



City Environmental Quality Review

ENVIRONMENTAL ASSESSMENT STATEMENT (EAS) FULL FORM

Please fill out and submit to the appropriate agency ([see instructions](#))

Part I: GENERAL INFORMATION

PROJECT NAME The Hebrew Home at Riverdale

1. Reference Numbers

CEQR REFERENCE NUMBER (to be assigned by lead agency)
18DCP134X

BSA REFERENCE NUMBER (if applicable)

ULURP REFERENCE NUMBER (if applicable)
180321 ZSX, N180322 ZAX, N180323 ZAX, N180324 ZAX,
N180325 ZAX, N180326 ZAX, N180327 ZCX

OTHER REFERENCE NUMBER(S) (if applicable)
(e.g., legislative intro, CAPA)

2a. Lead Agency Information

NAME OF LEAD AGENCY
New York City Department of City Planning

NAME OF LEAD AGENCY CONTACT PERSON
Robert Dobruskin, AICP

ADDRESS 120 Broadway

CITY New York

STATE NY

ZIP 10271

TELEPHONE (212) 720 3423

EMAIL
RDobrus@planning.nyc.gov

2b. Applicant Information

NAME OF APPLICANT
Hebrew Home for the Aged at Riverdale, Inc.

NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON
Gary Tarnoff, esq.
Kramer Levin Naftalis & Frankel LLP

ADDRESS 1177 Sixth Avenue

CITY New York

STATE NY

ZIP 10036

TELEPHONE (212)-715-7833

EMAIL
gtarnoff@kramerlevin.com

3. Action Classification and Type

SEQRA Classification

☒ UNLISTED ☐ TYPE I: Specify Category (see 6 NYCRR 617.4 and NYC Executive Order 91 of 1977, as amended):

Action Type (refer to [Chapter 2](#), "Establishing the Analysis Framework" for guidance)

☒ LOCALIZED ACTION, SITE SPECIFIC ☐ LOCALIZED ACTION, SMALL AREA ☐ GENERIC ACTION

4. Project Description

The applicant is seeking a special permit pursuant to ZR section 74-901 for a Long Term Care Facility (LTCF) (on the portion of the project site zoned R1-1) and multiple authorizations pursuant to the Special Natural Area District 2 requirements to facilitate the development of a Continuing Care Retirement Community (CCRC)/ LTCF at the existing Hebrew Home campus located at 5701–5961 Palisade Avenue in the Riverdale neighborhood of the Bronx. The applicant is also seeking a certification pursuant to Section 105-45 (Certification of Restoration Plan) for a proposed restoration plan with respect to natural features that were previously altered without prior approval of the CPC. The proposed project would include the demolition of several existing buildings and construction of three new buildings. Proposed programming includes: 137 Nonprofit Residences for the Elderly, 105 assisted living units, 623 skilled nursing beds, and 388 Independent Senior Living units, with 525 parking spaces. See also Section 1.0, "Project Description."

Project Location

BOROUGH Bronx

COMMUNITY DISTRICT(S) 8

STREET ADDRESS 5701-5961 Palisade Avenue

TAX BLOCK(S) AND LOT(S) Block 5933; Lots 55,210,224,225,230

ZIP CODE 10471

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS Palisade Avenue to the east, the Metro-North Hudson Line rail tracks to the west, a line approximately 380 feet south of West 261st Street to the north, and the southern boundary of Lot 55 to the south

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY R1-1,
R4, NA-2

ZONING SECTIONAL MAP NUMBER 1c

5. Required Actions or Approvals (check all that apply)

City Planning Commission: ☒ YES ☐ NO ☒ UNIFORM LAND USE REVIEW PROCEDURE (ULURP)

☐ CITY MAP AMENDMENT

☒ ZONING CERTIFICATION

☐ CONCESSION

☐ ZONING MAP AMENDMENT

☒ ZONING AUTHORIZATION

☐ UDAAP

☐ ZONING TEXT AMENDMENT

☐ ACQUISITION—REAL PROPERTY

☐ REVOCABLE CONSENT

☐ SITE SELECTION—PUBLIC FACILITY

☐ DISPOSITION—REAL PROPERTY

☐ FRANCHISE

☐ HOUSING PLAN & PROJECT

☐ OTHER, explain:

☒ SPECIAL PERMIT (if appropriate, specify type: ☐ modification; ☐ renewal; ☐ other); EXPIRATION DATE:

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION 74-901; 105-42; 105-43; 105-45

Board of Standards and Appeals: ☐ YES ☒ NO☐ VARIANCE (use)☐ VARIANCE (bulk)☐ SPECIAL PERMIT (if appropriate, specify type: ☐ modification; ☐ renewal; ☐ other); EXPIRATION DATE:

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

Department of Environmental Protection: ☐ YES ☒ NO If "yes," specify:**Other City Approvals Subject to CEQR** (check all that apply)☐ LEGISLATION☐ RULEMAKING☐ CONSTRUCTION OF PUBLIC FACILITIES☐ 384(b)(4) APPROVAL☐ OTHER, explain:☐ FUNDING OF CONSTRUCTION, specify:☐ POLICY OR PLAN, specify:☐ FUNDING OF PROGRAMS, specify:☐ PERMITS, specify:**Other City Approvals Not Subject to CEQR** (check all that apply)☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION
AND COORDINATION (OCMC)☐ LANDMARKS PRESERVATION COMMISSION APPROVAL☐ OTHER, explain:**State or Federal Actions/Approvals/Funding:** ☒ YES ☐ NO If "yes," specify: Seeking approval of an application for a Certificate of Authority under Article 46 of the New York Public Health Law to construct and operate a CCRC. This application is subject to review by the NYS Department of Health and the Dept. of Financial Services, with final approval required by the CCRC Council as specified in Article 46.**6. Site Description:** The directly affected area consists of the project site and the area subject to any change in regulatory controls. Except where otherwise indicated, provide the following information with regard to the directly affected area.**Graphics:** The following graphics must be attached and each box must be checked off before the EAS is complete. Each map must clearly depict the boundaries of the directly affected area or areas and indicate a 400-foot radius drawn from the outer boundaries of the project site. Maps may not exceed 11 x 17 inches in size and, for paper filings, must be folded to 8.5 x 11 inches.☒ SITE LOCATION MAP☒ ZONING MAP☒ SANBORN OR OTHER LAND USE MAP☒ TAX MAP☐ FOR LARGE AREAS OR MULTIPLE SITES, A GIS SHAPE FILE THAT DEFINES THE PROJECT SITE(S)☒ PHOTOGRAPHS OF THE PROJECT SITE TAKEN WITHIN 6 MONTHS OF EAS SUBMISSION AND KEYED TO THE SITE LOCATION MAP**Physical Setting** (both developed and undeveloped areas)

Total directly affected area (sq. ft.): 1,397,640

Waterbody area (sq. ft.) and type:

Roads, buildings, and other paved surfaces (sq. ft.): 458,705

Other, describe (sq. ft.): 938,935 landscaping/natural features

7. Physical Dimensions and Scale of Project (if the project affects multiple sites, provide the total development facilitated by the action)

SIZE OF PROJECT TO BE DEVELOPED (gross square feet): 633,890

NUMBER OF BUILDINGS: 3

GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): 443,190 gsf (12-story bldg); 190,700 gsf (6- and 4- story bldgs combined)

HEIGHT OF EACH BUILDING (ft.): 138 ft, 74 ft, 53 ft

NUMBER OF STORIES OF EACH BUILDING: 12, 6, 4

Does the proposed project involve changes in zoning on one or more sites? ☐ YES ☒ NO

If "yes," specify: The total square feet owned or controlled by the applicant:

The total square feet not owned or controlled by the applicant:

Does the proposed project involve in-ground excavation or subsurface disturbance, including, but not limited to foundation work, pilings, utility lines, or grading? ☒ YES ☐ NO

If "yes," indicate the estimated area and volume dimensions of subsurface disturbance (if known):

AREA OF TEMPORARY DISTURBANCE: 398,963 sq. ft. (width x length)

VOLUME OF DISTURBANCE: approximately 1,054,200 cubic ft.
(width x length x depth)

AREA OF PERMANENT DISTURBANCE: 87,850 sq. ft. (width x length)

8. Analysis Year [CEQR Technical Manual Chapter 2](#)

ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2024

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: 44

WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? ☒ YES ☐ NO IF MULTIPLE PHASES, HOW MANY?

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE:

9. Predominant Land Use in the Vicinity of the Project (check all that apply)☒ RESIDENTIAL☐ MANUFACTURING☐ COMMERCIAL☐ PARK/FOREST/OPEN SPACE☒ OTHER, specify:
institutional; transportation/
utility

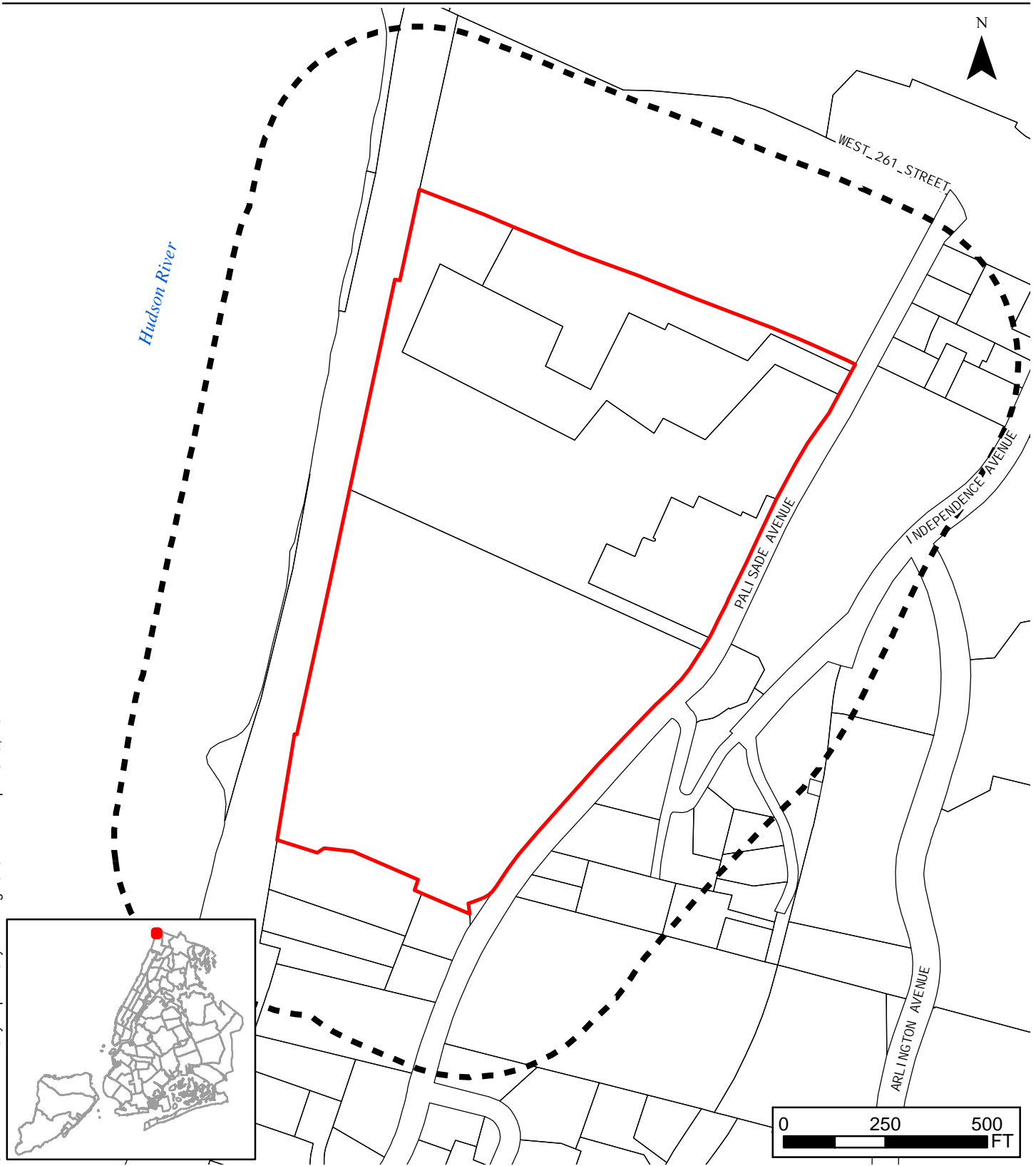
DESCRIPTION OF EXISTING AND PROPOSED CONDITIONS

The information requested in this table applies to the directly affected area. The directly affected area consists of the project site and the area subject to any change in regulatory control. The increment is the difference between the No-Action and the With-Action conditions.

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
LAND USE				
Residential	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
Describe type of residential structures	Nonprofit residences for the elderly (NPRE)	Nonprofit residences for the elderly (NPRE)	Nonprofit residences for the elderly (NPRE)	-
No. of dwelling units	137	137	137	-
No. of low- to moderate-income units				
Gross floor area (sq. ft.)	131,605	131,605	131,605	-
Commercial	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," specify the following:				
Describe type (retail, office, other)				
Gross floor area (sq. ft.)				
Manufacturing/Industrial	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," specify the following:				
Type of use				
Gross floor area (sq. ft.)				
Open storage area (sq. ft.)				
If any unenclosed activities, specify:				
Community Facility	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
Type	Skilled Nursing Facility (879 beds); Assisted Living (35 units)	Skilled Nursing Facility (767 beds); Assisted Living (105 units)	Skilled Nursing Facility (623 beds); Assisted Living (105 units); Independent Senior Living (388 units) NOTE: While the Assisted Living and Independent Senior Living facilities would be part of the LTCF, which is a community facility use, given their residential nature, these units will be analyzed as a residential use for certain CEQR technical areas, including socioeconomic conditions, community facilities, open space, noise, solid waste, energy and air quality.	- Skilled Nursing Facility (- 144 beds) + Independent Senior Living (+ 388 units)
Gross floor area (sq. ft.)	541,086	541,086	1,103,482	+ 562,396
Vacant Land	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," describe:				
Publicly Accessible Open Space	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," specify type (mapped City, State, or Federal parkland, wetland—mapped or otherwise known, other):				
Other Land Uses	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
If "yes," describe:				
PARKING				
Garages	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
No. of public spaces				
No. of accessory spaces	88	88	276	+ 188
Operating hours	n/a	n/a	n/a	
Attended or non-attended				
Lots	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
No. of public spaces				
No. of accessory spaces	347	347	249	- 98
Operating hours	n/a	n/a	n/a	
Other (includes street parking)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," describe:				
POPULATION				
Residents	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify number:	1,051	1,009	1,450	+ 441
Briefly explain how the number of residents was calculated:	Assumes 1 person per 1-BR Independent Living unit (IL unit); 1.5 persons per 1BR-den and small 2BR IL units; 2 persons per large 2BR and 2 BR-den units; 1 person per skilled nursing facility bed; 1 person per single-occupancy assisted living unit; and 1 person per single-occupancy non profit residence for the elderly.			
Businesses	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
No. and type				
No. and type of workers by business	986 Hebrew Home employees	957 Hebrew Home employees	948 Hebrew Home employees	- 9 employees
No. and type of non-residents who are not workers				
Briefly explain how the number of businesses was calculated:	Provided by the applicant			
Other (students, visitors, concert-goers, etc.)	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	
If any, specify type and number:				
Briefly explain how the number was calculated:				
ZONING				
Zoning classification	R1-1; R4	R1-1; R4	R1-1; R4	
Maximum amount of floor area that can be developed	North Site: 1,087,283 gsf South Site: 312,334 gsf	North Site: 1,087,283 gsf South Site: 312,334 gsf	North Site: 1,029,738 gsf South Site: 193,709 gsf	- 176,170 gsf
Predominant land use and zoning classifications within land use study area(s) or a 400 ft. radius of proposed project	Residential, public facilities and institutions, transportation, and open space/recreation; R-4, R1-1, R1-2, NA-2 special district	Residential, public facilities and institutions, transportation, and open space/recreation; R-4, R1-1, R1-2, NA-2 special district	Residential, public facilities and institutions, transportation, and open space/recreation; R-4, R1-1, R1-2, NA-2 special district	
Attach any additional information that may be needed to describe the project.				
If your project involves changes that affect one or more sites not associated with a specific development, it is generally appropriate to include total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.				

