 - 35.8
R83	1155 Pennsylvania Avenue	56.0 - 58.8	34.2 - 38.1	56.0 - 58.8	0.0	34.0 - 36.8
R84	1155 Pennsylvania Avenue	56.0 - 56.0	33.7 - 33.8	56.0 - 56.0	0.0	34.0 - 34.0
R85	1155 Pennsylvania Avenue	56.0 - 57.4	34.3 - 36.0	56.0 - 57.4	0.0	34.0 - 35.4
R86	1155 Pennsylvania Avenue	56.0 - 56.0	32.9 - 33.1	56.0 - 56.0	0.0	34.0 - 34.0
R87	1155 Pennsylvania Avenue	56.0 - 56.0	32.9 - 33.2	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	36.8 - 39.5	56.1 - 58.9	0.1	34.1 - 36.9
R89	1260 Cronton Loop	56.0 - 62.4	38.5 - 49.3	56.1 - 62.6	0.2	34.1 - 40.6
R90	1260 Cronton Loop	57.0 - 65.9	41.2 - 58.6	57.1 - 66.6	0.8	35.1 - 44.6
R91	1260 Cronton Loop	56.0 - 62.9	38.3 - 56.2	56.1 - 63.7	1.0	34.1 - 41.7
R92	1260 Cronton Loop	56.0 - 60.3	37.2 - 49.0	56.1 - 60.6	0.4	34.1 - 38.6
R93	1260 Cronton Loop	56.0 - 56.0	36.8 - 52.1	56.1 - 57.5	1.5	34.1 - 35.5
R94	1260 Cronton Loop	56.0 - 61.8	36.3 - 46.5	56.0 - 61.8	0.2	34.0 - 39.8

Source: VHB 2022

Table 19-27 Phase 2B/2C – Foundation/Superstructure Construction Noise Levels: Months 73 through 78

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	55.2 - 56.8	66.1 - 66.6	0.5	44.1 - 44.6
R02	10835 Flatlands Avenue	65.0 - 65.4	57.2 - 57.9	65.7 - 66.1	0.7	43.7 - 44.1
R03	10835 Flatlands Avenue	69.1 - 69.7	57.6 - 58.6	69.4 - 70.0	0.3	47.4 - 48.0
R04	Farragut Road Park	71.5 - 71.5	57.0 - 57.0	71.7 - 71.7	0.2	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	66.6 - 66.6	70.0 - 70.0	2.7	43.0 - 43.0
R06	730 Louisiana Avenue	59.3 - 59.3	59.4 - 59.4	62.4 - 62.4	3.1	35.4 - 35.4
R07	730 Louisiana Avenue	56.0 - 56.0	64.9 - 64.9	65.4 - 65.4	9.4	38.4 - 38.4
R08	730 Louisiana Avenue	58.2 - 58.2	65.5 - 65.5	66.2 - 66.2	8.0	39.2 - 39.2
R09	730 Louisiana Avenue	62.4 - 62.4	65.3 - 65.3	67.1 - 67.1	4.7	40.1 - 40.1
R10	790 Louisiana Avenue	61.3 - 63.1	62.2 - 65.5	65.3 - 67.4	4.5	43.3 - 45.4
R11	508 Louisiana Avenue	59.8 - 61.2	58.4 - 61.4	62.2 - 64.3	3.1	40.2 - 42.3
R12	556 Louisiana Avenue	56.0 - 58.4	48.6 - 55.7	56.7 - 60.3	1.9	34.7 - 38.3
R13	Proposed Building 6	56.0 - 59.4	66.6 - 74.3	67.0 - 74.4	15.6	44.6 - 47.4
R14	12048 Flatlands Avenue	65.3 - 68.8	69.2 - 72.5	72.0 - 73.3	8.0	50.0 - 51.3
R15	Proposed Building 6	59.5 - 61.3	48.7 - 52.3	59.8 - 61.8	0.5	33.5 - 34.8
R16	Proposed Building 6	56.0 - 56.0	55.2 - 66.7	58.6 - 67.1	11.1	31.6 - 40.1
R17	Proposed Building 6	56.0 - 56.0	66.4 - 74.7	66.8 - 74.8	18.8	41.9 - 47.8
R18	Proposed Building 5	56.0 - 56.0	55.7 - 67.4	58.9 - 67.7	11.7	31.9 - 40.7
R19	Proposed Building 5	56.0 - 57.6	46.2 - 47.4	56.4 - 58.0	0.5	29.5 - 31.0
R20	Proposed Building 5	56.0 - 56.0	52.8 - 66.3	57.7 - 66.7	10.7	31.9 - 39.7
R21	Proposed Building 5	56.0 - 56.0	46.8 - 50.4	56.5 - 57.1	1.1	29.5 - 30.1
R22	Proposed Building 3	56.0 - 56.0	45.5 - 54.7	56.4 - 58.4	2.4	29.6 - 31.4
R23	Proposed Building 3	60.0 - 61.8	44.8 - 46.1	60.1 - 61.9	0.1	33.5 - 34.9
R24	Proposed Building 3	56.0 - 56.0	45.6 - 57.9	56.4 - 60.1	4.1	29.4 - 33.1
R25	Proposed Building 4	56.0 - 56.0	48.1 - 57.8	56.7 - 60.0	4.0	29.7 - 33.0
R26	Proposed Building 3	58.8 - 64.6	46.4 - 52.3	59.0 - 64.8	0.3	32.5 - 37.8
R27	Proposed Building 4	56.0 - 56.0	47.8 - 51.6	56.6 - 57.3	1.3	29.6 - 30.3
R28	Proposed Building 1	62.9 - 65.9	45.8 - 55.0	63.0 - 66.2	0.3	36.0 - 39.2
R29	Proposed Building 2	56.0 - 57.6	48.1 - 55.8	56.8 - 59.8	2.2	29.8 - 32.8
R30	Proposed Building 1	67.2 - 71.2	40.6 - 42.9	67.2 - 71.2	0.0	37.3 - 39.2
R31	Proposed Building 1	56.0 - 56.0	46.3 - 52.3	56.4 - 57.5	1.5	29.4 - 30.5
R32	Proposed Building 2	56.0 - 56.3	44.3 - 51.8	56.3 - 57.6	1.3	29.3 - 30.6
R33	Proposed Building 2	56.0 - 56.2	44.7 - 51.3	56.3 - 57.4	1.2	29.3 - 30.4
R34	Proposed Building 1	66.3 - 70.4	40.1 - 41.8	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	42.7 - 43.8	59.2 - 63.9	0.1	28.7 - 31.9
R36	Proposed Building 4	56.0 - 57.9	53.6 - 66.7	58.0 - 67.2	9.3	31.0 - 40.2
R37	Proposed Building 4	56.0 - 56.0	48.2 - 53.7	56.7 - 58.0	2.0	29.7 - 31.0
R38	Proposed Building 4	56.0 - 56.0	52.5 - 65.4	57.6 - 65.9	9.9	30.6 - 38.9
R39	12041 Flatlands Avenue	58.3 - 58.3	51.4 - 51.4	59.1 - 59.1	0.8	32.1 - 32.1
R40	12079 Flatlands Avenue	56.0 - 56.0	45.8 - 45.8	56.4 - 56.4	0.4	29.4 - 29.4

Table 19-27 Phase 2B/2C – Foundation/Superstructure Construction Noise Levels: Months 73 through 78

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R41	12079 Flatlands Avenue	59.5 - 59.5	43.1 - 43.1	59.6 - 59.6	0.1	32.6 - 32.6
R42	1036 Sheffield Avenue	60.5 - 61.7	43.4 - 44.6	60.6 - 61.8	0.1	33.6 - 34.8
R43	1036 Sheffield Avenue	56.0 - 59.2	41.1 - 42.4	56.1 - 59.3	0.1	29.1 - 32.3
R44	1118 Pennsylvania Avenue	64.3 - 64.3	38.8 - 38.8	64.3 - 64.3	0.0	37.3 - 37.3
R45	1143 Flatlands Avenue	63.4 - 63.4	37.4 - 37.4	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	36.7 - 36.7	56.6 - 56.6	0.0	29.6 - 29.6
R47	148 Cozine Avenue	64.3 - 65.1	36.5 - 36.6	64.3 - 65.1	0.0	42.3 - 43.1
R48	148 Cozine Avenue	57.7 - 60.5	36.1 - 36.1	57.7 - 60.5	0.0	35.7 - 38.5
R49	148 Cozine Avenue	56.0 - 56.0	37.4 - 37.7	56.1 - 56.1	0.1	34.1 - 34.1
R50	190 Cozine Avenue	59.0 - 67.2	34.7 - 35.9	59.0 - 67.2	0.0	37.0 - 45.2
R51	1 Vandalia Avenue	58.8 - 64.5	61.7 - 69.9	63.5 - 70.7	8.7	41.5 - 48.7
R52	1 Vandalia Avenue	59.7 - 64.9	67.2 - 77.3	67.9 - 77.5	12.9	45.9 - 55.5
R53	1 Vandalia Avenue	56.0 - 58.1	62.3 - 72.9	63.2 - 73.0	15.3	41.2 - 51.0
R54	1 Vandalia Avenue	56.0 - 61.8	53.7 - 55.2	58.0 - 62.7	2.0	36.0 - 40.7
R55	1 Vandalia Avenue	56.0 - 56.0	62.8 - 62.8	63.6 - 63.6	7.6	41.6 - 41.6
R56	1 Vandalia Avenue	56.0 - 56.0	56.4 - 56.4	59.2 - 59.2	3.2	37.2 - 37.2
R57	1 Vandalia Avenue	56.0 - 56.8	49.4 - 65.3	56.9 - 65.9	9.1	34.9 - 43.9
R58	1 Vandalia Avenue	56.0 - 56.0	48.3 - 55.4	56.7 - 58.7	2.7	34.7 - 36.7
R59	1 Vandalia Avenue	56.0 - 56.7	49.1 - 60.5	56.8 - 62.0	5.4	34.8 - 40.0
R60	1 Vandalia Avenue	56.0 - 56.0	46.3 - 50.0	56.4 - 57.0	1.0	34.4 - 35.0
R61	1180 Pennsylvania Avenue	56.0 - 57.4	55.9 - 65.1	59.0 - 65.8	8.5	37.0 - 43.8
R62	1180 Pennsylvania Avenue	56.0 - 58.9	47.9 - 60.8	57.6 - 63.0	4.1	35.6 - 41.0
R63	1180 Pennsylvania Avenue	56.0 - 56.0	52.6 - 60.6	57.6 - 61.9	5.9	35.6 - 39.9
R64	1180 Pennsylvania Avenue	56.0 - 57.3	46.7 - 49.5	56.5 - 57.7	0.8	34.5 - 35.7
R65	99 Vandalia Avenue	56.0 - 56.0	49.5 - 57.6	56.9 - 59.9	3.9	34.9 - 37.9
R66	99 Vandalia Avenue	56.0 - 56.0	48.1 - 56.5	56.7 - 59.3	3.3	34.7 - 37.3
R67	99 Vandalia Avenue	56.0 - 57.9	42.5 - 44.9	56.2 - 58.1	0.3	34.2 - 36.1
R68	99 Vandalia Avenue	56.7 - 62.2	48.6 - 52.0	57.3 - 62.6	0.6	35.3 - 40.6
R69	1170 Pennsylvania Avenue	56.2 - 60.4	42.9 - 51.9	56.5 - 61.0	0.6	34.5 - 39.0
R70	1170 Pennsylvania Avenue	56.0 - 56.0	50.5 - 56.5	57.1 - 59.3	3.3	35.1 - 37.3
R71	1170 Pennsylvania Avenue	56.0 - 56.0	44.3 - 53.3	56.3 - 57.9	1.9	34.3 - 35.9
R72	1170 Pennsylvania Avenue	56.0 - 57.3	44.6 - 52.2	56.3 - 58.5	1.2	34.3 - 36.5
R73	1170 Pennsylvania Avenue	59.5 - 62.1	42.9 - 44.2	59.6 - 62.2	0.1	37.6 - 40.2
R74	1155 Pennsylvania Avenue	56.0 - 61.9	44.0 - 54.7	56.3 - 62.7	0.8	34.3 - 40.7
R75	1155 Pennsylvania Avenue	56.0 - 58.8	40.5 - 51.5	56.1 - 59.5	0.8	34.1 - 37.5
R76	1155 Pennsylvania Avenue	56.0 - 56.0	37.8 - 40.8	56.1 - 56.1	0.1	34.1 - 34.1
R77	1155 Pennsylvania Avenue	56.0 - 58.5	38.1 - 44.4	56.1 - 58.7	0.2	34.1 - 36.7
R78	1155 Pennsylvania Avenue	56.0 - 59.1	40.2 - 52.2	56.1 - 59.9	0.8	34.1 - 37.9
R79	1155 Pennsylvania Avenue	56.0 - 59.4	38.3 - 44.1	56.1 - 59.5	0.1	34.1 - 37.5
R80	1155 Pennsylvania Avenue	56.0 - 56.0	38.2 - 39.4	56.1 - 56.1	0.1	34.1 - 34.1

