Targeted Draft Environmental Impact Statement (DEIS)

for the

Proposed Redevelopment of the former St. John Villa Campus

57 Cleveland Place
Staten Island, New York

August 12, 2024

Lead Agency:
New York City School Construction Authority
25-01 Jackson Avenue
Long Island City, NY 11101

Prepared by:
STV Incorporated
350 Fifth Avenue
New York, NY 10118

Lead Agency Contact:
Callista Nazaire
Senior Management Specialist
New York City School Construction Authority
25-01 Jackson Avenue
Long Island City, NY 11101

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Foreword

INTRODUCTION

This is the Targeted Draft Environmental Impact Statement (DEIS) for the Proposed Redevelopment of the former St. John Villa campus (the "proposed project"). This Targeted DEIS is prepared pursuant to the New York State Environmental Quality Review Act (SEQRA) codified in Article 8 of the Environmental Conservation Law, and its implementing regulations at 6 NYCRR Part 617. The New York City School Construction Authority (SCA) is serving as the lead agency under SEQRA. Consistent with SCA practice, because the former St. John Villa campus is located in New York City, this Targeted DEIS has been prepared generally following the guidelines of the *New York City Environmental Quality Review (CEQR) Technical Manual.*[1]

SEQRA PROCEDURES

Per the conclusions of a SEQRA Environmental Assessment Form (EAF) published on February 21, 2024 and revised on May 1, 2024, the SCA classified the proposed project as a Type I Action requiring the preparation of a Targeted DEIS. As such, a Draft Scope of Work (DSOW) to Prepare a Targeted DEIS was published on February 21, 2024 and discussed during a March 7, 2024 virtual public scoping meeting. Subsequently, a revised DSOW was published on May 1, 2024, and a second public scoping meeting was held as a hybrid event (i.e., simultaneously in-person and virtual) on May 16, 2024. The SCA responded to public comments received on the DSOW during both scoping meetings and during both public comment periods as part of the Final Scope of Work (FSOW) to Prepare a Targeted DEIS, published on June 28, 2024.

A public hearing to discuss this Targeted DEIS will be held as a hybrid event on Thursday, August 29, 2024 from 6:00 PM to 8:00 PM, in-person at the New Richard H. Hungerford School at 715 Ocean Terrace, Staten Island, New York 10301. In addition to oral testimony that may be provided at this public hearing, written public comments will be accepted until 5:00 PM on Wednesday, September 18, 2024.

After the close of the public comment period for the Targeted DEIS, the SCA will prepare the Targeted Final Environmental Impact Statement (FEIS). The Targeted FEIS will incorporate relevant comments on the Targeted DEIS, in a separate chapter and in changes to the body of the text, graphics, and tables. Once the SCA determines that the Targeted FEIS is complete, it will issue a Notice of Completion (NOC) and circulate the Targeted FEIS.

CHANGES TO ZONING OVERRIDE REQUEST SINCE PUBLICATION OF THE EAF

Per the EAF and Supplemental Report published on May 1, 2024, "(i)t is expected that, with the proposed preliminary design, the SCA would request zoning overrides from the Deputy Mayor for Housing, Economic Development and Workforce for bulk regulations including side yards, height and setback, floor area ratio (FAR), and accessory parking. As the zoning overrides would pertain only to the project site, no significant adverse impacts to zoning would occur."

[1] The Targeted Environmental Impact Statement (EIS) will use the most recent version of the New York City Mayor's Office of Environmental Coordination *CEQR Technical Manual*, last updated December 2021. The *CEQR Technical Manual* can be accessed here: https://www1.nyc.gov/assets/oec/technical-manual/2021_ceqr_technical_manual.pdf.

It has since been determined that the proposed project would require additional zoning waivers for permitted obstructions in required yards or rear yard equivalents, yard regulations, accessory off-street parking and loading requirements, special screening and enclosure provisions, parking lot perimeter landscaping, and parking lot maintenance. As these zoning overrides would continue to pertain only to the project site, no significant adverse impact to zoning would occur and the findings of the EAF published on May 1, 2024 remain unchanged.

Executive Summary

INTRODUCTION

On behalf of the New York City Department of Education (DOE), the New York City School Construction Authority (SCA) proposes to create three new school facilities, an athletic field with an approximately 700-seat bleacher section, a maintenance building, and an internal driveway network with two parking lots, all of which would be located on Block 3087, Lot 1, as well as a separate parking lot on Block 3089, Lot 59 (the "proposed project") on the former St. John Villa campus at 57 Cleveland Place in the Arrochar section of Staten Island (the "project site") (see Figure ES-1, "Project Location"). The three new schools would consist of an approximately 764-seat Gifted and Talented primary school/intermediate school (PS/IS) and two separate, independently operated intermediate/high schools (IS/HS) that would collectively provide 1,350 seats (see Figure ES-2, "Conceptual Site Plan"). The two IS/HS would share a gymnasium, auditorium, kitchen, and lobby. The PS/IS would serve students in grade levels pre-kindergarten through eight throughout New York City. Each IS/HS would serve students in grade levels six through twelve in the Borough of Staten Island. All three schools would also serve special education students enrolled in a District 75 program[2] in the Borough of Staten Island. The proposed schools would collectively introduce approximately 2,114 new school seats to the project site.

The project site comprises the former St. John Villa campus, which was previously occupied by the former St. John Villa Academy, a private Roman Catholic school that supported educational facilities for approximately 724 students[3] in grades pre-kindergarten through twelve until its closure in 2018 (see Figure ES-3, "Aerial View Project Site"). The buildings associated with this former use remain on the project site and consist of a former convent building ("Villa"), Former Elementary School, Chapel Building, Former Annex, Garage, Former High School and Addition, and Former Pre-K Center. The existing buildings are in poor condition and cannot feasibly accommodate the modern school functions that the proposed project is intended to achieve. All but the Chapel Building would be removed in order to construct the proposed schools and athletic field. The Chapel Building would be maintained for school uses only and would not be made available for public use. Given the topography of the site, extensive grading would likely be necessary to accommodate the proposed school facilities.

Funding for site preparation, design, and construction of the proposed project (collectively, the "proposed actions") would be provided by DOE's Five-Year Capital Plan for Fiscal Years 2025-2029. Construction would be phased beginning in Q4 2024 and would conclude in Q3 2030. Therefore, 2030 is assumed for the analysis year ("build year").

The proposed project's purpose is to provide additional permanent public primary, intermediate, and high school capacity on Staten Island in order to address forecast changes in future student enrollment and to support DOE's policies regarding class size reduction. Staten Island faces overcrowding in many schools across the borough. District 31 (Staten Island) currently has only 24 percent of classes in compliance with the new Class Size Reduction Law; this is the third-lowest percentage in compliance among the City's 32 school districts. The compliance rate of District 31 is also significantly lower than the Citywide average of

[2] District 75 programs provide Citywide special education services for students in need of intensive or specialized services. The proposed project would include approximately 96 District 75 seats in the PS/IS and approximately 96 District 75 seats in the proposed shared facility for two IS/HS, for a total of 192 District 75 seats.
[3] Knudson, Annalise (2018-01-09). *"What's next for students at closing St. John Villa Academy?"*. *Silive.com*.

approximately 40 percent. In addition, District 31 represents nearly eight percent of the total number of classrooms needed Citywide. These data points are a clear indicator of the need for additional classrooms in District 31. Moreover, the Class Size Reduction Law mandates a very tight timeframe for its implementation, which requires the SCA/DOE to maximize capacity creation on any given site. In order to provide much-needed capacity, as well as to assist in achieving the recently adopted class size maximums, SCA, in collaboration with New York City Public Schools, intends to provide appropriate school space. In addition, it is a cost-effective use of taxpayer funds to provide ample school seats on a large property, rather than to acquire and develop additional parcels at additional taxpayer expense.

This report examines the environmental effects expected to result from the construction and operation of the proposed project. The following summarizes the expected impacts and their significance.

Source: National Geographic Society, i-cubed, 2013; STV Incorporated, 2024.

Figure ES-1

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

PROJECT LOCATION

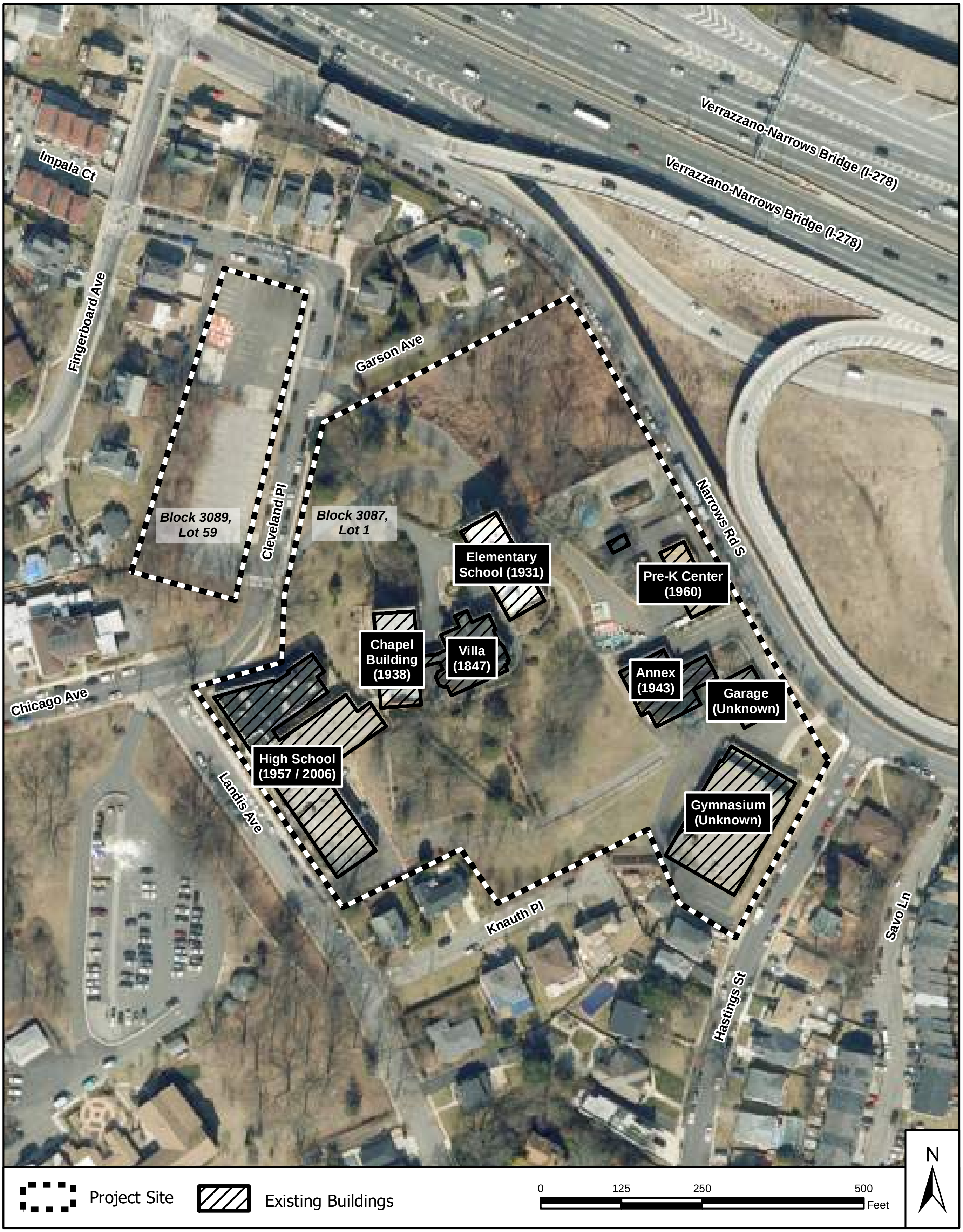
Note: For illustrative purposes only.

Source: Pei, Cobb, Freed, 2024; NYCSCA, 2024; STV Incorporated, 2024.

Figure ES-2

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

CONCEPTUAL SITE PLAN



Source: NYC Office of Technology and Innovation (OTI); NYC Department of City Planning MapPLUTO 2023 v3; New York State Office of Parks Recreation and Historic Preservation (OPRHP) Cultural Resources Information System (CRIS); ESRI, Maxar, Earthstar Geographics; STV Incorporated, 2024.

Figure ES-3

AERIAL VIEW PROJECT SITE

POTENTIAL EFFECTS OF THE PROPOSED PROJECT

A. Shadows

In the future with the proposed actions, shadows on the Chapel Building would be altered from current conditions. Shadows on the east façade of the Chapel Building, which contains arched windows with rusticated stone trim, would notably decrease in the future with the proposed project. However, shadows would also notably increase on the south and west façades of the Chapel Building, which contain arched windows with rusticated stone trim; the balcony on the south façade; and the portico balcony on the west façade.

The public's enjoyment of this resource, however, is not dependent on the sunlight received on the southern balcony, the portico balcony, or the building's arched windows, from which all stained glass was removed prior to the SCA's acquisition of the site. Rather, public enjoyment of the Chapel Building is primarily derived from its visual prominence and its historic aesthetic, both of which would remain unaffected by the increase in shadow.

Given these considerations, the proposed project would not result in a significant adverse shadows impact to the Chapel Building.

B. Historic and Cultural Resources

ARCHAEOLOGICAL RESOURCES

The Phase IA Archaeological Documentary Study completed for the proposed project site determined that no further research and study of archaeological resources is warranted based on significant disturbance to the original ground surface; owing to this condition it has a low sensitivity for both precontact and historical period archaeological resources. Construction of the proposed project would not result in significant adverse impacts to archaeological resources.

ARCHITECTURAL RESOURCES

The proposed project would require that the majority of the existing on-site structures be demolished to accommodate the project's new uses. Of the existing buildings, only the Chapel Building would remain. The existing St. John Villa Academy on the project site has been determined eligible for listing in the State/National Register of Historic Places (S/NRHP). As such, under Section 14.09 of the State Historic Preservation Act of 1980 (SHPA), demolition of a S/NRHP-eligible resource will result in an adverse impact to the historic resource. As required under Section 14.09, consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) was undertaken by the SCA as part of the proposed project.

The Letter of Resolution (LOR) agreed to by both the SCA and OPRHP establishes the course of action necessary for successful mitigation of the potential adverse impacts of the demolition of the Villa, Elementary School, High School, Pre-K Center, Annex, and Garage at the St. John Villa Academy in accordance with Section 14.09 of the SHPA. As the proposed project moves forward, the SCA will implement the terms of the LOR to mitigate the adverse impact to the St. John Villa Academy S/NRHP-eligible historic resource, and upon completion will certify in writing that they have completed the conditions specified in the LOR.

C. Water and Sewer Infrastructure

Based on the preliminary infrastructure analyses prepared per the guidance of the *CEQR Technical Manual*, the proposed project is not anticipated to result in any significant adverse impacts on the City's water supply and wastewater and stormwater conveyance and treatment infrastructure.

The proposed project would generate a water demand of 78,528 gallons per day (gpd), which is significantly less than the one million gallons per day (MGD) threshold set by the *CEQR Technical Manual* for a preliminary infrastructure analysis. In addition, the project site is not located in an area that experiences low water pressure. Therefore, the proposed project would not result in any significant adverse impacts to the City's water supply system and no further analysis is required.

The total sewage generation for the With-Action condition is 26,208 gpd, which in this case is also the incremental sewage generation over the No-Action condition. This incremental flow represents approximately 0.09 percent of the average daily flow of 30 MGD at the Port Richmond Wastewater Resource Recovery Facility (WRRF) and would not adversely impact the treatment capacity of this facility. The proposed school facilities would also be required per the New York City Plumbing Code (Local Law 33 of 2007) to use low-flow plumbing fixtures, which would further reduce sanitary flows. Therefore, the proposed project would not result in any significant adverse impacts to the City's wastewater collection and treatment system.

The total volume discharged to the combined sewer system in the With-Action condition would represent an increase compared to existing conditions, attributable to the stormwater runoff volumes resulting from the increased impervious areas. However, on-site stormwater best management practices (BMPs) required as part of the Site Connection Proposal approval process with the New York City Department of Environmental Preservation (NYCDEP) would result in a reduction in both the peak discharge and overall volume of stormwater runoff from the project site. With the incorporation of stormwater BMPs to meet NYCDEP's Site Connection Proposal requirements, the submission of a Site Connection Proposal application, and the preparation of a Stormwater Pollution Prevention Plan (SWPPP), it is anticipated that there would be no significant adverse impacts to the combined sewer system and wastewater treatment system.

D. Transportation

TRAFFIC

Traffic conditions were evaluated for the weekday AM and PM peak hours at 25 intersections and five driveway locations, and for the Saturday midday peak hours at seven intersections and one driveway location in the traffic study area, where additional traffic resulting from the proposed project would be most heavily concentrated. Traffic impact analysis indicates the potential for significant adverse impacts at nine intersections and one driveway location during one or more analyzed peak hours.

Significant adverse impacts were also identified at six I-278 freeway/service road segments during one or more analyzed peak hours.

Chapter 11, “Mitigation Measures,” identifies measures that could mitigate some of these significant adverse impacts.

TRANSIT

Bus

The study area is served by six bus routes operated by the Metropolitan Transportation Authority (MTA): the S51, S52, S53, S78, S79-SBS, and S93. The new demand from the proposed project would exceed the 50-trip *CEQR Technical Manual* analysis threshold along the S52, S78, and S79-SBS bus routes during the weekday AM and PM peak hours.

The proposed project would result in a capacity shortfall for the S79-SBS bus route during the weekday PM peak hour in the southbound direction. As a result, the S79-SBS bus route would experience a significant adverse impact based on *CEQR Technical Manual* criteria. The significant adverse impact to this bus service could be mitigated by increasing the number of buses during this peak hour.

PEDESTRIANS

The proposed project is expected to generate a net total of approximately 304 walk-only trips in the weekday AM peak hour, 504 in the PM peak hour, and 40 in the Saturday midday peak hour.

It is expected that during all peak periods, pedestrian trips attributable to the proposed project would be concentrated on sidewalks and crosswalks adjacent to the project site and along routes to and from the bus stops.

The pedestrian analysis indicates that all pedestrian elements in the project study area would operate at acceptable Level of Service (LOS) C conditions or better during the weekday AM and PM peak analysis hours. Therefore, significant adverse impacts to pedestrian operations are not anticipated based on *CEQR Technical Manual* criteria.

VEHICLE AND PEDESTRIAN SAFETY

The City’s Vision Zero initiative seeks to eliminate all deaths from traffic crashes, regardless of whether on foot, bicycle, or inside a motor vehicle. Within the project study area, Hylan Boulevard, Narrows Road North, Narrows Road South, McClean Avenue, and Bay Street are considered Vision Zero Priority Corridors. Additionally, the intersections of Fingerboard Road at Narrows Road South and Lily Pond Avenue at McClean Avenue are considered Vision Zero Priority Intersections.

Crash data for intersections within a quarter-mile of the project site, as well as the intersections within the traffic study area, were obtained from the New York City Department of Transportation (NYCDOT) for the three-year period between January 1, 2017, and December 31, 2019. During the three-year reporting period, a total of 153 injury crashes occurred, of which 16 were pedestrian-related crashes and one was a bicycle-related crash. Two intersections in the study area would be considered high-crash intersections as defined in the *CEQR Technical Manual* – Fingerboard Road at Narrows Road South and Lily Pond Avenue at McClean Avenue.

PARKING

There are approximately 492 legal on-street parking spaces within a reasonable walking distance of the project site. This supply of on-street parking spaces has an available capacity of 143 spaces during the weekday AM period, 134 spaces during the weekday midday period, and 303 spaces during the Saturday midday period.

The proposed project is estimated to provide a total of 160 off-street parking spaces for faculty and staff. Visitors, high school students who drive themselves to and from school, and all other faculty and staff are anticipated to use available on-street parking.

Overall, the proposed project is projected to generate an on-street parking demand of 56, 56, and 47 parking spaces during the weekday AM, midday, and Saturday midday peak periods, respectively. This on-street parking demand would not result in a parking shortfall during any peak period, and therefore the proposed project would not result in a significant parking shortfall.

E. Air Quality

The proposed project would use electric power to run the buildings' heating and hot water systems, so there would be no significant adverse air quality impacts from project-related stationary sources. There are no large combustion sources located within 1,000 feet of the project site and no industrial source permits on file for sites located within 400 feet of the project site; therefore, no significant adverse impacts from large combustion or industrial source emissions would result with the proposed project.

Project-related vehicle trips would exceed CEQR screening thresholds for carbon monoxide (CO) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) mobile-source analyses. In addition, the proposed project would include three surface parking lots. Based on the results of the mobile-source screening assessment, the intersection of Fingerboard Road and Narrows Road South and the proposed parking areas were evaluated for CO. The intersection of Chicago Avenue and Landis Avenue, in addition to the three proposed surface parking lots, were evaluated for $PM_{2.5}$. Results of the mobile-source CO and $PM_{2.5}$ analyses show that project-generated vehicles would not exceed applicable air quality standards or CEQR *de minimis* thresholds.

F. Noise

Mobile-Source Noise. The proposed project would result in significant adverse mobile-source noise impacts at three locations. Measures to reduce or eliminate the proposed project's mobile-source noise impacts will be explored by the SCA between the Targeted DEIS and Targeted FEIS. Absent the identification and further implementation of feasible measures to mitigate the mobile-source noise impacts, the proposed project would result in unmitigated significant adverse mobile-source noise impacts at these three locations.

Stationary Sources – Playground Noise Assessment. An approximately 84,000-square-foot (sf) athletic field would be constructed at the southeastern portion of the project site, and an up to approximately 16,000-

sf at-grade playground would be provided on the eastern side of the PS/IS. Projected noise exposure from the proposed athletic field and play yard would be well below the SCA 5 A-weighted decibels (dBA) minimum increase threshold to warrant abatement consideration. Therefore, the proposed project would not result in a significant adverse noise impact on any noise-sensitive properties.

School Interior Noise Levels. Peak-period noise exposure levels within both the interior of the PS/IS and two IS/HS are considered "Marginally Unacceptable" per the *CEQR Technical Manual*.

Double-glazed windows and doors rated to provide a minimum of 31 dBA noise attenuation would be required in the design and construction of the PS/IS to reduce exterior exposure to an acceptable interior level of 45 dBA or less. Double-glazed windows and doors rated to provide a minimum of 28 dBA noise attenuation would be required in the design and construction of the two IS/HS to reduce exterior exposure to an acceptable interior level of 45 dBA or less. With these recommended mitigations in place, interior noise levels within the PS/IS and two IS/HS would remain below the maximum allowable interior L_{10} noise exposure level of 45 dBA.

G. Public Health

The proposed project would not result in significant adverse impacts related to hazardous materials, water quality, or air quality. Significant adverse mobile-source noise impacts and construction-related noise impacts would be below the health-based noise threshold. Therefore, the proposed project would not result in significant adverse impacts to public health, and no further analysis is warranted.

H. Neighborhood Character

The proposed project would result in significant adverse impacts related to historical and cultural resources, transportation, and noise. However, none of these identified impacts, either individually or cumulatively, would alter the defining features of the neighborhood's character.

The features of the St. John Villa campus that are visible from the surrounding community would be maintained to the fullest extent practicable. The Chapel Building, which is visible from Cleveland Place, would be maintained. The Former High School and Addition that front Landis Avenue and Cleveland Place would be demolished; however, the PS/IS would be constructed in a similar location, thereby maintaining the visual connection and street wall. Further, new landscaping features that would be introduced as part of the proposed project would reestablish the greenery that is part of the pedestrian experience in the study area.

The project site's former education function would be reestablished, thereby strengthening the institutional campus presence in the study area. Further, the low-density residential character of the study area and pedestrian views of greenery would be maintained.

Given these considerations, the proposed project would not result in a significant adverse impact to neighborhood character.

I. Construction Related Impacts

Construction of the proposed project would not result in significant adverse impacts related to transit, pedestrians, air quality, historic and cultural resources, hazardous materials, or natural resources. However, construction activities associated with the proposed project could result in significant adverse impacts related to traffic and noise.

TRANSPORTATION

Traffic

The proposed project would result in a significant adverse traffic impact at one study area intersection – Fingerboard Road at Narrows Road North – during the 2025 (Q4) construction analysis for the 3:00 PM to 4:00 PM construction peak hour. No significant adverse impacts are expected during the 6:00 AM to 7:00 AM construction peak hour. In the 2025 (Q4) No Action condition, this intersection would operate with one lane group at an unacceptable LOS E. The impact at this intersection would remain unmitigated during this peak quarter for construction activities.

During the 2030 (Q1) cumulative construction and operational analysis, the proposed project is projected to result in significant adverse traffic impacts at eight study area intersections during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM operational peak hours. During the 2030 (Q1) No Action scenario, six of these eight intersections would operate with one or more lane groups at an unacceptable LOS E or F. The impacts at four intersections could be mitigated through the implementation of traffic engineering improvements, including modification of traffic signal phasing/timing and/or intersection approach lane reconfiguration. The significant impacts at the remaining four intersections would remain unmitigated.

Transit

During the 2025 (Q4) peak analysis period for construction, construction worker travel demand would generate approximately 11 bus trips during both the AM and PM construction peak hours. This is below the *CEQR Technical Manual* 200-trip threshold; therefore, significant adverse impacts are not expected during the 2025 (Q4) analysis period.

During the 2030 (Q1) peak analysis period for cumulative construction and operational bus demand, there would be reduced adverse impacts during the operational peak hours than during the Q3 2030 operational peak hours with full occupancy, as the number of bus trips would be fewer during the construction phase. Most of the proposed project would be completed by this time, and significant adverse bus impacts are expected during the operational peak hours. Therefore, the mitigation measures for 2030 operational bus impacts would also be effective at mitigating any potential impacts from construction transit trips during the 2030 (Q1) peak quarter for cumulative construction and operational travel demand.

Given ongoing MTA passenger monitoring programs, it is expected that comprehensive service plans would be generated to respond to specific, known needs with capital and/or operational improvements where fiscally and operationally practicable to mitigate the significant adverse impact generated by the projected bus ridership demand.

Pedestrians

Construction worker travel demand on area sidewalks and crosswalks is expected to total approximately 11 trips in both the 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM construction peak hours in 2025 (Q4). This is below the *CEQR Technical Manual* 200-trip threshold; therefore, significant adverse impacts are not expected during the 2025 (Q4) analysis period.

During the 2030 (Q1) operational peak hour, travel demand on area sidewalks and crosswalks from completed portions of the proposed project and construction workers is expected to be approximately 912 trips in the 7:00 AM to 8:00 AM hour and 910 trips in the 2:15 PM to 3:15 PM peak hour. A secondary pedestrian screening analysis was prepared for the weekday 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM construction peak hours and pedestrian elements exceeding the *CEQR Technical Manual* 200-trip threshold were selected for detailed analysis.

All analyzed elements would operate at LOS C or better; therefore, no significant impacts to pedestrian operations are expected during the 2030 (Q1) analysis period.

Parking

The 2025 (Q4) peak analysis period for construction parking demand would be approximately 135 spaces during the weekday AM and midday peak periods. Construction workers would be permitted to park in the Cleveland Place parking lot, which will provide 106 spaces. The remaining 29 construction workers would be expected to park on-street. Parking surveys indicate that there is sufficient available capacity within a one-quarter mile walking distance to accommodate this additional demand during the weekday AM and midday periods.

The 2030 (Q1) peak analysis period for cumulative construction and operational parking demand would be approximately 179 spaces during the weekday AM and midday peak periods. Parking surveys indicate that there is sufficient available capacity to within a one-quarter mile walking distance to accommodate this additional demand. Therefore, significant parking shortfalls are not expected.

AIR QUALITY

Construction Year 2025 Cumulative On-Site and Off-Site Analysis Results

During the 2025 peak construction year, cumulative on-site and off-site total concentrations of CO, $PM_{2.5}$, particulate matter less than 10 microns in diameter (PM_{10}), and nitrogen dioxide (NO_2) are predicted to be below their respective NAAQS during peak construction.

Measures to reduce pollutant emissions during construction would be taken in accordance with applicable laws and regulations, including use of ultra-low sulfur dioxide (ULSD) fuel and Best Available Tailpipe Reduction Technologies (BAT) (diesel particulate filters) on all nonroad engines with a horsepower rating of 50 or greater. Dust suppression measures would also be implemented, in accordance with the New York City Air Pollution Control Code, to prevent particulate matter from becoming airborne.

Construction Year 2025 Parking Lot Analysis Results

Construction-generated worker vehicles using the Cleveland Place parking lot would result in concentrations below the applicable CO and $PM_{2.5}$ NAAQS. Therefore, no significant adverse impact would result.

Construction Analysis Year 2029 On-Site Analysis Results

Since construction activities would be significantly reduced when the project site becomes partially operational after Q3 2029, maximum predicted concentrations are well below the applicable. Therefore, construction activities would not result in a significant adverse impact to on-site receptors.

NOISE AND VIBRATION

Mobile Sources

<u>2025 Q4 Analysis</u>
During the AM peak construction traffic hour, a maximum noise level increase of 10 dBA is predicted along Hastings Street. For the PM peak construction traffic hour, a maximum noise level increase of 4 dBA is predicted along Cleveland Place. Increases in noise levels by at least 5 dBA would be clearly noticeable to receptors. In locations where a noise level increase of 10 dBA or more is predicted, a doubling in sound levels would occur and considered significant during the 2025 Q4 construction period. As such, there would be mobile-source noise impacts during the 2025 Q4 construction period with the proposed project.

<u>2030 Q1 Analysis</u>
A maximum noise level increase of 3 dBA is predicted in the AM peak traffic hour along Hastings Street. This increase would be just noticeable to receptors located along this roadway segment and would be less significant than increases predicted during the 2025 Q4 construction period. This increase in mobile-source noise would be minimal and would not constitute a significant adverse impact.

Stationary Sources

<u>2025 Q4 Analysis</u>
The proposed project would result in significant adverse stationary-source noise impacts during the 2025 Q4 construction period. These noise level increases assume that all pieces of equipment would be working concurrently and in the same location to evaluate a worst-case scenario. Actual construction noise levels will vary and depend on distance from the work, the types and quantities of equipment working concurrently, location of sensitive receptors (i.e., inside or outside), and natural and/or man-made features (e.g., barriers, berms, existing buildings) between the work and sensitive receptor that would provide shielding.

<u>2030 Q1 Analysis</u>
The proposed project would result in significant adverse stationary-source noise impacts during the 2030 Q1 construction period. As described above, these noise level increases assume that all pieces of equipment would be working at the same time and location to determine a worst-case scenario. Actual construction noise levels will vary and depend on distance from the work, the types and quantities of equipment working concurrently, location of sensitive receptors (i.e., inside or outside), and natural and/or man-made features (e.g., barriers, berms, existing buildings) between the work and sensitive receptor that would provide shielding. The analysis assumes that foundation work for the PS/IS would occur during this phase and not concurrently during Phase 3-1 foundation work. However, noise levels during 2030 Q1 could be reduced at the two IS/HS if all foundation work were to be completed during 2025 Q4 construction, when the school is not in operation.

Cumulative Effects

<u>2025 Q4 Analysis</u>

The proposed project would result in significant adverse cumulative noise impacts during the 2025 Q4 construction period. However, this significant increase in noise levels would be temporary and transient and would only occur during peak construction in Q4 2025. Noise attenuation recommendations to ensure the interior noise levels of the two IS/HS remain below the maximum allowable interior L_{10} noise exposure level of 45 dBA when the campus is fully operational are described in Chapter 7, "Noise."

<u>2030 Q1 Analysis</u>

The proposed project would result in significant adverse cumulative noise impacts during the 2030 Q1 construction period. Peak-period noise exposure levels in the two IS/HS are considered "Clearly Unacceptable" per the *CEQR Technical Manual*. However, this significant increase in noise levels would be temporary and transient and only occur during construction. Noise attenuation recommendations to ensure that interior noise levels in the two IS/HS remain below the maximum allowable interior L_{10} noise exposure level of 45 dBA when the campus is fully operational are described in Chapter 7, "Noise."

Vibration

For work occurring during Phases 1, 2, 3-1, and 3-2, no significant off-site vibration annoyance impacts are predicted.

On-site vibration levels would rise to the point at which they may potentially damage the existing Chapel Building on the project site; however, the SCA would institute a Construction Phasing Plan (CPP) to mitigate any such damage. During Phase 3-2 work, the campus would be in partial operation with the occupation of the two IS/HS. To avoid potential vibration impacts, faculty and staff should avoid campus locations within the specified distances during construction.

OTHER TECHNICAL AREAS

A CPP would be warranted to minimize the potential effects of construction equipment-related vibration to the S/NRHP-eligible Chapel Building. If excavation equipment is limited to the use of a backhoe, vibration is likely to remain at a low level. No pile driving would be required during construction. If jackhammering is required, then vibration control measures could be implemented to minimize, as much as possible, the vibration levels at the historic buildings within the study area.

Identified contaminants at the project site would be addressed through the following measures: the incorporation of a soil vapor barrier and a sub-slab depressurization system into the new building design; fuel oil storage tanks to be closed and removed; the characterization of excavated soil to identify material handling, reuse and/or disposal requirements; and the placement of two feet of environmentally clean fill over all landscaped areas. With the implementation of these measures, there would be no significant adverse construction impacts related to hazardous materials.

There are no significant natural resources on the project site or immediate vicinity.

Therefore, with these measures in place, the proposed project would not result in significant adverse construction-related impacts to historic and cultural resources, hazardous materials, or natural resources.

J. Mitigation Measures

In accordance with the *CEQR Technical Manual*, where significant adverse impacts are identified — in the areas of historic and cultural resources (architectural resources), transportation (traffic and bus service), noise (mobile sources), and construction (traffic, noise, and historic and cultural resources) — mitigation to reduce or eliminate the impacts to the fullest extent practicable is developed and evaluated.

As described in Chapter 3, "Historic and Cultural Resources," the proposed project would require the removal of several contributing elements of the S/NRHP-eligible St. John Villa campus and the construction of new buildings on the project site, which would result in a significant adverse impact to historic architectural resources. An LOR has been executed between the SCA and OPRHP that provides specific mitigation measures. Further, a CPP would be warranted to minimize the potential effects of construction equipment-related vibration on the S/NRHP-eligible Chapel Building.

As described in Chapter 5, "Transportation," the proposed project would result in significant adverse traffic impacts at nine study area intersections and one campus driveway location during one or more analyzed peak hours. For significant impacts identified for movements that operated as LOS E or F in the With-Action condition, improvements were identified to achieve the same or better service as with the No-Action condition. Most of these impacts could be mitigated through the implementation of traffic engineering improvements, including modification of traffic signal phasing/timing and/or intersection approach lane reconfiguration. While impacts at six intersections could be mitigated, traffic impacts at four intersections would remain unmitigated.

As described in Chapter 5, "Transportation," the highway analysis indicated the potential for significant adverse impacts on six freeway segments. Geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate this impact may not be practical. This option would also require coordination with and approval from the New York State Department of Transportation (NYSDOT). Other improvement measures would be considered to the extent that mitigation is feasible. An alternative mitigation option would include travel demand management (TDM) measures to reduce the vehicle trip demand to I-278. TDM mitigation would require a binding commitment to implement proposed measures. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated.

As described in Chapter 5, "Transportation," the proposed project would result in a predicted capacity shortfall through the maximum load point on the southbound S79-SBS bus route during the weekday PM peak hour. This significant adverse impact could be fully mitigated by the addition of approximately one standard bus in the PM peak hour.

As described in Chapter 7, "Noise," the proposed project would result in significant adverse mobile-source noise impacts at three locations. Measures to reduce or eliminate the proposed project's mobile-source noise impacts will be further explored by the SCA between the Targeted DEIS and Targeted FEIS.

As described in Chapter 10, "Construction-Related Impacts," the proposed project is projected to result in a significant adverse traffic impact at one study area intersection during the 2025 (Q4) 3:00 PM to 4:00 PM construction peak hour. The impact at this intersection – Fingerboard Road at Narrows Road North – would remain unmitigated. During the 2030 (Q1) cumulative construction and operational analysis, the proposed project is projected to result in significant adverse traffic impacts at eight study area intersections during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM operational peak hours. The impacts at four intersections could be mitigated through the implementation of traffic engineering improvements, including modification of traffic signal phasing/timing and/or intersection approach lane reconfiguration. The significant impacts at the remaining four intersections would remain unmitigated.

As described in Chapter 10, "Construction-Related Impacts," the proposed project is projected to result in significant adverse impacts on six freeway segments during the 2030 (Q1) 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM cumulative construction operational peak hours. Geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate the highway impact may not be practical. This option would also require coordination with and approval by NYSDOT. Other improvement measures would be considered to the extent that mitigation is feasible. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated.

As described in Chapter 10, "Construction-Related Impacts," for bus transit, there would be reduced adverse impacts during the construction 2030 (Q1) peak hours compared to the 2030 operational peak hours with full occupancy. MTA oversees regular and routine bus ridership monitoring, and as a general policy the agency provides additional bus service where demand warrants, subject to financial and operational constraints. Given this monitoring, comprehensive service plans would be generated to respond to specific known needs with capital and/or operational improvements, where fiscally and operationally practicable, to mitigate the significant adverse impact generated by the projected bus ridership demand.

As described in Chapter 10, "Construction-Related Impacts," mobile-source noise impacts would occur during construction. To mitigate mobile-source noise impacts from construction-related vehicles, the rerouting of traffic could be considered where appropriate. Additionally, if a building possesses alternate means of ventilation, windows could remain closed during periods of loud construction to help reduce construction noise levels.

As described in Chapter 10, "Construction-Related Impacts," stationary-source noise impacts would occur during the construction. Mitigation for construction noise impacts may include noise barriers, use of low-noise emission equipment, locating stationary equipment as far as feasible away from receptors, use of area enclosures, limited duration of activities, substituting diesel equipment with electric-powered equipment, scheduling of activities to minimize impacts (based on either time of day or seasonal considerations), and locating noisy equipment near natural or existing barriers that would shield sensitive receptors. Other noise control measures defined in Title 15, Chapter 28: Citywide Construction Noise Mitigation of The Rules of the City of New York may also be incorporated into the noise control mitigation plan.

As described in Chapter 10, "Construction-Related Impacts," no significant vibration annoyance impacts are predicted. However, during Phase 3-2 work, the campus would be in partial operation due to the occupation of the two IS/HS. To avoid potential annoyance impacts, faculty and staff should avoid campus locations within the specified distances during construction. To reduce construction-related vibration at sensitive receptors, additional mitigation measures may be implemented.

K. Alternatives

The No-Action Alternative would not result in the proposed project's potential significant adverse impacts related to traffic, one bus route, mobile-source noise, construction traffic, or construction noise. However, the No-Action Alternative would also not achieve the goals and objectives of the proposed project. The proposed project would provide needed public school capacity on Staten Island, reestablish the project site as an academic campus, and return the currently vacant site to productive use.

Alternatives for rehabilitation and/or reuse of existing buildings on the project site and a lower-density partial redevelopment scenario were also considered for their feasibility as potential alternatives to the proposed project. These alternatives were determined not to meet the proposed project's purpose and need and, therefore, were not advanced further.

L. Cumulative Effects

Key assumptions supporting the consideration of cumulative effects associated with the proposed project include: 1) the analysis year (2030) represents the permanent operational condition, when all three schools and associated athletic and maintenance facilities will be fully occupied and operating on the project site, and 2) worst-case conditions for construction-related technical analyses are assumed for a combination of concurrent construction activities for the three schools, Chapel Building rehabilitation, and athletic and maintenance facilities buildings.

Further, per the guidance of the *CEQR Technical Manual*, analyses of a proposed project also consider the project and site as part of a broader development context that is assumed to change over time. For example, certain analyses, such as transportation analyses, assume a factor of "background growth" that represents the population growth and development expected to occur over a period of time throughout the City regardless of whether the proposed project is implemented. Descriptions of the transportation methodology, as well as the related air quality and noise methodologies, are presented in Chapters 5, 6, and 7, respectively.

Given that the analyses presented in this Targeted EIS take into consideration both background growth and identified No-Build projects, the potential for indirect or secondary effects related to the proposed project has been assessed and the potential for cumulative effects are fully considered in this Targeted EIS.

M. Unavoidable Significant Adverse Impacts

To the extent practicable, mitigation measures are proposed in this Targeted EIS for the identified significant adverse impacts. Potential unavoidable significant adverse impacts with the proposed project have been identified in the following technical areas: transportation (traffic and transit), noise (mobile sources), and construction (traffic, transit, and noise).

N. Growth-Inducing Aspects of the Proposed Project

The proposed actions would not induce new development or introduce substantial changes to existing development in the area surrounding the project site. While the proposed project would alter conditions on the former St. John Villa campus, these changes would be limited to the project site and would be consistent with the site's historic use as an academic campus. The surrounding neighborhood is expected to remain generally in its current state of development with the proposed project.

O. Irreversible and Irretrievable Commitments of Resources

There are several resources, both natural and built, that would be expended in the construction and operation of any development that may result from the proposed actions. These resources include the building materials used in the construction of the proposed project; energy in the form of natural gas, petroleum products, and electricity consumed during construction; electricity consumed for the operation of the school buildings and maintenance facility; and the human effort required to develop, construct, and operate various components of any potential development. These resources are considered irretrievably committed because their reuse for some other purpose would be impossible or highly unlikely.

The proposed actions would constitute an irreversible and irretrievable commitment of a potential development site, as a land resource, thereby rendering its use for other purposes infeasible. The irreversible and irretrievable commitment of non-renewable energy would facilitate the provision of needed school seats. Further, the redevelopment of a former private academic campus comprising the project site, to facilitate the development of new public academic campus that would provide additional PS, IS, and HS capacity for Staten Island and New York City as a whole, would be in the public interest. Therefore, considered together, the irreversible and irretrievable commitment of resources would not represent a significant adverse impact.

Chapter 1: Project Description

A. Introduction

On behalf of the New York City Department of Education (DOE), the New York City School Construction Authority (SCA) proposes to create three new school facilities, an athletic field with an approximately 700-seat bleacher section, a maintenance building, and an internal driveway network with two parking lots, all of which would be located on Block 3087, Lot 1, as well as a separate parking lot on Block 3089, Lot 59 (the "proposed project") on the former St. John Villa campus at 57 Cleveland Place in the Arrochar section of Staten Island (the "project site") (see Figure 1-1, "Project Location"). The three new schools would consist of an approximately 764-seat Gifted and Talented primary school/intermediate school (PS/IS) and two separate, independently operated intermediate/high schools (IS/HS) that would collectively provide 1,350 seats. The two IS/HS would share a gymnasium, auditorium, kitchen, and lobby. The PS/IS would serve students in grade levels pre-kindergarten through eight throughout New York City. Each IS/HS would serve students in grade levels six through twelve in the Borough of Staten Island. All three schools would also serve special education students enrolled in a District 75 program[4] in the Borough of Staten Island. The proposed schools would collectively introduce approximately 2,114 new school seats to the project site.

The PS/IS would be constructed as a standalone structure on the southwestern portion of Block 3087, Lot 1 fronting Landis Avenue (see Figure 1-2, "Conceptual Site Plan"). The proposed shared facility for two IS/HS would be another standalone structure on the northeastern portion of Block 3087, Lot 1, with frontage on Garson Avenue. The proposed athletic field would be constructed on the southeastern portion of Block 3087, Lot 1, fronting Narrows Road South and Hastings Street. A maintenance facility would be constructed at the southern end of Block 3087, Lot 1, with frontage on Hastings Street. A staff parking lot would be provided on Block 3089, Lot 59, along Cleveland Place. An internal driveway network with two smaller parking lots would be constructed on Block 3087, Lot 1, which would maintain the existing driveway connections to Garson Avenue, Cleveland Place, Landis Avenue, and Hastings Street while adding a new connection to Narrows Road South.

The project site comprises the former St. John Villa campus, which was previously occupied by the former St. John Villa Academy, a private Roman Catholic school that supported educational facilities for approximately 724 students[5] in grades pre-kindergarten through twelve until its closure in 2018 (see Figure 1-3, "Aerial View Project Site"). The buildings associated with this former use remain on the project site and consist of a former convent building ("Villa"), Former Elementary School, Chapel Building, Former Annex, Garage, Former High School and Addition, and Former Pre-K Center. The existing buildings are in poor condition and cannot feasibly accommodate the modern school functions that the proposed project is intended to achieve. All but the Chapel Building would be removed in order to construct the proposed schools and athletic field. The Chapel Building would be maintained for school uses only and would not be made available for public use. Given the topography of the site, extensive grading would likely be necessary to accommodate the proposed school facilities.

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[4] District 75 programs provide Citywide special education services for students in need of intensive or specialized services. The proposed project would include approximately 96 District 75 seats in the PS/IS and approximately 96 District 75 seats in the proposed shared facility for two IS/HS, for a total of 192 District 75 seats.
[5] Knudson, Annalise (2018-01-09). *"What's next for students at closing St. John Villa Academy?"*. *Silive.com*.

Source: National Geographic Society, i-cubed, 2013; STV Incorporated, 2024.

Figure 1-1

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

PROJECT LOCATION

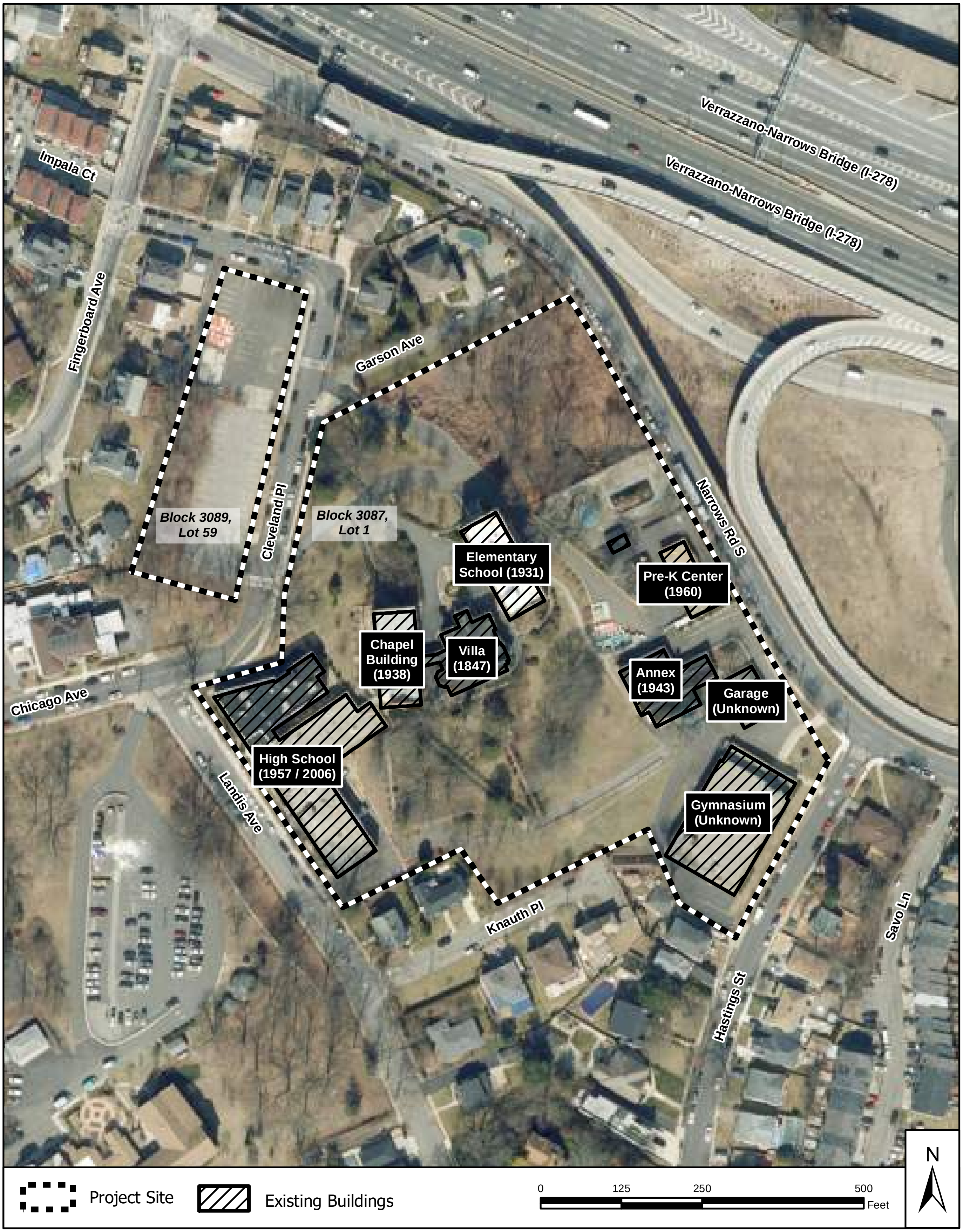
Note: For illustrative purposes only.

Source: Pei, Cobb, Freed, 2024; NYCSCA, 2024; STV Incorporated, 2024.

Figure 1-2

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

CONCEPTUAL SITE PLAN



Source: NYC Office of Technology and Innovation (OTI); NYC Department of City Planning MapPLUTO 2023 v3; New York State Office of Parks Recreation and Historic Preservation (OPRHP) Cultural Resources Information System (CRIS); ESRI, Maxar, Earthstar Geographics; STV Incorporated, 2024.

Figure 1-3

AERIAL VIEW PROJECT SITE

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

Funding for site preparation, design, and construction of the proposed project (collectively, the "proposed actions") would be provided by DOE's Five-Year Capital Plan for Fiscal Years 2025-2029. Construction would be phased beginning in Q4 2024 and would conclude in Q2 2030. Therefore, 2030 is assumed for the analysis year ("build year").

B. Purpose and Need

The proposed project's purpose is to provide additional permanent public primary, intermediate, and high school capacity in the Borough of Staten Island in order to address forecast changes in future student enrollment and to support DOE's policies regarding class size reduction. Staten Island faces overcrowding in many schools across the borough. District 31 (Staten Island) currently has only 24 percent of classes in compliance with the new Class Size Reduction Law; this is the third-lowest percentage in compliance among the City's 32 school districts. The compliance rate of District 31 is also significantly lower than the Citywide average of approximately 40 percent. In addition, District 31 represents nearly eight percent of all the classrooms needed Citywide. These data points are a clear indicator for the need for additional classrooms in District 31. Moreover, the Class Size Reduction Law mandates a very tight timeframe for its implementation, which requires the SCA/DOE to maximize capacity creation on any given site. In order to provide much-needed capacity, as well as to assist in achieving the recently adopted class size maximums, SCA, in collaboration with New York City Public Schools, intends to provide appropriate school space. In addition, it is a cost-effective use of taxpayer funds to provide ample school seats on a large property, rather than to acquire and develop additional parcels at additional taxpayer expense.

C. Project Site

The project site comprises approximately 8.49 acres (370,029 square feet [sf]) across two tax lots, Block 3087, Lot 1 and Block 3089, Lot 59, on either side of Cleveland Place in Staten Island Community District 2, on the former St. John Villa campus. The project site is surrounded by institutional uses to the west, residential uses to the north and south, and entrance and exit ramps to the Verrazano-Narrows Bridge (I-278) to the east. It is mapped with an R1-2 residential zoning district, in which schools are permitted as-of-right.

Block 3087, Lot 1

Block 3087, Lot 1 is an approximately 7.5-acre (326,927-sf) irregularly shaped lot that comprises the vast majority of Block 3087, bounded by Garson Avenue to the north, Hastings Street and Knauth Place to the south, Narrows Road South to the east, and Cleveland Place and Landis Avenue to the west. This portion of the project site has approximately 325 feet of frontage on Garson Avenue, approximately 235 feet of frontage on Hastings Street, approximately 135 feet of frontage on Knauth Place, approximately 625 feet of frontage on Narrows Road South, approximately 400 feet of frontage on Cleveland Place, and approximately 315 feet of frontage on Landis Avenue. Stone walls and hedges surround the perimeter of this lot, on which the majority of the existing elements of the former St. John Villa campus are located. The only portion of the former St. John Villa campus not located on this lot is a parking lot located on Block 3089, Lot 59, which is described in the following section. The elements of Block 3087, Lot 1 consist of:

- Buildings
    - Villa (1847): Located in the central portion of the lot, the Villa was originally constructed in 1847 as a private residence and was later modified to serve as a convent for the religious sisters who operated the former St. John Villa Academy. The building is a two-story gothic revival structure with a cellar. Since its construction, the building has been subject to substantial alterations.
    - Former Elementary School (1931): Located in the north-central portion of the lot, the Former Elementary School was constructed in 1931. It is a three-story brick building with cast stone trim in the Collegiate Gothic Style, which was commonly used for schools and college buildings from the early 1900s through the 1920s.
    - Chapel Building (1938): Located in the central portion of the lot, the Chapel Building was constructed in 1938. It is a four-story brick building with cast stone trim in the Collegiate Gothic Style, which was commonly used for schools and college buildings from the early 1900s through the 1920s.
    - Former Annex (1943): Located in the eastern portion of the lot, the one- to two-story brick Former Annex was constructed in 1943.
    - Garage (unknown): Located in the eastern portion of the lot, the one-story concrete Garage was constructed at some point between 1945 and 1957.
    - Former High School and Addition (1957/2006): Located in the western portion of the lot, the original two-story brick High School building was constructed in 1957. A two- to three-story Addition was added to the northern end of the Former High School in 2006.
    - Former Pre-K Center (1960): Located on the eastern portion of the project site, the one- to two-story brick Former Pre-K Center was constructed in 1960. Outside the building is a former play area.
    - Gymnasium (unknown): The one-story brick former Gymnasium is located on the southeastern corner of the lot.
- Landscaped Areas
    - Notable landscaped areas are located throughout this lot and include maintained lawns with planting beds, shrubbery, and mature trees as well as a tree-covered area at the lot's northeastern corner.
- Driveways and Parking Areas
    - This lot is traversed by driveways that provide access to the former St. John Villa campus buildings as well as several parking areas.

Block 3089, Lot 59

Block 3089, Lot 59 is an approximately 0.99-acre (43,102-sf) rectangular lot located at the northeastern corner of Block 3089, bounded by Cleveland Place to the north and to the east, Chicago Avenue to the south, and Fingerboard Road and Columbia Avenue to the west. This portion of the project site has approximately 475 feet of frontage on Cleveland Place. The lot was used as a parking lot for the former St. John Villa Academy. The asphalt-paved parking lot consists of two distinct sections. The southern half is at a higher elevation than the northern half and is bordered by a stone fence topped with chain-link fencing along Cleveland Place. The northern half is at a lower elevation and is bordered by chain-link fencing along Cleveland Place.

D. Proposed Actions

Construction of the approximately 764-seat PS/IS Gifted and Talented facility, a shared facility for two separate, independently operated IS/HS that would collectively provide approximately 1,350 seats, an athletic field, an internal driveway network, and parking areas entails the demolition of the existing Villa, Former Elementary School, Former Annex, Garage, Former High School and Addition, Former Pre-K Center, and the parking lot on Block 3089, Lot 59.[6] The Chapel Building located on the central portion of Block 3087, Lot 1 would be preserved. Construction would be phased, beginning in Q4 2024 (see Table 1-1, "Estimated Construction Phasing Plan"). Demolition would begin in Q4 2024 and conclude in Q1 2025. Site work, grading, and utilities would begin in Q1 2025 and conclude in Q4 2025. Construction of the shared facility for two IS/HS and the athletic field would begin in Q3 2025 and be complete by Q2 2029. Construction of the PS/IS and renovation of the Chapel Building would begin in Q3 2025 and conclude in Q2 2030. It is anticipated that the shared facility for two IS/HS would be operational in Q3 2029, while construction activities related to the PS/IS and Chapel Building renovations are ongoing.

Table 1-1: Estimated Construction Phasing Plan

Phase	Start	End
Demolition	Q4 2024	Q1 2025
Site Work, Grading, and Utilities	Q1 2025	Q4 2025
Construction of two IS/HS and Athletic Field*	Q3 2025	Q2 2029
Construction of PS/IS and Renovation of Chapel Building*	Q3 2025	Q2 2030
***NOTE**: It is anticipated that the shared facility for two IS/HS would be operational in Q3 2029 while construction activities related to the PS/IS and Chapel Building renovations are ongoing.		

Source: SCA, 2024.

The PS/IS would be constructed as an approximately 96,381-sf standalone structure (see Table 1-2, "Estimated Project Elements"). It would provide approximately 764 seats, including approximately 96 District 75 seats, for students in grade levels pre-kindergarten through eight, and would include classrooms for those grade levels, special education (District 75) classrooms, specialized instruction classrooms, science labs and resources rooms, a gymnatorium with retractable seating, lobby, student services offices, storage areas, administrative space, cafeteria space and kitchen, and custodial space. Entrances would be located on the southwestern frontage of the proposed structure, facing Landis Avenue, and the northeastern and southern frontages, facing the interior of the project site. An up to approximately 16,000-sf at-grade play yard would be provided on the southeastern side of the PS/IS, consisting of a general playground and an early childhood center playground.

The new shared facility for two IS/HS would be an approximately 186,405-sf, three- to five-story structure. The main entrance would be located on the western frontage of the proposed structure facing toward Landis Avenue. The shared facility for two IS/HS would provide approximately 1,350 seats for students in grades six through twelve, and would include classrooms for those grade levels, special education (District 75) classrooms, a resource room for small group instruction, an art classroom, a music room and storeroom, a science lab and demo room, library, medical suite, cafeteria and kitchen, custodial areas, physical education space (a competition gymnasium with bleacher seating, a stage, storage areas, locker rooms, an exercise room, and a health instructor's office), custodial areas, and storage.

[6] Per the New York City Department of Finance Record, the SCA acquired Block 3089, Lot 59 and Block 3087, Lot 1 in 2019.

Table 1-2: Estimated Project Elements*

Project Element	Area (sf)	Seats	District 75 Students	Teachers and Staff**	Parking Spaces
PS/IS	96,381 sf	764	96	99	--
Two IS/HS with shared facilities	186,405 sf	1,350	96	158	--
Athletic Field (including bleachers)	84,000 sf	--	--	--	--
Renovated Chapel Building	21,700 sf	--	--	--	--
Maintenance Building	3,275 sf	--	--	--	--
Staff Parking Lot on Block 3087, Lot 1 (including landscaping)	41,996 sf	--	--	--	106
Internal Driveway Network with two parking lots on Block 3089, Lot 59 (including landscaping)	175,668	--	--	--	54

***NOTE:** All project numbers are approximate.
****NOTE:** Based on a ratio of 10:1 (10 students to one teacher) for non-District 75 seats and a ratio of 6:1:1 (six students to one special education teacher and one aid) for District 75 seats.

Source: SCA, 2024; STV Incorporated, 2024.

An approximately 84,000-sf athletic field would be constructed at the southeastern portion of the project site. The athletic field would host athletic programs, including but not limited to soccer, football, field hockey, and lacrosse. Bleacher seating to accommodate approximately 700 viewers would occupy approximately 4,000 sf on the western side of the athletic field. Outdoor lighting would be provided along the edges of the athletic field.

A staff parking lot with approximately 106 parking spaces would be constructed on Block 3089, Lot 59, across Cleveland Place from the rest of the academic campus. In addition to this lot, approximately 54 parking spaces across two parking lots would be provided on Block 3087, Lot 1, within an internal driveway network that would provide interior access to the site. Existing driveway connections to Garson Avenue, Cleveland Place, Landis Avenue, and Hastings Street would be maintained and a new connection to Narrows Road South would be added as part of the proposed project. A small maintenance structure would be constructed on the southern edge of Block 3087, Lot 1 near Hastings Street. Landscape features would be introduced throughout the campus.

The PS/IS would employ approximately 99 teachers and staff. The proposed shared facility for two IS/HS would employ approximately 158 teachers and staff. These public school facilities would operate during normal school hours from September to June, though it is expected that the athletic field would operate occasionally in the evenings, on weekends, and during summer months when school is not in session.

Chapter 2: Shadows

This section discusses the potential impacts of the proposed project with regard to shadows. Per the guidance of the *City Environmental Quality Review* (*CEQR) Technical Manual*, a shadow is defined as "…the condition that results when a building or other built structure blocks the sunlight that would otherwise directly reach a certain area, space or feature." The *CEQR Technical Manual* further elaborates that a shadows assessment is appropriate if a project would result in new structures of 50 feet or more or is located near a sunlight-sensitive resource.

As the proposed project would result in new structures greater than 50 feet in height, a shadows assessment is appropriate. Per the *CEQR Technical Manual,* an appropriate study area for a shadows screening is the area surrounding the project site within a radius defined as 4.3 times the height of the proposed project. The tallest of the new structures would be approximately 105 feet tall, including rooftop mechanical equipment, and so the study area radius would be approximately 452 feet around the project site.

A. Existing Conditions

As described in Chapter 1, "Project Description," the project site itself is a State/National Register of Historic Places (S/NRHP)-eligible resource, containing several buildings (the Villa, the Former Elementary School, the Chapel Building, the Former Annex, the Garage, the Former High School and Addition, the Former Pre-K Center, and Gymnasium), landscaped areas, and driveways and parking areas. Sunlight-sensitive elements include the existing buildings and landscaping features on the project site. Because the proposed project would entail the demolition of all buildings except for the Chapel Building, as well as the regrading of existing landscaped areas, this chapter only details the sunlight-sensitive features of the Chapel Building.

Located in the central portion of the lot, the Chapel Building was constructed in 1938. It is a four-story brick building with cast stone trim in the Collegiate Gothic Style. The building contains a portico balcony on the east façade, a balcony on the south façade, and arched windows with rusticated stone trim that once contained stained glass (all stained glass was removed prior to acquisition of the project site by the SCA) on both the east and west façades. These elements potentially meet the *CEQR Technical Manual* definition of sunlight-sensitive architectural features. In existing conditions, shadows from the nearby Villa and Former Elementary School cast shadows onto the Chapel Building to varying degrees throughout the course of the day and year. See Section B, "The Future Without the Proposed Project," in this chapter for a detailed description of the extent and duration of existing shadows on the Chapel Building.

No other sunlight-sensitive resource is located within 452 feet of the project site.

B. The Future Without the Proposed Project

If the proposed project is not constructed, shadows from the existing buildings on the project site would remain unchanged. No potential historic resources are slated for designation near the project site, and no new publicly accessible open space is planned to be developed near the project site by 2030. No new developments would be completed within the study area by the 2030 build year. Therefore, conditions would remain unchanged from existing conditions.

In the future without the proposed project, as in existing conditions, shadows from the Villa and Former Elementary School would continue to extend to the S/NRHP-eligible Chapel Building to varying degrees throughout the course of the day and year. To illustrate the extent and duration of these shadows, the analysis dates and timeframes (December 21st – 8:53 AM to 2:53 PM; March 21st/September 21st – 7:36 AM to 4:29 PM; May 6th/August 6th – 6:27 AM to 5:18 PM; June 21st 5:57 AM to 6:01 PM) outlined in the *CEQR Technical Manual* for a detailed shadows analysis are used in conjunction with a three-dimensional model.

As shown in Table 2-1, "No-Action Condition Detailed Shadows Analysis," and illustrated on Figures 2-1a through 2-1d, "No-Action Condition Detailed Shadows Analysis," shadows from the existing Villa and Former High School extend onto the S/NRHP-eligible Chapel Building on all four analysis dates. While minor variations occur, the same general pattern of shadow coverage is present on all four analysis dates.

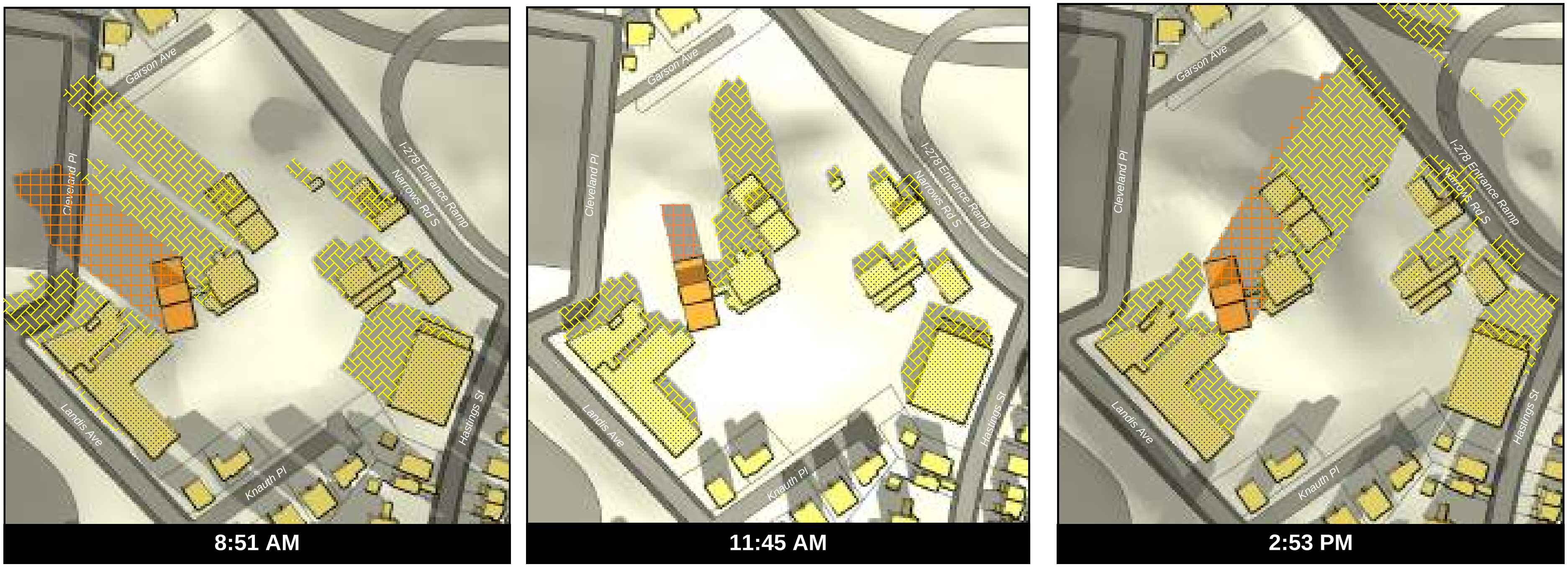
The extent of shadows is greatest at the beginning of the analysis period, with shadows from the Villa extending across large portions of the east façade of the Chapel Building, which contains arched windows with rusticated stone trim. These shadows gradually recede from the beginning of the analysis period for approximately 59 minutes on December 21st, 2 hours and 29 minutes on March 21st/September 21st, 3 hours and 8 minutes on May 6th/August 6th, and 3 hours and 31 minutes on June 21st, until the shadows are no longer present on the Chapel Building.

Shadows from the Former High School and Addition extend onto the west façade of the Chapel Building in the afternoon and continue to the end of the analysis period for approximately 1 hour and 59 minutes on December 21st, 1 hour and 20 minutes on March 21st/September 21st, 13 minutes on May 6th/August 6th, and 31 minutes on June 21st. The small portion of the Chapel Building affected by shadows from the Former High School and Addition does not contain any notable architectural elements.

Table 2-1: No-Action Condition Detailed Shadows Analysis

Analysis Date	Duration of Shadows on Chapel Building	Time Shadows Reach Chapel Building	Time Shadows Exit Chapel Building	Description
December 21st 8:53 AM – 2:53 PM	2 hours 58 minutes	8:51 AM	9:50 AM	Shadows from the Villa extend across the northern portion of the east façade of the Chapel Building at 8:51 AM and gradually recedes until 9:50 AM. This portion of the Chapel Building contains arched windows with rusticated stone trim.
		12:54 PM	2:53PM	Shadows from the Former High School and Addition extend to the southern portion of the west façade of the Chapel Building by 12:54 PM. The shadows extend until 2:53 PM when it covers a small portion of the Chapel Building's southwest corner. This small portion of the Chapel Building does not contain any notable architectural elements.
March 21st/ September 21st 7:36 AM – 4:29 PM	3 hours 49 minutes	7:36 AM	10:05 AM	Shadows from the Villa would extend across the majority of the east façade of the Chapel Building at 7:36 AM and gradually recede until 10:05 AM. This portion of the Chapel Building contains arched windows with rusticated stone trim.
		3:09 PM	4:29 PM	Shadows from the Former High School and Addition extend to the southern portion of the west façade of the Chapel Building by 3:09 PM. The shadows extend until 4:29 PM when it covers a small portion of the Chapel Building's southwest corner. This small portion of the Chapel Building does not contain any notable architectural elements.
May 6th/August 6th 6:27 AM – 5:18 PM	3 hours 21 minutes	6:27 AM	9:35 AM	Shadows from the Villa would extend across the majority of the east façade of the Chapel Building at 6:27 AM and gradually recede until 9:35 AM. This portion of the Chapel Building contains arched windows with rusticated stone trim.
		5:05 PM	5:18 PM	Shadows from the Former High School and Addition extend to the southern portion of the west façade of the Chapel Building by 5:05 PM. The shadows extend until 5:18 PM when it covers a small portion of the Chapel Building's southwest corner. This small portion of the Chapel Building does not contain any notable architectural elements.
June 21st 5:57 AM – 6:01 PM	4 hours 2 minutes	5:57 AM	9:28 AM	Shadows from the Villa would extend across the majority of the east façade of the Chapel Building at 5:57 AM and gradually recede until 9:28 AM. This portion of the Chapel Building contains arched windows with rusticated stone trim.
		5:30 PM	6:01 PM	Shadows from the Former High School and Addition extend to the southern portion of the west façade of the Chapel Building by 5:30 PM. The shadows extend until 6:01 PM when it covers a small portion of the Chapel Building's southwest corner. This small portion of the Chapel Building does not contain any notable architectural elements.

Source: STV Incorporated, 2024



No-Action Project Site Shadow December 21

- Existing buildings on project site to be demolished
- S/NRHP-Eligible Chapel Building
- Incremental Shadow from existing buildings on project site to be demolished
- Incremental Shadow from S/NRHP-Eligible Chapel Building

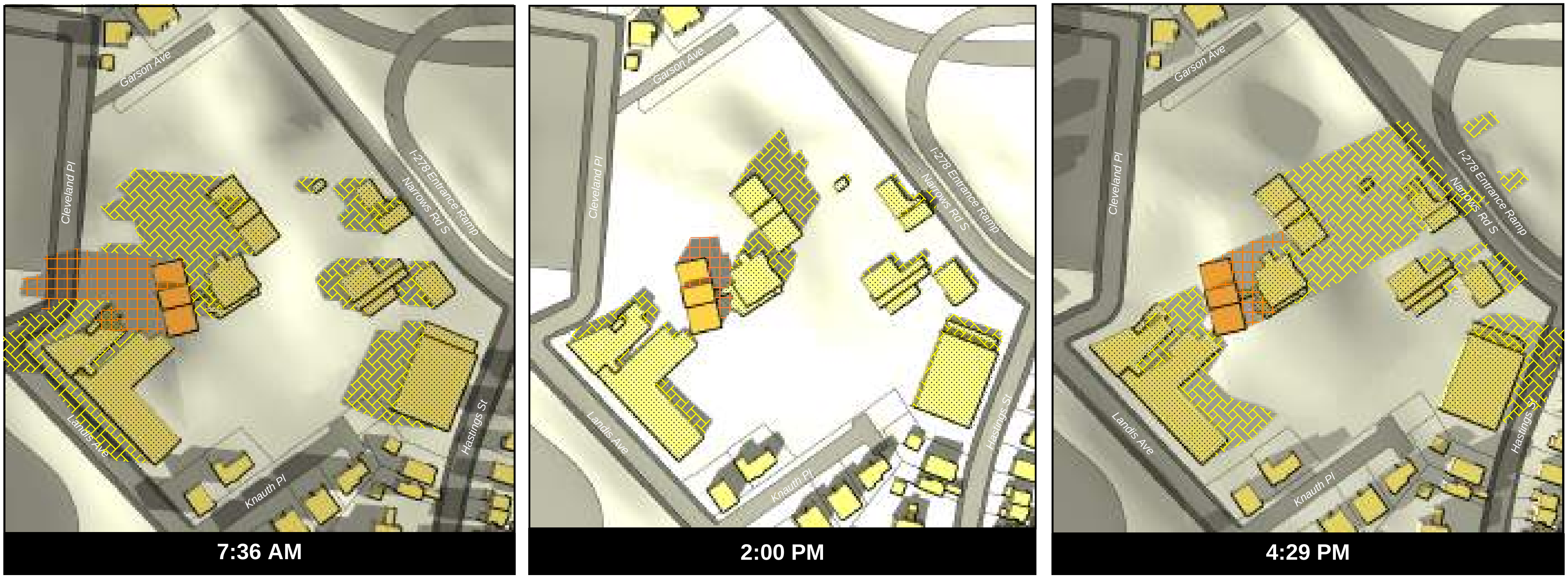
100 0 100 200 Feet

N

Source: STV Incorporated, 2024.

Figure 2-1a

NO-ACTION CONDITION DETAILED SHADOWS ANALYSIS



No-Action Project Site Shadow March 21/ September 21

Existing buildings on project site to be demolished

S/NRHP-Eligible Chapel Building

Incremental Shadow from existing buildings on project site to be demolished

Incremental Shadow from S/NRHP-Eligible Chapel Building

100 0 100 200 Feet

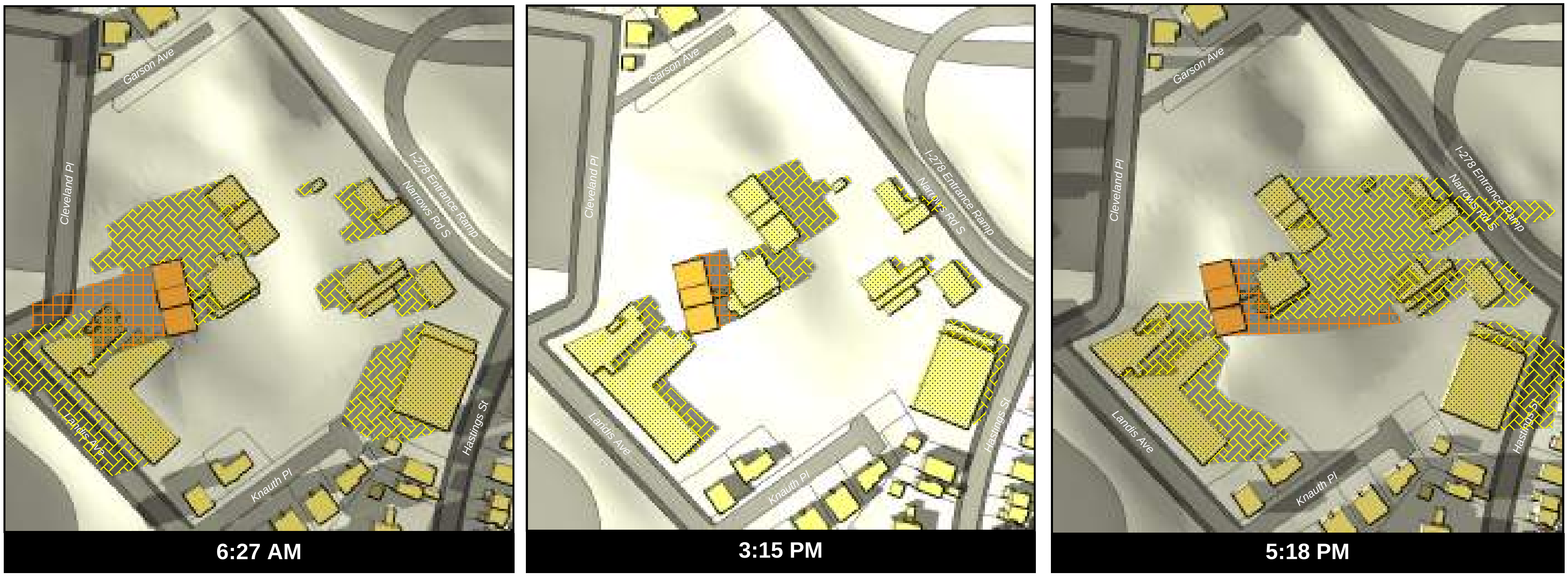
N

Source: STV Incorporated, 2024.

Figure 2-1b

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

NO-ACTION CONDITION DETAILED SHADOWS ANALYSIS



No-Action Project Site Shadow May 6/ August 6

Existing buildings on project site to be demolished

S/NRHP-Eligible Chapel Building

Incremental Shadow from existing buildings on project site to be demolished

Incremental Shadow from S/NRHP-Eligible Chapel Building

100 0 100 200 Feet

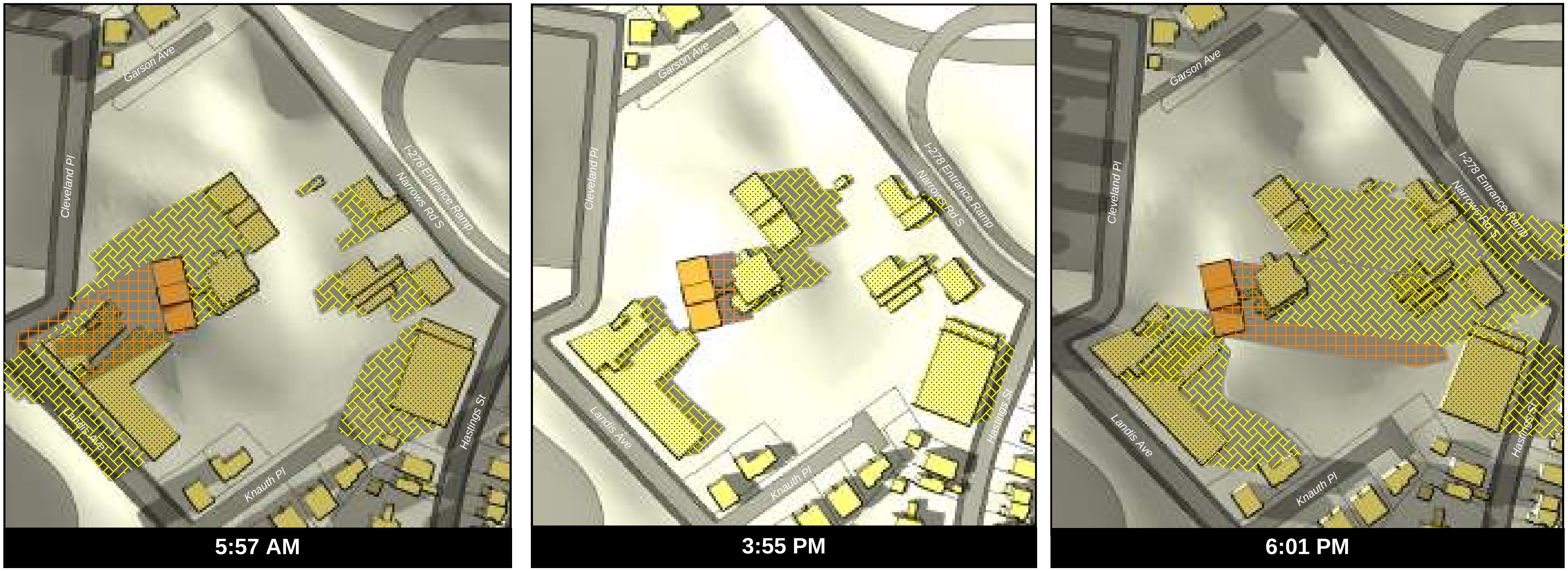
N

Source: STV Incorporated, 2024.

Figure 2-1c

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

NO-ACTION CONDITION DETAILED SHADOWS ANALYSIS



No-Action Project Site Shadow June 21

Existing buildings on project site to be demolished

S/NRHP-Eligible Chapel Building

Incremental Shadow from existing buildings on project site to be demolished

Incremental Shadow from S/NRHP-Eligible Chapel Building

100 0 100 200 Feet

N

Source: STV Incorporated, 2024.

Figure 2-1d

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

NO-ACTION CONDITION DETAILED SHADOWS ANALYSIS

C. Potential Effects of the Proposed Project

Tier 1 and Tier 2 Screenings

A Tier 1 Screening is performed to assess whether any potentially sunlight-sensitive resources exist within the area of maximum shadow for a proposed project. A Tier 2 Screening refines the Tier 1 Screening to account for the path that the sun travels across the sky in the northern hemisphere; no shadow can be cast in a triangular area south of any given project site. In New York City, this area lies between -108 and +108 degrees from true north (see Figure 2-2, "Tier 1 and Tier 2 Shadows Screenings").