Sources: New York City Dept. of City Planning 2016. Bronx MapPLUTO; LION.



Project Site



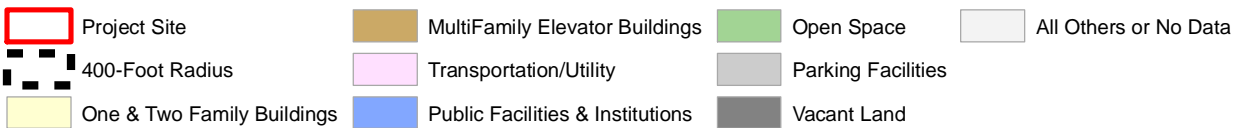
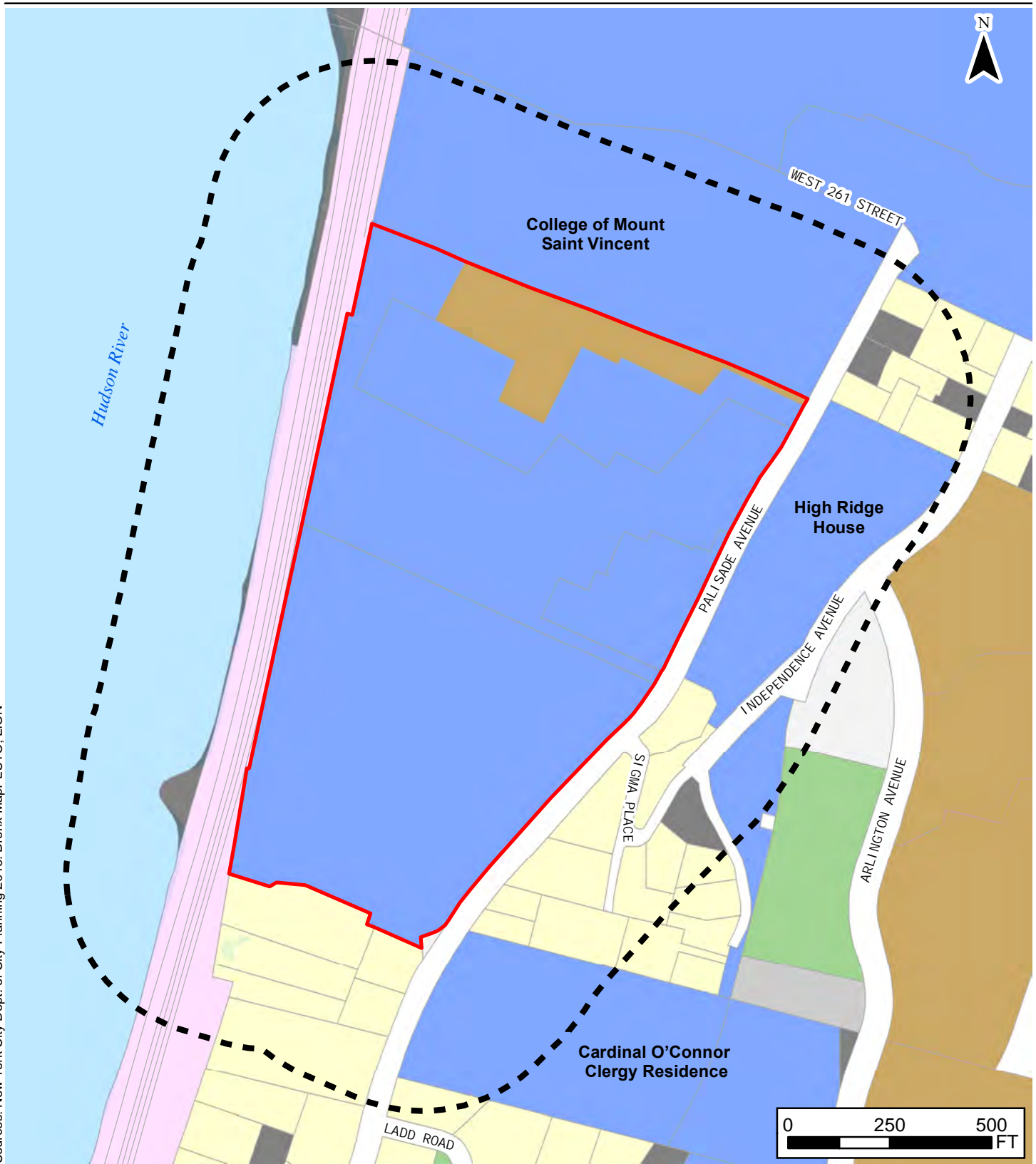
400-Foot Radius

The Hebrew Home at Riverdale
Bronx, New York

Site Location

Figure
1

Sources: New York City Dept. of City Planning 2016. Bronx MapPLUTO; LION

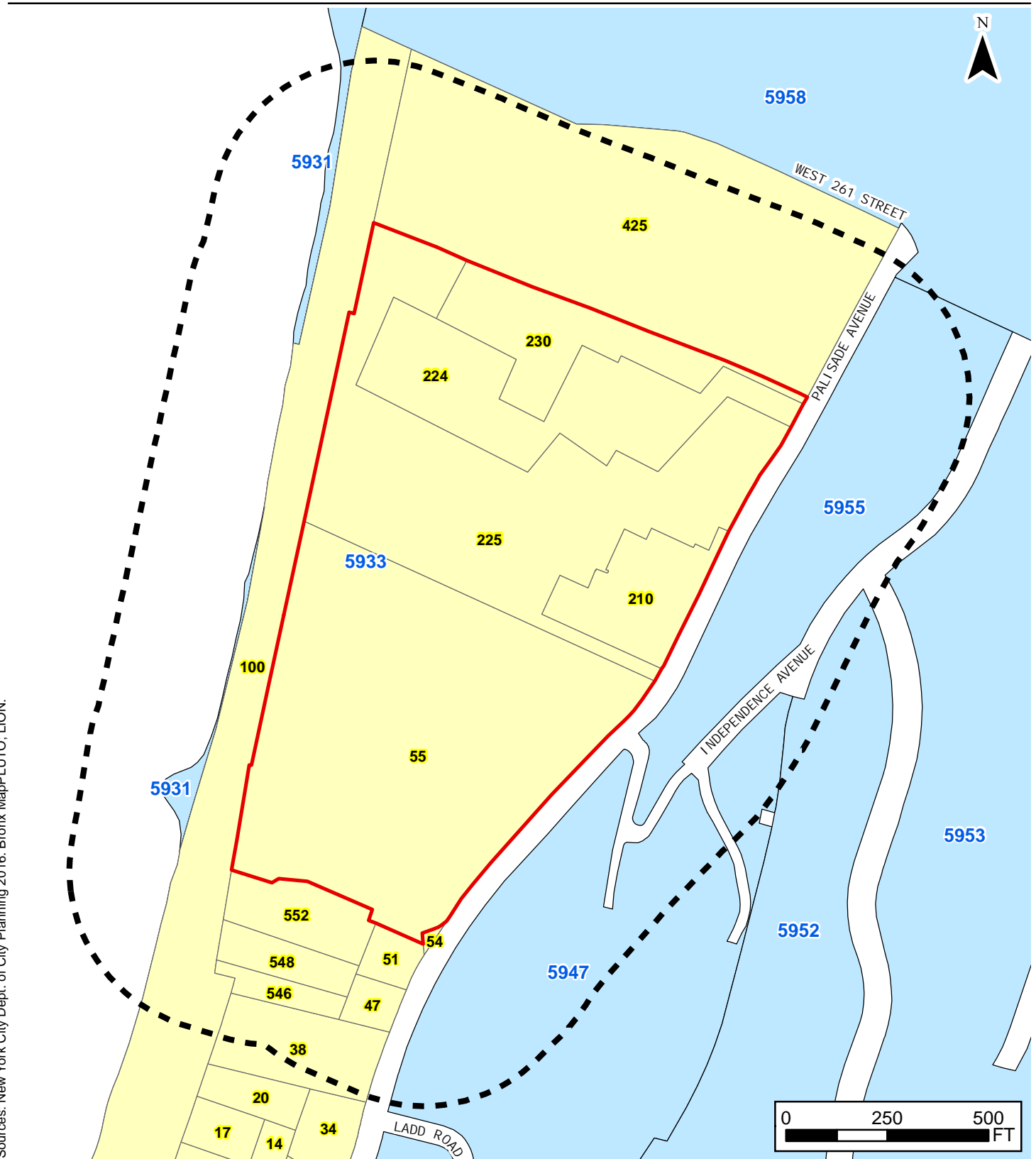


The Hebrew Home at Riverdale
Bronx, New York

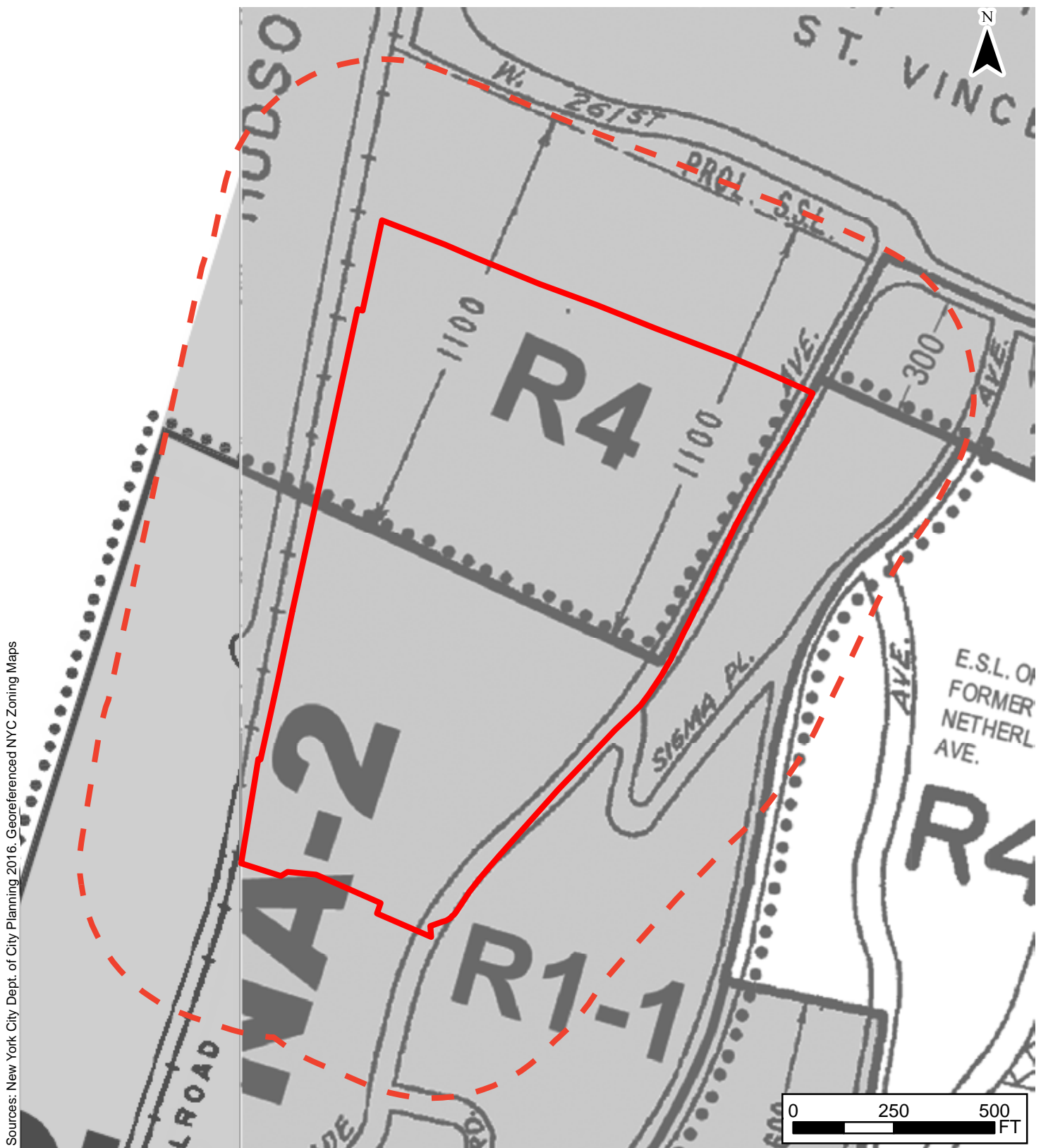
Land Use

Figure
2

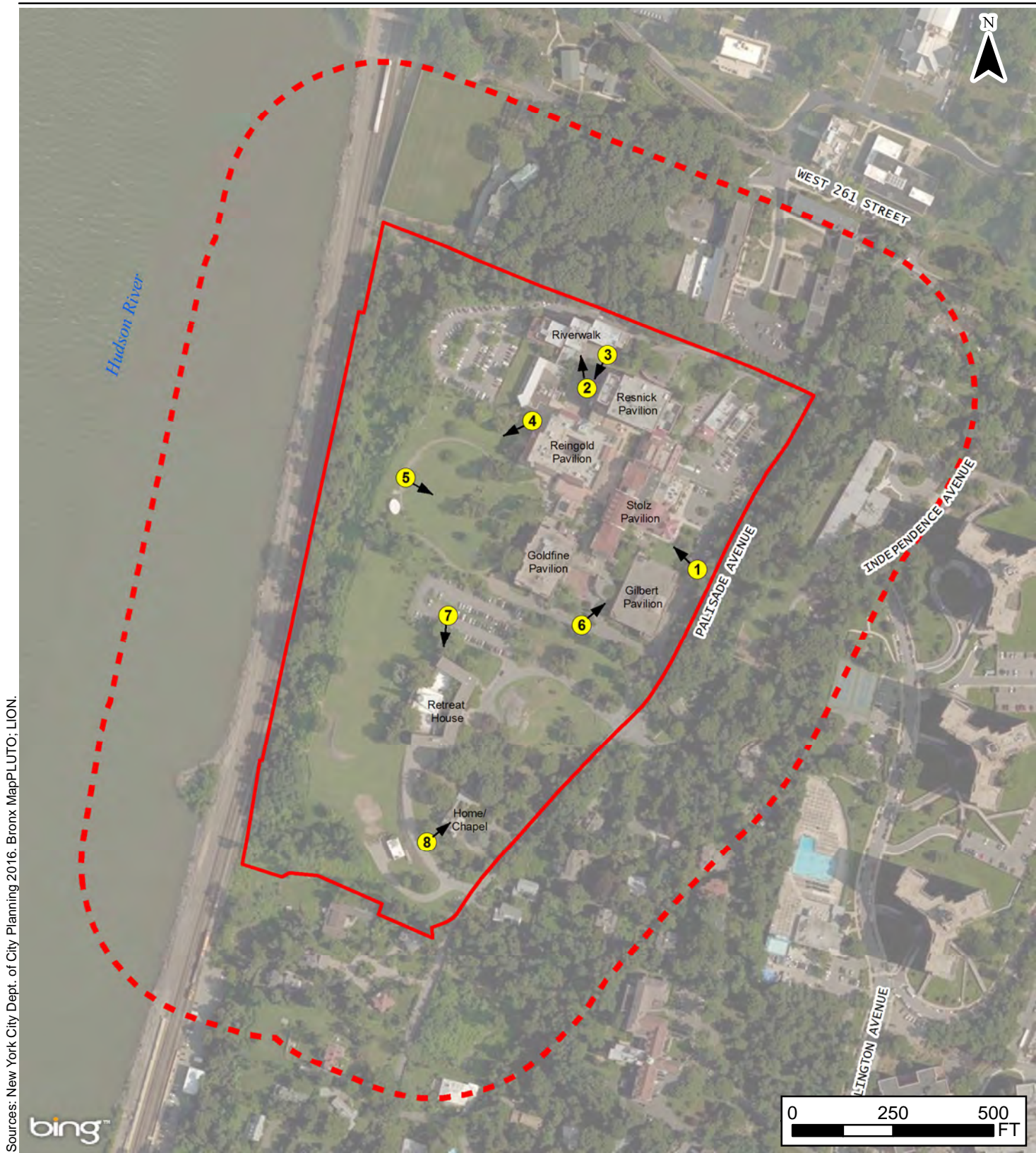
Sources: New York City Dept. of City Planning 2016. Bronx MapPLUTO; LION.