Table 19-27 Phase 2B/2C – Foundation/Superstructure Construction Noise Levels: Months 73 through 78

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R81	1155 Pennsylvania Avenue	56.0 - 56.0	37.7 - 40.2	56.1 - 56.1	0.1	34.1 - 34.1
R82	1155 Pennsylvania Avenue	56.0 - 57.8	36.5 - 39.6	56.0 - 57.8	0.1	34.0 - 35.8
R83	1155 Pennsylvania Avenue	56.0 - 58.8	36.1 - 38.0	56.0 - 58.8	0.1	34.0 - 36.8
R84	1155 Pennsylvania Avenue	56.0 - 56.0	36.1 - 38.4	56.0 - 56.1	0.1	34.0 - 34.1
R85	1155 Pennsylvania Avenue	56.0 - 57.4	35.4 - 36.4	56.0 - 57.4	0.0	34.0 - 35.4
R86	1155 Pennsylvania Avenue	56.0 - 56.0	36.2 - 39.1	56.0 - 56.1	0.1	34.0 - 34.1
R87	1155 Pennsylvania Avenue	56.0 - 56.0	35.6 - 36.8	56.0 - 56.1	0.1	34.0 - 34.1
R88	1260 Cronton Loop	56.0 - 58.8	43.0 - 51.1	56.2 - 59.5	0.9	34.2 - 37.5
R89	1260 Cronton Loop	56.0 - 62.4	44.5 - 59.3	56.3 - 64.1	1.7	34.3 - 42.1
R90	1260 Cronton Loop	57.0 - 65.9	44.5 - 59.9	57.2 - 66.9	1.0	35.2 - 44.9
R91	1260 Cronton Loop	56.0 - 62.9	42.6 - 58.4	56.2 - 64.2	1.3	34.2 - 42.2
R92	1260 Cronton Loop	56.0 - 60.3	46.1 - 57.2	56.4 - 62.0	1.9	34.4 - 40.0
R93	1260 Cronton Loop	56.0 - 56.0	40.4 - 57.6	56.1 - 59.9	3.9	34.1 - 37.9
R94	1260 Cronton Loop	56.0 - 61.8	39.9 - 45.5	56.1 - 61.9	0.1	34.1 - 39.9
R95	Proposed PAC	56.0 - 56.0	53.5 - 53.5	57.9 - 57.9	0.0	30.9 - 30.9

Source: VHB 2022

Table 19-28 Phase 2B/2C – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 79 through 85

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	55.0 - 56.0	66.1 - 66.6	0.4	44.1 - 44.6
R02	10835 Flatlands Avenue	65.0 - 65.4	56.2 - 57.3	65.6 - 66.0	0.6	43.6 - 44.0
R03	10835 Flatlands Avenue	69.1 - 69.7	57.7 - 59.1	69.4 - 70.1	0.4	47.4 - 48.1
R04	Farragut Road Park	71.5 - 71.5	56.1 - 56.1	71.6 - 71.6	0.1	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	67.5 - 67.5	70.4 - 70.4	3.1	43.4 - 43.4
R06	730 Louisiana Avenue	59.3 - 59.3	64.2 - 64.2	65.4 - 65.4	6.1	38.4 - 38.4
R07	730 Louisiana Avenue	56.0 - 56.0	65.6 - 65.6	66.1 - 66.1	10.1	39.1 - 39.1
R08	730 Louisiana Avenue	58.2 - 58.2	66.0 - 66.0	66.7 - 66.7	8.5	39.7 - 39.7
R09	730 Louisiana Avenue	62.4 - 62.4	64.6 - 64.6	66.6 - 66.6	4.2	39.6 - 39.6
R10	790 Louisiana Avenue	61.3 - 63.1	63.5 - 64.7	65.8 - 66.9	4.5	43.8 - 44.9
R11	508 Louisiana Avenue	59.8 - 61.2	59.4 - 60.4	62.6 - 63.8	2.9	40.6 - 41.8
R12	556 Louisiana Avenue	56.0 - 58.4	46.1 - 55.5	56.4 - 60.2	1.8	34.4 - 38.2
R13	Proposed Building 6	56.0 - 59.4	64.5 - 71.0	65.1 - 71.3	12.9	42.0 - 44.3
R14	12048 Flatlands Avenue	65.3 - 68.8	65.8 - 68.4	70.1 - 70.6	4.8	48.1 - 48.6
R15	Proposed Building 6	59.5 - 61.3	46.2 - 54.1	59.7 - 62.0	0.8	33.2 - 35.0
R16	Proposed Building 6	56.0 - 56.0	53.4 - 64.3	57.9 - 64.9	8.9	30.9 - 37.9
R17	Proposed Building 6	56.0 - 56.0	64.4 - 70.7	65.0 - 70.8	14.8	38.0 - 43.8
R18	Proposed Building 5	56.0 - 56.0	51.1 - 64.1	57.2 - 64.7	8.7	30.2 - 37.7

Table 19-28 Phase 2B/2C – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 79 through 85

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R19	Proposed Building 5	56.0 - 57.6	42.1 - 50.6	56.2 - 57.8	1.1	29.2 - 30.8
R20	Proposed Building 5	56.0 - 56.0	47.1 - 63.3	56.5 - 64.0	8.0	29.7 - 37.0
R21	Proposed Building 5	56.0 - 56.0	43.4 - 49.2	56.2 - 56.8	0.8	29.2 - 29.8
R22	Proposed Building 3	56.0 - 56.0	43.4 - 55.4	56.2 - 58.7	2.7	29.3 - 31.7
R23	Proposed Building 3	60.0 - 61.8	41.1 - 50.0	60.1 - 62.0	0.3	33.5 - 35.0
R24	Proposed Building 3	56.0 - 56.0	44.5 - 55.9	56.3 - 59.0	3.0	29.3 - 32.0
R25	Proposed Building 4	56.0 - 56.0	47.5 - 56.8	56.6 - 59.4	3.4	29.6 - 32.4
R26	Proposed Building 3	58.8 - 64.6	42.5 - 50.2	58.9 - 64.8	0.2	32.3 - 37.8
R27	Proposed Building 4	56.0 - 56.0	44.3 - 53.4	56.3 - 57.9	1.9	29.3 - 30.9
R28	Proposed Building 1	62.9 - 65.9	43.1 - 52.2	62.9 - 66.1	0.2	35.9 - 39.1
R29	Proposed Building 2	56.0 - 57.6	44.3 - 53.3	56.4 - 59.0	1.4	29.4 - 32.0
R30	Proposed Building 1	67.2 - 71.2	36.8 - 48.9	67.2 - 71.2	0.0	37.3 - 39.2
R31	Proposed Building 1	56.0 - 56.0	38.1 - 49.3	56.1 - 56.8	0.8	29.1 - 29.8
R32	Proposed Building 2	56.0 - 56.3	44.1 - 51.2	56.3 - 57.5	1.2	29.3 - 30.5
R33	Proposed Building 2	56.0 - 56.2	41.5 - 51.6	56.2 - 57.5	1.3	29.2 - 30.5
R34	Proposed Building 1	66.3 - 70.4	35.7 - 45.3	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	38.4 - 48.4	59.1 - 63.9	0.1	28.6 - 31.9
R36	Proposed Building 4	56.0 - 57.9	53.0 - 65.4	57.8 - 66.1	8.2	30.8 - 39.1
R37	Proposed Building 4	56.0 - 56.0	47.2 - 54.5	56.5 - 58.3	2.3	29.5 - 31.3
R38	Proposed Building 4	56.0 - 56.0	52.3 - 64.0	57.5 - 64.6	8.6	30.5 - 37.6
R39	12041 Flatlands Avenue	58.3 - 58.3	42.6 - 42.6	58.4 - 58.4	0.1	31.4 - 31.4
R40	12079 Flatlands Avenue	56.0 - 56.0	48.7 - 48.7	56.7 - 56.7	0.7	29.7 - 29.7
R41	12079 Flatlands Avenue	59.5 - 59.5	40.7 - 40.7	59.6 - 59.6	0.1	32.6 - 32.6
R42	1036 Sheffield Avenue	60.5 - 61.7	39.6 - 39.7	60.5 - 61.7	0.0	33.5 - 34.7
R43	1036 Sheffield Avenue	56.0 - 59.2	37.9 - 37.9	56.1 - 59.2	0.1	29.1 - 32.2
R44	1118 Pennsylvania Avenue	64.3 - 64.3	35.1 - 35.1	64.3 - 64.3	0.0	37.3 - 37.3
R45	1143 Flatlands Avenue	63.4 - 63.4	33.0 - 33.0	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	33.3 - 33.3	56.6 - 56.6	0.0	29.6 - 29.6
R47	148 Cozine Avenue	64.3 - 65.1	32.8 - 32.9	64.3 - 65.1	0.0	42.3 - 43.1
R48	148 Cozine Avenue	57.7 - 60.5	31.7 - 31.8	57.7 - 60.5	0.0	35.7 - 38.5
R49	148 Cozine Avenue	56.0 - 56.0	33.0 - 33.4	56.0 - 56.0	0.0	34.0 - 34.0
R50	190 Cozine Avenue	59.0 - 67.2	30.8 - 31.5	59.0 - 67.2	0.0	37.0 - 45.2
R51	1 Vandalia Avenue	58.8 - 64.5	57.7 - 66.4	61.3 - 68.3	5.5	39.3 - 46.3
R52	1 Vandalia Avenue	59.7 - 64.9	63.3 - 69.2	64.9 - 70.5	7.6	42.9 - 48.5
R53	1 Vandalia Avenue	56.0 - 58.1	60.3 - 67.9	61.7 - 68.3	10.2	39.7 - 46.3
R54	1 Vandalia Avenue	56.0 - 61.8	46.1 - 54.1	56.4 - 62.2	0.7	34.4 - 40.2
R55	1 Vandalia Avenue	56.0 - 56.0	60.6 - 60.6	61.9 - 61.9	5.9	39.9 - 39.9
R56	1 Vandalia Avenue	56.0 - 56.0	51.0 - 51.0	57.2 - 57.2	1.2	35.2 - 35.2
R57	1 Vandalia Avenue	56.0 - 56.8	46.1 - 61.9	56.4 - 63.1	6.3	34.4 - 41.1

Table 19-28 Phase 2B/2C – Foundation/Superstructure/Fit-Out Construction Noise Levels: Months 79 through 85