The tallest building proposed as part of the project would have an estimated height of approximately 105 feet, including rooftop mechanical equipment. The maximum shadow would extend approximately 452 feet. As previously described, the project site itself is a S/NRHP-eligible resource. Extensive regrading of the site is anticipated, so the landscaping features would be replaced with new features as part of the proposed project. Therefore, in the future with the proposed project, only the existing S/NRHP-eligible Chapel Building located on the central portion of Block 3087, Lot 1 would be preserved. No other sunlight-sensitive resource is located within 452 feet of the project site.

Given the Chapel Building's proximity to proposed school facilities, a detailed analysis is appropriate.

Source: NYC Department of City Planning MapPLUTO 23v3.1; STV Incorporated 2024.

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

Figure 2-2

TIER 1 AND TIER 2 SHADOWS SCREENING

Detailed Analysis

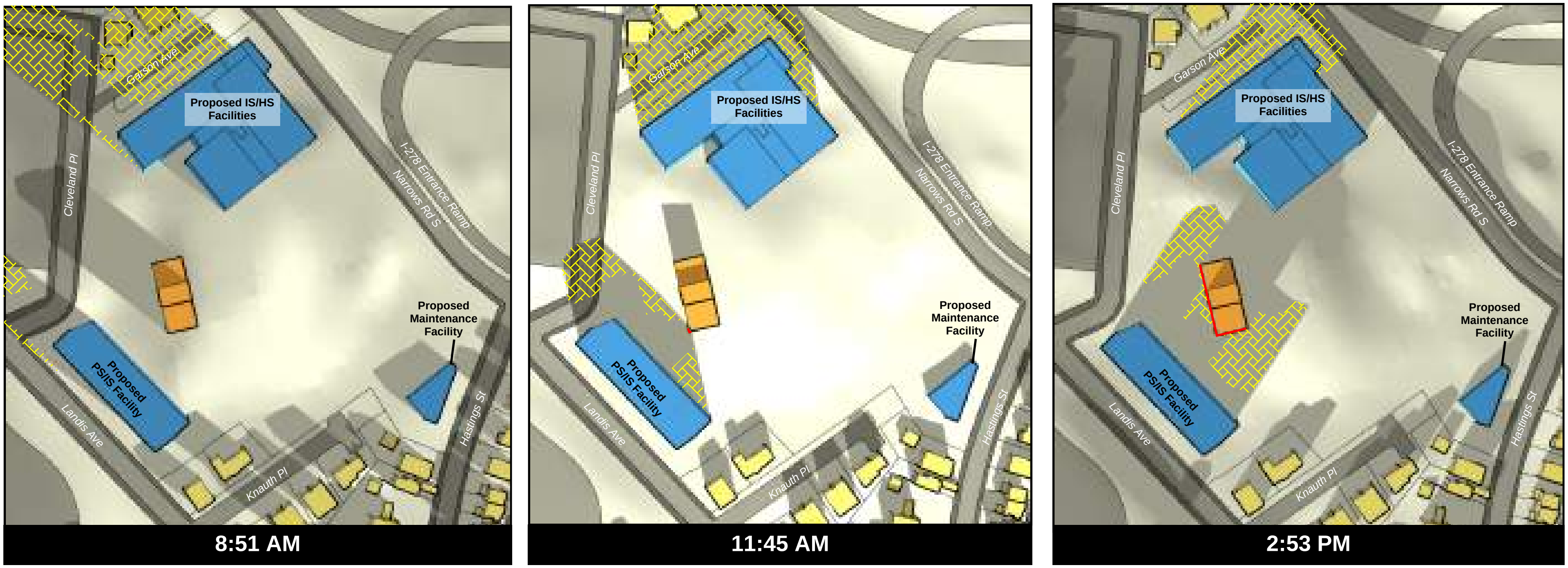
As shown in Table 2-2, "With-Action Condition Detailed Shadows Analysis," and illustrated on Figures 2-3a through 2-3d, "With-Action Condition Detailed Shadows Analysis," shadows from the proposed project would extend onto the S/NRHP-eligible Chapel Building on all four of the analysis dates. While minor variations occur, the same general pattern of shadow coverage is present on all four analysis dates.

On each of the analysis dates, shadows from the PS/IS would reach the Chapel Building in the afternoon and would gradually extend to cover portions of the west and sometimes south façades, which contain arched windows with rusticated stone trim, a balcony on the south façade, and a portico balcony on the west façade. The duration of incremental shadows on the Chapel Building resulting from the proposed project would be 3 hours and 8 minutes on December 21st, 3 hours and 34 minutes on March 21st/September 21st, 4 hours 18 minutes on May 6th/August 6th, and 4 hours 46 minutes on June 21st. A more detailed discussion of each of the analysis dates is provided below.

Table 2-2: With-Action Condition Detailed Shadows Analysis

Analysis Date	Duration of Shadows on Chapel Building	Time Shadows Reach Chapel Building	Time Shadows Exit Chapel Building	Description
December 21st 8:53 AM – 2:53 PM	3 hours 8 minutes	11:45 AM	2:53 PM	Shadows from the PS/IS would reach the southern corner of the south and west façades of the Chapel Building at approximately 11:45 AM. The incremental shadows would continue to extend across the south and west façades until 2:53 PM when much of the south and west façades would be in shadow. The south façade contains arched windows with rusticated stone trim and a balcony. The west façade contains arched windows with rusticated stone trim and a portico balcony.
March 21st/ September 21st 7:36 AM – 4:29 PM	3 hours 34 minutes	12:55 PM	4:29 PM	Shadows from the PS/IS would reach the middle of the west façade of the Chapel Building at 12:55 PM. The shadows would extend across the south façade and the southern half of the west façade until 4:29 PM when the majority of the south façade would be in incremental shadows and the southern half of the west façade would be partially in incremental shadow. The south façade contains arched windows with rusticated stone trim and a balcony. The west façade contains arched windows with rusticated stone trim and a portico balcony.
May 6th/August 6th 6:27 AM – 5:18 PM	4 hours 18 minutes	1:00 PM	5:18 PM	Shadows from the PS/IS would reach the middle of the west façade of the Chapel Building at 1:00 PM. The shadows would continue to extend across the west façade until 5:18 PM when a portion of the west façade would be in incremental shadows and most of the south façade would be in incremental shadow. The west façade contains arched windows with rusticated stone trim and a portico balcony. The south façade contains arched windows with rusticated stone trim and a balcony.
June 21st 5:57 AM – 6:01 PM	4 hours 46 minutes	1:15 PM	6:01 PM	Shadows from the PS/IS would reach the middle of the west façade of the Chapel Building at 1:15 PM. The incremental shadows would increase until 3:55 PM and from thereafter the shadows would recede until 6:01 PM when a portion of the west façade would be in incremental shadow. The west façade contains arched windows with rusticated stone trim and a portico balcony.

Source: STV Incorporated, 2024.



Maximum Incremental Shadow December 21

Proposed Project Buildings | S/NRHP-Eligible Chapel Building | Incremental Shadow | Incremental Shadow on S/NRHP-Eligible Chapel Building

100 0 100 200 Feet

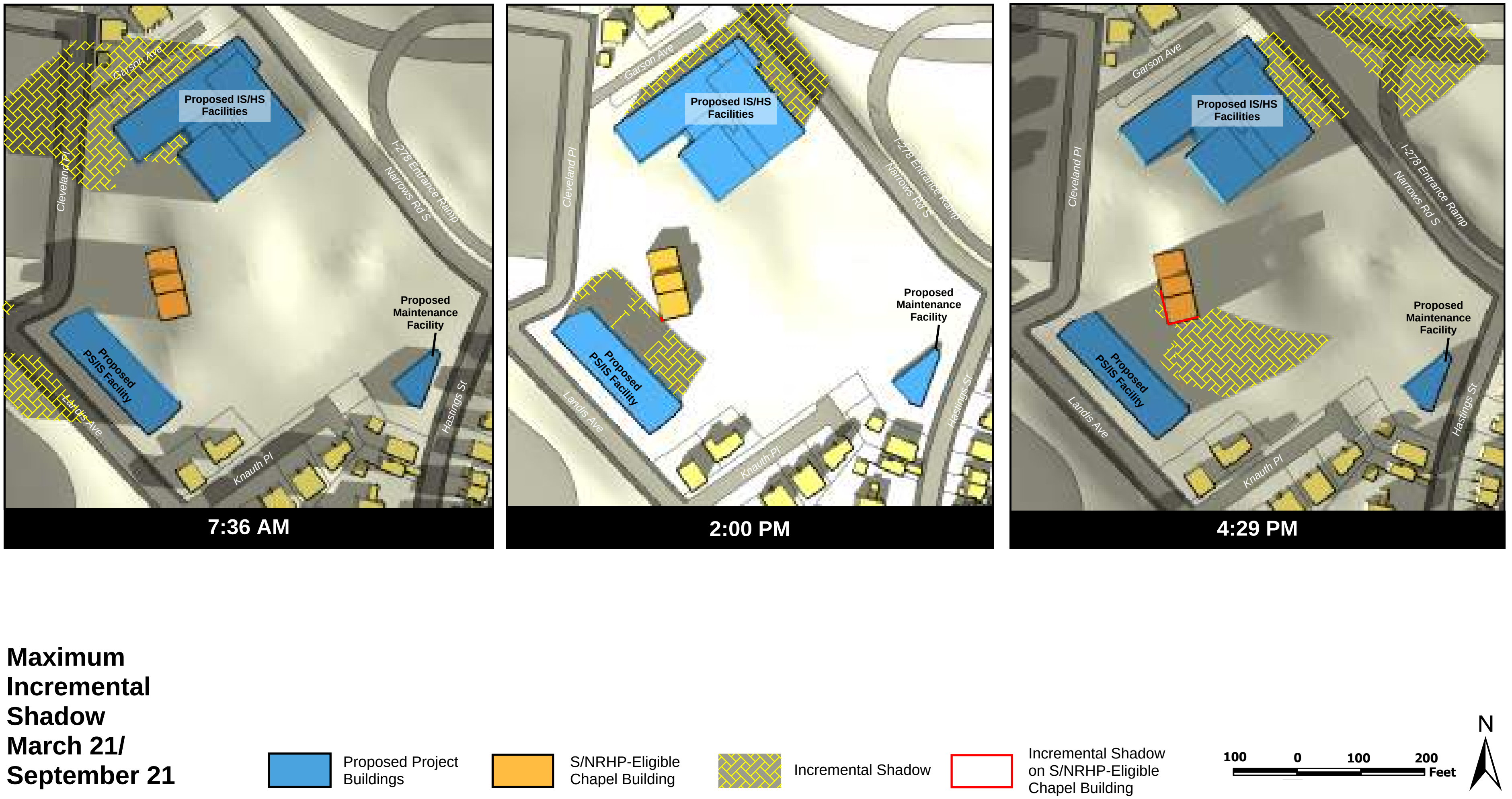
N

Source: STV Incorporated, 2024.

Figure 2-3a

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

WITH-ACTION CONDITION DETAILED SHADOWS ANALYSIS



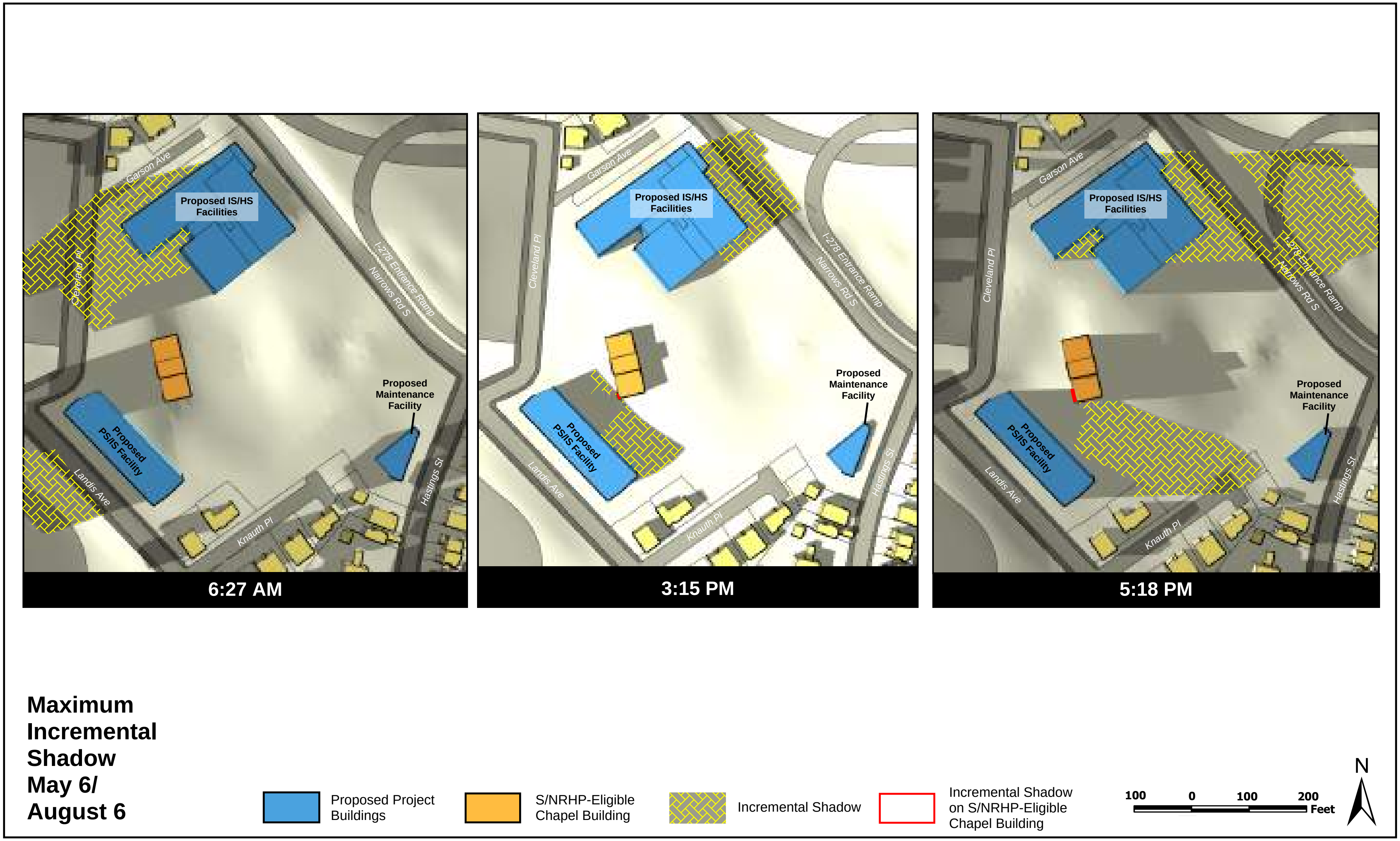
Maximum Incremental Shadow March 21/ September 21

Source: STV Incorporated, 2024.

Figure 2-3b

Proposed Redevelopment of the former St. John Villa Campus
57 Cleveland Place, Staten Island

WITH-ACTION CONDITION DETAILED SHADOWS ANALYSIS



Maximum Incremental Shadow May 6/ August 6

Source: STV Incorporated, 2024.

Figure 2-3c

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

WITH-ACTION CONDITION DETAILED SHADOWS ANALYSIS

Maximum Incremental Shadow June 21

Proposed Project Buildings
S/NRHP-Eligible Chapel Building
Incremental Shadow
Incremental Shadow on S/NRHP-Eligible Chapel Building

100 0 100 200 Feet

N

Source: STV Incorporated, 2024.

Figure 2-3d

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

WITH-ACTION CONDITION DETAILED SHADOWS ANALYSIS

December 21st

On the December 21st analysis date, the overall duration of shadows on the Chapel Building would increase from 2 hours and 58 minutes in the No-Action condition to 3 hours and 8 minutes in the With-Action condition. The extent of the shadows would also be greater on the west and south façades in the With-Action condition, resulting in new shadows on arched windows with rusticated stone trim, the balcony on the south façade, and the portico balcony on the west façade. At the same time, incremental shadows on the east façade of the Chapel Building, which also contains arched windows with rusticated stone trim, would decrease from 59 minutes in the No-Action condition to no incremental shadows in the With-Action condition.

March 21st/September 21st

On the March 21st/September 21st analysis date, the overall duration of shadows on the Chapel Building would decrease from 3 hours and 49 minutes in the No-Action condition to 3 hours and 34 minutes in the With-Action condition. The extent of the shadows would be greater on the west and south façades in the With-Action condition, resulting in new shadows on arched windows with rusticated stone trim, the balcony on the south façade, and the portico balcony on the west façade. At the same time, incremental shadows on the east façade of the Chapel Building, which also contains arched windows with rusticated stone trim, would decrease from 2 hours and 29 minutes in the No-Action condition to no incremental shadows in the With-Action condition.

May 6th/August 6th

On the May 6th/August 6th analysis date, the overall duration of shadows on the Chapel Building would increase from 3 hours and 21 minutes in the No-Action condition to 4 hours and 18 minutes in the With-Action condition. The extent of the shadows would be greater on the west façades in the With-Action condition, resulting in new shadows on arched windows with rusticated stone trim and the portico balcony. At the same time, incremental shadows on the east façade of the Chapel Building, which also contains arched windows with rusticated stone trim, would decrease from 3 hours and 8 minutes in the No-Action condition to no incremental shadows in the With-Action condition.

June 21st

On the June 21st analysis date, the overall duration of incremental shadows on the Chapel Building would increase from 4 hours and 2 minutes in the No-Action condition to 4 hours and 46 minutes in the With-Action condition. The extent of the shadows would be greater on the west façade in the With-Action condition, resulting in new shadows on arched windows with rusticated stone trim and the portico balcony. At the same time, incremental shadows on the east façade of the Chapel Building, which also contains arched windows with rusticated stone trim, would decrease from 3 hours and 31 minutes in the No-Action condition to no incremental shadows in the With-Action condition.

Conclusion

The *CEQR Technical Manual* considers a substantial reduction in sunlight available for the enjoyment or appreciation of the sunlight-sensitive features of a historic or cultural resource as a potential significant adverse impact.

In the future with the proposed actions, shadows on the Chapel Building would be altered from current conditions. Shadows on the east façade of the Chapel Building, which contains arched windows with rusticated stone trim, would notably decrease in the future with the proposed project. However, shadows would also notably increase on the south and west façades of the Chapel Building, which contain arched windows with rusticated stone trim, the balcony on the south façade, and the portico balcony on the west façade.

The increase in shadows on the south façade would not be perceptible to the general public from the surrounding streetscape. The increase in shadows on the west façade would be perceptible to the general public along Cleveland Place and Chicago Avenue. However, the public's enjoyment of this resource is not dependent on the sunlight received on the southern balcony, the portico balcony, or the building's arched windows, from which all stained glass was removed prior to the SCA's acquisition of the site. Rather, public enjoyment of the Chapel Building is primarily derived from its visual prominence and its historic aesthetic, both of which would remain unaffected by the increase in shadow.

Further, as described in Chapter 3, "Historic and Cultural Resources," the SCA is in ongoing coordination with New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) throughout the design process to maintain key historic elements on the project site, while allowing for the development of modern educational facilities that meet current building codes and standards. This additional level of review will help ensure that the public enjoyment of the Chapel Building is maintained in the future with the proposed project.

Given these considerations, the proposed project would not result in a significant adverse shadows impact to the Chapel Building.

Chapter 3: Historic and Cultural Resources

This section considers the potential impact of the construction of the proposed project on archaeological and historic resources on or near the project site. For archaeological resources, the *CEQR Technical Manual* recommends a detailed evaluation if there would be in-ground disturbance of an area not previously excavated. For historic resources, the *CEQR Technical Manual* recommends a detailed assessment if a proposed action would result in an adverse effect on historic buildings, structures, objects, sites, or districts.

A. Existing Conditions

ARCHAEOLOGICAL RESOURCES

The project site has been previously disturbed as a result of significant grading and filling associated with the construction of former and existing buildings and subterranean passageways as well as extensive subgrade utility work. The present parking lot parcel once had a high knolltop that was eradicated through grading. These activities have destroyed the upper limits of the natural soil column within the project site.

Please refer to Appendix A for the Phase IA Archaeological Documentary Study, which addresses archaeological sensitivity of the project site.

Precontact Sensitivity. From what is known of precontact period settlement patterns in New York City, most habitation and processing sites are found in sheltered, elevated sites close to wetland features, major waterways, and with nearby sources of fresh water. Several small glacial ponds were located in the general vicinity, with one pond located to the northeast of the project site at the base of a steep ravine. Original soils on the site may have been well drained. However, the project site has significant topography, with much of the property containing very substantial slopes. Based on these factors, in its natural state if there were sections of the project site that were not excessively sloped, those areas would have had a moderate precontact sensitivity. However, given the steep slopes of the project site, combined with the significant disturbance to the property, the Phase IA Archaeological Documentary Study concluded that there is low precontact period archaeological sensitivity for the property. Therefore, further research and study concerning precontact archaeological resources is not recommended (see Appendix A).

Historic Sensitivity. Research indicates that the project site was undeveloped until the existing Villa was constructed, in 1847. Originally erected for merchant William H. Townsend and his family, the Villa had a succession of owners until being sold to the Sisters of St. John the Baptist in 1922. Some of the owners, including the Townsends through the early 1860s and Charles Luling and his family into the 1870s, could be documented as living at the Villa, likely as a summer home. Both the Townsends and the Lulings employed domestic help who lived in the Villa with them. Several additional owners of the Villa from the 1880s through the first decades of the 1900s may have rented the property to tenants or used the large home for boarding. During the first decades of the twentieth century, the Villa was known as Clar Manor.

Prior to the property's use by the St. John Villa Academy, there may have been historic period archaeological resources present on the project site associated with the nineteenth-century occupation of the parcel by the Townsends, the Lulings, their workers, and others. Potential resources may have included archaeological deposits in shaft features, such as privies in use before the installation of sewers, or wells and cisterns used to collect water before municipal piped water was available on Staten Island. Shaft features such as privies, wells, and cisterns are often filled with contemporary refuse related to the dwellings and their occupants. They can provide important stratified cultural deposits for archaeologists and frequently provide the best remains recovered on sites. Wells or cisterns were often located in reasonably close proximity to a residence, for use in washing or cooking (additional wells and/or cisterns might be located further away from a residence for other uses, such as watering livestock). Privies often were situated further away from the residence, for sanitary purposes. Portions of these shaft features are often encountered because their deeper and therefore earlier layers remain undisturbed by subsequent construction, and in some cases, construction preserves the lower sections of the features by sealing them beneath structures and fill layers. Wells would have been excavated as far as the water table, and cisterns and privies often were dug up to 10-15 feet below grade. Thus, these shaft features often survive in truncated form after grading episodes. Other commonly occurring but more fragile yard remains include fence lines, paths, traces of landscaping, and sheet midden scatter.

Although these shaft features or other archaeological deposits likely once existed on the project site close to the Villa, it appears that the significant disturbance noted in the Phase IA Archaeological Documentary Study (Appendix A) almost certainly destroyed any traces of these features. In particular, the original footprint of the Villa was once smaller than it is today. The building has been extended on several sides, including with construction of a full basement across the entire building footprint. Former shaft features, particularly wells or cisterns, may have been located at the rear of the house in areas now covered by the basement. On the two sides of the Villa, there are underground passages linking the building to the chapel and the elementary school that would have further disturbed potential resources when they were constructed. Last, there are substantial buried utilities on all sides of the Villa, also in areas where potential historic period archaeological resources may have been located. The remainder of the project site also has been substantially disturbed from grading, filling, and construction of the existing and former buildings on the property. Soil borings indicated up to 20 feet of fill across the parcel. As such, the Phase IA Archaeological Documentary Study (Appendix A) concluded that the historic period archaeological sensitivity for the project site is low. Therefore, further research and study concerning historic period archaeological resources is not recommended (see Appendix A).

HISTORIC RESOURCES

OPRHP has determined that the St. John Villa Academy is eligible for the S/NRHP. The eligibility form's Statement of Significance notes:

> Based on the information submitted, the St. John Villa Academy in Staten Island is significant under Criterion A in the area of education for its association with the Sisters of St. John the Baptist, a Catholic religious order of nuns that had a significant educational impact on Staten Island during the twentieth century. The property is additionally significant under Criterion C in the area of architecture for its collection of architectural resources including its Gothic Revival style Villa (1847; former estate residence), Gothic-inspired Elementary School (1931) and Chapel (1938), and mid-twentieth century Annex (1943), High School (1957) and Pre-K Center (1960), that reflect the growth of the St. John Villa Academy campus during the twentieth century. Except for the Villa, designed by James Renwick Jr., nearly all of the primary buildings are architect-designed by the firm

> DePace & Juster, and architect Anthony DePace independently, and reflect both the Sisters' interest in maintaining a consistent design for their complex.[7]

There are no additional historic resources within the 400-foot Study Area.

B. The Future Without the Proposed Project

In the absence of the proposed project, there would be no new construction on the project site and no excavation or further disturbance of the project site. No potential cultural resources would be affected.

There are no historic resources within close proximity to the project site that are slated for review or expected to be designated in the future without the project. Therefore, in the future without the project, the only historic resources associated with the project site would be those described in the existing conditions section.

C. Potential Effects of the Proposed Project

ARCHAEOLOGICAL RESOURCES

The Phase IA Archaeological Documentary Study completed for the proposed project site determined that no further research and study of archaeological resources is warranted based on significant disturbance to the original ground surface and therefore it has a low sensitivity for both precontact and historical period archaeological resources. Construction of the proposed project would not result in significant adverse impacts to archaeological resources.

ARCHITECTURAL RESOURCES

The proposed project would require that the majority of the existing on-site structures be demolished to accommodate the project's new uses. Of the existing buildings, only the Chapel Building would remain. As described above, the existing St. John Villa Academy on the project site has been determined eligible for listing in the S/NRHP. As such, under Section 14.09 of the State Historic Preservation Act of 1980 (SHPA), demolition of a S/NRHP-eligible resource will result in an adverse impact to the historic resource. As required under Section 14.09, consultation with the OPRHP was undertaken by the SCA as part of the proposed project. OPRHP, in its letter of March 1, 2021, responded to the SCA's request to initiate the formal consultation process regarding the redevelopment of the project site for school use (see Appendix A). In their response, OPRHP confirmed that the proposed project would constitute an adverse impact on the eligible S/NRHP resource and recommended that the SCA consult with their office on ways to mitigate the adverse impact.

Information about the existing conditions of the St. John Villa Academy campus buildings and the ability of these buildings to meet the proposed project goals was presented in the project's Master Plan, Volume 2, published in 2019. In continued consultation with the OPRHP, the SCA used the data in the Master Plan to develop a Letter of Resolution (LOR) in 2023 that confirms the necessity of demolishing the majority of the St. John Villa Academy buildings and addresses the mitigation of the adverse impact to the S/NRHP-eligible resource (Appendix A).

[7] New York State Office of Parks, Recreation and Historic Preservation, St. John Villa Academy Determination of Eligibility, February 26, 2021.

As part of the LOR, OPRHP recognizes that:

- The oldest buildings on the project site, the Villa and the Former Elementary School, have undergone several modifications to their original design affecting their architectural style and significance;
- The access to and entrances of existing buildings do not meet current standards for accessibility and negatively impact safe access to and circulation around the project site;
- The existing buildings do not meet current building and safety codes requirements for egress and accessibility and require significant alterations to provide the required number and width of exits and required elevators, thereby reducing the available area for educational spaces;
- The existing buildings' structural systems cannot be adapted into contemporary instructional spaces because the existing building widths and column grids cannot accommodate and are not compatible with the SCA's standards for classrooms;
- Several of the existing buildings exhibit compromised structural systems, including cracked exterior façades and foundation walls, and a portion of the Former Annex's first floor has collapsed and is currently supported by temporary shoring;
- The existing buildings exhibit water infiltration from cracked and detached face brick façades, deteriorating brick facing, and corroded windows; and
- Staten Island has a demonstrated need for new educational facilities that the proposed project would provide, with few alternative sites for an academic campus.

As part of the LOR, the SCA has agreed to:

- Preserve the Chapel Building in consultation with OPRHP;
- Preserve or reconstruct the existing stone wall, iron fencing, and gates located at a portion of the site's perimeter, depending on condition;
- Continue to consult with OPRHP on the designs of new buildings and site work so that the proposed project will aim to reflect existing visual cues, massing, and scale of the historic buildings currently existing on the project site;
- Compile photo documentation of the Villa, Former Elementary School, Former High School and Addition, Former Pre-K-Center, Former Annex, and Garage;
- Provide drawings of the existing buildings for archive in an electronic database; and
- Install interpretive panels in the Chapel Building that may include photos of the existing former St. John Villa campus.

The LOR agreed to by both the SCA and OPRHP establishes the course of action necessary for successful mitigation of the potential adverse impacts of the demolition of the Villa, Elementary School, High School, Pre-K Center, Annex, and Garage at the St. John Villa Academy in accordance with Section 14.09 of the SHPA. As the proposed project moves forward, the SCA will implement the terms of the LOR to mitigate the adverse impact to the St. John Villa Academy S/NRHP-eligible historic resource. Following completion of the proposed project, the SCA will certify in writing that they have completed the conditions specified in the LOR and will provide any additional documentation regarding the proposed project at the reasonable request of OPRHP.

Chapter 4: Water and Sewer Infrastructure

This chapter evaluates the potential for the proposed project to result in significant adverse impacts on the City's water supply and wastewater and stormwater conveyance and treatment systems. The following sections present preliminary infrastructure analyses for existing conditions, the future without the proposed project (No-Action condition), and the future with the proposed project (With-Action condition), based on the methodologies in the *CEQR Technical Manual*.

Water Supply. The *CEQR Technical Manual* requires a preliminary infrastructure analysis for water supply if the proposed project would result in an exceptionally large demand for water (on the order of one million gallons per day [MGD]) or is located in an area that experiences low water pressure (for example, areas at the end of the water supply distribution system such as the Rockaway Peninsula and Coney Island). The proposed project involves the development of school facilities within an 8.49-acre site and is not anticipated to result in a water demand exceeding one MGD. In addition, the project site is not located in an area that experiences low water pressure. Therefore, the proposed project would not result in any significant adverse impacts to the water supply, and no further analysis of the water supply system is required. However, the total water demand for the proposed project has been calculated as part of the preliminary analysis for wastewater treatment.

Wastewater and Stormwater. For projects in Staten Island, the *CEQR Technical Manual* requires a preliminary analysis for wastewater and stormwater if the project is located within a combined sewer area and exceeds 400 residential units or 150,000 sf of commercial, public facility, and institutional and/or community facility space over the No-Action condition. The proposed project includes construction of three new schools with a net area of 282,786 sf in addition to other facilities, which exceeds this threshold and necessitates a preliminary infrastructure analysis. Sanitary sewage generation from the project site is calculated based on usage rates set by the *CEQR Technical Manual* for impact assessment. The Flow Volume Calculation Matrix developed by the New York City Department of Environmental Protection (NYCDEP) is utilized to calculate the total discharge from the project site to the combined sewer system for four rainfall scenarios. The ability of the City's sewer infrastructure to handle the impacts associated with the proposed project is assessed by considering the effect of the associated incremental flows on the capacities of the wastewater treatment facility and the stormwater and sanitary conveyance elements.

A. Existing Conditions

Wastewater Treatment. Sanitary sewage generated at the project site would be conveyed to the Port Richmond Wastewater Resource Recovery Facility (WRRF), located on the North Shore of Staten Island, per discussions with NYCDEP. Currently there is no sewage generation at the project site, since the St. John Villa campus facilities have been unoccupied since 2018.

The sewershed served by the Port Richmond WRRF covers a nearly 10,000-acre drainage area in northern Staten Island discharging into Kill van Kull and serves an estimated population of 200,000. Treatment at this facility consists of preliminary treatment, primary treatment, secondary treatment, and disinfection using chlorination. The quality of the treated wastewater (effluent) from the Port Richmond WRRF is regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by the New York State Department of Environmental Conservation (NYSDEC), which establishes limits for effluent parameters (such as total suspended solids, fecal coliform bacteria, chlorine, and other pollutants). The design dry weather flow capacity for the Port Richmond WRRF is 60 MGD, with a maximum wet weather flow capacity of more than twice that amount.

Table 4-1, "Monthly Average Flows for Port Richmond WRRF," presents the monthly average flows for the Port Richmond WRRF for the 12-month period from July 2021 through June 2022. The 12-month average of the flows for this period is 30 MGD, which is well below the design dry weather flow capacity of 60 MGD.

Table 4-1: Monthly Average Flows for Port Richmond WRRF

Month and Year	Monthly Average Flow, MGD
July 2021	36
Aug 2021	34
Sep 2021	36
Oct 2021	30
Nov 2021	25
Dec 2021	24
Jan 2022	27
Feb 2022	30
Mar 2022	28
Apr 2022	33
May 2022	35
Jun 2022	27
12-Month Average	**30**

Source: Discharge monitoring data from the EPA Enforcement and Compliance History Online (ECHO) website.

Sanitary and Stormwater Drainage. The project site is located within an area served by a combined sewer system that conveys both sanitary and stormwater flows to the Port Richmond WRRF. During dry weather conditions, the combined sewer system conveys only sanitary flows. During and immediately following wet weather events, the combined sewer system experiences much higher flows comprising a combination of stormwater and sanitary flows. To avoid exceeding the capacity of the Port Richmond WRRF, regulators within the sewer system are designed to convey approximately two times the amount of the design dry weather flow to the treatment facility via an interceptor. The excess flow would be discharged to the nearest waterbody as a combined sewer overflow (CSO). The SCA has initiated design coordination with NYCDEP; however, no information is available yet on the specific CSO outfall that would be impacted by flows from the project site.

Since the facilities within the St. John Villa campus have been vacant for a number of years, reliable information could not be obtained on the existing sanitary and stormwater connections within the site. For the purposes of a comparative analysis with the future No-Action and With-Action conditions, it is assumed that the stormwater runoff from the main campus discharges via one or more connections to the combined sewer system serving the area, while stormwater runoff from the existing parking lot discharges to a separate storm sewer. Table 4-2, "Weighted Runoff Coefficient, Existing Conditions," summarizes the surface cover and the runoff coefficients for the two drainage areas (main campus and parking lot) under existing conditions. The estimated weighted runoff coefficient is 0.55 for the main campus drainage area and 0.67 for the parking lot drainage area.

Table 4-2: Weighted Runoff Coefficient,* Existing Conditions

Surface Type	Roof	Pavement & Walkways	Other	Grass & Softscape	Total
Main Campus, 7.5 acres (to Combined Sewer System)					
Percent Area	20%	29%	0%	50%	100%
Surface Area (sf)	66,229	96,132	0	164,565	326,927
Runoff Coefficient	1.00	0.85	0.85	0.20	**0.55**
Parking Lot, 0.99 acres (to Storm Sewer)					
Percent Area	0%	72%	0%	28%	100%
Surface Area (sf)	0	31,184	0	11,918	43,102
Runoff Coefficient	1.00	0.85	0.85	0.20	**0.67**
***NOTE:** Weighted Runoff Coefficient calculations are based on the NYCDEP Volume Calculation Matrix referenced in the *CEQR Technical Manual*					

Source: STV Incorporated, 2024.

The NYCDEP Volume Calculation Matrix was used to calculate the runoff volumes to the storm sewer and the combined sewer system as well as the total volumes to the combined sewer system for four rainfall scenarios, as shown in Table 4-3, "NYCDEP Volume Calculation Matrix: Total Volume to Combined Sewer System (CSS) for Existing Conditions." There are no sanitary volumes discharging to the combined sewer system, as there is no sewage generation at the site for existing conditions.

Table 4-3: NYCDEP Volume Calculation Matrix: Total Volume to Combined Sewer System (CSS) for Existing Conditions

Rainfall Volume, in	Rainfall Duration, hr	Runoff Volume to Storm Sewer, MG	Runoff Volume to CSS, MG	Sanitary Volume to CSS, MG	Total Volume to CSS, MG
0.00	3.80	0.00	0.00	0.00	**0.00**
0.40	3.80	0.01	0.04	0.00	**0.04**
1.20	11.30	0.02	0.13	0.00	**0.13**
2.50	19.50	0.05	0.28	0.00	**0.28**

NOTE:
Runoff volumes have been calculated as follows:

$$Q_{VOL} = [R_{VOL} \times A \times RC \times 7.48GAL/1{,}000{,}000 \text{ MGD per GAL}] - S_{VOL}\text{; where}$$

Q_{VOL} = Total Volume of Rainfall for 24-hour storm event discharged offsite (to the CSS and the storm sewer), in MG
R_{VOL} = Rainfall Volume, in inches, for the corresponding rainfall event
A = Site Area in sf, for the areas of the site draining to the CSS and the storm sewer
RC = Weighted Rainfall Runoff Coefficient (from Table 4-2, "Weighted Runoff Coefficient, Existing Conditions")

Source: STV Incorporated, 2024.

B. The Future Without the Proposed Project

Wastewater Collection and Treatment. In the absence of the proposed project, the existing vacant buildings on the project site would remain and therefore, similar to existing conditions, there would be no sewage generation at the project site. Multiple inquiries were made to NYCDEP, including the Bureau of Environmental Planning and Analysis (BEPA), during May and June of 2024, regarding any new development planned in the sewershed served by the Port Richmond WRRF within the project build-year that would significantly impact sewage generation, any increased sewer generation rates that must be considered for the project build-year, and specific sewer conveyance elements that might potentially be impacted. However, no information relevant to these topics could be obtained from NYCDEP. In the absence of NYCDEP's input, it is assumed that no proposed projects are planned within the sewershed that would significantly impact sewage generation and the capacity of sewer conveyance elements and that the No-Action condition would be the same as existing conditions for sewage generation. Any relevant impacts on flows to the Port Richmond WRRF that are identified during subsequent design and permitting phases of the project will be addressed by the SCA through coordination with NYCDEP.

Sanitary and Stormwater Drainage. In the absence of the proposed project, no improvements or changes are planned for the sewer infrastructure within the project site. Therefore, the stormwater volumes discharging to the combined sewer system for the No-Action condition would be the same as in existing conditions.

C. Potential Effects of the Proposed Project

Wastewater Collection and Treatment. The proposed project would include new school facilities at the project site that would increase sewage generation over existing conditions. Table 4-4, "Project Area Water Demand and Sewage Generation, With-Action Condition," shows the estimated water demand and sewage generation in gallons per day (gpd) for the uses associated with the proposed project. For purposes of this analysis, the amount of sanitary sewage resulting from these uses is estimated as total water demand excluding water used by air conditioning, as this is typically not discharged to the sewer system.

Table 4-4: Project Area Water Demand and Sewage Generation, With-Action Condition

Use	Area or Seats	Rate[1]	Consumption (gpd)
Primary/Intermediate School			
School – Domestic	863 seats[2]	10 gpd/seat	8,630
School – Air Conditioning	96,381 sf	0.17 gpd/sf	16,385
Intermediate/High Schools			
School – Domestic	1,508 seats[2]	10 gpd/seat	15,080
School – Air Conditioning	186,405 sf	0.17 gpd/sf	31,689
Maintenance Building[3]			
Commercial/Office – Domestic	3,275 sf	0.10 gpd/sf	328
Commercial/Office – Air Conditioning	3,275 sf	0.17 gpd/sf	557
Renovated Chapel Building[4]			
Commercial/Office – Domestic	21,700 sf	0.10 gpd/sf	2,170
Commercial/Office – Air Conditioning	21,700 sf	0.17 gpd/sf	3,689
		Total Water Demand	**78,528**
		Total Sewage Generation	**26,208**

NOTES:
1. The usage rates are from the *CEQR Technical Manual*, Table 13-2.
2. For the two school buildings, the usage rate of 10 gpd/seat is applied to the total number of students and teachers for a conservative estimate.
3. Commercial/Office rates are assumed for these calculations.
4. The amount of sewage generation is estimated as all water demand generated by the occupied portions of the proposed project, except water used by air conditioning which is not typically discharged into the sewer system.

Source: STV Incorporated, 2024.

As shown in Table 4-4, "Project Area Water Demand and Sewage Generation, With-Action Condition," the total sewage generation for the proposed project is 26,208 gpd, which in this case is also the incremental sewage generation over the No-Action condition. This incremental flow represents approximately 0.09 percent of the average daily flow of 30 MGD at the Port Richmond WRRF and would not adversely impact the treatment capacity of this facility. In addition, the proposed school facilities would be required to use low-flow plumbing fixtures per the New York City Plumbing Code (Local Law 33 of 2007), which would reduce sanitary flows. Therefore, the proposed project would not result in any significant adverse impacts to the City's wastewater collection and treatment system.

Sanitary and Stormwater Drainage. The proposed project would result in an overall increase in impervious area on the project site, with a reduction in landscaped open area of just under 75 percent and a nearly two-fold increase in paved area, including proposed walkways and driveways. Two stormwater connections are proposed, one from the main campus and one from the parking lot. The main campus connection would be through a 6-inch pipe to an existing 24-inch combined sewer system pipe at Narrows Road South, east of the two IS/HS. The parking lot connection would be through a 6-inch pipe to an existing 12-inch storm sewer pipe at Cleveland Place. Four sanitary connections are proposed from the site to separate sanitary sewer mains: from the two IS/HS to Cleveland Place, from the Chapel Building to Cleveland Place, from the PS/IS to Landis Avenue, and from the Maintenance Building to Hastings Street.

Table 4-5, "Weighted Runoff Coefficients, With-Action Condition," summarizes the surface cover and runoff coefficients estimated for the two drainage areas (main campus and parking lot) in the With-Action condition. The weighted runoff coefficient for the main campus drainage area increases from 0.55 under existing conditions to 0.79 in the With-Action condition. The weighed runoff coefficient for the parking lot drainage area increases from 0.67 in existing conditions to 0.85 in the With-Action condition.

Table 4-5: Weighted Runoff Coefficients*, With-Action Condition

Surface Type	Roof	Pavement & Walkways	Other	Grass & Softscape	Total
Main Campus, 7.5 acres (to CSS)					
Percent Area	21%	64%	0%	15%	100%
Surface Area (sf)	68,566	210,640	0	47,721	326,927
Runoff Coefficient	1.00	0.85	0.85	0.20	**0.79**
Parking Lot, 0.99 acres (to Storm Sewer)					
Percent Area	0%	100%	0%	0%	100%
Surface Area (sf)	0	43,102	0	0	43,102
Runoff Coefficient	1.00	0.85	0.85	0.20	**0.85**
***NOTE:** Calculations for the weighted runoff coefficients are based on the NYCDEP Volume Calculation Matrix referenced in the *CEQR Technical Manual*.					

Source: STV Incorporated, 2024.

The NYCDEP Volume Calculation Matrix was used to calculate the runoff volumes to the storm sewer and the combined sewer system as well as the total volumes to the combined sewer system for four rainfall scenarios, as shown in Table 4-6, "NYCDEP Volume Calculation Matrix: Total Volume to CSS, With-Action Condition." No sanitary volumes would enter the combined sewer system, as all sanitary flows from the site would be collected via separate sanitary sewer system connections.

Table 4-6: NYCDEP Volume Calculation Matrix: Total Volume to CSS, With-Action Condition

Rainfall Volume, in	Rainfall Duration, hr	Runoff Volume to Storm Sewer, MG	Runoff Volume to CSS, MG	Sanitary Volume to CSS, MG	Total Volume to CSS, MG
0.00	3.80	0.00	0.00	0.00	**0.00**
0.40	3.80	0.01	0.06	0.00	**0.06**
1.20	11.30	0.03	0.19	0.00	**0.19**
2.50	19.50	0.06	0.40	0.00	**0.40**

NOTE:
Runoff volumes have been calculated as follows:

$$Q_{VOL} = [R_{VOL} \times A \times RC \times 7.48GAL/1{,}000{,}000 \text{ MGD per GAL}] - S_{VOL}; \text{ where}$$

Q_{VOL} = Total Volume of Rainfall for 24-hour storm event discharged offsite (to the CSS and the storm sewer), in MG
R_{VOL} = Rainfall Volume, in inches, for the corresponding rainfall event
A = Site Area in sf, for the areas of the site draining to the CSS and the storm sewer
RC = Weighted Rainfall Runoff Coefficient (from Table 4-4, ""Project Area Water Demand and Sewage Generation, With-Action Condition")

Source: STV Incorporated, 2024.

As shown in Table 4-7, "NYCDEP Volume Calculation Matrix: Existing and With-Action Volumes," which summarizes the results of the NYCDEP Volume Calculation Matrix, the total volumes to the combined sewer system in the With-Action condition would represent an increase of up to 50 percent compared to existing conditions for the four rainfall scenarios considered. This increase in discharge is directly attributable to the stormwater runoff volumes resulting from the increased impervious areas associated with the proposed project. However, these results do not reflect the incorporation of stormwater Best Management Practices (BMPs) within the project site that would be required as part of the NYCDEP permitting process for water quality and sewer operations. Stormwater BMPs currently under consideration for the main campus include a detention system, retention system, green roof, bio-retention/rain gardens, stormwater planters, and flow control outlets. The development of these stormwater BMPs would be reviewed and approved by NYCDEP to ensure the detention and release of stormwater runoff at a reduced discharge rate, which would reduce the overall volume of discharge to the combined sewer system.

Table 4-7: NYCDEP Volume Calculation Matrix: Existing and With-Action Volumes

Rainfall Volume, in	Rainfall Duration, hr	Total Volume to CSS (MG)		Increased Total Volume to CSS, MG[1]	Percent Increase in Volume to CSS
		Existing Conditions	With-Action Condition		
0.00	3.80	0.00	0.00	0.00	0.0%
0.40	3.80	0.04	0.06	0.02	50.0%
1.20	11.30	0.13	0.19	0.05	46.2%
2.50	19.50	0.28	0.40	0.11	42.9%

NOTE: Calculations for stormwater runoff volumes do not consider detention or other stormwater BMPs.

Source: STV Incorporated, 2024.

The SCA would be responsible for preparing and submitting the Site Connection Proposal application for the proposed project. The proposed BMPs would be reviewed by NYCDEP and further refined, as needed, to ensure the detention and release of stormwater runoff at a reduced discharge rate, thus reducing the overall volume of discharge to the combined sewer system. The SCA would also be required to prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) that includes include erosion and sediment control measures and post-construction stormwater BMPs. NYCDEP must certify the Site Connection Proposal for adequate sewer capacity to accommodate the proposed project and approve the SWPPP before stormwater construction and sewer connection permits can be obtained.

With the incorporation of stormwater BMPs to meet NYCDEP's Site Connection Proposal requirements, it is anticipated that there would be no significant adverse impacts to the combined sewer system and wastewater treatment system.

Chapter 5: Transportation

INTRODUCTION

The *CEQR Technical Manual* requires a detailed assessment of traffic and parking conditions when 50 or more vehicular trips would be generated by the project through one intersection during the peak hour. A detailed assessment is also required if a project would result in 200 or more peak-hour subway or bus trips. Similarly, if the project would generate 200 or more pedestrian trips during a peak hour at any sidewalk, crosswalk, or intersection corner, a detailed assessment is required because there is a potential for significant impact. As described below, the proposed project would exceed the threshold traffic and parking conditions, transit trips, and pedestrian trips. Therefore, detailed technical analyses for vehicular traffic, transit, pedestrians, vehicular and pedestrian safety, and parking are provided in this chapter.

PRELIMINARY ANALYSIS METHODOLOGY

The *CEQR Technical Manual* describes a two-level screening procedure for the preparation of a "preliminary analysis" to determine if quantified operational analyses of transportation conditions are warranted. As discussed in the following sections, the preliminary analysis begins with a trip generation (Level 1) analysis to estimate the numbers of trips attributable to the proposed actions by mode. According to the *CEQR Technical Manual*, if the proposed project is expected to result in fewer than 50 peak-hour vehicle trips and fewer than 200 peak-hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (Level 2) are performed to estimate the incremental trips that could be incurred at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the proposed project would generate 50 or more peak-hour vehicle trips at an intersection, 200 or more peak-hour subway trips at a station, 50 or more peak-hour bus trips in one direction along a bus route, or 200 or more peak-hour pedestrian trips traversing a sidewalk, corner area, or crosswalk, then further quantified operational analyses may be warranted to assess the potential impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

LEVEL 1 SCREENING ASSESSMENT

A. Background

A Level 1 trip generation screening assessment is conducted to estimate the numbers of person and vehicle trips by mode expected to be generated by the proposed project during the weekday AM, midday, and PM and Saturday midday peak hours. These estimates are then compared to the *CEQR Technical Manual* analysis thresholds to determine if a Level 2 screening and/or quantified operational analyses may be warranted. The travel demand assumptions used for the assessment are described in the following sections, along with a summary of the travel demand that would be generated by the proposed project; a detailed travel demand forecast is then provided.

B. Transportation Planning Factors

The preliminary transportation planning factors proposed for use in forecasting travel demand for the proposed project (expressed by demographic) are summarized in Table 5-1, "Transportation Planning Factors for PS/IS/HS," and Table 5-2, "Transportation Planning Factors for Athletic Field," and discussed below. The trip generation rates, temporal distributions, modal splits, and vehicle occupancies for the students, parents, and faculty/staff were developed based on those cited in the *CEQR Technical Manual*; reverse journey-to-work data for Richmond County Census Tracts 20.01, 20.02, 50, 64, and 74; recent New York City Department of Transportation (NYCDOT) trip generation survey data; data provided by New York City Department of Education (NYCDOE) for similar schools; and engineering judgement. Factors are shown for the weekday AM and PM peak hours (typical peak periods for school arrival and dismissal) and the Saturday midday (typical peak period for sporting event departures). These transportation planning factors were developed in consultation with NYCDOT during preparation of the Transportation Planning Factors technical memorandum, which is provided in Appendix B.

Table 5-1: Transportation Planning Factors for PS/IS/HS

	PS/IS Building															
	PS Students		**PS Parents**		**Pre-K Students**		**Pre-K Parents**		**IS Students in PS/IS Bldg.**		**6th Grade Parents in PS/IS Bldg.**		**PS D75 Students**		**PS/IS Faculty/Staff**	
Project Component:	430		48		31		3		207		12		96		99	
	(1)				(1)				(1)				(1)			
Attendance Rate:	100%		--		100%		--		100%		--		100%		--	
	(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)	
Daily Trip Generation:	2.0		4.0		2.0		4.0		2.0		4.0		2.0		2.0	
	per student		per student		per student		per student		per student		per student		per student		per employee	
Temporal Distribution:	(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)	
AM	49.5%		49.5%		49.5%		49.5%		49.5%		49.5%		49.5%		40.0%	
PM	49.5%		49.5%		49.5%		49.5%		49.5%		49.5%		49.5%		40.0%	
In/Out Splits:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%
PM	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%
	(3)		(3)		(3)		(3)		(3, 7)		(3, 7)		(6)		(5)	
Modal Splits:	**AM**	**PM**	**AM/PM**		**AM**	**PM**	**AM/PM**		**AM**	**PM**	**AM/PM**		**AM**	**PM**	**AM/PM**	
Auto	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	80%
Dropoff/Pickup	59%	59%	0%	0%	85%	85%	0%	0%	59%	59%	0%	0%	5%	5%	0%	0%
Bicycle	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Walk/Other	14%	14%	90%	90%	14%	14%	90%	90%	14%	14%	57%	57%	0%	0%	7%	7%
Subway/Rail	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus (Transit)	2%	2%	10%	10%	2%	2%	10%	10%	10%	10%	43%	43%	0%	0%	13%	13%
School Bus	27%	27%	0%	0%	0%	0%	0%	0%	18%	18%	0%	0%	95%	95%	0%	0%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy:	(8)				(8)								(6)		(5)	
Auto	1		--		1		--		1		--		--		1.06	
Dropoff/Pickup	1.9		--		1.9		--		1.3		--		1.0		--	
School Bus/Van	15		--		15		--		15		--		7		--	

Table 5-1: Transportation Planning Factors for PS/IS/HS (continued)

	IS/HS Buildings									
	IS Students		6th Grade Parents		HS Students		IS/HS D75 Students		IS/HS Faculty/Staff	
Project Component:	537		68		717		96		158	
	(1)				(1)		(1)			
Attendance Rate:	100%		--		100%		100%		--	
	(2)		(2)		(2)		(2)		(2)	
Daily Trip Generation:	2.0 per student		4.0 per student		2.0 per student		2.0 per student		2.0 per employee	
Temporal Distribution:	(2)		(2)		(2)		(2)		(2)	
AM	49.5%		49.5%		49.5%		49.5%		40.0%	
PM	49.5%		49.5%		49.5%		49.5%		40.0%	
In/Out Splits:	In	Out	In	Out	In	Out	In	Out	In	Out
AM	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%
PM	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%
	(4)		(4)		(4)		(6)		(5)	
Modal Splits:	**AM**	**PM**	**AM/PM**		**AM**	**PM**	**AM**	**PM**	**AM/PM**	
Auto	0%	0%	0%	0%	3%	3%	0%	0%	80%	80%
Dropoff/Pickup	32%	32%	0%	0%	27%	27%	5%	5%	0%	0%
Bicycle	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%
Walk/Other	35%	35%	70%	70%	14%	14%	0%	0%	7%	7%
Subway/Rail	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus (Transit)	15%	15%	30%	30%	55%	55%	0%	0%	13%	13%
School Bus	18%	18%	0%	0%	0%	0%	95%	95%	0%	0%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy:							(6)		(5)	
Auto	1		--		1		--		1.06	
Dropoff/Pickup	1.3		--		1.3		1.0		--	
School Bus/Van	15		--		15		7		--	

Notes:
1. No absentee rate was applied for the proposed HS. The school was assumed to be at full capacity during both the AM and PM peak hours.
2. Based on data from the *City Environmental Quality Review (CEQR) Technical Manual* .
3. Estimates for the PS students and parents were based on gifted & talented programs at PS 45 and PS 50, Staten Island. Pre-K students would not receive school bus services; it was assumed that the Pre-K would have the same mode choice as PS with 0% school bus share.
4. Estimates for IS/HS students were based on data provided by New York City Department of Education (NYCDOE) and adjusted based on New York City Department of Transportation (NYCDOT) recommendations.
5. U.S. Census Bureau, American Community Survey 2012-2016 Five-year estimates. Special Tabulation (A202105)- Census Tracts 20.01, 20.02, 50, 64 and 74, Richmond County, New York
6. Based on data provided by NYCSCA for schools with D75 students.
7. Modal splits for the gifted & talented IS students were adjusted based on data provided by NYCDOE for other gifted & talented PS/IS schools (Brooklyn School of Inquiry and The 30th Avenue School, Queens).
8. Estimates for the PS students were based on the proposed PS 70, Staten Island.

Source: STV Incorporated, 2024.

Table 5-2: Transportation Planning Factors for Athletic Field

	Football Field Team/ Staff		Football Field Spectators	
Project Component:	100		700	
Attendance Rate:	(1) 100%		(1) 100%	
Daily Trip Generation:	2.0		2.0	
Sat. Game Departure Peak Hour	per person		per attendees	
Temporal Distribution:				
Sat. Game Departure Peak Hour	50.0%		50.0%	
In/Out Splits:	In	Out	In	Out
Sat. Game Departure Peak Hour	0%	100%	0%	100%
Modal Splits:				
Auto	40%		80%	
Dropoff/Pickup	10%		10%	
Walk/Other	5%		5%	
Subway/Rail	0%		0%	
Bus (Transit)	5%		5%	
School Bus (2)	40%		0%	
	100%		100%	
Vehicle Occupancy:				
Auto	2		3	
Dropoff/Pickup	1		2	

Notes:
1. All parameters are based on engineering assumptions.
2. Assumes that the visiting team's players/staff would be bussed to the field.

Source: STV Incorporated, 2024.

GIFTED AND TALENTED PS AND IS STUDENTS AND PARENTS

Trip generation estimates for general education students and parents were based on modal split data provided by NYCDOE for gifted and talented programs at PS 45 and PS 50 on Staten Island. Students would arrive at and depart from the proposed school by a number of travel modes, including private autos, public transit, school buses, and walking from nearby residences. The program would be open to borough-wide enrollment.[8] Consequently, 59 percent of these students would be driven to school by their parents, while 14 percent would walk to school. School buses would transport 27 percent of PS students and 18 percent of IS students. The remaining students (two percent of PS students and 10 percent of IS students) would commute to school by public transit bus. Parents are expected to accompany all PS students and 6th grade IS students who would walk or commute by public transit.

GENERAL EDUCATION IS AND HS STUDENTS AND PARENTS

Trip generation estimates for general education IS and HS students were based on modal split data provided by NYCDOT and data provided by NYCDOE. A majority of general education students attending the school would live in nearby residential areas, within a four-mile distance to the school. Consequently, 35 percent of IS students and 14 percent of HS students would walk to school, and 15 percent of IS students and 55 percent of HS students would commute by public transit (bus). Between 27 and 32 percent of IS and HS students would be driven to school by their parents, and three percent of HS students would drive themselves to school. The remaining IS students (18 percent) would travel by school bus, while the remaining HS students (one percent) would ride a bicycle to school. Parents are expected to accompany all 6th grade IS students who would walk or commute by public transit.

DISTRICT 75

Trip generation estimates for District 75 special education students were based on data provided by the SCA. Based on previous discussions with school officials at PS 37 and existing pupil transportation records provided by PS 37, an estimated 95 percent of special education students would be bused to school, while the remaining five percent would be driven to school by their parents. According to NYC's Office of Pupil Transportation, 38 buses serve 267 special education students enrolled at PS 37. Using this same student-to-bus ratio of 7:1 for the PS/IS and shared facility for two IS/HS at 57 Cleveland Place, 26 buses will serve the District 75 special education students.

FACULTY AND STAFF

It is expected that all three school facilities would employ a combined total of 257 staff members. The ratio of general education students-to-staff was estimated to be 10 to 1, and the ratio of District 75 students-to-staff was estimated to be 6:1:1.[9] Based on 2012-2016 5-year American Community Survey (ACS) place-of-work data for Staten Island (Richmond County) Census Tracts 20.01, 20.02, 50, 64, and 74, it is estimated that 80 percent of the staff would travel in private automobiles, 13 percent would utilize public transit, and the remaining seven percent would walk.

[8] While the school would be open to citywide enrollment, it is more conservative for transportation analysis purposes to assume borough-wide enrollment.

[9] 6 students to 1 special education teacher to 1 paraprofessional, as per DOE District 75 information for class size.

ATHLETIC FIELD TEAM, STAFF, AND SPECTATORS

It is expected that 100 team members (players and staff) would be present for a sporting event on the athletic field. Of these 100, 40 would be visiting team players and staff, who are assumed to travel to and from the field via school bus. 40 home team players and staff would arrive by private automobile. For a fully attended event, 700 spectators are anticipated, 80 percent of which would arrive by private automobile. For the remaining players, staff, and spectators, 10 percent would be dropped off and picked up by automobile, five percent would walk, and five percent would take public transit.

C. Travel Demand Forecast

The person and vehicle trips expected to result from the proposed project are expressed as an "incremental change" in trips. This incremental change is calculated by comparing estimated numbers of trips resulting from the proposed project (in the 2030 analysis year) to the number of trips estimated to be occurring in the vicinity of the project site without the proposed actions in 2030. Person and vehicle trips are calculated based on the transportation planning factors shown previously in Table 5-1, "Transportation Planning Factors for PS/IS/HS," and Table 5-2, "Transportation Planning Factors for Athletic Field."

Table 5-3, "Travel Demand Forecast for PS/IS/HS," and Table 5-4, "Travel Demand Forecast for Athletic Field," list the estimated incremental changes in peak-period person trips and vehicle trips, respectively, in 2030 with implementation of the proposed project, as compared to anticipated 2030 conditions without the proposed project.

The proposed project would be expected to generate a net increase of approximately 2,560 person trips in both the weekday AM and PM peak periods, assuming that the PS/IS and the shared facility for two IS/HS have the same start and dismissal times, and 800 person trips in the Saturday midday peak hour.

These person trips can be translated into modal trip "types" as follows:

1. Peak-hour vehicle trips (including personal auto, auto drop-off/pick-up, and school bus trips) are projected to result in approximately 1,555 additional vehicle trips ("in" and "out" trips, combined) in both the weekday AM and PM peak periods, and 299 vehicle trips in Saturday midday peak hour. These figures reflect that auto drop-off/pick-up and school bus trips would arrive full and depart empty in the AM peak hour and arrive empty and depart full in the PM peak hour.
2. The proposed project is projected to introduce additional peak-hour transit trips (approximately 583 transit trips estimated for weekday AM and PM peak periods and 40 transit trips for the Saturday midday peak hour). The transit trips are expected to be only bus trips, as the nearest rail station is over one mile away.
3. Walk-only trips are projected to increase by approximately 593 trips during the weekday AM and PM peak periods and 40 trips during the Saturday midday peak hour.

D. Staggered Trips

Due to the high volume of anticipated trips associated with the proposed project, the primary/intermediate school and the two intermediate/high schools are anticipated to have different arrival and dismissal schedules to distribute the arrival and dismissal of student trips to the campus over a longer period of time. Based on the direction of NYC Department of Education, school arrival times should be within the 8:00 AM to 8:45 AM period. Therefore, the student and staff arrival and departure trips for the proposed St. John Villa campus were distributed over a 45-minute arrival and dismissal period assuming that school hours were 8:45 AM to 3:15 PM for the PS/IS and 8:00 AM to 2:30 PM for the shared facility for two IS/HS. Student and staff arrival and departure trips were estimated in 15-minute intervals for the proposed St. John Villa campus, assuming that 98 percent of the student trips and 80 percent of the staff trips arrive/depart within the peak hour for each school. The student arrival and departure patterns for the PS/IS were based on trip data collected at two intersections near a PS close to the project site, while the patterns for the two IS/HS were based on trip data collected at two intersections near a sample HS. Table 5-5, "Incremental Trip Predictions by School Building," summarizes vehicle trips in 15-minute increments and identifies the peak-hour vehicle, transit, and walking trip increments. Overall, the total number of vehicle trips generated during the AM and PM peak hours, assuming staggered school arrival and dismissal times, is 1,161 and 1,068 vehicle trips, respectively, which accounts for approximately 75 percent and 69 percent of the total peak-period trips.

Table 5-3: Travel Demand Forecast for PS/IS/HS

	PS/IS Building															
	PS Students		PS Parents		Pre-K Students		Pre-K Parents		IS Students in PS/IS Bldg.		6th Grade Parents in PS/IS Bldg.		PS D75 Students		PS/IS Faculty/Staff	
Project Component:	430		48		31		3		207		12		96		99	
Peak Hour Trips:																
Weekday AM	426		96		31		6		205		24		95		79	
Weekday PM	426		96		31		6		205		24		95		79	
In/Out Splits:	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Weekday AM	426	0	48	48	31	0	3	3	205	0	12	12	95	0	79	0
Weekday PM	0	426	48	48	0	31	3	3	0	205	12	12	0	95	0	79
Peak Hour Person Trips:	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
AM Auto	0	0	--	--	0	0	--	--	0	0	--	--	0	0	63	0
Dropoff/Pickup	249	0	--	--	26	0	--	--	120	0	--	--	5	0	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk/Other	57	0	44	44	4	0	3	3	28	0	7	7	0	0	6	0
Bus (Transit)	6	0	5	5	0	0	0	0	20	0	5	5	0	0	10	0
School Bus	113	0	--	--	0	0	--	--	37	0	--	--	90	0	0	0
	425	0	48	48	30	0	3	3	205	0	12	12	95	0	79	0
PM Auto	0	0	--	--	0	0	--	--	0	0	--	--	0	0	0	63
Dropoff/Pickup	0	249	--	--	0	26	--	--	0	120	--	--	0	5	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk/Other	0	57	44	44	0	4	3	3	0	28	7	7	0	0	0	6
Bus (Transit)	0	6	5	5	0	0	0	0	0	20	5	5	0	0	0	10
School Bus	0	113	--	--	0	0	--	--	0	37	--	--	0	90	0	0
	0	425	48	48	0	30	3	3	0	205	12	12	0	95	0	79
Peak Hour Vehicle Trips:	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
AM Auto	--	--	--	--	--	--	--	--	--	--	--	--	--	--	60	0
Dropoff/Pickup/Taxi	249	249	--	--	14	14	--	--	93	93	--	--	4	4	--	--
School Bus/Van	8	8	--	--	0	0	--	--	3	3	--	--	13	13	--	--
PM Auto	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	60
Dropoff/Pickup/Taxi	249	249	--	--	14	14	--	--	93	93	--	--	4	4	--	--
School Bus/Van	8	8	--	--	0	0	--	--	3	3	--	--	13	13	--	--

Table 5-3: Travel Demand Forecast for PS/IS/HS (continued)

	IS/HS Buildings												
	IS Students		6th Grade Parents		HS Students		IS/HS D75 Students		IS/HS Faculty/Staff				
Project Component:	537		68		717		96		158				
Peak Hour Trips:													
Weekday AM	532		136		709		95		126				
Weekday PM	532		136		709		95		126				
In/Out Splits:	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**			
Weekday AM	532	0	68	68	709	0	95	0	126	0			
Weekday PM	0	532	68	68	0	709	0	95	0	126			
Peak Hour Person Trips:	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**Net In**	**Out**	**Total**
AM Auto	0	0	--	--	21	0	0	0	101	0	185	0	185
Dropoff/Pickup	170	0	--	--	192	0	5	0	0	0	767	0	767
Bicycle	0	0	0	0	7	0	0	0	0	0	7	0	7
Walk/Other	186	0	48	48	99	0	0	0	9	0	491	102	593
Bus (Transit)	80	0	21	21	390	0	0	0	16	0	552	30	583
School Bus	96	0	--	--	0	0	90	0	0	0	426	0	426
	532	0	68	68	709	0	95	0	126	0	2428	132	2560
	0												
PM Auto	0	0	--	--	0	21	0	0	0	101	0	185	185
Dropoff/Pickup	0	170	--	--	0	192	0	5	0	0	0	767	767
Bicycle	0	0	0	0	0	7	0	0	0	0	0	7	7
Walk/Other	0	186	48	48	0	99	0	0	0	9	102	491	593
Bus (Transit)	0	80	21	21	0	390	0	0	0	16	30	552	583
School Bus	0	96	--	--	0	0	0	90	0	0	0	426	426
	0	532	68	68	0	709	0	95	0	126	132	2428	2560
Peak Hour Vehicle Trips:	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**Net In**	**Out**	**Total**
AM Auto	--	--	--	--	21	0	--	--	96	0	177	0	177
Dropoff/Pickup/Taxi	131	131	--	--	148	148	5	5	--	--	645	645	1290
School Bus/Van	7	7	--	--	0	0	13	13	--	--	44	44	88
											866	689	**1555**
PM Auto	--	--	--	--	0	21	--	--	0	96	0	177	177
Dropoff/Pickup/Taxi	131	131	--	--	148	148	5	5	--	--	645	645	1290
School Bus/Van	7	7	--	--	0	0	13	13	--	--	44	44	88
											689	866	**1555**

Notes:
1. The number of student auto trips consist of 710 arrivals and 689 departures during the AM analysis hour, and 689 arrivals and 710 departures during the PM
2. The staff auto trips consists of 156 arrivals to the area and 0 departures from the area during the AM analysis hour, and 0 arrivals to the area and 156 departures from the area during the PM analysis hour, assuming a vehicle occupancy rate of 1 persons per auto.

Source: STV Incorporated, 2024.

Table 5-4: Travel Demand Forecast for Athletic Field

	Football Field Team/ Staff		Football Field Spectators				
Project Component:	100		700				
Peak Hour Trips:							
Saturday Game Departure Peak Hour	100		700				
In/Out Splits:	**In**	**Out**	**In**	**Out**			
Saturday Game Departure Peak Hour	0	100	0	700			
Peak Hour Person Trips:	**In**	**Out**	**In**	**Out**	**Net In**	**Out**	**Total**
Auto	0	40	0	560	0	600	600
Dropoff/Pickup	0	10	0	70	0	80	80
Walk/Other	0	5	0	35	0	40	40
Bus (Transit)	0	5	0	35	0	40	40
School Bus	0	40	0	0	0	40	40
	0	100	0	700	0	800	800
Peak Hour Vehicle Trips:	**In**	**Out**	**In**	**Out**	**In**	**Out**	**Total**
Auto	0	20	0	187	0	207	207
School Bus (1)	0	2	0	0	0	2	2
Dropoff/Pickup/Taxi	10	10	35	35	45	45	90
					45	254	299

Notes:
1. Assumes 30 persons per school bus.

Source: STV Incorporated, 2024.

Table 5-5: Incremental Trip Predictions by School Building

PS/IS Building

Vehicle Trips (Auto+ School Bus)

15-Min Period		PS		PS Parents		Pre-K		Pre-K Parents		IS in PS		IS Parents		D75- PS		PS Staff	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
6:00 AM	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
7:45 AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0
8:00 AM	8:15 AM	16	0	0	15	1	0	0	1	6	0	0	6	1	1	15	0
8:15 AM	8:30 AM	187	6	0	181	10	0	0	10	70	2	0	68	13	13	15	0
8:30 AM	8:45 AM	55	2	0	53	3	0	0	3	20	1	0	20	4	4	15	0
8:45 AM	9:00 AM	3	0	0	3	0	0	0	0	1	0	0	1	0	0	8	0
1:30 PM	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	3:00 PM	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0
3:00 PM	3:15 PM	0	3	189	0	0	0	11	0	2	1	70	0	14	0	0	8
3:15 PM	3:30 PM	6	195	25	0	0	11	1	0	0	73	9	0	2	14	0	8
3:30 PM	3:45 PM	1	26	20	0	0	1	1	0	0	10	8	0	1	2	0	23
3:45 PM	4:00 PM	1	21	15	0	0	1	1	0	0	8	6	0	1	1	0	15

Vehicle Trips (Auto+ School Bus)

Peak Hour		PS		PS Parents		Pre-K		Pre-K Parents		IS in PS		IS Parents		D75- PS		PS Staff	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
7:45 AM	8:45 AM	257	8	0	249	14	0	0	14	96	3	0	93	18	18	60	0
2:30 PM	3:30 PM	6	197	216	0	0	11	12	0	3	74	81	0	16	14	0	15

Walk Trips (Veh Peak Hour)

Peak Hour		PS		PS Parents		Pre-K		Pre-K Parents		IS in PS		6th in PS Par		D75- PS		PS Staff	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
7:00 AM	8:00 AM	0	0	0	0	4	0	3	3	0	0	0	0	0	0	2	0
2:30 PM	3:30 PM	0	46	38	35	0	3	3	2	0	23	6	6	0	0	0	2

Public Transit (Bus) Trips (Veh Peak Hour)

		PS		PS Parents		Pre-K		Pre-K Parents		IS in PS		6th in PS Par		D75- PS		PS Staff	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
7:00 AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
2:30 PM	3:30 PM	0	5	4	4	0	0	0	0	0	15	4	4	0	0	0	3

School Bus Trips

Peak Hour		PS		PS Parents		Pre-K		Pre-K Parents		IS in PS		IS Parents		D75- PS		PS Staff	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
7:00 AM	8:00 AM	8	8	0	0	0	0	0	0	3	3	0	0	13	13	0	0
2:30 PM	3:30 PM	6	6	0	0	0	0	0	0	3	2	0	0	11	11	0	0

Bicycle Trips

Peak Hour		PS		PS Parents		Pre-K		Pre-K Parents		IS in PS		IS Parents		D75- PS		PS Staff	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
7:00 AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Auto Trips

Peak Hour		PS		PS Parents		Pre-K		Pre-K Parents		IS in PS		IS Parents		D75- PS		PS Staff	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
7:45 AM	8:45 AM	249	0	0	249	14	0	0	14	93	0	0	93	5	5	60	0
2:30 PM	3:30 PM	0	191	216	0	0	11	12	0	0	71	81	0	4	3	0	15

Table 5-5: Incremental Trip Predictions by School Building (continued)

IS/HS Buildings

Vehicle Trips (Auto+ School Bus)

15-Min Period		IS		IS Parents		HS		D75-IS		D75- HS		IS Staff		HS Staff		Total		Grand
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
6:00 AM	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	6	0	6	0	12	0	12
7:00 AM	7:15 AM	28	1	0	27	35	30	2	2	2	2	12	0	12	0	90	62	153
7:15 AM	7:30 AM	30	2	0	28	37	32	2	2	2	2	12	0	12	0	94	66	160
7:30 AM	7:45 AM	17	1	0	16	20	18	1	1	1	1	12	0	12	0	71	37	107
7:45 AM	8:00 AM	65	3	0	61	79	69	4	4	5	5	12	0	12	0	191	143	334
8:00 AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	6	0	50	23	74
8:15 AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	295	280	575
8:30 AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	82	178
8:45 AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	4	15
1:30 PM	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	2:30 PM	7	0	132	0	149	0	8	0	10	0	0	6	0	6	307	12	319
2:30 PM	2:45 PM	0	139	0	0	0	171	0	8	0	10	0	6	0	6	0	340	340
2:45 PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	18	0	18	4	36	40
3:00 PM	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	12	0	12	286	35	321
3:15 PM	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	12	0	12	44	323	367
3:30 PM	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	6	31	73	105
3:45 PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	46	70

Vehicle Trips (Auto+ School Bus)

Peak Hour		IS		IS Parents		HS		D75-IS		D75- HS		IS Staff		HS Staff		Students/ Pare		Staff		Total		Grand
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
7:45 AM	8:45 AM	65	3	0	61	79	69	4	4	5	5	18	0	18	0	537	528	96	0	633	528	1161
2:30 PM	3:30 PM	0	139	0	0	0	171	0	8	0	10	0	48	0	48	334	624	0	111	334	735	1068

Walk Trips

Peak Hour		IS		6th Parents		HS		D75-IS		D75- HS		IS Staff		HS Staff		Students/ Pare		Staff		Total		Grand
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
7:00 AM	8:00 AM	186	0	0	0	99	0	0	0	0	0	4	0	4	0	292	3	9	0	301	3	304
2:30 PM	3:30 PM	0	186	0	48	0	99	0	0	0	0	0	4	0	4	47	448	0	9	47	457	504

Public Transit (Bus) Trips

		IS		6th Parents		HS		D75-IS		D75- HS		IS Staff		HS Staff		Students/ Pare		Staff		Total		Grand
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
7:00 AM	8:00 AM	81	0	21	21	394	0	0	0	0	0	8	0	8	0	495	21	20	0	515	21	536
2:30 PM	3:30 PM	0	81	0	21	0	394	0	0	0	0	0	8	0	8	8	523	0	19	8	541	550

School Bus Trips

Peak Hour		IS		IS Parents		HS		D75-IS		D75- HS		IS Staff		HS Staff		Students/ Pare		Staff		Total		Grand
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
7:45 AM	8:45 AM	3	3	0	0	0	0	3	3	3	3	0	0	0	0	33	33	0	0	33	33	66
2:30 PM	3:30 PM	0	7	0	0	0	0	0	7	0	7	0	0	0	0	20	39	0	0	20	39	60

Bicycle Trips

Peak Hour		IS		IS Parents		HS		D75-IS		D75- HS		IS Staff		HS Staff		Students/ Pare		Staff		Total		Grand
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
7:00 AM	8:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	3
2:30 PM	3:30 PM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7	0	0	0	7	7

Auto Trips

Peak Hour		IS		IS Parents		HS		D75-IS		D75- HS		IS Staff		HS Staff		Students/ Pare		Staff		Total		Grand
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
7:45 AM	8:45 AM	61	0	0	61	79	69	1	1	2	2	18	0	18	0	504	495	96	0	600	495	1095
2:30 PM	3:30 PM	0	132	0	0	0	171	0	1	0	4	0	48	0	48	314	584	0	111	314	695	1009

Note: 7:45-8:45 AM is the identified vehicle AM peak hour; however, it does not represent the peak hour for transit and walk trips. The 7-8 AM period represents the peak hour for transit and walk trips and data for this period was used for the pedestrian and transit analyses.

Source: STV Incorporated, 2024.

LEVEL 2 SCREENING ASSESSMENT

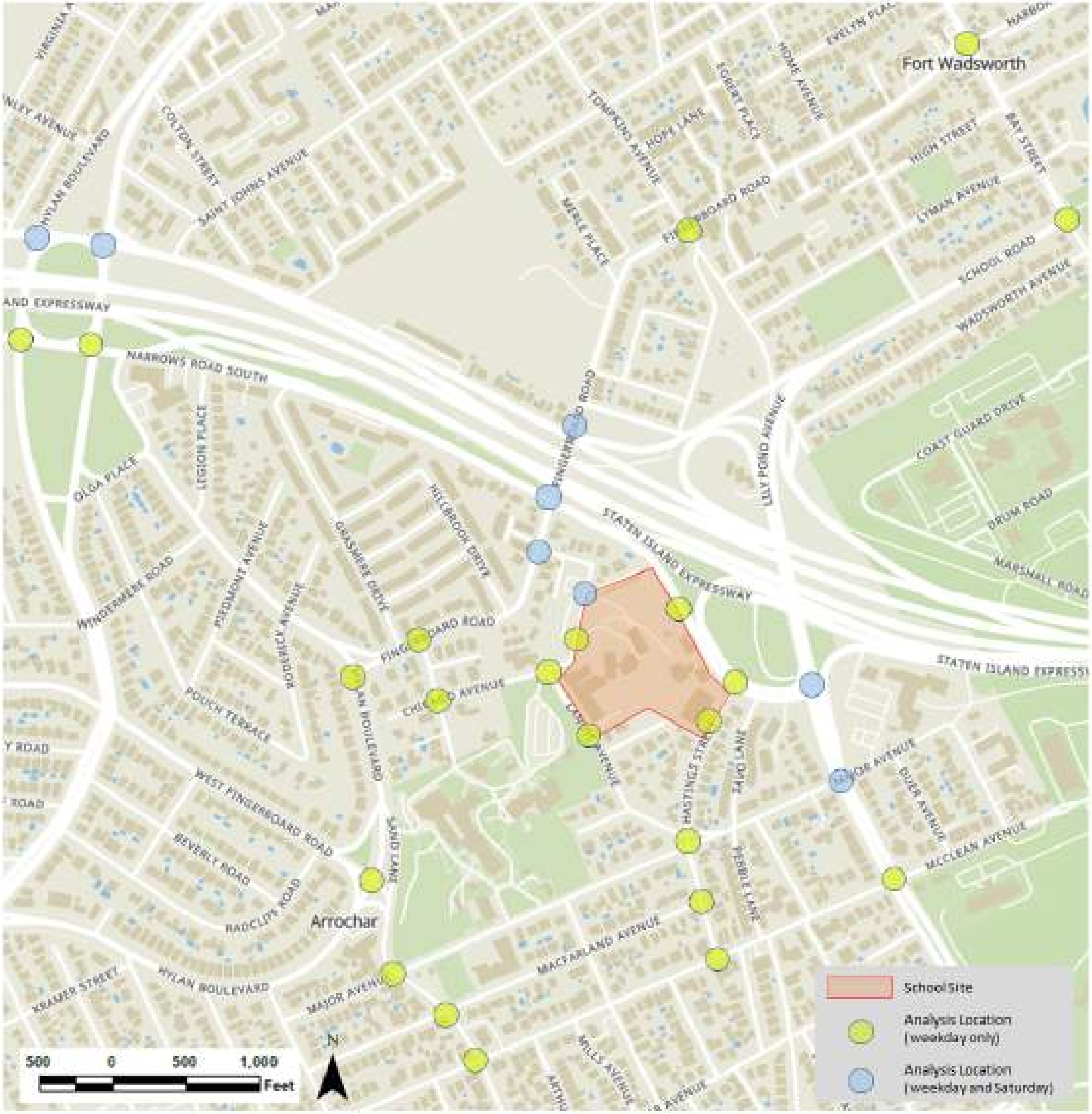
A Level 2 screening assessment involves the assignment of project-generated trips to the study area street network, pedestrian elements, and transit facilities, and the identification of specific locations where the incremental increase in demand may potentially exceed *CEQR Technical Manual* analysis thresholds and therefore require a quantitative analysis.

A. Vehicular Traffic

Based upon the proposed action, there would be 1,161 additional vehicle trips during the weekday AM peak hour, 1,068 during the PM peak hour, and 299 vehicle trips during the Saturday midday peak hour. These traffic volumes would exceed the *CEQR Technical Manual* threshold of 50 vehicle trip ends during the peak hours for Level 1 screening, and therefore a Level 2 screening was performed to help identify intersections for detailed analysis.

The *CEQR Technical Manual* Level 2 screening threshold for detailed analysis is also 50 vehicle trip ends, but this threshold applies to individual intersections during the peak hours (rather than total trips generated). A preliminary assignment of peak-hour traffic volumes was performed to identify the intersections that would potentially exceed the 50-trip-end threshold during these periods; these trip assignments are presented in the net incremental peak-hour vehicle trip figures shown on Figures 5-10 to 5-12. Vehicle assignments for students and parents were based on ACS 2015-2019 (5-Year) data for school enrollment by level of school, while vehicle assignments for faculty/staff were based on the Census Transportation Planning Package (CTPP) 2012-2016 (5-Year) for reverse-journey-to-work (RJTW) flow (origin-destination) data. The intersections most likely to be used by concentrations of action-generated vehicles traveling to and from the proposed project sites are then selected for detailed analysis. Figure 5-1, "Proposed Traffic Analysis Locations," identifies the intersections selected for detailed analysis.