- Project Site
- 17 Project Block Tax Parcel (w/ Lot Number) selection
- 400-Foot Radius
- 5947 Tax Block (w/ Block Number)



- Project Site
- 400-Foot Radius



→ Photograph Location and Viewpoint Direction

Project Site

400-Foot Radius

The Hebrew Home at Riverdale
Bronx, New York

Photograph Locations

Figure
5



Photo 1

View of Weill Pavilion (front), Stolz Pavilion (back left), and Resnick Pavilion (back right) facing northwest from the east parking lot



Photo 2

View of Riverwalk entrance facing north from vehicle pick-up/drop-off circle



Photo 3

View of Jacob Reingold Pavilion (center) and Resnick Pavilion (left) facing south from vehicle pick-up/drop-off circle



Photo 4

View of project site open space facing west from Jacob Reingold Pavilion



Photo 5

View of Jacob Reingold Pavilion (left), Stoltz Pavilion (center) and Goldfine Pavilion (right) facing east



Photo 6

View of Gilbert Pavilion facing northeast from south entrance driveway



Photo 7

View of Spellman Retreat House facing south from Spellman parking lot



Photo 8

View of existing house facing northeast from the roadway to Spellman Retreat House

Part II: TECHNICAL ANALYSIS

INSTRUCTIONS: For each of the analysis categories listed in this section, assess the proposed project's impacts based on the thresholds and criteria presented in the CEQR Technical Manual. Check each box that applies.

- If the proposed project can be demonstrated not to meet or exceed the threshold, check the "no" box.
- If the proposed project will meet or exceed the threshold, or if this cannot be determined, check the "yes" box.
- For each "yes" response, provide additional analyses (and, if needed, attach supporting information) based on guidance in the CEQR Technical Manual to determine whether the potential for significant impacts exists. Please note that a "yes" answer does not mean that an EIS must be prepared—it means that more information may be required for the lead agency to make a determination of significance.
- The lead agency, upon reviewing Part II, may require an applicant to provide additional information to support the Full EAS Form. For example, if a question is answered "no," an agency may request a short explanation for this response.

	YES	NO
1. LAND USE, ZONING, AND PUBLIC POLICY: CEQR Technical Manual Chapter 4		
(a) Would the proposed project result in a change in land use different from surrounding land uses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Would the proposed project result in a change in zoning different from surrounding zoning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Is there the potential to affect an applicable public policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) If "yes," to (a), (b), and/or (c), complete a preliminary assessment and attach.		
(e) Is the project a large, publicly sponsored project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," complete a PlaNYC assessment and attach.		
(f) Is any part of the directly affected area within the City's Waterfront Revitalization Program boundaries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o If "yes," complete the Consistency Assessment Form . see attached		
2. SOCIOECONOMIC CONDITIONS: CEQR Technical Manual Chapter 5		
(a) Would the proposed project:		
o Generate a net increase of more than 200 residential units or 200,000 square feet of commercial space?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
▪ If "yes," answer both questions 2(b)(ii) and 2(b)(iv) below.		
o Directly displace 500 or more residents?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
▪ If "yes," answer questions 2(b)(i), 2(b)(ii), and 2(b)(iv) below.		
o Directly displace more than 100 employees?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
▪ If "yes," answer questions under 2(b)(iii) and 2(b)(iv) below.		
o Affect conditions in a specific industry?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
▪ If "yes," answer question 2(b)(v) below.		
(b) If "yes" to any of the above, attach supporting information to answer the relevant questions below. If "no" was checked for each category above, the remaining questions in this technical area do not need to be answered.		
i. Direct Residential Displacement		
o If more than 500 residents would be displaced, would these residents represent more than 5% of the primary study area population?	<input type="checkbox"/>	<input type="checkbox"/>
o If "yes," is the average income of the directly displaced population markedly lower than the average income of the rest of the study area population?	<input type="checkbox"/>	<input type="checkbox"/>
ii. Indirect Residential Displacement		
o Would expected average incomes of the new population exceed the average incomes of study area populations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes:"		
▪ Would the population of the primary study area increase by more than 10 percent?	<input type="checkbox"/>	<input type="checkbox"/>
▪ Would the population of the primary study area increase by more than 5 percent in an area where there is the potential to accelerate trends toward increasing rents?	<input type="checkbox"/>	<input type="checkbox"/>
o If "yes" to either of the preceding questions, would more than 5 percent of all housing units be renter-occupied and unprotected?	<input type="checkbox"/>	<input type="checkbox"/>
iii. Direct Business Displacement		
o Do any of the displaced businesses provide goods or services that otherwise would not be found within the trade area, either under existing conditions or in the future with the proposed project?	<input type="checkbox"/>	<input type="checkbox"/>
o Is any category of business to be displaced the subject of other regulations or publicly adopted plans to preserve,	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
enhance, or otherwise protect it?		
iv. Indirect Business Displacement		
o Would the project potentially introduce trends that make it difficult for businesses to remain in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Would the project capture retail sales in a particular category of goods to the extent that the market for such goods would become saturated, potentially resulting in vacancies and disinvestment on neighborhood commercial streets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v. Effects on Industry		
o Would the project significantly affect business conditions in any industry or any category of businesses within or outside the study area?	<input type="checkbox"/>	<input type="checkbox"/>
o Would the project indirectly substantially reduce employment or impair the economic viability in the industry or category of businesses?	<input type="checkbox"/>	<input type="checkbox"/>
3. COMMUNITY FACILITIES: CEQR Technical Manual Chapter 6		
(a) Direct Effects		
o Would the project directly eliminate, displace, or alter public or publicly funded community facilities such as educational facilities, libraries, health care facilities, day care centers, police stations, or fire stations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Indirect Effects		
i. Child Care Centers		
o Would the project result in 20 or more eligible children under age 6, based on the number of low or low/moderate income residential units? (See Table 6-1 in Chapter 6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the project result in a collective utilization rate of the group child care/Head Start centers in the study area that is greater than 100 percent?	<input type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the project increase the collective utilization rate by 5 percent or more from the No-Action scenario?	<input type="checkbox"/>	<input type="checkbox"/>
ii. Libraries		
o Would the project result in a 5 percent or more increase in the ratio of residential units to library branches? (See Table 6-1 in Chapter 6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the project increase the study area population by 5 percent or more from the No-Action levels?	<input type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the additional population impair the delivery of library services in the study area?	<input type="checkbox"/>	<input type="checkbox"/>
iii. Public Schools		
o Would the project result in 50 or more elementary or middle school students, or 150 or more high school students based on number of residential units? (See Table 6-1 in Chapter 6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the project result in a collective utilization rate of the elementary and/or intermediate schools in the study area that is equal to or greater than 100 percent?	<input type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the project increase this collective utilization rate by 5 percent or more from the No-Action scenario?	<input type="checkbox"/>	<input type="checkbox"/>
iv. Health Care Facilities		
o Would the project result in the introduction of a sizeable new neighborhood?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the project affect the operation of health care facilities in the area?	<input type="checkbox"/>	<input type="checkbox"/>
v. Fire and Police Protection		
o Would the project result in the introduction of a sizeable new neighborhood?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the project affect the operation of fire or police protection in the area?	<input type="checkbox"/>	<input type="checkbox"/>
4. OPEN SPACE: CEQR Technical Manual Chapter 7		
(a) Would the project change or eliminate existing open space?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Is the project located within an under-served area in the Bronx , Brooklyn , Manhattan , Queens , or Staten Island ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) If "yes," would the project generate more than 50 additional residents or 125 additional employees?	<input type="checkbox"/>	<input type="checkbox"/>
(d) Is the project located within a well-served area in the Bronx , Brooklyn , Manhattan , Queens , or Staten Island ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) If "yes," would the project generate more than 350 additional residents or 750 additional employees?	<input type="checkbox"/>	<input type="checkbox"/>
(f) If the project is located in an area that is neither under-served nor well-served, would it generate more than 200 additional residents or 500 additional employees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) If "yes" to questions (c), (e), or (f) above, attach supporting information to answer the following:		
o If in an under-served area, would the project result in a decrease in the open space ratio by more than 1 percent?	<input type="checkbox"/>	<input type="checkbox"/>
o If in an area that is not under-served, would the project result in a decrease in the open space ratio by more than 5	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Socioeconomic Conditions

According to the *CEQR Technical Manual*, “The socioeconomic character of an area includes its population, housing, and economic activity. Socioeconomic changes may occur when a project directly or indirectly changes any of these elements.” A socioeconomic assessment may be necessary if an action is expected to create substantial socioeconomic changes within the area that would not be expected to occur in the absence of the action. Such socioeconomic changes include direct displacement of residential population; direct displacement of businesses or employees; a new development that is markedly different from the existing uses and activities in the neighborhood; an adverse effect on conditions in the real estate market in the area; or an adverse effect on socioeconomic conditions in a specific industry.

Direct displacement occurs when the proposed project displaces residents or businesses currently on the project site. The proposed project would not directly displace any residents or employees or adversely affect a specific industry, and therefore an analysis of direct residential or business displacement and specific industries is not warranted.

Per the *CEQR* guidelines, circumstances that require an assessment of indirect displacement include a project that would result in a substantial new development, including residential developments of 200 units or greater. Even though the proposed project is a community facility use, certain aspects of the development can be considered more residential in nature, and are therefore analyzed as a residential use for certain *CEQR* technical areas including the assessment of socioeconomic conditions. Since the proposed project includes 388 Independent Senior Living facility units, whose inhabitants live with relatively little assistance and are likely to leave the Hebrew Home campus more regularly than residents in the Assisted Living or Skilled Nursing Facility units, preliminary qualitative socioeconomic assessment for indirect displacement is provided below.

The proposed project introduces a specialty type of residential use, and, for several reasons described below, it would not be expected to result in a significant adverse impact on the socioeconomic conditions of the surrounding area. The Hebrew Home is an established institution in the North Riverdale neighborhood, and expansion of this Long Term Care Facility would not be markedly different from the existing uses on the project site. Therefore, the proposed project would not introduce a new trend that could be expected to change the socioeconomic character of the neighborhood.

In addition, the Hebrew Home is a use that serves a very specific population. The introduction of 388 Independent Senior Living Facility units that are restricted to residents of the Hebrew Home would not affect the housing rental market for units available to the broader residential population in the area. Therefore, the proposed project is not expected to affect the rental prices for any vulnerable populations. Finally, the project site is located in a relatively affluent neighborhood of the Bronx. The expected average incomes of new residents are expected to be similar to the average incomes of the existing population in the surrounding area. Overall, the proposed project would not change the socioeconomic conditions of the area and therefore a detailed socioeconomic assessment for indirect displacement is not warranted.

Community Facilities

The *CEQR Technical Manual* requires an analysis of community facilities - including public or publicly funded schools, libraries, child care centers, health care facilities and fire and police protection - if the proposed project physically displaces or alters a community facility (a direct effect) or causes a change in population that may affect the services delivered by a community facility (an indirect effect). As previously mentioned, even though the proposed project is a community facility use, certain aspects of the development can be considered more residential in nature, and are therefore analyzed as a residential use for certain *CEQR* technical areas including the assessment of community facilities. Per the community facility thresholds for a detailed analysis of community facilities outlined in Table 6-1 of the *CEQR Technical Manual*, the 388 Independent Senior Living facility units would exceed the threshold for an analysis of public schools and publicly funded child care facilities. However, these units are type of a specialty residential, with certain restrictions for its occupants, including an age restriction to seniors. According to Table 6-1a of the *CEQR Technical Manual*, housing units exclusively for seniors, aged 55 or older, may be excluded from the analysis. The proposed senior housing units would not generate public school students or children under age 6, and consequently would not burden the area's public schools or child care centers. The proposed project would not directly displace or alter an existing community facility. Therefore, the proposed project would not result in any significant adverse impacts for community facilities and a detailed analysis is not warranted.

	YES	NO
percent?		
<ul style="list-style-type: none"> o If "yes," are there qualitative considerations, such as the quality of open space, that need to be considered? Please specify: 	<input type="checkbox"/>	<input type="checkbox"/>
5. SHADOWS: CEQR Technical Manual Chapter 8		
(a) Would the proposed project result in a net height increase of any structure of 50 feet or more?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Would the proposed project result in any increase in structure height and be located adjacent to or across the street from a sunlight-sensitive resource?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) If "yes" to either of the above questions, attach supporting information explaining whether the project's shadow would reach any sunlight-sensitive resource at any time of the year. see attached		
6. HISTORIC AND CULTURAL RESOURCES: CEQR Technical Manual Chapter 9		
(a) Does the proposed project site or an adjacent site contain any architectural and/or archaeological resource that is eligible for or has been designated (or is calendared for consideration) as a New York City Landmark, Interior Landmark or Scenic Landmark; that is listed or eligible for listing on the New York State or National Register of Historic Places; or that is within a designated or eligible New York City, New York State or National Register Historic District? (See the GIS System for Archaeology and National Register to confirm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project involve construction resulting in in-ground disturbance to an area not previously excavated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) If "yes" to either of the above, list any identified architectural and/or archaeological resources and attach supporting information on whether the proposed project would potentially affect any architectural or archeological resources. See Appendix B		
7. URBAN DESIGN AND VISUAL RESOURCES: CEQR Technical Manual Chapter 10		
(a) Would the proposed project introduce a new building, a new building height, or result in any substantial physical alteration to the streetscape or public space in the vicinity of the proposed project that is not currently allowed by existing zoning?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources not currently allowed by existing zoning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) If "yes" to either of the above, please provide the information requested in Chapter 10 . see attached		
8. NATURAL RESOURCES: CEQR Technical Manual Chapter 11		
(a) Does the proposed project site or a site adjacent to the project contain natural resources as defined in Section 100 of Chapter 11 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," list the resources and attach supporting information on whether the project would affect any of these resources.		
(b) Is any part of the directly affected area within the Jamaica Bay Watershed ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," complete the Jamaica Bay Watershed Form and submit according to its instructions .		
9. HAZARDOUS MATERIALS: CEQR Technical Manual Chapter 12		
(a) Would the proposed project allow commercial or residential uses in an area that is currently, or was historically, a manufacturing area that involved hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Does the proposed project site have existing institutional controls (e.g., (E) designation or Restrictive Declaration) relating to hazardous materials that preclude the potential for significant adverse impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Would the project require soil disturbance in a manufacturing area or any development on or near a manufacturing area or existing/historic facilities listed in Appendix 1 (including nonconforming uses)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Would the project result in the development of a site where there is reason to suspect the presence of hazardous materials, contamination, illegal dumping or fill, or fill material of unknown origin?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Would the project result in development on or near a site that has or had underground and/or aboveground storage tanks (e.g., gas stations, oil storage facilities, heating oil storage)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(f) Would the project result in renovation of interior existing space on a site with the potential for compromised air quality; vapor intrusion from either on-site or off-site sources; or the presence of asbestos, PCBs, mercury or lead-based paint?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) Would the project result in development on or near a site with potential hazardous materials issues such as government-listed voluntary cleanup/brownfield site, current or former power generation/transmission facilities, coal gasification or gas storage sites, railroad tracks or rights-of-way, or municipal incinerators?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Has a Phase I Environmental Site Assessment been performed for the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o If "yes," were Recognized Environmental Conditions (RECs) identified? Briefly identify: See attached.		
(i) Based on the Phase I Assessment, is a Phase II Investigation needed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. WATER AND SEWER INFRASTRUCTURE: CEQR Technical Manual Chapter 13		
(a) Would the project result in water demand of more than one million gallons per day?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) If the proposed project located in a combined sewer area, would it result in at least 1,000 residential units or 250,000 square feet or more of commercial space in Manhattan, or at least 400 residential units or 150,000 square feet or more of commercial space in the Bronx, Brooklyn, Staten Island, or Queens?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Historic and Cultural Resources

Historic and cultural resources are defined as districts, buildings, structures, sites and objects of historical, aesthetic, cultural, and archaeological significance. According to the 2014 CEQR Technical Manual, these include properties that have been designated, or are under consideration for being designated, as New York City Landmarks or Scenic Landmarks, or are eligible for such designation; properties within New York City Historic Districts; properties listed in, or determined eligible for listing in, the State and/or National Register of Historic Places (SR/NR); and National Historic Landmarks.