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R58	1 Vandalia Avenue	56.0 - 56.0	42.5 - 52.5	56.2 - 57.6	1.6	34.2 - 35.6
R59	1 Vandalia Avenue	56.0 - 56.7	47.2 - 60.1	56.5 - 61.7	5.0	34.5 - 39.7
R60	1 Vandalia Avenue	56.0 - 56.0	41.4 - 51.6	56.1 - 57.3	1.3	34.1 - 35.3
R61	1180 Pennsylvania Avenue	56.0 - 57.4	56.0 - 65.5	59.0 - 66.1	8.8	37.0 - 44.1
R62	1180 Pennsylvania Avenue	56.0 - 58.9	59.9 - 65.3	62.3 - 66.2	9.2	40.3 - 44.2
R63	1180 Pennsylvania Avenue	56.0 - 56.0	50.0 - 59.0	57.0 - 60.8	4.8	35.0 - 38.8
R64	1180 Pennsylvania Avenue	56.0 - 57.3	43.5 - 54.8	56.2 - 58.9	2.2	34.2 - 36.9
R65	99 Vandalia Avenue	56.0 - 56.0	49.7 - 53.9	56.9 - 58.1	2.1	34.9 - 36.1
R66	99 Vandalia Avenue	56.0 - 56.0	47.8 - 56.1	56.6 - 59.1	3.1	34.6 - 37.1
R67	99 Vandalia Avenue	56.0 - 57.9	39.1 - 47.2	56.1 - 58.1	0.4	34.1 - 36.1
R68	99 Vandalia Avenue	56.7 - 62.2	42.6 - 51.6	56.9 - 62.5	0.4	34.9 - 40.5
R69	1170 Pennsylvania Avenue	56.2 - 60.4	38.9 - 50.3	56.4 - 60.8	0.4	34.4 - 38.8
R70	1170 Pennsylvania Avenue	56.0 - 56.0	52.4 - 57.2	57.6 - 59.7	3.7	35.6 - 37.7
R71	1170 Pennsylvania Avenue	56.0 - 56.0	52.9 - 57.1	57.7 - 59.6	3.6	35.7 - 37.6
R72	1170 Pennsylvania Avenue	56.0 - 57.3	42.6 - 52.0	56.2 - 58.4	1.2	34.2 - 36.4
R73	1170 Pennsylvania Avenue	59.5 - 62.1	38.9 - 50.4	59.5 - 62.2	0.3	37.5 - 40.2
R74	1155 Pennsylvania Avenue	56.0 - 61.9	46.0 - 54.7	56.4 - 62.6	0.8	34.4 - 40.6
R75	1155 Pennsylvania Avenue	56.0 - 58.8	40.5 - 49.2	56.1 - 59.3	0.5	34.1 - 37.3
R76	1155 Pennsylvania Avenue	56.0 - 56.0	33.9 - 48.5	56.0 - 56.7	0.7	34.0 - 34.7
R77	1155 Pennsylvania Avenue	56.0 - 58.5	34.3 - 48.3	56.0 - 58.9	0.4	34.0 - 36.9
R78	1155 Pennsylvania Avenue	56.0 - 59.1	33.4 - 53.7	56.0 - 60.1	1.1	34.0 - 38.1
R79	1155 Pennsylvania Avenue	56.0 - 59.4	33.3 - 43.9	56.0 - 59.5	0.1	34.0 - 37.5
R80	1155 Pennsylvania Avenue	56.0 - 56.0	32.9 - 39.3	56.0 - 56.1	0.1	34.0 - 34.1
R81	1155 Pennsylvania Avenue	56.0 - 56.0	32.5 - 39.5	56.0 - 56.1	0.1	34.0 - 34.1
R82	1155 Pennsylvania Avenue	56.0 - 57.8	31.4 - 38.2	56.0 - 57.8	0.0	34.0 - 35.8
R83	1155 Pennsylvania Avenue	56.0 - 58.8	30.9 - 36.6	56.0 - 58.8	0.0	34.0 - 36.8
R84	1155 Pennsylvania Avenue	56.0 - 56.0	30.9 - 37.6	56.0 - 56.1	0.1	34.0 - 34.1
R85	1155 Pennsylvania Avenue	56.0 - 57.4	30.3 - 31.6	56.0 - 57.4	0.0	34.0 - 35.4
R86	1155 Pennsylvania Avenue	56.0 - 56.0	31.3 - 37.2	56.0 - 56.1	0.1	34.0 - 34.1
R87	1155 Pennsylvania Avenue	56.0 - 56.0	30.0 - 34.4	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	38.8 - 47.9	56.1 - 59.1	0.6	34.1 - 37.1
R89	1260 Cronton Loop	56.0 - 62.4	49.1 - 57.1	56.8 - 63.5	1.5	34.8 - 41.5
R90	1260 Cronton Loop	57.0 - 65.9	44.7 - 57.9	57.2 - 66.5	0.6	35.2 - 44.5
R91	1260 Cronton Loop	56.0 - 62.9	37.7 - 55.9	56.1 - 63.7	0.8	34.1 - 41.7
R92	1260 Cronton Loop	56.0 - 60.3	36.6 - 54.8	56.0 - 61.4	1.1	34.0 - 39.4
R93	1260 Cronton Loop	56.0 - 56.0	42.3 - 55.6	56.2 - 58.8	2.8	34.2 - 36.8
R94	1260 Cronton Loop	56.0 - 61.8	35.3 - 45.3	56.0 - 61.8	0.1	34.0 - 39.8
R95	Proposed PAC	56.0 - 56.0	54.9 - 54.9	58.5 - 58.5	0.0	31.5 - 31.5

Source: VHB 2022.

Table 19-29 Phase 2B/2C – Superstructure/Fit-Out Construction Noise Levels: Months 86 through 89

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	47.4 - 48.1	65.8 - 66.4	0.1	43.8 - 44.4
R02	10835 Flatlands Avenue	65.0 - 65.4	48.8 - 49.3	65.1 - 65.5	0.1	43.1 - 43.5
R03	10835 Flatlands Avenue	69.1 - 69.7	49.3 - 50.0	69.1 - 69.7	0.0	47.1 - 47.7
R04	Farragut Road Park	71.5 - 71.5	46.5 - 46.5	71.5 - 71.5	0.0	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	56.9 - 56.9	67.7 - 67.7	0.4	40.7 - 40.7
R06	730 Louisiana Avenue	59.3 - 59.3	53.1 - 53.1	60.2 - 60.2	0.9	33.2 - 33.2
R07	730 Louisiana Avenue	56.0 - 56.0	58.2 - 58.2	60.2 - 60.2	4.2	33.2 - 33.2
R08	730 Louisiana Avenue	58.2 - 58.2	58.9 - 58.9	61.6 - 61.6	3.4	34.6 - 34.6
R09	730 Louisiana Avenue	62.4 - 62.4	60.7 - 60.7	64.6 - 64.6	2.2	37.6 - 37.6
R10	790 Louisiana Avenue	61.3 - 63.1	59.6 - 61.8	63.5 - 65.4	2.5	41.5 - 43.4
R11	508 Louisiana Avenue	59.8 - 61.2	55.3 - 58.0	61.3 - 62.7	2.2	39.3 - 40.7
R12	556 Louisiana Avenue	56.0 - 58.4	39.7 - 46.3	56.1 - 58.7	0.3	34.1 - 36.7
R13	Proposed Building 6	56.0 - 59.4	44.2 - 49.5	56.3 - 59.7	0.5	30.4 - 32.7
R14	12048 Flatlands Avenue	65.3 - 68.8	39.9 - 40.2	65.3 - 68.8	0.0	43.3 - 46.8
R15	Proposed Building 6	59.5 - 61.3	33.8 - 37.9	59.5 - 61.3	0.0	33.0 - 34.3
R16	Proposed Building 6	56.0 - 56.0	34.3 - 39.8	56.0 - 56.1	0.1	29.0 - 29.1
R17	Proposed Building 6	56.0 - 56.0	38.9 - 49.7	56.1 - 56.9	0.9	29.1 - 29.9
R18	Proposed Building 5	56.0 - 56.0	34.7 - 44.3	56.0 - 56.3	0.3	29.0 - 29.3
R19	Proposed Building 5	56.0 - 57.6	29.9 - 34.1	56.0 - 57.6	0.0	29.0 - 30.6
R20	Proposed Building 5	56.0 - 56.0	33.7 - 42.6	56.0 - 56.2	0.2	29.0 - 29.2
R21	Proposed Building 5	56.0 - 56.0	30.4 - 31.9	56.0 - 56.0	0.0	29.0 - 29.0
R22	Proposed Building 3	56.0 - 56.0	30.4 - 42.1	56.0 - 56.2	0.2	29.0 - 29.2
R23	Proposed Building 3	60.0 - 61.8	28.8 - 35.7	60.0 - 61.8	0.0	33.4 - 34.8
R24	Proposed Building 3	56.0 - 56.0	30.3 - 43.0	56.0 - 56.2	0.2	29.0 - 29.2
R25	Proposed Building 4	56.0 - 56.0	32.7 - 41.0	56.0 - 56.1	0.1	29.0 - 29.1
R26	Proposed Building 3	58.8 - 64.6	31.2 - 36.8	58.8 - 64.6	0.0	32.2 - 37.6
R27	Proposed Building 4	56.0 - 56.0	33.2 - 40.8	56.0 - 56.1	0.1	29.0 - 29.1
R28	Proposed Building 1	62.9 - 65.9	30.5 - 36.2	62.9 - 65.9	0.0	35.9 - 38.9
R29	Proposed Building 2	56.0 - 57.6	32.7 - 40.7	56.0 - 57.7	0.1	29.0 - 30.7
R30	Proposed Building 1	67.2 - 71.2	24.6 - 31.2	67.2 - 71.2	0.0	37.3 - 39.2
R31	Proposed Building 1	56.0 - 56.0	28.5 - 38.7	56.0 - 56.1	0.1	29.0 - 29.1
R32	Proposed Building 2	56.0 - 56.3	27.0 - 33.3	56.0 - 56.3	0.0	29.0 - 29.3
R33	Proposed Building 2	56.0 - 56.2	29.4 - 38.7	56.0 - 56.2	0.1	29.0 - 29.2
R34	Proposed Building 1	66.3 - 70.4	24.1 - 31.7	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	25.9 - 32.5	59.1 - 63.9	0.0	28.6 - 31.9
R36	Proposed Building 4	56.0 - 57.9	36.9 - 47.1	56.1 - 58.1	0.4	29.1 - 31.1
R37	Proposed Building 4	56.0 - 56.0	32.9 - 42.0	56.0 - 56.2	0.2	29.0 - 29.2
R38	Proposed Building 4	56.0 - 56.0	35.8 - 47.1	56.0 - 56.5	0.5	29.0 - 29.5
R39	12041 Flatlands Avenue	58.3 - 58.3	35.7 - 35.7	58.3 - 58.3	0.0	31.3 - 31.3
R40	12079 Flatlands Avenue	56.0 - 56.0	30.2 - 30.2	56.0 - 56.0	0.0	29.0 - 29.0

Table 19-29 Phase 2B/2C – Superstructure/Fit-Out Construction Noise Levels: Months 86 through 89

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R41	12079 Flatlands Avenue	59.5 - 59.5	26.9 - 26.9	59.5 - 59.5	0.0	32.5 - 32.5
R42	1036 Sheffield Avenue	60.5 - 61.7	27.1 - 27.1	60.5 - 61.7	0.0	33.5 - 34.7
R43	1036 Sheffield Avenue	56.0 - 59.2	26.1 - 26.3	56.0 - 59.2	0.0	29.0 - 32.2
R44	1118 Pennsylvania Avenue	64.3 - 64.3	22.7 - 22.7	64.3 - 64.3	0.0	37.3 - 37.3
R45	1143 Flatlands Avenue	63.4 - 63.4	21.7 - 21.7	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	21.1 - 21.1	56.6 - 56.6	0.0	29.6 - 29.6
R47	148 Cozine Avenue	64.3 - 65.1	21.1 - 21.3	64.3 - 65.1	0.0	42.3 - 43.1
R48	148 Cozine Avenue	57.7 - 60.5	20.3 - 20.3	57.7 - 60.5	0.0	35.7 - 38.5
R49	148 Cozine Avenue	56.0 - 56.0	21.6 - 22.1	56.0 - 56.0	0.0	34.0 - 34.0
R50	190 Cozine Avenue	59.0 - 67.2	19.4 - 19.6	59.0 - 67.2	0.0	37.0 - 45.2
R51	1 Vandalia Avenue	58.8 - 64.5	49.9 - 60.4	61.0 - 65.5	2.2	39.0 - 43.5
R52	1 Vandalia Avenue	59.7 - 64.9	43.1 - 51.4	60.0 - 64.9	0.3	38.0 - 42.9
R53	1 Vandalia Avenue	56.0 - 58.1	38.7 - 43.6	56.1 - 58.1	0.2	34.1 - 36.1
R54	1 Vandalia Avenue	56.0 - 61.8	34.6 - 42.4	56.0 - 61.8	0.1	34.0 - 39.8
R55	1 Vandalia Avenue	56.0 - 56.0	44.0 - 44.0	56.3 - 56.3	0.3	34.3 - 34.3
R56	1 Vandalia Avenue	56.0 - 56.0	36.0 - 36.0	56.0 - 56.0	0.0	34.0 - 34.0
R57	1 Vandalia Avenue	56.0 - 56.8	32.7 - 44.2	56.0 - 56.9	0.3	34.0 - 34.9
R58	1 Vandalia Avenue	56.0 - 56.0	31.8 - 44.3	56.0 - 56.3	0.3	34.0 - 34.3
R59	1 Vandalia Avenue	56.0 - 56.7	29.6 - 41.2	56.0 - 56.8	0.1	34.0 - 34.8
R60	1 Vandalia Avenue	56.0 - 56.0	29.9 - 31.8	56.0 - 56.0	0.0	34.0 - 34.0
R61	1180 Pennsylvania Avenue	56.0 - 57.4	34.9 - 43.2	56.0 - 57.6	0.2	34.0 - 35.6
R62	1180 Pennsylvania Avenue	56.0 - 58.9	33.7 - 39.0	56.0 - 58.9	0.0	34.0 - 36.9
R63	1180 Pennsylvania Avenue	56.0 - 56.0	31.8 - 42.6	56.0 - 56.2	0.2	34.0 - 34.2
R64	1180 Pennsylvania Avenue	56.0 - 57.3	29.4 - 32.6	56.0 - 57.3	0.0	34.0 - 35.3
R65	99 Vandalia Avenue	56.0 - 56.0	28.1 - 31.7	56.0 - 56.0	0.0	34.0 - 34.0
R66	99 Vandalia Avenue	56.0 - 56.0	26.9 - 35.7	56.0 - 56.0	0.0	34.0 - 34.0
R67	99 Vandalia Avenue	56.0 - 57.9	26.9 - 34.8	56.0 - 57.9	0.0	34.0 - 35.9
R68	99 Vandalia Avenue	56.7 - 62.2	26.8 - 28.7	56.7 - 62.2	0.0	34.7 - 40.2
R69	1170 Pennsylvania Avenue	56.2 - 60.4	27.5 - 37.4	56.2 - 60.4	0.0	34.2 - 38.4
R70	1170 Pennsylvania Avenue	56.0 - 56.0	31.5 - 40.8	56.0 - 56.1	0.1	34.0 - 34.1
R71	1170 Pennsylvania Avenue	56.0 - 56.0	29.7 - 32.5	56.0 - 56.0	0.0	34.0 - 34.0
R72	1170 Pennsylvania Avenue	56.0 - 57.3	28.1 - 31.4	56.0 - 57.3	0.0	34.0 - 35.3
R73	1170 Pennsylvania Avenue	59.5 - 62.1	25.5 - 29.3	59.5 - 62.1	0.0	37.5 - 40.1
R74	1155 Pennsylvania Avenue	56.0 - 61.9	26.9 - 31.8	56.0 - 61.9	0.0	34.0 - 39.9
R75	1155 Pennsylvania Avenue	56.0 - 58.8	22.4 - 28.9	56.0 - 58.8	0.0	34.0 - 36.8
R76	1155 Pennsylvania Avenue	56.0 - 56.0	21.7 - 25.5	56.0 - 56.0	0.0	34.0 - 34.0
R77	1155 Pennsylvania Avenue	56.0 - 58.5	22.5 - 27.6	56.0 - 58.5	0.0	34.0 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	23.9 - 38.5	56.0 - 59.1	0.0	34.0 - 37.1
R79	1155 Pennsylvania Avenue	56.0 - 59.4	22.0 - 25.5	56.0 - 59.4	0.0	34.0 - 37.4
R80	1155 Pennsylvania Avenue	56.0 - 56.0	22.3 - 26.1	56.0 - 56.0	0.0	34.0 - 34.0