In addition, a detailed traffic analysis for the freeway and ramp junctions on I-278 was performed for the weekday AM and PM and Saturday midday peak hours. The highway study area consists of the I-278 mainline, Narrows Road North weaving, and I-278 ramp locations between Exits 13 and 15.



Source: STV, Incorporated, 2024/ Google Maps

Figure 5-1

PROPOSED TRAFFIC ANALYSIS LOCATIONS

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

B. Transit

According to the general thresholds used by the Metropolitan Transportation Authority (MTA) and specified in the *CEQR Technical Manual*, detailed transit analyses are generally not required if a proposed action is projected to result in fewer than 200 peak-hour rail or bus transit riders. If a proposed action would result in 50 or more bus passengers being assigned to a single bus line (in one direction) a detailed bus analysis would be warranted.

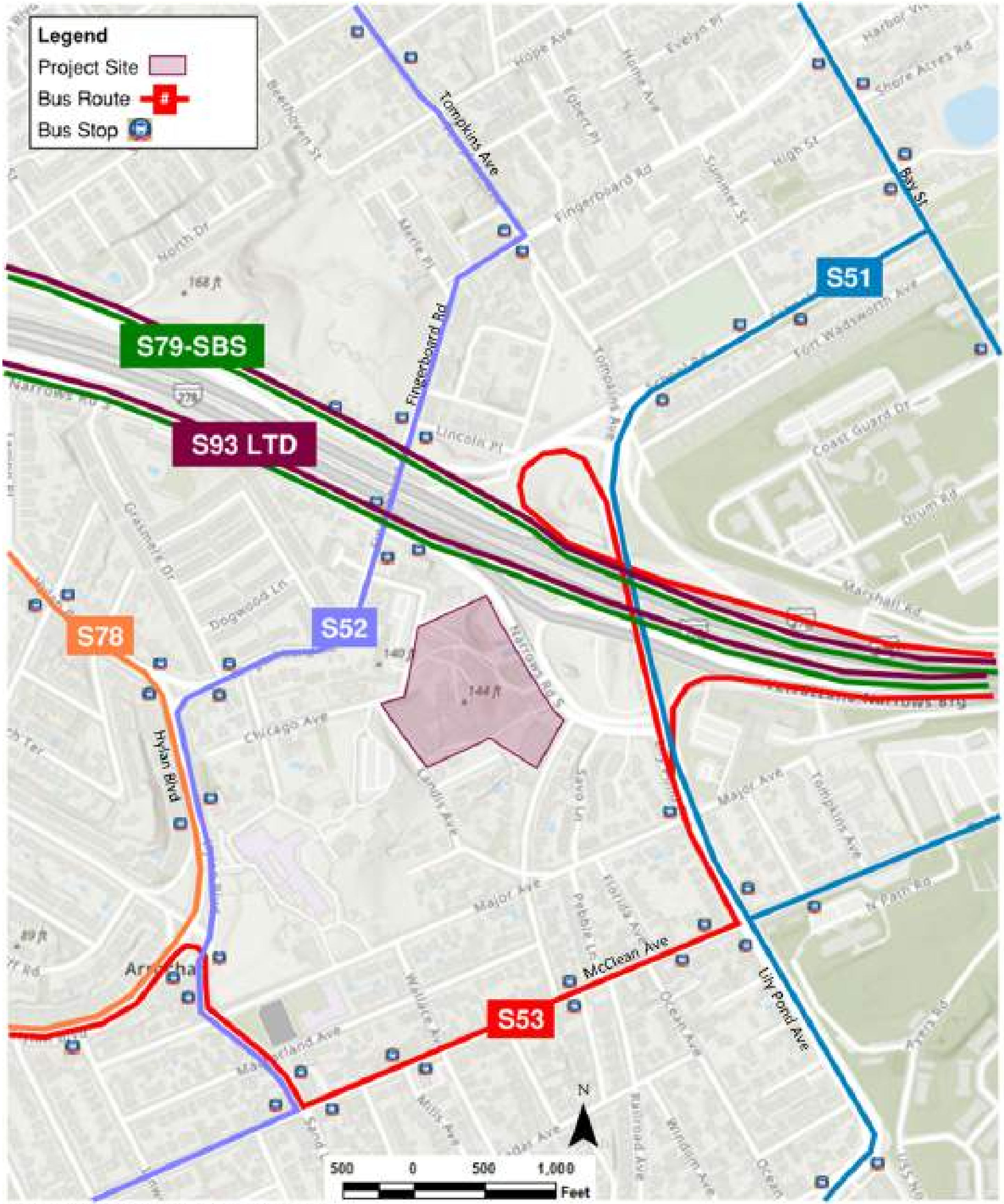
The proposed project would result in more than 50 bus passengers being assigned to a single bus line in one direction. Therefore, a detailed bus analysis is warranted.

C. Bus

The project site is served by six MTA bus routes (see Figure 5-2, "Study Area Bus Routes"). The MTA bus routes serving the project area include the following:

- S51 runs along Bay Street and Lily Pond Avenue in the study area. It provides service between St. George Ferry Terminal and Grant City.
- S52 provides service between St. George Ferry Terminal and Staten Island University Hospital. It travels along Fingerboard Road adjacent to the project site.
- S53 runs along McClean Avenue and Lily Pond Avenue in the vicinity of the study area; it connects Port Richmond with Bay Ridge, Brooklyn.
- S78 provides service between Bricktown Mall and the St. George Ferry Terminal. It travels via Hylan Boulevard about a quarter-mile west of the project site.
- S79-SBS travels via Hylan Boulevard, Narrows Road North, and Narrows Road South in the vicinity of the project site. It provides service between the Staten Island Mall and Bay Ridge, Brooklyn. As a Select Bus Service route, it makes limited stops to decrease travel times.
- S93 Limited travels via Narrows Road North and South adjacent to the project site. It provides service between the College of Staten Island in Willowbrook and Bay Ridge, Brooklyn.

Stops for S79-SBS and S93 buses are located on Narrows Road North and Narrows Road South, adjacent to the project site. Stops for S52 and S78 buses are located approximately a quarter-mile walk west of the project site, on Hylan Boulevard and Fingerboard Road. Stops for S51 and S53 buses are located approximately a half-mile walk south of the project site, at McClean and Lily Pond avenues.



Source: STV, Incorporated, 2024/ Google Maps

Figure 5-2

STUDY AREA BUS ROUTES

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place. Staten Island

As listed in Table 5-6, "Incremental Peak-Hour Bus Trips by Route," the proposed project is projected to generate approximately 536, 550, and 40 bus trips during the weekday AM and PM and Saturday midday peak hours, respectively. According to the general thresholds used by MTA and specified in the *CEQR Technical Manual*, a detailed analysis of bus conditions is generally not required if a proposed action is projected to result in fewer than 50 peak-hour trips being assigned to a single bus route (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts. As a result of the proposed project, the S52, S78, and S79-SBS routes are expected to carry 50 or more new trips in either direction in the weekday AM and PM analysis peak hours and are analyzed for the weekday AM and PM peak hours in both directions. Table 5-6, "Incremental Peak-Hour Bus Trips by Route," lists the anticipated numbers of new riders expected on each local bus route in the weekday AM and PM peak hours.

Table 5-6: Incremental Peak-Hour Bus Trips by Route

Route	Direction	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Alighting	Boarding	Total	Alighting	Boarding	Total
S51	NB	42	2	44	1	44	45
	SB	42	2	44	1	44	45
S52	NB	48	5	52	1	**118**	119
	SB	**113**	2	114	2	**50**	52
S53	EB	15	0	15	0	0	0
	WB	0	1	1	0	16	16
S93 LTD	EB	36	0	36	0	0	0
	WB	0	1	1	0	38	38
S78	EB	**61**	4	65	1	**94**	95
	WB	**90**	2	92	2	**64**	66
S79-SBS	NB	**69**	0	69	1	0	1
	SB	0	3	3	0	**72**	72
Total		515	21	536	8	541	550

Source: STV Incorporated, 2024
Note: **Bold** - denotes greater than 50 incremental trips per direction

D. Pedestrians

Per the *CEQR Technical Manual*, detailed pedestrian analyses are generally warranted if a proposed action is projected to result in 200 or more new peak-hour pedestrians at any sidewalk, corner reservoir area, or crosswalk. As shown previously in Table 5-5, "Incremental Trip Predictions by School Building," the proposed project is expected to generate approximately 304 walk-only trips in the weekday AM peak hour, 504 in the PM peak hour, and 40 in the Saturday midday peak hour. Persons en route to and from bus stops would add approximately 536, 550, and 40 pedestrian trips to area sidewalks and crosswalks during these same periods, respectively. Total pedestrian trips to and from the project site via area sidewalks and crosswalks are estimated at approximately 840, 1,054, and 80, respectively, during these same periods. It is expected that during all peak periods, pedestrian trips attributable to the proposed project would be concentrated on sidewalks and crosswalks adjacent to the project site and along routes to and from the bus stops.

The analysis of pedestrian conditions in this Targeted EIS focuses on the representative pedestrian elements where new trips generated by the proposed project are expected to be most concentrated. Specifically, pedestrian elements are examined at:

- North and south Fingerboard Road sidewalks west of Columbia Avenue
- North sidewalk of Cleveland Place east of Fingerboard Road
- Hylan Boulevard southeast corner at Fingerboard Road
- Columbia Avenue south crosswalk and southeast and southwest corners at Fingerboard Road
- East Columbia Avenue sidewalk south of Fingerboard Road
- South Chicago Avenue sidewalk east of Columbia Avenue
- South sidewalk of Cleveland Place east of Landis Avenue
- East Landis Avenue sidewalk south of Cleveland Place
- East Landis Avenue sidewalk north of Major Avenue

E. Parking

Parking demand was derived from the forecasts of daily auto trips to and from the proposed project. The estimated number of new high school student and staff vehicle trips (self-driven) generated by the proposed school would increase the parking demand by 216 vehicles – 195 faculty/staff vehicles and 21 HS student vehicles. It is anticipated that approximately 160 parking spaces would be provided on site for faculty/staff only.

As currently envisioned, the proposed number of on-site parking spaces is not anticipated to accommodate the overall incremental parking demand generated by the proposed project. As such, detailed existing off-street parking inventories were conducted to document the existing supply and demand during each period. On-street parking surveys were conducted to determine the number of spaces within an acceptable walking distance (i.e., a quarter-mile radius) of the project site. Surveys were conducted during the weekday AM and midday periods (when the highest faculty/staff and student parking demand would be expected) and Saturday midday period (when the highest sporting event parking demand would be expected.) On Staten Island, there are no on-street street-cleaning parking regulations. The parking analysis documents the parking supply and utilization on the project site and within a quarter-mile radius of the project site, both with and without the proposed project.

ANALYSES METHODOLOGIES

In order to assess the potential effects of the proposed project, both the future without the proposed actions ("No-Action") and the future with the proposed actions ("With-Action") conditions were analyzed for an analysis year of 2030 for all transportation analyses described in this section. The No-Action condition includes background growth, additional transportation-system demand, and any changes expected by the year 2030. The increase in travel demand resulting from the proposed project is then added to the No-Action condition to develop the With-Action condition. Methodologies for each of the transportation analyses prepared for the proposed project are described in the following sections.

A. Traffic

ANALYSIS METHODOLOGY

The traffic analysis examines conditions in the weekday AM and PM and Saturday midday peak hours when the increased travel demand attributable to the proposed project is expected to be the greatest. These peak hours are selected based on existing traffic volumes in the study area as reflected in automatic traffic recorder (ATR) and turning movement count (TMC) data.

The intersection capacity analyses are based on the methodology presented in the *Highway Capacity Manual* (HCM) and are conducted using Synchro 11 software. Traffic data required for these analyses include the hourly volumes on each approach, turning movements, the percentage of trucks and buses, and pedestrian volumes at crosswalks. Field inventories are also necessary to document the physical layout, street widths, lane markings, curbside parking regulations, traffic signal timings/phasings, and other relevant characteristics needed for the analysis.

The HCM methodology produces a volume-to-capacity (v/c) ratio for each signalized intersection approach. The v/c ratio represents the ratio of an approach's traffic volume to its carrying capacity. A v/c ratio of less than 0.90 is generally considered indicative of non-congested conditions in dense urban areas; when higher than this value, the ratio reflects increasing congestion. At a v/c ratio between 0.95 and 1.0, near-capacity conditions are reached, and delays can become substantial. Ratios of greater than 1.0 indicate saturated conditions with queuing. The HCM methodology also expresses the quality of traffic flow in terms of LOS, which is based on the amount of delay that a driver experiences at an intersection. Levels of service range from A, representing minimal delay (10 seconds or less per vehicle), to F, which represents long delays (greater than 80 seconds per vehicle).

For unsignalized intersections, the HCM methodology generally assumes that traffic on major streets is not affected by traffic flows on minor streets. Left turns from a major street are assumed to be affected by the opposing, or oncoming, traffic flow on that major street. Traffic on minor streets is affected by all conflicting movements. Similar to signalized intersections, the HCM methodology expresses the quality of traffic flow at unsignalized intersections in terms of LOS based on the amount of delay that a driver experiences. LOS definitions used to characterize traffic flows at unsignalized intersections differ somewhat from those used for signalized intersections, primarily because drivers anticipate different levels of performance from the two different kinds of intersections. For unsignalized intersections, LOS ranges from A, representing minimal delay (10 seconds or less per vehicle, as it is for signalized intersections), to F, which represents long delays (greater than 50 seconds per vehicle, compared to greater than 80 seconds per vehicle for signalized intersections).

The delay levels for signalized intersections are detailed below.

- LOS A describes operations with very low delay, i.e., up to 10 seconds per vehicle. This occurs when signal progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all.
- LOS B describes operations with delay in the range of 10 to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. Again, most vehicles do not stop at the intersection.

- LOS C describes operations with delay in the range of 20 to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping at an intersection is significant at this level, although many still pass through without stopping.
- LOS D describes operations with delay in the range of 35 to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles that do not stop declines.
- LOS E describes operations with delay in the range of 55 to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios.
- LOS F describes operations with delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with cycle failures. Poor progression and long cycle lengths may also be contributing to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

The LOS thresholds for unsignalized intersections differ slightly from those for signalized intersections. Delay levels for unsignalized intersections are detailed below.

- LOS A describes operations with very low delay, i.e., up to 10 seconds per vehicle. This generally occurs when little or no delay is experienced at the intersection.
- LOS B describes operations with delay in the range of 10 to 15 seconds per vehicle. This generally occurs when short traffic delays are experienced at the intersection.
- LOS C describes operations with delay in the range of 15 to 25 seconds per vehicle. This generally occurs when average traffic delays are experienced at the intersection.
- LOS D describes operations with delay in the range of 25 to 35 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable, and longer traffic delays are experienced.
- LOS E describes operations with delay in the range of 35 to 50 seconds per vehicle. At LOS E, there is obvious congestion, and very long traffic delays are experienced at the intersection.
- LOS F describes operations with delay greater than 50 seconds per vehicle. At LOS F, there is heavy congestion, and excessive traffic delays are experienced at the intersection.

For both signalized and unsignalized intersections, LOS A, B, C, and D are considered acceptable; LOS E and F are considered unacceptable.

Highway elements were also included for analysis using the HCS 2024 modeling software. HCS 2024 generates average measures of effectiveness (MOEs) for the facility overall and individual segments for the peak 15-minute interval. The busiest 15-minute interval is generally identified as the period during which the facility's average density is the highest, the speed is the lowest, and the time to traverse the analyzed facility is the longest as a result of the traffic flow profile created by the facility's mainline, ramps, and weaving sections' traffic demand. The results of each analysis are summarized by direction, at both the segment and facility levels in terms of the following MOEs:

- Volume-to-capacity ratio (v/c)

- Demand-to-capacity ratio (d/c)
- Density (passenger cars per mile per lane (pc/mi/ln))
- Space mean speed (miles per hour (mph))
- Level of service (LOS)

Freeway facility LOS is based on the weighted average density for all segments within the defined facility. Weighting is done based on segment length and the number of lanes in each segment. The HCM LOS criteria for both the facility as a whole and for individual segments is shown in Table 5-7, "Level of Service Criteria for Freeway Facilities and Segments."

Table 5-7: Level of Service Criteria for Freeway Facilities and Segments

LOS	Density (pc/mi/ln)
A	≤ 11
B	> 11- 18
C	> 18–26
D	> 26–35
E	> 35–45
F	> 45 or any component d/c ratio > 1.0

Source*: Highway Capacity Manual,* 2010.

SIGNIFICANT IMPACT CRITERIA

Intersections

The identification of significant adverse traffic impacts at analyzed intersections is based on *CEQR Technical Manual* criteria:

- If a lane group in the With-Action condition is within LOS A, B, C, or D (average control delay less than or equal to 55.0 seconds/vehicle for signalized intersections and delay less than or equal to 35.0 seconds/vehicle for unsignalized intersections), the impact is not considered significant.
- For a lane group that would operate at LOS E in the With-Action condition, a projected increase in delay of 5.0 or more seconds compared to the No-Action condition is considered a significant impact.
- For a lane group that would operate at LOS F in the With-Action condition, a projected increase in delay of 4.0 or more seconds compared to the No-Action condition is considered a significant impact.

In addition to these requirements, for the minor street of an unsignalized intersection to experience a significant impact, at least 90 passenger car equivalents (PCEs) must be identified in the future With-Action condition.

Freeways

The determination of significant adverse traffic impacts for basic freeway segments is based on criteria presented in the *CEQR Technical Manual*:

- If the LOS under the No-Action condition is LOS D, an increase in projected density of 5 or more pc/mi/ln under the With-Action condition should be considered a significant impact.
- If the LOS under the No-Action condition is LOS E, an increase in projected density of 4 or more pc/mi/ln under the With-Action condition should be considered a significant impact.
- If the LOS under the No-Action condition is LOS F, an increase in projected density of 3 or more pc/mi/ln under the With-Action condition should be considered a significant impact.

Similarly, the determination of significant adverse traffic impacts for freeway weaving, merge, and diverge segments is based on criteria presented in the *CEQR Technical Manual*:

- If the LOS under the No-Action condition is LOS D, an increase in projected density of 4 or more pc/mi/ln under the With-Action condition should be considered a significant impact.
- If the LOS under the No-Action condition is LOS E, an increase in projected density of 3 or more pc/mi/ln under the With-Action condition should be considered a significant impact.
- If the LOS under the No-Action condition is LOS F, an increase in projected density of 2 or more pc/mi/ln under the With-Action condition should be considered a significant impact.

B. Transit

ANALYSIS METHODOLOGY

Bus

Operating conditions for bus service are measured in terms of the number of passengers carried per bus at the maximum load point for each route. This is determined by dividing the peak-hour passenger count by the number of buses during that hour. The bus load levels are compared with MTA loading guidelines of 54 passenger spaces for a 40-foot standard bus.

SIGNIFICANT IMPACT CRITERIA

Bus

According to *CEQR Technical Manual* and MTA guidelines, additional bus service along a route is recommended when load levels exceed maximum capacity at the route's maximum load point. A significant adverse impact is considered at the route's maximum load point where an increase in bus load levels would exceed the maximum capacity. MTA's general policy is to provide additional bus service where demand warrants increased service, taking into account fiscal and operational constraints.

C. Pedestrians

ANALYSIS METHODOLOGY

Data on peak-period pedestrian flow volumes are collected along analyzed sidewalks, corner areas, and crosswalks and then summarized to determine peak-hour pedestrian volumes.

Pedestrian flow operating conditions during the weekday AM, midday, and PM and Saturday midday peak hours are analyzed using the HCM methodology and the NYCDOT-approved Excel spreadsheet as outlined in the *CEQR Technical Manual*. Using this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity, and developing a ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, measured in terms of pedestrian space.

At signalized and stop-controlled intersections, crosswalk and corner operations are often based on crosswalk time-space and pedestrian space. These operations are assessed based on the average effective area per pedestrian for each element, measured in square feet per pedestrian (sf/ped). The LOS for all crosswalk elements at a signalized intersection, and for all corner elements at both signalized and unsignalized intersections, is defined in these terms. LOS A occurs when the average pedestrian space is greater than 60 sf/ped. LOS B, C, and D occur when the space is in the range of 40 to 60, 24 to 40, and 15 to 24 sf/ped, respectively. LOS E is at-capacity operations, with a space from 8 to 15 sf/ped. LOS F describes congested conditions with an average space of 8 sf/ped or less.

Similarly, sidewalk and walkway operations are assessed based on the average effective area per pedestrian for each element, also measured in square feet per pedestrian. The analysis of sidewalk conditions includes a "platoon" factor to more accurately estimate the dynamics of walking. "Platooning" is the tendency of pedestrians to move in bunched groups or platoons once they cross a street where traffic controls required them to wait. LOS A occurs when the average pedestrian space is greater than 530 sf/ped. LOS B, C, and D occur when the space is in the range of 90 to 530, 40 to 90, and 23 to 40 sf/ped, respectively. LOS E is at-capacity operations, with 11 to 23 sf/ped. LOS F describes congested conditions with an average space of 11 sf/ped or less.

SIGNIFICANT IMPACT CRITERIA

Corner Areas and Crosswalks

For non-central business district (CBD) areas,[10] *CEQR Technical Manual* criteria consider a significant adverse corner area or crosswalk impact to result if the average pedestrian space under the No-Action condition is greater than 26.6 sf/ped and, under the With-Action condition, the average pedestrian space decreases to 24 sf/ped or less (LOS D or worse). If the pedestrian space under the With-Action condition is greater than 24 sf/ped (LOS C or better), the impact should not be considered significant. If the average pedestrian space under the No-Action condition is between 5.1 and 26.6 sf/ped, a decrease in pedestrian space under the With-Action condition may be considered significant, depending on the magnitude of the decrease. Table 16-12 in the *CEQR Technical Manual* lists a sliding scale that identifies what decrease in pedestrian space is considered a significant adverse impact for a given amount of pedestrian space in the No-Action condition. If the decrease in pedestrian space is less than that value, the impact is not considered significant. If the average pedestrian space under the No-Action condition is less than 5.1 sf/ped, then a decrease in pedestrian space greater than or equal to 0.2 sf/ped should be considered significant.

[10] CBD areas include Midtown and Lower Manhattan, Downtown Brooklyn, Long Island City, Downtown Flushing, Downtown Jamaica, and similar districts.

Sidewalks

For non-CBD areas, *CEQR Technical Manual* criteria defines a significant adverse sidewalk impact to have occurred if the average pedestrian space under the No-Action condition is greater than 44.3 sf/ped and, under the With-Action condition, the average pedestrian space decreases to 40.0 sf/ped or less (LOS D or worse). If the pedestrian space under the With-Action condition is greater than 40.0 sf/ped (LOS C or better), the impact should not be considered significant. If the average pedestrian space under the No-Action condition is between 6.4 and 44.2 sf/ped, a decrease in pedestrian space under the With-Action condition may be considered significant, depending on the magnitude of the decrease. Table 16-14 in the *CEQR Technical Manual* lists a sliding scale that identifies what decrease in pedestrian space is considered a significant adverse impact for a given amount of pedestrian space in the No-Action condition. If the decrease in pedestrian space is less than that value, the impact is not considered significant. If the average pedestrian space under the No-Action condition is less than 6.3 sf/ped, then a decrease in pedestrian space greater than or equal to 0.3 sf/ped should be considered significant.

D. Vehicular and Pedestrian Safety Evaluation

Pursuant to *CEQR Technical Manual* guidelines, an evaluation of vehicular and pedestrian safety is needed for locations within the traffic and pedestrian study areas that have been identified as high-crash locations. A high-crash location is defined by the *CEQR Technical Manual* as a Vision Zero priority intersection, or a location with five or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available. In addition, any location along a Vision Zero Priority Corridor with three or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available should be identified as a high-crash location.

For these locations, crash trends are identified to determine whether projected vehicular and pedestrian traffic could further affect safety, or whether existing unsafe conditions could adversely affect the flow of the projected new trips. The determination of potential significant safety impacts depends on the type of area where the project site is located, traffic volumes, crash types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety should be identified and coordinated with NYCDOT.

E. Parking

ANALYSIS METHODOLOGY

The parking analysis identifies the supply of on- and off-street public parking near a project site and determines the extent to which the supply is utilized in existing conditions and in the future with and without a proposed action. The analysis considers anticipated changes in the study area's parking supply and demand and compares project-generated parking demand with future parking availability to determine if a parking shortfall is likely to result. The displacement of existing parking capacity attributable to the proposed action or project is also considered. Typically, the analysis encompasses the parking facilities — public parking lots and garages and on-street curb spaces — that vehicular traffic destined to the project site or area would likely utilize. According to the *CEQR Technical Manual*, a quarter-mile radius around a project site is generally assumed as the distance that someone driving to the site would be willing to walk.

The parking analyses therefore document changes in the parking supply and utilization on the project site and within a quarter-mile radius of the site under both No-Action and With-Action conditions.

SIGNIFICANT SHORTFALL CRITERIA

Should a proposed action generate the need for more parking than it provides, a shortfall of spaces may be considered significant; however, a significant shortfall would not necessarily be considered an impact. The availability of on- and off-street parking spaces within a convenient walking distance, as well as the availability of alternative modes of transportation, are considered in making this determination.

Pursuant to *CEQR Technical Manual* guidelines, different criteria for determining significance are applied based on whether or not a proposed action is located in a residential or commercial area designated as Parking Zone 1 or 2, as shown on Map 16-2 (CEQR Parking Zones) in the *CEQR Technical Manual*. As this project is not located within these two zones, a parking shortfall that exceeds the available on- and off-street parking spaces within a quarter mile of the site can be considered significant. Additional factors that can be considered when determining whether such a shortfall is significant include: the availability and extent of transit in the area; the proximity of the project site to such transit; any features of the project that are considered trip reduction or travel demand management (TDM) measures; travel modes of customers of area commercial businesses; and patterns of automobile usage by area residents. The sufficiency of parking within a half-mile (rather than a quarter mile) of the project site to accommodate the projected shortfall may also be considered.

TRAFFIC

A. Existing Conditions

STUDY AREA STREET NETWORK

The project site is primarily the former St. John Villa campus (Block 3087, Lot 1), bounded by Knauth Place to the south, Landis Avenue and Cleveland Place to the west, Garson Avenue to the north, and Narrows Road South to the east. The project site also includes Block 3089, Lot 59, which is bounded by Cleveland Place to the east and north, Chicago Avenue to the south, and Fingerboard Road to the west.

Primary East-West Corridors

The Staten Island Expressway (I-278) is a major two-way east-west roadway classified as a Principal Arterial Expressway. It operates with between three and four standard travel lanes plus one high-occupancy vehicle (HOV) lane in each direction. The eastbound and westbound roadways are separated by a concrete barrier.

Narrows Road North and South are one-way minor arterials which are service roads to I-278. Each provides two travel lanes and curbside parking, with Narrows Road North carrying traffic westbound and Narrows Road South carrying traffic eastbound. Adjacent to the project site, they generally provide two travel lanes and a curbside parking lane in each direction. Each is approximately 30 feet wide.

McClean Avenue is an east-west minor arterial that carries vehicles from Lily Pond Avenue to Norway Avenue. It provides one travel lane and curbside parking in each direction.

Major and MacFarland avenues are one-way local streets with a single traffic lane and curbside parking on both sides. MacFarland Avenue is one-way eastbound and Major Avenue is one-way westbound.

Primary North-South Corridors

Fingerboard Road is a north-south minor arterial that carries traffic between Bay Street in Rosebank and Hylan Boulevard in Arrochar. Fingerboard Road provides one travel lane in both directions in addition to left-turn bays, with curbside parking generally prohibited.

Lily Pond Avenue is a north-south street classified as a principal arterial. It carries traffic between the Staten Island Expressway (I-278) and Father Capodanno Boulevard. It provides two travel lanes, curbside parking, and a dedicated bicycle lane in both directions.

Hylan Boulevard is considered a north-south major collector north of Fingerboard Road and a minor arterial south of Fingerboard Road within the study area. It provides two travel lanes and curbside parking in both directions.

Sand Lane is a north-south minor arterial that carries traffic between Hylan Boulevard and Father Capodanno Boulevard. Sand Lane is located to the south of the proposed school site and provides one travel lane and curbside parking in both directions.

Landis Avenue is a north-south local road that is located adjacent to the project site and runs between Chicago Avenue and Major Avenue. The 30-foot-wide avenue allows travel in both directions and provides curbside parking on both sides.

Hastings Street is a local two-way street connecting McClean Avenue to Narrows Road South.

Bus Routes

MTA bus routes primarily operate along portions of the following study area corridors:

- Fingerboard Road (S52)
- Bay Street (S51)
- Lily Pond Avenue (S51 and S53)
- Sand Lane (S52 and S53)
- McClean Avenue (S53)
- Hylan Boulevard (S52 and S78)
- Narrows Road North and South (S79-SBS and S93 Limited)

Truck Routes

Through trucks are defined as having neither an origin nor a destination within the Borough of Staten Island. Through truck routes near the study area have been designated along the Staten Island Expressway (I-278). Local truck routes are designated routes for trucks that are intended for the purpose of delivery, loading, or providing service within Staten Island. Generally, trucks must travel on local truck routes to reach the intersection nearest their destinations. Designated local truck routes in the study area include Narrows Road North and South to the north, Lily Pond Avenue to the east, Father Capodanno Boulevard to the south, and Hylan Boulevard to the west.

Bicycle Lanes

There are no bicycle lanes on the streets adjacent to the proposed project. The closest bike lanes are the conventional bike lanes provided on Lily Pond Avenue (north- and southbound), located approximately a quarter mile east of the project site.

TRAFFIC CONDITIONS

Traffic data collection programs were performed in November 2023, December 2023, and May 2024 to establish the Existing Conditions traffic network, which included ATR counts and intersection turning movement and classification counts. At this time, physical inventory data needed for operational analysis — e.g., the number of traffic lanes, lane widths, pavement markings, turn prohibitions, bus stops, and typical parking regulations — were also collected. Signal timing plans for signalized intersections within the study area were obtained from NYCDOT.

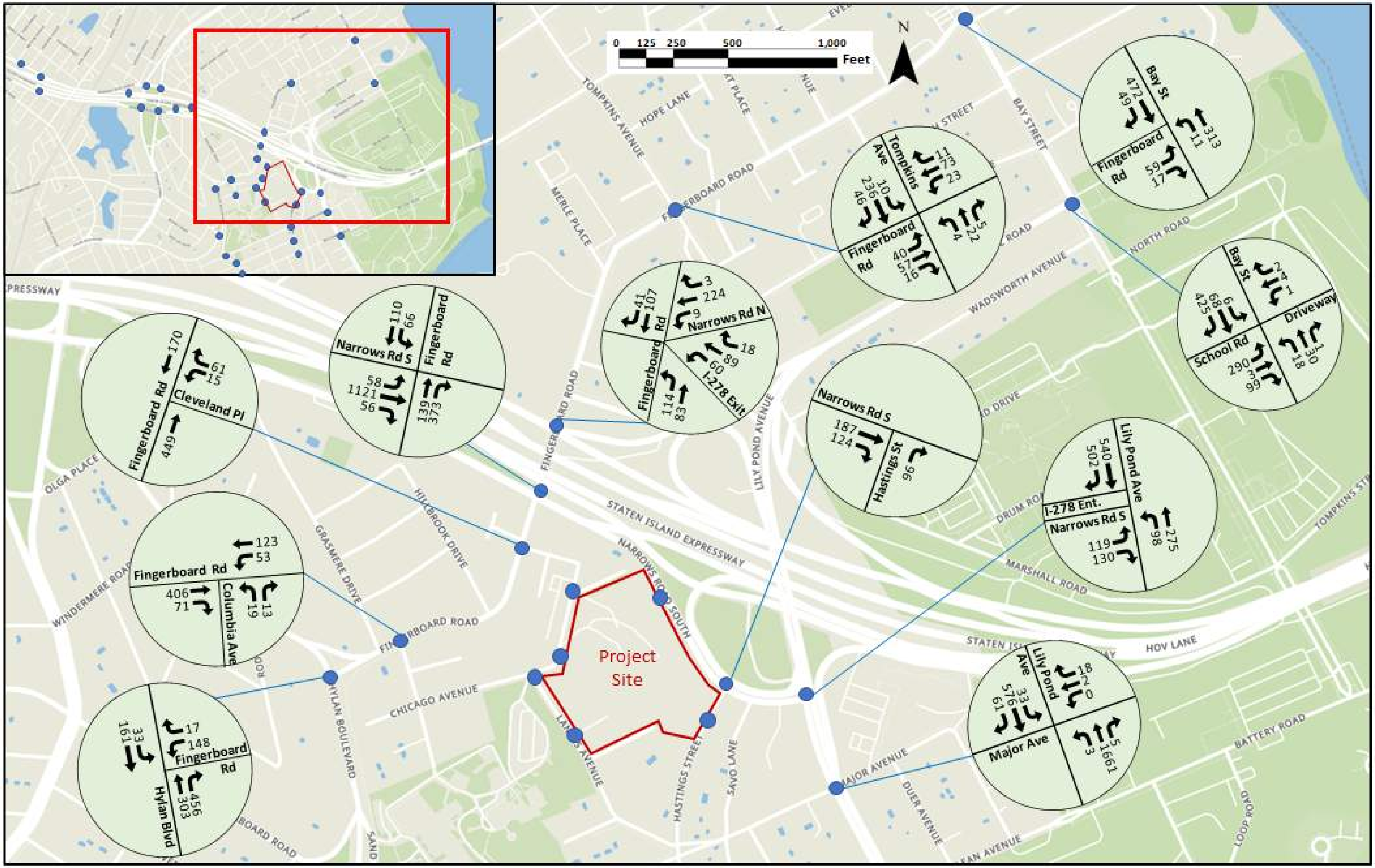
Figure 5-3, “Existing Traffic Volumes - Weekday AM Peak Hour,” Figure 5-4, “Existing Traffic Volumes - Weekday PM Peak Hour,” Figure 5-5, and "Existing Traffic Volumes – Saturday Midday Peak Hour,” show existing traffic volumes during each analysis peak hour.

Traffic volumes vary through the study area during the peak hours. The highest street network traffic volumes are carried on Lily Pond Avenue, with up to 1,900 northbound and 650 southbound vehicles per hour (vph) in the AM peak hour, 800 northbound and 1,600 southbound vph in the PM peak hour, and between 700 and 850 vph in each direction during the Saturday midday peak hour.

Traffic volumes along Narrows Road North and South are also high, carrying between 1,300 and 1,800 eastbound and between 500 and 1,500 westbound vph in the AM peak hour, between 500 and 900 eastbound and between 800 and 1,800 westbound vph in the PM peak hour, and between 400 and 1,000 vph per direction in the Saturday midday peak hour.

Traffic volumes along Hylan Boulevard and Fingerboard Road adjacent to the project site are generally lower than those along Narrows Road North and South, each carrying between 450 and 600 vph northbound and approximately 200 vph southbound in the AM peak hour. In the PM peak hour, each carry approximately 200 vph northbound and up to 500 vph southbound.

Adjacent to the project site, volumes along Landis Avenue, Chicago Avenue/Cleveland Place, and Hastings Street are generally low, less than 125 vph on each street in each peak hour.

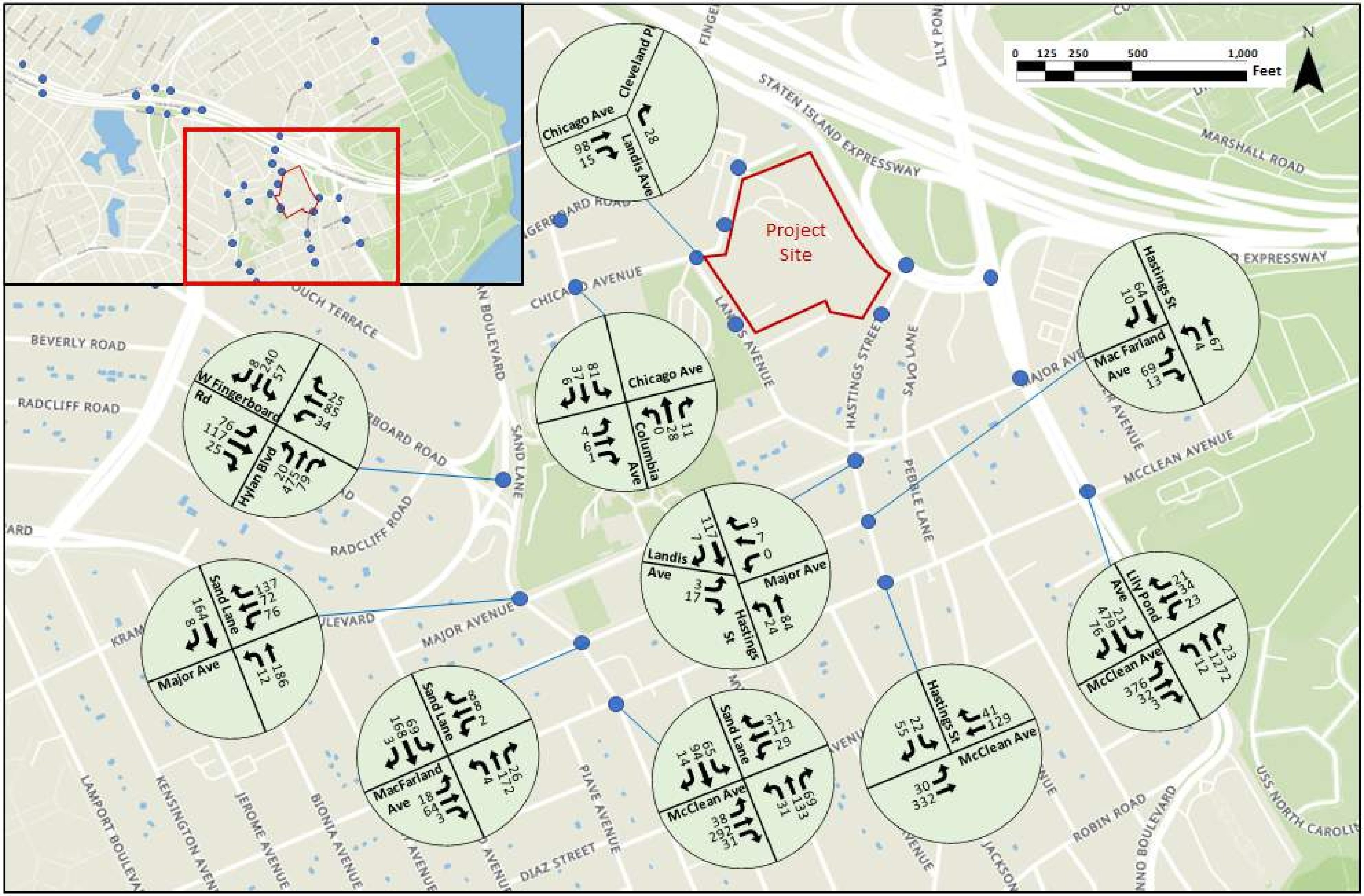


Source: STV Incorporated, 2024/MapTiler

Figure 5-3A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

EXISTING TRAFFIC VOLUMES - WEEKDAY AM PEAK HOUR

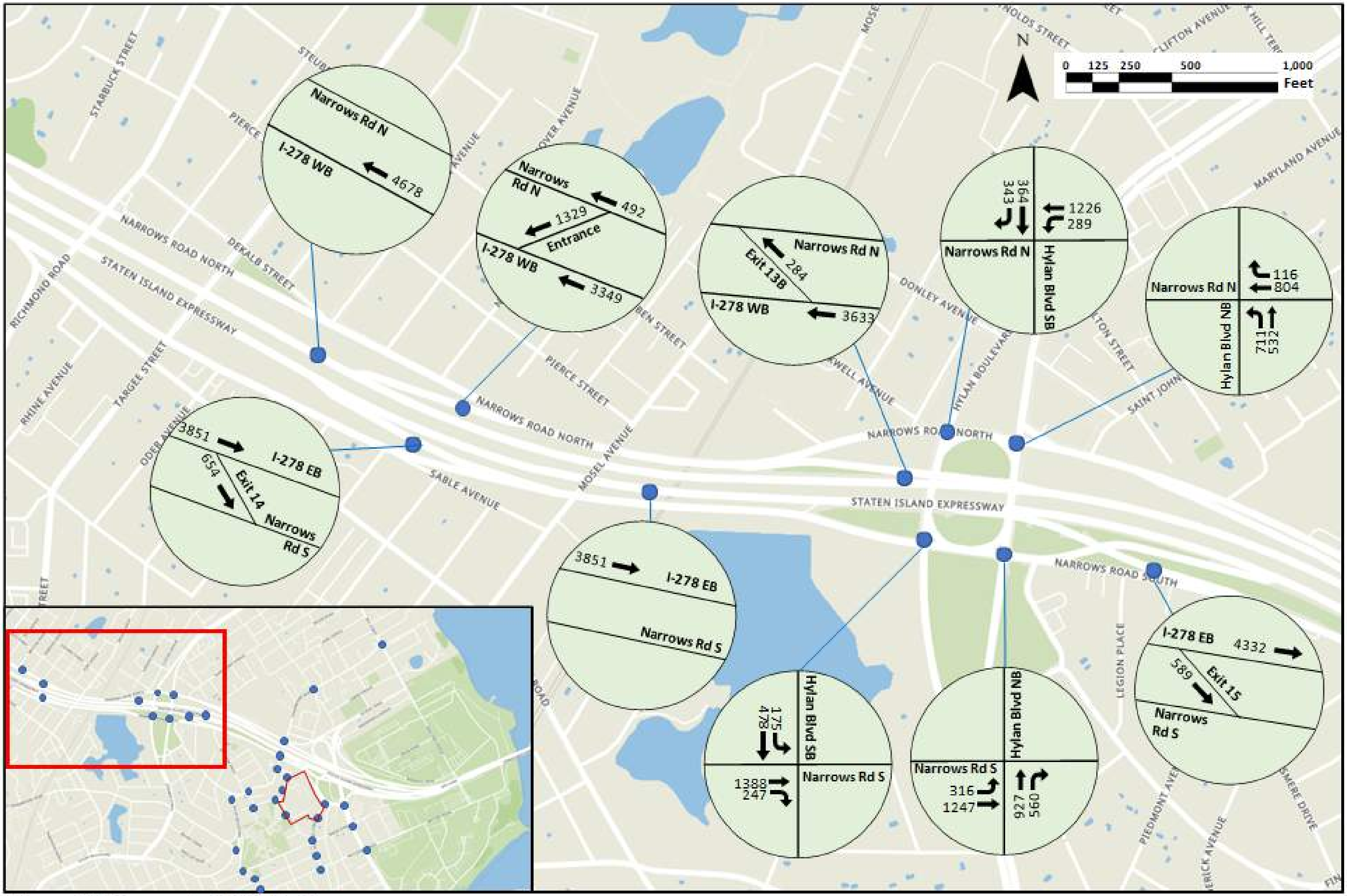


Source: STV Incorporated, 2024/MapTiler

Figure 5-3B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

EXISTING TRAFFIC VOLUMES - WEEKDAY AM PEAK HOUR

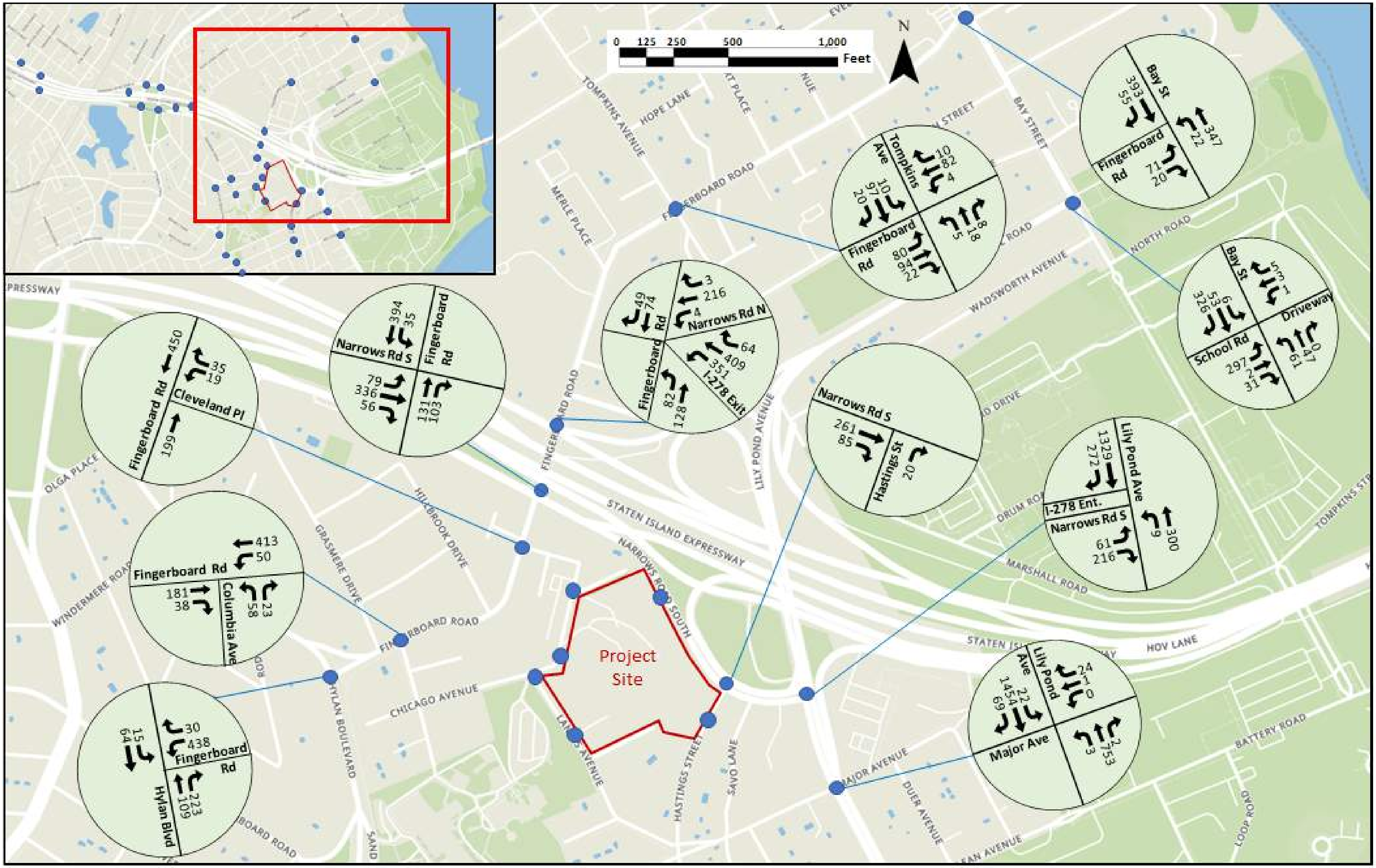


Source: STV Incorporated, 2024/MapTiler

Figure 5-3C

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

EXISTING TRAFFIC VOLUMES - WEEKDAY AM PEAK HOUR

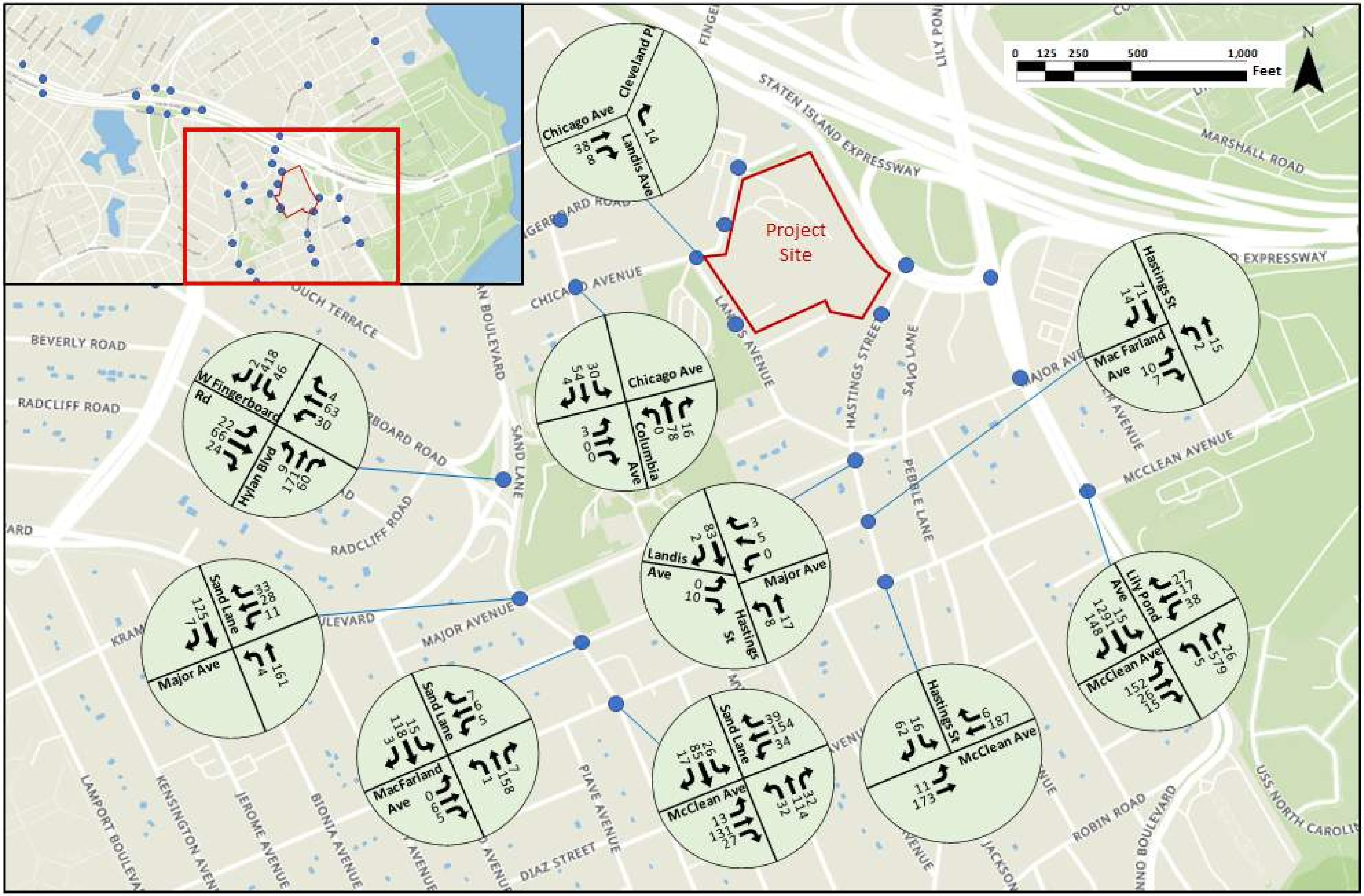


Source: STV Incorporated, 2024/MapTiler

Figure 5-4A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

EXISTING TRAFFIC VOLUMES - WEEKDAY PM PEAK HOUR

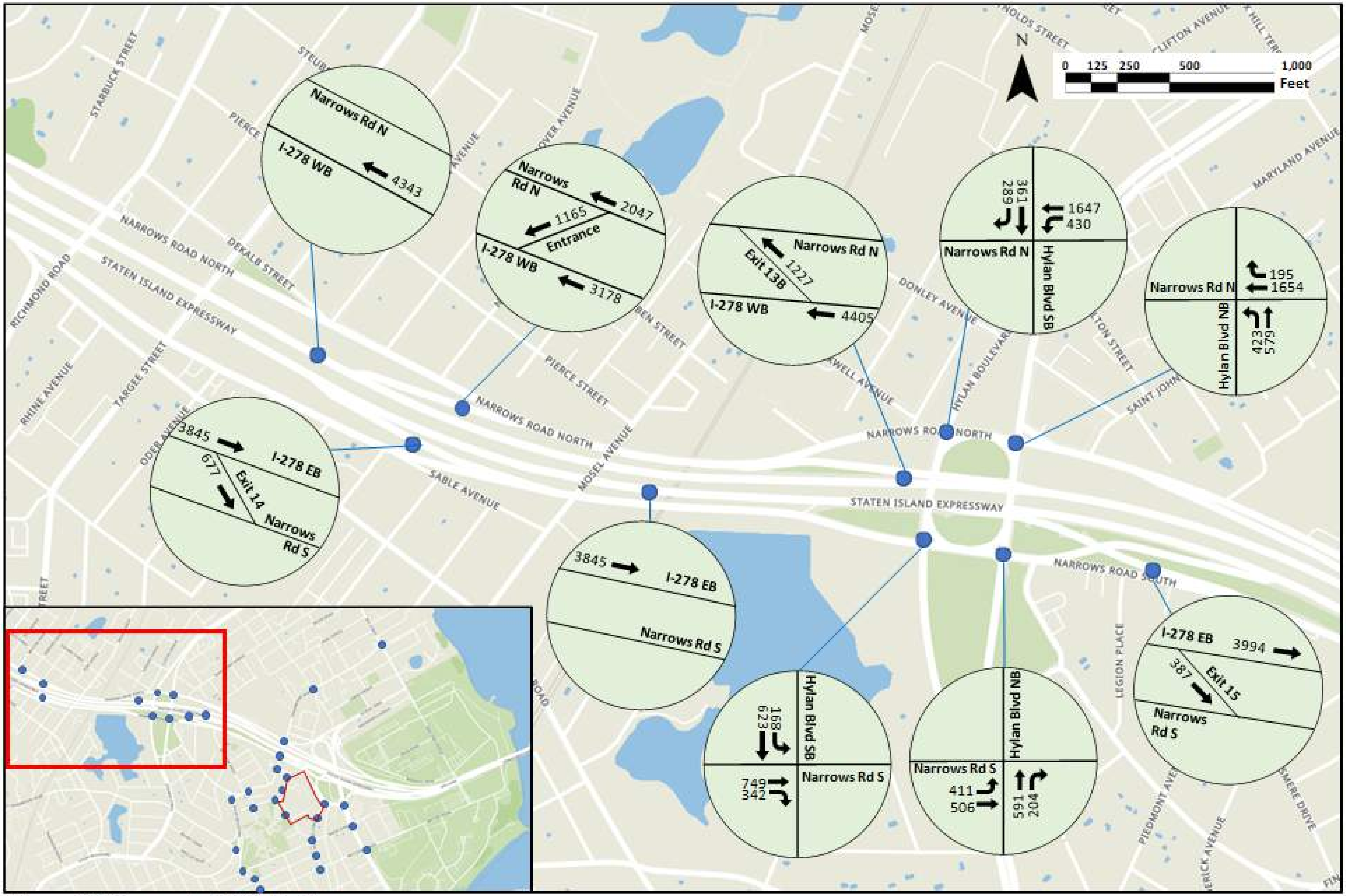


Source: STV Incorporated, 2024/MapTiler

Figure 5-4B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

EXISTING TRAFFIC VOLUMES - WEEKDAY PM PEAK HOUR

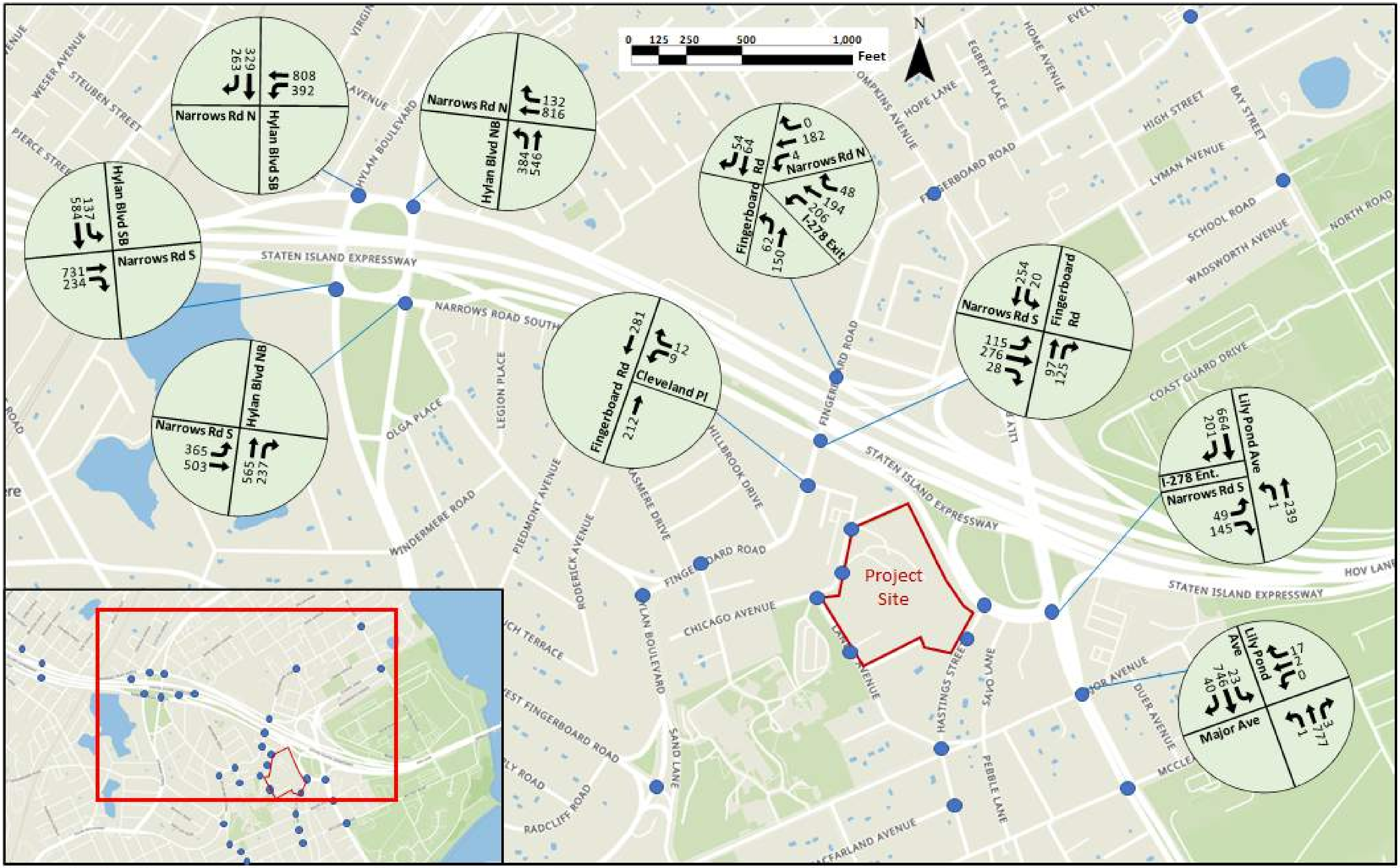


Source: STV Incorporated, 2024/MapTiler

Figure 5-4C

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

EXISTING TRAFFIC VOLUMES - WEEKDAY PM PEAK HOUR

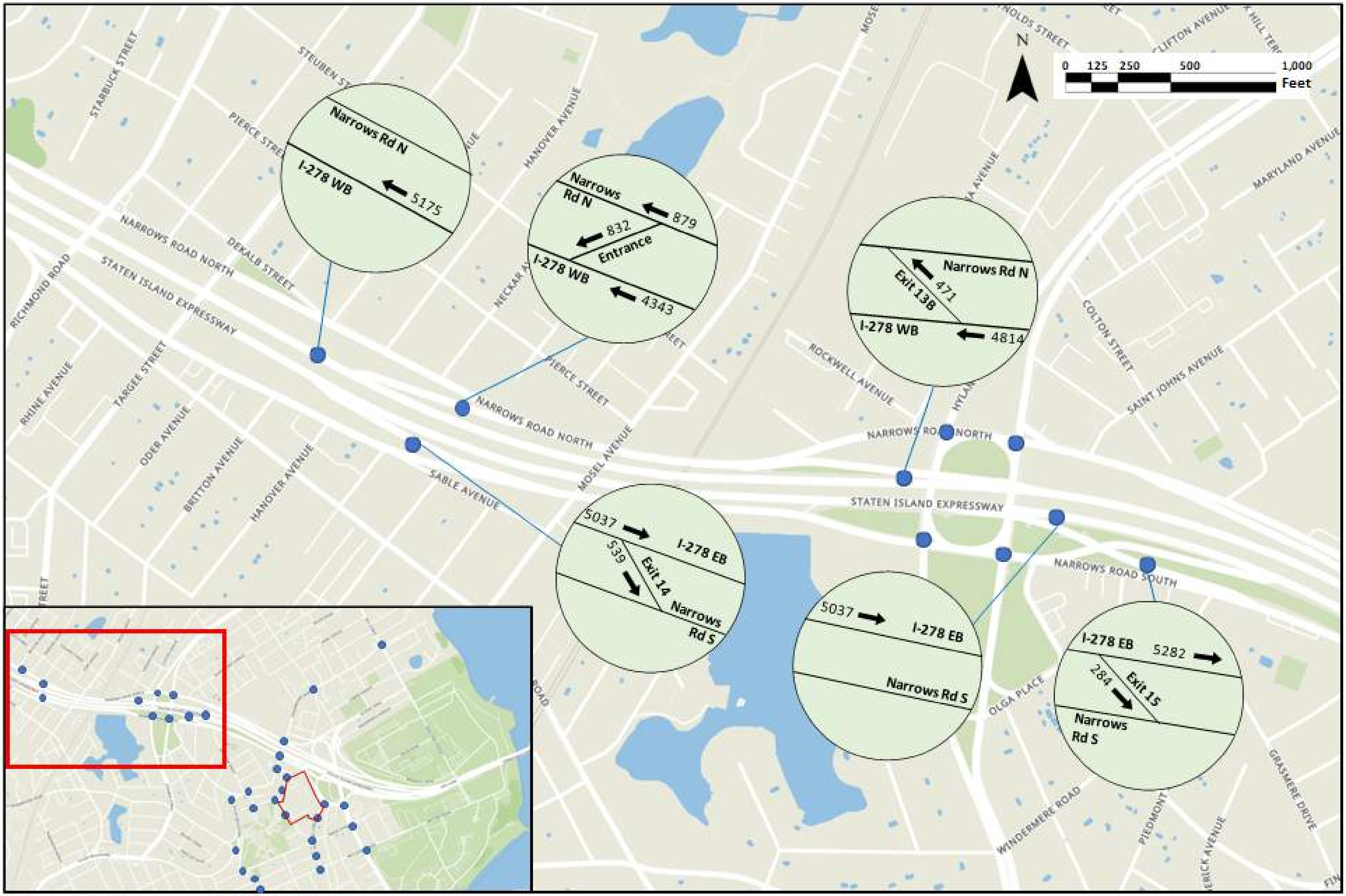


Source: STV Incorporated, 2024/MapTiler

Figure 5-5A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

EXISTING TRAFFIC VOLUMES - SATURDAY MIDDAY PEAK HOUR



Source: STV Incorporated, 2024/MapTiler

Figure 5-5B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

EXISTING TRAFFIC VOLUMES - SATURDAY MIDDAY PEAK HOUR

INTERSECTION CAPACITY ANALYSIS

Table 5-8, "2023 Existing Conditions Traffic Operations," lists the levels of service that characterize existing intersection conditions during the weekday AM and PM and Saturday midday peak hours. The overall LOS of an intersection represents a weighted average of the individual lane groups' LOS. "Overall" LOS E or F indicates that serious congestion exists — either one specific lane group at the intersection has severe delays, or two or more lane groups at the intersection are at LOS E or F.

The analyses showed that the majority of the intersections in the project study area operate at acceptable levels – with overall operations at LOS D or better – during the weekday AM and PM and Saturday midday peak analysis hours. One exception is the intersection of Fingerboard Road and Narrows Road South, which operates at LOS E conditions during the AM peak hour due to high-volume traffic approaching the entrance ramp for eastbound I-278 to the Verrazano-Narrows Bridge. Several intersections operate at overall LOS D or better, but with some individual movements operating with congestion as follows:

- The eastbound Narrows Road South movement at Fingerboard Road operates at LOS E during the AM peak hour.
- The westbound Narrows Road North movement at Fingerboard Road operates at LOS E during the PM peak hour.
- The West Fingerboard Road eastbound movement at Hylan Boulevard operates at LOS E during the AM peak hour.
- The McClean Avenue eastbound left-turn movement at Lily Pond Avenue operates at LOS E during the AM peak hour and the eastbound approach operates at LOS F during the PM peak hour.
- The Hylan Boulevard northbound movement at Narrows Road South operates at LOS E during the AM peak hour.
- The Hylan Boulevard northbound left-turn movement at Narrows Road North operates at LOS E during the AM peak hour.

Table 5-8: 2023 Existing Conditions Traffic Operations

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Signalized											
Fingerboard Road and Hylan Boulevard											
Fingerboard Road	WB	L	0.15	7.2	A	0.43	7.3	A			
		R	0.02	6.4	A	0.03	5.0	A			
Hylan Boulevard	NB	T	0.69	37.2	D	0.26	30.5	C			
		R	0.34	1.7	A	0.19	0.8	A			
	SB	LT	0.35	33.5	C	0.12	30.1	C			
Overall Intersection		-		**17.8**	**B**		**10.5**	**B**			
Fingerboard Road and Columbia Avenue											
Fingerboard Road	EB	TR	0.40	7.0	A	0.21	6.9	A			
	WB	LT	0.24	3.4	A	0.50	7.6	A			
Columbia Avenue	NB	LR	0.13	39.5	D	0.32	42.9	D			
Overall Intersection		-		**7.7**	A		**11.2**	**B**			
Fingerboard Road and Narrows Road South											
Narrows Road South	EB	LTR	1.04	68.1	E	0.70	45.7	D	0.57	41.5	D
Fingerboard Road	NB	TR	0.89	39.5	D	0.31	9.6	A	0.29	16.7	B
	SB	L	0.53	36.1	D	0.07	3.8	A	0.04	5.7	A
		T	0.20	20.7	C	0.47	7.0	A	0.27	8.6	A
Overall Intersection		-		**56.4**	**E**		**23.0**	**C**		**25.7**	**C**
Fingerboard Road and Narrows Road North											
Narrows Road North	WB	LTR	0.51	49.0	D	0.60	56.2	E	0.45	52.1	D
I-278 W Exit Ramp	NWB	LTR	0.19	25.8	C	0.58	18.1	B	0.30	13.9	B
Fingerboard Road	NB	L	0.39	28.4	C	0.57	50.9	D	0.42	39.0	D
		T	0.19	26.8	C	0.54	45.5	D	0.56	40.4	D
	SB	TR	0.32	31.4	C	0.51	50.5	D	0.49	49.7	D
Overall Intersection		-		**34.4**	**C**		**31.3**	**C**		**31.2**	**C**
Fingerboard Road and Tompkins Avenue											
Fingerboard Road	EB	LTR	0.23	18.2	B	0.41	20.9	C			
	WB	LTR	0.25	18.5	B	0.20	17.8	B			
Tompkins Avenue	NB	LTR	0.05	16.7	B	0.06	16.7	B			
	SB	LTR	0.50	22.8	C	0.22	18.5	B			
Overall Intersection		-		**20.7**	**C**		**19.2**	**B**			
Fingerboard Road and Bay Street											
Fingerboard Road	EB	LR	0.20	34.4	C	0.23	34.8	C			
Bay Street	NB	LT	0.36	14.2	B	0.43	15.4	B			
	SB	TR	0.57	18.1	B	0.52	17.0	B			
Overall Intersection		-		**18.2**	**B**		**18.3**	**B**			

Table 5-8: 2023 Existing Conditions Traffic Operations (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Hylan Boulevard and W Fingerboard Road											
W Fingerboard Road	EB	LTR	0.87	70.6	E	0.36	41.2	D			
Sand Lane	WB	LT	0.49	44.3	D	0.31	40.2	D			
Hylan Boulevard	NB	L	0.04	8.8	A	0.02	8.6	A			
		TR	0.30	10.7	B	0.12	9.3	A			
	SB	L	0.17	8.6	A	0.09	5.4	A			
		T	0.14	8.2	A	0.21	5.8	A			
		R	0.04	7.6	A	0.05	5.2	A			
Overall Intersection		-		**24.4**	**C**		**14.7**	**B**			
Sand Lane and Major Avenue											
Major Avenue	WB	LTR	0.84	39.2	D	0.21	19.0	B			
Sand Lane	NB	LT	0.35	9.6	A	0.32	7.4	A			
	SB	TR	0.34	13.3	B	0.23	12.1	B			
Overall Intersection		-		**23.8**	**C**		**11.3**	**B**			
Sand Lane and MacFarland Avenue											
MacFarland Avenue	EB	LTR	0.16	11.5	B	0.02	10.4	B			
	WB	LTR	0.04	10.5	B	0.03	10.4	B			
Sand Lane	NB	LTR	0.36	10.0	A	0.33	9.1	A			
	SB	LTR	0.51	8.4	A	0.25	6.0	A			
Overall Intersection		-		**9.6**	**A**		**7.9**	**A**			
Sand Lane and McClean Avenue											
McClean Avenue	EB	LTR	0.86	34.7	C	0.39	16.3	B			
	WB	LTR	0.40	16.3	B	0.47	17.3	B			
Sand Lane	NB	LTR	0.67	24.5	C	0.50	19.3	B			
	SB	LTR	0.55	13.5	B	0.34	10.6	B			
Overall Intersection		-		**24.8**	**C**		**16.4**	**B**			
Lily Pond Avenue and Narrows Road South											
Narrows Road South	EB	L	0.28	28.5	C	0.27	31.9	C	0.20	27.6	C
		R	0.29	29.9	C	0.37	34.7	C	0.25	29.1	C
Lily Pond Avenue	NB	L	0.33	5.8	A	0.08	8.7	A	0.00	6.5	A
		T	0.15	4.6	A	0.16	4.4	A	0.12	6.3	A
	SB	T	0.42	15.6	B	0.74	20.3	C	0.44	14.2	B
		R	0.52	6.9	A	0.28	2.9	A	0.21	3.2	A
Overall Intersection		-		**12.8**	**B**		**17.3**	**B**		**13.4**	**B**

Table 5-8: 2023 Existing Conditions Traffic Operations (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Lily Pond Avenue and McClean Avenue											
McClean Avenue	EB	L	1.00	71.2	E						
		TR/ LTR	0.09	21.0	C	0.97	96.6	F			
	WB	LTR	0.22	22.8	C	0.36	42.0	D			
Lily Pond Avenue	NB	L	0.06	13.1	B	0.09	11.4	B			
		T	0.99	44.1	D	0.34	11.2	B			
		R	0.04	12.7	B	0.04	8.7	A			
	SB	LTR	0.62	30.3	C	0.91	16.4	B			
Overall Intersection		-		**43.5**	**D**		**23.0**	**C**			
Narrows Road North and Hylan Boulevard E											
Narrows Road North	WB	TR	0.51	21.0	C	0.73	17.2	B	0.42	12.6	B
Hylan Boulevard East	NB	T	0.45	12.8	B	0.60	20.9	C	0.50	16.3	B
Overall Intersection		-		**17.9**	**B**		**18.0**	**B**		**14.0**	**B**
Narrows Road North and Hylan Boulevard W											
Narrows Road North	WB	T	0.60	13.0	B	0.62	4.7	A	0.33	5.5	A
Hylan Boulevard West	SB	TR	0.48	26.6	C	0.60	38.6	D	0.42	23.5	C
Overall Intersection		-		**18.1**	**B**		**14.6**	**B**		**13.4**	**B**
Narrows Road South and Hylan Boulevard W											
Narrows Road South	EB	T	0.97	49.7	D	0.51	21.3	C			
		R	0.43	23.9	C	0.49	22.1	C			
Hylan Boulevard West	SB	T	0.25	8.6	A	0.36	12.7	B			
Overall Intersection		-		**37.0**	**D**		**18.3**	**B**			
Narrows Road South and Hylan Boulevard E											
Narrows Road South	EB	T	0.70	23.3	C	0.37	11.4	B			
Hylan Boulevard East	NB	T/TR	0.99	57.9	E	0.58	32.8	C			
		R	0.92	54.9	D						
Overall Intersection		-		**41.9**	**D**		**24.4**	**C**			
School Road and Bay Street											
School Road	EB	L	0.79	49.9	D	0.57	30.3	C			
		TR	0.24	29.3	C	0.06	20.5	C			
Park Driveway	WB	LTR	0.01	26.2	C	0.01	20.0	B			
Bay Street	NB	LTR	0.07	14.7	B	0.20	21.8	C			
	SB	LT	0.31	17.7	B	0.32	22.6	C			
		R	0.22	16.5	B	0.30	21.3	C			
Overall Intersection		-		**28.3**	**C**		**24.7**	**C**			

Table 5-8: 2023 Existing Conditions Traffic Operations (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Unsignalized											
Fingerboard Road and Cleveland Place											
Cleveland Place	WB	LR	0.19	14.1	B	0.12	12.2	B	0.04	11.0	B
Fingerboard Road	NB	T	0.32	0.0	A	0.13	0.0	A	0.15	0.0	A
	SB	T	0.12	0.0	A	0.30	0.0	A	0.19	0.0	A
Overall Intersection		-		**1.6**	**A**		**1.0**	**A**		**0.5**	**A**
Hastings Street and Landis/Major Avenue											
Landis Avenue	EB	LTR	0.03	7.3	A	0.01	6.6	A			
Major Avenue	WB	LTR	0.03	7.7	A	0.01	7.0	A			
Hastings Street	NB	LTR	0.16	8.0	A	0.04	7.7	A			
	SB	LT	0.18	8.1	A	0.12	7.5	A			
Overall Intersection		-		**8.0**	**A**		**7.4**	**A**			
Hastings Street and Major Avenue											
Major Avenue	WB	LT	0.10	8.3	A	0.08	7.7	A			
Hastings Street	NB	LT	0.20	8.4	A	0.04	7.7	A			
	SB	TR	0.18	7.8	A	0.13	7.5	A			
Overall Intersection		-		**8.2**	**A**		**7.6**	**A**			
Hastings Street and MacFarland Avenue											
MacFarland Avenue	EB	LR	0.13	10.1	B	0.02	9.3	A			
Hastings Street	NB	LT	0.00	0.5	A	0.00	0.7	A			
	SB	TR	0.05	0.0	A	0.06	0.0	A			
Overall Intersection		-		**3.8**	**A**		**1.4**	**A**			
Hastings Street and McClean Avenue											
McClean Avenue	EB	LT	0.03	1.0	A	0.01	0.6	A			
	WB	TR	0.12	0.0	A	0.12	0.0	A			
Hastings Street	SB	LR	0.16	12.0	B	0.14	11.0	B			
Overall Intersection		-		**2.1**	**A**		**2.3**	**A**			
Lily Pond Avenue and Major Avenue											
Major Avenue	WB	LTR	0.07	16.4	C	0.06	12.4	B	0.06	15.1	C
Lily Pond Avenue	NB	LTR	0.00	0.1	A	0.01	0.1	A	0.00	0.0	A
	SB	LTR	0.09	1.4	A	0.03	0.4	A	0.03	0.4	A
Overall Intersection		-		**0.6**	**A**		**0.5**	**A**		**0.4**	**A**
Landis Avenue and Chicago Avenue											
Chicago Avenue	EB	LR	0.08	0.0	A	0.03	0.0	A			
Landis Avenue	NB	R	0.04	9.1	A	0.02	8.7	A			
Overall Intersection		-		**1.8**	**A**		**2.1**	**A**			

Table 5-8: 2023 Existing Conditions Traffic Operations (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Hastings Street and Narrows Road South											
Narrows Road S	EB	T	0.09	0.0	A	0.12	0.0	A			
Hastings Street	NB	R	0.15	10.4	B	0.03	10.1	B			
Overall Intersection		-		**2.5**	**A**		**0.6**	**A**			
Columbia Avenue and Chicago Avenue											
Chicago Avenue	EB	LTR	0.02	11.3	B	0.01	10.5	B			
Columbia Avenue	NB	LTR	0.00	0.0	A	0.00	0.0	A			
	SB	LTR	0.06	5.0	A	0.03	2.7	A			
Overall Intersection		-		**4.3**	**A**		**1.5**	**A**			
Narrows Road N and Hylan Boulevard E											
Narrows Road N	WB	T	0.18	0.0	A	0.35	0.0	A			
Hylan Boulevard E	NB	L	0.92	37.2	E	0.73	22.5	C			
Overall Intersection		-		**17.3**	**C**		**5.0**	**A**			
Narrows Road N and Hylan Boulevard W											
Narrows Road N	WB	L	0.43	12.8	B	0.56	14.6	B			
Hylan Boulevard W	SB	T	0.09	0.0	A	0.08	0.0	A			
Overall Intersection		-		**5.6**	**A**		**7.7**	**A**			
Narrows Road S and Hylan Boulevard W											
Narrows Road S	EB	T	0.28	0.0	A	0.24	0.0	A			
Hylan Boulevard W	SB	L	0.36	14.6	B	0.25	10.7	B			
Overall Intersection		-		**1.8**	**A**		**2.1**	**A**			
Narrows Road S and Hylan Boulevard E											
Narrows Road S	EB	L	0.66	22.0	C	0.51	13.6	B			
Hylan Boulevard E	NB	T	0.31	0.0	A	0.19	0.0	A			
Overall Intersection		-		**5.8**	**A**		**5.4**	**A**			

1 "Mvt." refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through- right turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed

2 V/C is the volume-to-capacity ratio for the Mvt. listed in the first column. Values above 1.0 indicate an excess of demand

3 Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group listed in the Mvt. Column as noted in the 2000 HCM - TRB.

4 The delay calculations for signalized intersections represent the average control delay experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the lane group is saturated.

5 LOS for unsignalized intersections is based upon total average delay per vehicle (sec/veh) for each lane group listed in the Mvt. column as noted in the 2000 HCM - TRB.

Source: STV Incorporated, 2024.

B. The Future Without the Proposed Project

This section establishes the baseline (No-Action) conditions against which potential significant adverse impacts of the proposed project can be compared. No-Action traffic volumes for the 2030 analysis year are established by applying an annual background traffic growth rate based on *CEQR Technical Manual* guidelines, and then adding vehicular volumes expected to be generated by developments to be completed and occupied prior to 2030.

FUTURE NO-ACTION TRAFFIC GROWTH

Background Growth

The assumed annual background growth rate for this section of Staten Island is one percent for Years 1 to 5, and 0.50 percent for Year 6 and beyond, as recommended by the *CEQR Technical Manual*. The total compounded background growth rate for 2030 is approximately six percent (one percent annual growth for five years from 2023 through 2028, and 0.50 percent growth for two years from 2028 through 2030).

Background Development Projects

Traffic Volumes – The 2030 No-Action condition also includes incremental trips anticipated as a result of the proposed Manhattan Central Business District Tolling Program.[11] Incremental trips associated with this program determined in the *Central Business District (CBD) Tolling Program Environmental Assessment [2023]* have been assigned to the I-278 eastbound and westbound mainline movements and added to the 2030 No-Action traffic network.

Roadway Improvements – Roadway improvements as part of a proposed NYCDOT street improvement project (SIP) at the intersection of Narrows Road North and Fingerboard Road are included in the 2030 No-Action traffic analysis. This project includes a signal timing change and the reduction of the Narrows Road North westbound approach from two lanes to one lane.