The *CEQR Technical Manual* requires an analysis of historic and cultural resources for projects located adjacent to listed or eligible historic or landmark structures or within historic districts, or projects that require in-ground disturbance, unless such disturbance occurs in an area that has already been excavated. The project site or an adjacent site does not contain any architectural resources as defined above. The proposed project would involve construction resulting in in-ground disturbance in an area not previously excavated requiring further assessment. Therefore, a Phase IA Archaeological Assessment was prepared and the New York City Landmarks Preservation Commission (LPC) was consulted to identify any potential impacts of the proposed project on archaeological resources. According to a letter from the Landmarks Preservation Committee (LPC), found in Appendix A, there are no sources of archaeological concern listed at the project site. As such, the proposed project would not result in any significant adverse archaeological or architectural impacts and no further archaeological investigations is warranted.

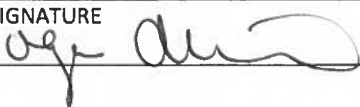
	YES	NO
(c) If the proposed project located in a separately sewer area , would it result in the same or greater development than that listed in Table 13-1 in Chapter 13 ?	<input type="checkbox"/>	<input type="checkbox"/>
(d) Would the project involve development on a site that is 5 acres or larger where the amount of impervious surface would increase?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e) If the project is located within the Jamaica Bay Watershed or in certain specific drainage areas , including Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, or Westchester Creek, would it involve development on a site that is 1 acre or larger where the amount of impervious surface would increase?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Would the proposed project be located in an area that is partially sewer or currently unsewered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a Wastewater Treatment Plant and/or contribute contaminated stormwater to a separate storm sewer system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) If "yes" to any of the above, conduct the appropriate preliminary analyses and attach supporting documentation. see attached		
11. SOLID WASTE AND SANITATION SERVICES: CEQR Technical Manual Chapter 14		
(a) Using Table 14-1 in Chapter 14 , the project's projected operational solid waste generation is estimated to be (pounds per week): 8,564		
o Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the proposed project comply with the City's Solid Waste Management Plan?	<input type="checkbox"/>	<input type="checkbox"/>
12. ENERGY: CEQR Technical Manual Chapter 15		
(a) Using energy modeling or Table 15-1 in Chapter 15 , the project's projected energy use is estimated to be (annual BTUs): 123,903,962 MBTUs		
(b) Would the proposed project affect the transmission or generation of energy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. TRANSPORTATION: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) If "yes," conduct the appropriate screening analyses, attach back up data as needed for each stage, and answer the following questions:		
o Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If "yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? <i>**It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 of Chapter 16 for more information.</i>	<input type="checkbox"/>	<input type="checkbox"/>
o Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If "yes," would the proposed project result, per project peak hour, in 50 or more bus trips on a single line (in one direction) or 200 subway/rail trips per station or line?	<input type="checkbox"/>	<input type="checkbox"/>
o Would the proposed project result in more than 200 pedestrian trips per project peak hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If "yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?	<input type="checkbox"/>	<input type="checkbox"/>
14. AIR QUALITY: CEQR Technical Manual Chapter 17		
(a) <i>Mobile Sources:</i> Would the proposed project result in the conditions outlined in Section 210 in Chapter 17 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) <i>Stationary Sources:</i> Would the proposed project result in the conditions outlined in Section 220 in Chapter 17 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the proposed project exceed the thresholds in Figure 17-3, Stationary Source Screen Graph in Chapter 17 ? (Attach graph as needed) see attached	<input type="checkbox"/>	<input type="checkbox"/>
(c) Does the proposed project involve multiple buildings on the project site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d) Does the proposed project require federal approvals, support, licensing, or permits subject to conformity requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Does the proposed project site have existing institutional controls (e.g., (E) designation or Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation. see attached		
15. GREENHOUSE GAS EMISSIONS: CEQR Technical Manual Chapter 18		
(a) Is the proposed project a city capital project or a power generation plant?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project fundamentally change the City's solid waste management system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Would the proposed project result in the development of 350,000 square feet or more?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d) If "yes" to any of the above, would the project require a GHG emissions assessment based on guidance in Chapter 18 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	YES	NO
<p>o If "yes," would the project result in inconsistencies with the City's GHG reduction goal? (See Local Law 22 of 2008; § 24-803 of the Administrative Code of the City of New York). Please attach supporting documentation.</p>	<input type="checkbox"/>	<input type="checkbox"/>
16. NOISE: CEQR Technical Manual Chapter 19		
(a) Would the proposed project generate or reroute vehicular traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project introduce new or additional receptors (see Section 124 in Chapter 19) near heavily trafficked roadways, within one horizontal mile of an existing or proposed flight path, or within 1,500 feet of an existing or proposed rail line with a direct line of sight to that rail line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Does the proposed project site have existing institutional controls (e.g., (E) designation or Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation. see attached		
17. PUBLIC HEALTH: CEQR Technical Manual Chapter 20		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Air Quality; Hazardous Materials; Noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) If "yes," explain why an assessment of public health is or is not warranted based on the guidance in Chapter 20 , "Public Health." Attach a preliminary analysis, if necessary. As detailed in Hazardous Materials, Air Quality, and Noise, the proposed project would not result in any significant adverse impacts in these technical areas, and therefore, would not have the potential for adverse public health impacts.		
18. NEIGHBORHOOD CHARACTER: CEQR Technical Manual Chapter 21		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Land Use, Zoning, and Public Policy; Socioeconomic Conditions; Open Space; Historic and Cultural Resources; Urban Design and Visual Resources; Shadows; Transportation; Noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) If "yes," explain why an assessment of neighborhood character is or is not warranted based on the guidance in Chapter 21 , "Neighborhood Character." Attach a preliminary analysis, if necessary. The proposed project would be in keeping with the surrounding institutional and residential land uses and would not result in any significant adverse impact on visual resources in the surrounding area. Therefore, the proposed project would not adversely impact the neighborhood character, and an assessment of neighborhood character is not warranted.		
19. CONSTRUCTION: CEQR Technical Manual Chapter 22		
(a) Would the project's construction activities involve:		
o Construction activities lasting longer than two years?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Construction activities within a Central Business District or along an arterial highway or major thoroughfare?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Closing, narrowing, or otherwise impeding traffic, transit, or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, etc.)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o The operation of several pieces of diesel equipment in a single location at peak construction?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Closure of a community facility or disruption in its services?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Activities within 400 feet of a historic or cultural resource?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Disturbance of a site containing or adjacent to a site containing natural resources?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Construction on multiple development sites in the same geographic area, such that there is the potential for several construction timelines to overlap or last for more than two years overall?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) If any boxes are checked "yes," explain why a preliminary construction assessment is or is not warranted based on the guidance in Chapter 22 , "Construction." It should be noted that the nature and extent of any commitment to use the Best Available Technology for construction equipment or Best Management Practices for construction activities should be considered when making this determination. See attached.		
20. APPLICANT'S CERTIFICATION		
<p>I swear or affirm under oath and subject to the penalties for perjury that the information provided in this Environmental Assessment Statement (EAS) is true and accurate to the best of my knowledge and belief, based upon my personal knowledge and familiarity with the information described herein and after examination of the pertinent books and records and/or after inquiry of persons who have personal knowledge of such information or who have examined pertinent books and records.</p> <p>Still under oath, I further swear or affirm that I make this statement in my capacity as the applicant or representative of the entity that seeks the permits, approvals, funding, or other governmental action(s) described in this EAS.</p>		
APPLICANT/REPRESENTATIVE NAME	SIGNATURE	DATE
Nancy Doon, AICP	<i>Nancy Doon</i>	4/20/2018

PLEASE NOTE THAT APPLICANTS MAY BE REQUIRED TO SUBSTANTIATE RESPONSES IN THIS FORM AT THE DISCRETION OF THE LEAD AGENCY SO THAT IT MAY SUPPORT ITS DETERMINATION OF SIGNIFICANCE.

Part III: DETERMINATION OF SIGNIFICANCE (To Be Completed by Lead Agency)

INSTRUCTIONS: In completing Part III, the lead agency should consult 6 NYCRR 617.7 and 43 RCNY § 6-06 (Executive Order 91 or 1977, as amended), which contain the State and City criteria for determining significance.

1. For each of the impact categories listed below, consider whether the project may have a significant adverse effect on the environment, taking into account its (a) location; (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude.		Potentially Significant Adverse Impact	
		YES	NO
IMPACT CATEGORY			
Land Use, Zoning, and Public Policy		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Socioeconomic Conditions		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Community Facilities and Services		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Open Space		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shadows		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Historic and Cultural Resources		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Urban Design/Visual Resources		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Natural Resources		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hazardous Materials		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Water and Sewer Infrastructure		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solid Waste and Sanitation Services		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Energy		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Transportation		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Air Quality		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Greenhouse Gas Emissions		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Noise		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Health		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Neighborhood Character		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Construction		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Are there any aspects of the project relevant to the determination of whether the project may have a significant impact on the environment, such as combined or cumulative impacts, that were not fully covered by other responses and supporting materials?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
If there are such impacts, attach an explanation stating whether, as a result of them, the project may have a significant impact on the environment.			
3. Check determination to be issued by the lead agency:			
<input type="checkbox"/> Positive Declaration: If the lead agency has determined that the project may have a significant impact on the environment, and if a Conditional Negative Declaration is not appropriate, then the lead agency issues a <i>Positive Declaration</i> and prepares a draft Scope of Work for the Environmental Impact Statement (EIS).			
<input checked="" type="checkbox"/> Conditional Negative Declaration: A <i>Conditional Negative Declaration</i> (CND) may be appropriate if there is a private applicant for an Unlisted action AND when conditions imposed by the lead agency will modify the proposed project so that no significant adverse environmental impacts would result. The CND is prepared as a separate document and is subject to the requirements of 6 NYCRR Part 617.			
<input type="checkbox"/> Negative Declaration: If the lead agency has determined that the project would not result in potentially significant adverse environmental impacts, then the lead agency issues a <i>Negative Declaration</i> . The <i>Negative Declaration</i> may be prepared as a separate document (see <u>template</u>) or using the embedded Negative Declaration on the next page.			
4. LEAD AGENCY'S CERTIFICATION			
TITLE	LEAD AGENCY		
Deputy Director, EARD	New York City Department of City Planning		
NAME	DATE		
Olga Abinader	April 20, 2018		
SIGNATURE			
			

1.0

Project Description

1.1 Introduction

The applicant, Hebrew Home for the Aged at Riverdale, Inc. (Hebrew Home), is seeking a special permit pursuant to New York City Zoning Resolution (ZR) Section 74-901 (Long-term care facilities) for a Long Term Care Facility (LTCF) within an R1-1 zoning district, as well as multiple authorizations pursuant to the Special Natural Area District 2 (NA-2) requirements (collectively, the “proposed actions”) to facilitate the development of a 633,890-gross square foot (gsf) Continuing Care Retirement Community (CCRC)/LTCF (the “proposed project”) at the existing Hebrew Home campus located at 5701–5961 Palisade Avenue (Bronx Block 5933, Lots 55, 210, 224, 225, and 230) in the Riverdale neighborhood of the Bronx, Community District 8 (the “project site”). The proposed project involves the construction of three new buildings and additional site improvements, including the renovation of an existing building, demolition of five existing buildings and/or structures, and accommodation of 90 additional parking spaces on the project site. If approved, the combined CCRC/LTCF campus would be the first continuing care retirement community in New York City.

1.2 Project Site

The project site is located at 5701–5961 Palisade Avenue and comprises Lots 55, 210, 224, 225, and 230 on Block 5933 in the Riverdale neighborhood of the Bronx, Community District 8. The project site is bounded by Palisade Avenue to the east, the Metro-North Hudson Line rail tracks to the west, a line approximately 380 feet south of West 261st Street to the north, and the southern boundary of Lot 55 to the south. The project site is split into a north site and a south site; the zoning district boundary between the R4 district and the R1-1 district marks the boundary between the two sites (see EAS Figure 4 and Figure 1-1).

1.2.1 North Site

The north site is the location of the existing Hebrew Home campus. The applicant acquired the north site in or around December 1948, where it now provides long term care, assisted living, rehabilitation services, housing, skilled nursing, and specialized services including elder abuse prevention and an array of arts and cultural offerings.

The north site is approximately 802,719 square feet (sf) and is zoned R4. Under the New York City zoning regulations for LTCFs a maximum Floor Area Ratio (FAR) of 1.29 is permitted on the north

site for certain community facility uses. Accordingly, a maximum of 1,035,508 zoning square feet (1,087,283 gsf) is permitted.¹ The existing Hebrew Home campus contains the following:

- 879 skilled nursing beds²
- 35 assisted living units
- 137 nonprofit residences for the elderly (NPRES)
- 328 parking spaces (240 surface and 88 garage spaces)

The north site is currently improved with nine buildings that house or support the above programming, concentrated in the eastern portion of the site. These buildings include the Riverwalk/Riverwalk dining building, Resnick Pavilion, Jacob Reingold Pavilion, Goldfine Pavilion, Gilbert Pavilion, Stoltz Pavilion, the staff dining building, electrical building and the service building.³ A detailed breakdown of the north and south site buildings is provided in Table 1-1. All of the buildings on the north site support Use Group 3, with the exception of the Riverwalk building and dining hall, which supports Use Group 2, nonprofit residences for the elderly. To the west of the campus buildings, the north site is improved with a significant amount of private open space, including walking paths, gardens, and sculptural elements.

Currently, the primary entrance to the north site is along Palisade Avenue at the northern lot boundary. There is a second, fenced access point from Palisade Avenue at the southern lot boundary. There are 240 surface parking spaces on the north site located to the west of the Riverwalk building and along Palisade Avenue adjacent to the service building. Both surface parking lots can be accessed from the primary entrance to the north site. There are also 88 garage spaces in the Gilbert Pavilion parking garage, which can be accessed from both entrances to the north site.

1.2.2 South Site

The south site is 594,921 sf and zoned R1-1. The south site currently contains five buildings, including the Cardinal Spellman Retreat House, once a retreat destination for Catholic Church members (Use Group 4), and an old home and connected chapel (Use Group 3), both currently vacant, as well as three utility buildings (see Table 1-1).

Three driveways provide access to the south site from Palisade Avenue. To the north of the Cardinal Spellman Retreat House and accessible via the northernmost driveway, 107 surface parking spaces are located.

¹ GSF calculated based on a coefficient of five percent applied to the zoning square footage.

² Skilled nursing beds can be used for either long-term skilled care or short-term skilled care. Long-term skilled care is for patients with chronic medical issues who require constant medical care supervised by registered nursing staff. The average length of stay is approximately two and a half years. Short-term skilled care provides skilled nursing care for patients who are post-operative or may have suffered a stroke, for example. These short-term stays for recuperative care or rehabilitation generally run from one month to three months.

³ Riverwalk and the Riverwalk dining building are connected and considered one building.

1.2.3 Surrounding Area

The project site is located within the Riverdale neighborhood of the Bronx, which is generally characterized by a mix of single-family and multi-family residential uses, large institutional uses, and access to park spaces, including Van Cortlandt Park to the east and Riverdale Park to the south. Westchester County borders the neighborhood to the north.

The area is served by the Metro-North Hudson Line; the Riverdale Station is located to the southwest of the project site at West 254th Street. Several New York City Transit bus lines run north-south along Riverdale Avenue, including the Bx7, Bx10, and the BxM 1, 2, and 18. There are no subway stations within the boundaries of the neighborhood; the closest station is the Van Cortlandt Park – 242 Street 1 train station, approximately two miles from the project site.