Table 19-29 Phase 2B/2C – Superstructure/Fit-Out Construction Noise Levels: Months 86 through 89

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R81	1155 Pennsylvania Avenue	56.0 - 56.0	22.0 - 26.0	56.0 - 56.0	0.0	34.0 - 34.0
R82	1155 Pennsylvania Avenue	56.0 - 57.8	21.0 - 25.8	56.0 - 57.8	0.0	34.0 - 35.8
R83	1155 Pennsylvania Avenue	56.0 - 58.8	20.1 - 23.8	56.0 - 58.8	0.0	34.0 - 36.8
R84	1155 Pennsylvania Avenue	56.0 - 56.0	20.8 - 24.0	56.0 - 56.0	0.0	34.0 - 34.0
R85	1155 Pennsylvania Avenue	56.0 - 57.4	19.5 - 23.0	56.0 - 57.4	0.0	34.0 - 35.4
R86	1155 Pennsylvania Avenue	56.0 - 56.0	20.9 - 32.2	56.0 - 56.0	0.0	34.0 - 34.0
R87	1155 Pennsylvania Avenue	56.0 - 56.0	20.4 - 32.3	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	36.8 - 37.9	56.1 - 58.8	0.1	34.1 - 36.8
R89	1260 Cronton Loop	56.0 - 62.4	44.1 - 51.1	56.8 - 62.5	0.9	34.8 - 40.5
R90	1260 Cronton Loop	57.0 - 65.9	34.0 - 49.3	57.3 - 65.9	0.3	35.3 - 43.9
R91	1260 Cronton Loop	56.0 - 62.9	27.2 - 39.9	56.0 - 62.9	0.0	34.0 - 40.9
R92	1260 Cronton Loop	56.0 - 60.3	25.9 - 38.2	56.0 - 60.3	0.0	34.0 - 38.3
R93	1260 Cronton Loop	56.0 - 56.0	25.7 - 35.6	56.0 - 56.0	0.0	34.0 - 34.0
R94	1260 Cronton Loop	56.0 - 61.8	24.5 - 37.3	56.0 - 61.8	0.0	34.0 - 39.8
R95	Proposed PAC	56.0 - 56.0	35.3 - 35.3	0.0 - 0.0	0.0	29.0 - 29.0

Source: VHB 2022

Table 19-30 Phase 2B/2C – Fit-Out Construction Noise Levels: Months 90 through 96

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R01	10835 Flatlands Avenue	65.7 - 66.3	51.0 - 51.0	65.8 - 66.4	0.1	43.8 - 44.4
R02	10835 Flatlands Avenue	65.0 - 65.4	52.1 - 52.1	65.2 - 65.6	0.2	43.2 - 43.6
R03	10835 Flatlands Avenue	69.1 - 69.7	49.3 - 51.3	69.1 - 69.8	0.1	47.1 - 47.8
R04	Farragut Road Park	71.5 - 71.5	44.5 - 44.5	71.5 - 71.5	0.0	0.0 - 0.0
R05	11110 Flatlands Avenue	67.3 - 67.3	59.0 - 59.0	67.9 - 67.9	0.6	40.9 - 40.9
R06	730 Louisiana Avenue	59.3 - 59.3	61.9 - 61.9	63.8 - 63.8	4.5	36.8 - 36.8
R07	730 Louisiana Avenue	56.0 - 56.0	61.6 - 61.6	62.7 - 62.7	6.7	35.7 - 35.7
R08	730 Louisiana Avenue	58.2 - 58.2	62.9 - 62.9	64.2 - 64.2	6.0	37.2 - 37.2
R09	730 Louisiana Avenue	62.4 - 62.4	59.4 - 59.4	64.2 - 64.2	1.8	37.2 - 37.2
R10	790 Louisiana Avenue	61.3 - 63.1	46.1 - 48.6	61.5 - 63.2	0.2	39.5 - 41.2
R11	508 Louisiana Avenue	59.8 - 61.2	42.6 - 45.9	59.9 - 61.3	0.1	37.9 - 39.3
R12	556 Louisiana Avenue	56.0 - 58.4	39.9 - 42.3	56.1 - 58.5	0.1	34.1 - 36.5
R13	Proposed Building 6	56.0 - 59.4	58.9 - 66.2	60.7 - 67.0	7.8	37.5 - 40.0
R14	12048 Flatlands Avenue	65.3 - 68.8	59.1 - 60.4	66.5 - 69.2	1.2	44.5 - 47.2
R15	Proposed Building 6	59.5 - 61.3	45.5 - 58.3	59.7 - 63.0	1.8	33.2 - 36.0
R16	Proposed Building 6	56.0 - 56.0	45.6 - 58.5	56.4 - 60.4	4.4	29.4 - 33.4
R17	Proposed Building 6	56.0 - 56.0	51.1 - 68.2	57.2 - 68.5	12.5	30.8 - 41.5
R18	Proposed Building 5	56.0 - 56.0	48.2 - 63.8	56.7 - 64.5	8.5	29.7 - 37.5
R19	Proposed Building 5	56.0 - 57.6	44.5 - 55.4	56.3 - 59.6	2.2	29.3 - 32.6

Table 19-30 Phase 2B/2C – Fit-Out Construction Noise Levels: Months 90 through 96

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R20	Proposed Building 5	56.0 - 56.0	48.0 - 66.3	56.6 - 66.7	10.7	30.2 - 39.7
R21	Proposed Building 5	56.0 - 56.0	44.2 - 55.0	56.3 - 58.5	2.5	29.3 - 31.5
R22	Proposed Building 3	56.0 - 56.0	45.1 - 58.4	56.3 - 60.4	4.4	29.4 - 33.4
R23	Proposed Building 3	60.0 - 61.8	42.3 - 52.3	60.1 - 62.2	0.5	33.5 - 35.2
R24	Proposed Building 3	56.0 - 56.0	45.6 - 57.7	56.4 - 59.9	3.9	29.4 - 32.9
R25	Proposed Building 4	56.0 - 56.0	50.5 - 58.6	57.1 - 60.5	4.5	30.1 - 33.5
R26	Proposed Building 3	58.8 - 64.6	42.9 - 54.0	58.9 - 64.9	0.4	32.3 - 37.9
R27	Proposed Building 4	56.0 - 56.0	45.2 - 54.3	56.3 - 58.2	2.2	29.3 - 31.2
R28	Proposed Building 1	62.9 - 65.9	43.4 - 55.2	62.9 - 66.2	0.4	35.9 - 39.2
R29	Proposed Building 2	56.0 - 57.6	45.5 - 55.6	56.4 - 59.7	2.1	29.4 - 32.7
R30	Proposed Building 1	67.2 - 71.2	38.6 - 52.0	67.2 - 71.3	0.1	37.3 - 39.3
R31	Proposed Building 1	56.0 - 56.0	39.3 - 51.2	56.1 - 57.2	1.2	29.1 - 30.2
R32	Proposed Building 2	56.0 - 56.3	40.2 - 49.9	56.1 - 57.2	0.9	29.1 - 30.2
R33	Proposed Building 2	56.0 - 56.2	42.3 - 54.4	56.2 - 58.4	2.2	29.2 - 31.4
R34	Proposed Building 1	66.3 - 70.4	37.2 - 47.2	66.3 - 70.4	0.0	35.6 - 38.4
R35	Proposed Building 2	59.1 - 63.9	38.6 - 50.6	59.1 - 64.0	0.2	28.6 - 32.0
R36	Proposed Building 4	56.0 - 57.9	55.5 - 68.2	58.8 - 68.6	10.7	31.8 - 41.6
R37	Proposed Building 4	56.0 - 56.0	46.4 - 57.3	56.5 - 59.7	3.7	29.5 - 32.7
R38	Proposed Building 4	56.0 - 56.0	50.2 - 66.6	57.0 - 67.0	11.0	30.0 - 40.0
R39	12041 Flatlands Avenue	58.3 - 58.3	43.3 - 43.3	58.4 - 58.4	0.1	31.4 - 31.4
R40	12079 Flatlands Avenue	56.0 - 56.0	43.5 - 43.5	56.2 - 56.2	0.2	29.2 - 29.2
R41	12079 Flatlands Avenue	59.5 - 59.5	41.0 - 41.0	59.6 - 59.6	0.1	32.6 - 32.6
R42	1036 Sheffield Avenue	60.5 - 61.7	41.5 - 41.7	60.6 - 61.7	0.1	33.6 - 34.7
R43	1036 Sheffield Avenue	56.0 - 59.2	40.0 - 40.0	56.1 - 59.3	0.1	29.1 - 32.3
R44	1118 Pennsylvania Avenue	64.3 - 64.3	36.2 - 36.2	64.3 - 64.3	0.0	37.3 - 37.3
R45	1143 Flatlands Avenue	63.4 - 63.4	34.4 - 34.4	63.4 - 63.4	0.0	36.4 - 36.4
R46	1111 Pennsylvania Avenue	56.6 - 56.6	34.4 - 34.4	56.6 - 56.6	0.0	29.6 - 29.6
R47	148 Cozine Avenue	64.3 - 65.1	33.7 - 33.8	64.3 - 65.1	0.0	42.3 - 43.1
R48	148 Cozine Avenue	57.7 - 60.5	33.4 - 33.4	57.7 - 60.5	0.0	35.7 - 38.5
R49	148 Cozine Avenue	56.0 - 56.0	34.0 - 34.8	56.0 - 56.0	0.0	34.0 - 34.0
R50	190 Cozine Avenue	59.0 - 67.2	31.3 - 32.2	59.0 - 67.2	0.0	37.0 - 45.2
R51	1 Vandalia Avenue	58.8 - 64.5	45.6 - 49.6	59.0 - 64.6	0.2	37.0 - 42.6
R52	1 Vandalia Avenue	59.7 - 64.9	45.5 - 51.3	59.9 - 65.1	0.2	37.9 - 43.1
R53	1 Vandalia Avenue	56.0 - 58.1	45.7 - 52.3	56.4 - 58.8	1.3	34.4 - 36.8
R54	1 Vandalia Avenue	56.0 - 61.8	43.5 - 52.6	56.2 - 62.2	0.5	34.2 - 40.2
R55	1 Vandalia Avenue	56.0 - 56.0	46.5 - 46.5	56.5 - 56.5	0.5	34.5 - 34.5
R56	1 Vandalia Avenue	56.0 - 56.0	45.8 - 45.8	56.4 - 56.4	0.4	34.4 - 34.4
R57	1 Vandalia Avenue	56.0 - 56.8	41.7 - 47.9	56.2 - 56.9	0.6	34.2 - 34.9
R58	1 Vandalia Avenue	56.0 - 56.0	40.7 - 47.0	56.1 - 56.5	0.5	34.1 - 34.5
R59	1 Vandalia Avenue	56.0 - 56.7	40.6 - 48.8	56.1 - 56.9	0.8	34.1 - 34.9