INTERSECTION CAPACITY ANALYSIS

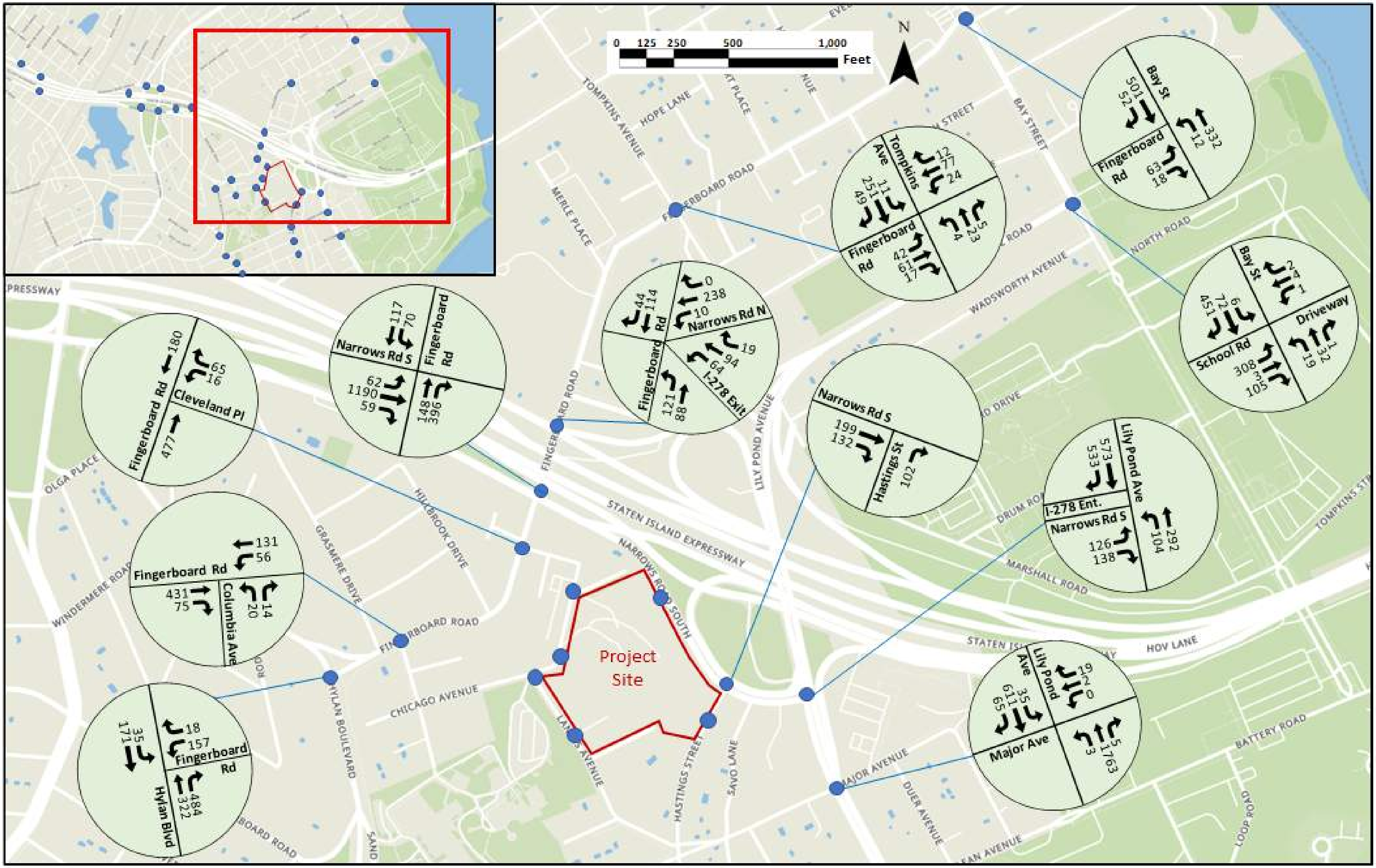
Expected No-Action LOS are determined for 2030 based on the projected increases in traffic volumes. Figure 5-6, "2030 No-Action Traffic Volumes – Weekday AM Peak Hour," Figure 5-7, "2030 No-Action Traffic Volumes – Weekday PM Peak Hour," Figure 5-8, "2030 No-Action Traffic Volumes – Saturday Midday Peak Hour," show the No-Action traffic volumes during analysis hours. Table 5-9, "2030 No-Action Condition," lists the LOS projected for the study area intersections during the No-Action weekday AM and PM and Saturday midday peak hours.

The analyses show that the majority of the intersections in the project study area would operate at acceptable levels during the weekday AM and PM and Saturday midday peak analysis hours — with overall operations at LOS D or better. Those intersections and movements that would experience a change in LOS to E or F conditions as compared to existing conditions include:

- The Narrows Road South eastbound movement at Fingerboard Road would worsen from LOS E to F conditions in the AM peak hour.

[11] New York Governor Kathy Hochul announced on June 5th, 2024, that implementation of this program has been indefinitely delayed.

- The Fingerboard Road northbound left-turn movement at Narrows Road North would worsen from LOS D to LOS E conditions during the PM peak hour.
- The Narrows Road North westbound movement at Fingerboard Road would worsen from LOS D to LOS E during the AM peak hour and deteriorate within LOS E during the PM peak hour.
- The West Fingerboard Road eastbound movement at Hylan Boulevard would deteriorate from LOS E to LOS F conditions during the AM peak hour.
- The McClean Avenue eastbound left-turn movement at Lily Pond Avenue would worsen from LOS E to LOS F conditions during the AM peak hour and the eastbound approach would deteriorate within LOS F conditions during the PM peak hour.
- The Lily Pond Avenue northbound through movement at McClean Avenue would worsen from LOS D to LOS E conditions during the AM peak hour.
- The Narrows Road South eastbound through movement at Hylan Boulevard would worsen from LOS D to LOS E conditions during the AM peak hour.
- The Hylan Boulevard northbound through movement at Narrows Road South would deteriorate within LOS E and the northbound right-turn movement would worsen from LOS D to F during the AM peak hour.
- The Hylan Boulevard northbound left-turn movement at Narrows Road North would deteriorate from LOS E to LOS F conditions during the AM peak hour.

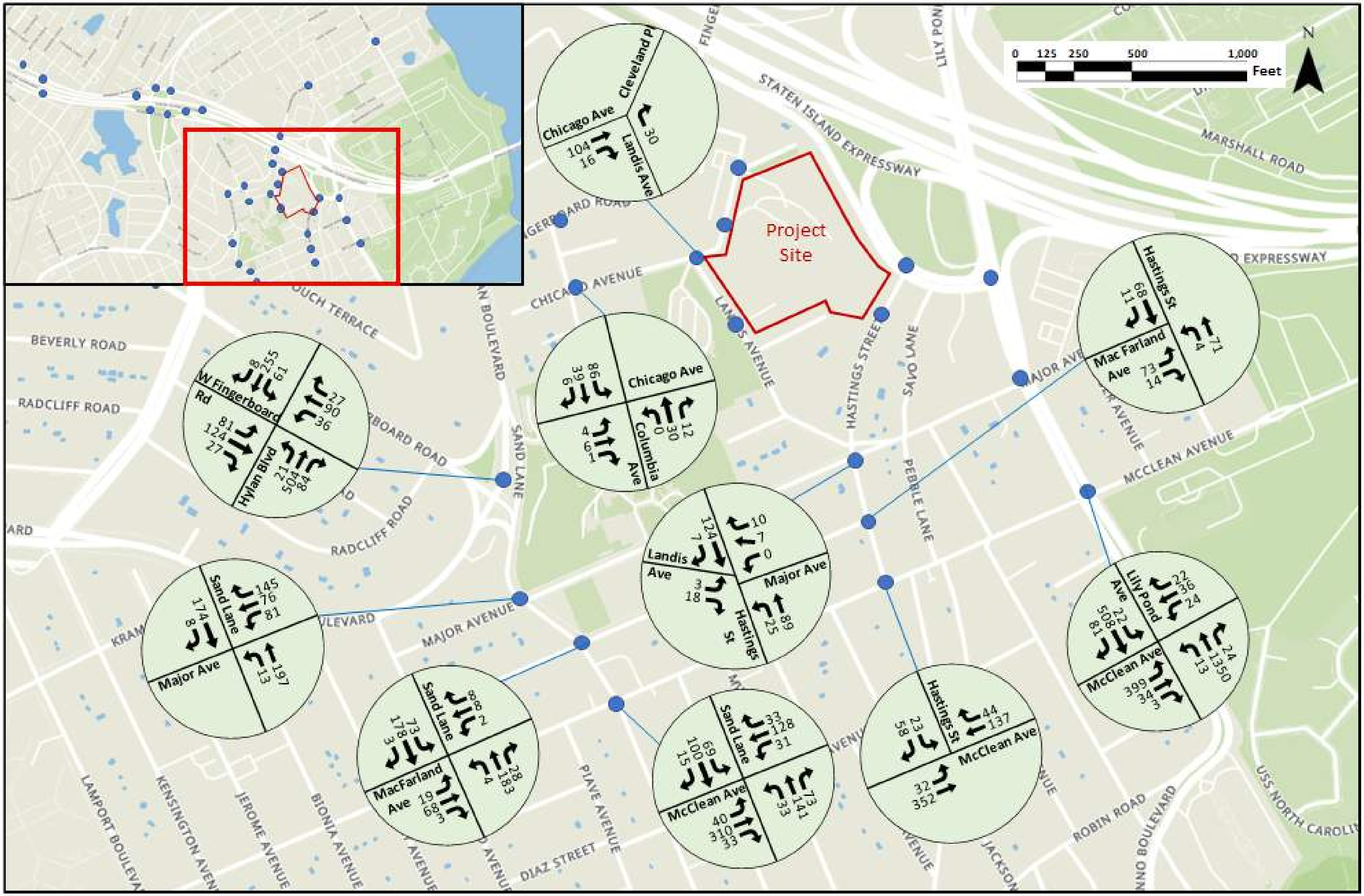


Source: STV Incorporated, 2024/MapTiler

Figure 5-6A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 NO-ACTION TRAFFIC VOLUMES- WEEKDAY AM PEAK HOUR

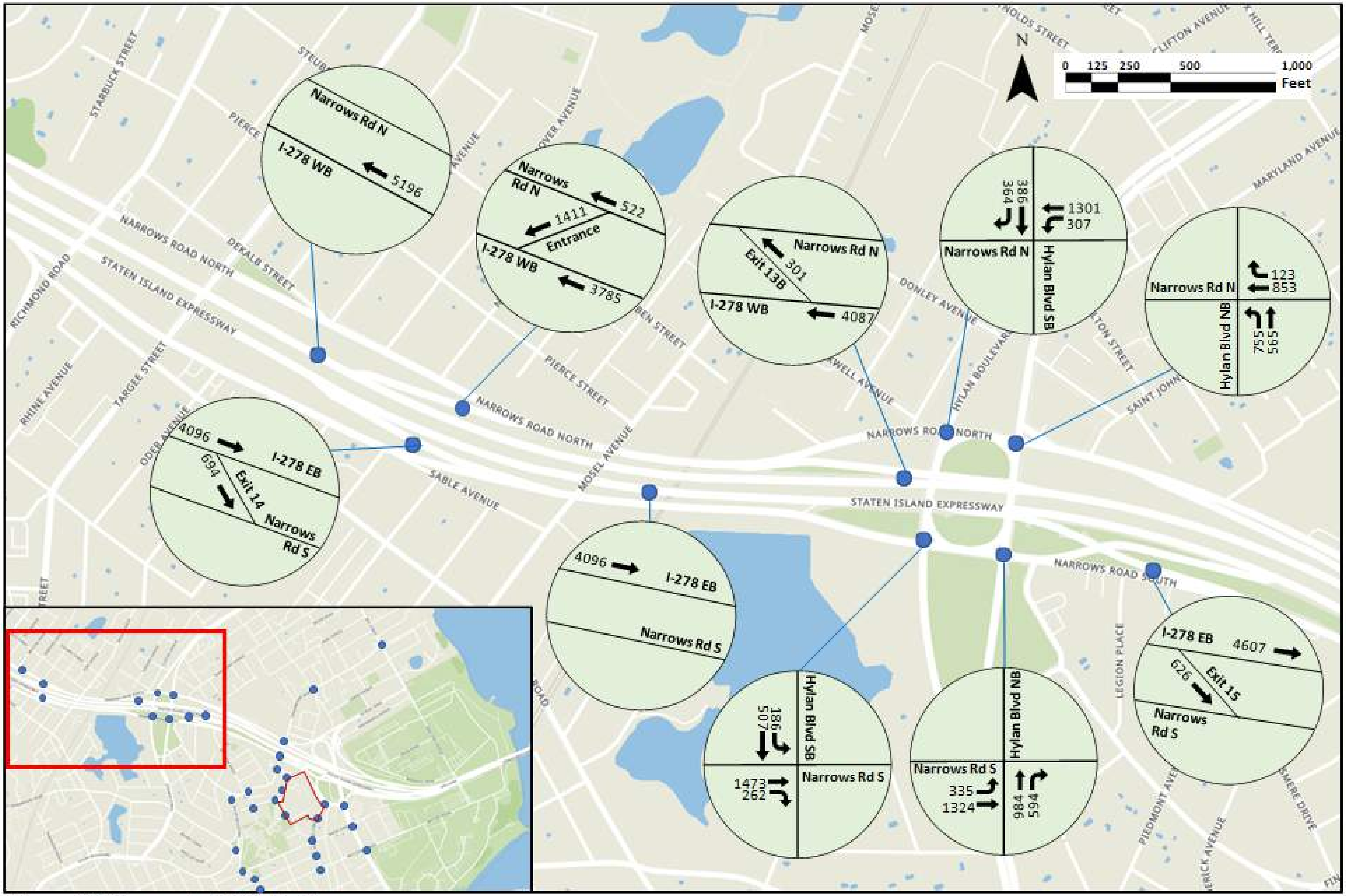


Source: STV Incorporated, 2024/MapTiler

Figure 5-6B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 NO-ACTION TRAFFIC VOLUMES - WEEKDAY AM PEAK HOUR

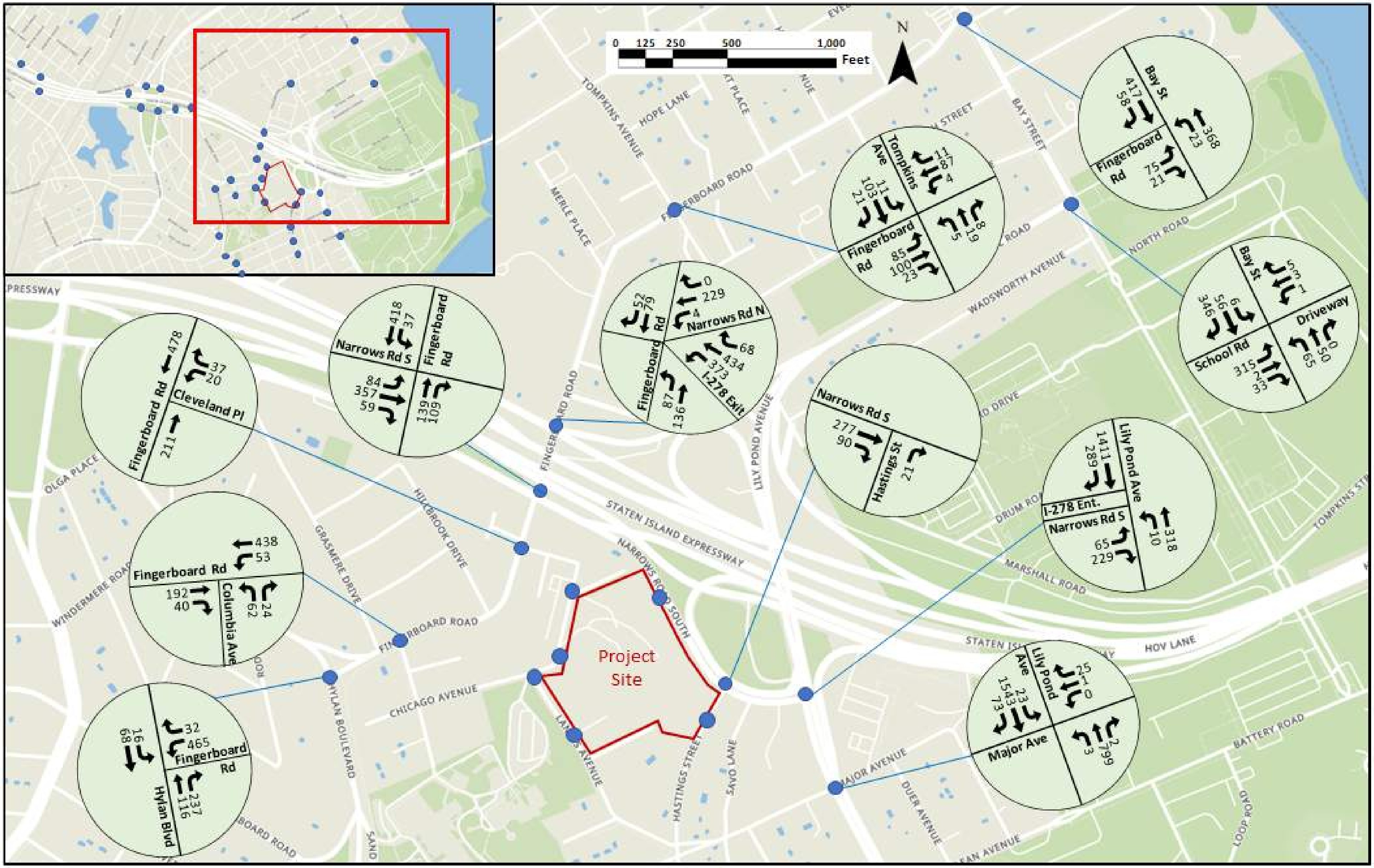


Source: STV Incorporated, 2024/MapTiler

Figure 5-6C

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 NO-ACTION TRAFFIC VOLUMES - WEEKDAY AM PEAK HOUR

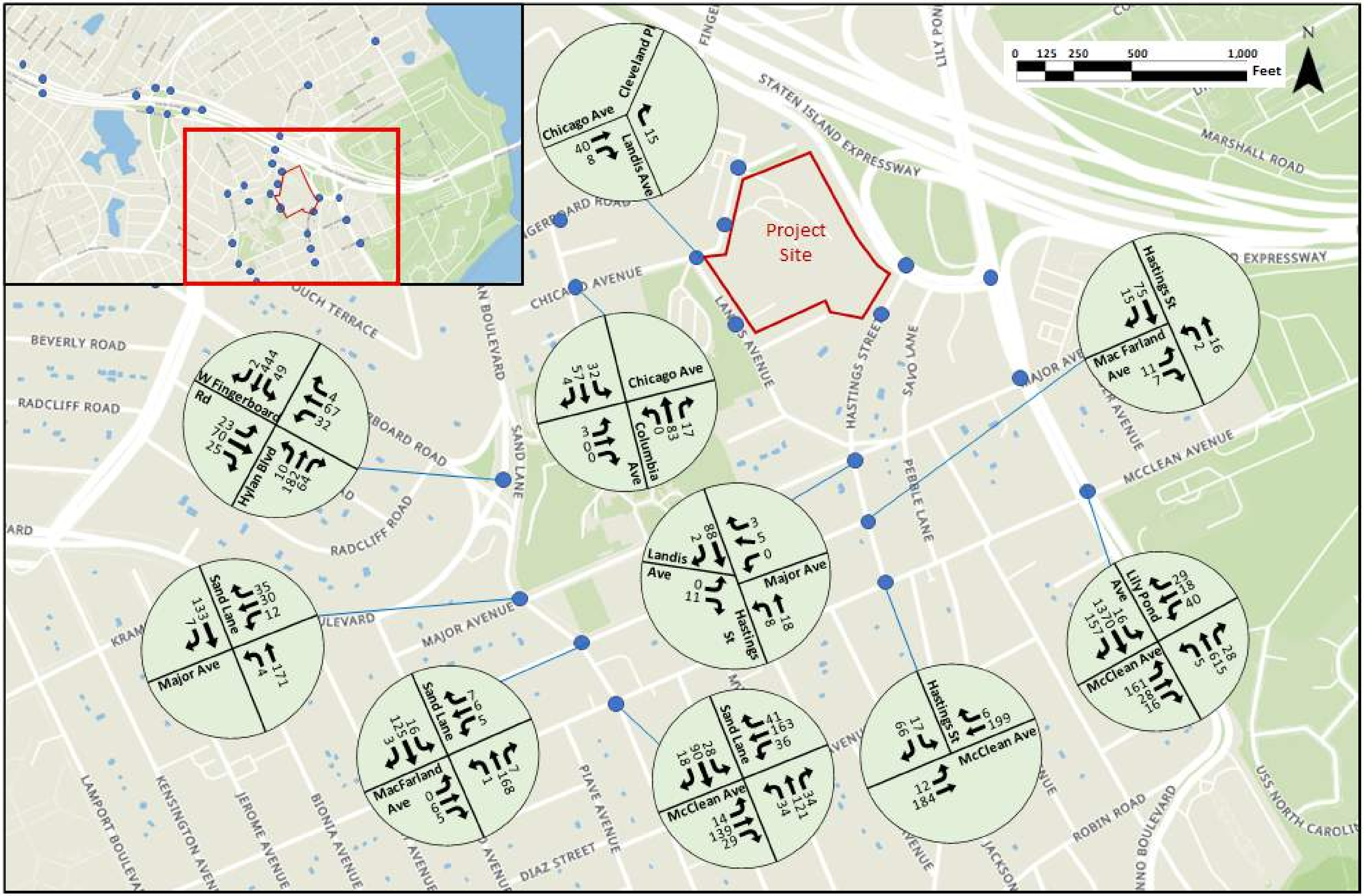


Source: STV Incorporated, 2024/MapTiler

Figure 5-7A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 NO-ACTION TRAFFIC VOLUMES - WEEKDAY PM PEAK HOUR

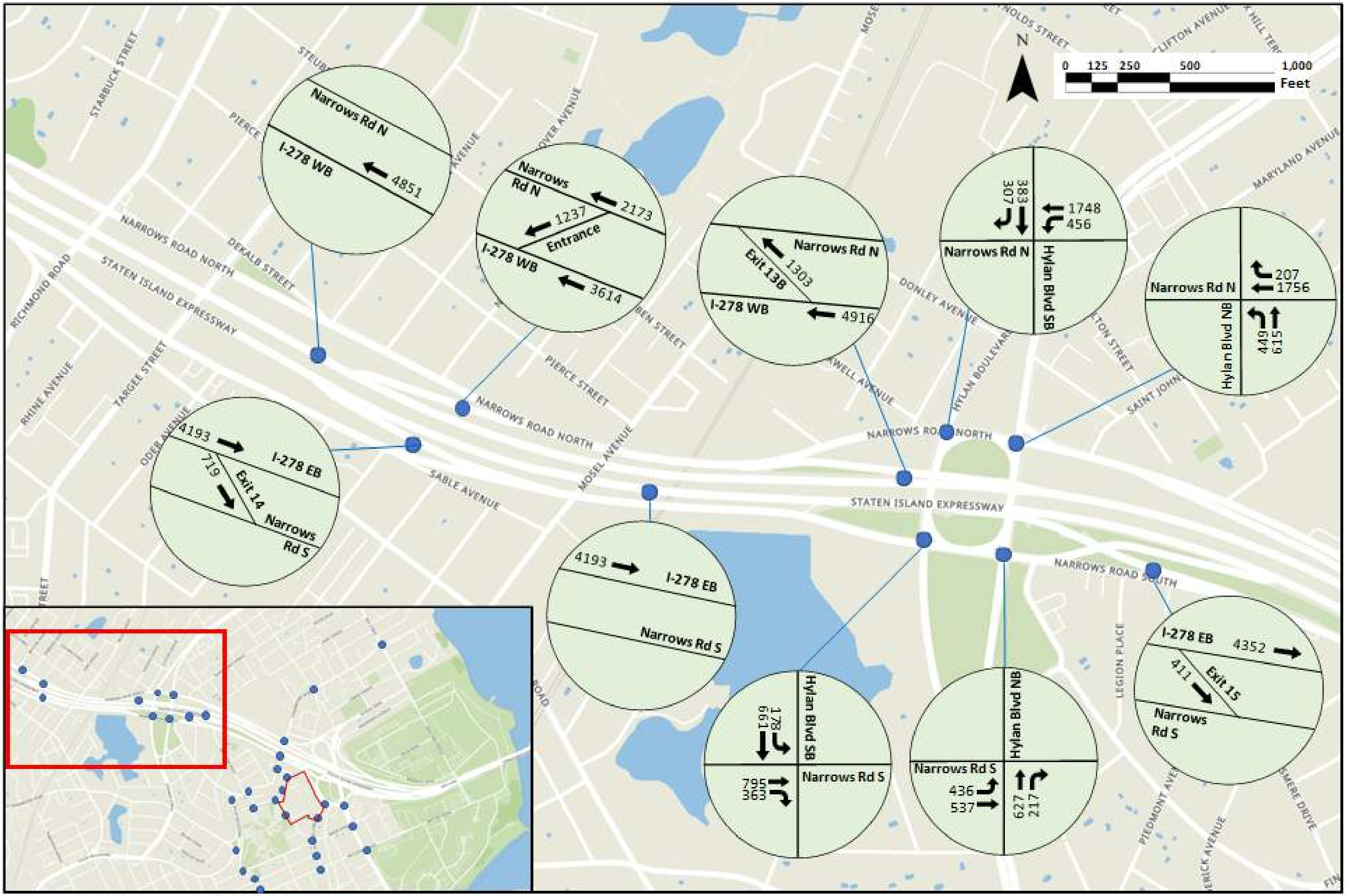


Source: STV Incorporated, 2024/MapTiler

Figure 5-7B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 NO-ACTION TRAFFIC VOLUMES - WEEKDAY PM PEAK HOUR

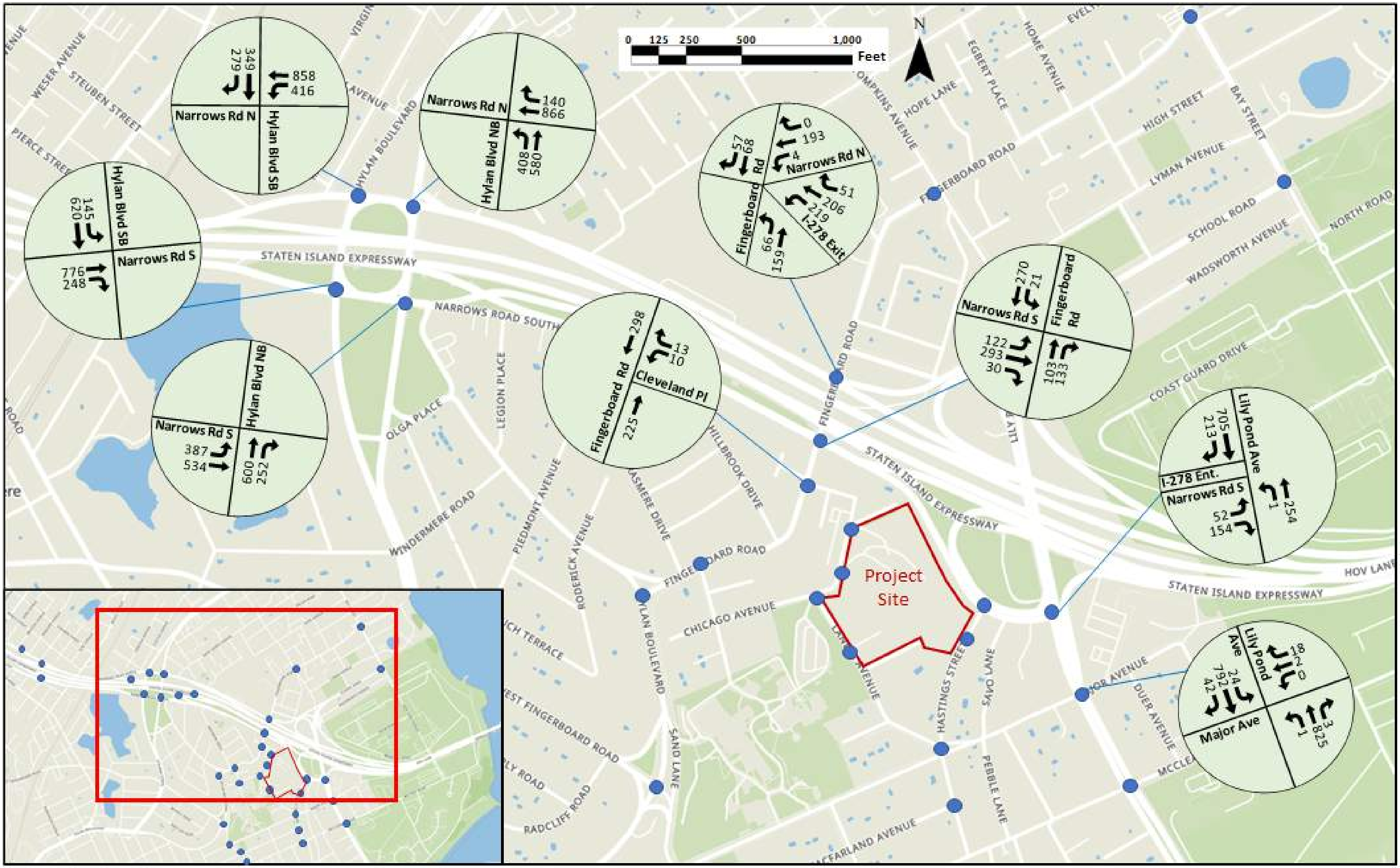


Source: STV Incorporated, 2024/MapTiler

Figure 5-7C

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 NO-ACTION TRAFFIC VOLUMES - WEEKDAY PM PEAK HOUR

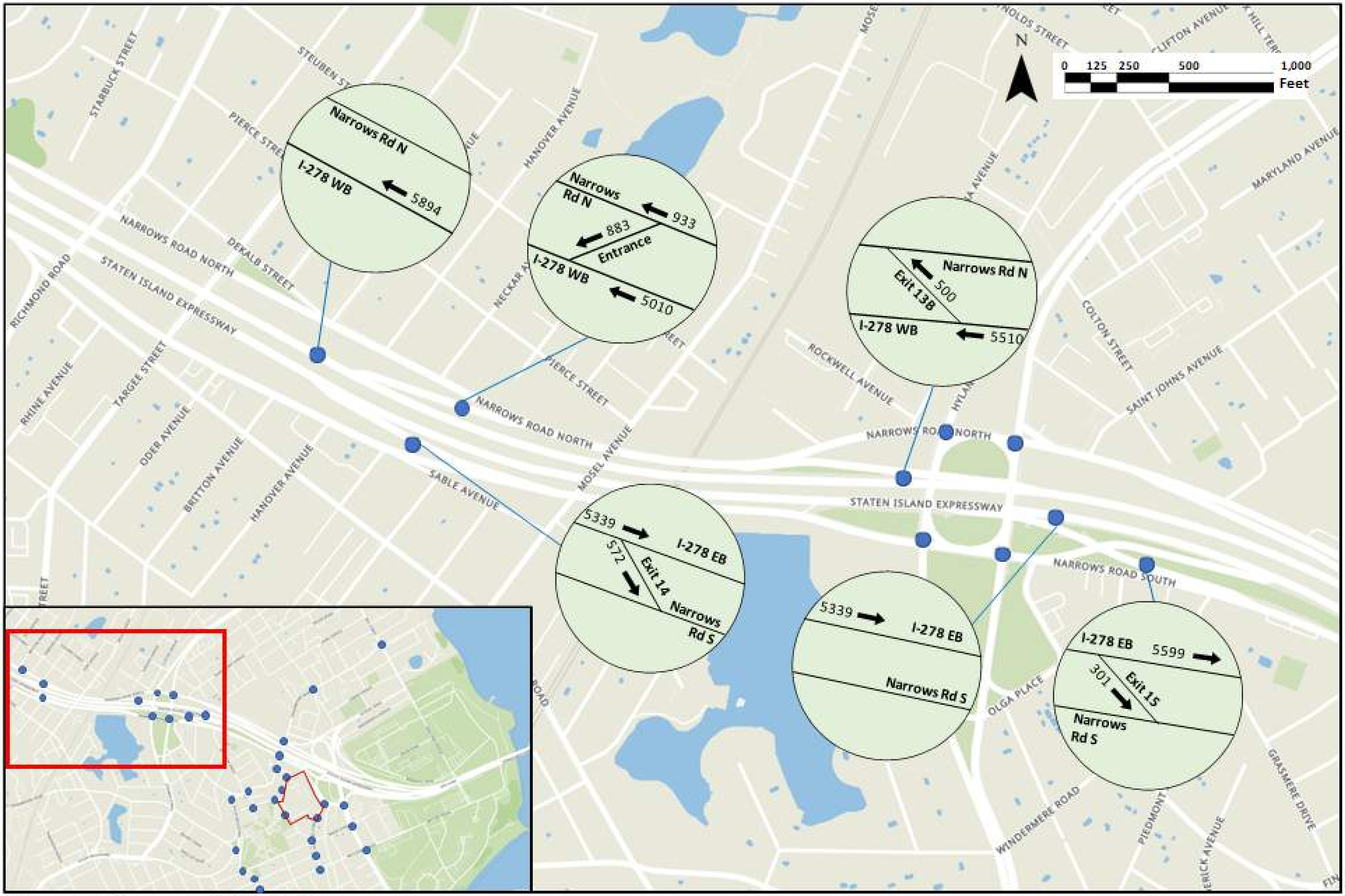


Source: STV Incorporated, 2024/MapTiler

Figure 5-8A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 NO-ACTION TRAFFIC VOLUMES - SATURDAY MIDDAY PEAK HOUR



Source: STV Incorporated, 2024/MapTiler

Figure 5-8B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 NO-ACTION TRAFFIC VOLUMES - SATURDAY MIDDAY PEAK HOUR

Table 5-9: 2030 No-Action Condition

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Signalized											
Fingerboard Road and Hylan Boulevard											
Fingerboard Road	WB	L	0.16	6.9	A	0.45	7.3	A			
		R	0.02	6.2	A	0.04	4.9	A			
Hylan Boulevard	NB	T	0.74	38.7	D	0.28	30.6	C			
		R	0.36	1.9	A	0.20	0.8	A			
	SB	LT	0.38	34.2	C	0.12	30.2	C			
Overall Intersection		-		**18.4**	**B**		**10.6**	**B**			
Fingerboard Road and Columbia Avenue											
Fingerboard Road	EB	TR	0.42	5.7	A	0.22	6.9	A			
	WB	LT	0.26	3.2	A	0.53	5.2	A			
Columbia Avenue	NB	LR	0.14	39.7	D	0.34	43.3	D			
Overall Intersection		-		**6.8**	A		**9.9**	**A**			
Fingerboard Road and Narrows Road South											
Narrows Road South	EB	LTR	1.10	90.4	F	0.74	47.4	D	0.61	42.3	D
Fingerboard Road	NB	TR	0.95	48.7	D	0.33	9.8	A	0.31	17.0	B
	SB	L	0.69	47.1	D	0.08	8.2	A	0.04	9.1	A
		T	0.21	15.2	B	0.50	10.7	B	0.29	10.8	B
Overall Intersection		-		**73.1**	**E**		**25.1**	**C**		**26.8**	**C**
Fingerboard Road and Narrows Road North											
Narrows Road North	WB	LTR	0.82	64.8	E	0.81	67.4	E	0.62	53.4	D
I-278 W Exit Ramp	NWB	LTR	0.22	27.4	C	0.00	24.7	C	0.00	18.2	B
Fingerboard Road	NB	L	0.47	33.3	C	0.63	55.8	E	0.46	40.6	D
		T	0.22	31.0	C	0.57	47.2	D	0.59	41.8	D
	SB	TR	0.37	34.4	C	0.55	51.8	D	0.52	50.6	D
Overall Intersection		-		**41.3**	**D**		**37.5**	**D**		**33.8**	**C**
Fingerboard Road and Tompkins Avenue											
Fingerboard Road	EB	LTR	0.25	18.4	B	0.43	21.4	C			
	WB	LTR	0.26	18.7	B	0.22	18.0	B			
Tompkins Avenue	NB	LTR	0.05	16.7	B	0.06	16.7	B			
	SB	LTR	0.54	23.5	C	0.23	18.6	B			
Overall Intersection		-		**21.1**	**C**		**19.6**	**B**			
Fingerboard Road and Bay Street											
Fingerboard Road	EB	LR	0.22	34.6	C	0.25	35.0	C			
Bay Street	NB	LT	0.38	14.5	B	0.46	15.8	B			
	SB	TR	0.61	18.9	B	0.55	17.6	B			
Overall Intersection		-		**18.9**	**B**		**18.8**	**B**			

Table 5-9: 2030 No-Action Condition (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Hylan Boulevard and W Fingerboard Road											
W Fingerboard Road	EB	LTR	0.94	84.4	F	0.38	41.6	D			
Sand Lane	WB	LT	0.52	45.5	D	0.34	40.7	D			
Hylan Boulevard	NB	L	0.04	8.8	A	0.03	8.7	A			
		TR	0.31	10.9	B	0.13	9.3	A			
	SB	L	0.19	8.6	A	0.09	5.4	A			
		T	0.15	8.0	A	0.22	5.8	A			
		R	0.04	7.4	A	0.06	5.1	A			
Overall Intersection		-		**27.0**	**C**		**14.8**	**B**			
Sand Lane and Major Avenue											
Major Avenue	WB	LTR	0.66	23.2	C	0.19	16.4	B			
Sand Lane	NB	LT	0.40	12.8	B	0.34	7.8	A			
	SB	TR	0.39	15.4	B	0.25	12.3	B			
Overall Intersection		-		**18.2**	**B**		**11.1**	**B**			
Sand Lane and MacFarland Avenue											
MacFarland Avenue	EB	LTR	0.17	11.6	B	0.02	10.4	B			
	WB	LTR	0.04	10.5	B	0.03	10.4	B			
Sand Lane	NB	LTR	0.38	10.0	A	0.35	9.1	A			
	SB	LTR	0.55	9.4	A	0.27	6.2	A			
Overall Intersection		-		**10.0**	**A**		**8.0**	**A**			
Sand Lane and McClean Avenue											
McClean Avenue	EB	LTR	0.92	41.7	D	0.42	16.9	B			
	WB	LTR	0.43	16.8	B	0.50	17.8	B			
Sand Lane	NB	LTR	0.71	26.6	C	0.53	20.1	C			
	SB	LTR	0.59	15.5	B	0.36	11.2	B			
Overall Intersection		-		**28.5**	**C**		**17.0**	**B**			
Lily Pond Avenue and Narrows Road South											
Narrows Road South	EB	L	0.30	28.7	C	0.29	33.1	C	0.21	27.7	C
		R	0.31	30.2	C	0.40	36.3	D	0.27	29.4	C
Lily Pond Avenue	NB	L	0.36	4.8	A	0.11	10.0	A	0.00	6.6	A
		T	0.16	4.1	A	0.17	4.4	A	0.13	6.3	A
	SB	T	0.44	15.9	B	0.78	21.9	C	0.47	14.5	B
		R	0.55	7.3	A	0.30	3.0	A	0.22	3.3	A
Overall Intersection		-		**12.9**	**B**		**18.5**	**B**		**13.6**	**B**

Table 5-9: 2030 No-Action Condition (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Lily Pond Avenue and McClean Avenue											
McClean Avenue	EB	L	1.04	81.3	F						
		TR/ LTR	0.09	21.0	C	1.04	115.6	F			
	WB	LTR	0.23	22.9	C	0.38	42.5	D			
Lily Pond Avenue	NB	L	0.07	13.3	B	0.11	13.4	B			
		T	1.05	61.4	E	0.36	11.4	B			
		R	0.05	12.7	B	0.04	8.8	A			
	SB	LTR	0.70	28.8	C	0.96	22.5	C			
Overall Intersection		-		**53.8**	**D**		**28.6**	**C**			
Narrows Road North and Hylan Boulevard E											
Narrows Road North	WB	TR	0.54	21.5	C	0.77	18.5	B	0.44	12.9	B
Hylan Boulevard East	NB	T	0.47	13.5	B	0.63	21.4	C	0.53	16.5	B
Overall Intersection		-		**18.5**	**B**		**19.1**	**B**		**14.2**	**B**
Narrows Road North and Hylan Boulevard W											
Narrows Road North	WB	T	0.63	13.3	B	0.66	4.9	A	0.35	5.5	A
Hylan Boulevard West	SB	TR	0.51	27.1	C	0.89	39.5	D	0.45	23.8	C
Overall Intersection		-		**18.5**	**B**		**15.0**	**B**		**13.5**	**B**
Narrows Road South and Hylan Boulevard W											
Narrows Road South	EB	T	1.03	64.8	E	0.55	21.9	C			
		R	0.45	24.4	C	0.52	22.7	C			
Hylan Boulevard West	SB	T	0.27	8.6	A	0.38	12.8	B			
Overall Intersection		-		**46.8**	**D**		**18.7**	**B**			
Narrows Road South and Hylan Boulevard E											
Narrows Road South	EB	T	0.74	24.6	C	0.39	11.5	B			
Hylan Boulevard East	NB	T/TR	1.05	75.2	E	0.62	33.5	C			
		R	1.04	82.7	F						
Overall Intersection		-		**53.8**	**D**		**24.9**	**C**			
School Road and Bay Street											
School Road	EB	L	0.84	54.8	D	0.60	31.5	C			
		TR	0.25	29.6	C	0.06	20.6	C			
Park Driveway	WB	LTR	0.01	26.2	C	0.01	20.0	B			
Bay Street	NB	LTR	0.08	14.8	B	0.22	22.1	C			
	SB	LT	0.33	18.0	B	0.33	22.9	C			
		R	0.23	16.7	B	0.31	21.4	C			
Overall Intersection		-		**29.9**	**C**		**25.2**	**C**			

Table 5-9: 2030 No-Action Condition (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Unsignalized											
Fingerboard Road and Cleveland Place											
Cleveland Place	WB	LR	0.21	14.8	B	0.13	12.6	B	0.05	11.2	B
Fingerboard Road	NB	T	0.34	0.0	A	0.14	0.0	A	0.15	0.0	A
	SB	T	0.13	0.0	A	0.32	0.0	A	0.20	0.0	A
Overall Intersection		-		**1.7**	**A**		**1.0**	**A**		**0.5**	**A**
Hastings Street and Landis/Major Avenue											
Landis Avenue	EB	LTR	0.03	7.3	A	0.01	6.7	A			
Major Avenue	WB	LTR	0.03	7.7	A	0.01	7.0	A			
Hastings Street	NB	LTR	0.17	8.1	A	0.04	7.7	A			
	SB	LT	0.19	8.1	A	0.12	7.6	A			
Overall Intersection		-		**8.1**	**A**		**7.5**	**A**			
Hastings Street and Major Avenue											
Major Avenue	WB	LT	0.10	8.4	A	0.09	7.7	A			
Hastings Street	NB	LT	0.22	8.6	A	0.04	7.7	A			
	SB	TR	0.19	7.9	A	0.13	7.6	A			
Overall Intersection		-		**8.3**	**A**		**7.7**	**A**			
Hastings Street and MacFarland Avenue											
MacFarland Avenue	EB	LR	0.14	10.3	B	0.03	9.4	A			
Hastings Street	NB	LT	0.00	0.5	A	0.00	0.7	A			
	SB	TR	0.06	0.0	A	0.07	0.0	A			
Overall Intersection		-		**3.9**	**A**		**1.5**	**A**			
Hastings Street and McClean Avenue											
McClean Avenue	EB	LT	0.03	1.0	A	0.01	0.6	A			
	WB	TR	0.13	0.0	A	0.13	0.0	A			
Hastings Street	SB	LR	0.17	12.4	B	0.15	11.3	B			
Overall Intersection		-		**2.2**	**A**		**2.3**	**A**			
Lily Pond Avenue and Major Avenue											
Major Avenue	WB	LTR	0.09	18.1	C	0.07	12.9	B	0.07	16.1	C
Lily Pond Avenue	NB	LTR	0.00	0.1	A	0.01	0.1	A	0.00	0.0	A
	SB	LTR	0.11	1.8	A	0.04	0.5	A	0.03	0.5	A
Overall Intersection		-		**0.7**	**A**		**0.5**	**A**		**0.4**	**A**
Landis Avenue and Chicago Avenue											
Chicago Avenue	EB	LR	0.09	0.0	A	0.03	0.0	A			
Landis Avenue	NB	R	0.04	9.2	A	0.02	8.7	A			
Overall Intersection		-		**1.8**	**A**		**2.1**	**A**			

Table 5-9: 2030 No-Action Condition (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Hastings Street and Narrows Road South											
Narrows Road S	EB	T	0.10	0.0	A	0.13	0.0	A			
Hastings Street	NB	R	0.16	10.6	B	0.04	10.2	B			
Overall Intersection		-		**2.5**	**A**		**0.6**	**A**			
Columbia Avenue and Chicago Avenue											
Chicago Avenue	EB	LTR	0.02	11.5	B	0.01	10.7	B			
Columbia Avenue	NB	LTR	0.00	0.0	A	0.00	0.0	A			
	SB	LTR	0.07	5.1	A	0.03	2.8	A			
Overall Intersection		-		**4.3**	**A**		**1.5**	**A**			
Narrows Road N and Hylan Boulevard E											
Narrows Road N	WB	T	0.19	0.0	A	0.37	0.0	A			
Hylan Boulevard E	NB	L	1.00	52.4	F	0.81	29.8	D			
Overall Intersection		-		**24.3**	**C**		**6.6**	**A**			
Narrows Road N and Hylan Boulevard W											
Narrows Road N	WB	L	0.46	13.4	B	0.60	15.6	C			
Hylan Boulevard W	SB	T	0.09	0.0	A	0.09	0.0	A			
Overall Intersection		-		**5.9**	**A**		**8.3**	**A**			
Narrows Road S and Hylan Boulevard W											
Narrows Road S	EB	T	0.30	0.0	A	0.26	0.0	A			
Hylan Boulevard W	SB	L	0.40	15.6	C	0.27	10.9	B			
Overall Intersection		-		**2.0**	**A**		**2.2**	**A**			
Narrows Road S and Hylan Boulevard E											
Narrows Road S	EB	L	0.70	24.6	C	0.55	14.4	B			
Hylan Boulevard E	NB	T	0.33	0.0	A	0.20	0.0	A			
Overall Intersection		-		**6.5**	**A**		**5.7**	**A**			

1 "Mvt." refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through- right turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed

2 V/C is the volume-to-capacity ratio for the Mvt. listed in the first column. Values above 1.0 indicate an excess of demand

3 Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group listed in the Mvt. Column as noted in the 2000 HCM - TRB.

4 The delay calculations for signalized intersections represent the average control delay experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the lane group is saturated.

5 LOS for unsignalized intersections is based upon total average delay per vehicle (sec/veh) for each lane group listed in the Mvt. column as noted in the 2000 HCM - TRB.

Source: STV Incorporated, 2024.

C. Potential Effects of the Proposed Project

PROJECT TRAFFIC VOLUME INCREMENT

As listed in Table 5-3, “Travel Demand Forecast for PS/IS/HS,” and Table 5-4, “Travel Demand Forecast for Athletic Field,” there would be a total of approximately 1,161 additional vehicle trips during the weekday AM peak hour, 1,068 during the PM peak hour, and 299 vehicle trips during the Saturday midday peak hour. Auto trips were assigned to the street network based on the location of the schools and the anticipated origins and destinations of vehicle trips associated with the different demographics and modes projected for the project site (e.g., PS/IS student auto, IS/HS student auto, District 75 school bus, faculty/staff auto, etc.).

Parents are expected to drop off and pick up students on-street. The PS/IS loading zone would be located on Landis Avenue. The shared facility for the two IS/HS would provide two loading zones – one along Cleveland Place, and one to the north of the property along Narrows Road South.

The Proposed Project would provide internal campus driveways which are anticipated to be used by authorized faculty/staff, school bus drivers, and delivery drivers only. One would be located on the east side of the property, with an entrance on Hastings Street and an exit onto Landis Avenue. The access points to this driveway are existing, although the curb cut at Hastings Street would be widened to 18 feet and the curb cut at the Landis Avenue exit would be widened to 15 feet in order to accommodate turning maneuvers for larger vehicles, such as delivery trucks and school buses. This driveway would be located adjacent to the proposed PS building and would be used as the loading zone for the PS/IS Gifted & Talented and PS District 75 student school buses.

Another driveway would be located on the west side of the property, with an entrance on Cleveland Place and two exit driveways, one exit at Garson Avenue and the other exit at Narrows Road South. The entrance on Cleveland Place would be a new driveway located at the intersection of Cleveland Place and Chicago Avenue, approximately 100 feet south of the existing campus driveway on Cleveland Place. The existing driveway on Cleveland Place would be removed and replaced with a pedestrian access point to the campus. The existing driveway at Garson Avenue is anticipated to be an exit only. The driveway at Narrows Road South would be new, located approximately 420 feet northwest of Hastings Street. It would be used as an exit driveway and an entrance for staff and delivery vehicles. This internal driveway around the IS/HS buildings would be used as the loading zone for IS general education and IS/HS District 75 student school buses.

The staff parking lot across Cleveland Place would have its new entrance and exit located at Cleveland Place and Garson Avenue. The existing parking lot driveway closer to Chicago Avenue would be removed and replaced with a pedestrian access point to the parking lot. See Figure 5-9, “Conceptual Site Plan,” for the locations of these driveways and access points.

With the Proposed Project, it is anticipated that NYCDOT will convert Landis Avenue to one-way northbound operations between Chicago Avenue and Knauth Place, concurrent with school opening. Traffic volumes that currently use southbound Landis Avenue are low, fewer than 15 vph during the peak hours. These volumes have been reassigned to use southbound Sand Lane or southbound Hastings Street in the With-Action traffic network.

Net incremental peak-hour vehicle trips were assigned to intersections to be analyzed within the traffic study area, as illustrated in Figure 5-10, “2030 With-Action Traffic Volume Increments – Weekday AM Peak Hour,” Figure 5-11, “2030 With-Action Traffic Volume Increments – Weekday PM Peak Hour,” and Figure 5-12, “2030 With-Action Traffic Volume Increments – Saturday Midday Peak Hour.”

Figure 5-13, “With-Action Traffic Volumes – Weekday AM Peak Hour,” Figure 5-14, “With-Action Traffic Volumes – Weekday PM Peak Hour,” and Figure 5-15, “With-Action Traffic Volumes – Saturday Midday Peak Hour,” show the total weekday AM, PM, and Saturday midday traffic volumes in the 2030 future with the proposed project. The volumes shown are the combination of the rerouted southbound Landis Avenue traffic volumes, the net incremental traffic generated by the proposed project, and the No-Action volumes.

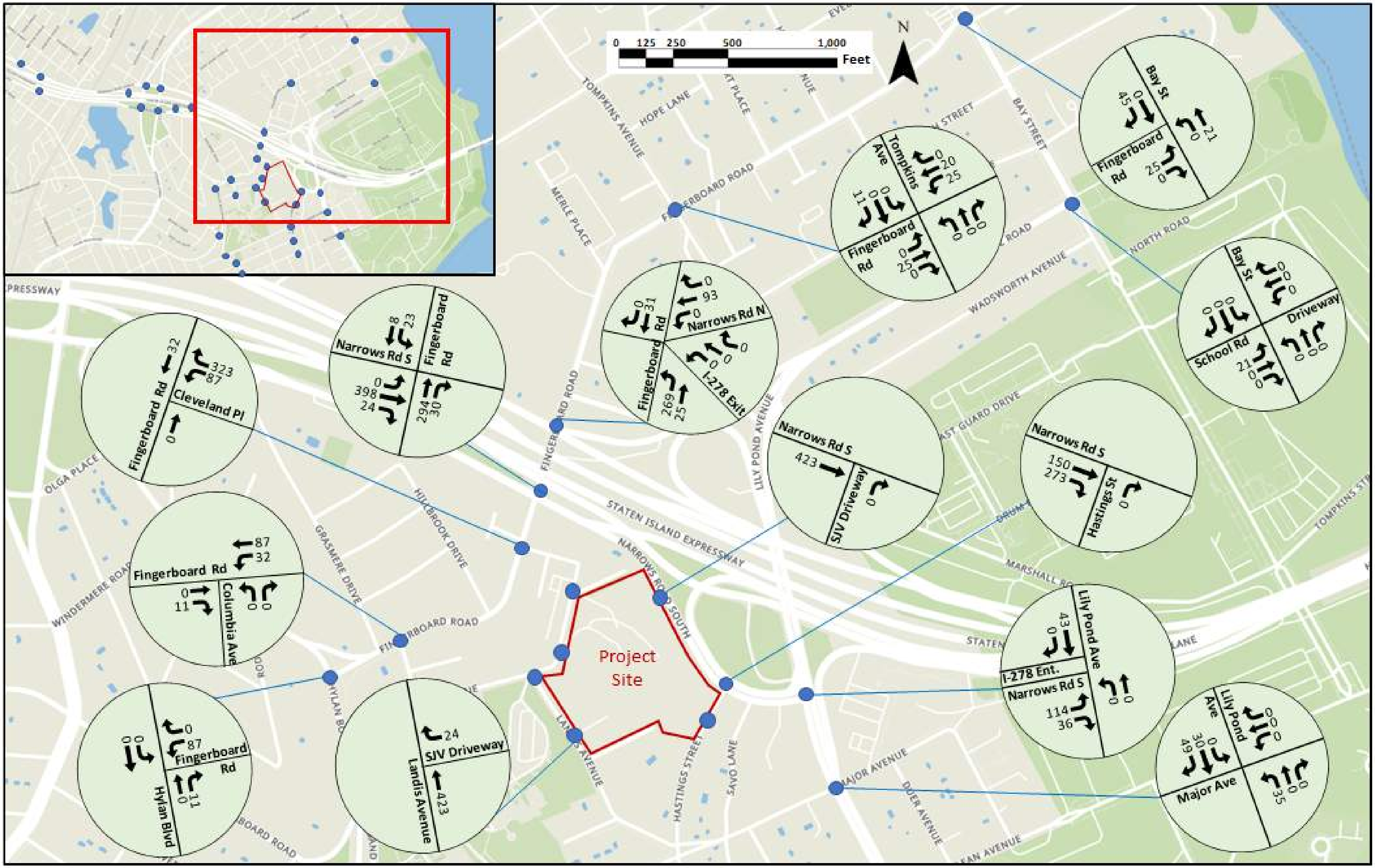
Note: For illustrative purposes only.

Source: Pei, Cobb, Freed, 2024; NYCSCA, 2024; STV Incorporated, 2024.

Figure 5-9

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

CONCEPTUAL SITE PLAN

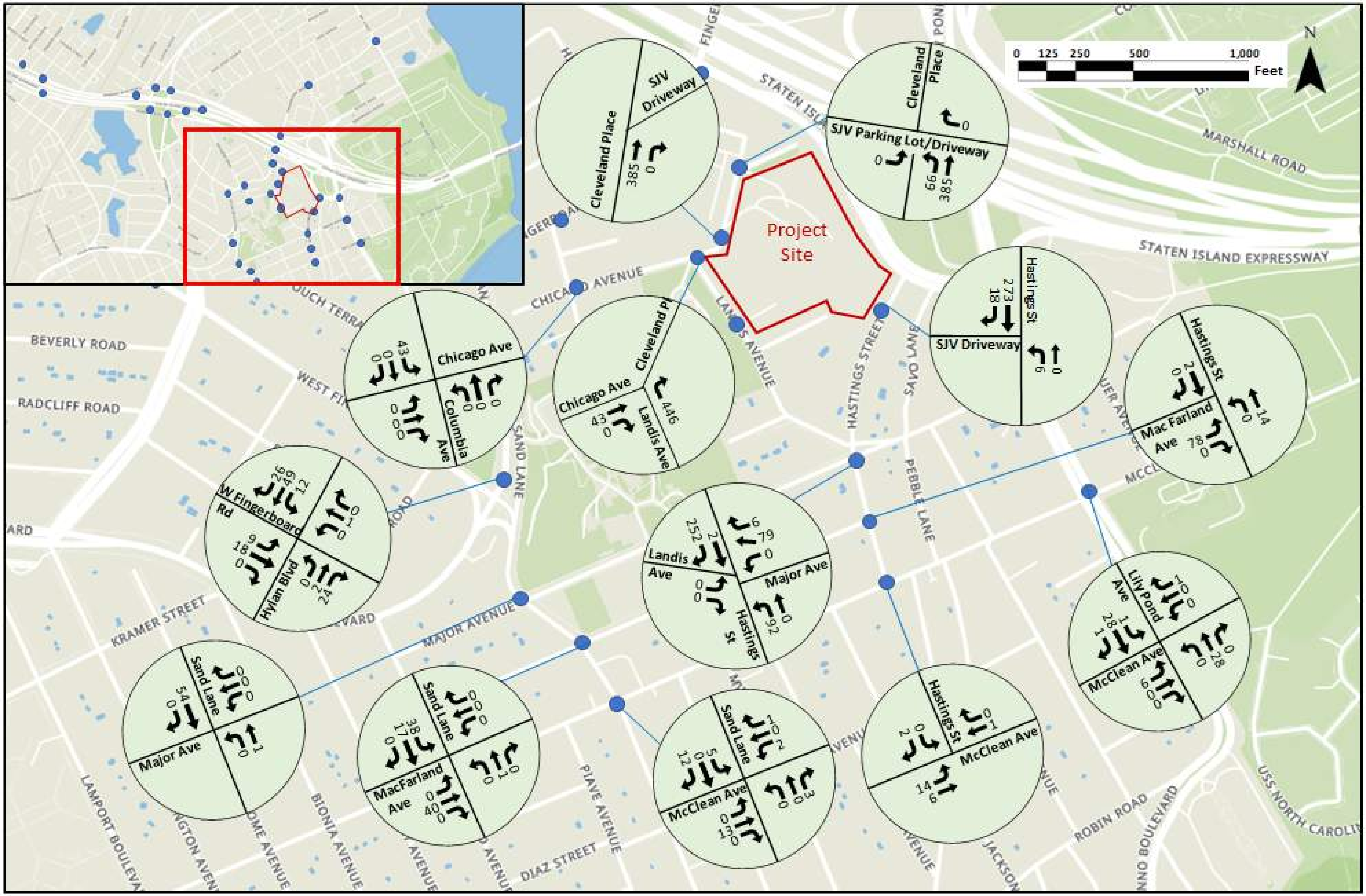


Source: STV Incorporated, 2024/MapTiler

Figure 5-10A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUME INCREMENTS - WEEKDAY AM PEAK HOUR

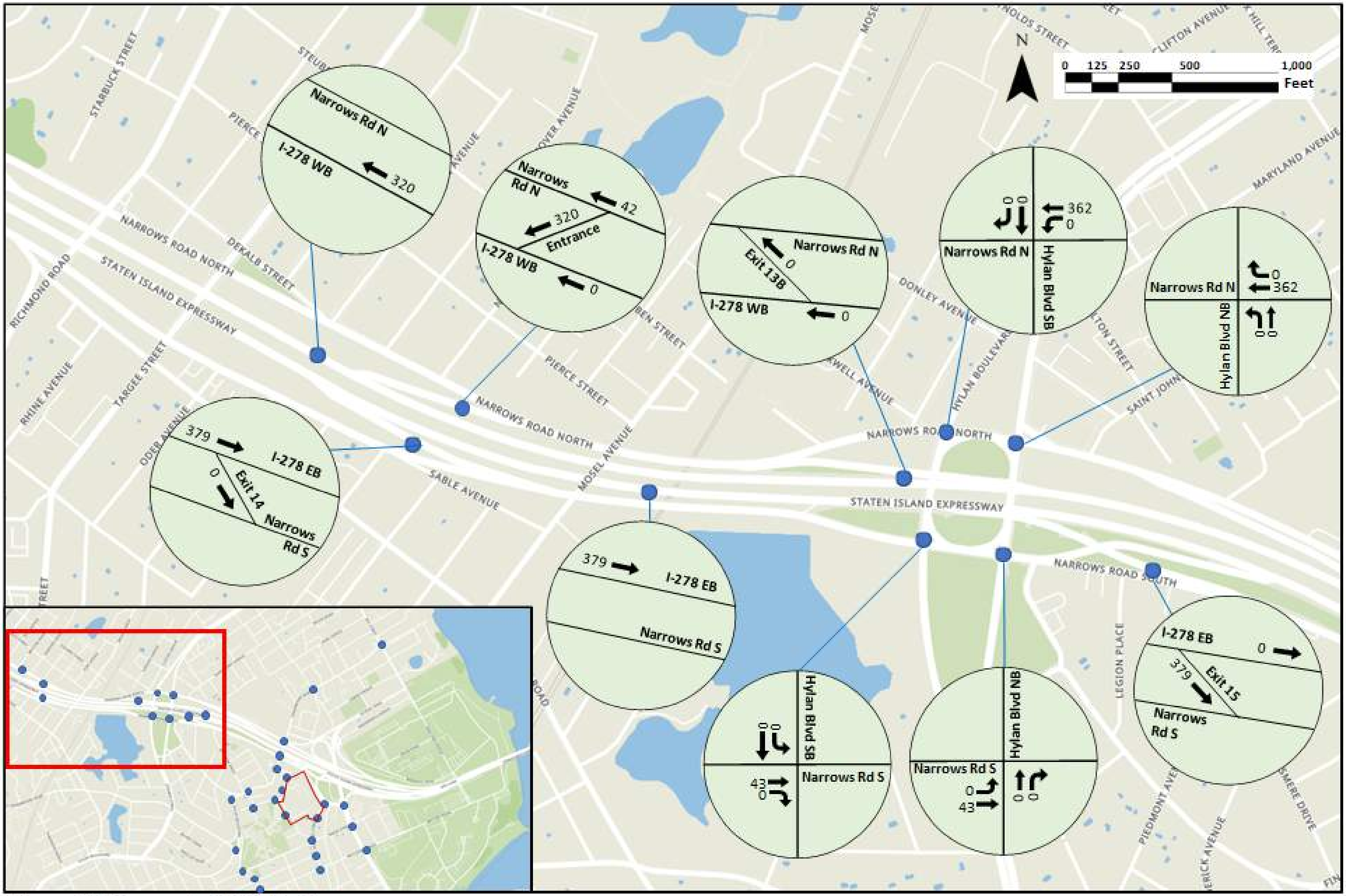


Source: STV Incorporated, 2024/MapTiler

Figure 5-10B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUME INCREMENTS - WEEKDAY AM PEAK HOUR

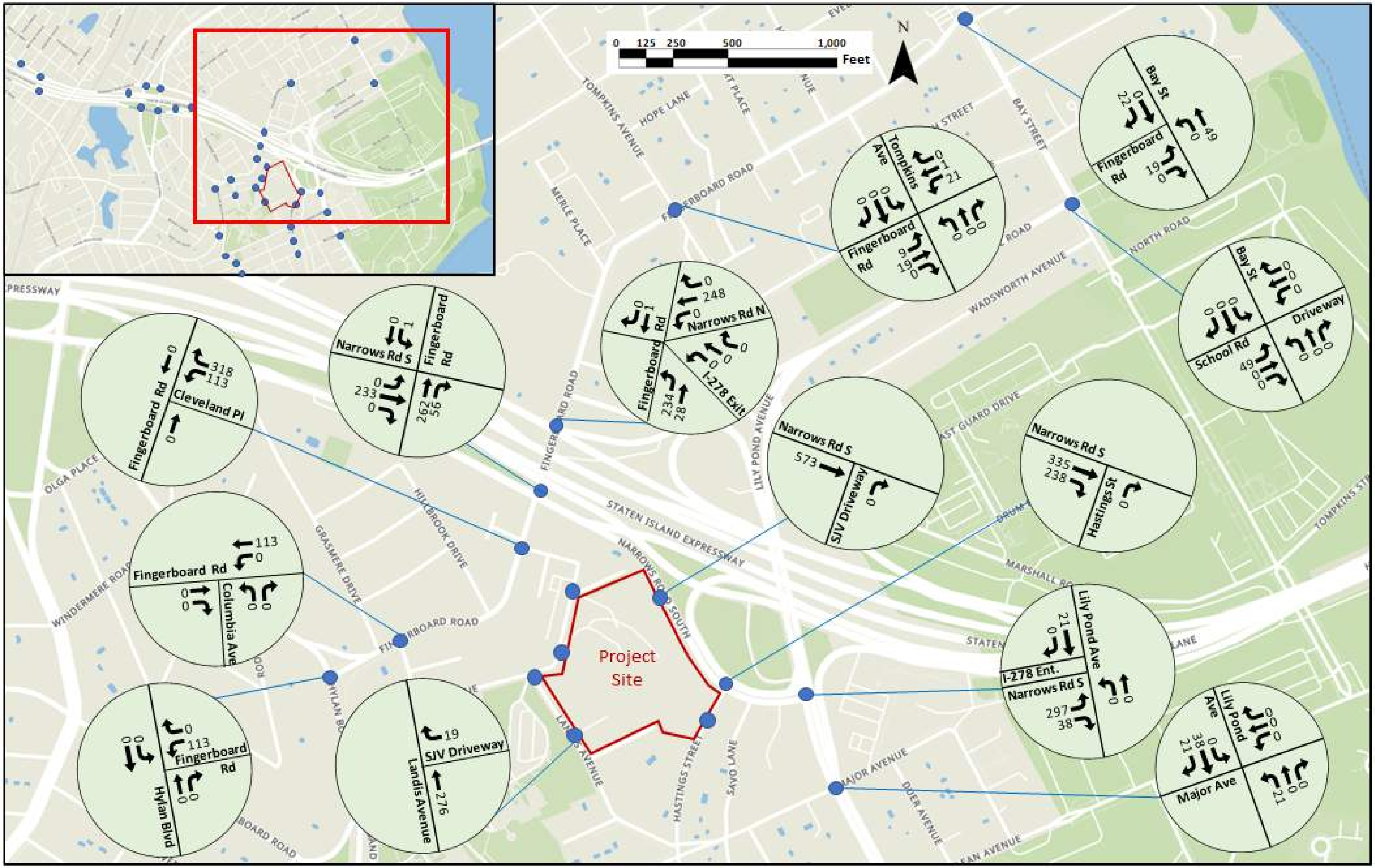


Source: STV Incorporated, 2024/MapTiler

Figure 5-10C

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUME INCREMENTS - WEEKDAY AM PEAK HOUR

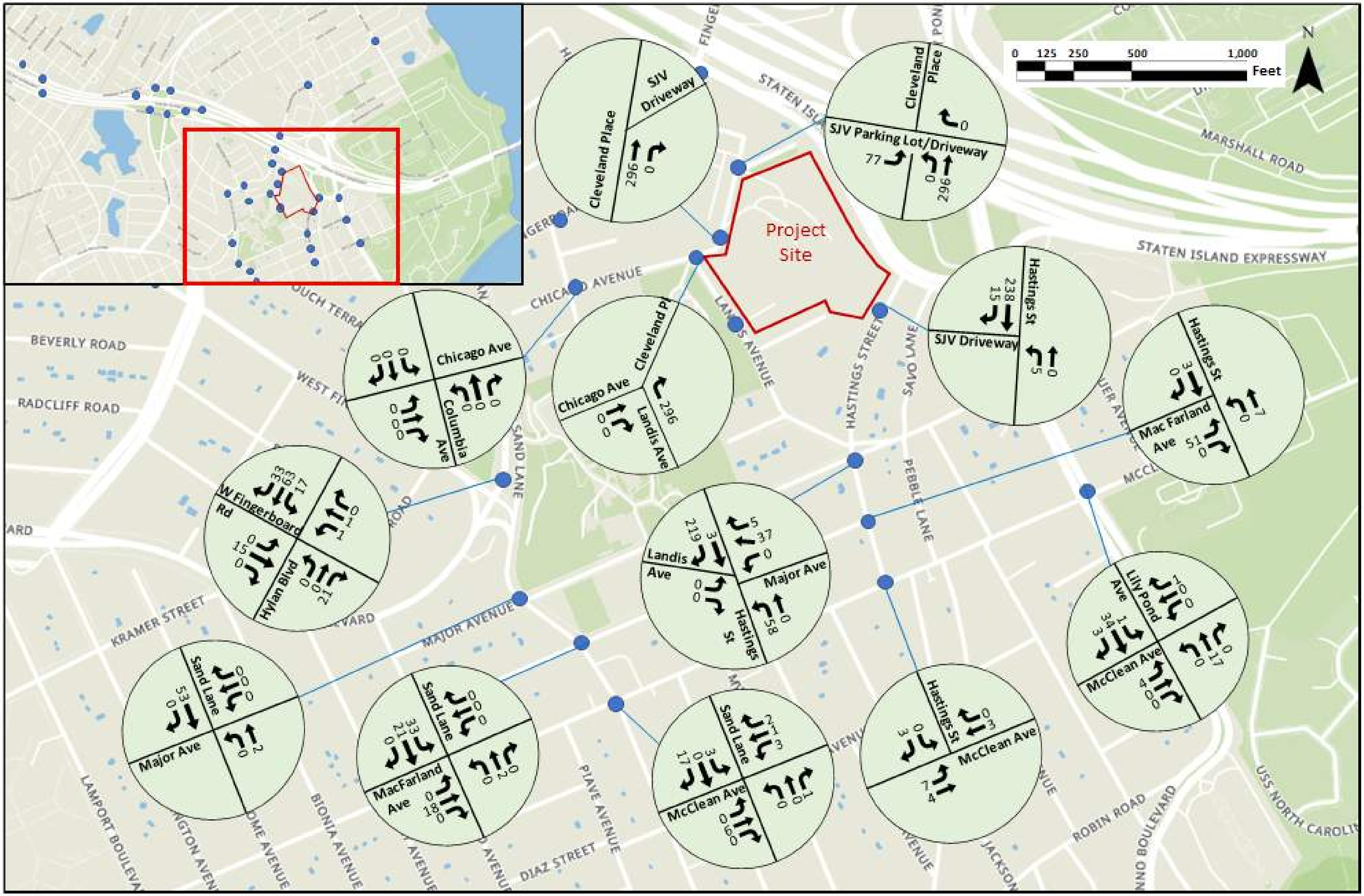


Source: STV Incorporated, 2024/MapTiler

Figure 5-11A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUME INCREMENTS - WEEKDAY PM PEAK HOUR

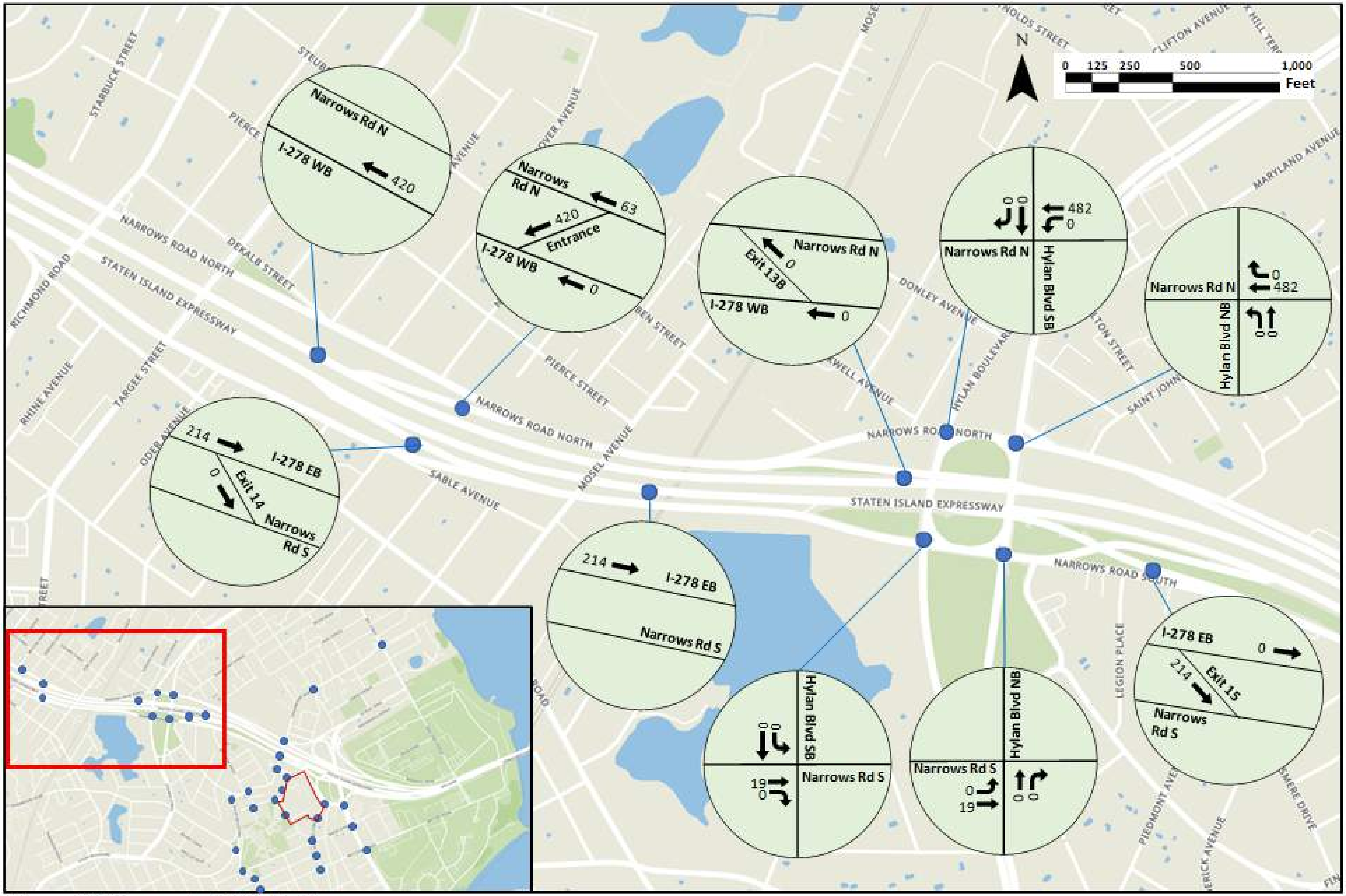


Source: STV Incorporated, 2024/MapTiler

Figure 5-11B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUME INCREMENTS - WEEKDAY PM PEAK HOUR

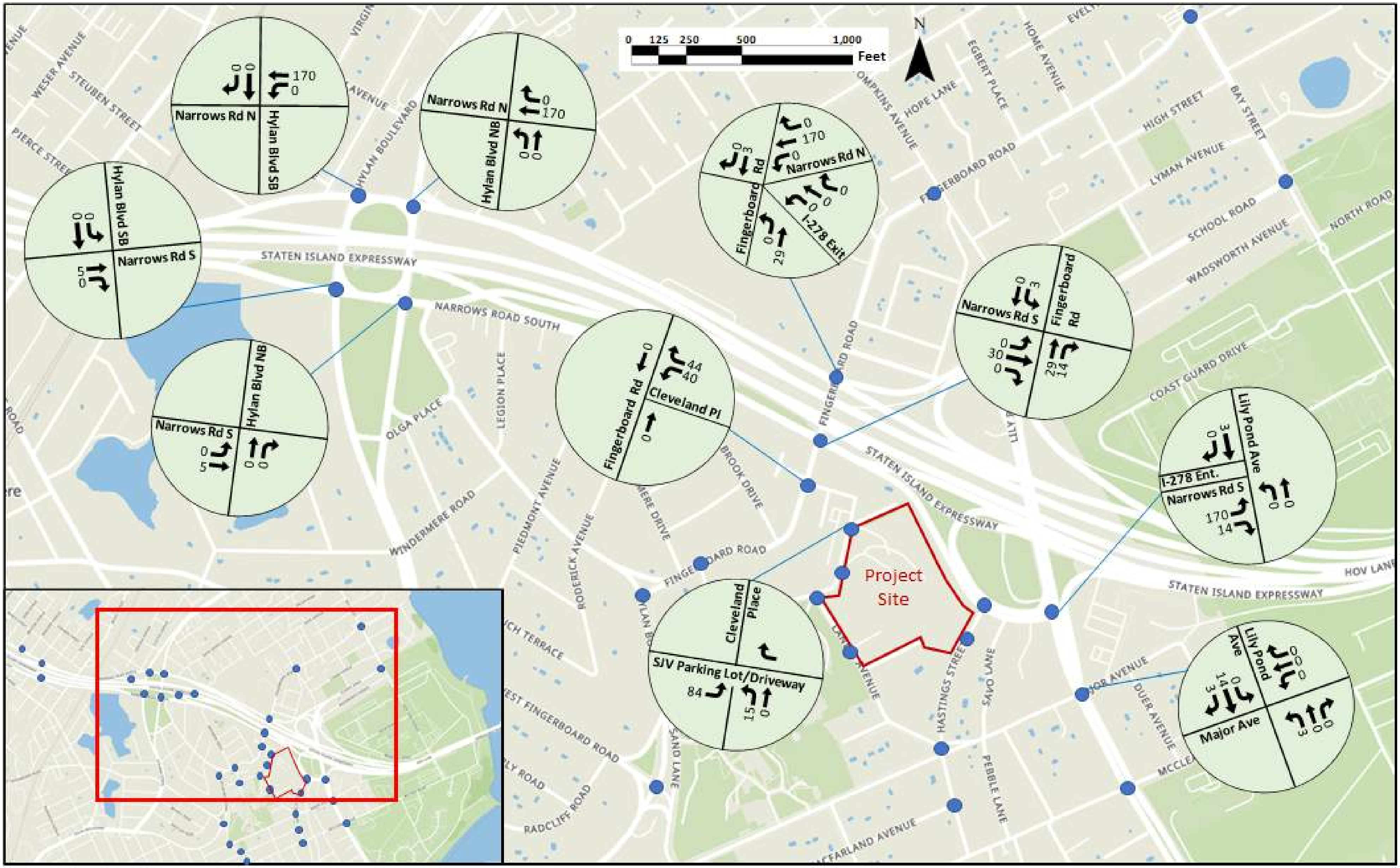


Source: STV Incorporated, 2024/MapTiler

Figure 5-11C

Proposed Redevelopment of the former St. John Villa Campus
57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUME INCREMENTS - WEEKDAY PM PEAK HOUR

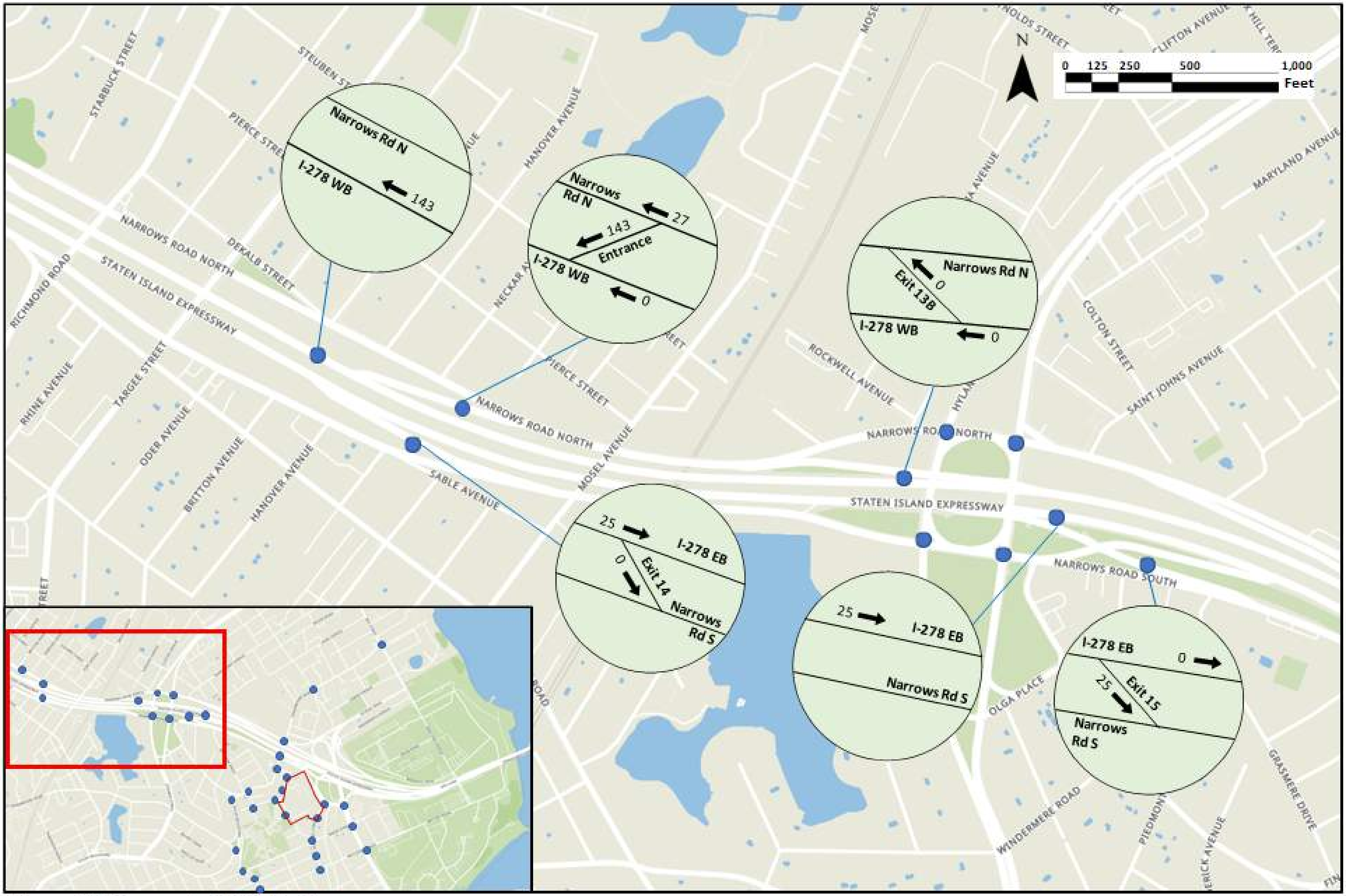


Source: STV Incorporated, 2024/MapTiler

Figure 5-12A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUME INCREMENTS - SATURDAY MIDDAY PEAK HOUR