1.3 Proposed Actions

The applicant is seeking a special permit pursuant to ZR Section 74-901 (Long-term care facilities) to allow for the development of an LTCF in the R1-1 district on the south site, a use not permitted as-of-right in that district. This special permit would include approval for the total floor area and the maximum number of beds/units and type of beds/units in the LTCF, as well as the site plan for the LTCF.

To develop within the NA-2, the applicant is also seeking multiple authorizations pursuant to ZR Section 105-42 (Authorization to Alter Natural Features) and ZR Section 105-43 (Authorization to Modify Bulk, Parking, Grading and Private Roads), including the following:

- 105-421 Modification of topographic features on Tier I sites. The average slope of the project site is 8.8 percent, which is below the 10 percent average slope threshold for Tier II sites. Therefore, the project site is a Tier I site.
- 105-422 Authorization of a development enlargement, or site alteration on a Tier II site or portion of a zoning lot having a steep slope or steep slope buffer. Although designated Tier I, there are areas above 25 percent slope within the project site. The project site contains 269,687 square feet of steep slope (19.3 percent of the project site), located primarily along the bank of the Hudson River.
- 105-424 Authorization for Alteration of rock outcrops. The project site contains nine outcroppings, which total 14,474 sf of the project site. Collectively, the rock outcroppings are a defining visual element of the campus landscape. A large natural rock outcrop along Palisade Avenue creates a visual screen between neighboring properties and the project site. The proposed project would not be feasible without the alteration of a rock outcrop.
- 105-425 Authorization for Modification of botanic environment and tree preservation and planting requirements. ZR Section 105-32 (Botanic Environment and Tree Planting Requirements) sets forth the requirements related to vegetation and tree planting, including the rate at which trees and vegetation must be planted and/or replaced as well as the size and species of trees and vegetation required as a result of a new development or site alteration. The project site contains 760 trees for 2,073 tree credits. The NA-2 regulations require 1,413 trees. Additionally, 51 percent of tree credits currently on the project site are required to remain as per these regulations. The applicant proposes to remove 161 trees to build CCRC North and CCRC South which would result in a total of 386 tree credits being removed. There are 61 trees for 155

tree credits that exist within the limit of disturbance that would be preserved for no credit. There would then be 599 existing trees for 1,432 tree credits which would exceed the tree requirements for the project site. The applicant also proposes to add 215 new 3" caliper trees to the project site to make up for the trees being removed by construction.

- 105-432 Authorization for Modification of height and setback regulations. The applicant is proposing to develop to a maximum height of 138 feet in the R4 zoning district, which exceeds the required sloping plane and is above the 45-foot height limit, as set forth in ZR Section 24-013 (Special provisions for certain community facility uses), 23-631(b) and 23-631(j) (General provisions).

These authorizations are requested to allow for a project design generally in alignment with the goals of the Special Natural Area District. The proposed project has been designed to avoid sensitive natural features to the greatest extent practicable.

The applicant is also seeking a certification pursuant to Section 105-45 (Certification of Restoration Plan) for a proposed restoration plan with respect to natural features that were previously altered without prior approval of the City Planning Commission (CPC), specifically: an addition to the Riverwalk dining building; location of the walking paths that differs from the 2001 approved site plan; fill and grading changes; changes to parking area curbs; an additional staircase to access the Riverwalk dining building; additional glass volumes at the Riverwalk dining connector; and a cogeneration facility on a portion of the parking lot.

In addition to the actions above, the applicant would execute a Restrictive Declaration associated with the Special Permit and Authorizations listed, limiting development as shown on the CPC-approved site plan as well as the total floor area and number of beds. The executed declaration would supersede an existing Second Amended Supplemental Declaration, dated October 22, 2001 (recorded at Reel 1941, page 2385), to which the existing Hebrew Home campus (Block 5933, Lots 210, 224, 225, and 230) is subject. The Second Amended Supplemental Declaration was entered into in connection with the 2001 CPC approvals for the Reingold Pavilion.

Finally, the applicant has been granted a Conditional Certificate of Authority under Article 46 of the New York Public Health Law and is seeking a final Certificate of Authority to construct and operate a Continuing Care Retirement Community. The application for approval was subject to review by the New York State Department of Health and the Department of Financial Services, with final approval required by the Continuing Care Retirement Community Council as specified in Article 46. This action is subject to review under the New York State Environmental Quality Review Act (SEQRA).

1.4 Proposed Project

The proposed actions would permit the development of a CCRC/LTCF campus, the first of its kind in New York City. The ZR defines an LTCF as "a community facility use that has secured appropriate certificate of authority or licensure by the New York State Department of Health." LTCFs include nursing homes, or assisted living facilities, and CCRCs. CCRCs consist of independent living dwelling units in addition to nursing home beds (including skilled nursing facility beds) and assisted living facilities, as defined in the Public Health Law.

The proposed project would include construction of three new buildings, two on the south site and one on the north site (see Figures 1-1 through 1-3). The new building on the north site, CCRC North, would be built in place of the existing Goldfine Pavilion, the southernmost existing building on the north site, which would be demolished. CCRC North would be 12 stories and built to a height of approximately 138 feet (see Figure 1-4); the building square footage would be approximately 443,190 gsf and building coverage would be 43,800 sf. CCRC North would house 271 independent senior living units. The two buildings on the south site, together known as CCRC South, would be four and six stories (approximately 53 feet and 74 feet high, respectively). These buildings would have a combined building square footage of 190,700 gsf, a building coverage of 44,050 sf, and would hold 117 new independent senior living units (Use Group 3). The proposed buildings would be concentrated to the north of the south site, close to the existing Hebrew Home campus. The minimum unit size in both CCRC North and South would be a 750-sf one-bedroom unit.

The orientation of the buildings, generally perpendicular to Palisade Avenue, would maintain view corridors to the Hudson River. Additional site improvements include the demolition of the Cardinal Spellman Retreat House and the three utility buildings currently on the south site. One hard-court tennis court, 60 feet by 120 feet, would be constructed immediately west of the existing chapel for private use by the residents on the project site. No lights would be installed on the court.

Proposed programming for the north site includes: 623 skilled nursing beds (a 144-bed decrease from the future No-Action condition as a result of the demolition of the Goldfine Pavilion); 105 assisted living units (including the conversion of the Gilbert Pavilion in the No-Action condition); 271 independent senior living units; and 137 NPRES to be maintained at the Riverwalk building. Proposed programming for the south site includes 117 independent senior living units within the two south site buildings. Table 1-1 outlines the existing, No-Action and With-Action programming on the north and south sites. The programming layout is depicted in Figure 1-5.

The project site would contain a combined 525 parking spaces, a 90-space increase from existing conditions. The north site would contain a total of 408 spaces (249 surface spaces and 159 garage spaces) and the south site would contain 117 garage spaces, to be located under the proposed south site buildings. Existing surface parking on the south site would be eliminated and the current driveway system would be modified for efficiency. As a result of the proposed project, there would be an overall increase of impervious area of approximately five percent.

1.5 Project Purpose and Need

The proposed actions would permit the development of the CCRC/LTCF campus on the north site. The proposed CCRC would be constructed as an enlargement to the applicant's existing facilities. Senior living, elder care, and health care facilities need to keep pace with changing technology and changing modes of elder care and senior living. Older adults are now more likely to want to live in more residential environments that have less staff and thus fewer cars. These needs have been recognized by the New York City Department of City Planning (DCP) in its creation of a new use category for LTCFs and CCRCs. The proposed actions are necessary to facilitate a development that is in keeping with these needs.

1.6 Analysis Framework

1.6.1 Analysis Year

The build year for the proposed project is 2024. Demolition of the existing buildings on the project site is expected to commence in late-2020, with construction on the north site estimated to be ready for occupancy as early as the beginning of the second quarter of 2023. Construction on the south site would commence at the end of the first quarter of 2022 and be completed by mid-2024. Thus, the total construction duration for the proposed project would be approximately three and three-quarters years (44 months).

1.6.2 Future No-Action Condition

Absent the proposed actions (the future No-Action condition), the project site would primarily remain in its existing condition, as there would be no special permit to allow for the LTCF use on the south site, and the current provisions of the R1-1 zoning district would remain. In addition, without the authorizations required for redevelopment within the NA-2, the applicant would be unable to redevelop the north site as proposed.

However, certain renovations of existing buildings on the project site are currently underway and would be completed under the future No-Action condition. The applicant is renovating and converting the Gilbert Pavilion, which previously housed 144 skilled nursing beds, to accommodate 70 assisted living units. The Gilbert Pavilion has been vacant in anticipation of this work, which is expected to be complete in the second or third quarter of 2019. The building will undergo a complete renovation of the existing three floors and a new terrace will be constructed off the northwest corner of the third floor. In addition to the work on Gilbert Pavilion, Resnick and Reingold Pavilions are also currently undergoing interior renovations to accommodate an additional 32 skilled nursing beds (16 beds in each building). Renovations to these three buildings are being undertaken to meet current demand and no state discretionary approval is required; therefore, they are not subject to the State Environmental Quality Review Act (SEQRA).

In the No-Action condition, the applicant will also seek a certification pursuant to Section 105-45 (Certification of Restoration Plans) for its proposed restoration plan with respect to natural features that were previously altered without prior approval of the CPC, as described in detail above. As part of the restoration plan, the applicant plans to construct a cogeneration facility on the north site, attached to the existing service and electrical buildings located at the northeast corner of the project site. These buildings will be renovated to accommodate the functions of the cogeneration facility. There will be no change of use or occupancy resulting from this work. Figures 1-6 and 1-7 depict the proposed location and footprint of the cogeneration facility. A separate New York State Department of Environmental Conservation State Facility Air Permit will be issued for this work, which is expected to be complete and the facility operational by July 2018. No CPC discretionary actions are required for the construction of the cogeneration facility, and therefore it is not subject to CEQR.

1.6.3 Future With-Action Condition

The proposed actions would permit the use of the project site as a combined CCRC/LTCF. If approved, the requested special permit and restrictive declaration would set the parameters—including the site plan, number of units, and floor area—of the proposed project. The proposed actions would result in the demolition of the existing Goldfine Pavilion on the north site and the Cardinal Spellman Retreat House and the three existing utility buildings on the south site, as well as the construction of three new buildings: two on the south site and the third in place of the Goldfine Pavilion on the north site.

The overall development program under the future With-Action condition and the increment for analysis is shown in Table 1-1.

1.6.4 Increment

In each of the technical areas in Section 2.0, “Supplemental Analyses,” the future With-Action condition is compared to the future No-Action condition. Table 1-1 summarizes the increments for analysis.

Table 1-1: Existing and Proposed Program, North and South Sites

	Type of Facility	Existing		No-Action		With-Action		Increment	
		Program	GSF	Program	GSF	Program	GSF	Program	GSF
NORTH SITE									
Riverwalk/ Riverwalk Dining	NPRE	137 NPRE units	125,851 gsf/ 5,754 gsf	137 NPRE units	125,851 gsf/ 5,754 gsf	137 NPRE units	125,851 gsf/ 5,754 gsf	-	-
Resnick Pavilion	SNF	317 SNF beds	177,614 gsf	333 SNF beds	177,614 gsf	333 SNF beds	177,614 gsf	-	-
Stolz Pavilion (including Weill)	SNF & AL	100 SNF beds 35 AL units	90,528 gsf	100 SNF beds 35 AL units	90,528 gsf	100 SNF beds 35 AL units	90,528 gsf	-	-
Goldfine Pavilion	SNF	144 SNF beds	78,453 gsf	144 SNF beds	78,453 gsf	To be demolished		- 144 SNF beds	- 78,453 gsf
Reingold Pavilion	SNF	174 SNF beds	124,635 gsf	190 SNF beds	124,635 gsf	190 SNF beds	124,635 gsf	-	-
Gilbert Pavilion	SNF	144 SNF beds	66,943 gsf	70 AL units	66,943 gsf	70 AL units	66,943 gsf	-	-
Staff Dining	Staff Dining	-	2,913 gsf	-	2,913 gsf	-	2,913 gsf	-	-
Service Building/ Electrical Building	Service Buildings	-	5,882 gsf/ 868 gsf	-	5,882 gsf/ 868 gsf	-	5,882 gsf/ 868 gsf	-	-
CCRC North	LTCF	-	-	-	-	271 IL units	443,190 gsf	+ 271 IL units	+ 443,190 gsf
Parking		240 surface spaces 88 garage spaces	-	240 surface spaces 88 garage spaces	-	249 surface spaces 159 garage spaces	-	+ 9 surface spaces + 71 garage spaces	
TOTAL NORTH SITE		137 NPRE units 35 AL units 879 SNF beds 328 parking spaces	679,441 gsf	137 NPRE units 105 AL units 767 SNF beds 328 parking spaces	679,441 gsf	137 NPRE units 105 AL units 623 SNF beds 271 IL units 408 parking spaces	1,044,178 gsf	- 144 SNF beds + 271 IL units + 80 parking spaces	+ 364,737 gsf
SOUTH SITE									
Retreat House	Monastery	Vacant	57,540 gsf	Vacant	57,540 gsf	To be demolished		-	- 57,540 gsf
Home/ Chapel	Religious Space	Vacant	6,076 gsf/ 883 gsf	Vacant	6,076 gsf/ 883 gsf	LTCF offices	6,076 gsf/ 883 gsf	-	-
Utility Buildings 1 – 3	Utility Service Buildings	-	3,665 gsf (combined)	-	3,665 gsf (combined)	To be demolished		-	- 3,665 gsf
CCRC South	LTCF	-	-	-	-	117 IL units	190,700 gsf	+ 117 IL units	+ 190,700 gsf
Parking		107 surface spaces		107 surface spaces		117 garage spaces		- 107 surface spaces + 117 garage spaces	
TOTAL SOUTH SITE		107 parking spaces	68,164 gsf	107 parking spaces	68,164 gsf	117 IL units 117 parking spaces	197,659 gsf	+ 117 IL units + 10 parking spaces	+ 129,495 gsf

Table 1-1: Existing and Proposed Program, North and South Sites (Continued)

	Type of Facility	Existing		No-Action		With-Action		Increment	
		Program	GSF	Program	GSF	Program	GSF	Program	GSF
NORTH AND SOUTH SITES									
	TOTAL	137 NPRE units 35 AL units 879 SNF beds 435 parking spaces	747,605 gsf	137 NPRE units 105 AL units 767 SNF beds 435 parking spaces	747,605 gsf	137 NPRE units 105 AL units 623 SNF beds 388 IL units 525 parking spaces	1,241,837 gsf	- 144 SNF beds + 388 IL units + 90 parking spaces	+ 494,232 gsf
Notes: GSF: Gross Square Footage NPRE = Nonprofit Residence for the Elderly SNF = Skilled Nursing Facility AL = Assisted Living IL = Independent Senior Living									

2.0

Supplemental Analyses

2.1 Land Use, Zoning, and Public Policy

2.1.1 Introduction

This analysis of land use, zoning, and public policy follows the guidelines set forth in the *2014 City Environmental Quality Review (CEQR) Technical Manual*. It characterizes the existing conditions in the area surrounding the project site and addresses potential impacts to land use, zoning, and public policy that would be associated with the proposed actions.

2.1.2 Methodology

According to the *CEQR Technical Manual*, a preliminary land use and zoning assessment includes a basic description of existing and future land uses and zoning information, and describes any changes in zoning that could cause changes in land use. It also characterizes the land use development trends in the area surrounding the project site that might be affected by the proposed actions, and determines whether the proposed project is compatible with those trends or may affect them.

The *CEQR Technical Manual* stipulates that a preliminary assessment of public policy should identify and describe any public policies (formal plans, published reports) that pertain to the study area, and should determine whether the proposed project could alter or conflict with the identified policies. If so, a detailed assessment should be conducted; otherwise, no further assessment is needed.

The following land use, zoning, and public policy assessment follows this guidance and provides a description of the existing conditions of the project site and the surrounding area. This is followed by an assessment of the future No-Action condition and the future With-Action condition, and a conclusion that no further analysis is needed.