Table 19-30 Phase 2B/2C – Fit-Out Construction Noise Levels: Months 90 through 96

Receptor	Location	Existing 8-9 AM Sound Level (dBA, L_{eq})	Construction Sound Level (dBA, L_{eq})	Future Sound Level (dBA, L_{eq})	Maximum Increase (dBA)	Interior Sound Level (dBA, L_{10})
R60	1 Vandalia Avenue	56.0 - 56.0	39.1 - 48.8	56.1 - 56.8	0.8	34.1 - 34.8
R61	1180 Pennsylvania Avenue	56.0 - 57.4	52.4 - 57.4	57.6 - 59.9	3.7	35.6 - 37.9
R62	1180 Pennsylvania Avenue	56.0 - 58.9	58.8 - 64.3	61.7 - 65.4	6.7	39.7 - 43.4
R63	1180 Pennsylvania Avenue	56.0 - 56.0	38.9 - 43.9	56.1 - 56.3	0.3	34.1 - 34.3
R64	1180 Pennsylvania Avenue	56.0 - 57.3	40.8 - 49.5	56.1 - 57.5	0.8	34.1 - 35.5
R65	99 Vandalia Avenue	56.0 - 56.0	38.2 - 39.9	56.1 - 56.1	0.1	34.1 - 34.1
R66	99 Vandalia Avenue	56.0 - 56.0	38.2 - 39.8	56.1 - 56.1	0.1	34.1 - 34.1
R67	99 Vandalia Avenue	56.0 - 57.9	35.7 - 46.4	56.0 - 57.9	0.3	34.0 - 35.9
R68	99 Vandalia Avenue	56.7 - 62.2	36.7 - 42.3	56.7 - 62.2	0.0	34.7 - 40.2
R69	1170 Pennsylvania Avenue	56.2 - 60.4	39.3 - 50.7	56.3 - 60.8	0.4	34.3 - 38.8
R70	1170 Pennsylvania Avenue	56.0 - 56.0	53.8 - 60.1	58.0 - 61.5	5.5	36.0 - 39.5
R71	1170 Pennsylvania Avenue	56.0 - 56.0	49.8 - 56.9	56.9 - 59.5	3.5	34.9 - 37.5
R72	1170 Pennsylvania Avenue	56.0 - 57.3	34.3 - 43.9	56.0 - 57.3	0.2	34.0 - 35.3
R73	1170 Pennsylvania Avenue	59.5 - 62.1	35.9 - 38.5	59.5 - 62.1	0.0	37.5 - 40.1
R74	1155 Pennsylvania Avenue	56.0 - 61.9	38.1 - 46.2	56.1 - 61.9	0.2	34.1 - 39.9
R75	1155 Pennsylvania Avenue	56.0 - 58.8	31.9 - 42.6	56.0 - 58.9	0.1	34.0 - 36.9
R76	1155 Pennsylvania Avenue	56.0 - 56.0	31.1 - 32.4	56.0 - 56.0	0.0	34.0 - 34.0
R77	1155 Pennsylvania Avenue	56.0 - 58.5	31.3 - 32.0	56.0 - 58.5	0.0	34.0 - 36.5
R78	1155 Pennsylvania Avenue	56.0 - 59.1	33.4 - 52.7	56.0 - 60.0	0.9	34.0 - 38.0
R79	1155 Pennsylvania Avenue	56.0 - 59.4	33.3 - 45.8	56.0 - 59.6	0.2	34.0 - 37.6
R80	1155 Pennsylvania Avenue	56.0 - 56.0	31.4 - 33.0	56.0 - 56.0	0.0	34.0 - 34.0
R81	1155 Pennsylvania Avenue	56.0 - 56.0	32.0 - 45.2	56.0 - 56.3	0.3	34.0 - 34.3
R82	1155 Pennsylvania Avenue	56.0 - 57.8	31.7 - 44.4	56.0 - 57.9	0.2	34.0 - 35.9
R83	1155 Pennsylvania Avenue	56.0 - 58.8	31.3 - 43.7	56.0 - 58.9	0.1	34.0 - 36.9
R84	1155 Pennsylvania Avenue	56.0 - 56.0	30.8 - 44.0	56.0 - 56.3	0.3	34.0 - 34.3
R85	1155 Pennsylvania Avenue	56.0 - 57.4	30.6 - 42.8	56.0 - 57.5	0.2	34.0 - 35.5
R86	1155 Pennsylvania Avenue	56.0 - 56.0	30.4 - 36.7	56.0 - 56.1	0.1	34.0 - 34.1
R87	1155 Pennsylvania Avenue	56.0 - 56.0	29.1 - 29.9	56.0 - 56.0	0.0	34.0 - 34.0
R88	1260 Cronton Loop	56.0 - 58.8	38.7 - 44.4	56.1 - 58.9	0.3	34.1 - 36.9
R89	1260 Cronton Loop	56.0 - 62.4	39.6 - 49.3	56.1 - 62.6	0.4	34.1 - 40.6
R90	1260 Cronton Loop	57.0 - 65.9	38.9 - 51.3	57.1 - 66.0	0.2	35.1 - 44.0
R91	1260 Cronton Loop	56.0 - 62.9	35.8 - 36.6	56.0 - 62.9	0.0	34.0 - 40.9
R92	1260 Cronton Loop	56.0 - 60.3	33.6 - 39.2	56.0 - 60.3	0.1	34.0 - 38.3
R93	1260 Cronton Loop	56.0 - 56.0	33.1 - 37.6	56.0 - 56.1	0.1	34.0 - 34.1
R94	1260 Cronton Loop	56.0 - 61.8	31.9 - 33.0	56.0 - 61.8	0.0	34.0 - 39.8
R95	Proposed PAC	56.0 - 56.0	48.2 - 48.2	0.0 - 0.0	0.0	29.7 - 29.7

Source: VHB 2022

Construction noise levels would not exceed 85 dBA (L_{eq}) at any receptor location for any phase of construction; therefore, construction noise would not cause a significant adverse impact due to the Public Health noise criterion.

The following summarizes the results of the construction noise assessment, as shown in **Table 19-15** through **Table 19-30** at the nearest receptors to the Proposed Project by phase of construction.

Phase 1A – Construction of Proposed Buildings 1 and 2

Construction for Phase 1A including proposed buildings 1 and 2 is scheduled to last approximately 23 months. Since none of the proposed buildings would be completed during Phase 1A, receptors include only the existing receptors located adjacent to the Development Site.

- Between months 1 and 4, when foundation installation construction activities would occur, the maximum exterior sound levels would range from 56.1 to 80.9 dBA (L_{eq}), which would be an increase of up to 22.4 dBA over existing levels. Construction noise levels would increase by 20 dBA or more at two building facades, between 15 and 20 dBA at six building facades, and between 10 and 15 dBA at eleven building facades.
- Between months 5 and 12, when foundation, superstructure, and exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 71.8 dBA (L_{eq}), which would be an increase of up to 14.9 dBA over existing levels. Construction noise levels would increase between 10 and 15 dBA at seven building facades.
- Between months 13 and 17, when exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 71.5 dBA (L_{eq}), which would be an increase of up to 3.0 dBA over existing levels. Construction noise levels would not increase by 10 dBA or more at any building facades.
- Between months 18 and 23, when exterior and interior fit-out construction activities would occur, maximum exterior sound levels would range from 56.0 to 71.6 dBA (L_{eq}), which would be an increase of up to 11.7 dBA over existing levels. Construction noise levels would increase by 10 dBA or more at three building facades.

Phase 1B – Construction of Proposed Buildings 3, 4, and CCC Garage

Construction for Phase 1B, including Building 3, 4 and the CCC Garage, is scheduled to last approximately 23 months. Construction associated with Buildings 1 and 2 is expected to be complete, with the buildings potentially occupied, at the start of construction for Phase 1B. Receptors include the existing receptors as well as new receptors associated with the Phase 1A, Buildings 1 and 2.

- Between months 25 and 28, when foundation installation construction activities would occur, the maximum exterior sound levels would range from 56.2 to 83.2 dBA (L_{eq}), which would be an increase of up to 26.1 dBA over existing levels. Construction noise levels would increase by 20 dBA or more at two building facades, between 15 and 20 dBA at eight building facades, and between 10 and 15 dBA at 13 building facades.
- Between months 29 and 36, when foundation, superstructure, and exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would

range from 56.1 to 78.3 dBA (L_{eq}), which would be an increase of up to 22.0 dBA over existing levels. Construction noise levels would increase by 20 dBA or more at three building facades, between 15 and 20 dBA at eight building facades, and between 10 and 15 dBA at 11 building facades.

- Between months 37 and 43, when exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 75.0 dBA (L_{eq}), which would be an increase of up to 13.2 dBA over existing levels. Construction noise levels would increase by 10 dBA or more at four building facades.
- Between months 44 and 47, when exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 72.6 dBA (L_{eq}), which would be an increase of up to 15.9 dBA over existing levels. Construction noise levels would increase by 15 dBA or more at one building facades and between 10 and 15 dBA at two building facades.

Phase 2A – Construction of Proposed Buildings 5, 6, and Performing Arts Center

Construction for Phase 2A, including Buildings 5, 6, and the PAC, is scheduled to last approximately 24 months. Construction associated with Buildings 1, 2, 3, and 4 is expected to be complete, with the buildings potentially occupied, at the start of construction for Phase 2A. Receptors include the existing receptors within the Project Study Area as well as new receptors associated with the Phase 1A, Buildings 1 and 2, and Phase 1B, Buildings 3 and 4.

- Between months 49 and 55, when foundation installation and superstructure construction activities would occur, the maximum exterior sound levels would range from 56.0 to 76.6 dBA (L_{eq}), which would be an increase of up to 20.6 dBA over existing levels. Construction noise levels would increase by 20 dBA or more at one building facade, between 15-20 dBA at two building facades, and between 10 and 15 dBA at six building facades.
- Between months 56 and 61, when foundation, superstructure, and exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 79.1 dBA (L_{eq}), which would be an increase of up to 22.0 dBA over existing levels. Construction noise levels would increase by 20 dBA or more at one building facade, between 15 and 20 dBA at two building facades, and between 10 and 15 dBA at eight building facades.
- Between months 62 and 66, when superstructure and exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 71.5 dBA (L_{eq}), which would be an increase of up to 9.3 dBA over existing levels. Construction noise levels would not increase by 10 dBA or more at any building facades.
- Between months 67 and 72, when exterior and interior fit-out construction activities would occur, maximum exterior sound levels would range from 56.0 to 74.4 dBA (L_{eq}), which would be an increase of up to 18.3 dBA over existing levels. Construction noise levels would increase by 15 dBA or more at one building facade and between 10 and 15 dBA at two building facades.

Phase 2B/2C – Construction of Proposed Buildings 7/ 8 and 9/ 10

Construction for Phase 2b/2C, including Buildings 7/8 and 9/10, is scheduled to last approximately 25 months. Construction associated with Buildings 1, 2, 3, 4, 5, 6 and the PAC is expected to be complete, with the buildings potentially occupied, at the start of construction for Phase 2B/2C. Receptors include the existing receptors within the project's Study Area as well as new receptors associated with all previously constructed buildings.

- Between months 73 and 78, when foundation installation and superstructure construction activities would occur, the maximum exterior sound levels would range from 56.0 to 77.5 dBA (L_{eq}), which would be an increase of up to 18.8 dBA over existing levels. Construction noise levels would increase by 15 dBA or more at three building facades and between 10 and 15 dBA at four building facades.
- Between months 79 and 85, when foundation, superstructure, and exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 71.6 dBA (L_{eq}), which would be an increase of up to 14.8 dBA over existing levels. Construction noise levels would increase by 10 dBA or more at four building facades.
- Between months 86 and 89, when superstructure and exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 71.5 dBA (L_{eq}), which would be an increase of up to 4.2 dBA over existing levels. Construction noise levels would not increase by 10 dBA or more at any building facades.
- Between months 90 and 96, when exterior and interior fit-out construction activities would occur, the maximum exterior sound levels would range from 56.0 to 71.5 dBA (L_{eq}), which would be an increase of up to 12.5 dBA over existing levels. Construction noise levels would increase by 10 dBA or more at four building facades.