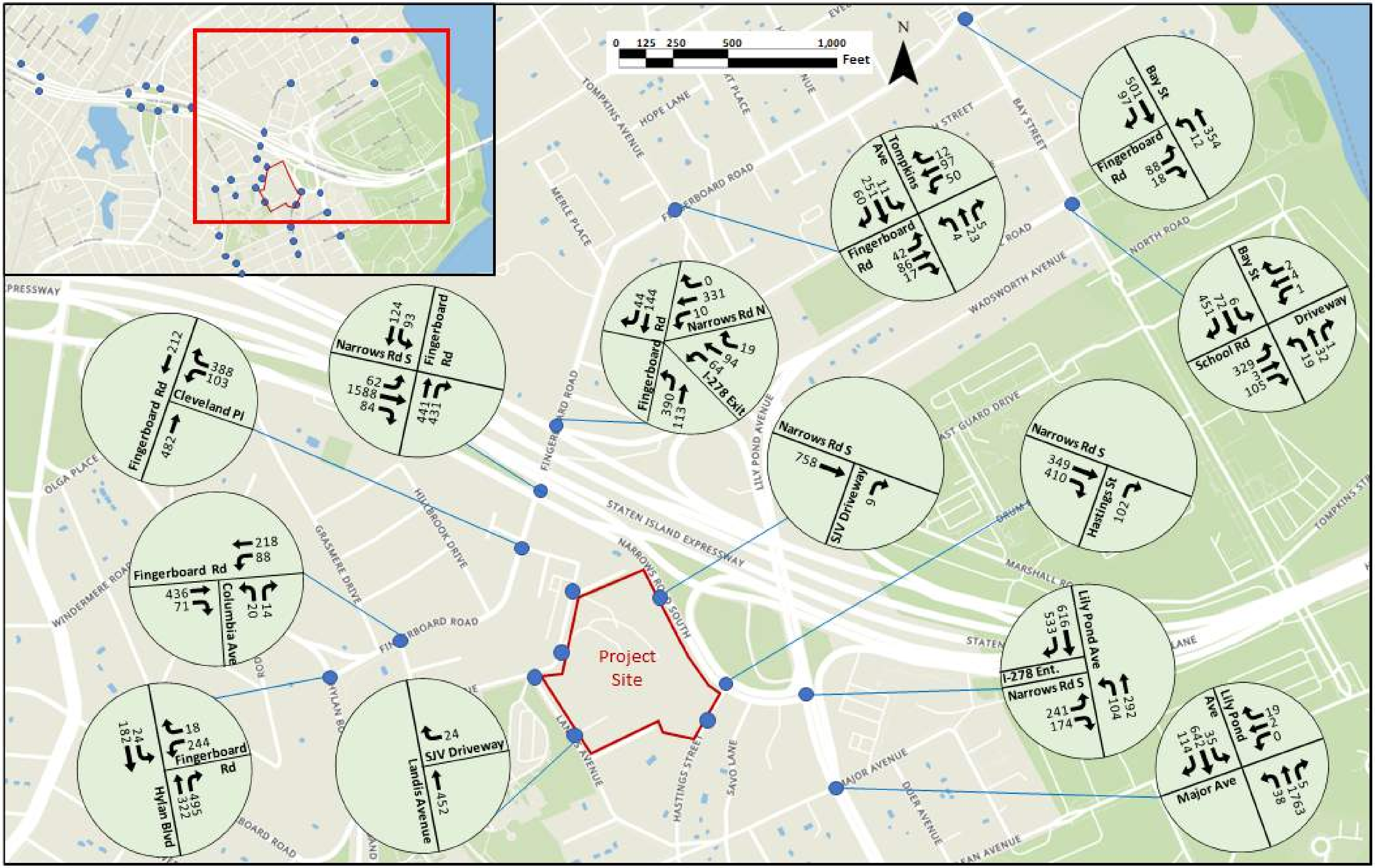


Source: STV Incorporated, 2024/MapTiler

Figure 5-12B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUME INCREMENTS - SATURDAY MIDDAY PEAK HOUR

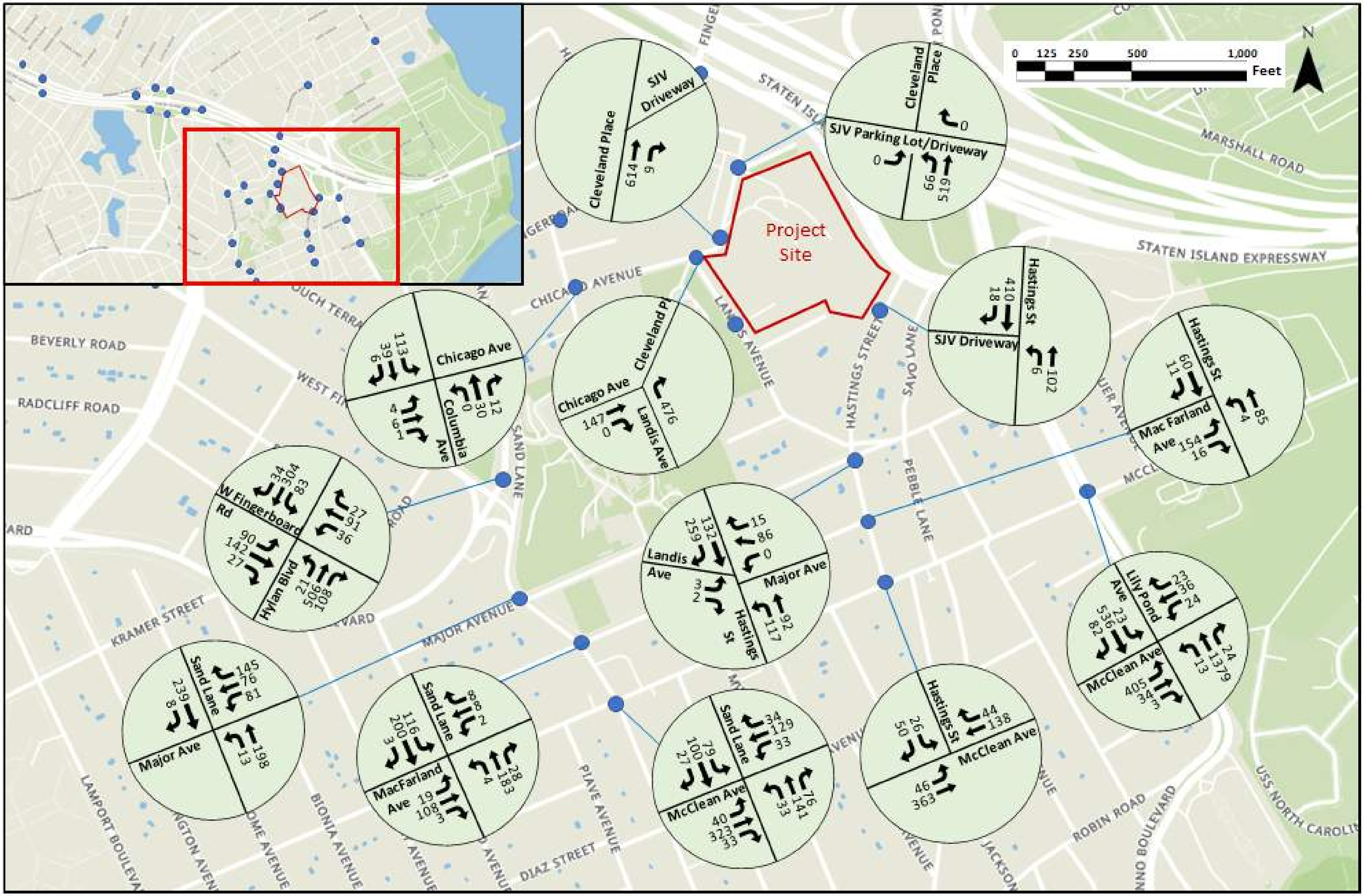


Source: STV Incorporated, 2024/MapTiler

Figure 5-13A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUMES - WEEKDAY AM PEAK HOUR

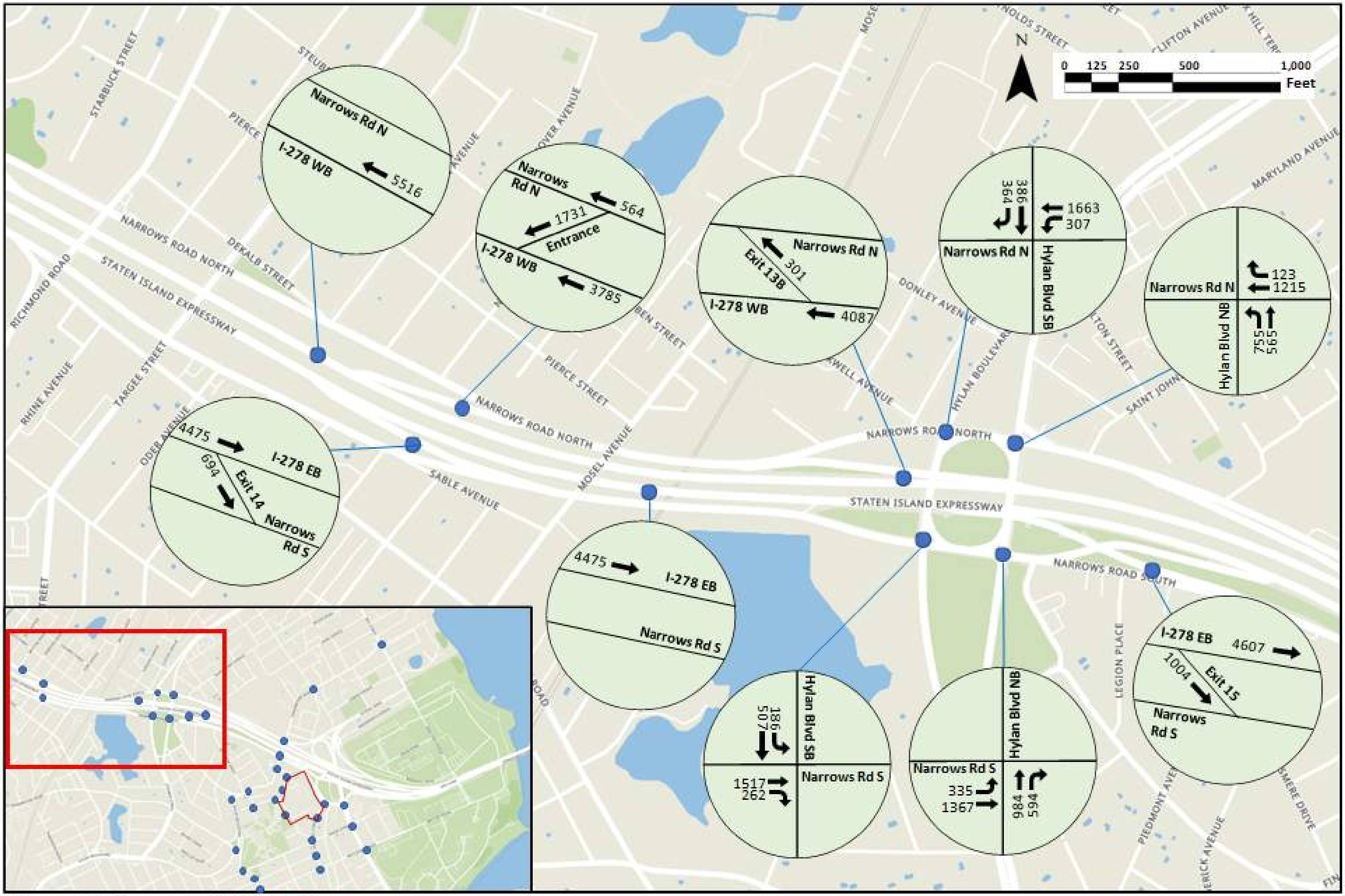


Source: STV Incorporated, 2024/MapTiler

Figure 5-13B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUMES - WEEKDAY AM PEAK HOUR

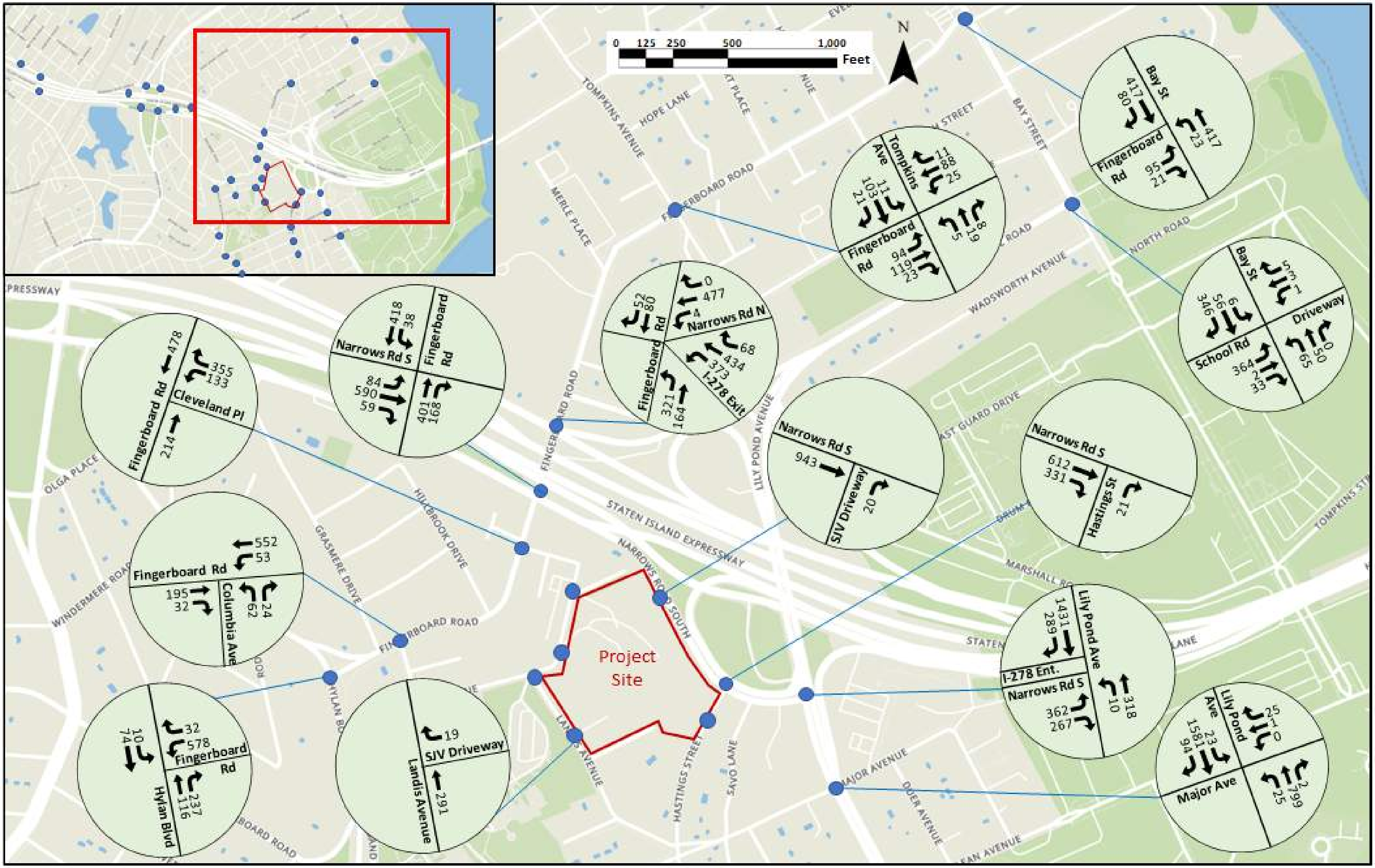


Source: STV Incorporated, 2024/MapTiler

Proposed Redevelopment of the former St. John Villa Campus
57 Cleveland Place, Staten Island

Figure 5-13C

2030 WITH-ACTION TRAFFIC VOLUMES - WEEKDAY AM PEAK HOUR

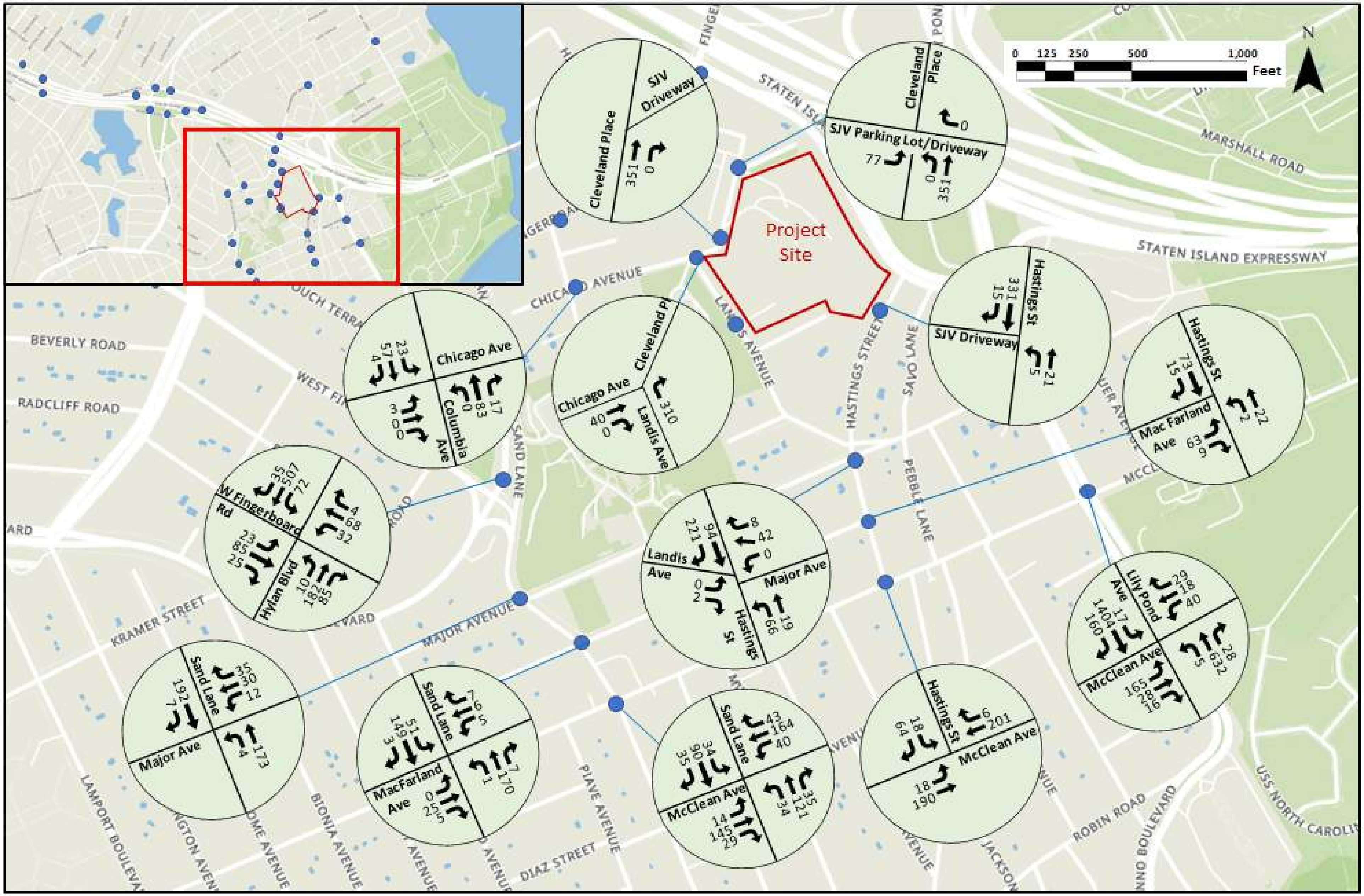


Source: STV Incorporated, 2024/MapTiler

Figure 5-14A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUMES - WEEKDAY PM PEAK HOUR

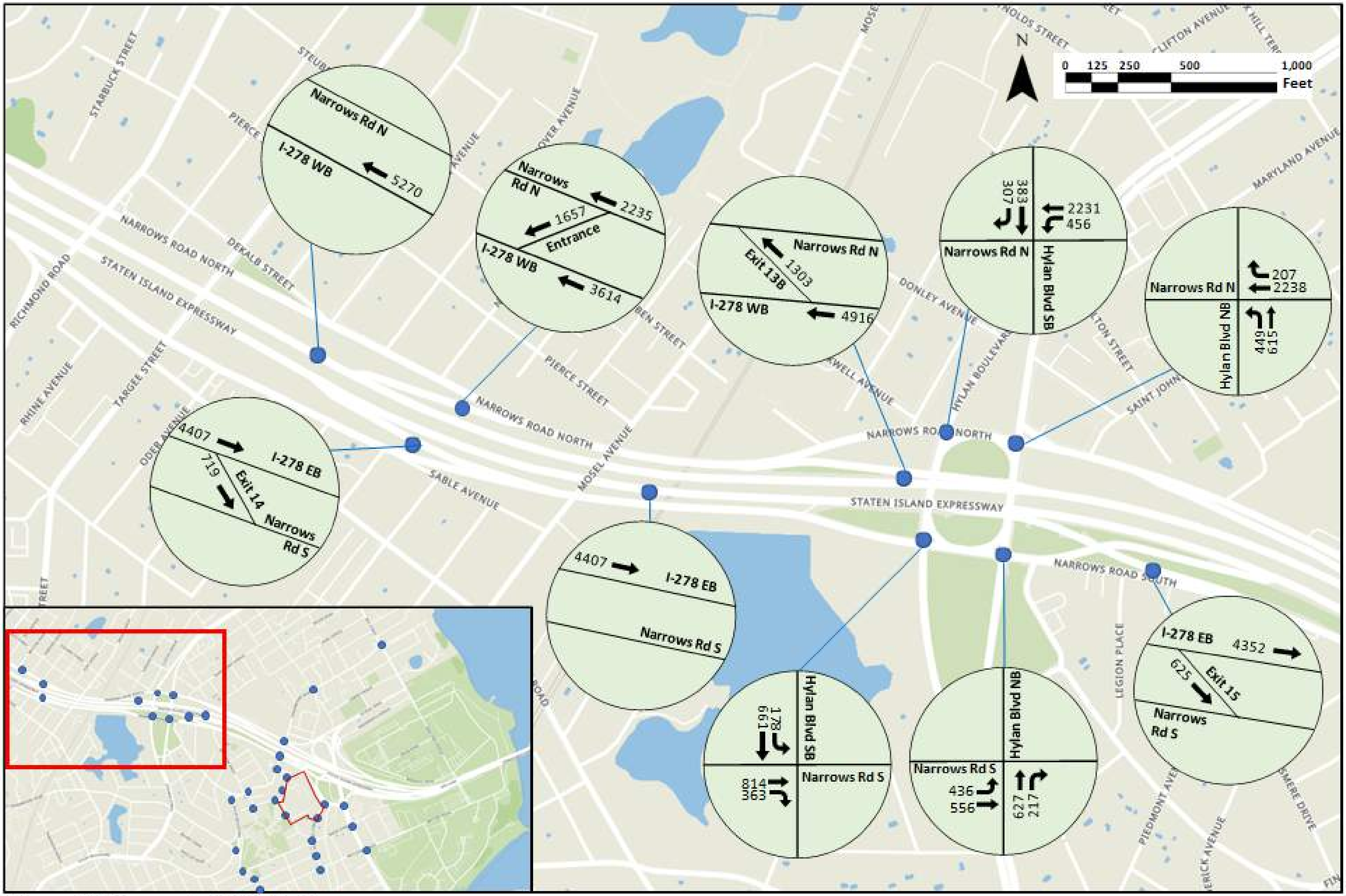


Source: STV Incorporated, 2024/MapTiler

Figure 5-14B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUMES - WEEKDAY PM PEAK HOUR

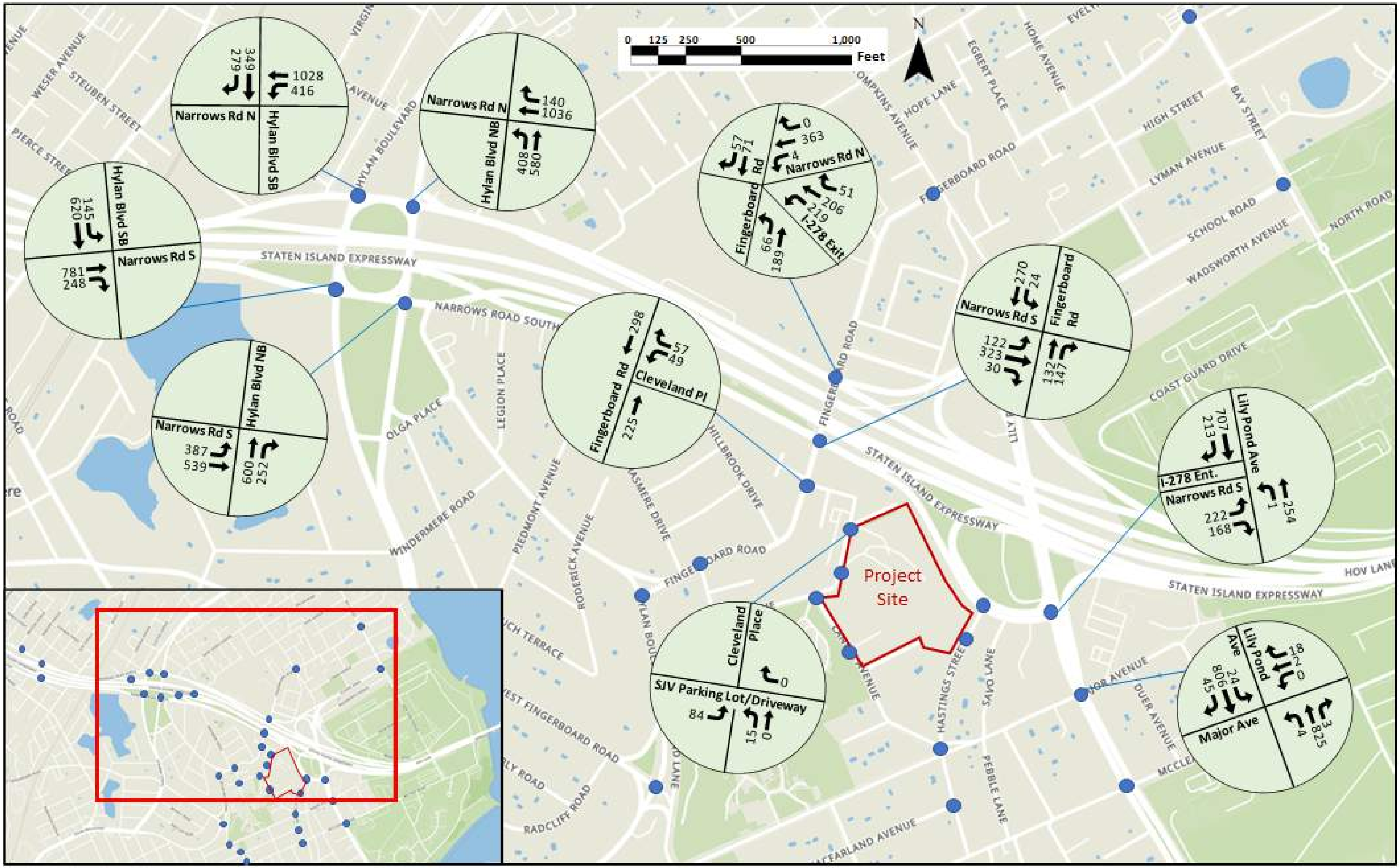


Source: STV Incorporated, 2024/MapTiler

Figure 5-14C

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUMES- WEEKDAY PM PEAK HOUR

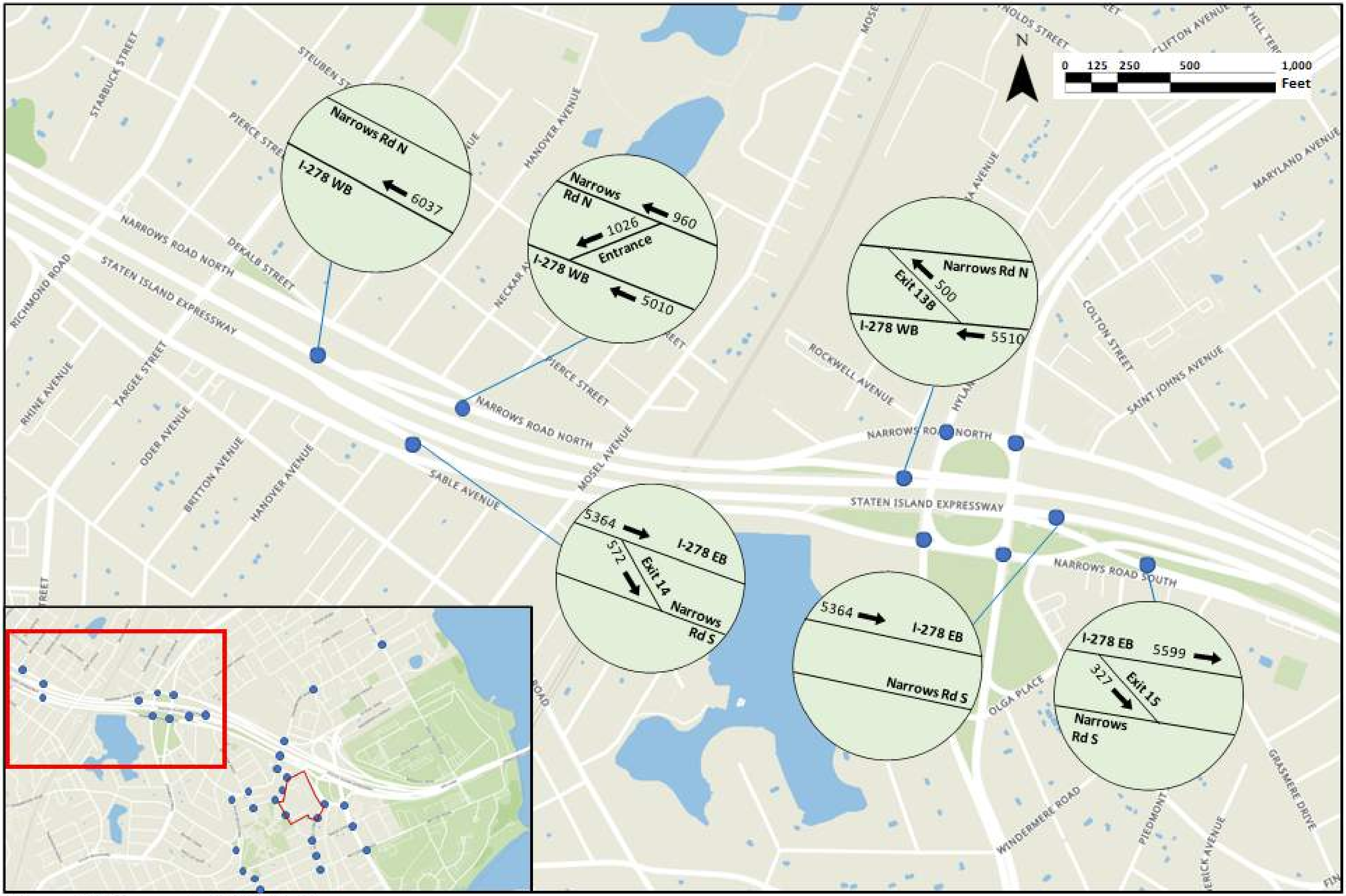


Source: STV Incorporated, 2024/MapTiler

Figure 5-15A

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUMES - SATURDAY MIDDAY PEAK HOUR



Source: STV Incorporated, 2024/MapTiler

Figure 5-15B

Proposed Redevelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

2030 WITH-ACTION TRAFFIC VOLUMES - SATURDAY MIDDAY PEAK HOUR

INTERSECTION CAPACITY ANALYSIS

Table 5-10, "2030 With-Action Condition," lists the expected With-Action LOS projected for the study area intersections during the weekday AM, PM, and Saturday midday peak hours.

The analyses show that many of the intersections in the project study area would operate at acceptable levels during the weekday AM and PM and Saturday midday peak analysis hours. However, the following intersection movements would experience a significant adverse traffic impact based on a deteriorating LOS from the No-Action condition:

- The Narrows Road South eastbound movement at Fingerboard Road would deteriorate within LOS F conditions during the AM peak hour and would worsen from LOS D to LOS F during the PM peak hour. The Fingerboard Road northbound shared through/right-turn movement and the southbound left-turn movement at Narrows Road South would worsen from LOS D to LOS F conditions during the AM peak hour.
- The Fingerboard Road northbound left-turn movement at Narrows Road North would worsen from LOS C to LOS F conditions during the AM peak hour and worsen from LOS E to LOS F conditions during the PM peak hour. The northbound through movement would worsen from LOS D to LOS E during the PM peak hour. The Narrows Road North westbound movement would worsen from LOS E to LOS F conditions during the AM and PM peak hours and worsen from LOS D to LOS F during the Saturday midday peak hour.
- The West Fingerboard Road eastbound movement at Hylan Boulevard would deteriorate within LOS F conditions during the AM peak hour.
- The McClean Avenue eastbound left-turn movement at Lily Pond Avenue would deteriorate within LOS F during the AM peak hour and the eastbound approach would deteriorate with LOS F during the PM peak hour. The Lily Pond Avenue northbound through movement at McClean Avenue would deteriorate within LOS E conditions during the AM peak hour.
- The Hylan Boulevard northbound left-turn movement at Narrows Road North would deteriorate within LOS F conditions during the AM peak hour and worsen from LOS D to LOS F conditions during the PM peak hour.
- The Narrows Road South eastbound through movement at Hylan Boulevard would deteriorate within LOS E conditions during the AM peak hour.
- The School Road eastbound left-turn movement at Bay Street would deteriorate from LOS D to E conditions during the AM peak hour.
- The Cleveland Place westbound shared left-turn/right-turn movement at Fingerboard Road would worsen from LOS B to LOS F in the AM and PM peak hours.
- The Landis Avenue northbound right-turn movement at Chicago Avenue would deteriorate from LOS A to LOS F conditions in the AM and PM peak hours.
- The campus parking lot eastbound left-turn movement at Cleveland Place would operate at LOS F during the PM peak hour.

Measures to mitigate the potential significant adverse traffic impacts are discussed in Chapter 11, "Mitigation Measures."

Table 5-10: 2030 With-Action Condition

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Signalized											
Fingerboard Road and Hylan Boulevard											
Fingerboard Road	WB	L	0.25	8.5	A	0.57	7.1	A			
		R	0.02	6.5	A	0.04	4.4	A			
Hylan Boulevard	NB	T	0.74	39.0	D	0.28	30.5	C			
		R	0.39	2.4	A	0.21	0.8	A			
	SB	LT	0.35	33.6	C	0.12	30.2	C			
	Overall Intersection	-		**18.0**	**B**		**10.1**	**B**			
Fingerboard Road and Columbia Avenue											
Fingerboard Road	EB	TR	0.43	7.3	A	0.23	6.6	A			
	WB	LT	0.46	6.0	A	0.65	8.0	A			
Columbia Avenue	NB	LR	0.17	40.5	D	0.43	46.6	D			
	Overall Intersection	-		**8.3**	A		**11.4**	**B**			
Fingerboard Road and Narrows Road South											
Narrows Road South	EB	LTR	1.46	243.3	F	1.11	110.2	F	0.64	43.3	D
Fingerboard Road	NB	TR	1.51	264.8	F	0.74	20.8	C	0.37	17.5	B
	SB	L	1.77	422.6	F	0.16	9.0	A	0.05	9.3	A
		T	0.23	13.3	B	0.50	10.6	B	0.29	10.9	B
	Overall Intersection	-		**245.6**	**F**		**53.8**	**D**		**27.4**	**C**
Fingerboard Road and Narrows Road North											
Narrows Road North	WB	LTR	1.13	135.5	F	1.68	367.0	F	1.15	145.9	F
I-278 W Exit Ramp	NWB	LTR	0.22	27.4	C	0.00	24.5	C	0.00	18.2	B
Fingerboard Road	NB	L	1.70	355.2	F	2.79	868.5	F	0.46	44.4	D
		T	0.29	32.7	C	0.69	56.2	E	0.70	50.0	D
	SB	TR	0.44	35.9	D	0.60	54.6	D	0.53	51.0	D
	Overall Intersection	-		**167.6**	**F**		**248.7**	**F**		**64.1**	**E**
Fingerboard Road and Tompkins Avenue											
Fingerboard Road	EB	LTR	0.30	19.0	B	0.49	22.5	C			
	WB	LTR	0.40	21.1	C	0.27	18.8	B			
Tompkins Avenue	NB	LTR	0.05	16.7	B	0.06	16.7	B			
	SB	LTR	0.56	24.0	C	0.23	18.6	B			
	Overall Intersection	-		**21.9**	**C**		**20.3**	**C**			
Fingerboard Road and Bay Street											
Fingerboard Road	EB	LR	0.28	35.7	D	0.30	35.9	D			
Bay Street	NB	LT	0.40	14.9	B	0.52	16.9	B			
	SB	TR	0.67	20.8	C	0.58	18.3	B			
	Overall Intersection	-		**20.5**	**C**		**19.8**	**B**			

Table 5-10: 2030 With-Action Condition (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Hylan Boulevard and W Fingerboard Road											
W Fingerboard Road	EB	LTR	1.05	111.0	F	0.43	42.6	D			
Sand Lane	WB	LT	0.54	46.0	D	0.35	40.9	D			
Hylan Boulevard	NB	L	0.04	8.8	A	0.03	8.7	A			
		TR	0.33	11.1	B	0.15	9.4	A			
	SB	L	0.27	11.9	B	0.14	5.0	A			
		T	0.18	10.1	B	0.26	5.1	A			
		R	0.07	9.3	A	0.10	4.6	A			
Overall Intersection		-		**32.1**	**C**		**14.0**	**B**			
Sand Lane and Major Avenue											
Major Avenue	WB	LTR	0.68	24.2	C	0.20	16.5	B			
Sand Lane	NB	LT	0.40	12.9	B	0.35	7.8	A			
	SB	TR	0.52	17.7	B	0.35	13.4	B			
Overall Intersection		-		**19.1**	**B**		**11.7**	**B**			
Sand Lane and MacFarland Avenue											
MacFarland Avenue	EB	LTR	0.24	12.2	B	0.06	10.6	B			
	WB	LTR	0.04	10.5	B	0.03	10.4	B			
Sand Lane	NB	LTR	0.38	10.0	A	0.35	9.2	A			
	SB	LTR	0.73	12.9	B	0.42	7.3	A			
Overall Intersection		-		**11.8**	**B**		**8.5**	**A**			
Sand Lane and McClean Avenue											
McClean Avenue	EB	LTR	0.95	46.7	D	0.43	17.1	B			
	WB	LTR	0.45	17.1	B	0.52	18.2	B			
Sand Lane	NB	LTR	0.73	27.5	C	0.53	20.2	C			
	SB	LTR	0.70	22.0	C	0.45	15.9	B			
Overall Intersection		-		**31.7**	**C**		**18.0**	**B**			
Lily Pond Avenue and Narrows Road South											
Narrows Road South	EB	L	0.46	30.9	C	0.64	44.9	D	0.41	30.0	C
		R	0.48	34.0	C	0.67	51.1	D	0.43	32.4	C
Lily Pond Avenue	NB	L	0.38	5.5	A	0.11	10.3	B	0.00	6.6	A
		T	0.16	4.5	A	0.17	4.4	A	0.13	6.3	A
	SB	T	0.48	16.4	B	0.79	22.3	C	0.47	14.5	B
		R	0.55	7.3	A	0.30	3.0	A	0.22	3.3	A
Overall Intersection		-		**15.1**	**B**		**23.7**	**C**		**16.1**	**B**
Lily Pond Avenue and McClean Avenue											
McClean Avenue	EB	L	1.07	90.4	F						
		TR/ LTR	0.09	21.0	C	1.09	131.1	F			
	WB	LTR	0.24	23.0	C	0.38	42.7	D			
Lily Pond Avenue	NB	L	0.08	13.4	B	0.12	14.0	B			
		T	1.07	69.2	E	0.37	11.5	B			
		R	0.05	12.7	B	0.04	8.8	A			
	SB	LTR	0.75	33.1	C	0.99	28.8	C			
Overall Intersection		-		**60.2**	**E**		**33.8**	**C**			

Table 5-10: 2030 With-Action Condition (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Narrows Road North and Hylan Boulevard E											
Narrows Road North	WB	TR	0.73	25.9	C	0.96	30.8	C	0.52	13.8	B
Hylan Boulevard East	NB	T	0.47	13.5	B	0.63	21.4	C	0.53	16.5	B
Overall Intersection		-		**22.1**	**C**		**29.0**	**C**		**14.7**	**B**
Narrows Road North and Hylan Boulevard W											
Narrows Road North	WB	T	0.81	14.4	B	0.84	6.5	A	0.41	5.4	A
Hylan Boulevard West	SB	TR	0.51	27.1	C	0.89	39.5	D	0.45	23.8	C
Overall Intersection		-		**18.4**	**B**		**14.5**	**B**		**12.6**	**B**
Narrows Road South and Hylan Boulevard W											
Narrows Road South	EB	T	1.06	75.0	E	0.56	22.2	C			
		R	0.45	24.4	C	0.52	22.7	C			
Hylan Boulevard West	SB	T	0.27	8.6	A	0.38	12.8	B			
Overall Intersection		-		**53.7**	**D**		**18.9**	**B**			
Narrows Road South and Hylan Boulevard E											
Narrows Road South	EB	T	0.76	25.2	C	0.40	11.5	B			
Hylan Boulevard East	NB	T/TR	1.05	75.2	E	0.62	33.5	C			
		R	1.04	82.7	F						
Overall Intersection		-		**53.6**	**D**		**24.7**	**C**			
School Road and Bay Street											
School Road	EB	L	0.90	62.7	E	0.69	35.3	D			
		TR	0.25	29.6	C	0.06	20.6	C			
Park Driveway	WB	LTR	0.01	26.2	C	0.01	20.0	B			
Bay Street	NB	LTR	0.08	14.8	B	0.22	22.1	C			
	SB	LT	0.33	18.0	B	0.33	22.8	C			
		R	0.23	16.7	B	0.31	21.3	C			
Overall Intersection		-		**32.9**	**C**		**26.9**	**C**			
Unsignalized											
Fingerboard Road and Cleveland Place											
Cleveland Place	WB	LR	1.52	272.5	F	1.27	164.0	F	0.22	12.8	B
Fingerboard Road	NB	T	0.34	0.0	A	0.14	0.0	A	0.15	0.0	A
	SB	T	0.15	0.0	A	0.32	0.0	A	0.20	0.0	A
Overall Intersection		-		**114.2**	**F**		**70.8**	**F**		**2.3**	**A**
Hastings Street and Landis/Major Avenue											
Landis Avenue	EB	LTR	0.01	9.2	A	0.00	7.6	A			
Major Avenue	WB	LTR	0.20	9.9	A	0.09	8.4	A			
Hastings Street	NB	LTR	0.36	10.7	B	0.14	8.5	A			
	SB	LT	0.57	12.8	B	0.48	11.3	B			
Overall Intersection		-		**11.8**	**B**		**10.4**	**B**			

Table 5-10: 2030 With-Action Condition (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Hastings Street and Major Avenue											
Major Avenue	WB	LT	0.11	8.7	A	0.09	7.9	A			
Hastings Street	NB	LT	0.36	9.8	A	0.13	8.2	A			
	SB	TR	0.19	8.0	A	0.13	7.7	A			
Overall Intersection		-		**9.1**	**A**		**7.9**	**A**			
Hastings Street and MacFarland Avenue											
MacFarland Avenue	EB	LR	0.29	11.9	B	0.11	10.1	B			
Hastings Street	NB	LT	0.00	0.4	A	0.00	0.5	A			
	SB	TR	0.05	0.0	A	0.06	0.0	A			
Overall Intersection		-		**6.3**	**A**		**4.0**	**A**			
Hastings Street and McClean Avenue											
McClean Avenue	EB	LT	0.05	1.4	A	0.02	0.9	A			
	WB	TR	0.13	0.0	A	0.13	0.0	A			
Hastings Street	SB	LR	0.19	13.9	B	0.16	12.0	B			
Overall Intersection		-		**2.4**	**A**		**2.5**	**A**			
Lily Pond Avenue and Major Avenue											
Major Avenue	WB	LTR	0.12	23.1	C	0.08	15.1	C	0.07	16.3	C
Lily Pond Avenue	NB	LTR	0.06	0.9	A	0.09	1.5	A	0.01	0.1	A
	SB	LTR	0.11	1.6	A	0.04	0.5	A	0.03	0.5	A
Overall Intersection		-		**1.3**	**A**		**1.0**	**A**		**0.5**	**A**
Landis Avenue and Chicago Avenue											
Chicago Avenue	EB	LR	0.11	0.0	A	0.03	0.0	A			
Landis Avenue	NB	R	1.77	383.5	F	2.52	747.1	F			
Overall Intersection		-		**293.3**	**F**		**663.4**	**F**			
Hastings Street and Narrows Road South											
Narrows Road S	EB	T	0.17	0.0	A	0.29	0.0	A			
Hastings Street	NB	R	0.24	14.2	B	0.04	10.1	B			
Overall Intersection		-		**1.7**	**A**		**0.2**	**A**			
Columbia Avenue and Chicago Avenue											
Chicago Avenue	EB	LTR	0.04	15.7	C	0.01	12.0	B			
Columbia Avenue	NB	LTR	0.00	0.0	A	0.00	0.0	A			
	SB	LTR	0.12	6.4	A	0.03	2.7	A			
Overall Intersection		-		**5.6**	**A**		**1.4**	**A**			
Hastings Street and Campus Driveway (PS bus entrance)											
Hastings Street	NB	LT	0.01	0.6	A	0.01	1.6	A			
	SB	TR	0.30	0.0	A	0.24	0.0	A			
Overall Intersection		-		**0.1**	**A**		**0.1**	**A**			

Table 5-10: 2030 With-Action Condition (continued)

INTERSECTION & APPROACH		Mvt.	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			V/C	Control Delay	LOS	V/C	Control Delay	LOS	V/C	Control Delay	LOS
Landis Avenue and Campus Driveway (PS bus exit)											
Landis Avenue	NB	T	0.56	0.0	A	0.44	0.0	A			
	SB	T									
SJV Driveway	WB	LR	0.09	19.1	C	0.06	15.3	C			
Overall Intersection		-		**0.5**	**A**		**0.4**	**A**			
Cleveland Place and Campus Driveway (IS/HS bus entrance)											
Cleveland Place	NB	TR	0.46	0.0	A	0.26	0.0	A			
Overall Intersection		-		**0.0**	**A**		**0.0**	**A**			
Cleveland Place and Campus Parking Lot											
Cleveland Place	NB	LT	0.04	1.2	A	0.00	0.0	A	0.01	7.2	A
SJV Parking Lot	EB	L	0.00	0.0	A	0.65	73.7	F	0.09	9.1	A
SJV Driveway/Garson Avenue	WB	R	0.00	0.0	A	0.00	0.0	A	0.00	0.0	A
Overall Intersection		-		**1.2**	**A**		**10.4**	**B**		**8.8**	**A**
Narrows Road South and Campus Driveway (IS/HS bus exit)											
Narrows Road South	SB	T	0.27	0.0	A	0.33	0.0	A			
SJV Driveway	EB	R	0.03	15.5	C	0.03	10.6	B			
Overall Intersection		-		**0.2**	**A**		**0.2**	**A**			
Narrows Road North and Hylan Boulevard E											
Narrows Road North	WB	T	0.27	0.0	A	0.48	0.0	A	0.22	0.0	A
Hylan Boulevard East	NB	L	1.14	101.7	F	1.21	140.4	F	0.52	13.6	B
Overall Intersection		-		**38.4**	**E**		**25.5**	**D**		**3.9**	**A**
Narrows Road North and Hylan Boulevard W											
Narrows Road North	WB	L	0.46	13.4	B	0.60	15.6	C	0.59	15.3	C
Hylan Boulevard West	SB	T	0.09	0.0	A	0.09	0.0	A	0.08	0.0	A
Overall Intersection		-		**5.9**	**A**		**8.3**	**A**		**8.6**	**A**
Narrows Road South and Hylan Boulevard W											
Narrows Road South	EB	T	0.31	0.0	A	0.27	0.0	A	0.26	0.0	A
Hylan Boulevard West	SB	L	0.40	15.6	C	0.27	11.0	B	0.23	10.9	B
Overall Intersection		-		**1.9**	**A**		**2.1**	**A**		**1.8**	**A**
Narrows Road South and Hylan Boulevard E											
Narrows Road South	EB	L	0.70	24.6	C	0.55	14.4	B	0.50	13.2	B
Hylan Boulevard East	NB	T	0.33	0.0	A	0.20	0.0	A	0.19	0.0	A
Overall Intersection		-		**6.5**	**A**		**5.7**	**A**		**5.3**	**A**

Source: STV Incorporated, 2024.

HIGHWAY ANALYSIS

A detailed traffic analysis for the I-278 freeway and ramps at Hylan Boulevard and Fingerboard Road were performed for the weekday AM and PM and Saturday midday peak hours. The highway study area includes the eastbound segment of I-278 from Hylan Boulevard to Fingerboard Road, the westbound segment of I-278 from Hylan Boulevard to Clove Road, and the westbound weaving segment of Narrows Road North from I-278 westbound Exit 13B at Hylan Boulevard to the adjacent upstream I-278 entrance ramp. The existing conditions HCS 2024 analyses were based on 2024 ATR data for I-278 and Narrows Road North.

I-278 processes between 4,400 and 4,600 vph in each direction during both the weekday AM and PM peak hours, and up to 5,600 eastbound and 4,800 westbound vph during the Saturday midday peak hour. The lower weekday peak-hour peak-direction traffic volumes as compared to the Saturday peak hour are the result of downstream highway congestion that limits the volume of traffic that can be processed on the highway network through the study area.

Table 5-11, "Highway Traffic Operations," lists the levels of service that characterize existing, No-Action, and With-Action conditions during the weekday AM, PM, and Saturday midday peak hours. The analyses showed that many merging, diverging, weaving, and basic freeway segments generally operate at a congested LOS E or F condition in the eastbound direction during the weekday AM peak hour and westbound direction during the weekday PM peak hour. Highway traffic generally operates at LOS C or D conditions in the off-peak direction and during the Saturday midday period. The following segments would experience a significant adverse traffic impact based on a deteriorating LOS from the No-Action condition due to incremental school traffic added to the highway network:

- The I-278 eastbound diverge segment at Exit 14, basic highway segment between Exits 14 and 15, and diverge segment at Exit 15, which currently operate at LOS F during the weekday AM peak hour, would deteriorate within LOS F in the No-Action and With-Action scenarios.
- The I-278 westbound weaving segment, which currently operates at LOS E in the weekday AM and Saturday Midday peak hours and at LOS F in the weekday PM peak hour, would operate at LOS F during the No-Action scenario and deteriorate within LOS F in the With-Action scenario for all analysis peak hours.
- The I-278 westbound basic highway segment between the on-ramp at Hylan Boulevard and Exit 13A, which currently operates at LOS F during the weekday PM peak hour, would deteriorate within LOS F in the No-Action and With-Action scenarios. During the Saturday midday peak hour, this segment currently operates at LOS D; it would worsen to LOS E in the No-Action scenario and worsen to LOS F in the With-Action scenario.
- The Narrows Road North westbound weaving segment, which currently operates at LOS E during the weekday PM peak hour, would deteriorate within LOS F in the No-Action and With-Action scenarios.

Table 5-11: Highway Traffic Operations

Highway/ Service Road	Location	Freeway Segment Type	Existing Condition			No Action			With Action		
			Average Speed (mph)	Density (pc/mi/ln)	Density Based LOS	Average Speed (mph)	Density (pc/mi/ln)	Density Based LOS	Average Speed (mph)	Density (pc/mi/ln)	Density Based LOS
			Weekday AM Peak Hour								
I-278 Eastbound	Exit 14 to Hylan Boulevard	Diverge	24.0	52.9	F	24.0	56.8	F	24.0	61.3	F
	Eastbound I-278 Mainline	Basic	24.0	71.4	F	24.0	76.0	F	24.0	82.0	F
	Exit 15 to Fingerboard Road	Diverge	24.0	59.9	F	24.0	64.6	F	24.0	69.8	F
I-278 Westbound	Exit 13B to Targee Street	Diverge	50.0	20.6	C	49.9	24.9	C	49.9	24.9	C
	Westbound I-278 Mainline	Basic	50.0	25.3	C	50.0	30.9	D	50.0	30.9	D
	Between On Ramp and Exit 13A	Weaving	31.2	42.1	E	29.0	53.1	F	30.4	48.9	F*
Narrows Road North	Between Exit 13B and On Ramp	Weaving	36.1	19.3	B	35.7	20.7	C	34.5	25.4	C
			Weekday PM Peak Hour								
I-278 Eastbound	Exit 14 to Hylan Boulevard	Diverge	50.0	24.6	C	50.0	26.7	D	50.0	27.9	D
	Eastbound I-278 Mainline	Basic	50.0	27.9	D	50.0	30.4	D	50.0	32.0	D
	Exit 15 to Fingerboard Road	Diverge	48.3	28.9	C	48.2	31.5	C	48.0	33.3	D
I-278 Westbound	Exit 13B to Targee Street	Diverge	38.0	40.0	E	38.0	43.5	E	38.0	39.7	E*
	Westbound I-278 Mainline	Basic	38.0	44.5	F	28.5	62.4	F	19.5	80.0	F
	Between On Ramp and Exit 13A	Weaving	21.4	67.8	F	20.8	73.4	F	22.8	59.0	F*
Narrows Road North	Between Exit 13B and On Ramp	Weaving	29.4	41.7	E	28.3	46.0	F	25.5	57.5	F
			Saturday Midday Peak Hour								
I-278 Eastbound	Exit 14 to Hylan Boulevard	Diverge	50.0	28.5	D	50.0	30.2	D	50.0	30.4	D
	Eastbound I-278 Mainline	Basic	50.0	34.4	D	50.0	36.4	E	50.0	36.6	E
	Exit 15 to Fingerboard Road	Diverge	48.1	35.7	D	47.9	38.0	D	47.9	38.2	D
I-278 Westbound	Exit 13B to Targee Street	Diverge	50.0	25.7	C	49.2	32.7	D	49.0	34.2	D
	Westbound I-278 Mainline	Basic	50.0	30.9	D	50.0	39.3	E	37.0	54.4	F
	Between On Ramp and Exit 13A	Weaving	33.5	42.0	E	31.1	55.6	F	32.2	53.6	F*
Narrows Road North	Between Exit 13B and On Ramp	Weaving	36.2	17.9	B	35.8	19.2	B	35.2	21.1	C

Notes:
1. Shaded grey cell denotes significant adverse impact
2. * - Denotes density decreased between No Action and With Action scenarios due to changes in weaving volume ratio (VR) and capacity; however, vehicular volume is increasing between scenarios. For weaving segments, if the demand-to-capacity ratio exceeds 1.0, oversaturated conditions will occur, yielding an automatic LOS F for the segment.

Source: STV Incorporated, 2024.

TRANSIT

A. Existing Conditions

BUS SERVICE

As discussed above, the proposed project is expected to exceed the 50-trip *CEQR Technical Manual* analysis threshold in the weekday AM and PM peak hours for the S52, S78, and S79-SBS bus routes and therefore a detailed bus analysis has been performed. Detailed analyses of bus conditions for these routes during the Saturday midday peak hour are not required, as the proposed project is projected to result in fewer than 50 peak-hour trips and this level of new demand is considered unlikely to result in significant adverse impacts.

Table 5-12, "Existing Local Bus Analysis," lists the existing number of buses and ridership at the maximum load point in each direction for each of the three analyzed bus routes in the peak hours based on May 2023 data obtained from MTA. As listed, all bus routes operate within available capacity at the maximum load points during the peak hours.

Table 5-12: Existing Local Bus Analysis

Peak Hour (1)	Route	Direction	Maximum Load Point	Peak Hour Passengers (2)	Peak Hour Buses (2)	Average Passengers Per Bus	Available Capacity (3)
Weekday AM	S52	NB	Hamilton Av/Egmont Pl	107	5	21	163
		SB	Tompkins Av/Fingerboard Rd	72	4	18	144
	S78	EB	Van Duzer St/Baltic St	130	7	19	248
		WB	Hylan Bl/Jefferson Av	218	6	36	106
	S79-SBS	NB	Narrows Rd S/Fingerboard Rd	596	13	46	106
		SB	Hylan Bl/Seaview Av	504	15	34	306
Weekday PM	S52	NB	Beach St/Van Duzer St	60	4	15	156
		SB	Cebra Av/Victory Bl	55	3	18	107
	S78	EB	Hylan Bl/Elmtree Av	114	4	29	102
		WB	St Pauls Av/Van Duzer St	101	4	25	115
	S79-SBS	NB	Hylan Bl/Jacques Av	197	7	28	181
		SB	92 St/Ft Hamilton Pky	238	5	48	32

Source: STV Incorporated, 2024
Notes:
(1) Weekday peak hours: 7-8 AM, 2-3 PM
(2) Based on most recent available data from MTA (May 2023)
(3) Available capacity based on MTA loading guideline of 54 passengers per standard bus

B. The Future Without the Proposed Project

BUS SERVICE

Demand on the local bus services operating in the vicinity of the study area is expected to increase during the 2023 through 2030 period as a result of background growth. The annual background growth rate was assumed to be one percent for Years 1 to 5 and 0.5 percent for Year 6 and beyond, for a total compounded background growth rate of approximately six percent.

As listed in Table 5-13, "No-Action Local Bus Analysis," existing levels of bus service will be sufficient to provide adequate supply to meet the projected demand in the 2030 No-Action condition for all analysis time periods.

Table 5-13: No-Action Local Bus Analysis

Peak Hour (1)	Route	Direction	Maximum Load Point	Peak Hour Passengers	No Build Conditions with Current Service Levels		
					Peak Hour Buses (2)	Average Passengers Per Bus	Available Capacity (3)
Weekday AM	S52	NB	Hamilton Av/Egmont Pl	114	5	23	156
		SB	Tompkins Av/Fingerboard Rd	76	4	19	140
	S78	EB	Van Duzer St/Baltic St	138	7	20	240
		WB	Hylan Bl/Jefferson Av	231	6	39	93
	S79-SBS	NB	Narrows Rd S/Fingerboard Rd	633	13	49	69
		SB	Hylan Bl/Seaview Av	535	15	36	275
Weekday PM	S52	EB	Beach St/Van Duzer St	64	4	16	152
		WB	Cebra Av/Victory Bl	58	3	19	104
	S78	NB	Hylan Bl/Elmtree Av	121	4	30	95
		SB	St Pauls Av/Van Duzer St	107	4	27	109
	S79-SBS	NB	Hylan Bl/Jacques Av	209	7	30	169
		SB	92 St/Ft Hamilton Pky	253	5	51	17

Source: STV Incorporated, 2024
Notes:
(1) Weekday peak hours: 7-8 AM, 2-3 PM
(2) Based on most recent available data from MTA (May 2023)
(3) Available capacity based on MTA loading guideline of 54 passengers per standard bus

C. Potential Effects of the Proposed Project

BUS SERVICE

As listed in Table 5-6, "Incremental Peak-Hour Bus Trips by Route," the proposed project is projected to generate approximately 536 and 550 bus trips during the weekday AM and PM peak hours, respectively.

Projected bus trips were assigned to the six bus routes serving the project site based on several factors, including the proximity of the bus stops to the proposed project and to the residential areas surrounding the proposed project, the density in each residential area, and transit route travel times. Overall, projected bus trips were assigned to nearby routes as follows:

- 16 percent to the S51
- 31 percent to the S52
- 3 percent to the S53
- 29 percent to the S78
- 13 percent to the S79-SBS
- 7 percent to the S93 Limited

A detailed analysis of bus conditions is generally not required if a proposed action is projected to result in fewer than 50 peak-hour trips being assigned to a single bus route (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts according to the general thresholds used by MTA and specified in the *CEQR Technical Manual*. As a result of the proposed project, the S52, S78, and S79-SBS bus routes are expected to carry 50 or more new trips in each direction in the analysis peak hours and were analyzed for the weekday AM and PM peak hours (see Table 5-6, "Incremental Peak-Hour Bus Trips by Route," for a summary of anticipated numbers of new riders expected on each local bus route in the weekday AM and PM peak hours).

As listed in Table 5-14, "With-Action Local Bus Analysis," passenger demands on each bus route would increase at the maximum load points in at least one travel direction for the weekday AM and PM peak hours. Passenger demand increments would range up to 110 trips per direction during the peak hours. For several routes and travel directions, the maximum load point changes to a location closer to the project site due to the high number of students expected to board or alight.

The proposed project would result in a capacity shortfall for the S79-SBS bus route during the weekday PM peak hour for the southbound direction. As a result, the S79-SBS bus route would experience a significant adverse impact based on *CEQR Technical Manual* criteria. As discussed in Chapter 11, "Mitigation Measures," the significant adverse impact to this bus service could be mitigated by increasing the number of buses in the peak hours.

Table 5-14: With-Action Local Bus Analysis

Peak Hour (1)	Route	Direction	Existing Maximum Load Point	Peak Hour Buses	No Build Available Capacity at Maximum Load Point	New Maximum Load Point	No Build Available Capacity at New Maximum Load Point	Project Increment at Maximum Load Point	Build Available Capacity (3)
Weekday AM	S52	NB	Hamilton Av/Egmont Pl	5	156	Hamilton Av/Egmont Pl	156	3	153
		SB	Tompkins Av/Fingerboard Rd	4	140	Tompkins Av/Fingerboard Rd	140	109	30
	S78	EB	Van Duzer St/Baltic St	7	240	Hylan Bl/Reno Av	242	40	202
		WB	Hylan Bl/Jefferson Av	6	93	Hylan Bl/Reynolds St	232	86	146
	S79-SBS	NB	Narrows Rd S/Fingerboard Rd	13	69	Hylan Bl/Narrows Rd S	120	69	51
		SB	Hylan Bl/Seaview Av	15	275	Hylan Bl/Seaview Av	275	2	273
Weekday PM	S52	NB	Beach St/Van Duzer St	4	152	Fingerboard Rd/Lincoln Pl	163	86	77
		SB	Cebra Av/Victory Bl	3	104	Fingerboard Rd/Grasmere Dr	130	50	80
	S78	EB	Hylan Bl/Elmtree Av	4	95	Hylan Bl/Donley Av	141	92	49
		WB	St Pauls Av/Van Duzer St	4	109	Hylan Bl/W Fingerboard Rd	139	64	75
	S79-SBS	NB	Hylan Bl/Jacques Av	7	169	Hylan Bl/Jacques Av	169	1	168
		SB	92 St/Ft Hamilton Pky	5	17	Narrows Rd N/Fingerboard Rd	29	72	-43

Source: STV Incorporated, 2024
Notes:
(1) Weekday peak hours: 7-8 AM, 2-3 PM
(2) Based on most recent available data from MTA (May 2023)
(3) Available capacity based on MTA loading guideline of 54 passengers per standard bus

PEDESTRIANS

A. Existing Conditions

The study area currently experiences low pedestrian volumes during the peak periods. As discussed above, the analysis of pedestrian conditions focuses on representative pedestrian elements where new trips generated by the proposed project are expected to be most concentrated. These elements — sidewalks, corner areas, and crosswalks — near the project site are selected as they provide access to local bus stops and commercial uses. Specifically, a quantitative analysis of pedestrian conditions was performed for the weekday AM and PM peak hours at selected crosswalk, corner, and sidewalk elements at:

- North and south Fingerboard Road sidewalks west of Columbia Avenue
- North sidewalk of Cleveland Place east of Fingerboard Road
- Hylan Boulevard southeast corner at Fingerboard Road
- Columbia Avenue south crosswalk and southeast and southwest corners at Fingerboard Road
- East Columbia Avenue sidewalk south of Fingerboard Road
- South Chicago Avenue sidewalk east of Columbia Avenue
- South sidewalk of Cleveland Place east of Landis Avenue
- East Landis Avenue sidewalk south of Cleveland Place
- North Landis Avenue sidewalk west of Hastings Street

Existing pedestrian volumes through and around the project site are low; two-way pedestrian volumes on any pedestrian element (i.e., sidewalk or crosswalk) are generally less than 50 persons per hour during each of the analysis periods. Overall, all pedestrian elements operate at an acceptable LOS A condition due to low existing pedestrian volumes (see Table 5-15, "Existing Pedestrian Conditions").

Table 5-15: Existing Pedestrian Conditions

Intersection and Element	AM Peak		PM Peak	
	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS
Fingerboard Road and Columbia Avenue				
Southeast Corner	1,692	A	1,029	A
Southwest Corner	1,294	A	1,491	A
South Crosswalk	3,392	A	2,298	A
Fingerboard Road and Hylan Boulevard				
Southeast Corner	1,220	A	2,441	A
Fingerboard Road between Hylan Boulevard and Columbia Avenue				
North Sidewalk	2,475	A	3,300	A
South Sidewalk	1,800	A	1,980	A
Cleveland Place east of Fingerboard Road				
North Sidewalk	2,909	A	1,398	A
Columbia Avenue between Fingerboard Road and Chicago Avenue				
East Sidewalk	5,483	A	4,320	A
Chicago Avenue between Columbia Avenue and Landis Avenue				
South Sidewalk	748	A	709	A
Cleveland Place east of Landis Avenue				
South Sidewalk	4,950	A	6,600	A
Landis Avenue between Chicago Avenue and Knauth Place				
East Sidewalk	9,900	A	6,600	A
Landis Avenue between Pickersgill Avenue and Hastings Street				
North Sidewalk	6,600	A	9,900	A

Note: Average Space is based on the assumption that pedestrians distribute themselves uniformly throughout the effective crosswalk and corner space. LOS designations are based on average pedestrian space expressed as square feet per pedestrian (sf/ped).

Source: STV Incorporated, 2024.

B. The Future Without the Proposed Project

PEDESTRIAN ELEMENTS

Pedestrian volumes along analyzed sidewalks, crosswalks, and corner areas are expected to increase during the 2023 through 2030 period as a result of background growth. The annual background growth rate was assumed to be one percent for Years 1 to 5 and 0.50 percent for Year 6 and beyond for a total compounded background growth rate of approximately six percent.

Table 5-16, "No-Action Pedestrian Conditions," lists the average pedestrian space at all analyzed pedestrian elements in the No-Action condition. All pedestrian elements would continue to operate at acceptable LOS A conditions during each analysis period.

Table 5-16: No-Action Pedestrian Conditions

Intersection and Element	AM Peak		PM Peak	
	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS
Fingerboard Road and Columbia Avenue				
Southeast Corner	1,593	A	968	A
Southwest Corner	1,218	A	1,404	A
South Crosswalk	3,180	A	2,167	A
Fingerboard Road and Hylan Boulevard				
Southeast Corner	1,149	A	2,299	A
Fingerboard Road between Hylan Boulevard and Columbia Avenue				
North Sidewalk	2,331	A	3,109	A
South Sidewalk	1,696	A	1,865	A
Cleveland Place east of Fingerboard Road				
North Sidewalk	2,741	A	1,317	A
Columbia Avenue between Fingerboard Road and Chicago Avenue				
East Sidewalk	5,165	A	4,070	A
Chicago Avenue between Columbia Avenue and Landis Avenue				
South Sidewalk	705	A	668	A
Cleveland Place east of Landis Avenue				
South Sidewalk	4,663	A	6,217	A
Landis Avenue between Chicago Avenue and Knauth Place				
East Sidewalk	9,326	A	6,217	A
Landis Avenue between Pickersgill Avenue and Hastings Street				
North Sidewalk	6,217	A	9,326	A

Note: Average Space is based on the assumption that pedestrians distribute themselves uniformly throughout the effective crosswalk and corner space. LOS designations are based on average pedestrian space expressed as square feet per pedestrian (sf/ped).

Source: STV Incorporated, 2024.

C. Potential Effects of the Proposed Project

PEDESTRIAN ELEMENTS

The proposed project would generate new pedestrian demand on analyzed sidewalks, crosswalks, and corner areas by 2030. This new demand would include trips made solely by walking, as well as pedestrian trips en route to and from bus stops. Pedestrian trips generated by the proposed project are expected to be most concentrated near the project site and along corridors connecting the site to area bus routes.

As listed in Table 5-3, "Travel Demand Forecast for PS/IS/HS," and Table 5-4, "Travel Demand Forecast for Athletic Field," the proposed project is expected to generate a net total of approximately 304 walk trips in the weekday AM peak hour, 504 in the PM peak hour, and 40 walk trips during the Saturday midday peak hour. Persons en route to and from transit (i.e., bus stops) are projected to add approximately 536, 550, and 40 additional pedestrian trips to area sidewalks and crosswalks during these same periods, respectively. These pedestrian volumes are added to the projected No-Action pedestrian volume network to generate the With-Action pedestrian volumes for analysis.

The pedestrian trip distribution patterns were estimated using the New York City MapPLUTO[12] data for the residential unit density within a quarter-mile distance from the proposed redevelopment. Walking trips to/from the bus stops in the vicinity of the project site are also included in the pedestrian trip assignments.

The analyses show that all of the pedestrian elements in the Project study area would operate at acceptable LOS C conditions or better during the weekday AM and PM peak hours (see Table 5-17, "With-Action Pedestrian Conditions"). Therefore, significant adverse impacts to pedestrian operations are not anticipated based on *CEQR Technical Manual* criteria.

[12] Note that the US Census student enrollment data within the census block group could not be used due to the block group polygons being larger than the proposed school walk-only zones. Therefore, the MapPLUTO data was used for this assignment.

Table 5-17: With-Action Pedestrian Conditions

Intersection and Element	AM Peak		PM Peak	
	Average Space (sf/ped)	LOS	Average Space (sf/ped)	LOS
Fingerboard Road and Columbia Avenue				
Southeast Corner	39	C	27	C
Southwest Corner	52	B	47	B
South Crosswalk	40	B	44	B
Fingerboard Road and Hylan Boulevard				
Southeast Corner	79	A	47	B
Fingerboard Road between Hylan Boulevard and Columbia Avenue				
North Sidewalk	208	B	299	B
South Sidewalk	70	C	50	C
Cleveland Place east of Fingerboard Road				
North Sidewalk	232	B	110	B
Columbia Avenue between Fingerboard Road and Chicago Avenue				
East Sidewalk	174	B	102	B
Chicago Avenue between Columbia Avenue and Landis Avenue				
South Sidewalk	56	C	56	C
Cleveland Place east of Landis Avenue				
South Sidewalk	73	C	52	C
Landis Avenue between Chicago Avenue and Knauth Place				
East Sidewalk	127	B	69	C
Landis Avenue between Pickersgill Avenue and Hastings Street				
North Sidewalk	86	C	63	C

Note: Average Space is based on the assumption that pedestrians distribute themselves uniformly throughout the effective crosswalk and corner space. LOS designations are based on average pedestrian space expressed as square feet per pedestrian (sf/ped).

Source: STV Incorporated, 2024.

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

A. NYCDOT Initiatives

VISION ZERO STATEN ISLAND SAFETY ACTION PLAN

Within the proposed project study area, Hylan Boulevard, Narrows Road North, Narrows Road South, McClean Avenue, and Bay Street are considered Vision Zero Priority Corridors. Additionally, the intersections of Fingerboard Road at Narrows Road South, as well as Lily Pond Avenue at McClean Avenue, are considered Vision Zero Priority Intersections.

As part of the Vision Zero initiative, Leading Pedestrian Intervals (LPI) have been implemented at several study area intersections. LPIs enable pedestrians to enter the crosswalk at an intersection at least 7 seconds before vehicles are given a green indication. Within the study area, LPIs have been implemented at the following intersections:

- Sand Lane at Major Avenue
- Sand Lane at McClean Avenue
- McClean Avenue at Lily Pond Avenue
- Narrows Road South at Fingerboard Road
- Narrows Road South at Hylan Boulevard East
- Hylan Boulevard at West Fingerboard Road
- Fingerboard Road at Tompkins Avenue
- Fingerboard Road at Bay Street
- School Road at Bay Street

NYC PEDESTRIAN MOBILITY PLAN

NYCDOT has developed a Pedestrian Mobility Plan to inform street and sidewalk design to enhance existing safety/accessibility guidelines and to encourage more walking trips, which benefits the City by reducing the demand for vehicles. The plan uses anticipated pedestrian volumes to designate five types of streets in NYC (Baseline, Community Connector, Neighborhood Corridor, Regional Corridor, and Global Corridor).

Adjacent to the proposed project, Landis Avenue is identified as a Community Connector, which are residential streets that have individuals or small groups passing one another and connect to nearby destinations such as small parks or schools. The design guidelines recommend that the sidewalks along Community Connectors be a minimum of ten feet wide to provide an eight-foot-wide walk lane and a two-foot-wide furnishing zone for street trees, lighting, bicycle parking, etc. All other adjacent sidewalks are identified as Baseline streets, which should be a minimum of eight feet wide to provide a five-foot wide walk lane and a three-foot-wide furnishing zone.

B. Study Area High-Crash Locations

A high-crash location is defined by the *CEQR Technical Manual* as a Vision Zero priority intersection, or a location with five or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available. In addition, any location along a Vision Zero Priority Corridor with three or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available should be identified as a high-crash location.

Based on the NYC OpenData Vision Zero Priority Corridors map, Hylan Boulevard, Narrows Road North and South, McClean Avenue, and Bay Street are identified as Vision Zero Priority Corridors. In addition, the following intersections are identified as Vision Zero Priority Intersections:

- Fingerboard Road at Narrows Road South
- Lily Pond Avenue at McClean Avenue

Crash data for intersections within a quarter mile of the project site, as well as the intersections within the traffic study area were obtained from NYCDOT for the three-year period between January 1, 2017 and December 31, 2019. The data quantifies the total number of crashes involving injuries to pedestrians or bicyclists. During the three-year reporting period, a total of 153 crashes occurred, of which 16 were pedestrian-related crashes and one was a bicycle-related crash. Table 5-18, "Summary of Motor Vehicle Crash Data 2017-2019," provides details of crash characteristics by intersection during the 2017 through 2019 period, as well as a breakdown of pedestrian and bicycle crashes by year and location. Two intersections would be considered high-crash intersections: Fingerboard Road at Narrows Road South and Lily Pond Avenue at McClean Avenue. Both intersections are Vision Zero Priority Intersections and both experienced three pedestrian-related crashes in 2019.

Fingerboard Road at Narrows Road South experienced a total of 12 crashes during the three-year period from 2017 to 2019, four of which were pedestrian crashes. All four of these crashes involved pedestrians running south across Narrows Road South trying to catch a bus. Two pedestrians were struck by turning vehicles and two were struck by vehicles travelling straight along Narrows Road South. The intersection processes nearly 2,000 vehicles during the AM analysis peak hour and over 1,100 vehicles during the PM analysis peak hour since it is used to access the on-ramp to I-278 and the Verrazzano Bridge. Additionally, the bus stop on the southeast corner of the intersection serves up to eight MTA bus routes during the AM peak period and five routes at all other times, making it an important pedestrian destination. The proposed project would add up to 140 pedestrians crossing Narrows Road South on the east and west crosswalks during the PM analysis peak hours. This intersection currently provides a seven-to-ten-second LPI for pedestrians crossing Narrows Road South. The east crosswalk has a 15-foot painted curb extension, which shortens the pedestrian crossing distance.

Lily Pond Avenue at McClean Avenue experienced 11 crashes during the three-year period from 2017 to 2019, four of which were pedestrian crashes. Three of these crashes involved pedestrians being struck in the crosswalk by vehicles turning left onto Lily Pond Avenue. This intersection already operates with an LPI, providing a seven-second head-start at all times for pedestrians crossing Lily Pond Avenue. The proposed project would not add any pedestrians crossing Lily Pond Avenue at this intersection but would add approximately five left-turning vehicles to the eastbound approach at this intersection during the weekday AM and PM analysis peak hours.

Table 5-18: Summary of Motor Vehicle Crash Data 2017-2019

Intersection		Vision Zero Corridor	Total	Injury Crashes, 2017-2019				Fatalities
				Motor Vehicle	Pedestrian	Bicycle	Total	
Fingerboard Road	Hylan Boulevard	Y	2	1	1	0	2	0
	Hillbrook Drive	N	1	1	0	0	1	0
	Cleveland Place	N	2	2	0	0	2	0
	Narrows Road South	Y	12	8	4	0	12	0
	Tompkins Avenue	N	4	3	1	0	4	0
	Bay Street	Y	7	7	0	0	6	1
School Road	Bay Street	Y	1	1	0	0	1	0
Hylan Boulevard	Linwood Avenue	Y	1	1	0	0	1	0
	West Fingerboard Road	Y	7	7	0	0	7	0
	Narrows Road North	Y	29	29	0	0	29	0
	Narrows Road South	Y	43	40	2	1	43	0
Lincoln Avenue	Tompkins Avenue	N	5	4	1	0	5	0
Narrows Road South	Lily Pond Avenue	Y	3	3	0	0	3	0
MacFarland Avenue	Sand Lane	N	1	1	0	0	1	0
McClean Avenue	Linwood Avenue	Y	6	5	1	0	6	0
	Sand Lane	Y	7	5	2	0	7	0
	Wallace Avenue	Y	5	5	0	0	5	0
	Jackson Avenue	Y	1	1	0	0	1	0
	Hastings Street	Y	2	2	0	0	2	0
	Pebble Lane	Y	1	1	0	0	1	0
	Ocean Avenue	Y	2	2	0	0	2	0
	Lily Pond Avenue	Y	11	7	4	0	11	0

Source: NYCDOT crash data from January 1, 2017, to December 31, 2019.

PARKING

A. Existing Conditions

An inventory of existing on-street parking regulations within a quarter-mile radius of the project site was compiled from field data. Curbside parking regulations for all block faces within the study area are listed in Appendix B. Alternate-side-of-the-street regulations to facilitate street cleaning are not used on Staten Island. Within a quarter-mile radius of the project site, on-street public parking is only governed by No Standing Anytime and No Standing on School Days from 7:00 AM to 4:00 PM regulations. On-street parking surveys were conducted on a representative midweek day in October 2023 when curbside regulations were in effect and on one Saturday in February 2024 to determine the available capacity. Three parking survey time periods were assessed —weekday morning (6:00 AM to 9:00 AM) and weekday midday (12:00 PM to 2:00 PM), when faculty/staff and HS student parking demand would be highest, and Saturday midday (12:00 PM to 5:00 PM), when sporting event parking demand would be highest.

There are approximately 492 legal on-street parking spaces within a reasonable walking distance of the project site when no regulations are in effect based on existing curbside parking regulations and taking into account curb space obstructed by curb cuts, fire hydrants, and other impediments.

This demand for on-street parking spaces peaks during the weekday morning hours at approximately 349 spaces, resulting in an occupancy rate of 71 percent and approximately 143 available on-street parking spaces. The occupancy rate slightly increases to 73 percent during the weekday midday period, resulting in about 134 available on-street parking spaces. The Saturday midday period provides the most available on-street parking supply as more than 300 spaces are available, resulting in a 38 percent occupancy rate (see Table 5-19, "Existing On-Street Parking Supply and Demand").

Table 5-19: Existing On-Street Parking Supply and Demand

Parking Parameter	Weekday 6 AM - 9 AM	Weekday 12 PM - 2 PM	Saturday 12 PM - 5 PM
Parking-Space Supply	492	492	492
Demand (Occupancy Rate)	349 71%	358 73%	189 38%
Spaces Available (Rate)	143 29%	134 27%	303 62%

Source: STV Incorporated, 2024.

B. The Future Without the Proposed Project

Between 2023 and 2030, it is expected that parking demand in the vicinity of the project site would increase due to long-term background growth. The annual background growth rate was assumed to be one percent for Years 1 to 5 and 0.5 percent for Year 6 and beyond, for a total compounded background growth rate of approximately six percent. This background growth rate recommended in the *CEQR Technical Manual* for projects in Staten Island outside of the St. George area is applied to account for general increases in parking demand not attributable to specific development projects.