This analysis of land use, zoning, and public policy examines the area within 400-feet of the project site which, for this project, is generally bounded by the Hudson River to the west, a line that runs between the intersection of Ladd Road and Palisade Avenue to the Hudson River to the south, a line midway between Independence and Arlington Avenues to the east, and West 261st Street to the north (see EAS Figure 2).

2.1.3 Assessment

Existing Conditions

Land Use

Project Site

The project site is a large, roughly rectangular-shaped waterfront property and comprises Lots 55, 210, 224, 225 and 230 on Block 5933 in the Riverdale neighborhood of the Bronx, Community District 8 (see EAS Figure 3). The project site is bounded by Palisade Avenue to the east, the Metro-North Hudson Line rail tracks to the west, a line approximately 380 feet south of West 261st Street to the north, and the southern boundary of Lot 55 to the south. The project site is located within the Special Natural Area District 2 (NA-2) and the New York City Coastal Zone. The project site is also split into a north site, within an R4 zoning district and consisting of Lots 210, 224, 225 and 230, and a south site, within an R1-1 zoning district and consisting of Lot 55 (see EAS Figure 4). The north site lots together are approximately 802,719 square feet (sf) and the south site lot is 594,921 sf.

The north site houses the existing Hebrew Home campus, which contains the following programming: 879 skilled nursing beds¹; 35 assisted living units; 137 nonprofit residences for the elderly (NPPE); and 328 parking spaces (240 surface and 88 garage spaces). The north site is currently improved with nine buildings that house or support this programming, concentrated in the eastern portion of the site. These buildings include the Riverwalk/Riverwalk dining building, Resnick Pavilion, Jacob Reingold Pavilion, Goldfine Pavilion, Gilbert Pavilion, Stoltz Pavilion, the staff dining building, the electrical building, and the service building. A detailed breakdown of the north and south site buildings is provided in Table 1-1 in Section 1.0, "Project Description." All of the buildings on the north site support community facility uses in Use Group 3 (skilled nursing facilities and assisted living units), with the exception of the Riverwalk building and dining hall, which support the NPPE units, a residential Use Group 2.

The south site is currently improved with five buildings, including the Cardinal Spellman Retreat House, once a retreat destination for Catholic Church members (Use Group 4), and an old home and connected chapel (Use Group 3), both currently vacant, as well as three utility buildings and a 107-space surface parking lot, as detailed in Table 1-1.

Other than the existing buildings, the project site contains several private landscaped gardens and walking paths, providing significant views to the Hudson River.

¹ Skilled nursing beds can be used for either long-term skilled care or short-term skilled care. Long-term skilled care is for people with chronic medical issues who require constant medical care supervised by registered nursing staff. The average length of stay is approximately two and a half years, with many entering long-term care at much older ages following a traumatic health episode. Short-term skilled care provides skilled nursing care for people who are post-operative or may have suffered a stroke, for example. These short-term stays for recuperative care or rehabilitation generally run from one month to three months.

Study Area

The project site is located within the Riverdale neighborhood of the Bronx, which is generally characterized by a mix of single-family and multi-family residential uses, large institutional uses, and significant access to park space, including Van Cortlandt Park to the east and Riverdale Park to the south. Westchester County borders the neighborhood to the north.

As shown in EAS Figure 2, the study area contains several large institutional uses, including the College of Mount Saint Vincent to the north of the project site, the High Ridge House (a Christian Science nursing care facility) to the east, and the Cardinal O'Connor Clergy Residence building to the southeast. There is a smaller institutional use, the Joseph Declemente Group Home, located on Independence Avenue, although this use is residential in character.

Residential land uses are located to the east and south of the project site and are composed of single family homes primarily along Palisade Avenue, West 261st Street, and Sigma Place. Multifamily residential buildings are located just east of the study area along Arlington Avenue, including the Skyview apartments, which consists of three 20-story buildings with over 1,300 residential units. Across Arlington Avenue are an outdoor pool, health club, and open space with parks and a playground associated with the Skyview apartments.

Transportation uses, specifically the Metro-North Hudson Line rail tracks and Riverdale Station to the south, are immediately adjacent to the project site, between the Hebrew Home campus and the Hudson River.

Zoning

Project Site

The north site is located within an R4 residential district. R4 allows a maximum residential floor area ratio (FAR) of 0.75, a minimum open space ratio of 55, and a maximum lot coverage of 45 percent. The R4 district allows for Use Groups 1 through 4. Under the recently approved Zoning for Quality and Affordability regulations, approved by the City Council in March 2016, certain community facilities, including affordable independent residences for seniors and long term care facilities (LTCF), are permitted to a maximum FAR of 1.29 within an R4 district. For LTCFs, a lot coverage of 55 percent for interior or through lots and 60 percent for corner lots is permitted. Per New York City Zoning Resolution (ZR) Section 23-631(b) and (j), the height of a building containing affordable independent residences for seniors or LTCFs is subject to a sloping plane commencing at 25 feet above grade at the building wall and a maximum height of 45 feet within this district.

The south site is located within an R1-1 residential district, which allows for a maximum FAR of 0.5 and a minimum required open space ratio of 150. Certain uses within Use Groups 1, 3 and 4 are permitted within the R1-1 district.² Where a long-term care facility is permitted pursuant to Section 74-901 (Long-term care facilities), the maximum FAR for such LTCF may not exceed 0.5. For community facility uses a maximum lot coverage of 55 percent for interior or through lots and 60 percent for corner lots is permitted. Per ZR Section 23-631(a), the height and setback regulations

² With certain exceptions, per ZR Section 22-13 (Use Group 3) and 22-14 (Use Group 4).

provide that a sky exposure plane of 1 to 1 must be observed, commencing 25 feet above the front yard line.

Per ZR Section 74-901, LTCFs are permitted in R1-1 districts by special permit. The special permit would include approval for a maximum number of beds/units and type of beds/units in the LTCF, as well as the site plan for the LTCF.

The entire project site, both the north site and the south site, is contained within the NA-2 special district. The purpose of the Special Natural Area District ("SNAD") is to guide new development and site alterations in areas endowed with unique natural characteristics (including forests, rock outcrops, steep slopes, creeks and a variety of botanic and aquatic environments) by limiting modifications in topography; preserving trees, plant and marine life, and natural water courses; and encouraging clustered development. Steep slopes are found on the project site along the Hudson River. The interior of the south site also contains some steep topography.

Existing lot coverage for the north site (R4) is 20 percent and for the south site (R1) is 5.1 percent, leaving a significant amount of open space within the project site. Parking is required for an LTCF in an R1-1 or an R4 district at a rate of one parking space per ten beds, except that independent living dwelling units within a continuing care retirement community require one parking space per unit.

Study Area

As shown on EAS Figure 4, the R4 district in which the north site is located ends at Palisade Avenue to the east and extends north beyond West 261st Street. The R1-1 district extends to the south of the project site as well as east, terminating at Independence Avenue. In addition to the R4 and R1-1 zoning districts, R1-2 is zoned on a small portion at the northeast corner of the study area between Palisade and Independence Avenues, West 261st Street to the north, and a line 300 feet south of West 261st Street. The entirety of the study area is located within the NA-2.

Public Policy

197-a Plan – CD 8 2000: A River to Reservoir Preservation Strategy, Community Board 8, The Bronx

Section 197-a of the New York City Charter authorizes Community Boards and Borough Boards, as well as the Mayor, the City Planning Commission (CPC), the Department of City Planning (DCP), and any Borough President to sponsor plans for the development, growth, and improvement of the City, its boroughs, and communities. *CD 8 2000: A River to Reservoir Preservation Strategy* was developed by The Bronx Community Board 8 (CB 8) and approved by the City Council in November, 2003. This plan covers all of CB 8, including the project site and surrounding areas. The plan's stated goals are to preserve the scale and character of area neighborhoods; strengthen protections for sensitive natural features including steep slope areas, mature trees, water features, and the surrounding contexts of these features; improve the appearance and economic vitality of local commercial districts; foster economic opportunities and improve access for all segments of the population to cultural and educational facilities; create additional recreational resources, enhance existing parks, and promote the greening of major corridors; and preserve and educate the public about historical resources.

While there are no zoning recommendations in the plan that pertain directly to the project site, the plan outlines recommendations for text amendments to the NA-2 regulations that would apply to the project site and surrounding area more generally. These measures include the following: a call for heightened consideration of unique natural features, such as stone walls or historic roadway features, that should be preserved to the extent practicable, and encouraging local institutions to involve the Community Board from early on in the process of planning for expansions or alterations of their campuses.

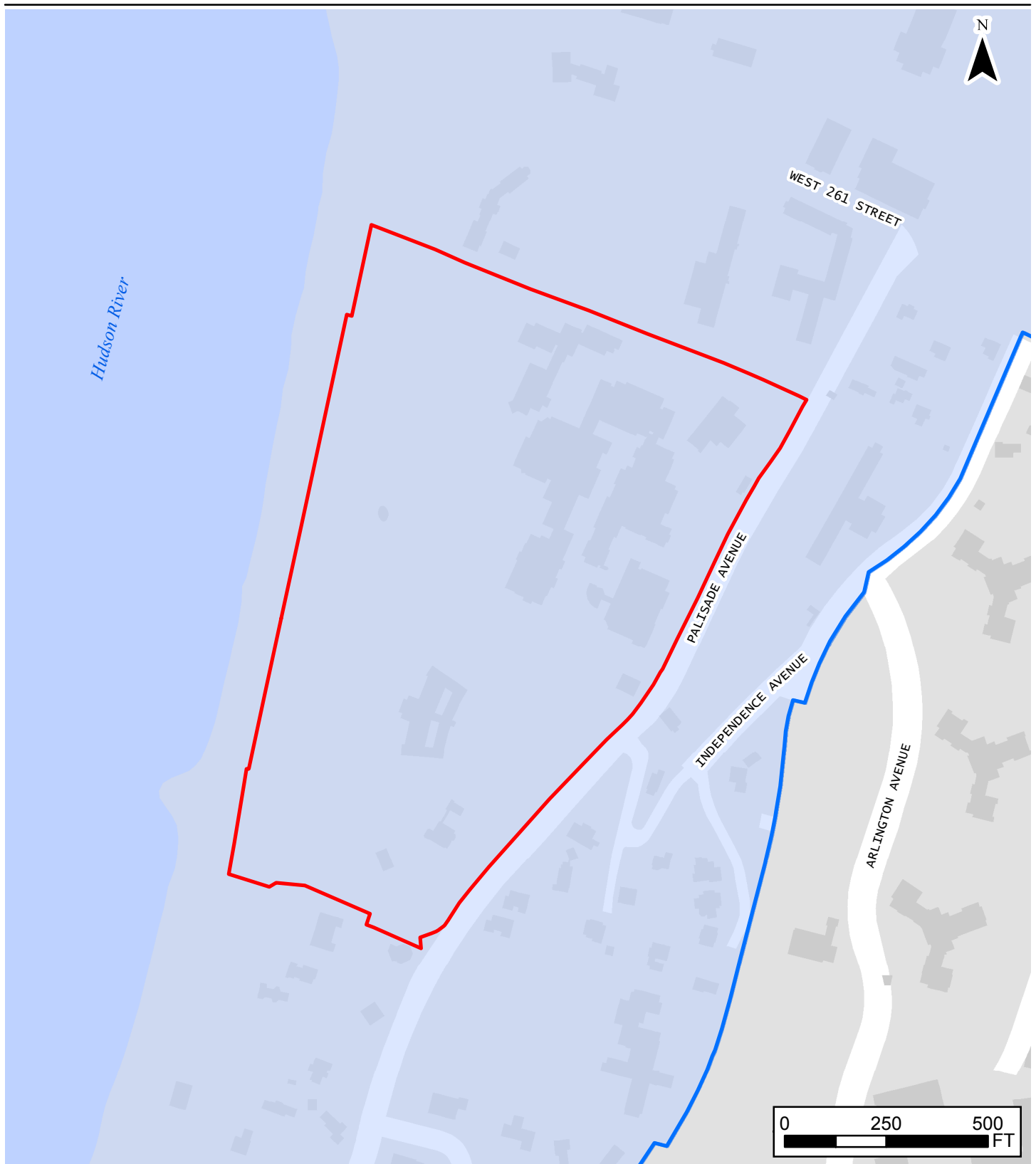
Vision 2020: New York City's Comprehensive Waterfront Plan



The Comprehensive Waterfront Plan presents a 10-year plan to expand the use of the waterfront for parks, housing and economic development, and waterways for transportation, recreation, and natural habitats. The Comprehensive Waterfront Plan, issued in 2011 and building on the original 1992 plan, identifies eight goals for the New York City waterfront: to expand public access to the waterfront and waterways on public and private property for all New Yorkers and visitors alike; enliven the waterfront with a range of attractive uses integrated with adjacent upland communities; support economic development activity on the working waterfront; improve water quality through measures that benefit natural habitats, support public recreation, and enhance waterfront and upland communities; restore degraded natural waterfront areas, and protect wetland and shorefront habitats; enhance the public experience of the waterways that surround New York; improve government regulation, coordination, and oversight of the waterfront and waterways; and identify and pursue strategies to increase the city's resilience to climate change and sea level rise. The plan identifies strategies and projects to achieve these goals.

Reach 6 of the Neighborhood Reach Strategies includes strategies and projects to achieve these goals in the Northwest Bronx. One of the neighborhood reach recommendation areas, the Hudson River Waterfront, includes the project site. Strategies for this recommendation area include the following: support the study and the implementation of the Hudson River Greenway Link providing bicycle and pedestrian connectivity from Manhattan to Yonkers with access to the waterfront; work with NY Central Railroad to provide safe access to the Hudson River shoreline; mitigate stormwater eroding Riverdale Park slopes; and develop a long-term sediment removal maintenance plan with the New York City Department of Environmental Protection (DEP) Bluebelt program.

Waterfront Revitalization Program

The project site is located within the New York State and City Coastal Zone Boundary and is therefore subject to the Coastal Zone management policies of both the City and the State (see Figure 2.1-1). The Waterfront Revitalization Program (WRP) is the City's principal coastal zone management tool. As originally adopted in 1982 and revised in 2016, it establishes the City's policies for development and use of the waterfront. Revisions to the WRP were adopted by the City Council in 2013, and were then approved by the New York State Secretary of State in February 2016. All proposed actions subject to CEQR, Uniform Land Use Review Procedure (ULURP), or other local, state, or federal agency discretionary actions that are situated within New York City's designated Coastal Zone Boundary must be reviewed and assessed for their consistency with the WRP. The WRP contains 10 major policies, each with several objectives focused on: improving public access to the waterfront; reducing damage from flooding and other water-related disasters; protecting water quality, sensitive habitats



-  Project Site
-  2016 Coastal Zone Boundary

(such as wetlands), and the aquatic ecosystem; reusing abandoned waterfront structures; and promoting development with appropriate land uses. An assessment of the proposed project's consistency with the WRP is provided section 2.1.4 below.

Future No-Action Condition

As described in Section 1.0, "Project Description," absent the proposed actions (the future No-Action condition), the project site would primarily remain in its existing condition as there would be no special permit to allow for the LTCF use on the south site, and the current provisions of the R1-1 zoning district would remain. In addition, without the authorizations required for redevelopment within the NA-2, the applicant would be unable to redevelop the north site as proposed.

However, under the future No-Action condition, the applicant will seek a certification pursuant to Section 105-45 for its proposed restoration plan with respect to natural features that were previously altered without prior approval of the CPC, as described in Section 1.0, "Project Description." The applicant is currently renovating and converting the Gilbert Pavilion, which previously housed 144 skilled nursing beds, to accommodate 70 assisted living units. This work is expected to be complete in 2019. Resnick and Reingold Pavilions are also currently undergoing interior renovations to accommodate an additional 32 skilled nursing beds (16 beds in each building). In addition, as part of the proposed restoration plan, the applicant plans to construct a cogeneration facility on the north site, attached to the existing service and electrical buildings located at the northeast corner of the project site. These buildings will be renovated to accommodate the functions of the cogeneration facility. There will be no change of use or occupancy resulting from this work. A separate DEC State Facility Air Permit will be issued for this work, which is expected to be complete and the facility operational by July 2018. No New York City Department of City Planning discretionary actions are required for the construction of the cogeneration facility, and therefore it is not subject to CEQR.