Construction Noise Impact Assessment

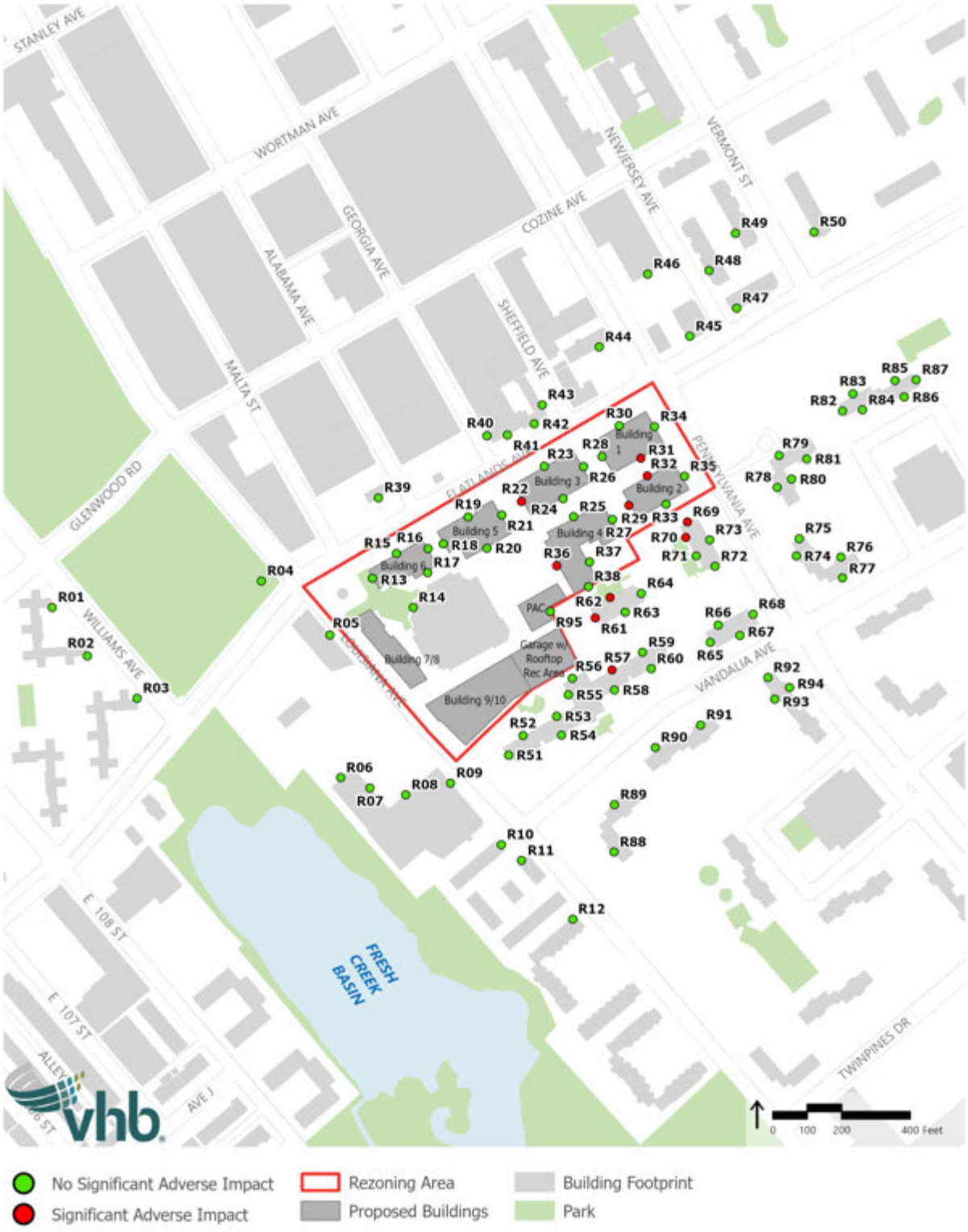
As shown in **Figure 19-6** exterior construction noise levels would exceed the thresholds at receptors located within close proximity to the Development Site. These receptors include existing receptors near the Development Site as well as receptors that would be introduced by the Proposed Actions during the phased development.

- There would be a total of six buildings where construction noise levels would increase by 20 dBA or more over existing conditions for three months or longer including:
  - Proposed Building 2
  - Proposed Building 3
  - Proposed Building 4
  - 1180 Pennsylvania Avenue
  - 1170 Pennsylvania Avenue
  - 1 Vandalia Avenue
- There would be a total of six buildings where construction noise levels would increase by 15 dBA or more over existing conditions for 12 months or longer including:
  - Proposed Building 1

- Proposed Building 2
- Proposed Building 3
- Proposed Building 4
- 1180 Pennsylvania Avenue
- 1170 Pennsylvania Avenue

In total, exterior construction noise levels would exceed the thresholds at seven buildings, including three existing buildings and four buildings that would be introduced by the Proposed Actions during the phased development.

Figure 19-6 Construction Noise Assessment Results



Building by Building Conclusions

› **Proposed Building 1 (R28, R30, R31, R34):** This 15-story residential building would be constructed in Phase 1A and would be located in the northeast corner (Block 3343, Lot 10) of the Development Site. Construction for Proposed Building 1 is scheduled to be completed in month 23. The western façade (R28), eastern façade (R34), northern façade (R30), and southern façade (R31), were assessed for potential noise impacts beginning in month 25.

Exterior future noise levels would range from 63.0 to 82.6 dBA (Leq) during Phase 1B of development, which would be an increase of up to 19.1 dBA (Leq). Exterior noise levels would range from 56.3 to 71.4 dBA (Leq) during Phase 2A of development, which would be an increase of up to 10.4 dBA (Leq). Exterior levels would range from 56.0 to 71.3 dBA (Leq) during Phase 2B/2C of development, which would be an increase of up to 1.5 dBA (Leq).

Based on building construction plans, Proposed Building 1 would have insulated glass windows and central air-conditioning, which would be expected to provide 30 dBA window/wall attenuation. The northern (R30) and eastern (R34) façades are required to have a minimum OITC rating of 35 dBA window/wall attenuation.

Interior construction noise levels would be up to 55.6 dBA (L_{10}) during Phase 1B, up to 40.1 dBA (L_{10}) during Phase 2A, and up to 39.3 dBA (L_{10}) during 2B/2C. Interior noise levels would exceed the interior noise criterion for residential spaces (45 dBA L_{10}) by up to 10.6 dBA during Phase 1B.

Increases in exterior noise of 20 dBA or more for three or more months would not occur at any façade. Increases in exterior noise of 15 to 20 dBA or more for 12 months or more would occur at one façade (R31). Increases in exterior noise of 10 dBA or more for 24 months or more would not occur at any facade on Proposed Building 1. Therefore, based on the predicted magnitude and duration of noise increases, construction noise associated with the proposed actions at Proposed Building 1 would have the potential to result in significant adverse construction noise impact. While there would be significant adverse construction noise impacts at this facade receptor (R31), acceptable interior noise criteria (45 dBA L10) for residential spaces would not be exceeded for 12 or more consecutive months of objectionable noise increase (i.e., 15 to 20 dBA of noise increase). Therefore, above mentioned insulated glass windows and central air conditioning at this receptor would fully mitigate the identified significant adverse construction noise impacts and there would not be a need for additional mitigation measures at this receptor. Further discussion is provided in **Chapter 20, Mitigation**.

› **Proposed Building 2 (R29, R32, R33, R35):** This 13-story residential building would be constructed in Phase 1A and would be located in the southeast corner (Block 3343, Lot 10) of the Development Site. Construction for Proposed Building 1 is scheduled to be completed in month 23. The western façade (R29), eastern façade (R35), northern façade (R32), and southern façade (R33), were assessed for potential noise impacts beginning in month 25.

Exterior future noise levels would range from 56.3 to 83.2 dBA (L_{eq}) during Phase 1B of development, which would be an increase of up to 26.0 dBA (L_{eq}). Exterior noise levels would range from 56.0 to 66.4 dBA (L_{eq}) during Phase 2A of development, which would be an increase of up to 10.3 dBA (L_{eq}). Exterior levels would range from 56.0 to 64.0 dBA

(L_{eq}) during Phase 2B/2C of development, which would be an increase of up to 2.2 dBA (L_{eq}).

Based on building construction plans, Proposed Building 2 would have insulated glass windows and central air-conditioning, which would be expected to provide 30 dBA window/wall attenuation. The eastern façade (R35) is required to have a minimum OITC rating of 35 dBA window/wall attenuation.

Interior construction noise levels would be up to 56.2 dBA (L_{10}) during Phase 1B, up to 39.4 dBA (L_{10}) during Phase 2A, and up to 32.8 dBA (L_{10}) during 2B/2C. Interior noise levels would exceed the interior noise criterion for residential spaces (45 dBA L_{10}) by up to 11.2 dBA during Phase 1B.

Increases in exterior noise of 20 dBA or more for three or more months would occur at one façade (R29). Increases in exterior noise of 15 to 20 dBA or more for 12 months or more would occur at two façades (R29 and R32). Increases in exterior noise of 10 dBA or more for 24 months or more would not occur at any facades on Proposed Building 2. Therefore, based on the predicted magnitude and duration of noise increases, construction noise associated with the proposed actions at Proposed Building 2 would have the potential to result in significant adverse construction noise impact. While there would be significant adverse construction noise impacts at the north facade receptor (R32), acceptable interior noise criteria (45 dBA L10) for residential spaces would not be exceeded for 12 or more consecutive months of objectionable noise increase (i.e., 15 to 20 dBA of noise increase) at this façade (R32). Therefore, above mentioned insulated glass window and central air conditioning would fully mitigate the identified significant adverse construction noise impacts at the north façade (R32) and there would not be a need for additional mitigation measures for the north facade receptor (R32). On the other hand, it is expected that interior noise levels at west façade (R29) would exceed 45 dBA L10 for the majority of identified significant adverse construction noise impacts and, therefore, above mentioned insulated glass windows and central air conditioning would not fully mitigate the identified significant adverse construction noise impacts at the west façade (R29). Further discussion is provided in **Chapter 20, Mitigation**.

› **Proposed Building 3 (R22 – R24, and R26):** This 14-story residential building would be constructed in Phase 1B and would be located in the northeast corner (Block 3343, Lot 1) of the Development Site. Construction for Proposed Building 3 is scheduled to be completed in month 47. The western façade (R22), eastern façade (R26), northern façade (R23), and southern façade (R24), were assessed for potential noise impacts beginning in month 49.

Exterior future noise levels would range from 56.4 to 76.6 dBA (L_{eq}) during Phase 2A of development, which would be an increase of up to 20.6 dBA (L_{eq}). Exterior noise levels would range from 56.0to 64.9 dBA (L_{eq}) during Phase 2B/2C of development, which would be an increase of up to 4.4 dBA (L_{eq}).

Based on building construction plans, Proposed Building 3 would have insulated glass windows and central air-conditioning, which would be expected to provide 30 dBA window/wall attenuation.

Interior construction noise levels would be up to 49.6 dBA (L_{10}) during Phase 2A and up to 37.9 dBA (L_{10}) during 2B/2C. Interior noise levels would exceed the interior noise criterion for residential spaces (45 dBA L_{10}) by up to 4.6 dBA during Phase 2A.

Increases in exterior noise of 20 dBA or more for three or more months would occur at one façade (R22). Increases in exterior noise of 15 to 20 dBA or more for 12 months or more would occur at one facade (R22) on Proposed Building 3. Therefore, based on the predicted magnitude and duration of noise increases, construction noise associated with the proposed actions at Proposed Building 3 would have the potential to result in significant adverse construction noise impact. These receptors are discussed further in **Chapter 20, Mitigation**.

- **Proposed Building 4 (R25, R27, and R36 – R38):** This 12-story residential building would be constructed in Phase 1B and would be located in the southeast corner (Block 3343, Lot 1) of the Development Site. Construction for Proposed Building 4 is scheduled to be completed in month 47. The western façade (R36), eastern façades (R27 and R37), northern façade (R25), and southern façade (R38), were assessed for potential noise impacts beginning in month 49.

  Exterior future noise levels would range from 56.1 to 79.1 dBA (L_{eq}) during Phase 2A of development, which would be an increase of up to 22.0 dBA (L_{eq}). Exterior noise levels would range from 56.0 to 68.6 dBA (L_{eq}) during Phase 2B/2C of development, which would be an increase of up to 11.0 dBA (L_{eq}).

  Based on building construction plans, Proposed Building 4 would have insulated glass windows and central air-conditioning, which would be expected to provide 30 dBA window/wall attenuation.