The 2030 No-Action Condition increase in parking demand would decrease the number of available on-street parking spaces to approximately 122, 112, and 291 spaces during the weekday AM, midday, and Saturday midday peak periods, respectively (see Table 5-20, "2030 No-Action On-Street Parking Supply and Demand").

Table 5-20: 2030 No-Action On-Street Parking Supply and Demand

Parking Parameter	Weekday 6 AM - 9 AM	Weekday 12 PM - 2 PM	Saturday 12 PM - 5 PM
Parking-Space Supply	492	492	492
Demand (Occupancy Rate)	370 75%	380 77%	201 41%
Spaces Available (Rate)	122 25%	112 23%	291 59%

Source: STV Incorporated, 2024.

C. Potential Effects of the Proposed Project

The proposed project is estimated to provide a total of 160 on-site parking spaces for faculty/staff during the weekday AM and midday periods and for sporting event visitors during the Saturday midday period. All other faculty/staff, sporting event visitors, and any HS students driving themselves to school are anticipated to use available on-street parking.

On-street parking regulations would be modified in several locations to facilitate school operations. Approximately seven parking spaces along Narrows Road South, 18 parking spaces along Cleveland Place, and 12 parking spaces along Landis Avenue are anticipated to be changed to “No Standing Anytime – School Days 7 AM to 4 PM” to provide student pick-up/drop-off locations. Additionally, three parking spaces on Narrows Road South, one parking space on Hastings Street, and four parking spaces on Chicago Avenue are anticipated to be modified to “No Standing Anytime” to accommodate turning maneuvers into and out of campus driveways. These parking regulation changes result in a supply of 447, 447, and 484 on-street parking spaces during the weekday AM, weekday midday, and Saturday midday peak periods, respectively.

Parking demand was generated by auto trip forecasts. Overall, the proposed project is projected to generate an on-street parking demand of 56 parking spaces during both the weekday AM and midday peak periods, and 47 parking spaces during the Saturday midday peak period. This on-street parking demand would not result in a parking shortfall during any peak period (see Table 5-21, “2030 With-Action On-Street Parking Supply and Demand”).

Table 5-21: 2030 With-Action On-Street Parking Supply and Demand

Parking Parameter	Weekday 6 AM - 9 AM	Weekday 12 PM - 2 PM	Saturday 12 PM - 5 PM
Parking-Space Supply	447	447	484
Demand (Occupancy Rate)	426 95%	436 98%	248 51%
Spaces Available (Rate)	21 5%	11 2%	236 49%

Source: STV Incorporated, 2024.

Chapter 6: Air Quality

INTRODUCTION

The *CEQR Technical Manual* requires an assessment of air quality for projects that would increase traffic volumes or increase concentrations of air pollutants, especially where they may affect residential or other sensitive uses (such as a school). In this area of Staten Island, a detailed carbon monoxide (CO) mobile-source analysis would be required if 170 or more project-related auto trips are generated in any given peak period. In addition, the NYCDEP has established screening threshold limits for mobile-source particulate matter, for which a detailed analysis is required if more than 12-23 project-generated heavy-duty diesel trucks or buses would pass through an intersection in any given peak period, depending on roadway types. Projects that would add surface parking lots or garages with significant traffic generation and/or permit new sensitive land uses within 200 feet of a highway or bridge also require an assessment of air quality. Regarding stationary emission sources, analyses are required if a project creates new sensitive land uses within 400 feet of existing industrial facilities and/or within 1,000 feet of existing major/large sources, and/or if a proposed project's heating and hot water system may affect nearby sensitive land uses (or the heating system of nearby buildings may affect the proposed project).

PRINCIPAL CONCLUSIONS

The proposed project would use electric power to run heating and hot water systems. As a result, no significant adverse air quality impacts from project-related stationary sources would result with the proposed project. There are no large combustion sources located within 1,000 feet of the project site and no industrial source permits on file located within 400 feet of the project site; therefore, no significant adverse impacts from large combustion or industrial source emissions would result with the proposed project.

Project-related vehicle trips would exceed CEQR screening thresholds for CO and $PM_{2.5}$ mobile-source analyses. In addition, the proposed project would include three surface parking lots. Based on results of the mobile-source screening assessment, the intersection of Fingerboard Road and Narrows Road South, in addition to the proposed parking areas, were evaluated for CO. The intersection of Chicago Avenue and Landis Avenue, in addition to the three proposed surface parking lots, were evaluated for $PM_{2.5}$. Results of the mobile-source CO and $PM_{2.5}$ analyses show that project-generated vehicles would not exceed applicable air quality standards or CEQR *de minimis* thresholds.

REGULATORY REQUIREMENTS AND IMPACT CRITERIA

National Ambient Air Quality Standards

At the Federal level, the Clean Air Act (CAA) (42 United States Code [U.S.C.] §§ 7401-7671q) gives the EPA authority to specify National Ambient Air Quality Standards (NAAQS) that apply throughout the United States and its territories. Air pollutants subject to the NAAQS are known as criteria pollutants. The NAAQS are categorized into primary standards, which are intended to protect human health, and secondary standards, which are intended to protect public welfare (see Table 6-1, "National Ambient Air Quality Standards"). On February 7, 2024, the EPA finalized a rule for the fine particulate matter NAAQS, lowering the primary $PM_{2.5}$ annual NAAQS from 12 $\mu g/m^3$ to 9 $\mu g/m^3$. Air quality regions that do not meet the NAAQS for one or more criteria pollutants are designated by the EPA as nonattainment areas; these regions must produce a State Implementation Plan (SIP) providing mitigation strategies and timelines for attaining the NAAQS. Nonattainment areas that attain the NAAQS for a specific criteria pollutant are re-designated as maintenance areas, and the area's SIP must remain in place to ensure continuing attainment with the NAAQS.

Table 6-1: National Ambient Air Quality Standards

Pollutant	Averaging Time	Primary	Secondary
Ozone (O_3)	8-hour	0.070 ppm (2015 standard)	Same as Primary
	8-hour	0.075 ppm (2008 standard)	Same as Primary
Carbon Monoxide (CO)	8-hour	9 ppm	N/A
	1-hour	35 ppm	N/A
Nitrogen Dioxide (NO_2)	Annual	53 ppb	Same as primary
	1-hour	100 ppb	N/A
Sulfur Dioxide (SO_2)	3-hour	N/A	0.5 ppm
	1-hour	75 ppb	N/A
Respirable Particulate Matter (PM_{10})	24-Hour	150 µg/m^3	Same as Primary
Fine Particulate Matter ($PM_{2.5}$)	Annual	9 µg/m^3	15 µg/m^3
	24-Hour	35 µg/m^3	Same as Primary
Lead (Pb)	Rolling 3-Month Average	0.15 µg/m^3	Same as Primary

Notes:
NAAQS = National Ambient Air Quality Standards; N/A = Not applicable
ppm = parts per million (by volume)
ppb = parts per billion (by volume)
µg/m^3 = micrograms per cubic meter

Source: EPA, National Ambient Air Quality Standards Table, Available: https://www.epa.gov/criteria-air-pollutants/naaqs-table, accessed June 13, 2024.

Conformity with the State Implementation Plan

Existing stationary-source emissions in the immediate vicinity of the project site would not have a detrimental effect on the health of students or staff at the PS/IS or two IS/HS, nor would the operations of the proposed project result in stationary-source impacts within the surrounding community. However, further analysis is required to determine the proposed project's potential effects on mobile-source emissions. Therefore, the proposed project's consistency with the New York State SIP for the control of CO and $PM_{2.5}$ was analyzed.

New York City *de minimis* Criteria

In addition to the NAAQs, NYCDEP has developed *de minimis* criteria for criteria pollutants to maintain concentrations lower than the NAAQS in attainment areas and ensure that concentrations in nonattainment areas will not be significantly increased. Actions which are predicted to increase concentrations above these *de minimis* criteria are considered to have a significant adverse effect on air quality. New York City *de minimis* criteria for CO and $PM_{2.5}$ are described below.

Mobile-source CO *de minimis* criteria are used for determining the significance of incremental increases in CO concentrations resulting from a proposed project. The criteria establish a minimum 8-hour average incremental change in CO concentrations that would yield a significant effect on the environment. As outlined in the *CEQR Technical Manual*, a significant increase in CO in New York City is defined by the *de minimis* criteria as:

- An increase of 0.5 parts per million (ppm) or more in the maximum 8-hour average CO concentration at a location where the predicted No-Action 8-hour concentration is equal to 8 ppm or between 8 ppm and 9ppm; or
- An increase of more than half the difference between baseline (i.e., No-Action) concentrations and the 8-hour standard, when No-Action concentrations are below 8 ppm.

In accordance with the *CEQR Technical Manual*, the following criteria should be used for determining significant adverse effects from $PM_{2.5}$:

- Predicted 24-hour maximum $PM_{2.5}$ concentration increase of more than half the difference between the 24-hour background concentration and the 24-hour standard; or
- Predicted annual average $PM_{2.5}$ concentration increments greater than 0.1 µg/m^3 at ground level on a neighborhood scale (i.e., the annual increase in concentration representing the average over an area of approximately 1 square kilometer, centered on the location where the maximum ground-level impact is predicted for stationary sources; or for mobile sources, at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or
- Predicted annual average $PM_{2.5}$ concentration increments greater than 0.3 µg/m^3 at any receptor location for stationary sources.

EXISTING CONDITIONS

Attainment Status

The proposed project is located in the Arrochar section of Staten Island, New York in Richmond County. This area is within the New York portion of the New York-Northern New Jersey-Long Island NY-NJ-CT air basin in the New York Metropolitan Transportation Council (NYMTC) planning area. The EPA Green Book,[13] which lists nonattainment, maintenance, and attainment areas, was reviewed to determine the attainment status for Richmond County. To confirm attainment status as listed in the Green Book, NYMTC's conformity determination was also reviewed. Richmond County is in nonattainment for the 2015 ozone standard and was recently redesignated to "severe" nonattainment for the 2008 ozone standard, with an attainment date of July 20, 2027. Although the 1997 ozone standard was revoked by the EPA on July 20, 2013, the area retains its nonattainment designation for the 1997 ozone standard.[14] Richmond County is in maintenance for the 1997 annual and 2006 24-hour standards for $PM_{2.5}$. The EPA officially ended the NYMTC 20-year CO maintenance plan as of May 20, 2022,[15] redesignating the area to attainment. However, NYSDEC has no current plans to submit a CAA 110(I) anti-backsliding analysis as a SIP revision; therefore, the maintenance plans in the SIP remain effective.[16] Richmond County is in attainment for all other NAAQS-

[13] EPA Green Book: https://www3.epa.gov/airquality/greenbook/anayo_ny.html (accessed on July 11, 2024).
[14] Transportation Conformity Determination. Prepared for New York Metropolitan Transportation Council's Federal Fiscal Year's 2023 – 2027 Transportation Improvement Program (TIP) and 2022 – 2050 Regional Transportation Plan,
as amended. Adopted September 21, 2023.
https://www.nymtc.org/en-us/Required-Planning-Products/Transportation-Conformity/Transportation-Conformity-Determination-Documents-adopted (accessed June 11, 2024).
[15] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-81/subpart-C/section-81.333
[16] Email communication with NYSDEC on June 11, 2024.

regulated pollutants, including sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and particulate matter less than 10 microns in diameter (PM_{10}).

Background Concentrations

Background concentrations are those pollutant concentrations originating from distant sources that are not included in the modeling analysis. The NYSDEC Division of Air Resources operates air monitoring sites throughout the State of New York for all criteria pollutants. However, not all pollutants are monitored at each station. NYSDEC ambient air quality monitoring data is available in an annual report and summarized by region. Richmond County is located within NYSDEC Region 2. Air quality monitoring data, collected at stations closest to, and most representative of, the project site, were reviewed and summarized in Table 6-2, "Maximum Background Pollutant Concentrations for Mobile-Source Analysis," along with the applicable NAAQS for each pollutant and CEQR *de minimis* threshold. The latest available monitoring report (New York State Ambient Air Quality Report 2022) was used to identify monitored concentrations.

8-hour CO impacts are assessed on an incremental basis and compared with the 8-hour CO *de minimis* criteria. The 8-hour CO *de minimis* criteria is determined based on half the difference between the No Action concentration and the 8-hour standard. Based on the No-Action modeling results, which are described in the following sections, the 8-hour CO *de minimis* threshold is 3.66 ppm.

$PM_{2.5}$ impacts are assessed on an incremental basis and compared with the $PM_{2.5}$ *de minimis* criteria. The $PM_{2.5}$ 24-hour average background concentration based on the 98th percentile concentration, averaged over the years 2020-2022, was used to establish the *de minimis* value of 8.0 ug/m^3. $PM2_{2.5}$ annual average impacts are assessed on an incremental basis and compared to the $PM_{2.5}$ *de minimis* criteria, without considering the annual background.

Table 6-2: Maximum Background Pollutant Concentrations for Mobile-Source Analysis

Pollutant	Average Period	Location	Concentration	NAAQS / *CEQR de minimis*
CO	1-hour	Queens College 148-20 Reeves Avenue, Queens	1.6 ppm	35 ppm
	8-hour	Queens College 148-20 Reeves Avenue, Queens	1.3 ppm	9 ppm / 3.6 ppm
$PM_{2.5}$	24-hour	364 Port Richmond Avenue, Staten Island	20.6 µg/m^3	35 / 7.2 µg/m^3
	Annual	364 Port Richmond Avenue, Staten Island	7.6 µg/m^3	9 / 0.1 µg/m3

Notes:
(1) CO concentrations represent the maximum second-highest monitored concentrations from the most recent three years of data.
(2) 24-hour $PM_{2.5}$ data is representative of the 98th percentile 24-hour concentrations averaged over three years, consistent with the statistical form of the NAAQS. The annual $PM_{2.5}$ data is representative of the average of three consecutive annual means (2020 to 2022).

Source: New York State Ambient Air Quality Report, NYSDEC, 2020-2022.

SCREENING ASSESSMENT

Mobile Sources

As outlined in the *CEQR Technical Manual*, in this area of the City, actions that would result in the generation of 170 or more peak-hour vehicle trips at an intersection may cause adverse air quality impacts and require a detailed air quality analysis for CO.

Based on data obtained from traffic studies, the proposed project is expected to add more than 170 vehicle trips at six intersections in the project area. Therefore, a detailed mobile-source CO analysis is warranted.

For particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), the screening procedure outlined in the *CEQR Technical Manual* is based on a determination of whether the projected number of vehicle trips at an intersection exceeds thresholds based on heavy-duty diesel vehicle (HDDV) equivalents. The thresholds are as follows:

- 12 or more HDDV for paved roads with average daily traffic fewer than 5,000 vehicles;
- 19 or more HDDV for collector roads;
- 23 or more HDDV for principal and minor arterials; and
- 23 or more HDDV for expressways and limited access roads.

To determine whether any of these thresholds are exceeded, the worksheet referenced in Chapter 17 of the *CEQR Technical Manual* was used to calculate the number of HDDV equivalents at intersections in the traffic study area. The worksheet uses vehicle classification information based on the traffic data collected for the proposed project and assigns these classifications to vehicle categories using a table referenced in the *CEQR Technical Manual*. Roadway classifications are determined by corridor at each intersection, based on NYCDOT functional class criteria and With-Action traffic volumes.

Based on the screening analysis, eight intersections would exceed the CEQR screening threshold during at least one peak traffic period. In addition, the proposed project would add three surface parking lots (two on-site and one off-site on Cleveland Place). As such, detailed mobile-source analyses, including a detailed parking lot analysis, of CO and $PM_{2.5}$ are required. Intersections selected for detailed mobile-source CO and $PM_{2.5}$ analyses include Fingerboard Road and Narrows Road South and Chicago Avenue and Landis Avenue, respectively.

Stationary Sources

According to the *CEQR Technical Manual*, stationary-source air quality screening assessments should take into consideration information such as land use, fuel type, stack height, and square footage of the development to determine if a proposed project has the potential to create any air quality impacts. However, it is assumed that the proposed school facilities would use electric power to run their heating and hot water systems. As a result, no significant adverse air quality impacts from project-related stationary sources would result with the proposed project, and no further analysis is warranted.

The *CEQR Technical Manual* requires an assessment of proposed projects that could result in the location of sensitive uses (e.g., the PS/IS or two IS/HS) within 400 feet of existing emission sources associated with manufacturing or processing facilities, where the proposed project would be of a height similar to or greater than the height of an existing emission stack. Similarly, an analysis is required if emissions from any large combustion sources (such as a power plant or cogeneration facility) located within 1,000 feet of the proposed project would have the potential to affect the project.

Based on NYSDEC's Permit Database (DECinfo Locator), there are no large combustion sources located within 1,000 feet of the project site, so no analysis of these emission sources is required, and no significant impact would occur. In addition, based on NYCDEP's Permit Database, there are no industrial source permits on file for sites within 400 feet of the project site; therefore, no analysis of these emission sources is required, and no significant adverse impacts from industrial source emissions would result with the proposed project.

DETAILED MOBILE-SOURCE ANALYSIS METHODOLOGY

The prediction of vehicle-generated emissions and their dispersion in an urban environment incorporates meteorological phenomena, traffic conditions, and physical configuration. Air pollutant dispersion models mathematically simulate how traffic, meteorology, and physical configuration combine to affect pollutant concentrations. The mathematical expressions and formulations contained in the various models attempt to describe an extremely complex physical phenomenon as closely as possible. However, because all models contain simplifications and approximations of actual conditions and interactions, and since it is necessary to predict the reasonable worst-case condition, most dispersion analyses predict conservatively high concentrations of pollutants, particularly under adverse meteorological conditions.

The mobile-source analyses for the proposed project employ models approved by the EPA that have been used for evaluating air quality impacts of projects in New York City, other parts of New York State, and throughout the country. The modeling approach includes a series of conservative assumptions relating to traffic, and background concentration levels resulting in a conservatively high estimate of expected pollutant concentrations that could ensue from the proposed project.

Engine Emissions

Vehicular CO and $PM_{2.5}$ engine emission factors were computed using the latest version of the EPA's mobile-source emissions model, Motor Vehicle Emission Simulator (MOVES4). This emissions model can calculate engine, brake wear, and tire wear emission factors for various vehicle types, based on the fuel type (e.g., gasoline, diesel, or natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway type and grade, number of starts per day, engine soak time, and various other factors that influence emissions, such as inspection and maintenance programs. The inputs and use of MOVES incorporate the most current guidance available from NYSDEC.

The MOVES4 model was executed on project scale in inventory mode with emission quantities output in units of grams/hour (g/hr) for one vehicle traveling one mile. The model was executed for the months of January and July for CO and PM, respectively, as those months are typically when each pollutant emission peaks. Processes included running and crankcase exhaust for CO and $PM_{2.5}$ as well as primary total exhaust, brake wear, and tire wear emissions for $PM_{2.5}$. To evaluate emissions within the three proposed surface parking lots, the model was also executed to obtain idle and start emissions. Richmond County, NY input databases provided by NYSDEC were imported into MOVES, and the age distribution (AVFT), vehicle population (VPOP) and vehicle miles traveled (VMT) databases were projected to the 2030 build year using the EPA's Age Distribution Projection Tool for MOVES4 projection tool.[17]

Road Dust

Fugitive dust emission factors resulting from vehicles traveling on paved roadways were estimated using EPA's AP-42 Compilation of Air Pollutant Emission Factors.[18] Fugitive dust emissions were added to short-term (24-hour) $PM_{2.5}$ engine, brake wear and tire wear emissions, as NYSDEC has determined that fugitive dust does not have an impact on an annual neighborhood scale. In accordance with *CEQR Technical Manual* guidelines, calculations of fugitive dust for 24-hour $PM_{2.5}$ conservatively assume dry conditions (i.e., zero hours of precipitation). Silt content factors provided in the *CEQR Technical Manual* by roadway class were also used in the calculations. An average vehicle weight of 2.5 tons, based on county-specific average vehicle weight data, was assumed.

Traffic Data

Traffic data for the intersection and parking analyses were derived from existing traffic counts, projected future growth in traffic, and other information developed as part of the traffic analysis for the proposed project (see Chapter 5, "Transportation"). Traffic data for the future without the project (the No-Action condition) and with the proposed project (the With-Action condition) were used to scale MOVES emission factors to yield emission rates for use in the dispersion model. The transportation analysis conservatively assigns all project-generated traffic to the study area traffic peak hours of 7:15 AM to 8:15 AM and 3:00 PM to 4:00 PM. Therefore, the MOVES model was executed for these traffic peak hours for the CO and $PM_{2.5}$ analyses. Consistent with the EPA's "PM Hot-spot Guidance,"[19] evaluation of $PM_{2.5}$ requires a 24-hour emissions profile; therefore, Midday (MD) and Overnight (ON) traffic peak hours for the study area were modeled in addition to the AM and PM peak hours. 24-hour traffic data was evaluated to identify a MD peak hour from 1:00 PM to 2:00 PM and an ON peak hour from 7:00 PM to 8:00 PM. The AM peak hour emission factor and traffic volumes were assigned to the hours from 6:00 AM to 9:00 AM. The MD peak hour emission factor and traffic volumes were assigned to the hours from 9:00 AM to 3:00 PM. The PM peak hour emission factor and traffic volumes were assigned to the hours from 3:00 PM to 7:00 PM, and the ON peak hour emission factor and traffic volumes were assigned to the hours from 7:00 PM to 6:00 AM. Predicted speeds on each approach and departure link were calculated based on existing travel speeds collected during the traffic count program and predicted future delay durations. Vehicle speeds were used within MOVES to evaluate emissions on each roadway link. Roadway grades were also calculated and included in MOVES modeling.

For the three parking areas, most vehicles arrive during two AM hours and depart during two PM hours, with only a few vehicles entering and exiting during the middle of the day and no vehicles entering or exiting overnight. Based on the hourly volume of vehicles entering and exiting the surface lots, all vehicles that would start up prior to exiting the lot would be stationary, with the engine turned off for approximately eight hours. Therefore, to accurately represent start emissions within MOVES, 100 percent of vehicles were assigned to a soak time of greater than 360 minutes but less than 720 minutes. Traveling emissions

[17] https://www.epa.gov/moves/tools-develop-or-convert-moves-inputs#moves3-inputs
[18] AP-42, Fifth Edition Compilation of Air Emissions Factors. Chapter 13.2.1 Paved Roads.
[19] Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas. Transportation and Climate Division Office of Transportation and Air Quality. U.S. Environmental Protection Agency. EPA-420-B-21-037. October 2021.

within the surface lots were modeled as on-road links at a speed of 5 miles per hour (5 mph) per *CEQR Technical Manual* guidelines. Per *CEQR Technical Manual* guidelines, all vehicles were assumed to travel two thirds of the distance between the entrance/exit of the parking lot and the last available parking space. In addition, all vehicles exiting the surface parking lots were assumed to idle for a duration of one minute, per *CEQR Technical Manual* guidelines. Fugitive dust was added to traveling emissions within the lot.

Microscale Dispersion Model

The CO and $PM_{2.5}$ concentrations due to vehicular emissions from project-affected intersections and surface parking lots were predicted using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) Version 23132. AERMOD is a state-of-the-art, steady-state plume dispersion model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). AERMOD has been a recommended model for transportation air quality analyses for several years, and the EPA mandated its use for transportation conformity purposes after a three-year transition period. The analysis was performed using an area source representation of emission sources to simulate traffic-related air pollutant dispersion. Hourly traffic volumes and associated emission factors were used to estimate hourly emission rates from each modeled roadway segment and surface parking areas and predict traffic-related air pollutant concentrations at receptor locations.

Meteorology

In general, the transport and concentration of pollutants from vehicular sources are influenced by three principal meteorological factors: wind direction, wind speed, and atmospheric stability. Wind direction influences the direction in which pollutants are dispersed, and atmospheric stability accounts for the effects of vertical mixing in the atmosphere. These factors, therefore, influence the concentration at a particular prediction location (receptor).

The AERMOD model includes the modeling of hourly concentrations based on hourly traffic data and five years of monitored hourly meteorological data. For this analysis, the latest available five years of AERMOD-ready processed surface meteorological data was provided by NYSDEC for Newark Liberty International Airport (2017 – 2021) with concurrent upper air data from Brookhaven, New York.[20] The meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevations over the five-year period.

Receptor Placement

Multiple receptors (i.e., precise locations at which concentrations are evaluated) were modeled along the approach and departure links at 25-foot intervals out to 125 feet in each direction for the $PM_{2.5}$ 24-hour analysis. For predicting the annual average neighborhood-scale $PM_{2.5}$ concentrations, receptors were placed 15 meters from the nearest moving lane, based on the *CEQR Technical Manual* guidelines. All ground-level receptors were placed on sidewalks or in other locations near intersections with continuous public access, at a pedestrian height of 1.8 meters.

[20] NYSDEC advised that, despite more recent available meteorological data, there was a significant gap in 2022 upper air data due to the helium shortage limiting upper air launches. While regular upper air data collection resumed by the end of the year and through 2023, the 2022 OKX (Brookhaven) Upper Air issue creates a discontinuity that can negatively impact the quality of the modeling.

MOBILE-SOURCE ANALYSIS RESULTS

Using the previously described methodology, build year 2030 CO and $PM_{2.5}$ concentrations were predicted at receptor locations. Maximum 1-hour and 8-hour CO concentrations were identified, and the maximum No-Action concentration was used to calculate the CEQR *de minimis* 8-hour CO threshold. Table 6-3, "Maximum Predicted 1-hour CO Concentrations (ppm)," shows the maximum total 1-hour No-Action and With-Action CO concentrations in comparison to the 1-hour CO NAAQS. Table 6-4, "Maximum Predicted 8-hour CO Concentrations (ppm)," shows the maximum total No-Action and With-Action concentrations as well as the predicted increment in comparison to the 8-hour CO *de minimis*. As shown in each table, maximum With-Action 1-hour and 8-hour CO concentrations would not exceed the applicable NAAQS or the CEQR *de minimis* threshold. Therefore, the proposed project would not result in a significant air quality impact related to mobile sources of CO.

Table 6-3: Maximum Predicted 1-hour CO Concentrations (ppm)

Intersection	Total No-Action Concentration	Total With-Action Concentration	Increment	NAAQS
Fingerboard Road and Narrows Road S.	3.979	4.25	0.271	35

Note:
(1) Predicted No-Action and With-Action concentrations represent the highest second high concentrations from five years of meteorological data and the maximum between the AM and PM peak analysis hours.
(2) The total No-Action and With-Action concentrations are the sum of the modeled concentrations and the 1-hour background concentration of 1.6 ppm.

Source: HMMH, 2024.

Table 6-4: Maximum Predicted 8-hour CO Concentrations (ppm)

Intersection	Total No-Action Concentration	Total With-Action Concentration	Increment	CEQR *de minimis*/ NAAQS
Fingerboard Road and Narrows Road S.	-	-	0.146	3.66
	2.983	3.128	-	9

Note:
(1) Predicted No-Action and With-Action concentrations represent the highest second high concentrations from five years of meteorological data and the maximum between the AM and PM peak analysis hours.
(2) The total No-Action and With-Action concentrations are the sum of the modeled concentrations and the 8-hour background concentration of 1.3 ppm.
(3) The 8-hour CO CEQR *de minimis* criterion was calculated based on half the difference between the modeled No Action concentration (1.683 ppm) and the 8-hour NAAQS.

Source: HMMH, 2024.

Table 6-5, "Maximum Predicted 24-hour Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)," shows the maximum total 24-hour No-Action and With-Action $PM_{2.5}$ concentrations in comparison to the 24-hour $PM_{2.5}$ NAAQS as well as the predicted increment in comparison to the CEQR 24-hour $PM_{2.5}$ *de minimis* criterion. Table 6-6, "Maximum Predicted Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)," shows the maximum annual average No-Action and With-Action $PM_{2.5}$ concentrations in comparison to the annual $PM_{2.5}$ NAAQS as well as the predicted increment in comparison to the CEQR neighborhood scale $PM_{2.5}$ *de minimis* criterion. As shown in each table, maximum With-Action 24-hour and annual $PM_{2.5}$ concentrations would not exceed the applicable NAAQS, and the predicted increment would not exceed the CEQR *de minimis* threshold.

Therefore, the proposed project would not result in a significant air quality impact related to mobile sources of $PM_{2.5}$.

Table 6-5: Maximum Predicted 24-hour Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)

Intersection	Total No-Action Concentration	Total With-Action Concentration	Increment	CEQR *de minimis*/ NAAQS
Chicago Avenue & Landis Avenue	-	-	0.92	7.2
	20.86	21.78	-	35

Notes:
(1) $PM_{2.5}$ *de minimis* criterion—24-hour average, not to exceed more than half the difference between the background concentration (20.6 µg/m3) and the 24-hour standard of 35 µg/m3.
(2) Predicted No-Action and With-Action concentrations represent the eighth highest concentration from five years of meteorological data.

Source: HMMH, 2024.

Table 6-6: Maximum Predicted Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)

Intersection	Total No Action Concentration	Total With Action Concentration	Increment	CEQR *de minimis*/ NAAQS
Chicago Avenue & Landis Avenue	-	-	.01	0.1
	7.63	7.64	-	9

Notes:
(1) $PM_{2.5}$ *de minimis* criterion—annual (neighborhood scale), 0.1 $\mu g/m^3$.
(2) The total No Action and With Action concentrations are the sum of the modeled concentrations and the annual background concentration of 7.6 $\mu g/m^3$.
(3) Predicted No Action and With Action concentrations represent the maximum annual average concentration from five years of meteorological data.

Source: HMMH, 2024.

Chapter 7: Noise

The noise assessment considers potential noise impacts resulting from increases in vehicular traffic as well as noise from mechanical equipment systems and outdoor playground spaces. It also evaluates the interior noise exposure levels of the PS/IS and two IS/HS.

Noise Fundamentals. The A-weighted sound level (dBA) is used to determine existing and future noise exposure because it correlates well with the human perception of changes in noise level and annoyance. The most common time period used for the equivalent noise level is one hour, represented as L_{eq}(h). This descriptor is commonly used to express ambient noise measurement and noise prediction estimates, and is used extensively in noise impact criteria. Another commonly used descriptor is L_{10}, which is defined as the L_{eq}(h) level exceeded 10 percent of the time. Per the guidance of the *CEQR Technical Manual,* the L_{10} is used to define interior noise exceedance criteria inside school and residential buildings.

SCA Noise Criteria. The SCA considers playground noise levels, which for the proposed project includes the proposed athletic field in addition to the proposed play yard, representing an increase of 5 dBA or more over existing noise levels, determined at noise-sensitive receptors, to be significant and therefore warranting abatement consideration.

CEQR Noise Exposure Standards. The CEQR Noise Exposure Standards, shown in Table 7-1, "Noise Exposure Standards for Use in City Environmental Impact Review," set by the NYCDEP Division of Noise Abatement, apply to a proposed project's location near adjacent sensitive receptor sites such as a residence, hospital, or school. Exposure at noise-sensitive receptor sites is classified into four main categories: "Acceptable," "Marginally Acceptable," "Marginally Unacceptable," and "Clearly Unacceptable."

The *CEQR Technical Manual* also provides guidance for determining noise attenuation requirements to maintain an acceptable interior noise environment in schools and residential buildings, beyond the 25 dBA minimum attenuation that standard double-paned building windows typically provide today. Acceptable interior noise exposure requires indoor L_{10} noise levels inside schools and residential buildings to be 45 dBA or less. Exterior-to-interior noise attenuation requirements are determined by establishing the total exterior noise exposure level estimated at the building façade. The required exterior-to-interior noise attenuation to maintain an acceptable interior noise environment is defined by the values shown in Table 7-2, "Required Attenuation Values to Achieve Acceptable Interior Noise Levels." For example, a proposed school building in an area where the With-Action condition noise levels reach the "Marginally Unacceptable" L_{10} level of 75 dBA would require a minimum exterior-to-interior noise reduction of 33 dBA to achieve and maintain the 45 dBA interior noise exposure level condition.

Table 7-1: Noise Exposure Standards for Use in City Environmental Impact Review[1]

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

Source:
NYCDEP (adopted policy 1983).
Notes:
In addition, any new activity shall not increase the ambient noise level by 3 dBA or more:

1. Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by ANSI Standards; all values are for the worst hour in the time period.
2. Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential of the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and old-age homes.
3. One may use FAA-approved Land contours supplied by the Port Authority, or the noise contours may be computed from the Federally-approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.
4. External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

Table 7-2: Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Vehicular Traffic	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$80 < L_{10}$
Aircraft [A]	65<DNL≤68	68<DNL ≤71	71< DNL ≤73	73< DNL ≤75	75< DNL
Train	$65<L_{dn}\leq68$	$68<L_{dn}\leq71$	$71<L_{dn}\leq73$ 7	$73<L_{dn}\leq75$	$75<L_{dn}$
Attenuation [B]	(I) 28 dBA	(II) 31 dBA	(III) 33 dBA	(IV) 35 dBA	See note [C]

Source: NYCDEP

Notes:

[A] A DNL descriptor based on average values of L_{dn} over a year period.

[B] The above composite window-wall attenuation values are for residential dwellings and community facility development. Commercial office spaces and meeting rooms would be 5 dB(A) less in each category. All of the above categories require a closed window situation and hence an alternate means of ventilation.

[C] The required attenuation value is the difference between L_{build} and $L_{interior}$, using the appropriate noise descriptor
Where:
L_{build} is the projected noise level under the With-Action condition rounded up to the whole number
$L_{interior}$ is the designed interior noise level (45 dB(A) for vehicular noise, 40 dB(A) for aircraft and train noise)

A. Existing Conditions

The project site comprises approximately 8.49 acres (370,029 sf) across two tax lots, Block 3087, Lot 1 and Block 3089, Lot 59. The surrounding area is characterized by a mix of residential and institutional land uses. There are no major stationary noise sources in the study area; traffic movements are the major existing sources of noise at and near the project site.

Noise Monitoring. Six representative locations, depicted on Figure 7-1, "Noise Monitoring Locations," were selected for noise measurement and impact assessment. These sites were selected based on a review of preliminary design plans provided for the proposed project's buildings and its outdoor athletic field and play yard. The six sites represent a reasonable worst-case scenario for assessing the project's potential noise exposure in the adjacent community and establishing the proper window attenuation requirements for the PS/IS and two IS/HS. Site #1 is on the sidewalk in front of 35 Landis Avenue, near the southwestern corner of the project site. Site #2 is on the sidewalk in front of 40 Knauth Place, bordering the southern end of the project site, near the proposed play yard. Site #3 is near the intersection of Garson Avenue and Narrows Road South, at the eastern edge of the project site near where the proposed athletic field would be. Site #4 is on 31 Cleveland Place at the northern end of the project site, in the vicinity of neighboring residences. Site #5 is on 338 Fingerboard Road, to the west of Block 3089, Lot 59 on the project site, near a proposed parking lot. Site #6 is on 5 Hastings Street, opposite the southeastern corner of the project site where the athletic field is proposed, near adjacent residences. Existing noise levels were measured at the six receptor sites on December 12, 2023, December 13, 2023, and January 31, 2024 during regular school operating hours. All noise measurements were recorded for a 20-minute duration per site per time period. The noise measurements were collected during the following time periods: 7:00-9:00 AM, 11:00 AM-12:30 PM, and 2:00-4:00 PM.

The noise descriptors recorded during field measurements included L_{eq}(h) and L_{10}. All noise measurements are recorded using a Larson & Davis Model LxT Type I sound level meter with a windscreen placed over the microphone. Prior to collecting the measurements, the LxT meter is calibrated using a Larson & Davis Model Cal200 calibrator. There are no significant variances between the beginning and ending calibration measurements and, therefore, the recorded measurements are not adjusted. Weather conditions during the noise measurement survey were sunny, with light winds under 10 mph. No aircraft or construction noise was observed in the area during the noise monitoring survey.

Traffic and classification count data at each location are collected concurrently with each noise measurement. Traffic and classification counts are used to calculate the hourly Passenger Car Equivalents (PCEs) during the traffic analysis AM and PM typical school arrival and departure time periods, respectively. Each type of motor vehicle (i.e., car, truck, etc.) is converted to its equivalent *CEQR Technical Manual*-defined PCE value. The relationships used for calculating PCEs are as follows: 1 automobile is equivalent to 1 PCE; 1 medium truck is equivalent to 13 PCEs; 1 bus is equivalent to 18 PCEs; and 1 heavy truck is equivalent to 47 PCEs. In other words, the total noise level produced by one medium truck would be the same as that generated from 13 cars, and the noise level generated from one heavy truck (3 or more axles) would be equivalent to that generated by 47 cars.

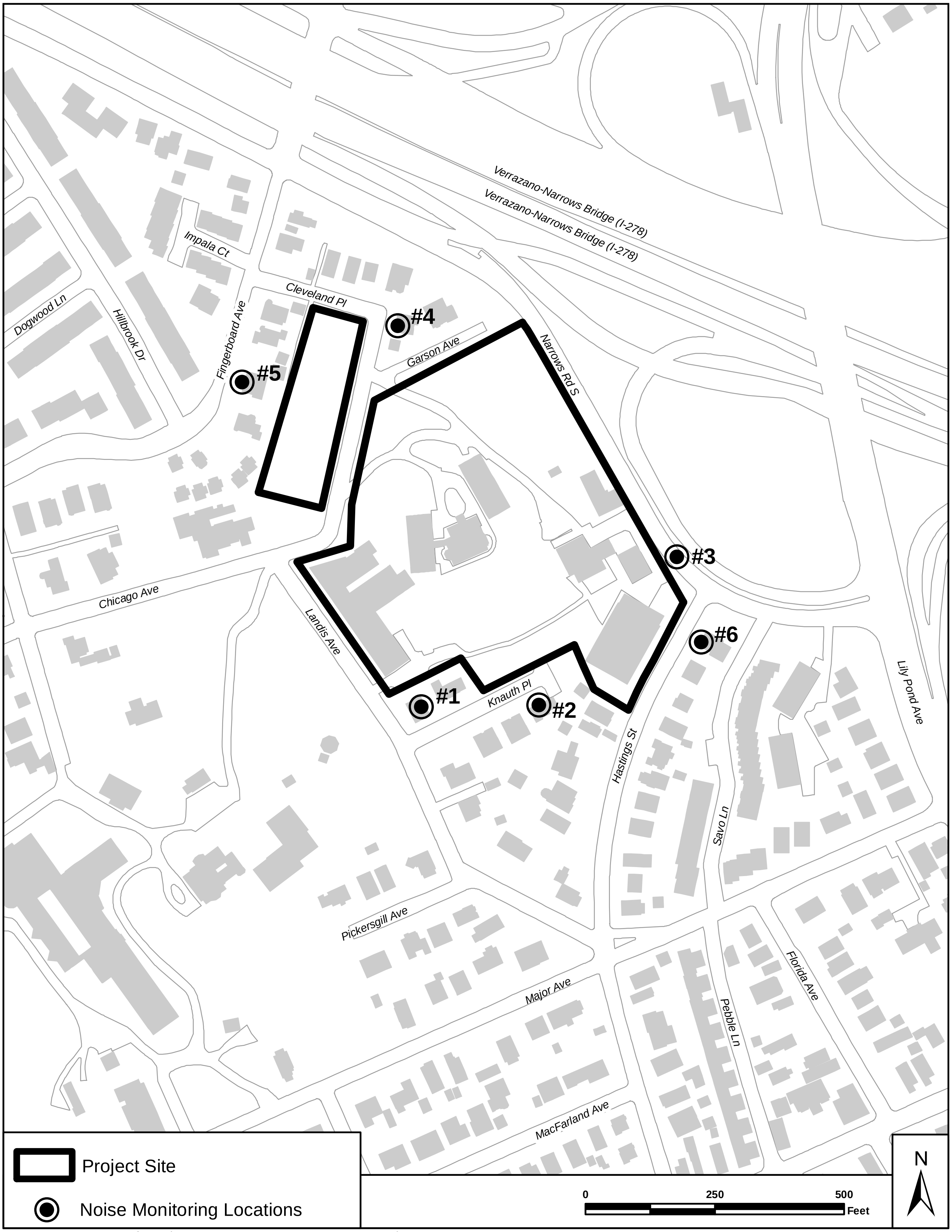
Existing Noise Levels. Noise levels are collected during three time periods corresponding to school arrivals in the morning, school departures in the afternoon, and the midday period when the athletic field and outdoor play yard are generally used. As indicated in Table 7-3, "Monitored Peak Hour Noise Levels," measured L_{eq}(h) noise levels range from a minimum level of 53.6 dBA at Site #2 during the midday period to a maximum level of 70.6 dBA at Site #5 during the PM period.

Table 7-3: Monitored Peak Hour Noise Levels

Site Number	Monitoring Site Location	Hourly L_{eq}(h) (dBA)			Hourly L_{10} (dBA)		
		AM	Midday	PM	AM	Midday	PM
1	35 Landis Avenue	60.0	54.7	57.3	63.2	56.8	59.4
2	40 Knauth Place	60.3	53.6	58.9	62.7	53.9	62.6
3	Intersection of Garson Avenue/Narrows Road South	62.5	63.1	62.9	66.1	66.2	66.5
4	31 Cleveland Place	60.0	58.9	57.5	61.9	60.5	60.3
5	338 Fingerboard Road	69.3	66.9	70.6	74.0	71.7	74.3
6	5 Hastings Street	58.9	63.9	62.3	61.2	66.2	66.2

Note: Noise monitoring was completed on December 12, 2023, December 13, 2023, and January 31, 2024, during the time periods of approximately 7:00 AM to 9:00 AM, 11:00 AM to 12:30 PM (Midday) and 2:00 PM to 4:00 PM.

Source: STV Incorporated, 2024.



Source: NYC Department of City Planning MapPLUTO 2023 v3; STV Incorporated, 2024.

Proposed Redvelopment of the former St. John Villa Campus 57 Cleveland Place, Staten Island

Figure 7-1

NOISE MONITORING LOCATIONS

B. The Future Without the Proposed Project

Assessment of existing conditions determined that noise in the study area is primarily attributable to traffic movements, and as no significant new noise generators are expected in the future without the proposed project, traffic movements are expected to remain the primary source of noise in the No-Action condition.

C. Potential Effects of the Proposed Project

Mobile Sources–- Noise Impact Screening Assessment

An increase in vehicular traffic traveling to and away from the project site is expected to occur owing to a combination of future staff automobiles and school bus movements. Therefore, a noise assessment that considers traffic noise exposure using the Noise PCE-based methodology is warranted per the guidance of the *CEQR Technical Manual.*

Future noise exposure estimates at each of the representative sites are based on traffic movements projected for the 2030 With-Action condition. Per the guidance of the *CEQR Technical Manual,* all traffic volumes, with and without the proposed project, are converted to Noise PCEs for all roadways near each receptor site. This data is used to determine the estimated noise level change based on the logarithmic formula consisting of the ratio of the estimated With-Action PCE value divided by the No-Action noise PCE value. For this project, the PCE values are determined for project-affected intersections within the roadway network. For the AM and PM peak hour in the With-Action Condition, a total of three intersections are predicted to experience a doubling or more of Noise PCEs, including:

- Hastings Street, Major Avenue and Landis Avenue
- Landis Avenue and Chicago Avenue
- Hastings Street and Narrows Road South

For the Saturday midday hour, when athletic activities would occur at the project site, 11 intersections are anticipated to experience a doubling or more of Noise PCEs. These intersections currently experience very low or no traffic during the Saturday midday hour and while the increases in traffic volumes are generally low and significantly less than those during the weekday peak hours, these increases would still be considered significant.

A summary of the peak-hour L_{eq} and L_{10} noise level estimates, in the No-Action and With-Action conditions, is provided in Table 7-4, "Noise PCE Traffic Noise Level Calculations for With-Action Conditions." The L_{10} noise level estimates are shown in parentheses. The PCE analysis is completed for the peak AM and PM typical school arrival and departure time periods respectively.

The expected Noise PCE traffic volumes under the With-Action condition indicate that noise level increases in the 1 to 11 dBA range can be expected to occur. Three of these increases exceed the SCA 5 dBA minimum noise level increase impact criterion. The 11 dBA maximum noise level increase is expected to occur adjacent to Site #1 and Site #2 in the PM condition, representing residences along Landis Avenue and Knauth Place; there would a 10 dBA maximum noise level increase in the AM condition at these same two sites. In addition, Site #4, representing residences along Cleveland Place, would experience maximum noise level increases of 8 dBA in the AM condition and 10 dBA in the PM condition. These projected increases can be attributed to the new school vehicle movements expected to be running along Landis Avenue near Knauth Place and along Cleveland Place in the With-Action condition.

Maximum L_{10} levels under a 2030 build year scenario would remain within the *CEQR* "Marginally Unacceptable" exposure range throughout the day at five of the six representative locations, including the three locations noted above. No increase at any of the six locations would be considered "Clearly Unacceptable" per the *CEQR Technical Manual*.

However, the maximum noise level increases at Sites #1, #2, and #4 would exceed the SCA 5 dBA minimum noise level increase impact criterion during both the AM and PM conditions. Therefore, the proposed project would result in significant adverse mobile-source noise impacts at these three locations representing residences along Landis Avenue near Knauth Place (Site #1), along Knauth Place (Site #2), and along Cleveland Place (Site #4).

Measures to reduce or eliminate the proposed project's mobile-source noise impacts will be explored by the SCA between the Targeted DEIS and Targeted FEIS. Absent the identification and further implementation of feasible mitigation measures that would mitigate the mobile-source noise impacts, the proposed project would result in unmitigated significant adverse mobile-source noise impacts at these three locations.

Table 7-4: Noise PCE Traffic Noise Level Calculations for With-Action Conditions

Site Number	2030 Future No-Action Noise Levels		2030 With-Action Traffic Noise Levels		Projected 2030 No-Action to With-Action Increase in Noise Levels	
	Hourly $L_{eq}(h)$ (L_{10}) in dBA		Hourly $L_{eq}(h)$ (L_{10}) in dBA		Decibels Change (dBA)	
	AM	PM	AM	PM	AM	PM
1	60 (63)	58 (60)	71 (74)	69 (71)	10	11
2	61 (63)	59 (63)	71 (73)	70 (74)	10	11
3	63 (66)	63 (67)	67 (71)	68 (71)	4	4
4	60 (62)	58 (61)	68 (70)	68 (71)	8	10
5	70 (74)	71 (75)	70 (75)	71 (75)	1	1
6	59 (61)	63 (66)	61 (63)	65 (69)	2	2

Source: HMMH, 2024.

Stationary Sources – Playground Noise Assessment

An approximately 84,000-sf athletic field would be constructed at the southeastern portion of the project site, and an approximately up to 16,000-sf at-grade playground consisting of two play yards, a slope walk, and an open green area, and nature nook would be provided on the eastern side of the PS/IS. Therefore, the potential impact of playground noise is considered at noise-sensitive properties closest to the athletic field and play yard.

Analysis of future playground noise exposure is based on the results of the 1992 SCA playground noise study. The results of the study indicate that the highest noise level to be generated by school playgrounds would occur during the midday time period, when levels of outdoor play activity are generally highest.

A summary of the midday L_{10} noise level estimates, under No-Action and With-Action conditions, is provided in Table 7-5, "Estimated Playground Noise and Noise Exposure at Analysis Sites." It is expected that the worst-case playground noise exposure from the proposed athletic field would occur at Site #2, located along Knauth Place. This site is projected to experience a 2.9 dBA increase over existing ambient L_{10} noise levels reported at this location during the midday time period. Thus, projected noise exposure from the proposed athletic field and play yard would be well below the SCA 5 dBA minimum increase threshold necessary to warrant abatement consideration.

It is expected that the worst-case playground noise exposure from the proposed athletic field would occur at Site #1, located directly adjacent to the project site along Knauth Place. This site is projected to experience a 3.1 dBA increase over existing ambient L_{10} noise levels reported at this location during the midday time period. Therefore, playground noise from the proposed project would not result in a significant adverse noise impact on any noise sensitive properties within the immediately adjacent community.

Table 7-5: Estimated Playground Noise and Noise Exposure at Analysis Sites

Site Number	Monitoring Site Location	Existing Traffic Noise	Future Playground Noise	Total Noise Exposure	Delta Noise Level Change	SCA Impact
		L_{10} (dBA)	L_{10} (dBA)	L_{10} (dBA)	dB	
1	35 Landis Avenue	56.8	57	**60**	3.1	No
2	40 Knauth Place	53.9	51	**56**	1.9	No
3	Intersection of Garson Avenue/Narrows Road South	66.2	46	**66**	0.0	No
4	31 Cleveland Place	60.5	44	**61**	0.1	No
5	338 Fingerboard Road	71.7	45	**72**	0.0	No
6	5 Hastings Street	66.2	45	**66**	0.0	No

Source: HMMH, 2024.

New York City Noise Code

The proposed project's HVAC equipment, along with any other project-related outdoor mechanical devices, would be required to comply with the NYC Noise Code standards described in Table 7-6, "New York City Noise Code."

Table 7-6: New York City Noise Code

Octave Band Frequency (Hz)	Maximum Sound Pressure Levels (dB) as measured within a receiving property as specified below	
	Residential Receiving Property for mixed-use buildings and residential buildings (as measured within any room of the residential portion of the building with windows open, if possible).	Commercial Receiving Property (as measured within any room containing offices within the building with windows open, if possible).
31.5	70	74
63	61	64
125	53	56
250	46	50
500	40	45
1000	36	41
2000	34	39
4000	33	38
8000	32	37

Source: Section 24-232 of the Administrative Code of the City of New York, as amended December 2005.

School Interior Noise Levels

As shown in Table 7-4, "PCE Traffic Noise Level Calculations for With-Action Conditions," the estimated maximum L_{10} noise exposure level is determined to be 74 dBA at Site #1, representing the PS/IS, during the peak AM time period and the estimated maximum L_{10} noise exposure level is determined to be 71 dBA at Site #4, representing the two IS/HS, during the peak PM time period. Peak period noise exposure levels within both the interior of the PS/IS and two IS/HS are considered "Marginally Unacceptable" per the *CEQR Technical Manual* as the maximum allowable interior L_{10} noise exposure level would be 45 dBA.

Double-glazed windows and doors rated to provide a minimum of 31 dBA noise attenuation would be required in the design and construction of the PS/IS to reduce exterior exposure to an acceptable interior level of 45 dBA or less. Double-glazed windows and doors rated to provide a minimum of 28 dBA noise attenuation would be required in the design and construction of the two IS/HS to reduce exterior exposure to an acceptable interior level of 45 dBA or less. With these recommended mitigations in place, interior noise levels within both the PS/IS and two IS/HS would remain below the maximum allowable interior L_{10} noise exposure level of 45 dBA.

Summary

In summary, the proposed project would result in significant adverse impacts related to noise due to increases in vehicular traffic. Measures to reduce or eliminate the proposed project's mobile-source noise impacts will be explored by the SCA between the Targeted DEIS and Targeted FEIS. Absent the identification and further implementation of feasible mitigation measures that would mitigate the mobile-source noise impacts, the proposed project would result in unmitigated significant adverse mobile-source noise impacts.

The proposed project would not result in increases in playground noise that would be expected to significantly contribute to ambient noise conditions in the surrounding neighborhood. With recommended window attenuation included as part of the design and construction of the PS/IS and two IS/HS, interior noise levels within the schools would be acceptable.

Chapter 8: Public Health

Per the guidance of the *CEQR Technical Manual*, the goal of environmental review with respect to public health is to determine whether adverse impacts on public health may occur as a result of a proposed project and, if so, to identify measures to mitigate such effects.

For most proposed projects, a public health analysis is not necessary. Where no significant unmitigated adverse impact is found in other technical analysis areas, such as air quality, water quality, hazardous materials, or noise, no public health analysis is warranted.

AIR QUALITY

As described in Chapter 6, Air Quality," the proposed project would not result in any significant adverse air quality impacts from project-related stationary sources or mobile sources. Further, there are no large combustion sources located within 1,000 feet of the project site and no industrial source permits on file for sites located within 400 feet of the project site; therefore, no significant adverse impacts from large combustion or industrial source emissions would result with the proposed project. Therefore, the proposed project would not result in public health impacts related to air quality.

NOISE

As described in Chapter 7, "Noise," the proposed project would not result in increases in playground noise that would be expected to significantly contribute to ambient noise conditions in the surrounding neighborhood. Further, with recommended window attenuation included as part of the design and construction of the PS/IS and two IS/HS, interior noise levels within the schools would be acceptable.

The proposed project would result in significant adverse mobile-source noise impacts at three locations representing residences along Landis Avenue near Knauth Place (Site #1), along Knauth Place (Site #2), and along Cleveland Place (Site #4). Measures to reduce or eliminate the proposed project's mobile-source noise impacts will be explored by the SCA between the Targeted DEIS and Targeted FEIS. Absent the identification and further implementation of feasible mitigation measures that would mitigate the mobile-source noise impacts, the proposed project would result in unmitigated significant adverse mobile-source noise impacts at these three locations.

Although the CEQR thresholds for significant adverse impacts are predicted to be exceeded at during operational and construction conditions, the magnitude and duration of these exceedances would not constitute significant adverse public health impacts. As discussed above, the CEQR noise thresholds are based on quality-of-life considerations and not on public health considerations. The predicted absolute noise levels would be below the health-based noise threshold.[21] Therefore, the proposed project would not result in significant adverse public health impacts related to noise.

[21] According to the *CEQR Technical Manual* (p. 20-6), prolonged exposure to noise levels above 85 dBA will eventually harm hearing. Although some noise levels may exceed 85 dBA during construction, construction noise is transient and exposure to these levels is not expected to be prolonged.

HAZARDOUS MATERIALS

Hazardous materials are anticipated to be present on site, based on the Phase I ESA and Phase II ESI prepared for the project site. However, with any such existing on-site contamination appropriately addressed through proper handling and disposal, and other measures (including the incorporation of a soil vapor barrier and a sub-slab depressurization system into the new building design; the characterization of excavated soil to identify material handling, reuse and/or disposal requirements; and the placement of two feet of environmentally clean fill over all landscaped areas), no public health impacts related to hazardous materials are expected with the proposed project.

WATER QUALITY

As discussed in Chapter 4, "Water and Sewer Infrastructure," no impacts related to water quality are anticipated as a result of the proposed project. As such, the proposed project would not result in significant adverse public health impacts related to water quality.

CONCLUSION

The proposed project would not result in significant adverse impacts related to hazardous materials, water quality, or air quality. Significant adverse mobile-source noise impacts and construction-related noise impacts would be below the health-based noise threshold. Therefore, the proposed project would not result in significant adverse impacts to public health, and no further analysis is warranted.

Chapter 9: Neighborhood Character

The *CEQR Technical Manual* defines neighborhood character as the amalgam of various elements that give a neighborhood its distinct personality, including land use, urban design, visual resources, historic resources, socioeconomic conditions, traffic, and noise. It recommends an assessment of potential impact on neighborhood character when the proposed project has the potential to result in significant adverse impacts in the following areas: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; transportation; or noise. An assessment of neighborhood character is also a means of summarily describing whether the proposed project would be compatible with its surroundings.

A. Existing Conditions

As described in Chapter 1, "Project Description," the project site comprises two lots (Block 3087, Lot 1 and Block 3089, Lot 59) at 57 Cleveland Place in the Arrochar section of Staten Island. The project site has a gross land area of approximately 8.49 acres (370,029 sf) and is currently occupied by eight buildings: the Villa, Former Elementary School, Chapel Building, Former Annex, Garage, Former High School and Addition, Former Pre-K Center, and Gymnasium. Much of the interior of the project site is not visible from the surrounding streetscapes due to topography, landscaping, and the arrangement of buildings. The defining features of the project site to the surrounding community comprise the Chapel Building, which is visible from Cleveland Place; the Former High School and Addition that front Landis Avenue and Cleveland Place; and the landscaping, stonewalls, and gates along the perimeter of the project site along Cleveland Place. The entire project site, and therefore all of the buildings it contains, is part of the S/NRHP-eligible former St. John Villa campus, which has been vacant since the closure of the academy in 2018.

The project site contributes to the low-density, suburban character of the study area. This character is reinforced by the St. Joseph Hill Academy, another large institutional campus located immediately west of the project site, across Landis Avenue. This institutional presence affords ample landscaping and low-density environments that are perceptible to pedestrians along the surrounding streets.

Outside of institutional uses, the study area is almost entirely residential. Residential uses primarily consist of single-family detached houses with yards and driveways. However, there is a multi-family complex in the northern portion of the study area along Hillbrook Avenue, as well as attached single-family residences along Savo Lane and Impala Court. Even with this slightly higher-density residential development, heights are generally limited to two to three stories. Therefore, the overall impression of the study area is suburban residential.

Although the study area contains no publicly accessible open spaces, the landscaped institutional campuses, residential lots with front yards, and street trees along residential roads offer pedestrians ample views of plant life and greenery. The nearest publicly accessible open spaces include Angel Triangle, Staats Circle, and Arrochar Playground. Angel Triangle lies at the intersection of Fingerboard Road and Hylan Boulevard and is primarily used as a 9/11 memorial. Staats Circle lies at the intersection of Hylan Boulevard, West Fingerboard Road, and Sand Lane, and is a small, grassy park with no benches or lighting fixtures. The Arrochar Playground contains two basketball courts, a turf field, and play structures. It is adjacent to PS 39 and used by the school as a play yard. It is accessible to the public only during non-school hours.

West of Narrows Road South, the study area contains a portion of I-278 leading to the Verrazano-Narrows Bridge, as well as entrance and exit ramps. Narrows Road South serves as a boundary between the Arrochar neighborhood to the west and the network of high-capacity roadways to the east.

B. The Future Without the Proposed Project

If the proposed project is not built, it is expected that the project site would continue to reflect current conditions, with the existing unused educational buildings remaining. There are no construction projects planned or underway in the neighborhood, so neighborhood character would likely remain the same as it exists today in the future without the proposed actions.

C. Potential Effects of the Proposed Project

The proposed actions would entail the demolition of all buildings on the project site with the exception of the Chapel Building. In place of the demolished buildings, the following buildings would be constructed: an approximately 90-foot-tall (with rooftop mechanical equipment) PS/IS would be built along Landis Avenue; an approximately 105-foot-tall facility for two separate, independently-operated IS/HS with a shared gymnasium, auditorium, kitchen, and lobby would be constructed at the northeastern corner of the project site, near Garson Avenue; and a one-story maintenance building would be constructed on the southeastern portion of the project site, near Hastings Street. Given that impacts have been identified in analyses relevant to neighborhood character, a preliminary assessment of neighborhood character is provided. This section provides a summary of the defining features of the neighborhood, a summary of potential effects identified in analyses relevant to neighborhood character, and an assessment of the proposed project's potential for significant adverse effects to neighborhood character.

DEFINING FEATURES OF THE NEIGHBORHOOD

As described in Section A above, "Existing Conditions," the study area is a low-density suburban neighborhood with the following defining features:

- The features of the St. John Villa campus that are visible from the surrounding community. These features consist of the Chapel Building, which is visible from Cleveland Place; the Former High School and Addition that front Landis Avenue and Cleveland Place; and the landscaping, stone walls, and gates along the perimeter of the project site, along Cleveland Place.
- The presence of large institutional campuses (i.e., the former St. John Villa Academy and St. Joseph Hill Academy) that contribute to the low-density suburban character of the study area.
- Low-density residential uses that provide the overall impression of a suburban residential area.
- Pedestrian views of greenery via landscaped institutional campuses, residential lots with front yards, and street trees along residential roads.

EFFECTS IDENTIFIED IN ANALYSES RELEVANT TO NEIGHBORHOOD CHARACTER

Shadows

As described in Chapter 2, "Shadows," the proposed project would result in new incremental shadows on south and east façades of the S/NRHP-eligible Chapel Building located on the project site. However, this increase would not affect the public's enjoyment of this resource, which is primarily derived from its visual prominence and its historic aesthetic, both of which would remain unaffected by the increase in shadow.

Further, the increased incremental shadows resulting from the proposed project would not alter the presence of institutional uses, residential uses, or greenery in the study area. Therefore, the increased incremental shadows resulting from the proposed project would not result in a significant adverse impact to neighborhood character.

Historic and Cultural Resources

As described in Chapter 3, "Historic and Cultural Resources," the Phase IA Archaeological Documentary Study completed for the project site determined that no further research and study of archaeological resources is warranted based on significant disturbance to the original ground surface on the project site and therefore a low sensitivity for both precontact and historical period archaeological resources. Therefore, construction of the proposed project would not result in significant adverse impacts to archaeological resources.

Also as described in Chapter 3, "Historic and Cultural Resources," the proposed project would require that the majority of the existing on-site structures be demolished to accommodate the project's new uses. Of the existing buildings, only the Chapel Building would remain. Under Section 14.09 of the SHPA, demolition of a S/NRHP eligible resource will result in an adverse impact to the historic resource. The SCA and OPRHP agreed to a LOR (see Appendix A) regarding the demolition of structure on the S/NRHP-eligible site. As part of that agreement, the SCA has agreed to renovate and maintain the S/NRHP-eligible Chapel Building, as well as to maintain or reconstruct the existing stone wall, iron fencing, and gates located on a portion of the project site's perimeter. This resolution allows for both the redevelopment of the project site to meet the needs of the proposed project and the maintenance of key historic elements of the project site that are most visible from the surrounding streetscapes.

Therefore, while the proposed project would alter an existing S/NRHP-eligible architectural resource, the prominent Chapel Building would be maintained, as would perimeter historic features (stone walls, iron fencing, and gates). Additionally, where the Former High School and Addition front Landis Avenue, the PS/IS would be constructed in a similar location, thereby maintaining the visual connection and street wall. Further, new landscaping features that would be introduced as part of the proposed project would reestablish the greenery that is part of the pedestrian experience in the study area. While the proposed project would remove S/NRHP-eligible resources from the study area, the elements with prominent connections to the surrounding neighborhood would be maintained and the project site's former education function would be reestablished, thereby maintaining key aspects of the site that contribute to neighborhood character.

Therefore, the alteration of the S/NRHP-eligible St. John Villa campus would not result in a significant adverse impact to neighborhood character.

Transportation

As described in Chapter 5, "Transportation," the proposed project has the potential to result in significant adverse impacts to traffic and transit. Traffic analysis indicates the potential for significant adverse impacts at nine intersections and one driveway during one or more analyzed peak hours. As described in Chapter 11, "Mitigation Measures," most of these impacts could be mitigated through the implementation of traffic engineering improvements, including modification of traffic signal phasing/timing and/or intersection approach lane reconfiguration. While impacts at six intersections could be mitigated, traffic impacts at four intersections would remain unmitigated.

As described in Chapter 5, "Transportation," significant adverse impacts were also identified at four freeway segments during the weekday AM peak hour, three freeway segments during the weekday PM peak hour, and two freeway segments during the Saturday midday peak hour. As described in Chapter 11, "Mitigation Measures," geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate this impact may not be practical. This option would also require coordination with and approval from the New York State Department of Transportation (NYSDOT). Other improvement measures would be considered to the extent that mitigation is feasible. An alternative mitigation option would include TDM measures to reduce the vehicle trip demand to I-278. TDM mitigation would require a binding commitment to implement proposed measures to reduce vehicle trip demand. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated.

As described in Chapter 5, "Transportation," transit analysis indicates the potential for a significant adverse impact for the southbound S79-SBS bus route during the weekday PM peak hour. As described in Chapter 11, "Mitigation Measures," this significant adverse impact could be fully mitigated by the addition of approximately one standard bus in the PM peak hour. The general policy of MTA is to provide additional bus service where demand warrants, taking into account financial and operational constraints. Note that if additional bus service is not provided, the impact would be unavoidable.

While these impacts to traffic and transit would occur, they would not alter the public's visual connection with the former St. John Villa campus, the presence of institutional campuses in the study area, or pedestrians' enjoyment of study area greenery. The increase in traffic in a low-density residential neighborhood may be noticeable; however, to the fullest extent practicable this effect would be mitigated. In instances where the traffic impact would be unmitigated or partially mitigated, it would not occur to such a degree that it would fundamentally alter the residential character of the study area.

Given these considerations, the potential for transportation-related effects would not result in a significant adverse impact to neighborhood character.

Noise

As described in Chapter 7, "Noise," while the proposed project would not result in any significant adverse stationary-source noise impacts, the proposed project would result in significant adverse impacts related to noise due to increases in vehicular traffic. Measures to reduce or eliminate the proposed project's mobile-source noise impacts will be explored by the SCA between the Targeted DEIS and Targeted FEIS. Absent the identification and further implementation of feasible mitigation measures that would mitigate the mobile-source noise impacts, the proposed project would result in unmitigated significant adverse mobile-source noise impacts.

While these mobile-source noise impacts may occur, they would not alter the public's visual connection with the former St. John Villa campus, the presence of institutional campuses in the study area, or the pedestrian's enjoyment of study area greenery. The increase in mobile-source noise in a low-density residential neighborhood may be noticeable; however, the impact would occur at select peak hours and would not occur to such a degree that it would fundamentally alter the residential character of the study area. Given these considerations, the potential for noise-related effects would not result in a significant adverse impact to neighborhood character.

Other Analyses

Additionally, the proposed project would not result in any significant adverse impacts related to land use, zoning, and public policy; socioeconomic conditions; open space; or urban design and visual resources. Rather, the proposed project would reestablish the currently vacant project site to its former academic campus use. The form and function of the proposed project would maintain and expand on the key elements that comprise the study area's low-density, residential neighborhood character. Given these considerations, the proposed project would not result in significant adverse impacts to neighborhood character.

CONCLUSION

The proposed project would result in significant adverse impacts related to historical and cultural resources, transportation, and noise. However, none of these identified impacts, either individually or cumulatively, would alter the defining features of the neighborhood's character.

The features of the St. John Villa campus that are visible from the surrounding community would be maintained to the fullest extent practicable. The Chapel Building, which is visible from Cleveland Place, would be maintained. The Former High School and Addition that front Landis Avenue and Cleveland Place would be demolished; however, the PS/IS would be constructed in a similar location, thereby maintaining the visual connection and street wall. Further, new landscaping features that would be introduced as part of the proposed project would reestablish the greenery that is part of the pedestrian experience in the study area.

The project site's former education function would be reestablished, thereby strengthening the institutional campus presence in the study area. Further, the low-density residential character of the study area and pedestrian views of greenery would be maintained.

Given these considerations, the proposed project would not result in a significant adverse impact to neighborhood character.

Chapter 10: Construction-Related Impacts

INTRODUCTION

The technical analyses provided in the previous chapters of this Targeted EIS disclose the potential for environmental impacts associated with the "occupied" or "completed" conditions, generally in the 2030 analysis year, when the proposed project would be complete. This chapter considers environmental effects that would be associated specifically with construction activities (including demolition, excavation and foundations, superstructures and exteriors, and interiors) that would occur while the project site is under construction. In general, depending on context and the specific construction activities, construction activities can cause noticeable effects associated with traffic conditions, hazardous materials, archaeological resources, the integrity of historic resources, community noise patterns, and/or air quality conditions. The effects of some construction activities could include the physical alteration of properties, such as may result indirectly from construction activity vibration effects; however, many construction-period effects are temporary, lasting only as long as the duration of a particular construction activity, which may be much shorter than the overall construction period.

As stated in *CEQR Technical Manual*, determination of the significance of construction impacts and need for mitigation measures is generally based on the duration and magnitude of the impacts. According to the *CEQR Technical Manual*, construction duration may be referred to as being "short-term" (less than two years) and "long-term" (two or more years). As described in Chapter 1, "Project Description," construction of the proposed project would be undertaken in three phases and is expected to last approximately six years. Demolition would begin in the fourth quarter of 2024. The two IS/HS and athletic field are expected to be completed and operational by the third quarter of 2029, while construction activities related to the PS/IS and Chapel Building renovations are ongoing, with full occupancy expected in the third quarter of 2030.

This chapter provides an overview of the construction process that would facilitate the development of the proposed project, as well as assessment of the potential effects that may be expected with the proposed construction-period activities. The construction process is explained for a typical phase, and the potential "worst-case" construction-period scenario is explained, as it represents the most intensive combination of construction activities that would be expected to occur at any one time. This worst-case construction-period scenario is assumed, for analysis purposes, to occur during the latter part of the proposed project construction when ambient traffic conditions would be highest, resulting in a conservative characterization of this scenario. As explained in the respective analyses, these conservative characterizations (e.g., for noise conditions) are then applied to the nearest sensitive receptors on the project site and in the vicinity; in this way, the ongoing occupancy of buildings in the presence of construction is considered.

GENERAL CONSTRUCTION PRACTICES

Deliveries and Access

Work areas on the project site would be fenced off and limited access points for workers and trucks would be provided. Security guards would be posted, and all persons and trucks would have to pass through security points. 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.

Material deliveries to the project site would be controlled and scheduled to the degree feasible. To aid in adhering to the delivery schedules, flaggers may be employed at access points, as is customary for building construction in New York City. The flaggers would be supplied by the construction subcontractor on-site at that time or by the construction manager. They would control trucks entering and exiting the project site to ensure that they do not interfere with one another or with on-street traffic streams.

Hours of Work

Construction activities for the buildings would generally take place Monday through Friday. In accordance with City laws and regulations, construction work would generally begin at 7:00 AM on weekdays, with some workers arriving to prepare work areas between 6:00 and 7:00 AM. Normally, work would end at 3:30 PM, but it can be expected that to meet the construction schedule, or as needed for specific tasks that must be completed at the same time, the workday could be extended as late as 6:00 PM without requiring authorization from NYCDOB. Such work could include such tasks as finishing a concrete pour or completing the bolting of a steel frame erected that day. The extended workday would not include all construction workers on-site, only those involved in the specific task requiring additional work time. Limited extended workdays may occur on weekdays over the course of construction.

Some tasks may have to be continuous, and the work could extend beyond a typical 8-hour day. For example, in certain situations, concrete must be poured continuously to form one structure without joints. This type of concrete pour is usually associated with foundations and structural slabs at grade and could require a minimum of 12 hours or more to complete; any work that must be conducted at night would be subject to all necessary NYCDOB permits or approvals.

Sidewalk and Lane Closures

Although not currently anticipated, during the course of construction traffic lanes and sidewalks may be closed or protected for varying periods of time. In instances where lane and sidewalk closures would be required, pedestrian access to businesses, residences, and community facilities would be maintained with provisions for pedestrian safety (such as barriers, signage, sidewalk sheds, etc.) implemented as required by City building codes and NYCDOT. Portions of the sidewalks adjacent to the project site may be intermittently closed to allow for certain construction activities. This work would be coordinated with and approved by NYCDOT. No rerouting of traffic is anticipated and moving lanes are expected to be available at all times. Pedestrians would be rerouted to a sectioned-off and protected portion of the street, or to the other side of the street if required, and NYCDOT would be consulted to determine any other appropriate protective measures for ensuring pedestrian safety surrounding the development site.

CONSTRUCTION SCHEDULE AND ACTIVITIES

Construction Sequencing

The anticipated construction period for the proposed project is approximately 70 months and would consist of three phases beginning in Q4 2024 (see Table 10-1, "Proposed Construction Phasing"). Demolition (Phase 1) would begin in Q4 2024 and conclude in Q1 2025. Site work, grading, and utilities (Phase 2) would begin in Q1 2025 and conclude in Q4 2025. Construction of the shared facility for two IS/HS and athletic field (Phase 3-1) would begin in Q3 2025 and be complete by Q2 2029. Construction of the PS/IS facility and renovation of the Chapel Building (Phase 3-2) would begin in Q3 2025 and conclude in Q2 2030. It is anticipated that the shared facility for two IS/HS would be operational in Q3 2029 while construction activities related to the PS/IS facility and Chapel Building renovations are ongoing. The proposed project is anticipated to be fully operational by Q3 2030.

Table 10-1: Proposed Construction Phasing

2024				2025				2026				2027				2028				2029				2030			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
			PHASE 1																								
				PHASE 2																							
						PHASE 3-1																					
						PHASE 3-2																					

Source: STV Incorporated, 2024

Typical Construction Activities

Construction activities, intensities, and durations would likely vary somewhat within each of the three phases, though they would generally be similar across all phases. Demolition of existing buildings on the project site and site preparation would occur during Phases 1 and 2, followed by new building construction activities including excavation and foundations, superstructures and exteriors, and interiors in Phase 3. Each activity is described below:

- **Demolition** of seven existing buildings – the former convent building, elementary school, annex, garage, high school, high school addition, and Pre-K center – would begin in Q4 of 2024. All demolition work would require loaders, excavators, and backhoes. Flatbed trucks and dump trucks would remove any excavated material and construction debris; up to 30 dump trucks per day would be required on site.

- **Foundations** would include excavation and backfilling as well as concrete pouring and installation of load-bearing block and precast plank structures. This work would require the use of specialized equipment, including excavators, dump trucks, a concrete pump, concrete mixer trucks, a backhoe, rebar benders, a drill rig, a bulldozer, and skidsteer loaders. There could be between 25 and 75 construction workers on site per day during this task, depending on building size and complexity.

- **Superstructures and Exteriors** would include the installation of beams, columns, and decking. This stage of construction would also include the assembly of exterior walls and cladding as well as roof construction. This work would require the use of specialized equipment, including a concrete pump, concrete mixer trucks, plank trucks, excavators, cranes, a rebar bender, telehandlers, a skidsteer loader, a bulldozer, a backhoe, and a hoist. There could be between 40 and 128 construction workers on site per day during this task, depending on building size and complexity.

- **Interiors** would entail all remaining building components, including mechanical equipment and ductwork installation and finishing work as well as the installation of walls, doors, windows, storefronts, and all fixtures and finishes. Roofing, sitework, and landscaping would be completed during this period. The Builders Pavement Plan (BPP) and asphalt work would also be completed, and a Temporary Certificate of Occupancy (TCO) would be secured. This task would require the use of construction equipment, including a boom truck, excavators, and bulldozers, and trucks would remain in use for material supply and construction waste removal. Since much of this stage of construction would occur when the buildings are fully enclosed, disruption to the surrounding neighborhood would be minimized. Between 20 and 49 construction workers would be on site per day.

Construction would occur over approximately 70 months, with construction activities and intensities varying, depending upon which components of the overall development are underway at a given time. Following is a general outline of typical construction stages on the project site. The phases and duration of construction activities are identified on Table 10-1, "Proposed Construction Phasing." It should be noted that the actual duration of such activities could vary. For example, the time necessary for each activity would vary depending upon such factors as work hours, traffic restrictions, and contractors' means and methods. Other factors would include the number and type of utilities requiring relocation and the location and condition of nearby surface and subsurface structures.

Estimate of Construction Workers and Construction Period Trucks

The construction schedule, phasing, and level of worker and truck trip activity were estimated and provided by the SCA. Construction is anticipated to start in 2024 (Q4), consist of three phases of construction, and finish by the second quarter of 2030.

The resultant estimate of the number of trucks and workers per quarter are summarized in Table 10-2, "Estimated Total Number of Construction Workers and Construction Trucks On-Site Per Day." The number of workers and trucks would peak in the third and fourth quarters (Q3-Q4) of 2025, with an estimated 160 daily workers and 50 trucks per day. This peak construction worker and truck period is when Phases 2 and 3 overlap (refer to Table 10-1, "Proposed Construction Phasing").

Table 10-2: Estimated Total Number of Construction Workers and Construction Trucks On-Site Per Day

Year	2024				2025				2026				2027			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Construction Workers				50	80	30	160	160	130	130	130	130	130	130	130	130
Construction Trucks				30	50	20	50	50	30	30	30	30	30	30	30	30

Year	2028				2029				2030			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Construction Workers	130	130	130	130	130	130	45	45	45	45		
Construction Trucks	30	30	30	30	30	30	10	10	10	10		

	Project Total			
	Phase 1 Peak 2025 (Q1)	Phase 2 Peak 2025 (Q3-Q4)	Phase 3 Peak 2026 (Q1)-2029 (Q2)	Average
Construction Workers	80	160	130	108
Construction Trucks	50	50	30	29

Source: STV Incorporated, 2024.

Determining Peak Year for Cumulative Construction and Operational Effects

According to the *CEQR Technical Manual*, if a project involves multiple development sites over varying construction timelines, a preliminary assessment must be undertaken to determine if the operational trips from completed portions of the project and construction trips associated with construction activities could overlap.

TRAFFIC

Average daily on-site construction workers and trucks were forecasted for each phase of construction (see Table 10-1, "Proposed Construction Phasing," and Table 10-2, "Estimated Total Number of Construction Workers and Construction Trucks On-Site Per Day"). Over the duration of construction, the largest number of workers and trucks would be generated during the overlap of Phases 2 and 3, which would occur between the third and fourth quarters of 2025, with an estimated daily 160 workers and 50 truck trips per day. However, the first quarter (Q1) of 2030 would have the largest combined number of construction period and operational trips, with an estimated daily 45 workers and 10 truck deliveries, combined with an anticipated approximately 731 and 719 vehicle trips during the AM and PM peak hours, respectively, attributable to the full occupancy of the two IS/HS constructed during Phase 3-1. Therefore, the fourth quarter (Q4) of 2025 represents the reasonable worst-case analysis period for assessing potential traffic impacts from construction trips associated with construction activities, and first quarter (Q1) of 2030 represents the reasonable worst-case analysis period for assessing potential cumulative traffic impacts from operational trips from completed portions of the proposed project and construction trips.

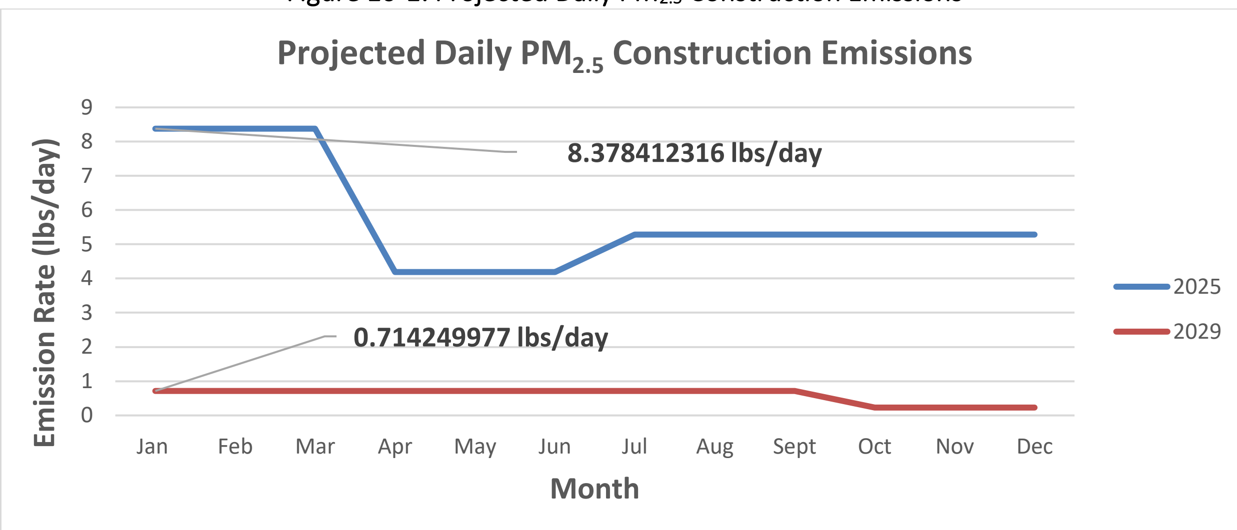
AIR QUALITY

To determine the worst-case short-term and long-term construction periods, construction-related emissions of $PM_{2.5}$ are typically calculated for each calendar year on a rolling annual and peak day basis. $PM_{2.5}$ is typically a good indicator of peak construction emissions since the ratio of emissions to impact criteria is expected to be the highest, relative to other pollutants of concern. In addition, due to the relationship between emissions and diesel engine horsepower, emission profiles for NO_2 and PM_{10} tend to generally follow the emission profiles of $PM_{2.5}$. CO emissions may not exhibit the same profile as other pollutants but are also expected to peak during peak construction activity.

Figure 10-1, "Projected Daily $PM_{2.5}$ Construction Emissions," illustrates the $PM_{2.5}$ peak daily on-site emissions for 2025 as well as 2029. Construction emissions were evaluated for 2029 as a surrogate for 2026, 2027, and 2028 since the same activities would occur in each of these years[22]; however, the two IS/HS and athletic field would become operational in Q3 2029, thereby creating an on-site receptor that requires air quality assessment in 2029 per *CEQR Technical Manual* guidelines.

As shown in Figure 10-1, "Projected Daily $PM_{2.5}$ Construction Emissions," the worst-case short-term period from on-site emissions would occur in Q1 of 2025. Based on the proposed construction schedule, 2025 would be the peak construction year since, during Q1 2025, both Phase 1 and Phase 2 would overlap, and during Q3 and Q4, Phase 2, Phase 3-1, and Phase 3-2 would overlap. In addition, as shown in the figure, 2029 emissions (and thus 2026 – 2028 emissions) are much lower than 2025 emissions.