Land Use

Under the future No-Action condition, the project site would continue to operate in its existing condition, utilized as the Hebrew Home campus, with assisted living units, nonprofit residences for the elderly, and a skilled nursing facility. The south site would remain vacant.

There are no known planned developments within the 400-foot study area that are expected to be completed by the 2024 analysis year. The project site and study area would continue to be governed by the various zoning regulations found in the area, as described above.

Zoning

Under the future No-Action condition, there are no known zoning changes that are anticipated to affect the project site or study area.

Public Policy

Under the future No-Action condition, there are no known public policy changes that are anticipated to affect the project site or study area.

Future With-Action Condition

The proposed actions would permit the development of a Continuing Care Retirement Community (CCRC)/Long Term Care Facility (LTCF) campus, the first of its kind in New York City. The ZR defines an LTCF as “a community facility use that has secured appropriate certificate of authority or licensure by the New York State Department of Health.” LTCFs include nursing homes, or assisted living facilities, and CCRCs. CCRCs consist of independent living dwelling units in addition to nursing home beds and assisted living facilities, as defined in the Public Health Law.

Land Use

The proposed project would include construction of three new buildings, including two on the south site and one on the north site. The two buildings on the south site, together known as CCRC South, would be four and six stories (approximately 53 feet and 74 feet high, respectively). These buildings would have a combined building square footage of 190,700 gross square feet (gsf), a building coverage of 44,050 sf, and would hold 117 new independent senior living units (Use Group 3). The new building on the north site, CCRC North, would be built in place of the existing Goldfine Pavilion, the southernmost existing building on the north site, which would be demolished. CCRC North would be 12 stories and built to a height of approximately 138 feet; the building square footage would be approximately 443,190 gsf and building coverage would be 43,800 sf. CCRC North would house 271 independent senior living units. The proposed buildings would be concentrated to the north of the south site, close to the existing Hebrew Home campus.

Additional site improvements include the demolition of the Cardinal Spellman Retreat House and the three utility buildings currently on the south site. One hard-court tennis court, 60 feet by 120 feet, would be constructed immediately west of the existing chapel for private use by the residents on the project site. No lights would be installed on the court.

Proposed programming for the north site includes the following: 623 skilled nursing beds (a 144-bed decrease from the future No-Action condition as a result of the demolition of Goldfine Pavilion); 105 assisted living units; 271 independent senior living units; and 137 NPRES to be maintained at the Riverwalk building. Proposed programming for the south site includes 117 independent senior living units within the two south site buildings. Table 1-1 in Section 1.0, “Project Description,” outlines the existing and future With-Action programming on the north and south sites.

As shown on Table 1-1, the project site would contain a combined 525 parking spaces, a 90-space increase from existing conditions. The north site would contain a total of 408 spaces (249 surface spaces and 159 garage spaces) and the south site would contain 117 garage spaces, to be located under the proposed CCRC South building. Existing surface parking on the south site would be eliminated and the current driveway system would be modified for efficiency.

The proposed use for the project site would not change from the uses under the future No-Action condition, including the institutional use on the north and south sites and the nonprofit senior residential use on the north site. Although the proposed project would increase the density of the project site, the proposed scale of development is in keeping with the existing buildings on the north site and the surrounding uses, particularly the College of Mount Saint Vincent to the north. Therefore, the proposed project would not result in any significant adverse land use impacts.

Zoning

As detailed in Section 1.0, "Project Description," the applicant is seeking a special permit pursuant to ZR Section 74-901 (Long-term care facilities) to allow for the development of an LTCF on the portion of the project site zoned R1-1, as well as multiple authorizations pursuant to the NA-2 requirements. To facilitate the proposed project, the applicant seeks to include multiple authorizations pursuant to ZR Section 105-42 to alter natural features within NA-2, as well as multiple authorizations pursuant to ZR Section 105-43 to modify bulk, parking, grading, and private road regulations. In addition to the special permit and zoning authorizations, the applicant also seeks to execute a restrictive declaration to limit development and total floor area to the CPC-approved site plans, and a certification pursuant to ZR Section 105-45 for a proposed restoration plan with respect to natural features that were previously altered without prior approval of the CPC. Details related to the NA-2 authorizations and other proposed actions are provided in Section 1.0, "Project Description."

The proposed project would not fully utilize the available gross square footage (gsf), amounting to 1,399,617 gsf on the full project site, including 1,087,283 gsf on the north site and 312,334 gsf on the south site, pursuant to the current zoning regulations. As noted above, the Special Permit and Restrictive Declaration would "lock-in" the total floor area proposed. The existing gsf to remain on the north site after demolition of the Goldfine Pavilion equals a total of 600,988 gsf. The proposed CCRC North building would be 443,190 gsf, leaving 43,105 unused gsf on the north site.

In addition, the proposed CCRC North building would be built to a height of approximately 138 feet, without the sloping plane at 25 feet above grade and above the 45-foot height limit as set forth in ZR Section 24-013 (Special provisions for certain community facility uses) and 23-631(b) and (j) (General provisions). The applicant is requesting authorization per ZR Section 105-432 (Authorization for Modification of height and setback regulations) to surpass this height limit. In comparison, the existing Resnick Pavilion is approximately 128 feet in height.

On the south site, the only buildings that would be preserved are the home and chapel. The buildings to remain total 6,959 gsf. The two proposed buildings on the south site, CCRC South, would be 190,700 gsf in total, leaving 114,675 unused gsf. The CCRC South buildings would be constructed to a height of approximately 53 feet and 74 feet. In comparison, the existing Retreat House is approximately 67 feet.

Under the future With-Action condition, the proposed lot coverage would be 22.9 percent for the north site and 8.6 percent for the south site, in compliance with the permitted lot coverage of 55 percent.

As mentioned, the NA-2 authorizations would allow for the alteration of natural features on the project site, including for modification of topographic features on Tier I sites (ZR Section 105-421), development and site alteration on a zoning lot having a steep slope (ZR Section 105-422), for

alteration of rock outcrops (ZR Section 105-424), and for modification of the botanic environment (ZR Section 105-425). The proposed special permit and zoning authorizations are necessary for a development that suits the demands and needs of a CCRC/LTCF campus.

In addition, while the proposed actions would modify several of the zoning provisions in the NA-2 regulations, the proposed project has been designed to minimize impacts on natural features and is in alignment with the goals of the Special Natural Area District. The proposed buildings would be located to avoid the steep topography of the project site as much as possible; the proposed project would impact 6,663 sf, or less than 2.5 percent, of the total sf of steep slope on the project site. The proposed buildings would be located to coincide as much as possible with the existing buildings, minimizing site alteration impacts to natural features and maintaining existing drainage patterns and soil conditions. The largest rock outcrop located along Palisade Avenue would maintain its existing natural features. Additionally, 215 new trees would be planted to replace 161 trees proposed for removal. The orientation of the buildings, generally perpendicular to Palisade Avenue, would maintain existing view corridors. The proposed project would comply with floor area and site coverage regulations, leaving a total of 157,780 unused sf and covering less than half of the permitted lot coverage for the north and south sites. The proposed actions would permit the height and bulk of the proposed CCRC North. The height waiver would facilitate lower lot coverage, reducing the impact on natural features. Therefore, the proposed project would not result in any significant adverse zoning impacts.

Public Policy

197-a Plan – CD 8 2000: A River to Reservoir Preservation Strategy, Community Board 8, The Bronx

The proposed project is consistent with a number of the goals expressed in the community's adopted 197-a Plan. Specifically, the proposed project is sensitive to the area's natural features, including the steep slopes, rock outcrops, and aquatic features. In addition, the applicant conducted significant community outreach, engaging with the Community Board from early on in the planning process for the proposed project. Therefore, the proposed project is consistent with this policy.

Vision 2020: New York City's Comprehensive Waterfront Plan

The proposed project would result in the expansion of the Hebrew Home campus onto a primarily vacant parcel along the Hudson River. The proposed project is designed to avoid the most sensitive natural features on the project site, particularly through clustering the proposed buildings near the existing campus and away from the steep slopes along the shoreline. In addition, buildings would be oriented to preserve existing waterfront views for upland properties. For these reasons, the proposed project is consistent with several key goals of the *Vision 2020* plan, including maintaining natural waterfront areas and preserving the public's experience of the waterways. In addition, while the Hudson River Waterfront recommendation area within Reach 6 of the Neighborhood Reach Strategy does encompass the project site, none of the strategies are directly related to the project site. Overall, the proposed project would be supportive of and consistent with the goals and objectives of *Vision 2020*.

Waterfront Revitalization Program

See Section 2.1.4 below for a full evaluation of consistency with the WRP.

Based on the analysis above and the detailed assessment of the proposed project's consistency with the WRP below, the proposed project would not result in any significant adverse public policy impacts.

2.1.4 Waterfront Revitalization Program

The project site is located within the New York City Coastal Zone and, as such, is subject to review for its consistency with the City's WRP. As discussed above, the City Council approved revisions to the WRP in October 2013. In accordance with the guidelines of the *CEQR Technical Manual*, a preliminary evaluation of the proposed actions' potential for inconsistency with the new WRP policies was undertaken. This preliminary evaluation requires completion of the WRP Consistency Assessment Form (CAF), which contains a series of questions designed to screen out those policies that would have no bearing on a consistency determination for a proposed action. The CAF lists the WRP policies and indicates whether the proposed project would promote or hinder that policy, or if that policy would not be applicable. For any policies which may be affected, additional information is provided, along with the WRP CAF in Appendix B.

As demonstrated in Appendix B, the proposed project is consistent with all applicable WRP policies, including policies 1, 5, 7 and 9. The proposed project would redevelop the largely underutilized south site to accommodate additional residents and promote economic development in an area with adequate public infrastructure. Stormwater systems proposed for the project site would protect water quality, and several design features of the proposed project would help protect the visual quality of the area and minimize the visual impact of the proposed buildings. See Appendix B for details regarding how the proposed project supports the individual WRP policies.

2.1.5 Conclusion

The proposed use for the project site would not change under the future No-Action condition, including the institutional use on the north and south sites and the nonprofit senior residential use on the north site. The proposed discretionary approvals are necessary for a development that suits the demands and needs of a CCRC/LTCF campus, the first of its kind in New York City. While the proposed actions would modify several of the zoning provisions in the NA-2 regulations, the proposed project has been designed to minimize impacts on natural features and is in alignment with the goals of the NA-2 special district. The proposed project would impact less than 2.5 percent of the total sf of steep slope on the project site, and the proposed buildings would be located to coincide as much as possible with the existing buildings, minimizing site alternation impacts to natural features and maintaining existing drainage patterns and soil conditions. The proposed project would also comply with floor area and site coverage regulations, leaving a total of 157,780 unused sf and covering less than half of the permitted lot coverage for the north and south sites. Finally, the future With-Action condition would be consistent with and support the goals of all applicable public policies affecting the project site, including the WRP. Therefore, there would be no potential for significant adverse land use, zoning, or public policy impacts as a result of the proposed actions.

2.2 Open Space

2.2.1 Introduction

This chapter assesses the potential impacts of the proposed actions on open space resources. Open space is defined in the *2014 CEQR Technical Manual* as publicly accessible, publicly or privately owned land that is available for leisure, play, or sport, or serves to protect or enhance the natural environment. The *CEQR Technical Manual* guidelines indicate that an open space analysis should be conducted if an action would result in a direct effect, such as the physical loss or alteration of public open space, or an indirect effect, such as when a substantial new population could place added demand on an area's open spaces.

As described in Section 1.0, "Project Description," the proposed actions would facilitate the development of a Continuing Care Retirement Community (CCRC)/Long Term Care Facility (LTCF) at the project site. The proposed project would include the construction of three new buildings totaling 633,890-gross square feet (gsf) and additional site improvements, including the renovation of an existing building, demolition of five existing buildings and structures, and accommodation of 90 additional parking spaces on the project site. Overall programming for the entire CCRC/LTCF at project completion would include 137 nonprofit residences for the elderly (NPREs), 105 assisted living (AL) units, 623 skilled nursing facility (SNF) beds and 388 independent senior living (IL) units. This represents an increment of 144 fewer SNF beds and 388 additional IL units compared to the future No-Action condition.

The project site contains a significant amount of open space for private recreational use by building residents. The proposed project would open the south site to existing and future residents of the Hebrew Home, significantly increasing the amount of private open space on the project site through the construction of a tennis court, landscaping improvements (including a landscaped terrace between the CCRC South buildings), and a rock garden. For purposes of conducting a conservative analysis, an analysis of the proposed project's potential impact on public open space was undertaken.

The proposed project would not result in the physical loss or direct displacement of publicly accessible open space. Thus, this analysis focuses on the potential for the proposed project to have an indirect effect on open space. An indirect effect on open space can occur when a project adds enough population to the area to noticeably diminish the ability of an area's open space to serve the future population. For most projects (those located in neither a well-served nor underserved area for open space), if the proposed project would result in the introduction of 200 or more residents, or 500 or more non-residents, to an area, an assessment is performed to determine if the project would have an indirect effect on open space.¹ The proposed project is expected to introduce approximately 585 new residents to the project site (greater than 200 residents), and would create additional demand for open space.

¹ A non-residential population comprises the total worker, college/post-secondary student, and visitor persons that frequent a selected geography.

Therefore, an open space assessment was conducted to determine whether the proposed project would result in any significant adverse open space impacts.

2.2.2 Methodology

A direct effects analysis should be performed if a proposed project would directly affect open space conditions by causing the loss of public open space, changing the use of an open space so that it no longer serves the same user population, limiting public access to an open space, or increasing noise or air pollutant emissions, odor, or shadows that would temporarily or permanently affect the usefulness of a public open space. A proposed project can also directly affect an open space by enhancing its design or increasing its accessibility to the public. The proposed project would not result in the physical loss or direct displacement of publicly accessible open space, nor would it increase noise or air pollutant emissions or cast shadows on a public open space. Therefore, no direct effects analysis is required.

In addition, according to the *CEQR Technical Manual*, an indirect effects analysis should be performed if a project would add sufficient population, either residents or non-residents, to noticeably diminish the capacity of open space in an area to serve the future population. According to the *CEQR Technical Manual*, the project site is in an area identified as neither well-served nor under-served by existing open space resources.

The *CEQR Technical Manual* suggests that an indirect effects analysis is necessary when a project would introduce 200 or more residents or 500 or more workers to an area. Compared to the future No-Action condition, the proposed project would add more than 200 residents to the area; therefore, following *CEQR Technical Manual* guidance, an indirect effects open space analysis was conducted for the residential population, as described below. It should be noted that the proposed project would result in 113 fewer SNF beds compared to the future No-Action condition. However, it is assumed that SNF patients would be less likely to use surrounding public open space given their mobility limitations; therefore, this negative increment was not factored into the residential population estimates.

The worker population would be expected to decrease by nine people as a result of the demolition of the Goldfine Pavilion; therefore, a worker population assessment was not necessary.²

Study Area

The *CEQR Technical Manual* recommends a study area be established as the first step in an open space assessment. The study area is based on the distance that users are likely to walk to an open space. As described in the *CEQR Technical Manual*, an open space study area is defined by the reasonable walking distance such users would travel to reach open spaces and recreational areas—typically 20 minutes or a half-mile for residential populations. According to the *CEQR Technical Manual* guidelines, all census tracts that have at least 50 percent of their area within the half-mile radius are entirely included in the study area, and all census tracts with less than 50 percent within the radius are entirely excluded. Due to the size and irregular shape of the project site's census tract, Bronx

² Independent living units would require less employee support than the existing skilled nursing facility beds at Goldfine Pavilion.

County Census Tract 309, less than 50 percent of the census tract's area is within the half-mile radius; however, given that this census tract contains the project site, Census Tract 309 was still included in the half-mile study area.

Based on the methodology described above, a residential open space study area was defined (see Figure 2.2-1). The residential study area comprises five census tracts, including Bronx County Census Tracts 309, 319, 323, 337, and 343.