  Interior construction noise levels would be up to 52.1 dBA (L_{10}) during Phase 2A and up to 41.6 dBA (L_{10}) during 2B/2C. Interior noise levels would exceed the interior noise criterion for residential spaces (45 dBA L_{10}) by up to 7.1 dBA during Phase 2A.

  Increases in exterior noise of 20 dBA or more for three or more months would occur at one façade (R36). Increases in exterior noise of 15 to 20 dBA or more for 12 months or more would occur at one façade (R36) on Proposed Building 4. Therefore, based on the predicted magnitude and duration of noise increases, construction noise associated with the proposed actions at Proposed Building 4 would have the potential to result in significant adverse construction noise impact. These receptors are discussed further in **Chapter 20, Mitigation**.

- **1180 Pennsylvania Avenue (R61 – R64):** This 12-story residential building is located south of the Development Site (Block 4431, Lot 70). The western façade (R61), eastern façade (R64), northern façade (R62), and southern façade (R63), were assessed for potential noise impacts.

  Exterior future noise levels would range from 56.1 to 75.4 dBA (L_{eq}) during Phase 1A of development, which would be an increase of up to 18.8 dBA (L_{eq}). Exterior noise levels would range from 56.4 to 79.0 dBA (L_{eq}) during Phase 1B, which would be an increase of up to 22.4 dBA (L_{eq}). Exterior noise levels would range from 56.0 to 73.4 dBA (L_{eq}) during Phase 2A of development, which would be an increase of up to 16.7 dBA (L_{eq}). Exterior levels would range from 56.0 to 66.2 dBA (L_{eq}) during Phase 2B/2C of development, which would be an increase of up to 9.2 dBA (L_{eq}).

  Based on street-level field observations, this building has insulated glass windows and through-wall air-conditioning, which would be expected to provide 25 dBA window/wall attenuation.

Interior construction noise levels would be up to 53.4 (L_{10}) during Phase 1A, up to 57.0 dBA (L_{10}) during Phase 1B, up to 51.4 dBA (L_{10}) during Phase 2A, and up to 44.2 dBA (L_{10}) during 2B/2C. Interior noise levels would exceed the interior noise criterion for residential spaces (45 dBA L_{10}) by up to 8.4 dBA during Phase 1A, up to 12.0 dBA during Phase 1B, and up to 6.4 dBA during Phase 2A.

Increases in exterior noise of 20 dBA or more for three or more months would occur at two façades (R61 and R62). Increases in exterior noise of 15 to 20 dBA or more for 12 months or more would occur at two façades (R61 and R62). Therefore, based on the predicted magnitude and duration of noise increases, construction noise associated with the proposed actions at 1180 Pennsylvania Avenue would have the potential to result in significant adverse construction noise impact. These receptors are discussed further in **Chapter 20, Mitigation**.

› **1170 Pennsylvania Avenue (R69 – R73):** This 12-story residential building is located south of the Development Site (Block 4434, Lot 60). The western façades (R70 and R71), eastern façade (R73), northern façade (R69), and southern façade (R72), were assessed for potential noise impacts.

Exterior future noise levels would range from 56.1 to 80.9 dBA (L_{eq}) during Phase 1A, which would be an increase of up to 22.4 dBA. Exterior noise levels would range from 56.3 to 74.5 dBA (L_{eq}) during Phase 1B of development, which would be an increase of up to 18.5 dBA (L_{eq}). Exterior noise levels would range from 56.0 to 62.2 dBA (L_{eq}) during Phase 2A of development, which would be an increase of up to 5.0 dBA (L_{eq}). Exterior levels would range from 56.0 to 62.2 dBA (L_{eq}) during Phase 2B/2C of development, which would be an increase of up to 5.5 dBA (L_{eq}).

Based on street-level field observations, this building has insulated glass windows and through-wall air-conditioning, which would be expected to provide 25 dBA window/wall attenuation.

Interior construction noise levels would be up to 58.9 (L_{10}) during Phase 1A, up to 52.5 dBA (L_{10}) during Phase 1B, up to 40.2 dBA (L_{eq}) during Phase 2A, and up to 40.2 dBA (L_{10}) during 2B/2C. Interior noise levels would exceed the interior noise criterion for residential spaces (45 dBA L_{10}) by up to 13.9 dBA during Phase 1A and up to 7.5 dBA during Phase 1B.

Increases in exterior noise of 20 dBA or more for three or more months would occur at two façades (R69 and R70). Increases in exterior noise of 15 to 20 dBA or more for 12 months or more would occur at one façade (R70). Increases in exterior noise of 10 dBA or more for 24 months or more would not occur at any facade on the building located at 1170 Pennsylvania Avenue. Therefore, based on the predicted magnitude and duration of noise increases, construction noise associated with the proposed actions at 1170 Pennsylvania Avenue would have the potential to result in significant adverse construction noise impact. These receptors are discussed further in **Chapter 20, Mitigation**.

› **1 Vandalia Avenue (R57 – R60):** This 10-story residential building is located south of the Development Site (Block 4431, Lot 10). The northern façades (R57 and R59) and southern façades (R58 and R60) were assessed for potential noise impacts.

Exterior future noise levels would range from 56.0 to 68.9 dBA (L_{eq}) during Phase 1A, which would be an increase of up to 12.5 dBA. Exterior noise levels would range from

56.1 to 78.3 dBA (L_{eq}) during Phase 1B of development, which would be an increase of up to 22.0 dBA (L_{eq}). Exterior noise levels would range from 56.0 to 67.0 dBA (L_{eq}) during Phase 2A of development, which would be an increase of up to 10.3 dBA (L_{eq}). Exterior levels would range from 56.0 to 65.9 dBA (L_{eq}) during Phase 2B/2C of development, which would be an increase of up to 9.1 dBA (L_{eq}).

Based on street-level field observations, this building has insulated glass windows and through-wall air-conditioning, which would be expected to provide 25 dBA window/wall attenuation.

Interior construction noise levels would be up to 46.9 (L_{10}) during Phase 1A, up to 56.3 dBA (L_{10}) during Phase 1B, up to 45.0 dBA (L_{eq}) during Phase 2A, and up to 43.9 dBA (L_{10}) during 2B/2C. Interior noise levels would exceed the interior noise criterion for residential spaces (45 dBA L_{10}) by up to 1.9 dBA during Phase 1A, up to 11.3 dBA during Phase 1B, and meets the interior noise criterion during Phase 2B/2C.

Increases in exterior noise of 20 dBA or more for three or more months would occur at one façade (R57). Increases in exterior noise of 15 to 20 dBA or more for 12 months or more would not occur at façades on the building located at 1 Vandalia Avenue. Therefore, based on the predicted magnitude and duration of noise increases, construction noise associated with the proposed actions at 1 Vandalia Avenue would have the potential to result in significant adverse construction noise impact. These receptors are discussed further in **Chapter 20, Mitigation**.

Figure 19-7 to **Figure 19-10** show the noise level contour maps at a height of 5 feet above ground for the loudest month during each of the construction phases as well as the location of noise receptors.