Figure 10-1: Projected Daily $PM_{2.5}$ Construction Emissions



Source: HMMH, 2024.

NOISE

Noise during construction would include noise from demolition activities, site work and grading, construction of school buildings and athletic field, renovation of the existing Chapel Building, and construction vehicles traveling in and out of the project site. It is expected that most construction workers would travel by automobile, however, heavy truck vehicles will be required for transporting materials to and from the work site. A detailed construction noise analysis was completed using the procedures and guidelines within the *CEQR Technical Manual*. The construction noise analysis evaluates two peak construction periods for the project. The first analysis represents the peak construction period for the project during 2025 Q4, while the second analysis represents a cumulative analysis when construction is occurring while a portion of the campus is operational in 2030 Q1. The potential for construction noise impact on sensitive receptors near the project site depends upon the type and amount of construction equipment as well as the distance from the construction site.

[22] Year 2029 on-site emissions may be insignificantly lower than years 2026, 2027, and 2028 only due to cleaner engine technologies assumed in NONROAD as years progress.

CONSTRUCTION ANALYSES

Transportation

PRELIMINARY ASSESSMENT

In accordance with the guidelines of the *CEQR Technical Manual*, a preliminary assessment evaluated the effects associated with the proposed project's construction-related activities on traffic, transit, pedestrians, and parking conditions. The proposed project would result in the demolition of several existing buildings; construction of school buildings; construction of several private driveways; rehabilitation of an existing parking lot; and renovation of an existing building between 2024 and 2030. Construction on the project site would generate trips by workers traveling to/from the site, as well as trips associated with the movement of materials and equipment. Given typical construction hours, worker trips would be concentrated in the early morning and mid-afternoon periods on weekdays and are generally not expected to represent a substantial increment during the area's peak travel periods.

Traffic

Modal split and vehicle occupancy rates for construction workers, based on 2006-2010 United States Census Bureau American Community Survey data, indicate that 90 percent of construction workers are expected to travel by personal automobile at an average occupancy rate of approximately 1.08 persons per vehicle.[23] The remaining 10 percent of construction worker trips would use public transportation (bus only).

Table 10-3, "2025 (Q4) Peak Incremental Construction Vehicle Trip Projections," and Table 10-4, "2030 (Q1) Peak Incremental Construction Vehicle Trip Projections," list the forecasts of hourly construction worker auto and construction truck trips during these respective peak construction periods. The temporal distribution for these vehicle trips was based on typical work shift allocations and conventional arrival/departure patterns for construction workers. Each worker vehicle was assumed to arrive in the morning and depart in the afternoon or early evening; truck deliveries would occur throughout the construction day. To avoid congestion and ensure that materials are on-site for the start of each shift, construction truck deliveries during the 2025 (Q4) period would often peak during the hour before the regular day shift, overlapping with construction worker arrival traffic. During the 2030 (Q1) period, it is anticipated that all construction truck deliveries would occur after 9 AM to avoid any conflicts with the arrival of IS/HS students. Each truck delivery was assumed to result in two truck trips during the same hour (one inbound and one outbound).

[23] U.S. Census Bureau American Community Survey 2006-2010: Means of Transportation to Work by Selected Characteristics for Workplace Geography (Occupation: Construction), for Richmond County Census Tracts 20.01, 20.02, 50, 64, and 74.

Table 10-3: 2025 (Q4) Peak Incremental Construction Vehicle Trip Projections

Hour	Auto Trips (Construction Employees)					Truck Trips (in PCE)					Total Vehicle Trips		
	In		Out			In		Out			In	Out	Total
	%	#	%	#	Total	%	#	%	#	Total			
6:00-7:00 AM	80%	108	0%	0	108	15%	15	15%	15	30	123	15	138
7:00-8:00 AM	20%	27	0%	0	27	15%	15	15%	15	30	42	15	57
8:00-9:00 AM	0%	0	0%	0	0	15%	15	15%	15	30	15	15	30
9:00-10:00 AM	0%	0	0%	0	0	15%	15	15%	15	30	15	15	30
10:00-11:00 AM	0%	0	0%	0	0	15%	15	15%	15	30	15	15	30
11:00-12:00 PM	0%	0	0%	0	0	10%	10	10%	10	20	10	10	20
12:00-1:00 PM	0%	0	0%	0	0	10%	10	10%	10	20	10	10	20
1:00-2:00 PM	0%	0	0%	0	0	5%	5	5%	5	10	5	5	10
2:00-3:00 PM	0%	0	5%	7	7	0%	0	0%	0	0	0	7	7
3:00-4:00 PM	0%	0	80%	108	108	0.0%	0	0%	0	0	0	108	108
4:00-5:00 PM	0%	0	15%	20	20	0.0%	0	0%	0	0	0	10	20

Source: STV Incorporated, 2024.

During the 2025 (Q4) construction traffic analysis period, no part of the proposed project would be operational yet. During the 6:00 AM to 7:00 AM construction peak hour, 138 vehicle trips (construction workers and construction trucks), including 123 inbound trips and 15 outbound trips, are anticipated; during the 3:00 PM to 4:00 PM construction peak hour, a total of 108 vehicle trips, all of which would be outbound, are anticipated (see Table 10-3, "2025 (Q4) Peak Incremental Construction Vehicle Trip Projections").

Table 10-4: 2030 (Q1) Peak Incremental Construction Vehicle Trip Projections

Hour	Auto Trips (Construction Employees)					Truck Trips (in PCE)					Total Vehicle Trips		
	In		Out			In		Out			In	Out	Total
	%	#	%	#	Total	%	#	%	#	Total			
6:00-7:00 AM	80%	30	0%	0	30	0%	0	0%	0	0	30	0	30
7:00-8:00 AM	20%	8	0%	0	8	0%	0	0%	0	0	8	0	8
8:00-9:00 AM	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0
9:00-10:00 AM	0%	0	0%	0	0	60%	12	60%	12	24	12	12	24
10:00-11:00 AM	0%	0	0%	0	0	15%	3	15%	3	6	3	3	6
11:00-12:00 PM	0%	0	0%	0	0	10%	2	10%	2	4	2	2	4
12:00-1:00 PM	0%	0	0%	0	0	10%	2	10%	2	4	2	2	4
1:00-2:00 PM	0%	0	0%	0	0	5%	1	5%	1	2	1	1	2
2:00-3:00 PM	0%	0	5%	2	2	0%	0	0%	0	0	0	2	2
3:00-4:00 PM	0%	0	80%	30	30	0%	0	0%	0	0	0	30	30
4:00-5:00 PM	0%	0	15%	6	6	0%	0	0%	0	0	0	6	6

Source: STV Incorporated, 2024.

During the 2030 (Q1) cumulative construction and operational traffic analysis period, the Phase 3-1 two IS/HS and athletic field would already be completed and operational and the Phase 3-2 PS/IS would be under construction. During the 6:00 AM to 7:00 AM construction peak hour, 30 vehicle trips generated by construction workers, all of which would be inbound, are anticipated; during the 3:00 PM to 4:00 PM construction peak hour, a total of 30 vehicle trips, all of which would be outbound, are anticipated (see Table 10-5, "2030 (Q1) Peak Incremental Construction Vehicle Trip Projections"). By comparison, construction vehicle trip totals would be lower during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM hours when school dismissal traffic volumes are generally highest.

There would be net increases of 42 vehicle trips during the 6:00 AM to 7:00 AM construction peak hour and 90 trips during the 3:00 PM to 4:00 PM construction peak hour (see Table 10-5, "2030 (Q1) Peak Incremental Construction and Operational Traffic Volumes"). By comparison, during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM operational peak hours, combined operational and construction vehicle trips would total 737 and 728 vehicles in the AM and PM peak hours, respectively. During these operational peak hours, construction vehicles would account for 6 of the combined trips in the AM hour and 9 trips in the PM hour. Given that the predicted cumulative trip volumes are higher during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM peak hours as compared to the construction 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM peak hours, the operational 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM peak hours were selected for construction-phase analysis. As these levels of trip generation would exceed the *CEQR Technical Manual* threshold of 50 peak-hour vehicle trips, a secondary traffic screening analysis was prepared for the weekday 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM construction peak hours and is provided below.

Table 10-5: 2030 (Q1) Peak Incremental Construction and Operational Traffic Volumes

Hour	Construction Trips	Operational Trips[1]	Total Trips
6:00-7:00 AM	30	12	42
7:00-8:00 AM	6	731	737
2:15-3:15 PM[2]	9	719	728
3:00-4:00 PM	30	60	90

Notes:
[1] Operation trips reflect the net increment from the proposed project expected to be completed by the 2030 (Q1) cumulative analysis period.
[2] Construction trips during these hours are based on the weighted average for the 2:00 PM to 3:00 PM and 3:00 PM to 4:00 PM construction peak periods.

Source: STV Incorporated, 2024.

Transit

It is estimated that approximately 160 construction workers would travel to and from the project site each day during the 2025 (Q4) peak analysis period for construction and approximately 45 construction workers would travel to and from the project site each day during the 2030 (Q1) cumulative construction and operational travel demand (see Table 10-3, "Estimated Total Number of Construction Workers and Construction Trucks On-Site Per Day"). Approximately 10 percent of these construction workers are expected to travel to and from the project site by public transit (bus). As described in Chapter 5, "Transportation," the project site is served by a total of six MTA bus routes — the S51, S52, S53, S78, S79-SBS, and S93 Limited.

As noted above, it is estimated that approximately 80 percent of all construction workers would arrive and depart in the peak hour before and after each shift. Therefore, construction worker travel demand is expected to generate a total of approximately 11 bus trips in both the 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM construction peak hours in 2025 (Q4). No operational bus trips would be generated during this time. Since fewer than 50 trips would be added to any route, no significant adverse bus impacts are expected during the 2025 (Q4) peak construction analysis periods.

During 2030 (Q1), construction worker travel demand is expected to generate a total of approximately three bus trips during the 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM construction peak hours and operational bus trips from completed portions of the proposed project would total approximately two and 76 during these same periods, respectively. Construction worker travel demand during the operational peak hour is expected to be approximately one bus trip in both the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM operational peak hours. During these same periods, operational transit trips from completed portions of the proposed project would total approximately 524 and 522 trips, respectively. By comparison, bus trips with full occupancy with the proposed project in 2030 would be similar in number, totaling 536 and 550 during the analyzed weekday commuter peak periods when overall demand on area bus services typically peaks. Therefore, 2030 (Q1) transit conditions during the construction and operational peak hours are expected to be generally better than during the analyzed commuter peak hours with full occupancy of the proposed project in Q3 2030.

Most of the proposed project would be completed by 2030 (Q1), and significant adverse bus impacts are expected during the operational peak hours given that the bus trip demand is projected to be just below the full occupancy demand that resulted in a significant adverse bus impact. Therefore, the mitigation measures for 2030 operational bus impacts identified in Chapter 11, "Mitigation Measures," would also be effective at mitigating any potential impacts from construction transit trips during the 2030 (Q1) peak quarter for cumulative construction and operational travel demand. MTA oversees regular and routine bus ridership monitoring, and as a general policy, the agency provides additional bus service where demand warrants, taking into account financial and operational constraints. Based on ongoing passenger monitoring programs, comprehensive service plans would be generated to respond to specific, known needs with capital and/or operational improvements where fiscally and operationally practicable.

Pedestrians

As discussed above, during the 2025 (Q4) peak analysis period for construction, it is estimated that there would be approximately 160 construction workers on site daily. During the 2030 (Q1) cumulative construction and operational travel demand, it is estimated that there would be approximately 45 construction workers on site daily. Approximately 10 percent of these workers would be expected to travel to the project site by transit, walking to and from area bus stops.

Construction worker travel demand on area sidewalks and crosswalks is expected to total approximately 11 trips in both the 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM construction peak hours in 2025 (Q4) and three trips in both construction peak hours in 2030 (Q1), when 80 percent of construction workers are expected to arrive and depart. During these same periods in 2030 (Q1), operational pedestrian trips (including walk trips and bus trips) from completed portions of the proposed project would total approximately three and 13, respectively. Fewer than 200 trips are expected on any pedestrian element; therefore, significant adverse pedestrian impacts during the construction peak hours in 2025 (Q4) and 2030 (Q1) are not expected.

During the 2030 (Q1) operational peak hour, travel demand on area sidewalks and crosswalks from completed portions of the proposed project and construction workers is expected to be approximately 912 trips in the 7:00 AM to 8:00 AM hour and 910 trips in the 2:15 PM to 3:15 PM peak hour. As these levels of trip generation would exceed the *CEQR Technical Manual* threshold of 200 peak-hour trips, a secondary pedestrian screening analysis was prepared for the weekday 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM construction peak hours and is provided below. These trips would be distributed among the sidewalk and crosswalk elements surrounding the project site, to and from multiple bus stop locations.

Parking

The 2025 (Q4) peak analysis period for construction would result in approximately 160 workers on site daily and the 2030 (Q1) peak analysis period for cumulative construction and operational travel demand would result in approximately 45 workers on site daily, approximately 90 percent of whom would be expected to travel to the project site by private auto. Based on an average vehicle occupancy of 1.08 persons per vehicle, the maximum daily parking demand from project site construction workers would total approximately 135 and 38 spaces during each respective analysis period (see Table 10-6, "2025 (Q4) Construction Worker Parking Accumulation" and Table 10-7, "2030 (Q1) Construction Worker Parking Accumulation").

Table 10-6: 2025 (Q4) Construction Worker Parking Accumulation

Hour	2025 (Q4)		
	In	Out	Total Accumulation
6:00-7:00 AM	108	0	108
7:00-8:00 AM	27	0	135
8:00-9:00 AM	0	0	135
9:00-10:00 AM	0	0	135
10:00-11:00 AM	0	0	135
11:00-12:00 PM	0	0	135
12:00-1:00 PM	0	0	135
1:00-2:00 PM	0	0	135
2:00-3:00 PM	0	7	128
3:00-4:00 PM	0	108	20
4:00-5:00 PM	0	20	0

Source: STV Incorporated, 2024.

Table 10-7: 2030 (Q1) Construction Worker Parking Accumulation

Hour	2030 (Q1)		
	In	Out	Total Accumulation
6:00-7:00 AM	30	0	30
7:00-8:00 AM	8	0	38
8:00-9:00 AM	0	0	38
9:00-10:00 AM	0	0	38
10:00-11:00 AM	0	0	38
11:00-12:00 PM	0	0	38
12:00-1:00 PM	0	0	38
1:00-2:00 PM	0	0	38
2:00-3:00 PM	0	2	36
3:00-4:00 PM	0	30	6
4:00-5:00 PM	0	6	0

Source: STV Incorporated, 2024.

During 2025 (Q4), construction workers would be allowed to park in the Cleveland Place parking lot, which would provide 106 parking spaces. This parking demand would exceed the on-site parking availability and create an off-site demand during the weekday AM and midday peak periods; the remaining 29 construction workers would be expected to park on the street. As discussed in Chapter 5, "Transportation," within a quarter-mile radius of the project site, there are approximately 492 on-street parking spaces. On-street parking was estimated to have an available capacity of approximately 122 spaces during the weekday morning hours and 112 spaces during the weekday midday hours during the 2030 No-Action condition. Given that 2025 No-Action parking capacity is expected to be greater than 2030 No-Action parking capacity, no significant parking shortfall is expected during the 2025 (Q4) construction analysis period.

During 2030 (Q1), completion of Phase 3-1 of the proposed project would provide an estimated additional 18 parking spaces. The 106 parking spaces in the Cleveland Place parking lot would remain available, bringing the on-site parking capacity to 124. Operational conditions for the proposed project's completed Phase 3-1 during 2030 (Q1) would create weekday AM and midday parking demands of 141 parking spaces – 120 staff and 21 HS students. Additionally, construction worker parking demand during this period is expected to be 38 parking spaces. This parking demand of 179 parking spaces would exceed the on-site parking availability and create an off-site demand of 55 spaces during the weekday AM and midday peak periods.

As discussed in Chapter 5, "Transportation," within a quarter-mile radius of the project site, there are approximately 492 on-street parking spaces. On-street parking was estimated to have an available capacity of approximately 122 spaces during the weekday morning hours and 112 spaces during the weekday midday hours during the 2030 No-Action condition. The increase in demand of on-street parking during the 2030 (Q1) construction phase condition is not expected to result in a significant parking shortfall during the weekday AM and midday peak hours.

There is no construction worker parking demand during the Saturday midday peak periods; therefore, no construction phase parking analysis is necessary for this period.

DETAILED ANALYSES

Traffic – Construction 2025 (Q4) Analysis

Traffic volumes for the 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM construction peak hours were developed from the manual turning movement counts. Baseline traffic volumes during peak construction activities in the fourth quarter of 2025 were established by applying a background growth rate. Vehicles generated by construction activities were assigned to the street network, including worker auto trips to the project site. Worker auto trips were assigned to use the Cleveland Place parking lot while construction truck trips were assumed to access the site via a construction driveway from Narrows Road South during Phase 3-1. Construction vehicle assignments were based on the CTPP 2012-2016 (5-Year) for Reverse-Journey-to-Work flow (origin-destination) data. All trucks making deliveries were assigned using NYCDOT-designated local truck routes in the area, which include Narrows Road North and South, Lily Pond Avenue, and Hylan Boulevard.

Intersections that met the 50-trip *CEQR Technical Manual* threshold were selected for analysis during the 2025 (Q4) construction analysis period. These intersections include:

- Fingerboard Road at Columbia Avenue
- Fingerboard Road at Cleveland Place
- Fingerboard Road at Narrows Road South
- Fingerboard Road at Narrows Road North
- Narrows Road North at Hylan Boulevard East
- Narrows Road North at Hylan Boulevard West
- Landis Avenue at Chicago Avenue
- Major Avenue at Landis Avenue and Hastings Street

These intersections were analyzed using the traffic analysis methodology and impact criteria described in Chapter 5, "Transportation." One significant adverse impact from construction trips was identified at the intersection of Fingerboard Road and Narrows Road North. The northbound left-turn movement would deteriorate from LOS E to F during the PM construction peak hour as compared to 2025 No-Action condition.

Traffic – Cumulative Construction and Operational 2030 (Q1) Analysis

The traffic volume data indicate that background traffic volumes from 6:00 AM to 7:00 AM are approximately 40 percent lower than 7:00 AM to 8:00 AM volumes, which is the AM peak hour for school arrivals associated with completed portions of the proposed project. The cumulative increment of operational and construction vehicle trips was determined to occur during the operational peak hours of 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM, not during the construction peak hours of 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM. Therefore, the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM periods were examined for the 2030 (Q1) construction-phase analysis.

Baseline traffic volumes during peak construction activities in the first quarter of 2030 were established by applying a background growth rate. Vehicles generated by construction activities in 2030 (Q1) were assigned to the street network in the same manner as described above in Traffic – Construction 2025 (Q4), with the exception of construction trucks being assigned to use the Hastings Street driveway to access the site rather than the Narrows Road South construction driveway. Vehicle trips associated with completed portions of the proposed project were also included in the project-generated traffic volumes.

Each of the intersections studied for the operational condition were examined for the cumulative construction and operational phase condition. These intersections were analyzed using the traffic analysis methodology and impact criteria described in Chapter 5, "Transportation." Significant adverse impacts from cumulative incremental construction and operational trips were identified at the following eight intersections during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM peak hours:

- **Fingerboard Road and Narrows Road South**: During the AM peak hour, the eastbound movement would deteriorate within LOS F conditions, the northbound shared through/right-turn would worsen from LOS D to LOS E conditions, and the southbound left-turn would worsen from LOS D to LOS F conditions. During the PM peak hour, the eastbound movement would worsen from LOS D to LOS F conditions.
- **Fingerboard Road and Narrows Road North:** During the PM peak hour, the northbound left-turn movement would worsen from LOS E to F conditions and the southbound shared through/right-turn movement would worsen from LOS D to E conditions. During both AM and PM peak hours, the westbound movement would worsen from LOS E to LOS F.
- **Hylan Boulevard and West Fingerboard Road:** The eastbound movement would deteriorate within LOS F conditions during the AM peak hour.
- **Lily Pond Avenue and McClean Avenue:** The eastbound left-turn movement would deteriorate within LOS F conditions during both the AM peak hour and the eastbound approach would deteriorate within LOS F conditions during the PM peak hour. During the AM peak hour, the northbound through movement would deteriorate within LOS E conditions.
- **Narrows Road North and Hylan Boulevard East:** The channelized northbound left-turn movement would deteriorate within LOS F conditions during the AM peak hour and worsen from LOS D to F conditions during PM peak hour.

- **Narrows Road South and Hylan Boulevard West:** During the AM peak hour, the eastbound through movement would deteriorate within LOS E conditions.
- **School Road and Bay Street:** During the AM peak hour, the eastbound left-turn movement would worsen from LOS D to LOS E.
- **Landis Avenue and Chicago Avenue**: The northbound right-turn movement would deteriorate from LOS A to LOS F during the AM peak hour and to LOS E during the PM peak hour.

I-278 from Fingerboard Road to Clove Road was also analyzed for the AM and PM construction operational peak hours. Significant adverse impacts from cumulative incremental construction and operational trips were identified at the following six freeway segments:

- **I-278 Eastbound:** The diverge segment at Exit 14, basic segment between Exits 14 and 15, and diverge segment at Exit 15 would deteriorate within LOS F conditions during the AM peak hour.
- **I-278 Westbound**: The basic segment and the weaving segment between the on-Ramp at Hylan Boulevard and Exit 13A would deteriorate within LOS F conditions during the PM peak hour.
- **Narrows Road North:** The weaving segment between Exit 13B and the on-Ramp at Hylan Boulevard would deteriorate within LOS F conditions during the PM peak hour.

Pedestrians

Construction worker travel demand on area sidewalks and crosswalks is expected to total approximately 11 trips in both the 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM construction peak hours in 2025 (Q4). This is below the *CEQR Technical Manual* 200-trip threshold; therefore, significant adverse impacts are not expected during the 2025 (Q4) analysis period.

During the 2030 (Q1) operational peak hour, travel demand on area sidewalks and crosswalks from completed portions of the proposed project and construction workers is expected to be approximately 912 trips in the 7:00 AM to 8:00 AM hour and 910 trips in the 2:15 PM to 3:15 PM peak hour. A secondary pedestrian screening analysis was prepared for the weekday 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM construction peak hours and pedestrian elements exceeding the *CEQR Technical Manual* 200-trip threshold were selected for detailed analysis. These elements include:

- North and south Fingerboard Road sidewalks west of Columbia Avenue
- North sidewalk of Cleveland Place east of Fingerboard Road
- Hylan Boulevard southeast corner at Fingerboard Road
- Columbia Avenue south crosswalk and southeast and southwest corners at Fingerboard Road
- East Columbia Avenue sidewalk south of Fingerboard Road
- South Chicago Avenue sidewalk east of Columbia Avenue
- South sidewalk of Cleveland Place east of Landis Avenue
- East Landis Avenue sidewalk south of Cleveland Place
- North Landis Avenue sidewalk west of Hastings Street

These pedestrian elements were analyzed using the pedestrian analysis methodology and impact criteria described in Chapter 5, "Transportation." The analysis showed that all analyzed elements would operate at

LOS C or better; therefore, no significant impacts to pedestrian operations are expected during the 2030 (Q1) analysis period.

Transit

During the 2025 (Q4) peak analysis period for construction, construction worker travel demand would generate approximately 11 bus trips during both the AM and PM construction peak hours. This is below the *CEQR Technical Manual* 200-trip threshold; therefore, significant adverse impacts are not expected during the 2025 (Q4) analysis period.

During the 2030 (Q1) peak analysis period for cumulative construction and operational bus demand, there would be reduced adverse impacts during the operational peak hours than during the Q3 2030 operational peak hours with full occupancy as the number of bus trips would be fewer during the construction phase. Overall, bus trips generated from operational and construction components of the proposed project would total approximately 524 and 522 during the AM and PM peak hours, respectively. By comparison, bus trips with full occupancy of the proposed project in 2030 would be slightly greater in number, totaling approximately 536 and 550 during the analyzed weekday commuter peak periods when overall demand on area bus routes typically peaks. Most of the proposed project would be completed by 2030 (Q1), and significant adverse bus impacts are expected during the operational peak hours given that the bus trip demand is just below the full occupancy demand that resulted in a significant adverse bus impact. Therefore, the mitigation measures for 2030 operational bus impacts identified in Chapter 11, "Mitigation Measures," would also be effective at mitigating any potential impacts from construction transit trips during the 2030 (Q1) peak quarter for cumulative construction and operational travel demand.

MTA oversees regular and routine bus ridership monitoring, and as a general policy, the agency provides additional bus service where demand warrants, taking into account financial and operational constraints. Based on ongoing passenger monitoring programs, comprehensive service plans would be generated to respond to specific, known needs with capital and/or operational improvements where fiscally and operationally practicable to mitigate the significant adverse impact generated by the projected bus ridership demand.

Parking

The 2025 (Q4) peak analysis period for construction parking demand would be approximately 135 spaces during the weekday AM and midday peak periods. Construction workers would be permitted to park in the Cleveland Place parking lot, which will provide 106 spaces. The remaining 29 construction workers would be expected to park on-street. Parking surveys indicate that there is sufficient available capacity within a one-quarter mile walking distance to accommodate this additional demand during the weekday AM and midday periods.

The 2030 (Q1) peak analysis period for cumulative construction and operational parking demand would be approximately 179 spaces during the weekday AM and midday peak periods. This demand would include 38 construction workers, 120 faculty/staff members, and 21 HS students. In addition to the 106 spaces provided in the Cleveland Place parking lot, it is anticipated that 18 parking spaces would be available on campus adjacent to the two IS/HS for faculty/staff only. All 21 HS students and 38 construction workers would be expected to park on-street. Parking surveys indicate that there is sufficient available capacity within a one-quarter mile walking distance to accommodate this additional demand during the weekday AM and midday periods. Therefore, significant parking shortfalls are not expected.

Air Quality

Construction-related activities such as demolition, excavation, earth moving operations, etc., may cause elevated levels of particulate matter (fugitive dust), while excess emissions of nitrogen oxides (NO_x), CO, and particulate matter typically result from on-site diesel equipment and increased truck traffic to and from the site. Worker vehicles, which are generally gasoline-powered engines, may also cause increases in CO emissions. The EPA mandates the use of ultra-low sulfur dioxide (ULSD) fuel for all highway and non-road diesel engines; therefore, sulfur oxide (SO_x) emissions from construction activities are anticipated to be negligible. NAAQS-regulated pollutants of concern that were analyzed as part of the construction-related air quality assessment include NO_2, PM_{10}, $PM_{2.5}$, and CO.

ON-SITE CONSTRUCTION ASSESSMENT

The conceptual construction schedule illustrated in Table 10-1, “Proposed Construction Phasing,” was used to develop the assumptions for the construction-related air quality analysis. Typical construction equipment types and quantities for building demolition, site work and grading, and construction of buildings were used to conduct the air quality analysis. Equipment quantities typically vary by building size, with larger structures necessitating more equipment per activity. Table 10-8, “Construction Equipment Types and Quantities,” summarizes construction equipment assumptions by phase for the air quality analysis. Equipment quantities shown for Phase 1 represent the total pieces of equipment for demolition of all buildings.

Table 10-8: Construction Equipment Types and Quantities

Phase	Equipment Type	Equipment Quantities
Phase 1 – Existing Building Demolition / Phase 2 – Site Work, Grading, Utilities	100-ton crawler crane	7
	compressor	7
	concrete pump	7
	dozer	7
	excavator	14
	generator	7
	jackhammer/pavement breaker	14
	pile driver	7
	portable water pump	7
	rebar bender	14
	welding equipment	14
	wheeled front end loader	7
Phase 3-1 – Construction of Two IS/HS and Athletic Field	100-ton crawler crane	5
	circular saw	8
	concrete pump	2
	concrete vibrator	12
	dozer	1
	dual hoist - high rise	4
	excavator	2
	forklift	7
	generator	3
	portable cement mixer	4
	rebar bender	4
	scissor lift	7
	table saw	8
	troweling machine	12
	welding equipment	4
	wheeled front end loader	1

Table 10-8: Construction Equipment Types and Quantities (continued)

Phase	Equipment Type	Equipment Quantities
Phase 3-2 – Construction of PS/IS and Chapel Building Renovations	100-ton crawler crane	3
	circular saw	8
	concrete pump	1
	concrete vibrator	6
	dual hoist - high rise	3
	forklift	6
	generator	1
	portable cement mixer	2
	rebar bender	2
	scissor lift	6
	table saw	8
	troweling machine	6
	welding equipment	2

Notes:
Phase 1 – divide by 7 to obtain per building quantities (total of 7 buildings demolished)
Phase 2 equipment is assumed for the entire site.

Source: HMMH, 2024.

NONROAD Engine and Fugitive Dust Emissions

The EPA's NONROAD, incorporated within the MOVES4 model, was used to develop peak daily and annual emissions of CO, NO_x, PM_{10}, and $PM_{2.5}$ based on equipment type, horsepower, and quantity. Electric equipment was assumed to have zero emissions. Measures to reduce pollutant emissions during construction in accordance with applicable laws and regulations were accounted for in the emission factor calculations for nonroad engines. Specifically, the SCA is required to comply with NYC Local Law 77 (LL 77), which requires the use of ULSD fuel and Best Available Tailpipe Reduction Technologies (BAT). As stated above, use of ULSD is also federally mandated by the EPA. In accordance with LL 77, nonroad diesel engines with a power rating of 50 horsepower or greater and controlled truck fleets (i.e., truck fleets under long-term contract for the project) would use BAT for reducing diesel particulate matter emissions. Diesel particulate filters are the current identified BAT for reducing diesel particulate matter emissions.

To scale emissions for actual usage, emission quantities output from NONROAD in grams per horsepower-hour (g/hp-hr) were multiplied by reasonable horsepower estimates, estimated load factors, and daily and average usage factors, assuming an 8-hour workday from 7:00 AM – 3:00 PM. Daily usage factors were used to develop emission rates for short-term pollutant averaging periods (i.e., 1-hour, 8-hour, and 24-hour), whereas average usage factors were used to develop emission rates for long-term pollutant averaging periods (i.e., annual).

Fugitive dust emission factors resulting from ground disturbance of the site (surface dust from materials handling activities and soil stockpiles) during demolition and site work were calculated using assumptions and equations in EPA's AP-42 Compilation of Air Pollutant Emission Factors,[24] pursuant to *CEQR Technical Manual* guidelines. Fugitive dust emissions were added to NONROAD short-term PM_{10} and $PM_{2.5}$ engine emissions, as fugitive dust is not anticipated to have a significant effect on annual emissions per the

[24] AP-42, Fifth Edition Compilation of Air Emissions Factors. Chapter 13.2.4 Aggregate Handling and Storage Piles.

NYSDEC. Construction operations are required to follow provisions established within the New York City Air Pollution Control Code,[25] which requires dust suppression to prevent particulate matter from becoming airborne. Therefore, a 75 percent control was included in the fugitive dust calculation for watering.

OFF-SITE CONSTRUCTION ASSESSMENT

As shown in Table 10-2, "Estimated Total Number of Construction Workers and Construction Trucks On-Site Per Day," the number of truck and worker trips would peak in the Q3 and Q4 of 2025, with an estimated 160 daily workers and 50 trucks per day. During the peak construction quarters, the maximum construction-generated vehicle trips are 108 vehicles. The maximum construction-generated vehicles would travel through the intersection of Chicago Avenue and Landis Avenue during the AM construction traffic peak hour (6:00 AM to 7:00 AM) and through the Fingerboard Road and Cleveland Place intersection during the PM construction traffic peak hour (3:00 PM – 4:00 PM). The maximum construction-generated vehicle trips are below the applicable CEQR CO screening threshold of 170 autos for Staten Island; therefore, a construction period mobile-source intersection analysis of CO is not warranted.

Construction-generated truck trips were screened using CEQR's heavy-duty diesel vehicle (HDDV) equivalent truck screen. During the construction traffic peak periods, the intersection that would experience the greatest number of construction-generated truck trips is Narrows Road South at Hastings Street, with a maximum of 11 trucks utilizing Hastings Street to access the construction site. Therefore, peak truck trips would be below the CEQR screening thresholds for mobile-source intersection analysis of particulate matter.

Since construction workers would utilize the Cleveland Place parking lot and would generate a significant number of vehicle trips entering and exiting the lot, a detailed mobile-source parking analysis was conducted to estimate CO and $PM_{2.5}$ concentrations during peak construction. The parking analysis was conducted for the AM (6:00 AM – 7:00 AM) and PM (3:00 PM – 4:00 PM) peak construction traffic periods when the maximum worker vehicles would enter and exit the parking lot, respectively, in Q3 and Q4 2025. In addition, Narrows Road South and Hastings Street were modeled to account for construction truck trips (haul and delivery trucks) throughout the workday from 7:00 AM to 3:00 PM while on-site construction is active to assess cumulative concentrations from both off-site truck trips and on-site construction activities.

ONROAD Engine and Fugitive Dust Emissions

The MOVES4 model was executed on project scale in inventory mode with emission quantities output in units of grams/hour (g/hr) for one vehicle traveling one mile. The model was executed for the months of January and July for CO and PM, respectively, as those months are typically when each pollutant emission peaks. Processes included running and crankcase exhaust for CO and $PM_{2.5}$ as well as primary total exhaust, brake wear, and tire wear emissions for $PM_{2.5}$. To evaluate emissions within the Cleveland Place construction worker surface parking lot, the model was also executed to obtain idle and start emissions as well as traveling emissions for a speed of five miles per hour (mph) per *CEQR Technical Manual* guidelines. Richmond County, NY input databases provided by NYSDEC were imported into MOVES, and the age distribution (AVFT), vehicle population (VPOP) and vehicle miles traveled (VMT) databases were projected

[25] Title 24 of the Administrative Code of the City of New York, Chapter 1, Subchapter 6, Section 24-146, "Preventing Particulate Matter from Becoming Airborne; Spraying of Asbestos Prohibited; Spraying of Insulating Material and Demolition Regulated.

to the 2025 construction peak year using the EPA's Age Distribution Projection Tool for MOVES4 projection tool.[26]

Fugitive dust emission factors resulting from vehicles traveling on paved roadways were estimated using EPA's AP-42 Compilation of Air Pollutant Emission Factors.[27] Fugitive dust emissions were added to short-term (24-hour) $PM_{2.5}$ engine, brake wear and tire wear emissions, as NYSDEC has determined that fugitive dust does not have an impact on an annual neighborhood scale. In accordance with *CEQR Technical Manual* guidelines, calculations of fugitive dust for 24-hour $PM_{2.5}$ conservatively assume dry conditions (i.e., zero hours of precipitation). Silt content factors provided in the *CEQR Technical Manual* by roadway class were also used in the calculations. An average vehicle weight of 2.5 tons was used for light duty vehicles and 17.5 tons for construction-generated trucks.

Traffic Data

Traffic data for the parking analysis and truck haul routes were derived from construction transportation analysis. Traffic data were used to scale MOVES emission factors to yield emission rates for use in the dispersion model. Consistent with the EPA's "PM Hot-spot Guidance,"[28] evaluation of $PM_{2.5}$ requires a 24-hour emissions profile; therefore, Midday (MD) and Overnight (ON) traffic peak hours for the study area were modeled in addition to the AM and PM peak hours. 24-hour traffic data was evaluated to identify a MD peak hour from 1:00 PM – 2:00 PM and an ON peak hour from 7:00 PM – 8:00 PM. The AM peak hour emission factor and traffic volumes were assigned to the hours from 6:00 AM to 9:00 AM. The MD peak hour emission factor and traffic volumes were assigned to the hours from 9:00 AM to 3:00 PM. The PM peak hour emission factor and traffic volumes were assigned to the hours from 3:00 PM to 7:00 PM, and the ON peak hour emission factor and traffic volumes were assigned to the hours from 7:00 PM to 6:00 AM. A speed of 15 mph was assumed for truck traffic traveling down Narrows Road South and 5 mph on Hastings Street since trucks would enter the work site, shortly after turning onto Hastings Street. Roadway grades were also calculated and included in MOVES modeling.

For the contractor parking area, most vehicles arrive during two AM hours and depart during two PM hours. Based on the hourly volume of vehicles entering and exiting the surface lot, all vehicles that would start up prior to exiting the lot would be stationary with the engine turned off for approximately eight hours. Therefore, to accurately represent start emissions within MOVES, 100 percent of vehicles were assigned to a soak time of greater than 360 minutes but less than 720 minutes. Traveling emissions within the surface lots were modeled as on-road links at a speed of 5 mph, as previously discussed. Per *CEQR Technical Manual* guidelines, all vehicles were assumed to travel two thirds of the distance between the entrance/exit of the parking lot and the last available parking space. In addition, all vehicles exiting the surface parking lots were assumed to idle for a duration of one minute, per *CEQR Technical Manual* guidelines. Fugitive dust was added to $PM_{2.5}$ traveling emissions (engine, brake wear, and tire wear emissions) within the lot.

Dispersion Modeling

EPA's AERMOD dispersion model, version 23132, was used to evaluate pollutant concentrations from both on-site and off-site sources. Emissions from on-site equipment were conservatively applied to area sources

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[26] https://www.epa.gov/moves/tools-develop-or-convert-moves-inputs#moves3-inputs
[27] AP-42, Fifth Edition Compilation of Air Emissions Factors. Chapter 13.2.1 Paved Roads.
[28] Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas. Transportation and Climate Division Office of Transportation and Air Quality. U.S. Environmental Protection Agency. EPA-420-B-21-037. October 2021.

representing the footprint of each building to be demolished as well as the footprint of each proposed building and the athletic field. The entire site was modeled as an area source to represent Phase 2 activities, assuming the entire site would require grading and construction of utilities. Area sources were also used to represent Narrows Road South and Hastings Street paved roadways used by construction-generated truck traffic to access the site. In addition, the Cleveland Place parking lot was modeled as an area source representing traveling, idling and start emissions within the lot.

The NAAQS are established for NO_2, however, dispersion modeling yields NO_x concentrations. The EPA recommends a three-tiered approach for estimating NO to NO_2 conversion in the atmosphere. To estimate annual NO_2 concentrations, EPA's Tier 2 national default ratio of 0.75 was applied to modeled NO_x concentrations.[29]

Meteorology

In general, the transport and concentration of pollutants from vehicular sources are influenced by three principal meteorological factors: wind direction, wind speed, and atmospheric stability. Wind direction influences the direction in which pollutants are dispersed, and atmospheric stability accounts for the effects of vertical mixing in the atmosphere. These factors, therefore, influence the concentration at a particular prediction location (receptor).

The AERMOD model includes the modeling of hourly concentrations based on hourly traffic data and five years of monitored hourly meteorological data. For this analysis, the latest available five years of AERMOD-ready processed surface meteorological data was provided by NYSDEC for Newark Liberty International Airport (2017 – 2021) with concurrent upper air data from Brookhaven, New York.[30] The meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevations over the five-year period.

Receptor Placement

Cumulative concentrations from on-site and off-site sources were modeled at receptor locations within 400 feet of the work site for the peak construction year of 2025. Receptor locations included existing structures with operable windows and air intakes and other areas of continuous public access (e.g., sidewalks). For analysis year 2029, receptors were limited to the athletic field and proposed two IS/HS, which would become operational in Q3 2029. All ground-level receptors were modeled at a pedestrian height of 1.8 meters.

CONSTRUCTION ANALYSIS RESULTS

Using the previously described methodology, CO, $PM_{2.5}$, PM_{10}, and NO_2 concentrations were predicted at receptor locations for the peak construction year of 2025 and 2029, when the project site becomes partially operational.

[29] Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard. EPA. September 30, 2014.

[30] NYSDEC advised that, despite more recent available meteorological data, there was a significant gap in 2022 upper air data due to the helium shortage limiting upper air launches. While regular upper air data collection resumed by the end of the year and through 2023, the 2022 OKX (Brookhaven) Upper Air issue creates a discontinuity that can negatively impact the quality of the modeling.

Construction Year 2025 Cumulative On-Site and Off-Site Analysis Results

Table 10-9, "Construction Year 2025 Cumulative Air Quality Analysis Results," summarizes the results of the cumulative on-site and off-site peak construction analysis. As shown in the table, total concentrations of all criteria pollutants are predicted to be below their respective NAAQS during peak construction. Therefore, peak construction activities would not result in a significant adverse impact.

Table 10-9: Construction Year 2025 Cumulative Air Quality Analysis Results

Pollutant	Averaging Period	Modeled Concentration	Background Concentration	Total Concentration	NAAQS
CO	1-hour 8-hour	0.17 ppm 0.06 ppm	1.6 ppm 1.3 ppm	1.77 ppm 1.36 ppm	35 ppm 9 ppm
$PM_{2.5}$	24-hour Annual	1.5 µg/m³ 0.19 µg/m³	20.6 µg/m³ 7.6 µg/m³	22.1 µg/m³ 7.79 µg/m³	35 µg/m³ 9 µg/m³
PM_{10}	24-hour	1.92 µg/m³	24 µg/m³	25.92 µg/m³	150 µg/m³
NO_2	Annual	13.93 ppb	13.6 ppb	27.53 ppb	53 ppb

Notes:
(1) Predicted CO concentrations represent the highest second high concentrations from five years of meteorological data.
(2) Predicted 24-hour $PM_{2.5}$ concentrations represent the 98th percentile concentration.
(3) Predicted PM_{10} concentrations represent the 6th highest concentration.
(4) Predicted NO_x concentrations were multiplied by the EPA's Tier 2 national default ratio of 0.75 to estimate NO_2 concentrations.
(5) All background concentrations were obtained from the NYSDEC New York State Ambient Air Quality Report, 2020-2022.

Source: HMMH, 2024.

Construction Year 2025 Parking Lot Analysis Results

Table 10-10, "Construction Year 2025 Parking Lot Analysis Results," summarizes results of the peak construction year parking lot analysis. As shown in the table, construction-generated worker vehicles using the Cleveland Place parking lot would result in concentrations below the applicable CO and $PM_{2.5}$ NAAQS. Therefore, a significant adverse impact would not result from contractors using the Cleveland Place surface parking lot during the peak construction period or during periods with less construction-generated worker vehicle trips.

Table 10-10: Construction Year 2025 Parking Lot Analysis Results

Pollutant	Averaging Period	Modeled Concentration	Background Concentration	Total Concentration	NAAQS
CO	1-hour	2.3 ppm	1.6 ppm	3.9 ppm	35 ppm
	8-hour	1.5 ppm	1.3 ppm	2.8 ppm	9 ppm
$PM_{2.5}$	24-hour	2.5 µg/m³	20.6 µg/m³	23.1 µg/m³	35 µg/m³
	Annual	0.7 µg/m³	7.6 µg/m³	8.3 µg/m³	9 µg/m³

Notes:
(1) Predicted CO concentrations represent the highest second high concentrations from five years of meteorological data and the maximum concentrations predicted between the AM and PM peak hours.
(2) Predicted 24-hour $PM_{2.5}$ concentrations represent the 98th percentile concentration.
(3) All background concentrations were obtained from the NYSDEC New York State Ambient Air Quality Report, 2020-2022.

Source: HMMH, 2024.

Construction Analysis Year 2029 On-Site Analysis Results

Table 10-11, "Construction Year 2029 On-Site Air Quality Analysis Results," summarizes the results of the on-site construction analysis conducted to assess potential impact to on-site receptors when the project site becomes partially operational after Q3 2029 when Phase 3-1 is complete. Since construction activities would be significantly reduced, maximum predicted concentrations are well below the applicable NAAQS for the criteria pollutants evaluated. Therefore, construction activities would not result in a significant adverse impact to on-site receptors.

Table 10-11: Construction Year 2029 On-Site Air Quality Analysis Results

Pollutant	Averaging Period	Modeled Concentration	Background Concentration	Total Concentration	NAAQS
CO	1-hour	0.05 ppm	1.6 ppm	1.65 ppm	35 ppm
	8-hour	0.02 ppm	1.3 ppm	1.32 ppm	9 ppm
$PM_{2.5}$	24-hour	0.56 µg/m³	20.6 µg/m³	21.2 µg/m³	35 µg/m³
	Annual	0.03 µg/m³	7.6 µg/m³	7.64 µg/m³	9 µg/m³
PM_{10}	24-hour	0.77 µg/m³	24 µg/m³	24.7 µg/m³	150 µg/m³
NO_2	Annual	0.68 ppb	13.6 ppb	14.28 ppb	53 ppb

Notes:
(1) Predicted CO concentrations represent the highest second high concentrations from five years of meteorological data.
(2) Predicted 24-hour $PM_{2.5}$ concentrations represent the 98th percentile concentration.
(3) Predicted PM_{10} concentrations represent the 6th highest concentration.
(4) Predicted NO_x concentrations were multiplied by the EPA's Tier 2 national default ratio of 0.75 to estimate NO_2 concentrations.
(5) All background concentrations were obtained from the NYSDEC New York State Ambient Air Quality Report, 2020-2022.

Source: HMMH, 2024.

Noise and Vibration

Construction noise is regulated by the New York City Noise Code and by the EPA noise emission standards for construction equipment. These requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emissions standards; that except under exceptional circumstances, construction activities be limited to weekdays between the hours of 7:00 AM and 6:00 PM; and that construction material be handled and transported in such a manner as to not create unnecessary noise. The project site is in a neighborhood with a mix of uses, including residential and institutional. All reasonable means would be undertaken to avoid unnecessary noise. Sensitivity to the nearby residences in the study area (directly north, south, and west of the project site) would be maintained to the maximum extent practicable for the duration of the construction period. Because the project site is of adequate size to accommodate construction staging, it is assumed that construction activities would be limited to the project site.

Construction-induced vibration is not regulated at the local or State level. Therefore, vibration from construction activities was evaluated using guidelines and calculations contained within the 2018 version of the Federal Transit Administration's Noise and Vibration Impact Assessment Manual (FTA Manual).

METHODOLOGY

Mobile-Source Analysis

In accordance with *CEQR Technical Manual* guidelines and procedures, a noise passenger car equivalent (Noise PCE) screening was completed to identify potential noise impacts from construction-related traffic along roadways surrounding the project site. The CEQR screening analysis was performed for the eight intersections during peak AM and PM weekday construction traffic hours. The analyzed intersections align with those identified within the traffic section of this chapter. For each identified intersection, Existing, No-Action, and With-Action conditions vehicle volumes were converted into Noise PCEs to determine if a doubling of Noise PCEs between Existing and With-Action conditions would occur. Per CEQR guidelines, a doubling of Noise PCEs is equivalent to approximately 3 dBA increase in noise levels. Intersections predicted to experience such an increase would result in an exceedance of the CEQR construction noise screening thresholds and further analysis may be warranted.

Off-site construction activities will include haul trucks transporting materials and employee vehicles arriving and departing work shifts along local roads adjacent to the proposed school campus. Haul trucks accessing the site will utilize designated truck routes and include Narrows Road North and South, Lily Pond Avenue and Hylan Boulevard. Closer to the site, these vehicles will use local roads.

Stationary-Source Analysis

Noise levels associated with on-site construction activities were evaluated for sensitive receptors surrounding the proposed school campus as well as for the campus, since a portion of it is expected to be operational during construction. Construction noise levels can vary depending on equipment type, condition of the equipment, and the type of work the equipment is doing. Annoyance due to construction noise is variable and can result from the use of specific equipment, such as impact pile driving, pavement breakers, mobile equipment working on-site, and engines idling for extended periods of time. For the purpose of this analysis, it is assumed that construction activity would be happening simultaneously, which would result in the highest noise levels.

The analysis conservatively predicts the loudest noise levels that can be expected using the shortest distance between receptors and construction activities. Additionally, the analysis is intentionally conservative assuming that all construction equipment would operate simultaneously even though this condition may not occur throughout the construction effort; therefore, during typical workdays, construction noise levels would fluctuate and often be lower than these predicted worst-case levels.

The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) is recognized as an acceptable method for predicting on-site construction activities. Construction noise levels for on-site equipment were calculated using a spreadsheet model which incorporates equations and source levels from the FHWA RCNM Version 2.0. The predicted construction noise levels were then compared to measured existing noise levels to determine impact significance. Typical noise levels of construction equipment are given in Table 10-12, "Typical Noise Emission Levels for Construction Equipment." The noise emission levels for construction equipment are measured at 50 feet (15.2 meters) and decrease over distance. Equipment types and quantities assumed for the analysis were provided by the SCA.

Table 10-12: Typical Noise Emission Levels for Construction Equipment

Equipment Description	L_{max} @ 50 feet
Air-Operated Post Driver	84.9
Asphalt Distributor Truck (Asphalt Sprayer)	69.7
Auger Drill	101.0
Backhoe	83.6
Bar Bender	74.7
Blasting (Abrasive)	103.0
Blasting (Explosive)	92.7
Chip Spreader	76.7
Compactor (Plate)	74.6
Compactor (Roller)	82.4
Compressor	66.8
Concrete Batch Plant	90.0
Concrete Grinder	96.7
Concrete Mixer Truck	82.4
Concrete Pump Truck	87.5
Concrete Saw	88.1
Crane	76.0
Directional Drill Rig	79.6
Dozer	86.1
Drum Mixer	70.6
Dump Truck (Cyclical)	91.6
Dump Truck (Passby)	73.1
Excavator	86.7
Flatbed Truck	74.2
Front End Loader (Cyclical)	81.4
Front End Loader (Passby)	71.2
Generator	67.8
Grader (passby)	78.5
Hoe Ram	98.8
Horizontal Bore Drill	87.8
Impact Pile Driver	104.9
Joint Sealer	74.1
Light Tower	61.8
Man Lift	73.3
Movement Alarm	80.4
Mud Recycler	73.8
Power Tools - Air Hose	99.9
Power Tools - Chainsaw	82.6
Power Tools - Chipping Gun	99.5
Power Tools - Circular Saw	76.1
Power Tools - Grinder	71.2
Power Tools - Hammer Drill	75.1
Power Tools - Impact Wrench	72.2
Power Tools - Jackhammer	95.4
Power Tools - Jig Saw	94.6
Power Tools - Nail Gun	73.5
Power Tools - Reciprocating Saw	66.0
Power Tools - Rivet Buster	107.3

Table 10-12: Typical Noise Emission Levels for Construction Equipment (continued)

Equipment Description	L_{max} @ 50 feet
Power Tools - Sander	67.5
Pavement Scarifier (Milling Machine)	84.0
Paving - Asphalt (Paver + Dump Truck)	81.8
Paving - Asphalt (Paver + MTV + Dump Truck)	82.8
Paving - Concrete (Placer + Slipform Paver)	90.8
Paving - Concrete (Texturing/Curing Machine)	74.1
Paving - Concrete (Triple Roller Tube Paver)	88.4
Power Unit (Power Pack)	81.6
Pump	73.9
Rock Drill	95.3
Rumble Strip Grinding	87.3
Scraper	92.4
Shot Crete Pump/Spray	86.8
Street Sweeper	81.3
Telescopic Handler (Forklift)	88.3
Vacuum Excavator (Vac-Truck)	86.7
Ventilation Fan	63.2
Vibratory Concrete Consolidator	80.2
Vibratory Pile Driver	104.5
Warning Horn (Air Horn)	99.1
Water Spray Truck	72.0
Welding Machine	72.1
Notes: As per Local Law 113 §24-228(a)(1) *Construction, Exhausts, and other Devices,* "Sound, other than impulsive sound, attributable to the source or sources, that exceeds 85 dBA as measured 50 or more feet from the source or sources at a point outside the property line where the source or sources are located or as measured 50 or more feet from the source or sources on a public right-of-way" is prohibited.	

Source: Federal Highway Administration, Roadway Construction Noise Model version 2.0 source level database.

Construction noise for the proposed project would be regulated by the NYCDEP Noise Code and by the EPA noise emission standards for construction equipment. However, the *CEQR Technical Manual* considers 65 dBA L_{eq}(1) as an absolute noise level that should not be exceeded. However, the *CEQR Technical Manual* also recognizes that due to the temporary and transient nature of construction impacts, the affected area, the magnitudes, and the duration of the impacts would also be considered in in the final determination if the noise impacts exceed the significant adverse impact criteria described in their technical chapters.

Vibration

Potential vibration impacts from construction were assessed using the methodology contained in Section 7.2 of the FTA Noise and Vibration Impact Assessment (FTA 2018). Vibration source levels for a variety of typical construction equipment types are outlined in Table 7-4 of the FTA manual, in terms of PPV in inches per second at a reference distance of 25 feet from the source and velocity in decibels (VdB) at 25 feet (FTA 2018). The project construction equipment types that would generate the highest vibration levels are a hoe ram, loaded truck, and jackhammer. Other construction equipment, such as loaders and cranes, would have lower vibration levels; therefore, construction vibration levels are considered conservative for the purposes of the analysis.

Using equations from Section 7.2 of the FTA Manual, separate damage and annoyance assessments were performed at each sensitive property. The FTA calculation method is dependent on equipment vibration source level and distance between the equipment and receptor. Distances were calculated using NYC Open Data Information and GIS.

2025 Q4 ANALYSIS

The peak construction period is anticipated to occur during 2025 Q4 and will be comprised of concurrent work for Phases 2, 3-1, and 3-2. These phases include site work, grading, utilities during Phase 2; construction of the two IS/HS and athletic fields during Phase 3-1; and construction of the PS/IS and renovation of the Chapel Building during Phase 3-2.

Mobile-Source Analysis

A mobile-source screening analysis was performed for the weekday AM and PM Peak construction traffic hours from 6:00 AM – 7:00 AM and 3:00 PM – 4:00 PM. A total of seven roadway segments around the project site were analyzed for potential mobile-source noise impacts during 2025 Q4 construction. The mobile-source analysis for the peak construction period indicates that three roadway segments during the AM peak construction traffic hour and one roadway segment during the PM peak construction traffic hour are predicted to experience a doubling or more of Noise PCEs, as seen in Table 10-13, "Noise PCE Analysis Results – Construction 2025 Q4." The roadway segments include:

- Hastings Street, between Narrows Road South and Major Avenue – AM Peak Hour
- Major Avenue, between Lily Pond Avenue and Landis Avenue – AM Peak Hour
- Landis Avenue, between Hastings Street and Chicago Avenue – AM Peak Hour
- Cleveland Place, between Landis Avenue and Fingerboard Road – AM and PM Peak Hours

As detailed in Table 10-13, "Noise PCE Analysis Results – Construction 2025 Q4," during the AM peak construction traffic hour, a maximum noise level increase of 10 dBA is predicted along Hastings Street as a result of haul trucks entering the work site at the start of the day. For the PM peak construction traffic hour, a maximum noise level increase of 4 dBA is predicted along Cleveland Place due to worker vehicles departing the work site at the end of the day via the parking lot access along Cleveland Place. Increases in noise levels by at least 5 dBA would be clearly noticeable to receptors, however, in locations where a noise level increase of 10 dBA or more is predicted, a doubling in sound levels would occur and be considered significant during the 2025 Q4 construction period. Table 10-13, "Noise PCE Analysis Results – Construction 2025 Q4," summarizes the results of the Noise PCE analysis and Table 10-14, "PCE Traffic Noise Level Calculations for Construction 2025 Q4 Conditions," summarizes the resultant predicted noise levels for each site.

Table 10-13: Noise PCE Analysis Results – Construction 2025 Q4

	AM Peak Hour				
Roadway Segment	Noise PCE			Percent Increase in Noise PCE – No Action to With Action	Predicted Noise Level Increase (dBA)
	Existing	No Action	With Action		
Hastings Street – B/w Narrows Road South & Major Avenue	116	118	1,142	865%	10
Major Avenue – Lily Pond Avenue & Hastings Street	40	41	116	149%	5
Landis Avenue – Major Avenue & Chicago Avenue	22	23	70	171%	5
Cleveland – Landis Avenue and Fingerboard Road	86	88	196	122%	3
	PM Peak Hour				
Roadway Segment	Noise PCE			Percent Increase in Noise PCE – No Action to With Action	Predicted Noise Level Increase (dBA)
	Existing	No Action	With Action		
Cleveland – Landis Avenue and Fingerboard Road	59	60	168	180%	4

Source: HMMH, 2024.

Table 10-14: PCE Traffic Noise Level Calculations for Construction 2025 Q4 Conditions

Site Number	Site Location	2025 Q4 Future No Action Noise Levels		2025 Q4 With Action Traffic Noise Levels During Construction		Projected 2025 Q4 No Action to With Action Increase in Noise Levels During Construction	
		Hourly L_{eq}(h) (L_{10}) in dBA		Hourly L_{eq}(h) (L_{10}) in dBA		Decibels Change (dBA)	
		AM	PM	AM	PM	AM	PM
1	35 Landis Avenue	60 (63)	57 (59)	65 (68)	57 (59)	5	0
2	40 Knauth Place	60 (63)	59 (63)	65 (68)	59 (63)	5	0
3	Intersection of Garson Avenue/Narrows Road South	63 (66)	63 (67)	64 (68)	63 (67)	2	0
4	31 Cleveland Place	60 (62)	58 (60)	64 (65)	62 (65)	3	4
5	338 Fingerboard Road	69 (74)	71 (74)	70 (74)	71 (74)	0	0
6	5 Hastings Street	59 (61)	62 (66)	69 (71)	62 (66)	10	0

Source: HMMH, 2024.

Stationary-Source Analysis

Concurrent construction for Phases 2, 3-1, and 3-2 will occur during 2025 Q4. These phases include site work, grading, utilities during Phase 2; construction of the two IS/HS and athletic fields during Phase 3-1; and construction of the PS/IS and renovation of the Chapel Building during Phase 3-2. Predicted construction noise levels were compared to measured, midday noise levels since background noise levels are typically the lowest when construction activity is at its highest. The measured, midday noise levels were utilized for the analysis since it was determined that the No-Action noise levels are anticipated to increase by less than 1 decibel when compared to existing conditions.

The loudest noise levels during Phase 2, 3-1, and 3-2 will be produced by jackhammers during demolition of existing buildings, piledrivers during the construction of the school foundations, and heavy truck activity (concrete trucks, haul trucks, and dump trucks). During Phase 2, 3-1, and 3-2, noise sensitive locations around the project site are predicted to experience noise levels (L_{eq}) during construction between 89 and 96 dBA, which would result in significant noise levels increases between 22 and 41 dBA over existing midday conditions. As previously mentioned above, these noise level increases assume that all pieces of equipment would be working concurrently and in the same location to evaluate a worst-case scenario. Actual construction noise levels will vary and will be dependent on distance from the work, equipment types and quantities working concurrently, location of sensitive receptors (i.e., inside or outside), and natural and/or man-made features (e.g., barriers, berms, existing buildings) between the work and sensitive receptor that would provide shielding. The results of the construction noise analysis are summarized in Table 10-15, "Summary of Stationary-Source Analysis – Construction 2025 Q4."

Table 10-15: Summary of Stationary-Source Analysis - Construction 2025 Q4

Site Number	Site Location	Predicted Noise Levels, L_{eq} dBA			Increase in Noise Levels
		Measured Midday	Predicted Construction	Total Noise Level	
1	35 Landis Avenue	55	96	96	41
2	40 Knauth Place	54	90	90	37
3[1]	Intersection of Garson Avenue/Narrows Road South	63	NA	NA	NA
4	31 Cleveland Place	59	92	92	34
5	338 Fingerboard Road	67	89	89	22
6	5 Hastings Street	64	89	89	25

Notes:
1 – Site Number 3 was omitted from the construction noise analysis since it does not represent a noise sensitive location.

Source: HMMH, 2024.

Cumulative Analysis

To determine the maximum noise levels that can be anticipated during construction, the results of the mobile and stationary-source analyses were combined and are summarized in Table 10-16, "Summary of Cumulative Noise Analysis – Construction 2025 Q4." This assumes that construction-related traffic as well as on-site work would be occurring simultaneously during the AM and PM peak construction traffic hours. However, during a typical workday, the peak construction traffic hour would generally occur before and after on-site work commences. Construction-related traffic outside of the peak hours would be lower and is not anticipated to cause significant contribution to the overall construction noise levels. Therefore, the results presented within Table 10-16, "Summary of Cumulative Noise Analysis – Construction 2025 Q4," identify a worst-case scenario.

As shown in Table 10-16, "Summary of Cumulative Noise Analysis – Construction 2025 Q4," the estimated maximum L_{eq} noise exposure levels were determined to range between 89 and 96 dBA at receptors surrounding the project site, which is entirely due to on-site construction activities. Projected noise level increases will range between 18 and 39 dBA and would be considered significant. However, this significant increase in noise levels would be temporary and transient and would only occur during peak construction in Q4 2025. Noise attenuation recommendations to ensure that the interior noise levels of the two IS/HS remain below the maximum allowable interior L_{10} noise exposure level of 45 dBA when the campus is fully operational full are detailed in Chapter 7, "Noise."

Table 10-16: Summary of Cumulative Noise Analysis – Construction 2025 Q4

Site Number	Site Location	2030 Q1 Future No Build Noise Levels, L_{eq} dBA		Predicted Construction Noise Levels, L_{eq} dBA		Total Predicted Construction Noise Levels, L_{eq} dBA		2025 Q4 No Build to With Action Increase in Noise Levels During Construction, dBA	
		AM	PM	Mobile Source	Stationary Source	AM	PM	AM	PM
1	35 Landis Avenue	60	57	65	96	96	96	36	39
2	40 Knauth Place	60	59	65	90	90	90	30	31
3	Intersection of Garson Avenue/Narrows Road South	63	63	64	NA	NA	NA	NA	NA
4	31 Cleveland Place	60	58	64	92	92	92	32	34
5	338 Fingerboard Road	69	71	70	89	89	89	20	18
6	5 Hastings Street	59	62	69	89	89	89	30	27

Notes:
1 – Site Number 3 was omitted from the construction noise analysis since it does not represent a noise sensitive location.

Source: HMMH, 2024.

2030 Q1 ANALYSIS

In 2030 Q1, construction of the two IS/HS and athletic field will be completed and in operation while Phase 3-2 construction activities, including construction of the PS/IS and renovations to the Chapel Building, continue. A construction noise assessment was conducted for this condition to evaluate the effects of construction activities on students and faculty occupying the two IS/HS as well as adjacent receptors to the project site. Since this construction phase will analyze noise levels at a new receptor, the L_{10} noise level parameter is also used for impact determination.

Mobile-Source Analysis

A mobile-source screening analysis was performed for the AM and PM peak construction traffic hours for the project during weekdays. A total of seven roadway segments around the project site were analyzed for potential mobile-source noise impacts during 2030 Q1 construction. A maximum noise level increase of 3 dBA is predicted in the AM peak traffic hour along Hastings Street, between Narrows South Road and Major Avenue due to haul trucks traveling to and from the project site. This increase would be just noticeable to receptors located along this roadway segment and would be less significant than increases predicted during the 2025 Q4 construction period. Table 10-17, "PCE Traffic Noise Level Calculations for Construction 2030 Q1 Conditions," summarizes the resultant predicted noise levels for each site.

Table 10-17: PCE Traffic Noise Level Calculations for Construction 2030 Q1 Conditions

Site Number	Site Location	2030 Q1 Future No Build Noise Levels		2030 Q1 With Action Traffic Noise Levels During Construction		Projected 2030 Q1 No Build to With Action Increase in Noise Levels During Construction	
		Hourly L_{eq}(h) (L_{10}) in dBA		Hourly L_{eq}(h) (L_{10}) in dBA		Decibels Change (dBA)	
		AM	PM	AM	PM	AM	PM
1	35 Landis Avenue	60 (63)	58 (60)	60 (64)	58 (60)	0	0
2	40 Knauth Place	61 (63)	59 (63)	61 (63)	59 (63)	0	0
3	Intersection of Garson Avenue/Narrows Road South	63 (66)	63 (67)	63 (67)	63 (67)	0	0
4	31 Cleveland Place (Representing the two IS/HS)	60 (62)	58 (61)	60 (62)	58 (61)	0	0
5	338 Fingerboard Road	70 (74)	71 (75)	70 (74)	71 (75)	0	0
6	5 Hastings Street	59 (61)	63 (66)	62 (64)	63 (66)	3	0

Source: HMMH, 2024.

Stationary-Source Analysis

Phase 3-2 construction would continue while a portion of the campus is occupied. This phase includes the construction of the PS/IS and renovation of the Chapel Building during Phase 3-2. Predicted construction noise levels were compared to measured, midday noise levels since construction activity as this is when background noise levels are typically the lowest when construction activity is at its highest. The measured midday noise levels were used for the analysis since it was determined that the No-Action noise levels are anticipated to increase by less than 1 decibel when compared to existing conditions. Noise levels collected at Site #4 were used to represent midday conditions at the two IS/HS.

The loudest noise levels during Phase 3-2 will be produced by the pile driver during construction of the school and heavy truck activity (concrete trucks, haul trucks, and dump trucks). During Phase 3-2, students and faculty occupying the two IS/HS are predicted to experience noise levels (L_{eq}) during construction up to 94 dBA, which would result in significant noise levels increases up to 35 dBA over existing midday conditions. As discussed above, these noise level increases assume that all pieces of equipment would be working at the same time and location to determine a worst-case scenario. Actual construction noise levels will vary and will be dependent on distance from the work, equipment types and quantities working concurrently, location of sensitive receptors (i.e., inside or outside), and natural and/or man-made features (e.g., barriers, berms, existing buildings) between the work and sensitive receptor that would provide shielding. Additionally, the analysis assumes that foundation work for the PS/IS would occur during this phase and not concurrently during Phase 3-1 foundation work. However, noise levels during 2030 Q1 could be reduced at the two IS/HS if all foundation work was to be completed during 2025 Q4 construction when the school is not in operation. The results of the construction noise analysis are summarized in Table 10-18, "Summary of Construction Noise Analysis – 2030 Q1."

Table 10-18: Summary of Construction Noise Analysis – 2030 Q1

Site Number	Predicted Noise Levels, L_{eq} dBA			Increase in Noise Levels
	Measured Midday	Predicted Construction	Total Noise Level	
4 (Representing the two IS/HS)	59	94	94	35

Source: HMMH, 2024.

Cumulative Analysis

To determine the maximum noise levels that can be anticipated during construction while the two IS/HS are occupied, the results of the mobile and stationary-source analyses were combined and is summarized in Table 10-19, "Summary of Cumulative Noise Analysis – Construction 2030 Q1." This assumes that construction-related traffic as well as on-site work would be occurring simultaneously during the AM and PM peak traffic hours. However, as discussed within, during a typical workday, the peak construction traffic hour would generally occur before and after on-site work commences. Construction-related traffic outside of the peak hours would be lower and is not anticipated to significantly contribute to the overall construction noise levels. Therefore, the results presented in Table 10-19, "Summary of Cumulative Noise Analysis – Construction 2030 Q1," identify a worst-case scenario.

As shown in Table 10-19, "Summary of Cumulative Noise Analysis – Construction 2030 Q1," the estimated maximum L_{10} noise exposure level is determined to be 96 dBA at the two IS/HS. Peak period noise exposure levels of the two IS/HS are considered "Clearly Unacceptable", per the *CEQR Technical Manual*. However, this significant increase in noise levels would be temporary and transient and only occur during construction. Noise attenuation recommendations to ensure the interior noise levels of the two IS/HS remain below the maximum allowable interior L_{10} noise exposure level of 45 dBA when the campus is fully operational full are detailed in Chapter 7, "Noise."

Table 10-19: Summary of Cumulative Noise Analysis – Construction 2030 Q1

Site Number	2030 Q1 Future No Build Noise Levels, L_{eq} (L_{10}), dBA		Predicted Construction Noise Levels, L_{eq} (L_{10}), dBA		Total Predicted Construction Noise Levels, L_{eq} (L_{10}), dBA		2030 Q1 No Build to With Action Increase in Noise Levels During Construction, dBA	
	AM	PM	Mobile Source	Stationary Source	AM	PM	AM	PM
4 (Representing the two IS/HS)	60 (62)	58 (61)	64 (67)	93 (96)	93 (96)	93 (96)	33	35

Source: HMMH, 2024.

CONSTRUCTION VIBRATION

Vibration levels were analyzed at receptors adjacent to work areas on the project site. The vibration analysis conservatively assumes the most vibration-sensitive structures are FTA Category III structures, which are structures made of non-engineered timber and masonry buildings. For vibration annoyance, land uses most sensitive to construction vibration include places where people typically sleep, such as residences. Vibration-inducing activities occurring during construction of the project include the use of an impact pile driver, vibratory rollers, bulldozers, and haul trucks loaded with debris.

For work occurring during Phase 1, the greatest vibration levels would be related to the use of bulldozers, haul trucks, and jackhammers working on-site during demolition. The highest vibration level when evaluating for structural damage during Phase 1 work is 0.2196 PPV during bulldozer activities. This level is predicted at a residence located on the north side of Knauth Place, approximately 11 feet from the project site, and is above the damage impact criteria; therefore, a potential for structural damage is predicted. The remainder of structures adjacent to the project site are located further away and are not predicted to experience structure damage impacts from the project. Vibration annoyance predictions were also calculated at receptors nearest the Phase 1 work within the project site. For an annoyance impact to occur, a bulldozer would have to be located within 27 feet of a sensitive receptor. There are no vibration-sensitive land uses located this close to Phase 1 work; therefore, no significant vibration annoyance impacts are predicted.

For work occurring during Phase 2, the greatest vibration levels would be related to the use of bulldozers and haul trucks working on-site during site work, grading, and utility activities. The highest vibration level when evaluating for structural damage during Phase 2 work is 0.2196 PPV during bulldozer activities. This level is predicted at a residence located on the north side of Knauth Place, approximately 11 feet away and is above the damage impact criteria; therefore, a potential for structural damage is predicted. The remainder of structures adjacent to the project site are located further away and are not predicted to experience structure damage impacts from the project. Vibration annoyance predictions were also calculated at receptors nearest Phase 2 work within the project site. For an annoyance impact to occur, a bulldozer would have to be located within 27 feet of a sensitive receptor. There are no vibration-sensitive land uses located this close to Phase 2 work; therefore, no significant vibration annoyance impacts are predicted.

For work occurring during Phase 3-1, the greatest vibration levels would be related to the use of an impact pile driver, bulldozers, and haul trucks working on-site during the construction of the two IS/HS and athletic field. The highest vibration level when evaluating for structural damage during the construction of the two IS/HS is 0.1402 PPV during pile driving activities. This level is predicted at the existing Chapel Building located on campus, approximately 100 feet away. This level is below the damage impact criterion; therefore, no potential for structural damage is predicted. The highest vibration level when evaluating for structural damage during the construction of the athletic field is 0.0287 PPV during bulldozer activities. This level is predicted at a residence located on the west side of Hastings Street, approximately 70 feet away, and is below the damage impact criterion; therefore, no potential for structural damage is predicted. The remainder of structures adjacent to the project site are located further away and are not predicted to experience structure damage impacts from the project. Vibration annoyance predictions were also calculated at receptors nearest Phase 3-1 work within the project site. For an annoyance impact to occur, an impact pile driver would have to be located within 32 feet of a sensitive receptor, and 27 feet of a bulldozer and haul truck. There are no vibration-sensitive land uses located this close to Phase 3-1 work; therefore, no significant vibration annoyance impacts are predicted.

For work occurring during Phase 3-2, the greatest vibration levels would be related to the use of an impact pile driver, vibratory rollers, and bulldozers working on-site during the construction of the PS/IS and parking lots. The highest vibration level when evaluating for structural damage during the construction of the PS/IS is 0.644 PPV during pile driving activities. This level is predicted at the existing Chapel Building located on campus, approximately 25 feet away. This level is well above the damage criteria; therefore, a potential for structural damage is predicted. The SCA would prepare a Construction Phase Plan (CPP) to mitigate the potential effects of construction equipment-related vibration to the S/NRHP-eligible Chapel Building. No other structures are predicted to experience structural impact from pile driving activities.

The highest vibration level when evaluating for structural damage during the construction of the parking lots is 0.2840 PPV during vibratory roller activities. This level is predicted at the nearest structure along Cleveland Place, approximately 19 feet away, and is above the damage criteria; therefore, a potential for structural damage is predicted. The remainder of structures adjacent to the project site are located further away and are not predicted to experience structure damage impacts from the project. Vibration annoyance predictions were also calculated at receptors nearest Phase 3-2 work within the project site. For an annoyance impact to occur, an impact pile driver would have to be located within 32 feet of a sensitive receptor, and 27 feet of a bulldozer and haul truck. There are no vibration-sensitive land uses located around the project site this close to Phase 3-2 work; therefore, no significant vibration annoyance impacts are predicted at these locations. However, during Phase 3-2 work, the campus would be in partial operation due to the occupation of the two IS/HS. To avoid potential annoyance impacts, faculty and staff should avoid campus locations within the specified distances during construction.

Other Technical Areas

HISTORIC AND CULTURAL RESOURCES

Per the guidance of the *CEQR Technical Manual*, a construction assessment for potential effects to historic and cultural resources is not warranted unless the project is within 400 feet of a historic or cultural resource. As described in Chapter 3, “Historic and Cultural Resources,” the project site is located on the S/NRHP-eligible St. John Villa campus. While several structures (the Villa, the Former Elementary School, the Former Annex, the Garage, the Former High School and Addition, the Former Pre-K Center, and Gymnasium) would be removed as a result of the proposed actions, the S/NRHP-eligible Chapel Building would be renovated and maintained.

Under Section 14.09, of the SHPA, demolition of a S/NRHP eligible resource will result in an adverse impact to the historic resource. The SCA and OPRHP signed an LOR to “establish the course of action necessary for successful mitigation of the potential adverse impacts of the demolition of the Villa, Elementary School, High School, Pre-K Center, Annex, and Garage at the St. John Villa Academy in accordance with Section 14.09” regarding the demolition of structure on the S/NRHP-eligible site. As part of that agreement, the SCA has agreed to renovate and maintain the S/NRHP-eligible Chapel Building, as well as to maintain or reconstruct the existing stone wall, iron fencing, and gates located on a portion of the project site’s perimeter.

The LOR agreed to by both the SCA and OPRHP establishes the course of action necessary for successful mitigation of the potential adverse impacts of the demolition of the Villa, Elementary School, High School, Pre-K Center, Annex, and Garage at the St. John Villa Academy in accordance with Section 14.09 of the SHPA. As the proposed project moves forward, the SCA will implement the terms of the LOR to mitigate the adverse impact to the St. John Villa Academy S/NRHP-eligible historic resource. Following completion of the proposed project, the SCA will certify in writing that they have completed the conditions specified in the LOR and will provide any additional documentation regarding the proposed project at the reasonable request of OPRHP.

A CPP would be warranted to minimize the potential effects of construction equipment-related vibration to the S/NRHP-eligible Chapel Building. Such a plan could include measures to minimize potential impacts by developing and implementing vibration-monitoring protocol. This would establish vibration thresholds that are not to be exceeded by construction. If excavation equipment is limited to the use of a backhoe, vibrations are likely to remain at a low level. No pile driving would be required during construction. If jackhammering is required, then vibration control measures could be implemented to minimize, as much as possible, the vibration levels at the historic buildings within the study area.

HAZARDOUS MATERIALS

The Phase I Environmental Site Assessment ("Phase I ESA") and Subsurface Phase II Investigation ("Phase II Investigation") reports revealed on-site Recognized Environmental Conditions (RECs); three in-service fuel oil underground storage tanks (USTs) with associated closed-status spill listings and tightness test failure; environmental concerns associated with suspected asbestos-containing material (ACM), lead-based paint (LBP), and polychlorinated biphenyl (PCB)-containing equipment and materials associated with the building and buried structures; potential mold growth due to observed water damage; and a 55-gallon drum with unknown contents. Analytical results from soil samples indicated that several semi-volatile organic compounds, metals, and pesticides were detected at concentrations above the NYSDEC Soil Cleanup Objectives. Two volatile organic compounds were identified in sub-slab vapor at concentrations above the New York State Department of Health comparison criteria.

These identified contaminants on the project site would be addressed through the following measures: the incorporation of a soil vapor barrier and a sub-slab depressurization system into the new building design; fuel oil storage tanks to be closed and removed; the characterization of excavated soil to identify material handling, reuse and/or disposal requirements; and the placement of two feet of environmentally clean fill over all landscaped areas. With the implementation of these measures, there would be no significant adverse construction impacts related to hazardous materials.

NATURAL RESOURCES

Per the guidance of the *CEQR Technical Manual,* a construction assessment for potential effects to natural resources is not warranted unless the project involves construction that would disturb a site or to be located adjacent to a site containing natural resources.

There are no significant natural resources on the project site or within the surrounding area. No surface water bodies, State- or Federally-mapped wetlands, flood zones, nor significant terrestrial resources are located on or adjacent to the project site.

No significant natural communities are identified on or immediately adjacent to the project site. As disclosed in the Supplemental Report in the Environmental Assessment Form (EAF), a review of the online Environmental Resources Mapper for the NYSDEC New York Natural Heritage Program on April 24 and February 15, 2024, identified no known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats on or in the immediate vicinity of the project site. The proposed project would not impact terrestrial resources, wetlands, or flooding, so there would be no significant adverse impact to natural resources during construction.

Chapter 11: Mitigation Measures

INTRODUCTION

In accordance with the *CEQR Technical Manual*, where significant adverse impacts have been identified, mitigation measures that eliminate or reduce the impacts to the fullest extent practicable must be examined. The proposed actions would result in significant adverse impacts related to historic and cultural resources (architectural resources), transportation (traffic and transit), noise (mobile sources), and construction (traffic, transit, and noise). Mitigation measures proposed to address those impacts, where feasible and/or practical, are discussed below. If no feasible mitigation can be identified, an unavoidable significant adverse impact would result.

HISTORIC AND CULTURAL RESOURCES

The SCA and OPRHP entered into an LOR that specifies six mitigation measures that would be implemented as part of the proposed project:

1. The SCA will preserve the existing Chapel Building and will submit a restoration plan to OPRHP, which will have thirty days to review and comment upon the proposed work.
2. The SCA will preserve the existing stone wall, iron fencing, and gates located on a portion of the site's perimeter. Where they are in good condition, the stone wall and iron fence will be preserved, and the remainder will be reconstructed around the larger extent of the campus boundary.
3. The SCA will continue to consult with OPRHP on the designs of the new buildings and proposed site work so as to reflect, to the extent possible, existing visual cues, massing, and scale of the historic buildings currently existing at the Saint John Villa Academy. The SCA will submit its proposed design to OPRHP, which will have thirty days to respond and comment on the proposed designs.
4. Prior to their demolition, the SCA will compile photo documentation of the Villa, Elementary School, High School, Pre-K Center, Annex, and Garage buildings in the manner set forth in Exhibit 1. Two (2) copies of the photo documentation shall be provided to OPRHP. The SCA will send one copy of the photographs to a local library or historical society. A proof sheet will be provided to OPRHP for review thirty days before the buildings are scheduled for demolition. The actual photos will be included in the documentation reports, which the SCA will send to OPRHP within six months after demolition.
5. The SCA has scanned drawings of the existing buildings at Saint John Villa Academy and has archived same in its electronic database. These will be included in the documentation report.
6. The SCA will install interpretive panels in the Chapel Building that may include photos of the existing Campus. The designs for the interpretive panels shall be submitted to OPRHP for review and comment before design is final.

The LOR agreed to by both the SCA and OPRHP establishes the course of action necessary for successful mitigation of the potential adverse impacts of the demolition of the Villa, Elementary School, High School, Pre-K Center, Annex, and Garage at the St. John Villa Academy in accordance with Section 14.09 of the SHPA. As the proposed project moves forward, the SCA will implement the terms of the LOR to mitigate the adverse impact to the St. John Villa Academy S/NRHP-eligible historic resource. Following completion of the proposed project, the SCA will certify in writing that they have completed the conditions specified in the LOR and will provide any additional documentation regarding the proposed project at the reasonable request of OPRHP.

TRANSPORTATION

Traffic

INTERSECTIONS

As described in Chapter 5, "Transportation," the proposed project would result in significant adverse traffic impacts at nine study area intersections and one campus driveway location during one or more analyzed peak hours. For significant impacts identified for movements that operated as LOS E or F in the With-Action condition, improvements were identified to achieve the same or better delays as for the No-Action condition. As demonstrated below, many of these impacts could be mitigated through the implementation of traffic engineering improvements, including modification of traffic signal phasing/timing and/or intersection approach lane reconfiguration. While impacts at six intersections could be mitigated, traffic impacts at four intersections would remain unmitigated.

The types of mitigation measures proposed herein are standard measures that are routinely identified by the NYCDOT and considered feasible for implementation. Table 11-1, "Proposed Traffic Mitigation Measures," summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the weekday AM, PM, and Saturday midday peak hours. Implementation of the recommended traffic engineering improvements is subject to review and approval by NYCDOT. If, prior to implementation, NYCDOT determines that an identified mitigation measure is infeasible, alternative and equivalent mitigation measures would be explored and submitted for NYCDOT's review and approval. The impacts would remain unmitigated in the absence of mitigation measures if the predicted traffic volumes at the studied intersections are realized.

HIGHWAY ANALYSIS

The highway analysis indicated the potential for a significant adverse impact for six freeway segments. Geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate these impacts may not be practical. This option would also require coordination with and approval from NYSDOT. Other improvement measures would be considered to the extent that mitigation is feasible. An alternative mitigation option would include TDM measures to reduce the vehicle trip demand to I-278. TDM mitigation would require a binding commitment to implement proposed measures to reduce vehicle trip demand. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated. Consequently, these impacts would constitute unavoidable significant adverse traffic impacts as a result of the proposed project (refer to Chapter 14, "Unavoidable Adverse Impacts").

Table 11-1: Proposed Traffic Mitigation Measures

Intersection	Control Type	Impacted Lane Groups			Proposed Mitigation - AM	Proposed Mitigation - PM	Proposed Mitigation - SAT
		AM	PM	SAT			
Fingerboard Road @ Narrows Road South	Sig.	EB-LTR NB-TR SB-L	EB-LTR	--	Unmitigatable.	Unmitigatable.	--
Fingerboard Road @ Narrows Road North	Sig.	WB-LT NB-L	WB-LT NB-L NB-T	WB-LT	Unmitigatable.	Unmitigatable.	Unmitigatable.
Hylan Boulevard @ West Fingerboard Road	Sig.	EB-LTR	--	--	Shift three seconds of green time from the NB/SB phase to the EB/WB phase.	--	--
Lily Pond Avenue @ McClean Avenue	Sig.	EB-L NB-T	EB-LTR	--	Unmitigatable.	Unmitigatable.	--
Narrows Road South @ Hylan Boulevard West	Sig.	EB-T	--	--	Shift one second of green time from the SB phase to the EB phase.	--	--
Narrows Road North @ Hylan Blvd East	Unsig.	NB-L	NB-L	--	Unmitigatable.	Unmitigatable.	--
School Road @ Bay Street	Sig.	EB-L	--	--	Shift one second of green time from the NB/SB phase to the EB/WB phase.	--	--
Fingerboard Road @ Cleveland Place	Unsig.	WB-LR	WB-LR	--	Signalize intersection under Signal Warrant #3. Remove parking along the south curb of Cleveland Place to allow two westbound travel lanes.		--
Landis Avenue @ Chicago Avenue	Unsig.	NB-R	NB-R	--	Install stop sign on eastbound approach under AWS Warrant E.		--
Cleveland Place @ SJV Driveway/ Garson Avenue	Unsig.	--	EB-L	--	--	Install stop sign on northbound approach under AWS Warrant E.	--

Note: NB = northbound, SB = southbound, EB = eastbound, WB = westbound, L = left-turn, T = through, R = right-turn

Source: STV Incorporated, 2024.

The intersections that would require mitigation, or for which practicable mitigation has not been identified for one or more analysis periods, include:

- Fingerboard Road and Narrows Road South – Neither signal timing adjustments nor lane reconfigurations would be able to mitigate the significant adverse impacts during the weekday AM and PM peak hours.
- Fingerboard Road and Narrows Road North – Neither signal timing adjustments nor lane reconfigurations would be able to mitigate the significant adverse impacts during the weekday AM, PM, and Saturday midday peak hours.
- Hylan Boulevard and West Fingerboard Road – A traffic signal timing adjustment would mitigate the AM peak-hour impact.
- Lily Pond Avenue and McClean Avenue – Neither signal timing adjustments nor lane reconfigurations would be able to mitigate the significant adverse impacts during the weekday AM and PM peak hours.
- Narrows Road South and Hylan Boulevard West – A traffic signal timing adjustment would mitigate the AM peak hour impact.
- School Road and Bay Street – A traffic signal timing adjustment would mitigate the AM peak hour impact.

- Narrows Road North and Hylan Boulevard East – Neither modification of traffic control devices nor lane reconfigurations would be able to mitigate the significant adverse impacts during the weekday AM and PM peak hours.
- Fingerboard Road and Cleveland Place – Signalizing this intersection, as well as eliminating parking spaces along the north and south curbs of westbound Cleveland Place during school hours to allow for two travel lanes, would mitigate the AM and PM peak-hour impacts. MUTCD Traffic Signal Warrant #3 is met at this intersection due to high intersection volume and delay. Proposed traffic signal timing was coordinated with the adjacent intersection at Fingerboard Road and Narrows Road South to minimize queuing between the closely spaced intersections.
- Landis Avenue and Chicago Avenue – Installing all-way stop controls at this intersection would mitigate the AM and PM peak-hour impacts. MUCTD All-Way Stop Control Warrant E for other factors is met at this intersection, as it is located in a residential neighborhood and student pedestrian movements support installation.
- Cleveland Place and St. John Villa Campus Driveway at Garson Avenue – Installing all-way stop controls at this intersection would mitigate the PM peak-hour impact. MUCTD All-Way Stop Control Warrant E for other factors is met at this intersection, as it is located in a residential neighborhood and student pedestrian movements support installation.

Tables 11-2 through 11-4 identify the v/c ratios, delays, and LOSs for each intersection with implementation of these mitigation measures and compares them to No-Action and With-Action condition without the implementation of mitigation measures for the weekday AM, PM, and Saturday midday peak hours, respectively. According to *CEQR Technical Manual* criteria, an impact is considered fully mitigated when the resulting LOS degradation under the With-Action with mitigation condition compared to the No-Action condition is no longer deemed significant following the impact criteria described in Chapter 5, "Transportation." Tables 11-2 through 11-4 demonstrate that significant adverse impacts would be fully mitigated at all intersections except the intersections of:

- Fingerboard Road at Narrows Road South (weekday AM and PM peak hours)
- Fingerboard Road at Narrows Road North (weekday AM, PM, and Saturday midday peak hours)
- Lily Pond Avenue at McClean Avenue (weekday AM and PM peak hours)
- Hylan Boulevard East at Narrows Road North (weekday AM and PM peak hours)

Table 11-2: Mitigated With-Action Conditions – Weekday AM Peak Hour

INTERSECTION & APPROACH		No Action - AM				With Action - AM				w/ Mitigations - AM			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Signalized													
Fingerboard Road and Narrows Road South													
Narrows Road South	EB	LTR	1.10	90.4	F	LTR	1.46	243.3	F	LTR	Unmitigatable		
Fingerboard Road	NB	TR	0.95	48.7	D	TR	1.51	264.8	F	TR			
	SB	L	0.69	47.1	D	L	1.77	422.6	F	L			
		T	0.21	15.2	B	T	0.23	13.3	B	T			
Overall Intersection		-		**73.1**	**E**	-		**245.6**	**F**	-			
Fingerboard Road and Narrows Road North													
Narrows Road North	WB	LTR	0.82	64.8	E	LTR	1.13	135.5	F	LTR	Unmitigatable		
I-278 W Exit Ramp	NWB	LTR	0.22	27.4	C	LTR	0.22	27.4	C	LTR			
Fingerboard Road	NB	L	0.47	33.3	C	L	1.70	355.2	F	L			
		T	0.22	31.0	C	T	0.29	32.7	C	T			
	SB	TR	0.37	34.4	C	TR	0.44	35.9	D	TR			
Overall Intersection		-		**41.3**	**D**	-		**167.6**	**F**	-			
Hylan Boulevard and W Fingerboard Road													
W Fingerboard Road	EB	LTR	0.94	84.4	F	LTR	1.05	111.0	F	LTR	0.93	76.5	E
Sand Lane	WB	LT	0.52	45.5	D	LT	0.54	46.0	D	LT	0.47	41.6	D
Hylan Boulevard	NB	L	0.04	8.8	A	L	0.04	8.8	A	L	0.04	10.0	A
		TR	0.31	10.9	B	TR	0.33	11.1	B	TR	0.35	12.6	B
	SB	L	0.19	8.6	A	L	0.27	11.9	B	L	0.28	13.2	B
		T	0.15	8.0	A	T	0.18	10.1	B	T	0.18	11.0	B
		R	0.04	7.4	A	R	0.07	9.3	A	R	0.08	9.8	A
Overall Intersection		-		**27.0**	**C**	-		**32.1**	**C**	-		**26.4**	**C**
Lily Pond Avenue and McClean Avenue													
McClean Avenue	EB	L	1.04	81.3	F	L	1.07	90.4	F	L	Unmitigatable		
		TR	0.09	21.0	C	TR	0.09	21.0	C	TR			
	WB	LTR	0.23	22.9	C	LTR	0.24	23.0	C	LTR			
Lily Pond Avenue	NB	L	0.07	13.3	B	L	0.08	13.4	B	L			
		T	1.05	61.4	E	T	1.07	69.2	E	T			
		R	0.05	12.7	B	R	0.05	12.7	B	R			
	SB	LTR	0.70	28.8	C	LTR	0.75	33.1	C	LTR			
Overall Intersection		-		**53.8**	**D**			**60.2**	**E**				

Table 11-2: Mitigated With-Action Conditions – Weekday AM Peak Hour (continued)

INTERSECTION & APPROACH		No Action - AM				With Action - AM				w/ Mitigations - AM			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Narrows Road South and Hylan Boulevard W													
Narrows Road South	EB	T	1.03	64.8	E	T	1.06	75.0	E	T	1.04	67.9	E
		R	0.45	24.4	C	R	0.45	24.4	C	R	0.45	23.6	C
Hylan Boulevard West	SB	T	0.27	8.6	A	T	0.27	8.6	A	T	0.27	8.9	A
Overall Intersection		-		**46.8**	**D**	-		**53.7**	**D**	-		**49.0**	**D**
School Road and Bay Street													
School Road	EB	L	0.84	54.8	D	L	0.90	62.7	E	L	0.88	58.7	E
		TR	0.84	29.6	C	TR	0.25	29.6	C	TR	0.25	28.8	C
Park Driveway	WB	LTR	0.84	26.2	C	LTR	0.01	26.2	C	LTR	0.01	25.5	C
Bay Street	NB	LTR	0.84	14.8	B	LTR	0.08	14.8	B	LTR	0.08	15.3	B
	SB	LT	0.84	18.0	B	LT	0.33	18.0	B	LT	0.34	18.7	B
		R	0.84	16.7	B	R	0.23	16.7	B	R	0.23	17.2	B
Overall Intersection		-		**29.9**	**C**	-		**32.9**	**C**	-		**31.9**	**C**
Fingerboard Road and Cleveland Place													
Cleveland Place	WB	LR	0.21	14.8	B	LR	1.52	272.5	F	L	0.23	24.7	C
										R	0.88	51.1	D
Fingerboard Road	NB	T	0.34	0.0	A	T	0.34	0.0	A	T	0.82	28.7	C
	SB	T	0.13	0.0	A	T	0.15	0.0	A	T	0.37	14.6	B
Overall Intersection		-		**1.7**	**A**	-		**114.2**	**F**	-		**33.2**	**C**
<u>Unsignalized</u>													
Landis Avenue and Chicago Avenue													
Chicago Avenue	EB	LR	0.09	0.0	A	LR	0.11	0.0	A	LR	0.26	9.9	A
Landis Avenue	NB	R	0.04	9.2	A	R	1.77	383.5	F	R	0.63	13.2	B
Overall Intersection		-		**1.8**	**A**	-		**293.3**	**F**	-		**12.4**	**B**
Narrows Road North and Hylan Boulevard E													
Narrows Road North	WB	T	0.19	0.0	A	T	0.27	0.0	A	T	Unmitigatable		
Hylan Boulevard East	NB	L	1.00	52.4	F	L	1.14	101.7	F	L			
Overall Intersection		-		**24.3**	**C**	-		**38.4**	**E**	-			

Source: STV Incorporated, 2024.

Table 11-3: Mitigated With-Action Conditions – Weekday PM Peak Hour

INTERSECTION & APPROACH		No Action - PM				With Action - PM				w/ Mitigations - PM			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Signalized													
Fingerboard Road and Narrows Road South													
Narrows Road South	EB	LTR	0.74	47.4	D	LTR	1.11	110.2	F	LTR	Unmitigatable		
Fingerboard Road	NB	TR	0.33	9.8	A	TR	0.74	20.8	C	TR			
	SB	L	0.08	8.2	A	L	0.16	9.0	A	L			
		T	0.50	10.7	B	T	0.50	10.6	B	T			
Overall Intersection		-		**25.1**	**C**	-		**53.8**	**D**	-			
Fingerboard Road and Narrows Road North													
Narrows Road North	WB	LTR	0.81	67.4	E	LTR	1.68	367.0	F	LTR	Unmitigatable		
I-278 W Exit Ramp	NWB	LTR	0.00	24.7	C	LTR	0.00	24.5	C	LTR			
Fingerboard Road	NB	L	0.63	55.8	E	L	2.79	868.5	F	L			
		T	0.57	47.2	D	T	0.69	56.2	E	T			
	SB	TR	0.55	51.8	D	TR	0.60	54.6	D	TR			
Overall Intersection		-		**37.5**	**D**	-		**248.7**	**F**	-			
Lily Pond Avenue and McClean Avenue													
McClean Avenue	EB	LTR	1.04	115.6	F	LTR	1.09	131.1	F	LTR	Unmitigatable		
	WB	LTR	0.38	42.5	D	LTR	0.38	42.7	D	LTR			
Lily Pond Avenue	NB	L	0.11	13.4	B	L	0.12	14.0	B	L			
		T	0.36	11.4	B	T	0.37	11.5	B	T			
		R	0.04	8.8	A	R	0.04	8.8	A	R			
	SB	LTR	0.96	22.5	C	LTR	0.99	28.8	C	LTR			
Overall Intersection				**28.6**	**C**			**33.8**	**C**				
Fingerboard Road and Cleveland Place													
Cleveland Place	WB	LR	0.13	12.6	B	LR	1.27	164.0	F	L	0.30	27.9	C
										R	0.88	54.7	D
Fingerboard Road	NB	T	0.14	0.0	A	T	0.14	0.0	A	T	0.33	16.0	B
	SB	T	0.32	0.0	A	T	0.32	0.0	A	T	0.71	20.9	C
Overall Intersection		-		**1.0**	**A**	-		**70.8**	**F**	-		**31.4**	**C**

Table 11-3: Mitigated With-Action Conditions – Weekday PM Peak Hour (continued)

INTERSECTION & APPROACH		No Action - PM				With Action - PM				w/ Mitigations - PM			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Unsignalized													
Landis Avenue and Chicago Avenue													
Chicago Avenue	EB	LR	0.03	0.0	A	LR	0.03	0.0	A	LR	0.06	8.0	A
Landis Avenue	NB	R	0.02	8.7	A	R	2.52	747.1	F	R	0.38	8.7	A
Overall Intersection		-		**2.1**	**A**	-		**663.4**	**F**	-		**8.6**	**A**
Cleveland Place and Campus Parking Lot													
Cleveland Place	NB	LT	-	-	-	LT	0.00	0.0	A	LT	0.59	12.9	B
SJV Parking Lot	EB	L	-	-	-	L	0.65	73.7	F	L	0.12	9.0	A
SJV Driveway/Garson Avenue	WB	R	-	-	-	R	0.00	0.0	A	R	0.00	0.0	A
Overall Intersection		-		-	-	-		**10.4**	**B**	-		**12.3**	**B**
Narrows Road North and Hylan Boulevard E													
Narrows Road North	WB	T	0.37	0.0	A	T	0.48	0.0	A	T	Unmitigatable		
Hylan Boulevard East	NB	L	0.81	29.8	D	L	1.21	140.4	F	L			
Overall Intersection		-		**6.6**	**A**	-		**25.5**	**D**	-			

Source: STV Incorporated, 2024.

Table 11-4: Mitigated With-Action Conditions –Saturday Midday Peak Hour

INTERSECTION & APPROACH		No Action - Saturday				With Action - Saturday				w/ Mitigations - Saturday			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Signalized													
Fingerboard Road and Narrows Road North													
Narrows Road North	WB	LTR	0.62	53.4	D	LTR	1.15	145.9	F	LTR	Unmitigatable		
I-278 W Exit Ramp	NWB	LTR	0.00	18.2	B	LTR	0.00	18.2	B	LTR			
Fingerboard Road	NB	L	0.46	40.6	D	L	0.46	44.4	D	L			
		T	0.59	41.8	D	T	0.70	50.0	D	T			
	SB	TR	0.52	50.6	D	TR	0.53	51.0	D	TR			
Overall Intersection		-		**33.8**	**C**	-		**64.1**	**E**	-			

Source: STV Incorporated, 2024.

EFFECTS OF TRAFFIC MITIGATION ON PEDESTRIAN CONDITIONS

The proposed traffic mitigation measures include adjustments to traffic signal timings. These traffic signal timing adjustments would not affect pedestrian operations and the minimum pedestrian walk and clearance times would be provided; therefore, these measures would not result in new significant adverse pedestrian impacts at any of the analyzed pedestrian crosswalks.

EFFECTS OF TRAFFIC MITIGATION ON PARKING

The proposed traffic mitigation measures include the removal of approximately nine parking spaces. As discussed in Chapter 5, "Transportation," the results of the 2030 With-Action Parking analysis show that 21, 11, and 236 parking spaces would be available during the weekday AM, midday, and Saturday midday periods, respectively. Therefore, these measures would not result in a parking shortfall within a quarter-mile radius of the project site.

PROPOSED SCHEDULE FOR TRAFFIC MITIGATION MEASURES

Subject to approval from NYCDOT, the mitigation measures summarized in this section would be implemented to mitigate the significant adverse traffic impacts resulting from full build-out of the proposed project in 2030. As the construction of the proposed project would be expected to incrementally occur over an approximately six-year period, it is possible that some of the significant adverse traffic impacts could occur prior to full build-out in 2030. Based on a review of the number of trips generated by the proposed action, the proposed project would result in significant adverse traffic impacts when Phase 3-1 of construction is completed and the IS/HS buildings are operational by the end of 2029. At this time, early implementation of some or all of the mitigation measures developed for full build-out of the proposed project in 2030 may be warranted.

Transit

BUS

As discussed in Chapter 5, "Transportation," the proposed project would add approximately 536, 550, and 80 bus trips during the weekday AM, PM, and Saturday midday peak hours, respectively. The bus trips would be distributed across the S51, S52, S53, S78, S79-SBS, and S93 Limited bus routes. This increment would result in a predicted capacity shortfall through the maximum load point on the southbound S79-SBS bus route during the weekday PM peak hour. As listed in Table 11-5, "Mitigated With-Action Local Bus Analysis," this significant adverse impact could be fully mitigated by the addition of approximately one standard bus in the PM peak hour. The general policy of MTA is to provide additional bus service where demand warrants, taking into account financial and operational constraints. Note that if additional bus service is not provided, the impact would be unavoidable.

Table 11-5: Mitigated With-Action Local Bus Analysis

Peak Hour (1)	Route	Direction	Peak Hour Buses	Maximum Load Point	No Build Available Capacity at Maximum Load Point (2)	Project Increment at Maximum Load Point	Build Available Capacity	Additional Peak Hour Buses	Available Capacity with Mitigation (3)
Weekday AM	S52	NB	5	Hamilton Av/Egmont Pl	156	3	153	0	153
		SB	4	Tompkins Av/Fingerboard Rd	140	109	30	0	30
	S78	EB	7	Hylan Bl/Reno Av	242	40	202	0	202
		WB	6	Hylan Bl/Reynolds St	232	86	146	0	146
	S79-SBS	NB	13	Hylan Bl/Narrows Rd S	120	69	51	0	51
		SB	15	Hylan Bl/Seaview Av	275	2	273	0	273
Weekday PM	S52	NB	4	Fingerboard Rd/Lincoln Pl	163	86	77	0	77
		SB	3	Fingerboard Rd/Grasmere Dr	130	50	80	0	80
	S78	EB	4	Hylan Bl/Donley Av	141	92	49	0	49
		WB	4	Hylan Bl/W Fingerboard Rd	139	64	75	0	75
	S79-SBS	NB	7	Hylan Bl/Jacques Av	169	1	168	0	168
		SB	5	Narrows Rd N/Fingerboard Rd	29	72	-43	1	11

Source: STV Incorporated, 2024
Notes:
(1) Weekday peak hours: 7-8 AM, 2-3 PM
(2) Based on most recent available data from MTA (May 2023)
(3) Available capacity based on MTA loading guideline of 54 passengers per standard bus

NOISE

As described in Chapter 7, "Noise," the proposed project would result in significant adverse mobile-source noise impacts at three locations representing residences along Landis Avenue near Knauth Place (Site #1), along Knauth Place (Site #2), and along Cleveland Place (Site #4).

Measures to reduce or eliminate the proposed project's mobile-source noise impacts will be explored by the SCA between the Targeted DEIS and Targeted FEIS. Absent the identification and further implementation of feasible measures that would mitigate the mobile-source noise impacts, the proposed project would result in unmitigated significant adverse mobile-source noise impacts at these three locations.

CONSTRUCTION

Transportation

TRAFFIC

As described earlier, the proposed project is projected to result in a significant adverse traffic impact at one study area intersection during the 2025 (Q4) 3:00 PM to 4:00 PM construction peak hour. The impact at this intersection – Fingerboard Road at Narrows Road North – would remain unmitigated. No significant adverse impacts are expected during the 6:00 AM to 7:00 AM construction peak hour.

During the 2030 (Q1) cumulative construction and operational analysis, the proposed project is projected to result in significant adverse traffic impacts at eight study area intersections during the 7:00 AM to 8:00

AM and 2:15 PM to 3:15 PM operational peak hours. The impacts at four intersections could be mitigated through the implementation of traffic engineering improvements, including modification of traffic signal phasing/timing and/or intersection approach lane reconfiguration. The significant impacts at the remaining four intersections would remain unmitigated. Table 11-6, "Proposed Construction-Operational Phase Traffic Mitigation Measures," summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the weekday AM and PM construction peak hours. Implementation of the recommended traffic engineering improvements is subject to review and approval by NYCDOT. Table 11-7, "Mitigated Construction-Operational Phase With-Action Conditions – AM Peak Hour," and Table 11-8, "Mitigated Construction-Operational Phase With-Action Conditions – PM Peak Hour," show the v/c ratios, delays, and LOSs for each intersection with implementation of these mitigation measures and compares them to No-Action and With-Action condition for the weekday AM and PM construction peak hours. These proposed mitigation measures are recommended to be implemented before the completion of Phase 3-1.

HIGHWAY ANALYSIS

As described earlier, the proposed project is projected to result in significant adverse impacts at six freeway segments during the 2030 (Q1) 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM cumulative construction operational peak hours. These are the same impacts that would be expected during the With-Action condition. Geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate the highway impact may not be practical. This option would also require coordination with and approval by NYSDOT. Other improvement measures would be considered to the extent that mitigation is feasible. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated.

Table 11-6: Proposed Construction-Operational Phase Traffic Mitigation Measures

Intersection	Control Type	Impacted Lane Groups		Proposed Mitigation AM	Proposed Mitigation PM
		AM	PM		
Fingerboard Road @ Narrows Road South	Sig.	EB-LTR NB-TR SB-L	EB-LTR	Unmitigatable.	Unmitigatable.
Fingerboard Road @ Narrows Road North	Sig.	WB-LTR	WB-LTR NB-L SB-TR	Unmitigatable.	Unmitigatable.
Hylan Boulevard @ West Fingerboard Road	Sig.	EB-LTR	--	Shift three seconds of green time from the NB/SB phase to the EB/WB phase.	--
Lily Pond Avenue @ McClean Avenue	Sig.	EB-L NB-T	EB-TR	Unmitigatable.	Unmitigatable.
Narrows Road South @ Hylan Boulevard West	Sig.	EB-T	--	Shift one second of green time from the SB phase to the EB phase.	--
Narrows Road North @ Hylan Boulevard East	Unsig.	NB-L	NB-L	Unmitigatable.	Unmitigatable.
School Road @ Bay Street	Sig.	EB-L	--	Shift four seconds of green time from the NB/SB phase to the EB/WB phase.	--
Landis Avenue @ Chicago Avenue	Unsig.	NB-R	NB-R	Install stop sign on eastbound approach under AWS Warrant E.	Install stop sign on eastbound approach under AWS Warrant E.

Note: NB = northbound, SB = southbound, EB = eastbound, WB = westbound, L = left-turn, T = through, R = right-turn

Source: STV Incorporated, 2024.

Table 11-7: Mitigated Construction-Operational Phase With-Action Conditions – AM Peak Hour

INTERSECTION & APPROACH		No Action - AM				With Action - AM				w/ Mitigations - AM			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Signalized													
Fingerboard Road and Narrows Road South													
Narrows Road South	EB	LTR	1.10	90.8	F	LTR	1.34	189.9	F	LTR			
Fingerboard Road	NB	TR	0.97	53.0	D	TR	1.01	61.1	E	TR			
	SB	L	0.69	47.2	D	L	1.30	203.8	F	L	Unmitigatable		
		T	0.21	15.3	B	T	0.23	12.1	B	T			
Overall Intersection		-		**74.5**	**E**	-		**150.5**	**F**	-			
Fingerboard Road and Narrows Road North													
Narrows Road North	WB	LTR	0.82	64.8	E	LTR	1.48	280.5	F	LTR			
I-278 W Exit Ramp	NWB	LTR	0.22	27.4	C	LTR	0.00	27.5	C	LTR			
Fingerboard Road	NB	L	0.47	32.8	C	L	0.57	34.5	C	L			
		T	0.22	31.2	C	T	0.22	31.5	C	T	Unmitigatable		
	SB	TR	0.37	34.4	C	TR	0.49	37.1	D	TR			
Overall Intersection		-		**41.2**	**D**	-		**133.9**	**F**	-			
Hylan Boulevard and W Fingerboard Road													
W Fingerboard Road	EB	LTR	0.95	86.6	F	LTR	1.07	119.4	F	LTR	0.95	81.8	F
Sand Lane	WB	LT	0.53	45.7	D	LT	0.54	46.1	D	LT	0.48	41.7	D
Hylan Boulevard	NB	L	0.04	8.8	A	L	0.04	8.8	A	L	0.04	10.0	A
		TR	0.32	10.9	B	TR	0.32	10.9	B	TR	0.33	12.4	B
	SB	L	0.19	8.6	A	L	0.23	10.5	B	L	0.24	10.6	B
		T	0.15	8.0	A	T	0.15	9.4	A	T	0.16	9.1	A
		R	0.04	7.4	A	R	0.06	8.8	A	R	0.07	8.3	A
Overall Intersection		-		**27.4**	**C**	-		**34.1**	**C**	-		**27.4**	**C**
Lily Pond Avenue and McClean Avenue													
McClean Avenue	EB	L	1.05	85.6	F	L	1.09	96.5	F	L			
		TR	0.09	21.0	C	TR	0.09	21.0	C	TR			
	WB	LTR	0.24	23.0	C	LTR	0.24	23.1	C	LTR			
Lily Pond Avenue	NB	L	0.07	13.3	B	L	0.08	13.4	B	L	Unmitigatable		
		T	1.05	61.4	E	T	1.07	66.7	E	T			
		R	0.05	12.7	B	R	0.05	12.7	B	R			
	SB	LTR	0.70	28.8	C	LTR	0.74	32.3	C	LTR			
Overall Intersection		-		**54.5**	**D**	-		**59.7**	**E**	-			

Table 11-7: Mitigated Construction-Operational Phase With-Action Conditions – AM Peak Hour (continued)

INTERSECTION & APPROACH		No Action - AM				With Action - AM				w/ Mitigations - AM			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Narrows Road South and Hylan Boulevard W													
Narrows Road South	EB	T	1.03	64.8	E	T	1.07	75.4	E	T	1.05	68.3	E
		R	0.45	24.4	C	R	0.45	24.4	C	R	0.44	23.6	C
Hylan Boulevard West	SB	T	0.27	8.6	A	T	0.27	8.6	A	T	0.27	8.9	A
Overall Intersection		-		**46.8**	**D**	-		**54.0**	**D**	-		**49.3**	**D**
School Road and Bay Street													
School Road	EB	L	0.84	54.6	D	L	0.97	75.5	E	L	0.88	55.8	E
		TR	0.25	29.5	C	TR	0.25	29.5	C	TR	0.22	26.5	C
Park Driveway	WB	LTR	0.01	26.2	C	LTR	0.01	26.2	C	LTR	0.01	23.6	C
Bay Street	NB	LTR	0.08	14.8	B	LTR	0.08	14.8	B	LTR	0.08	16.9	B
	SB	LT	0.33	18.0	B	LT	0.39	18.0	B	LT	0.35	20.7	C
		R	0.23	16.7	B	R	0.36	16.7	B	R	0.23	18.8	B
Overall Intersection		-		**29.8**	**C**	-		**37.8**	**D**	-		**32.3**	**C**
Unsignalized													
Narrows Road North and Hylan Boulevard E													
Narrows Road North	WB	T	0.19	0.0	A	T	0.24	0.0	A	T	Unmitigatable		
Hylan Boulevard East	NB	L	1.00	52.1	F	L	1.07	74.3	F	L			
Overall Intersection		-		**24.2**	**C**	-		**30.6**	**D**	-			
Landis Avenue and Chicago Avenue													
Chicago Avenue	EB	LR	0.09	0.0	A	LR	0.13	0.0	A	LR	0.26	8.6	A
Landis Avenue	NB	R	0.04	9.2	A	R	0.72	55.6	F	R	0.16	7.6	A
Overall Intersection		-		**1.8**	**A**	-		**22.7**	**C**	-		**8.2**	**A**

Source: STV Incorporated, 2024.

Table 11-8: Mitigated Construction-Operational Phase With-Action Conditions – PM Peak Hour

INTERSECTION & APPROACH		No Action - PM				With Action - PM				w/ Mitigations - PM			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Signalized													
Fingerboard Road and Narrows Road South													
Narrows Road South	EB	LTR	0.74	47.4	D	LTR	1.05	92.7	F	LTR	Unmitigatable		
Fingerboard Road	NB	TR	0.33	9.8	A	TR	0.43	12.2	B	TR			
	SB	L	0.08	8.2	A	L	0.19	9.8	A	L			
		T	0.50	10.7	B	T	0.50	11.9	B	T			
Overall Intersection		-		**25.1**	**C**	-		**47.8**	**D**	-			
Fingerboard Road and Narrows Road North													
Narrows Road North	WB	LTR	0.81	67.4	E	LTR	1.65	355.8	F	LTR	Unmitigatable		
I-278 W Exit Ramp	NWB	LTR	0.00	24.7	C	LTR	0.68	24.7	C	LTR			
Fingerboard Road	NB	L	0.63	55.8	E	L	1.24	203.3	F	L			
		T	0.57	47.2	D	T	0.60	53.1	D	T			
	SB	TR	0.55	51.8	D	TR	0.77	64.4	E	TR			
Overall Intersection		-		**37.5**	**D**	-		**124.1**	**F**	-			
Lily Pond Avenue and McClean Avenue													
McClean Avenue	EB	LTR	1.05	117.0	F	LTR	1.10	133.0	F	LTR	Unmitigatable		
	WB	LTR	0.38	42.5	D	LTR	0.39	42.8	D	LTR			
Lily Pond Avenue	NB	L	0.11	13.4	B	L	0.12	14.0	B	L			
		T	0.36	11.4	B	T	0.37	11.5	B	T			
		R	0.04	8.8	A	R	0.04	8.8	A	R			
	SB	LTR	0.96	22.5	C	LTR	0.98	26.6	C	LTR			
Overall Intersection		LTR	0.00	28.7	C	LTR	0.00	32.6	C	LTR			
Unsignalized													
Narrows Road North and Hylan Boulevard E													
Narrows Road North	WB	T	0.37	0.0	A	T	0.43	0.0	A	T	Unmitigatable		
Hylan Boulevard East	NB	L	0.81	29.8	D	L	0.97	58.0	F	L			
Overall Intersection		-		**6.6**	**A**	-		**11.5**	**B**	-			
Landis Avenue and Chicago Avenue													
Chicago Avenue	EB	LR	0.03	0.0	A	LR	0.05	0.0	A	LR	0.10	7.5	A
Landis Avenue	NB	R	0.02	8.7	A	R	0.48	41.6	E	R	0.09	7.0	A
Overall Intersection		-		**2.1**	**A**	-		**20.8**	**C**	-		**7.2**	**A**

Source: STV Incorporated, 2024.

TRANSIT

For bus transit, there would be reduced adverse impacts during the construction 2030 (Q1) peak hours compared to the 2030 operational peak hours with full occupancy, as the number of bus trips would be fewer during the construction phase. Overall, bus trips generated from operational and construction components of the proposed project would total approximately 462 and 446 during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM peak hours, respectively. By comparison, bus trips with full occupancy of the proposed project in 2030 would be greater in number, totaling approximately 536 and 550 during the analyzed weekday commuter peak periods, when overall demand on area transit facilities and services typically peaks.

MTA oversees regular and routine bus ridership monitoring, and as a general policy the agency provides additional bus service where demand warrants, taking into account financial and operational constraints. Based on ongoing passenger monitoring programs, comprehensive service plans would be generated to respond to specific known needs with capital and/or operational improvements, where fiscally and operationally practicable, to mitigate the significant adverse impact generated by the projected bus ridership demand.

Air Quality

Construction-related emissions would result from heavy equipment operating on-site, materials handling, trucks moving around the site on unpaved roads, and both construction truck and worker trips to and from the site. Construction emissions are short-term and temporary in nature. However, to reduce public health and environmental impacts during construction, general environmental measures would be imposed on contractors. Construction work would be executed in a manner that would minimize air emissions. Air quality control measures implemented during construction will include:

- Dust Control – To minimize fugitive dust emissions from construction activities, the contractor will be required to develop and implement a fugitive dust control plan including a watering program as part of contract specifications. For example, all trucks hauling loose material will be equipped with tight-fitting tailgates and their loads securely covered prior to leaving the construction site. Water sprays will be used for all excavation and transfer of soils to ensure that materials would be dampened as necessary to avoid the suspension of dust into the air. Loose materials would be dampened or covered.
- Clean Fuel – Contract specifications will require exclusive use of ULSD fuel for all on-site diesel engines and haul trucks. Use of ULSD exclusively for non-road diesel engines is mandated by EPA.
- Idling Restriction – Pursuant to Title 24, §24-163 of the New York City Administrative Code, stationary vehicles on roadways adjacent to the construction site are prohibited from idling for longer than three (3) minutes. In addition, construction contracts will limit on-site vehicle idle time to five (5) 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 are otherwise required for the proper operation of the engine.
- Best Available Tailpipe Reduction Technologies – Diesel particulate filters are the tailpipe technology currently proven to have the highest reduction capability. Construction contracts will specify that all diesel non-road engines rated at 50 hp or greater will use diesel particulate filters, either installed by the original equipment manufacturer (OEM) or retrofitted. Retrofitted diesel particulate filters must be verified by EPA or the California Air Resources Board (CARB). Active

diesel particulate filters or other technologies proven to achieve an equivalent reduction may also be used.

- Utilization of Newer Equipment – EPA's Tier 1 through 4 standards for nonroad diesel engines regulate the emission of criteria pollutants from new engines, including PM, CO, NOx, and hydrocarbons. Contract specifications will specify that all diesel-powered non-road construction equipment with a power rating of 50 hp or greater shall meet at least the Tier 3 emissions standard. All diesel-powered engines used in the construction of the Project rated less than 50 hp shall meet at least the Tier 2 emissions standard as Tier 3 emissions standards do not apply to these engines.
- Diesel Equipment Reduction – Contract specifications will specify that electrically powered equipment will be used rather than diesel-powered and gasoline-powered versions of equipment, to the extent practicable.

Noise and Vibration

NOISE

To minimize and reduce construction noise, the proposed project would be required to comply with the New York City Noise Code, which requires the adoption of a noise control mitigation plan by the construction contractor selected for the Project prior to commencement of construction activities. Details on potential mitigation measures during construction activities are provided below.

Mobile Sources

To mitigate vehicular traffic noise from construction-related vehicles, the rerouting of traffic can be considered where appropriate. Additionally, if a building possesses alternate means of ventilation, windows can remain closed during periods of loud construction to help reduce construction noise levels.

Stationary Sources

Mitigation for construction noise impacts may include noise barriers, use of low noise emission equipment, locating stationary equipment as far as feasible away from receptors, use of area enclosures, limited duration of activities, substituting diesel equipment with electric-powered equipment, scheduling of activities to minimize impacts (based on either time of day or seasonal considerations), and locating noisy equipment near natural or existing barriers that would shield sensitive receptors. The following noise control measures defined in Title 15, Chapter 28: Citywide Construction Noise Mitigation of The Rules of the City of New York are examples of mitigation strategies that may be incorporated into the noise control mitigation plan for the proposed project:

- All construction equipment operating on a site shall be equipped with the appropriate manufacturer's noise reduction devices, including, but not limited to a manufacturer's muffler (or equivalently rated material) that is free of rust, holes, and exhaust leaks.
- Noise from construction devices with internal combustion engines shall be mitigated by ensuring that the engine's housing doors are kept closed, and by using noise-insulating material mounted on the engine housing that does not interfere with the manufacturer's guidelines for engine operation or exhaust.
- Portable compressors, generators, pumps and other such devices shall be covered with noise-insulating fabric to the maximum extent possible that does not interfere with the manufacturer's

guidelines for engine operation or exhaust and shall further reduce noise by operating the device at lower engine speeds during the work to the maximum extent possible.

- Vehicle engine idling onsite shall be limited to no longer than three minutes while parking, standing, or stopping as per New York City Administrative Code § 24-163.
- Quieter back-up alarms on construction equipment shall be used whenever practical.
- Strategically positioning construction vehicles as to minimize operation near receptors and avoiding tailgate slamming to the extent possible.
- Noise pathway controls, including noise barriers and enclosures free from gaps and holes should be placed as close as possible to construction areas. Construction of noise barriers and enclosures should follow rules and guidelines detailed within Title 15, Chapter 28; Citywide Construction Noise Mitigation.

Noise pathway controls may be the most useful for reducing construction noise, and these temporary barriers are most effective if deployed either close to operating equipment or close to noise-sensitive properties. For example, the Project contractor could position three-sided enclosures with roofs (i.e., "noise tents") around jackhammer operators as well as around stationary equipment, such as compressors and generators. Additionally, temporary barriers may be installed around the site perimeter, consisting of acoustic blankets affixed to construction fencing.

VIBRATION

To reduce construction-related vibration at sensitive receptors, the following mitigation measures can be implemented, as detailed within the FTA Manual:

- Reroute heavy vehicles away from residential streets when possible.
- Position earth moving equipment away from vibration sensitive receptors.
- Adjust construction schedule sequencing to ensure that the greatest vibration-inducing activities do not occur in the same time period.
- Avoid vibration-generating activities during the nighttime hours, when feasible.
- Consider alternative construction methods.
    - For example, in place of an impact pile driver, drilled piles or a vibratory pile driver can be used to create lower vibration levels.
    - Select demolition methods involving little to no impact, where possible.
    - Avoid vibratory rollers and packers near sensitive areas, where possible.

Historic and Cultural Resources

A CPP would be warranted to minimize the potential effects of construction equipment-related vibration on the S/NRHP-eligible Chapel Building. Such a plan could include measures to minimize potential impacts by developing and implementing vibration-monitoring protocol. This would establish vibration thresholds that are not to be exceeded by construction. If excavation equipment is limited to a backhoe, vibrations are likely to remain at a low level. No pile driving would be required during construction. If jackhammering is required, then vibration control measures could be implemented to minimize, as much as possible, the vibration levels at the historic buildings within the study area.

Chapter 12: Alternatives

INTRODUCTION

In accordance with the New York State Environmental Quality Review Act (SEQRA), this chapter presents and analyzes alternatives to the proposed project. Alternatives to a proposed project must be identified so that decision-makers may consider whether alternatives exist that would minimize or avoid significant adverse environmental effects. The selection of alternatives is determined by taking into account the nature of the specific project, its stated purpose and need, potential impacts, and the reasonableness of potential alternatives. Alternatives selected for consideration in an EIS generally include a No-Action Alternative and alternatives that are practicable, considering the objectives and capabilities of the project sponsor, and have the potential to reduce, eliminate, or avoid significant adverse impacts of a proposed action while meeting its goals and objectives.

As described in Chapter 1, “Project Description,” the proposed project would result in the development of three new schools in two facilities, consisting of an approximately 92,303-sf Gifted and Talented PS/IS and two separate, independently operated IS/HS with a shared gymnasium, auditorium, kitchen, and lobby in a 165,739-sf building. The proposed project would also include an athletic field with an approximately 700-seat bleacher section, a maintenance building, an internal driveway network with two parking lots, and a separate parking lot on Block 3087, Lot 1. The proposed project would collectively introduce approximately 2,114 new school seats to the project site and would require the demolition of all existing buildings on the project site with the exception of the Chapel building, which would be renovated.

This chapter considers a No-Action Alternative, which assumes that none of the proposed discretionary actions would occur, and the project site would generally resemble its current condition.

As described in the following sections, both the rehabilitation and/or reuse of existing buildings on the project site and a lower-density scenario were also considered for their feasibility as potential alternatives to the proposed project to reduce or avoid significant impacts to transportation and architectural resources. These alternatives were determined not to meet the proposed actions’ purpose and need and therefore were not advanced further.

Rehabilitation and Adaptive Reuse

The proposed project would entail the demolition of the existing S/NRHP-eligible Villa, Former Elementary School, Former Annex, Garage, Former High School and Addition, Former Pre-K Center, and the parking lot on Block 3089, Lot 59. The Chapel Building located on the central portion of Block 3087, Lot 1 would be preserved as part of the proposed actions.

Early in the design process, the SCA analyzed the suitability of the existing structures on the project site for use as modern educational facilities. The SCA found, and memorialized in an LOR with OPRHP, that the access to and entrances of existing buildings do not meet current standards for accessibility and impede safe access to and circulation around the project site; the existing buildings do not meet current building and safety code requirements for egress and accessibility and require significant alterations to provide the required number and width of exits and required elevators, thereby reducing the area available for educational spaces; the existing buildings’ structural systems cannot be adapted for contemporary instructional spaces because the existing building widths and column grids cannot accommodate, and are not compatible with, the SCA's standards for classrooms; several of the existing buildings exhibit compromised structural systems, including cracked exterior façades and foundation walls, and a portion of the Former Annex's first floor has collapsed and is currently supported by temporary shoring; and the existing buildings exhibit water infiltration from cracked and detached face brick façades, deteriorating brick facing, and corroded windows.

Given these considerations, the existing buildings on the project site, with the exception of the Chapel Building, are not suitable for needs of a modern educational campus and the maintenance of these structures would not support the purpose and need for the proposed project. As such, the rehabilitation and adaptive reuse of the existing buildings on the project site is not a feasible alternative for analysis.

Lower Capacity Redevelopment

The proposed project's purpose is to provide additional permanent public school capacity in the Borough of Staten Island and New York City as a whole. The DOE Five-Year Capital Plan for Fiscal Years 2025-2029 allocates funding to create additional seats at the primary, intermediate, and high school levels to address forecast changes in future student enrollment and to support DOE's policies regarding class size reduction.

Staten Island public schools face significant overcrowding. Of the borough's 32 school districts, only 24 percent of classrooms in District 31 (in which the project site is located) are in compliance with class size policies. The district has the third-lowest compliance percentage in New York City and is also significantly lower than the Citywide average of approximately 40 percent. Additionally, District 31 represents nearly eight percent of all the classrooms needed Citywide, indicating that the need for classrooms in this area of Staten Island is significant and one of the largest in the City.

The approximate size and enrollment of the three proposed schools were evaluated based on their ability to meet this purpose, and it was determined that a notably smaller development would not adequately meet the need for additional school seats in Staten Island and New York City as a whole, and therefore would not be a feasible alternative for analysis.

NO-ACTION ALTERNATIVE

Description of the No-Action Alternative

In the absence of the proposed project, no "as-of-right" development is anticipated on the project site. Therefore, this Targeted EIS assumes that the physical condition of the project site in 2030 without the proposed project would generally resemble existing conditions. While analysis of the No-Action Alternative is required by SEQRA, the No-Action Alternative would not meet the purpose, need, goals, or objectives of the proposed project, as it would not facilitate the additional permanent public-school capacity in the Borough of Staten Island.

No-Action Alternative Compared with the Proposed Actions

The No-Action Alternative has been used in other chapters of this Targeted EIS as the baseline against which impacts of the proposed project are measured. Following is a comparison of the effects of the proposed project as compared to the No-Action Alternative.

SHADOWS

With the No-Action Alternative, there would be no new development on the project site and, therefore, no potential for new shadows increments on nearby sunlight-sensitive resources.

In the future with the proposed project, on each of the analysis dates, shadows from the proposed PS/IS would reach the Chapel Building in the afternoon and would gradually extend to cover portions of the west, and sometimes south, façades, which contain arched windows with rusticated stone trim, a balcony on the south façade, and a portico balcony on the west façade on all four analysis dates (December 21st, 21st/September 21st, May 6th/August 6th, and June 21st).

Therefore, neither the proposed project, as described in Chapter 2, "Shadows," nor the No-Action Alternative would result in significant adverse impacts related to shadows on the project site or in the study area, though the No Action Alternative would not result in new incremental shadows on portions of the S/NRHP-eligible Chapel Building.

HISTORIC AND CULTURAL RESOURCES

As described in Chapter 3, "Historic and Cultural Resources," the project site comprises the S/NRHP-eligible St. John Villa campus. There are no proposed historic districts or other historic resources in the vicinity of the project site or study area that are pending OPRHP review. No new designations are anticipated in the vicinity of the project site in the future with the No-Action Alternative, and conditions on the project site and surrounding environs are anticipated to remain the same as existing conditions with regard to architectural resources. With the No-Action Alternative, no new construction or excavation that would disturb any portion of the project site is expected. The project site would generally resemble existing conditions (conditions in 2024), with the former St. John Villa campus buildings remaining vacant and no new development on the project site.

The proposed project would result in the removal of several S/NRHP-eligible structures (ex. the Villa, Former Elementary School, Former High School and Addition, Former Pre-K-Center, Former Annex, and Garage), which contribute to the historic character of the S/NRHP-eligible St. John Villa campus. However, as memorialized in an LOR with OPRHP, the SCA will maintain and rehabilitate the S/NRHP-eligible Chapel Building with the oversight of OPRHP; preserve or reconstruct the existing stone wall, iron fencing, and gates located at a portion of the site's perimeter; consult with OPRHP on the designs of new buildings and site work; photo document the Villa, Former Elementary School, Former High School and Addition, Former Pre-K-Center, Former Annex, and Garage; provide drawings of the existing buildings for archive in an electronic database; and install interpretive panels in the Chapel Building that may include photos of the existing former St. John Villa campus. These terms of the LOR establish the course of action for successful mitigation of the potential adverse impacts of the demolition of the Villa, Elementary School, High School, Pre-K Center, Annex, and Garage at the St. John Villa Academy in accordance with Section 14.09 of the SHPA.

Therefore, neither the proposed project, as described in Chapter 3, "Historic and Cultural Resources," nor the No-Action Alternative would result in significant adverse impacts related to historic and cultural on the project site or in the study area, though the No-Action Alternative would not result in the demolition of the S/NRHP-eligible Villa, Elementary School, High School, Pre-K Center, Annex, and Garage.

WATER AND SEWER INFRASTRUCTURE

No infrastructure improvements or changes are planned for the water distribution system or the stormwater and drainage management system serving the project site in the future with the No-Action Alternative. Additionally, no wastewater treatment improvements or changes are planned for the area. As such, the conditions related to the water and sewer infrastructure providing service to the project site in the future without the proposed project generally would resemble existing conditions.

In the future with the proposed project, there would be an increase in sanitary sewer usage and changes to the stormwater runoff conditions compared to the No-Action Alternative, as the proposed project would introduce new students and staff to the project site and also substantially increase the impermeable surfaces on the project site. Stormwater BMPs currently under consideration for the main campus include a detention system, retention system, green roof, bio-retention/rain gardens, stormwater planters, and flow control outlets. The SCA would be responsible for preparing and submitting the Site Connection Proposal application for the proposed project. The proposed BMPs would be reviewed by NYCDEP and further refined, as needed, to ensure the detention and release of stormwater runoff at a reduced discharge rate, thus reducing the overall volume of discharge to the combined sewer system. The SCA would also be required to prepare and submit a SWPPP that includes include erosion and sediment control measures and post-construction stormwater BMPs. NYCDEP must certify the Site Connection Proposal for adequate sewer capacity to accommodate the proposed project and approve the SWPPP before stormwater construction and sewer connection permits can be obtained. With the incorporation of stormwater BMPs to meet NYCDEP's Site Connection Proposal requirements, it is anticipated that there would be no significant adverse impacts to the combined sewer system and wastewater treatment system.

Therefore, neither the proposed project, as described in Chapter 4, "Water and Sewer Infrastructure," nor the No-Action Alternative would result in significant adverse impacts related to water and sewer infrastructure on the project site or in the study area.

TRANSPORTATION

Traffic Intersections

As discussed in Chapter 5, "Transportation," in the future the No-Action Alternative, traffic volumes at the majority of intersections in the study area would operate at acceptable levels during the weekday AM, PM, and Saturday midday peak analysis hours – with overall operations at LOS D or better. The intersections and movements that would experience a change in LOS to E or F conditions as compared to existing conditions include the following:

- The Narrows Road South eastbound movement at Fingerboard Road would worsen from LOS E to F conditions in the AM peak hour.
- The Fingerboard Road northbound left-turn movement at Narrows Road North would worsen from LOS D to LOS E conditions during the PM peak hour.

- The Narrows Road North westbound movement at Fingerboard Road would worsen from LOS D to LOS E during the AM peak hour and deteriorate within LOS E during the PM peak hour.
- The West Fingerboard Road eastbound movement at Hylan Boulevard would deteriorate from LOS E to LOS F conditions during the AM peak hour.
- The McClean Avenue eastbound left-turn movement at Lily Pond Avenue would worsen from LOS E to LOS F conditions during the AM peak hour and the eastbound approach would deteriorate within LOS F conditions during the PM peak hour.
- The Lily Pond Avenue northbound through movement at McClean Avenue would worsen from LOS D to LOS E conditions during the AM peak hour.
- The Narrows Road South eastbound through movement at Hylan Boulevard would worsen from LOS D to LOS E conditions during the AM peak hour.
- The Hylan Boulevard northbound through movement at Narrows Road South would deteriorate within LOS E and the northbound right-turn movement would worsen from LOS D to LOS F during AM peak hour.
- The Hylan Boulevard northbound left-turn movement at Narrows Road North would deteriorate from LOS E to LOS F conditions during the AM peak hour.

As described in Chapter 5, “Transportation,” the traffic analysis indicates the potential for significant adverse impacts at the following nine intersections and one driveway during one or more analyzed peak hours with the proposed project:

- The Narrows Road South eastbound movement at Fingerboard Road would deteriorate within LOS F conditions during the AM peak hour and would worsen from LOS D to LOS F during the PM peak hour. The Fingerboard Road northbound shared through/right-turn movement and the southbound left-turn movement at Narrows Road South would worsen from LOS D to LOS F conditions during the AM peak hour.
- The Fingerboard Road northbound left-turn movement at Narrows Road North would worsen from LOS C to LOS F conditions during the AM peak hour and worsen from LOS E to LOS F conditions during the PM peak hour. The northbound through movement at Narrows Road North would worsen from LOS D to LOS E during the PM peak hour. The Narrows Road North westbound movement would worsen from LOS E to LOS F conditions during the AM and PM peak hours and worsen from LOS D to LOS F during the Saturday midday peak hour.
- The West Fingerboard Road eastbound movement at Hylan Boulevard would deteriorate within LOS F conditions during the AM peak hour.
- The McClean Avenue eastbound left-turn movement at Lily Pond Avenue would deteriorate within LOS F during the AM peak hour and the eastbound approach would deteriorate with LOS F during the PM peak hour. The Lily Pond Avenue northbound through movement at McClean Avenue would deteriorate within LOS E conditions during the AM peak hour.
- The Hylan Boulevard northbound left-turn movement at Narrows Road North would deteriorate within LOS F conditions during the AM peak hour and worsen from LOS D to LOS F conditions during the PM peak hour.
- The Narrows Road South eastbound through movement at Hylan Boulevard would deteriorate within LOS E conditions during the AM peak hour.

- The School Road eastbound left-turn movement at Bay Street would deteriorate from LOS D to LOS E conditions during the AM peak hour.
- The Cleveland Place westbound shared left-turn/right-turn movement at Fingerboard Road would worsen from LOS B to LOS F in the AM and PM peak hours.
- The Landis Avenue northbound right-turn movement at Chicago Avenue would deteriorate from LOS A to LOS F conditions in the AM and PM peak hours.
- The campus parking lot eastbound left-turn movement at Cleveland Place would operate at LOS F during the PM peak hour.

As described in Chapter 11, "Mitigation Measures," traffic impacts could be mitigated at six of these intersections through the implementation of traffic engineering improvements, including modification of traffic signal phasing/timing and/or intersection approach lane reconfiguration. As described in Chapter 13, "Unavoidable Adverse Impacts," practicable mitigation measures have not been identified for four intersections, and as such, the proposed project would result in significant adverse impacts related to traffic conditions.

Therefore, while the No-Action Alternative would not result in the unavoidable significant adverse impacts anticipated with the proposed project, traffic conditions would deteriorate at select intersections in both the future with the proposed project, as described in Chapter 5, "Transportation," and the No-Action Alternative.

Highway Analysis

In the With-Action condition, the following segments would experience a significant adverse traffic impact based on a deteriorating LOS from the No-Action condition due to incremental school traffic added to the highway network:

- The I-278 eastbound diverge segment at Exit 14, basic segment between Exits 14 and 15, and diverge segment at Exit 15, which currently operate at LOS F during the weekday AM peak hour, would deteriorate within LOS F during the No-Action and With-Action scenarios.
- The I-278 westbound weaving segment, which currently operates at LOS E in the weekday AM and Saturday Midday peak hours and at LOS F in the weekday PM peak hour, would operate at LOS F during the No-Action scenario and deteriorate within LOS F during the With-Action scenario for all analysis peak hours.
- The I-278 westbound basic segment between the on-ramp at Hylan Boulevard and Exit 13A, which currently operates at LOS F during the weekday PM peak hour, would deteriorate within LOS F during the No-Action and With-Action scenarios. During the Saturday midday peak hour, this segment currently operates at LOS D, would worsen to LOS E during the No-Action scenario, and would worsen to LOS F during the With-Action scenario.
- The Narrows Road North westbound weaving segment, which currently operates at LOS E during the weekday PM peak hour, would deteriorate within LOS F during the No-Action and With-Action scenarios.

As described in Chapter 11, "Mitigation Measures," geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate this impact may not be practical. This option would also require coordination with and approval from NYSDOT. Other improvement measures would be considered to the extent that mitigation is feasible. An alternative mitigation option would include TDM measures to reduce the vehicle trip demand to I-278. TDM mitigation would require a binding commitment to implement proposed measures. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated. Consequently, these impacts would constitute unavoidable significant adverse traffic impacts as a result of the proposed project.

Therefore, while the No-Action Alternative would not result in the unavoidable significant adverse impacts anticipated with the proposed project, six highway segments would operate at LOS E or F in both the future with the proposed project and the No-Action Alternative.

Transit – Bus

The No-Action Alternative would not result in significant adverse impacts to transit service, while the proposed project would result in significant adverse impacts to the S79-SBS bus service in weekday PM peak hour. However, as described in Chapter 13, "Mitigation," this significant adverse impact could be fully mitigated by the addition of approximately one standard bus in the PM peak hour. If MTA implements the increase in peak hour bus service warranted by the shortfall in capacity projected with the proposed project, then there would be no significant difference in effects to transit services with either the proposed project or the No-Action Alternative. However, as discussed in Chapter 14, "Unavoidable Adverse Impacts," if this mitigation measure is not provided by MTA or deemed infeasible, then the proposed project may result in an unavoidable adverse impact to transit that would not occur in the future with the No-Action Alternative.

AIR QUALITY

The No-Action Alternative would not introduce new residents or visitors to the project site, nor would it result in activities that would alter the air quality conditions associated with stationary or mobile sources. Therefore, the No-Action Alternative would not result in any significant adverse air quality impacts.

As described in Chapter 6, "Air Quality," the proposed project would not result in a violation of NAAQS or NYCDEP/NYSDEC *de minimis* impact thresholds at sensitive receptors. In addition, the cumulative effect of emissions from project-induced traffic associated with the proposed project, and other changes in traffic patterns anticipated in the 2030 build year, would not result in any significant adverse air quality impacts. As the proposed project would utilize electric power to run its heating and hot water systems, its operations would not result in any violations of applicable NAAQS or exceed the NYCDEP/NYSDEC *de minimis* impact criteria. No industrial sources of regulated air pollutants are identified within 400 feet of the project site, nor are there any large combustion sources located within 1,000 feet of the project site. Therefore, there would be no potential for a significant adverse stationary-source air quality impact affecting the proposed project from off-site industrial sources.

Neither the proposed project, as described in Chapter 6, "Air Quality," nor the No-Action Alternative would result in any significant adverse impacts related to air quality.

NOISE

Assessment of existing conditions determined that noise in the study area is primarily attributable to traffic movements, and as no significant new noise generators are expected in the future without the proposed project, traffic movements are expected to remain the primary source of noise in the No-Action condition.

As described in Chapter 7, "Noise," the proposed project would result in significant adverse mobile-source noise impacts at three locations representing residences along Landis Avenue near Knauth Place (Site #1), along Knauth Place (Site #2), and along Cleveland Place (Site #4).

As described in Chapter 11, "Mitigation Measures," measures to reduce or eliminate mobile-source noise impacts will be further explored by the SCA between the Targeted DEIS and Targeted FEIS. As described in Chapter 14, "Unavoidable Adverse Impacts, "absent the identification and further implementation of feasible mitigation measures that would mitigate the mobile-source noise impacts, the proposed project would result in unmitigated significant adverse mobile-source noise impacts at these three locations.

If no feasible alternative is identified, the proposed project would result in significant adverse mobile-source noise impacts that would not occur in the future with the No-Action Alternative.

PUBLIC HEALTH

The No-Action Alternative would result in no changes to the project site or surrounding area that would potentially result in impacts to public health.

In comparison, as described in Chapter 8, "Public Health," the proposed project would introduce new population to the project site and new activities that could affect air quality, sanitation and water resources, hazardous materials, and noise. The proposed project would result in no significant adverse impacts related to air quality, water quality, or hazardous materials; significant adverse impacts related to mobile-source noise and construction noise would occur. However, significant adverse mobile-source noise impacts and construction-related noise impacts would be below the health-based noise threshold.

Therefore, neither the proposed project, as described in Chapter 8, "Public Health," nor the No-Action Alternative would result in significant adverse impacts related to public health.

NEIGHBORHOOD CHARACTER

The No-Action Alternative would not affect any aspect of neighborhood character; rather, as described in Chapter 9, "Neighborhood Character," the future neighborhood character conditions in the future without the proposed project (representing the No-Action Alternative) would largely resemble existing conditions, with the St. John Villa campus remaining vacant and no new development on the project site.

As described in Chapter 9, "Neighborhood Character," the proposed project would result in significant adverse impacts related to transportation and noise. However, none of these identified impacts, either individually or cumulatively, would alter the defining features of the neighborhood's character. Rather, the features of the St. John Villa campus that are visible from the surrounding community would be maintained to the fullest extent practicable. The Chapel Building, which is visible from Cleveland Place, would be maintained. The Former High School and Addition that front Landis Avenue and Cleveland Place would be replaced with the proposed PS/IS facility in a similar location, thereby maintaining the visual connection and street wall. New landscaping would reestablish the greenery that is part of the pedestrian experience in the study area. The project site's former education function would be reestablished, thereby strengthening the institutional campus presence in the study area. Further, the low-density residential character of the study area and pedestrian views of greenery would be maintained. Given these considerations, the proposed project would not result in a significant adverse impact to neighborhood character.

Therefore, neither the proposed project, as described in Chapter 9, "Neighborhood Character," nor the No-Action Alternative would result in significant adverse impacts related to neighborhood character.

CONSTRUCTION-RELATED IMPACTS

The No-Action Alternative would require no construction or excavation on the project site; therefore, there would be no associated construction-period impacts.

As described in Chapter 10, "Construction-Related Impacts," the proposed project would not result in significant adverse construction-period impacts related to pedestrians, air quality, hazardous materials, or natural resources. However, construction activities associated with the proposed project could result in significant adverse impacts related to traffic, transit, noise, and historic and cultural resources, as described below.

Construction-related traffic would result in a significant adverse traffic impact at one study area intersection during the 2025 (Q4) 3:00 PM to 4:00 PM construction peak hour, which would remain unmitigated. No significant adverse traffic impacts are expected during the 2025 (Q4) 6:00 AM to 7:00 AM construction peak hour. During the 2030 (Q1) cumulative construction and operational analysis, the proposed project is projected to result in significant adverse traffic impacts at eight study area intersections during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM operational peak hours, of which four intersections would remain unmitigated. Implementation of recommended traffic engineering improvements is subject to review and approval by NYCDOT.

As described earlier, the proposed project is projected to result in significant adverse impacts at six freeway segments during the 2030 (Q1) 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM cumulative construction operational peak hours. These are the same impacts that would be expected during the With-Action condition. Geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate the highway impact may not be practical. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated.

The proposed project's significant adverse bus impact would be less likely to occur during construction than with full occupancy of the proposed project, as incremental demand would be lower during construction and would mostly not occur during the peak hours of commuter demand. It is expected that the mitigation measure identified for the operational transit impact in Chapter 11, "Mitigation Measures," the addition of one bus to the affected route – would also be effective at mitigating any potential impacts from construction transit trips during the construction period.

As described in Chapter 10, "Construction-Related Impacts," significant adverse impacts related to noise would occur during certain times of construction activity and with the use of certain equipment. However, these impacts would be temporary given that high-noise-intensity activities would not last for extended periods of time. With the implementation of mitigation measures, per the New York City Noise Code, to reduce noise levels during construction, the potential for significant adverse impacts related to noise would be reduced, though not entirely eliminated. With the implementation of these control measures, noise levels from construction activities and equipment may occasionally still result in an exceedance of noise criteria levels at sensitive receptors; however, it is anticipated that overall construction noise levels would decrease at all affected receptors over time.

Vibration levels during construction of the proposed project may result in damage to the S/NRHP-eligible Chapel Building. Therefore, a CPP would be warranted to minimize the potential effects of construction equipment-related vibration. With a CPP in place, potential vibration impacts to the S/NRHP-eligible Chapel Building would be mitigated.

Therefore, in summary, significant adverse impacts related to traffic, bus ridership, noise, and vibration would occur with the proposed project during construction but would not occur with the No-Action Alternative.

With the proposed mitigation measures in place, the potential for significant adverse impacts related to bus ridership and vibration effects on architectural resources with the proposed project could be fully mitigated. The potential for significant adverse impacts related to traffic and noise would be minimized, though not entirely eliminated.

No-Action Alternative Support of Purpose and Need

The No-Action Alternative would not meet the proposed project's purpose and need, as described in Chapter 1, "Project Description." The proposed project would facilitate the construction of three new public schools that would serve to alleviate significant overcrowding in Staten Island schools. The proposed redevelopment would reestablish the project site's former use as an academic campus and be undertaken in a manner that provides modern academic facilities while also preserving elements of the project site's historic features through implementation of the terms of the LOR agreed to with OPRHP. Further, in addition to providing a needed community facility according to the terms agreed to with OPRHP, the proposed project would also provide construction jobs as well as permanent jobs at the three new schools.

Therefore, while the No-Action Alternative would not result in the proposed project's potential significant adverse impacts related to traffic, one bus route, mobile-source noise, construction traffic, or construction noise, the No-Action Alternative would also not achieve the goals and objectives of the proposed project. The proposed project would provide needed public school capacity to Staten Island, reestablish the project site as an academic campus, and return the currently vacant site to productive use.

Chapter 13: Cumulative Effects

Cumulative effects may result from simultaneous, recent, and reasonably foreseeable actions in the vicinity of a proposed project. A cumulative effects assessment considers the potential for indirect or secondary effects that would result from all aspects of a proposed project, as well as any potential developments occurring within the general vicinity of the project site. Thus, this chapter explains the manner in which various analyses account for potential cumulative effects inherently as part of the methodology and assumptions used in this Targeted EIS, and summarizes findings related to cumulative effects.

Proposed Actions and Other Development Actions in Vicinity

The proposed project comprises the development of three public schools and associated athletic and maintenance facilities operating on the same project site. All buildings would be constructed by the SCA, and they would have periods of concurrent construction activities, but their openings would be staggered. It is anticipated that the shared facility for two IS/HS would be operational in Q3 2029, while construction activities related to the PS/IS facility and Chapel Building renovations are ongoing. Thus, both the permanent conditions and the construction-period conditions have been considered in setting up analyses, and the findings represent the inherent potential overlap of effects associated with the three new schools and associated athletic and maintenance facilities on the project site, both during construction and in operational conditions.

Key assumptions supporting the consideration of cumulative effects associated with the proposed project include: 1) the analysis year (2030) represents the permanent operational condition, when all three schools and associated athletic and maintenance facilities will be fully occupied and operating on the project site, and 2) worst-case conditions for construction-related technical analyses are assumed for a combination of concurrent construction activities for the three schools, Chapel Building rehabilitation, and athletic and maintenance facilities buildings.

Further, per the guidance of the *CEQR Technical Manual*, analyses of a proposed project also consider the project and site as part of a broader development context that is assumed to change over time. For example, certain analyses, such as transportation analyses, assume a factor of "background growth" that represents the population growth and development expected to occur over a period of time throughout the City regardless of whether the proposed project is implemented. A description of the transportation methodology, as well as the related air quality and noise methodologies, are presented in Chapters 5, 6, and 7, respectively.

While no nearby developments are anticipated in the No-Action condition, the transportation analyses No-Action condition includes incremental trips anticipated as a result of the proposed Manhattan Central Business District Tolling Program.[31] Trips associated with this program in the *Central Business District (CBD) Tolling Program Environmental Assessment [2023]* have been assigned to the I-278 eastbound and westbound mainline movements and added to the 2030 No-Action traffic network.

Therefore, as a matter of course, the methodological assumptions related to consideration of the construction and operational complexities of the proposed project itself, in combination with reliance on conventions of the *CEQR Technical Manual*, including background growth assumptions, reliance on field data collected to describe actual existing conditions, and the identification of No-Build projects, allow for a

[31] New York Governor Kathy Hochul announced on June 5th, 2024, that implementation of this program has been indefinitely delayed.

rigorous and robust consideration of cumulative effects. Thus, the potential for cumulative effects can be described via a summary of the findings in individual technical areas:

Transportation
As described in Chapter 5, "Transportation," traffic conditions were evaluated for the weekday AM and PM peak hours at 25 intersections and five driveway locations, and for the Saturday midday peak hours at seven intersections and one driveway location in the traffic study area, where additional traffic resulting from the proposed project would be most heavily concentrated. As summarized in Table 5-10, "2030 With-Action Condition," which incorporates consideration of the effects of all other development actions described previously as part of the No-Action condition, traffic impact analysis indicates the potential for significant adverse impacts at the following nine intersections and one driveway location during one or more analyzed peak hours:

- Fingerboard Road and Narrows Road South
- Fingerboard Road and Narrows Road North
- Hylan Boulevard and West Fingerboard Road
- Lily Pond Avenue and McClean Avenue
- Narrows Road South and Hylan Boulevard West
- Narrows Road North and Hylan Boulevard East
- School Road and Bay Street
- Fingerboard Road and Cleveland Place
- Landis Avenue and Chicago Avenue
- Cleveland Place and Campus Driveway at Garson Avenue

Significant adverse impacts were also identified at six freeway segments during one or more analyzed peak hours.

Potential mitigation measures to address these significant adverse impacts are discussed in Chapter 11, "Mitigation Measures."

Air Quality
As described in Chapter 6, "Air Quality," no significant adverse impacts related to air quality were identified with the proposed project. The air quality analysis relied upon the transportation analysis, which, as previously described, included background growth and identified No-Build projects in future projections. Even with this consideration, the proposed project would not result in any significant adverse impact related to air quality, including any secondary or indirect impacts. Therefore, there would be no cumulative effects related to air quality.

Noise
As described in Chapter 7, "Noise," the *CEQR Technical Manual* requires that if an action could result in the generation of additional mobile- or stationary-source noise, then the potential for significant adverse impacts should be evaluated. The noise analyses also consider the potential cumulative effects associated with the proposed project in combination with other developments in the vicinity. Using mobile-source data derived from the transportation analysis, it was determined that the proposed project would result in significant adverse mobile-source noise impacts at three locations representing residences along Landis Avenue near Knauth Place (Site #1), along Knauth Place (Site #2), and along Cleveland Place (Site #4).

Potential mitigation measures to address these significant adverse impacts are discussed in Chapter 11, "Mitigation Measures."

Other Analyses

As described throughout this Targeted EIS, the shadows, historic and cultural resources, water and sewer infrastructure, public health, and neighborhood character analyses take into consideration effects from all three schools, the rehabilitated Chapel Building, and athletic and maintenance facilities. Further, No-Build conditions are considered for each of these analyses as well. Therefore, these analyses fully consider the potential for cumulative effects related to the proposed project. Shadows, water and sewer infrastructure, public health, and neighborhood character would not result in any significant adverse impact and as such would have no cumulative effect. The significant adverse impact identified in historic and cultural resources would be restricted to the project site and would not result in any cumulative effects.

Given that the analyses presented in this Targeted EIS take into consideration both background growth and identified No-Build projects, the potential for indirect or secondary effects related to the proposed project has been assessed and the potential for cumulative effects are fully considered in this Targeted EIS.

Chapter 14: Unavoidable Significant Adverse Impacts

According to the *CEQR Technical Manual*, unavoidable significant adverse impacts are significant adverse impacts that would occur with the implementation of a proposed action, regardless of the mitigation employed, or if mitigation were not possible. As described in Chapter 11, "Mitigation Measures," significant adverse impacts in the following technical areas have been identified: historic and cultural resources (architectural resources), transportation (traffic and transit), noise (mobile sources), and construction (traffic, transit, and noise). To the extent practicable, mitigation measures are proposed in this Targeted EIS for the identified significant adverse impacts. In the absence of effective and practicable mitigation strategies, the temporary significant impact, if it arises, would remain unmitigated and is therefore unavoidable.

TRANSPORTATION

Traffic

INTERSECTIONS

As described in Chapter 11, "Mitigation Measures," the proposed project would result in significant adverse traffic impacts at nine study area intersections and one campus driveway location during one or more analyzed peak hours. Traffic impacts at four intersections (Fingerboard Road at Narrows Road South, Fingerboard Road at Narrows Road North, Lily Pond Avenue at McClean Avenue, and Hylan Boulevard East at Narrows Road North) would remain unmitigated.

For the six intersections that could be mitigated, implementation of the recommended traffic engineering improvements is subject to review and approval by NYCDOT. If, prior to implementation, NYCDOT determines that an identified mitigation measure is infeasible, alternative and equivalent mitigation measures would be explored and submitted for NYCDOT's review and approval. The impacts would remain unmitigated in the absence of mitigation measures if the predicted traffic volumes at the studied intersections are realized.

HIGHWAY ANALYSIS

As described in Chapter 11, "Mitigation Measures," the highway analysis indicated the potential for a significant adverse impact for six freeway segments. Geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate this impact may not be practical. This option would also require coordination with and approval from NYSDOT. Other improvement measures would be considered to the extent that mitigation is feasible. An alternative mitigation option would include TDM measures to reduce the vehicle trip demand to I-278. TDM mitigation would require a binding commitment to implement proposed measures to reduce vehicle trip demand. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated. Consequently, these impacts would constitute unavoidable significant adverse traffic impacts as a result of the proposed project.

Transit

BUS

As described in Chapter 11, "Mitigation Measures," the proposed project would result in a predicted capacity shortfall through the maximum load point on the southbound S79-SBS bus route during the weekday PM peak hour. This significant adverse impact could be fully mitigated by the addition of approximately one standard bus in the PM peak hour. The general policy of MTA is to provide additional bus service where demand warrants, taking into account financial and operational constraints. Note that if additional bus service is not provided, the impact would be unavoidable.

NOISE

As described in Chapter 7, "Noise," the proposed project would result in significant adverse mobile-source noise impacts at three locations representing residences along Landis Avenue near Knauth Place (Site #1), along Knauth Place (Site #2), and along Cleveland Place (Site #4).

As described in Chapter 11, "Mitigation Measures," measures to reduce or eliminate the proposed project's mobile-source noise impacts will be explored by the SCA between the Targeted DEIS and Targeted FEIS. Absent the identification and further implementation of feasible mitigation measures that would mitigate the mobile-source noise impacts, the proposed project would result in unmitigated significant adverse mobile-source noise impacts at these three locations.

CONSTRUCTION

Transportation

TRAFFIC - INTERSECTIONS

As described in Chapter 11, "Mitigation Measures," the proposed project is projected to result in a significant adverse traffic impact at one study area intersection during the 2025 (Q4) 3:00 PM to 4:00 PM construction peak hour. The impact at this intersection – Fingerboard Road at Narrows Road North – would remain unmitigated.

During the 2030 (Q1) cumulative construction and operational analysis, the proposed project is projected to result in significant adverse traffic impacts at eight study area intersections during the 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM operational peak hours. Four intersections (Fingerboard Road at Narrows Road North, Fingerboard Road at Narrows Road South, Lily Pond Avenue at McClean Avenue, and Hylan Boulevard East and Narrows Road North) would remain unmitigated.

TRAFFIC – HIGHWAY ANALYSIS

As described in Chapter 11, "Mitigation Measures," the proposed project is projected to result in significant adverse impacts at six freeway segments during the 2030 (Q1) 7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM cumulative construction operational peak hours. These are the same six impacts that would be expected during the With-Action scenario. Geometric improvements, such as lengthening the weaving areas by adjusting ramp locations or widening the highway, to mitigate the highway impact may not be practical. This option would also require coordination with and approval by NYSDOT. Other improvement measures would be considered to the extent that mitigation is feasible. In the absence of practicable and effective mitigation strategies, the significant highway impact would remain unmitigated.

Noise

As described in Chapter 11, "Mitigation Measures," construction activities associated with the proposed project could result in significant adverse impacts related to mobile-source and stationary-source noise. However, these impacts would be temporary, as elevated noise levels related to construction would be relatively short-term in nature given that high-noise-intensity activities would not last for extended periods of time. As construction activities move throughout the project site, no one location would be impacted consistently. Once the highest noise-generating construction activities (requiring equipment such as excavators and dozers) are completed, noise levels from other construction activities and equipment, such as generators or front-end loaders, may occasionally still result in an exceedance of noise criteria levels; however, it is anticipated that overall construction noise levels would decrease over time. Finally, it is expected that higher noise levels would be mitigated by the use of construction industry best practices for noise reduction.

Even with the implementation of mitigation measures, noise levels from construction activities and equipment may occasionally still result in an exceedance of noise criteria levels; however, it is anticipated that overall construction noise levels would decrease at all affected receptors over time. To the extent that mitigation measures proposed as part of the proposed project may not be effective at fully mitigating the construction-period noise impacts, then the proposed project may result in unavoidable significant adverse impacts.

Chapter 15: Growth-Inducing Aspects of the Proposed Project

SEQRA specifies that growth-inducing aspects of a proposed action be considered in the environmental review process. The term "growth-inducing aspects" generally refers to "secondary" impacts of a proposed action whereby additional, off-site development would be expected to result indirectly with the implementation of the proposed action, which itself would be limited to the project site. For example, as explained in the *CEQR Technical Manual,* proposed actions that would introduce a new land use of a substantial size or introduce substantial numbers of new residents or employees could induce additional development of a similar kind or of complimentary uses, such as retail to support new residential uses. Likewise, projects that greatly expand the capacity of water supply or sewer infrastructure might also induce growth within the respective service areas.

The project site is located in the Arrochar section of Staten Island, which comprises established residential communities to the north and south of the project site, the St. Joseph Hill Academy to the west, and I-278 to the east. The 400-foot study area does not contain any neighborhood retail establishments. The nearest retail establishments are located approximately 1,000 feet to the south of the project site along McClean Avenue and serve the existing residential and worker populations in this area.

The proposed actions would facilitate development on the project site that is in accordance with the site's historic use as an academic campus. Schools are permitted as-of-right in residential districts, such as the R1-2 district in which the project site is located. While the proposed project would require zoning overrides for height and setback, floor area ratio (FAR), accessory parking, yards (side, rear, and front), sky exposure plane, curb cuts, ornamental fencing, planting islands, and refuse storage, the massing of the proposed buildings on the project site would not represent a significant increase in height or massing on the project site. Rather, the proposed project would restore the project site's former use as an academic campus and would not result in a significant change to building bulk, use, or type.

Further, the surrounding neighborhood is also expected to remain generally in its current state of development with the proposed project, given the following:

- The residential communities located to the north and south of the project site are developed with one- and two-family residences that are largely built out to the extent allowed by the R1-2 general residence district mapped in the area immediately surrounding the project site.
- The St. Joseph Hill Academy located to the west of the project site is not anticipated to change use.
- No rezonings or other zoning changes have been proposed in the vicinity of the project site.
- Finally, no developments are anticipated within the 400-foot study area in the No-Action condition.

Public water and sewer systems already are in place to reach the project site and NYCDEP connection permits would be obtained prior to construction of the proposed project, which would ensure sufficient service. NYCDEP connection permits would be specific to the proposed project, and thus if any modifications or improvements to the existing water and sewer system were to be deemed necessary, they would be specific to the project site, and would not encourage growth independent of the proposed project. There would be approximately 2,114 new students and 257 staff introduced to the project site with the proposed actions; it is expected that the needs of these students and staff would be met outside the residential and institutional area immediately surrounding the project site, such as McClean Avenue to the south, Hylan Boulevard to the west, or elsewhere in Staten Island. Therefore, given the proposed actions and the context of the project site, the proposed actions would not induce new development or substantial changes to existing development in the area surrounding the project site.

Chapter 16: Irreversible and Irretrievable Commitments of Resources

There are several resources, both natural and built, that would be expended in the construction and operation of any development that may result from the proposed actions. These resources include the building materials used in the construction of the proposed project; energy in the form of natural gas, petroleum products, and electricity consumed during construction; electricity consumed for the operation of an educational campus; and the human effort required to develop, construct, and operate various components of any potential development. These resources are considered irretrievably committed because their reuse for some other purpose would be impossible or highly unlikely.

The proposed actions would constitute an irreversible and irretrievable commitment of a potential development site, as a land resource, thereby rendering land use for other purposes infeasible. However, as described in Chapter 15, "Growth-Inducing Aspects of the Proposed Actions," the proposed actions would not induce development in the surrounding area.

In addition, building materials and the non-renewable energy that would be utilized for the construction associated with implementing the proposed actions, and any non-renewable energy associated with the operations of the educational spaces introduced with the proposed project, would also constitute an irreversible and irretrievable commitment of resources. However, as described in the EAF, the new schools would be all-electric facilities and would be designed to follow the NYC Green Schools Rating System (guidelines specific to the design, construction, and operation of New York City public school buildings) and be in compliance with site-related credits to achieve a LEED-certified or higher rating. The project would be in compliance with NYC Local Laws 92 and 94, which require all new buildings and alterations of existing buildings where the entire existing roof deck or roof assembly is being replaced must provide a sustainable roofing zone covering 100 percent of the roof. The proposed project would also be in conformity with NYC Local Law 97, which set limits on GHG emissions of covered buildings to help New York City reach the goal of a 40 percent reduction in GHG emissions from buildings by the year 2030 and 80 percent reduction in Citywide emissions by 2050.

Therefore, although land and non-renewable energy resources would be irreversibly and irretrievably committed with the proposed actions, the demand for such commitment of non-renewable energy would be reduced with the implementation of full electrification and energy-efficient building methods as part of the proposed project.

The irreversible and irretrievable commitment of non-renewable energy would facilitate the provision of needed school seats. Further, the redevelopment of a former private academic campus comprising the project site to facilitate a new public academic campus that would provide additional PS, IS, and HS capacity to Staten Island and New York City as a whole, would be in the public interest. Therefore, considered together, the irreversible and irretrievable commitment of resources would not represent a significant adverse impact.