Figure 19-7 Construction Noise Contours – Phase 1A, Foundation Installation

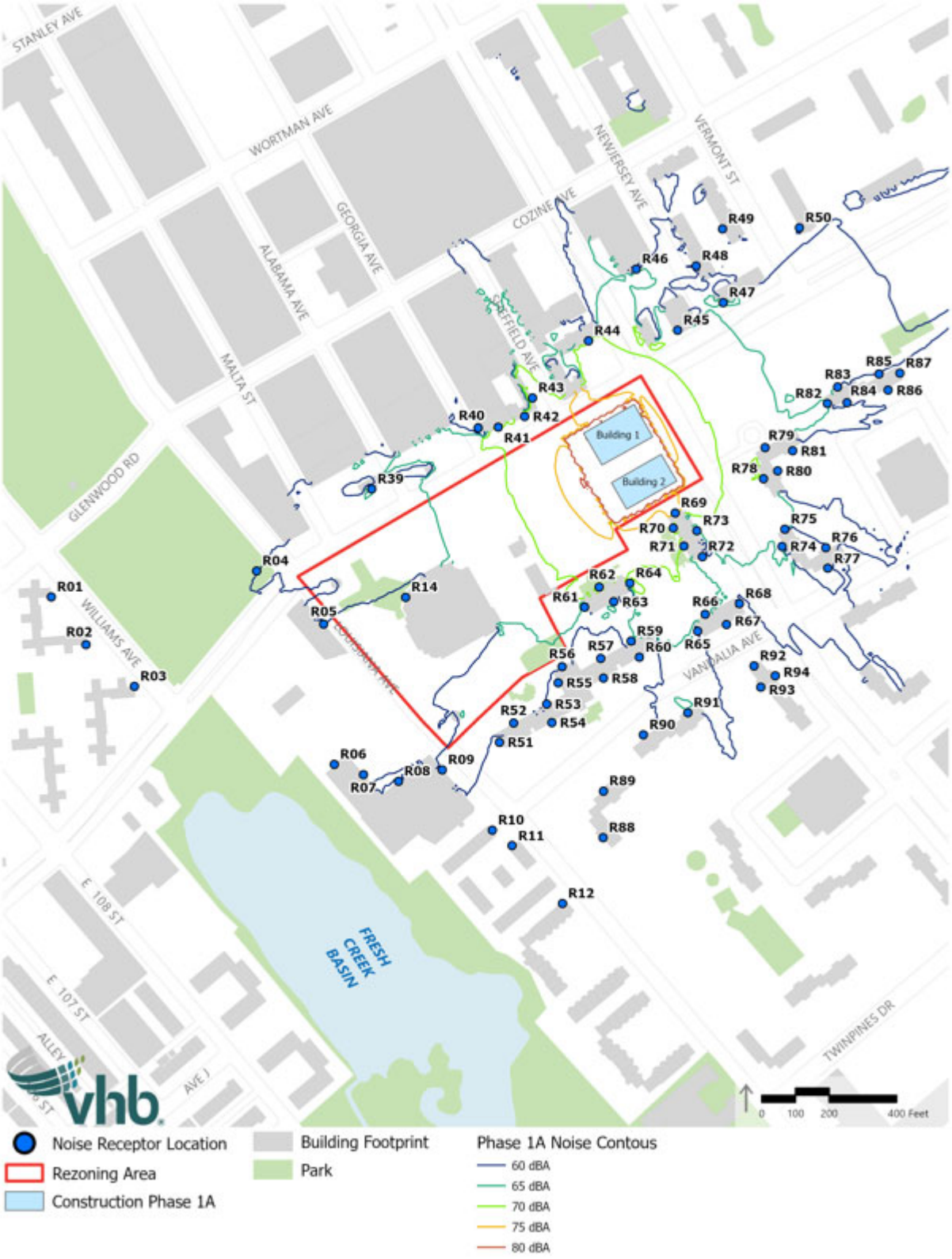


Figure 19-8 Construction Noise Contours – Phase 1B, Foundation Installation

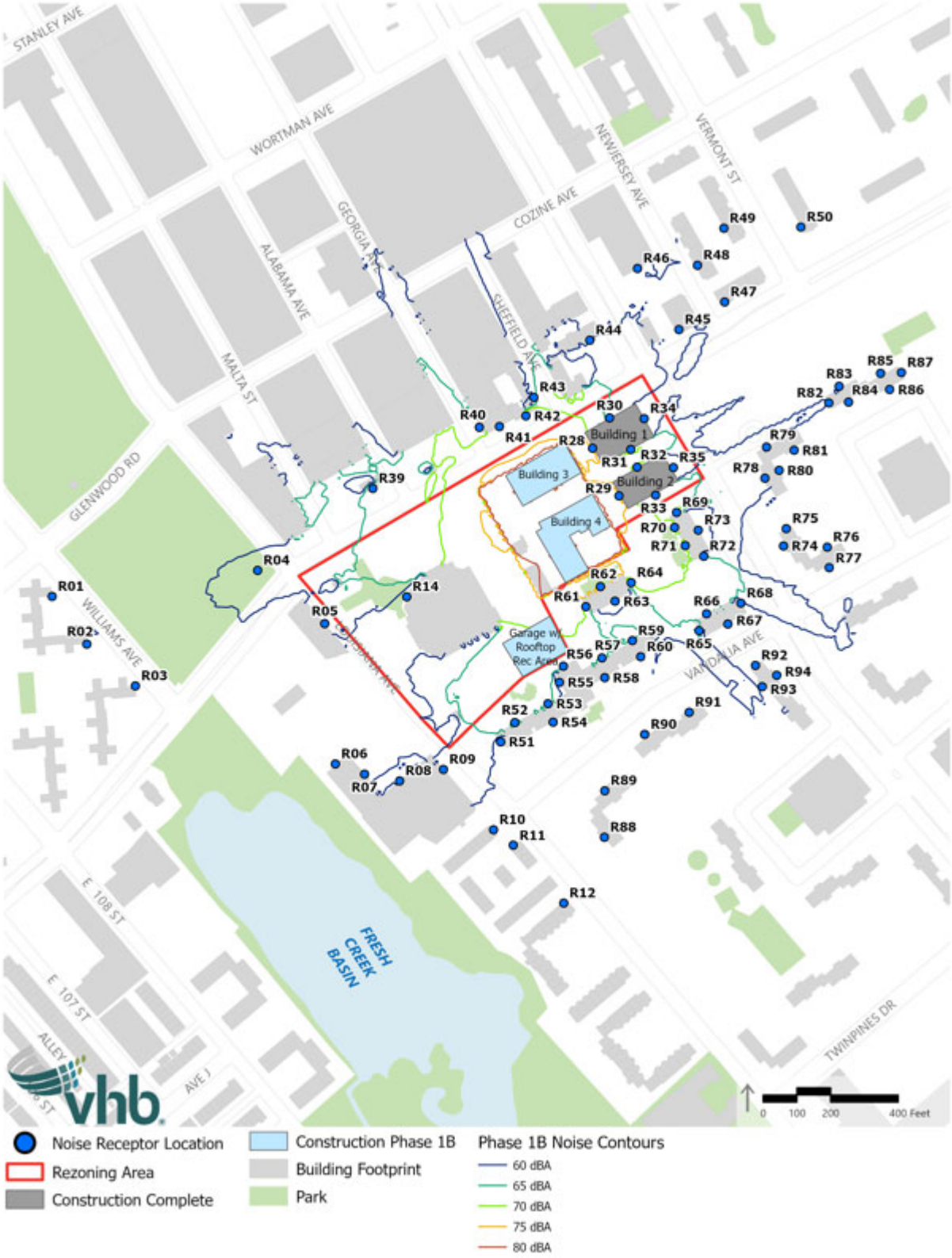


Figure 19-9 Construction Noise Contours – Phase 2A, Foundation Installation

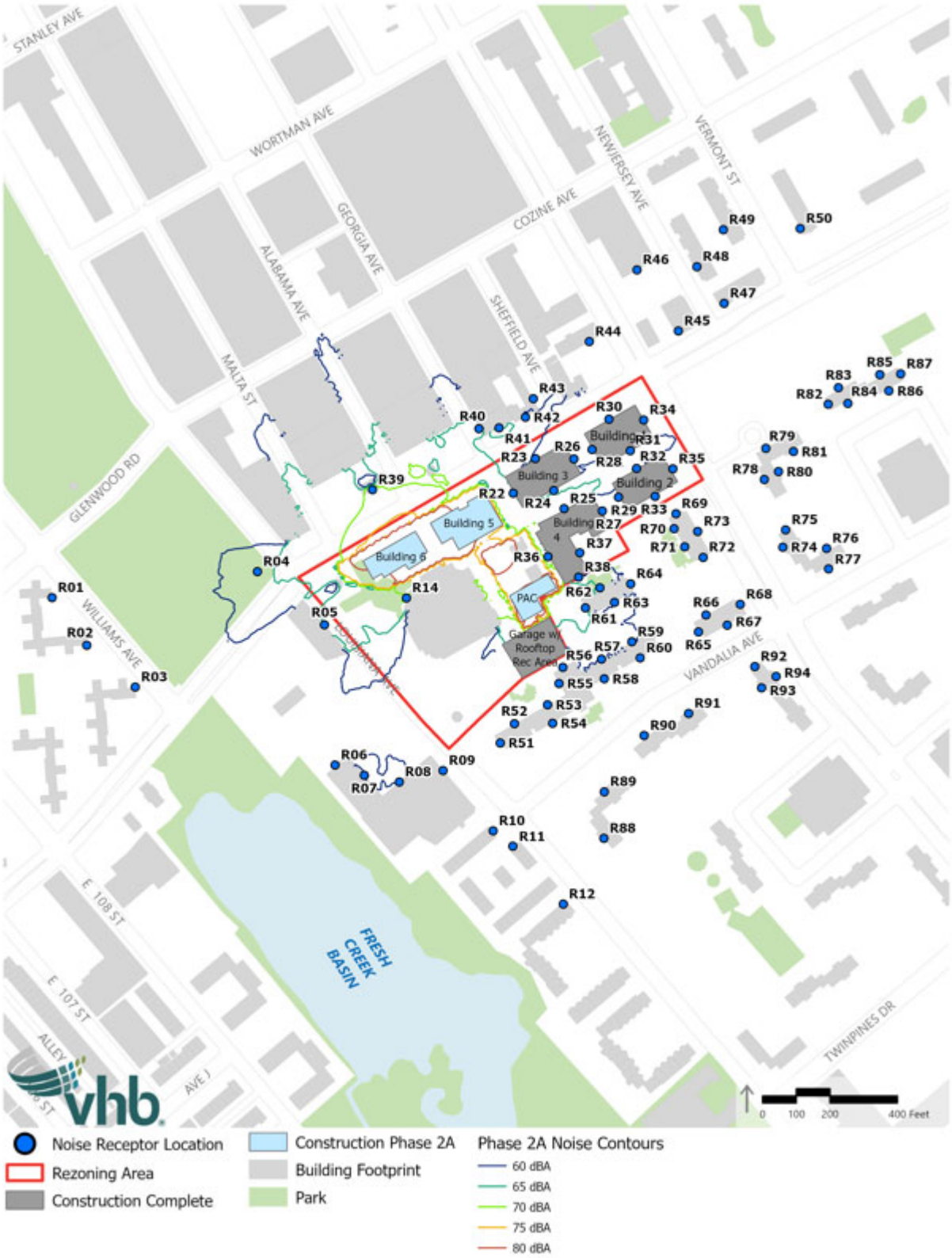
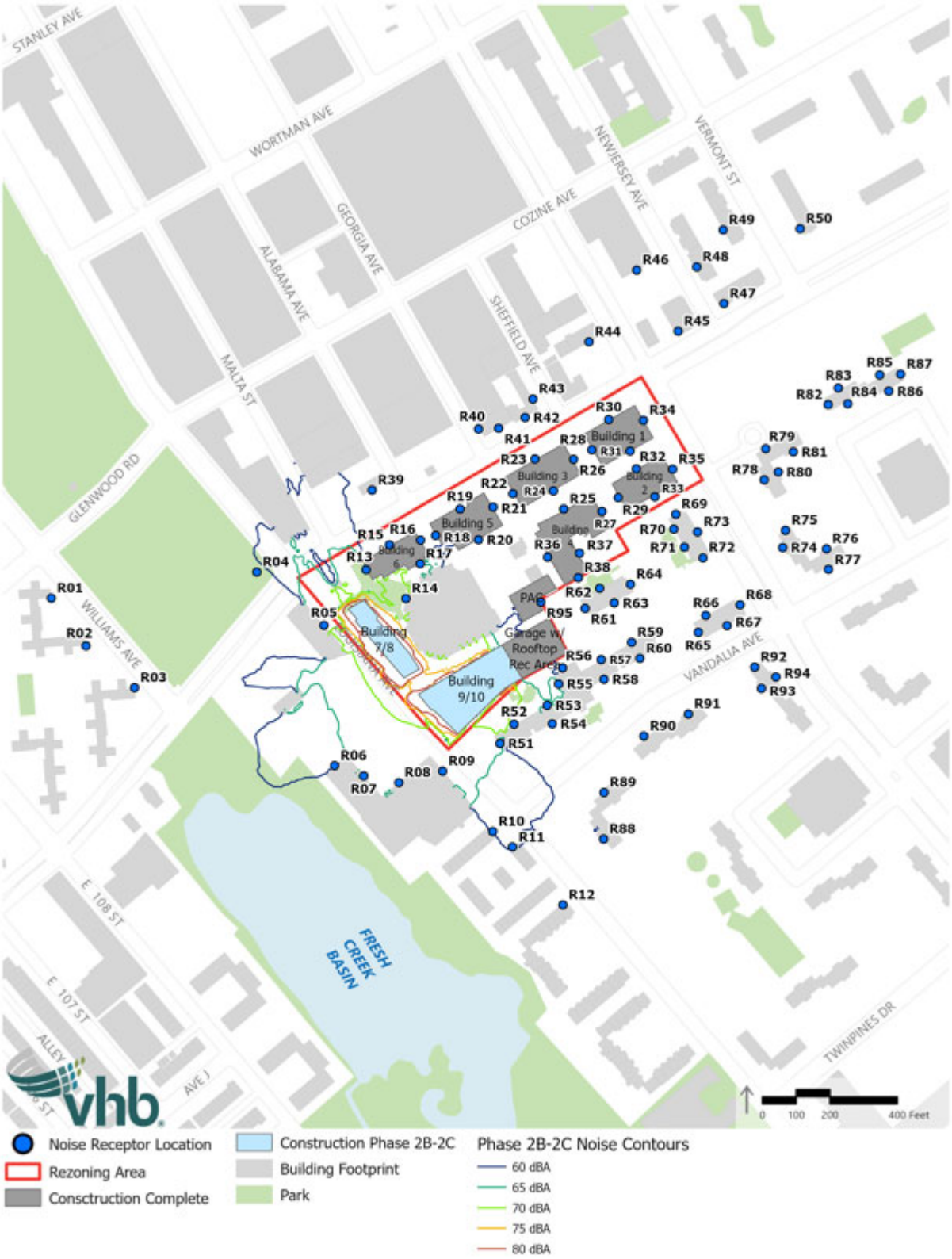


Figure 19-10 Construction Noise Contours – Phase 2B/2C, Foundation Installation



Conclusion

Since construction noise levels would exceed the thresholds for exterior increase in noise, there would be potential for the project to result in significant adverse construction noise impacts. All construction noise impacts would be at new buildings that would be introduced with the phased development or at existing residential buildings located immediately south of the Development Site. Interior noise levels would exceed the interior impact criterion for residential receptors during certain phases of construction.

With the adherence to existing construction noise regulations and the implementation of a Construction Noise Mitigation Plan, as required by the New York City Noise Code, including an 8-foot construction noise barrier, construction noise would be reduced but would still exceed the thresholds for significant construction noise impact prior to mitigation.

The primary sources of construction noise causing impact include drills during the foundation phases of construction and concrete mixer trucks during the foundation and superstructure phases of construction. Since residential buildings where there would be noise impact are 10 to 15 stories tall, increasing the height of the perimeter wall would provide limited benefit compared to the standard 8-foot wall.

Concrete mixer trucks would be located either within the Development Site or along Flatlands Avenue depending on the specific phase of construction. When the concrete trucks are within the Development Site, it would not be feasible to construct noise barriers interior to the site to reduce noise due to the need for the concrete trucks to mobilize within the site. When the concrete trucks are on Flatlands Avenue, they are relatively far from the noise impact locations south of the Development Site and it would not be feasible to introduce a noise barrier between Flatlands Avenue and the Development Site. See **Chapter 20, Mitigation** for further information on the construction noise control measures that will be included with the Proposed Actions.

Therefore, the Proposed Actions would have the potential to result in a significant adverse noise impact that would remain unmitigated. See **Chapter 21, Unavoidable Adverse Impacts**.

Vibration

Construction activities have the potential to generate ground-borne vibration that can potentially cause structural or architectural damage or annoy people in nearby vibration-sensitive spaces, such as residences. The most substantial sources of construction vibration are equipment associated with the excavation and foundation phase, such as pile drivers, drill rigs, bulldozers, and jack hammers.

There are no buildings within the Project Area listed by the New York City Landmarks Preservation Commission (LPC) or the State and/or National Register of Historic Places (S/NR) which would require special protections from potential damage due to vibration. There is the potential for construction vibration from some construction equipment, such as pile drivers, to cause annoyance in nearby residences. However, these construction activities would only occur for limited periods of time at any particular location and there would be no significant adverse impact as a result of construction vibration.

Natural Resources

In order to protect the nearby water resources outlined in **Chapter 9, Natural Resources**, the Proposed Project will require a State Pollutant Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001, January 2020) from the New York State Department of Environmental Conservation (NYSDEC). This permit establishes the criteria by which construction projects are regulated and are allowed to discharge stormwater.

Furthermore, the Applicant will be required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that meets criteria set forth by NYSDEC under the SPDES General Permit for Stormwater Discharges from Construction Activity. The SWPPP will be reviewed and approved by NYSDEC and address erosion and sediment control, stormwater management, and pollution prevention practices during the construction process. No project work or equipment and materials storage will occur within or adjacent to wetlands. Various project erosion and silt controls will be installed and maintained pursuant to the New York State Standards and Specifications for Erosion and Sediment Control (2016).

With the implementation of a SWPPP there will be no impacts to water resources due to construction.