Inventory of Open Space Resources

The *CEQR Technical Manual* defines public open space as open space that is publicly or privately owned and is accessible to the public on a regular basis, either constantly or for designated daily periods of time. Open spaces that are only available for limited users or are not available to the public on a regular or constant basis are not considered public open space, but are considered in a qualitative assessment of open space impacts.

All publicly accessible open space resources in the study area were inventoried through the latest available data obtained from the NYC Department of Parks and Recreation (NYC Parks) and New York City Geographic Information System (GIS) data. According to *CEQR Technical Manual* guidelines, open spaces were also described in terms of the amount of active and passive facilities present. Active open space is used for exercise, sports, or active children's play. Examples of active open space include playgrounds, athletic fields or courts, pools, and greenways. Passive open spaces allow for activities such as strolling, reading, sunbathing, and people watching. Examples of passive open space include plazas, walking paths, gardens, and certain lawns with restricted uses. Open space may be characterized as passive, active, or a mixture of active and passive. Esplanades are an example of open space that may be used for active uses such as running and biking or passive uses such as dog walking.

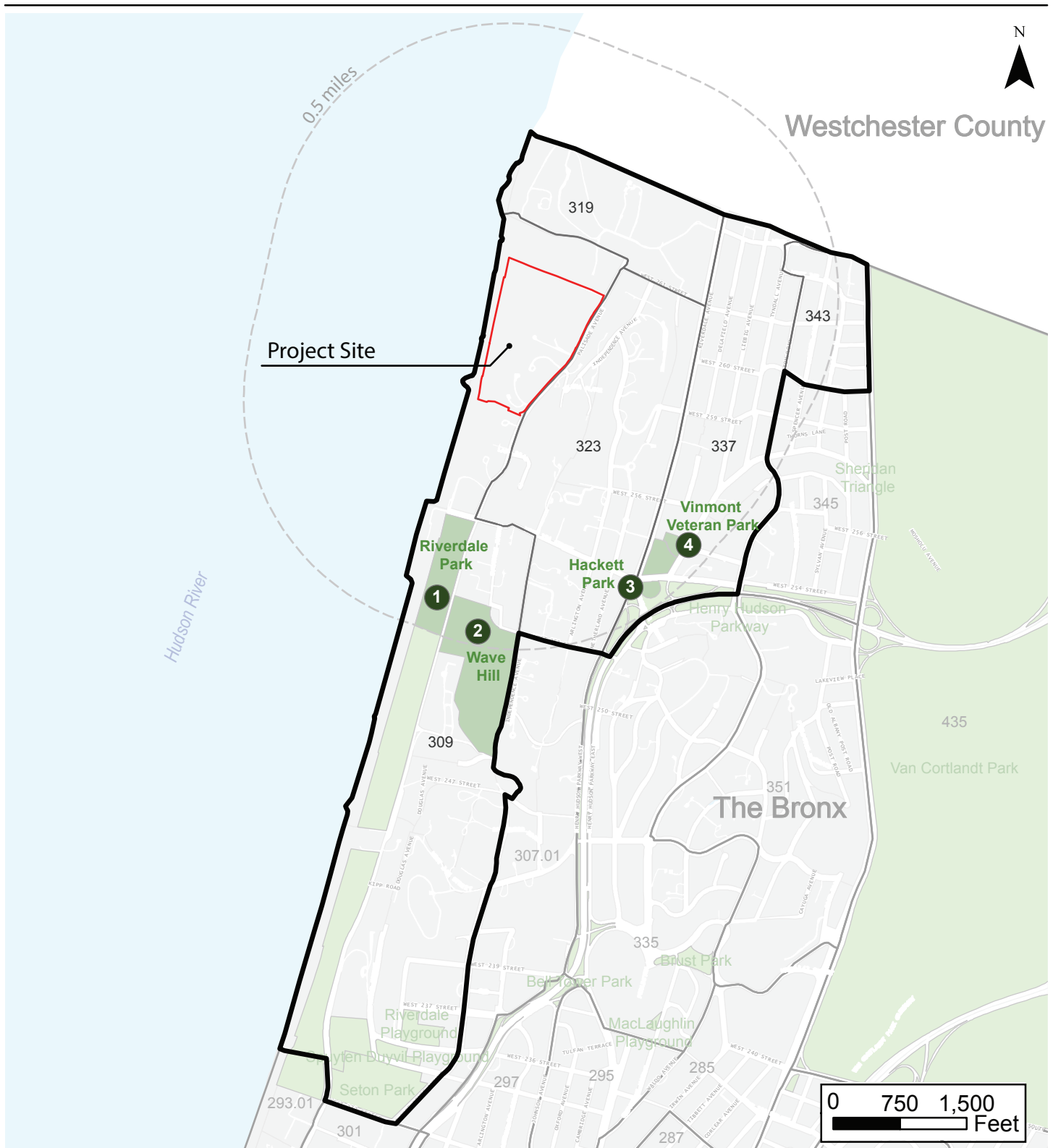
No new public open space would be created in the No-Action or With-Action conditions.

Adequacy of Open Space Resources

Comparison to City Guidelines

The adequacy of open space in the study area was assessed for existing conditions, the No-Action condition, and the With-Action condition. According to *CEQR Technical Manual* guidelines, the quantitative assessment is based on ratios of usable open space acreage to the study area populations (the "open space ratios"). The following guidelines are used in this type of analysis:

- For residential populations, the City attempts to achieve a ratio of 2.5 acres per 1,000 residents for large-scale proposals. Ideally, this would consist of 0.50 acres of passive space and 2.0 acres of active open space per 1,000 residents. However, these goals are often not feasible for many areas of the city and they do not constitute an impact threshold. Rather, it is a benchmark that represents how well an area is served by its open space.



Impact Assessment

The determination of significant adverse impacts is based on how a project would change the open space ratios in the study area, as well as qualitative factors not reflected in the quantitative assessment. According to the *CEQR Technical Manual*, if a proposed project would reduce an open space ratio and consequently result in overburdening existing facilities, or if it would substantially exacerbate an existing deficiency in open space, it may result in a significant impact on open space resources. In general, if a study area's open space ratios fall below City guidelines, and a proposed project would result in a decrease in the open space ratio of more than five percent, it could be considered a substantial change. However, in areas that have been determined to be extremely lacking in open space, a reduction as small as one percent may be considered significant.

2.2.3 Preliminary Assessment

Existing Conditions

Study Area Population

As outlined in Table 2.2-1, the estimated current residential population (based on 2016 data) in the study area is 12,797 persons.

Table 2.2-1: Existing Study Area Population

Census Tract	2010 Residential Population ¹	2016 Residential Population Estimate ²
Bronx 309	3,891	3,775
Bronx 319	751	654
Bronx 323	4,904	4,430
Bronx 337	2,357	2,314
Bronx 343	1,649	1,624
TOTAL:	13,552	12,797
Notes: ¹ 2010 Census Data ² 2016 American Community Survey (ACS) 5-year Estimate		

Study Area Open Space Resources

The study area includes a variety of parks and playgrounds that are accessible for use by the public, as outlined in Table 2.2-2 below.

Table 2.2-2: Existing Study Area Open Spaces

Map ID No.	Name	Owner / Agency ¹	Features and Amenities	Size (Acres)		
				Total	Active	Passive
1	Riverdale Park (north) ²	NYC Parks	Walking/Running Paths	9.44	4.72	4.72
2	Wave Hill ³	NYC Parks	Gardens, Walking Paths, Education Center, Café	20.87	0.00	20.87
4	Hackett Park ⁴	NYC Parks	Walking/Running Paths	1.00	0.50	0.50
3	Vinmont Veteran Park	NYC Parks	Sports Fields, Playground, Walking Paths	3.50	2.80	0.70
RESIDENTIAL STUDY AREA TOTAL:				34.81	8.02	26.79
PERCENT OF STUDY AREA OPEN SPACE				100%	23.04%	76.96%
Source: NYC Department of Parks and Recreation; 2016 PLUTO Notes: ¹ NYC Parks = New York City Department of Parks and Recreation ² Acreage only includes the portion of Riverdale Park within the half-mile radius from the project site. Since pathways are considered both active and passive open space, Riverdale Park is considered half active and half passive for the purposes of this analysis. ³ Wave Hill is an enclosed public garden and cultural center, open to the public for an \$8 entrance fee. According to the <i>CEQR Technical Manual</i> , parks available to the public through a nominal fee are still considered public open space. Given that Wave Hill is an enclosed garden with an entrance fee, it is assumed that visitors would utilize the entire facility once entering the grounds; therefore, the entire acreage of Wave Hill is included in the existing open space total acreage. ⁴ Since pathways are considered both active and passive open space, Hackett Park is considered half active and half passive for the purposes of this analysis.						

As depicted in Figure 2.2-1, and as described in Table 2.2-2, there are four publicly accessible open spaces within the study area, totaling 34.81 acres of passive and active open space.

Open spaces within the study area include playgrounds, neighborhood parks, and public gardens. The largest park within the study area is Riverdale Park, a linear, forested park with walking/running paths which runs along the Hudson River to the south of the project site. Riverdale Park can be accessed from West 254th Street. Given the linear shape of the park, the southern portions of the park are outside the reasonable walking distance from the project site. Therefore, only the portions of Riverdale Park within the half-mile radius of the project site are included in the open space quantitative analysis.

Wave Hill is an enclosed public garden and cultural center which can be accessed for a nominal entrance fee. It is assumed, given these features, that any visitor to Wave Hill would utilize the entire facility once entering the grounds; therefore, the entire acreage of Wave Hill is included in the open space quantitative analysis, even those portions outside the half-mile radius.

The other open space study area parks are Hackett Park and Vinmont Veteran Park. Hackett Park is a small grassy area to the north of Henry Hudson Parkway with walking/running paths. Vinmont Veteran Park, located to the north across West 254th Street, is a neighborhood park with sports fields, playground equipment, and bathroom facilities.

Wooded green spaces line the Henry Hudson Parkway; however, this area does not provide public access and is therefore excluded from the open space quantitative analysis.

Adequacy of Open Space Resources

With a residential population of 12,797, the study area has a total open space ratio of 2.72 acres per 1,000 residents. This open space ratio is above the City's planning goal of 2.5 acres of combined active and passive open space per 1,000 residents (see Table 2.2-3). The existing mix of active open space to passive open space is approximately 23 percent to 77 percent, which is far from the City's stated planning goal to have a balance of approximately 80 percent active space and 20 percent passive space. However, several spaces, including Riverside Park and Hackett Park, contain park pathways which could be used for both active and passive recreation.

Table 2.2-3: Existing Condition: Residential Open Space Ratio

	Residential Population	Total Open Space (Acres)	Open Space Ratio (Acres per 1,000 Residents)	Open Space Goal
Existing Condition	12,797	34.81	2.72	2.5

Future No-Action Condition

Study Area Population and Open Space Resources

As described in Section 1.0, "Project Description," in the future without the proposed project (the future No-Action condition), the applicant will renovate and convert the Gilbert Pavilion, which previously housed 144 skilled nursing beds, to accommodate 70 assisted living units. This work is expected to be complete in 2019, and would add 70 residents to the study area. There are no other significant residential development projects within the open space study area anticipated to be constructed and operational by the 2024 build year. For a conservative estimate of the 2024 population, the population change resulting from the renovation and conversion of Gilbert Pavilion was factored in, and an annual background growth rate of 0.25 percent for years 1 through 5 and 0.125 percent for year 6 and beyond (following the *CEQR Technical Manual's* background growth rates for transportation volumes in the Bronx) was applied to the 2016 population estimate, resulting in a total of 13,077 residents under the future No-Action condition.

In addition, no new open spaces or parks are anticipated under the future No-Action condition, and no existing parks are expected to be displaced or removed.

Adequacy of Open Space Resources

Based on the foregoing, under the future No-Action condition, the open space ratio in the study area would decrease from 2.72 acres per 1,000 residents to 2.66 acres per 1,000 residents, as shown in Table 2.2-4 below.

Table 2.2-4: No-Action Condition: Residential Open Space Ratio

	Residential Population	Total Open Space (Acres)	Open Space Ratio (Acres per 1,000 Residents)	Open Space Goal
Existing Condition	12,797	34.81	2.72	2.5
No-Action Increment	280 ¹	0.00	-	
Total No-Action	13,077	34.81	2.66	
Percent Change:			-2.21%	
Notes:				
¹ Annual background population growth was determined following the <i>CEQR Technical Manual's</i> background growth rates for transportation volumes of 0.25% for years 1 through 5 and 0.125% for year 6 and beyond in the Bronx. The 70 additional residents from the renovation and conversion of Gilbert Pavilion was also factored in.				

Future With-Action Condition

Study Area Population

In the future With-Action condition, the proposed project would result in the development of 388 IL units, which is estimated to introduce approximately 585 new residents to the study area. As mentioned above, given the mobility limitations of the population inhabiting the skilled nursing facilities on the project site, it is not anticipated that this population would frequently use nearby public open spaces. Although there would be an overall decrease in the skilled nursing population as a result of the proposed project, the analysis conservatively does not assume a decrease in the overall residential population estimates.

There is no additional public open space that would be created as a result of the proposed project. However, the proposed project would involve enhancements to the private open space on the Hebrew Home campus, including the construction of a new tennis court and walking paths on the south site, as described in Section 1.0, "Project Description."

Adequacy of Open Space Resources – Quantitative Assessment

As shown in Table 2.2-5, the project-generated residential population increase would result in an open space ratio of 2.55 acres per 1,000 residents, representing a decrease of the open space ratio by approximately 4.14 percent compared to the future No-Action condition. This projected open space ratio for the study area meets New York City's planning goal of 2.5 acres of open space per 1,000 residents.

Table 2.2-5: With-Action Changes to the Residential Open Space Ratio

	Residential Population	Total Open Space (Acres)	Open Space Ratio (Acres per 1,000 Residents)	Open Space Goal
No-Action	13,077	34.81	2.66	2.5
With-Action Increment	585	0	-	
Total With-Action	13,662	34.81	2.55	
Percent Change:			-4.14%	

The *CEQR Technical Manual* indicates that a greater percentage of change (more than five percent) may be tolerated if the ratio is close to or exceeding 2.5 acres per 1,000 residents. Since the decrease is less than five percent and the projected open space ratio meets the open space goal, the future With-Action condition would not result in a significant indirect adverse impact on open space and further analysis is not warranted.

Adequacy of Open Space Resources – Qualitative Assessment

The project site contains a significant amount of private open space that is used by the current residents, which is not factored into the quantitative assessment above. This open space lessens the burden on surrounding public open spaces in the study area. The proposed project would also open the south site to existing and future residents of the Hebrew Home, significantly increasing the amount of private open space on the project site. This open space offers views to the Hudson River, walking paths along the western edge of the project site and sculptural features across the campus. In addition to the tennis court mentioned above, the proposed project would also incorporate landscaping improvements to the south site, including a landscaped terrace between the CCRC South buildings and a rock garden.

In addition, though outside the open space study area, Van Cortlandt Park and the portion of Riverdale Park outside the study area are large open space resources accessible to the Riverdale neighborhood. The size and amenities of Van Cortlandt Park, New York City's third largest park, might attract residents of the Hebrew Home over the smaller open space resources nearby.

Given the high quality private open space available to all residents at the Hebrew Home and the proximity to Van Cortlandt Park and the remainder of Riverdale Park, a detailed analysis is not warranted and the proposed project would not result in any significant impacts to open space.

2.2.4 Conclusion

As noted above, since the decrease in the open space ratio is less than five percent and the resulting open space ratio meets New York City's open space goal of 2.5 acres per 1,000 residents, there would not be any indirect impact on open space and a detailed analysis is not necessary. In addition, the proposed project would include a significant addition to the private open space available to project site residents, lessening the burden on public open spaces within the study area. Therefore, the proposed project would not result in any significant adverse impacts to open space.

2.3 Shadows

2.3.1 Introduction

A shadow is defined in the *2014 CEQR Technical Manual* 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 purpose of this section is to assess whether new structures may cast shadows on sunlight-sensitive publicly accessible resources or other resources of concern such as natural resources, and to assess the significance of their impact.

According to the *CEQR Technical Manual*, the longest shadow a structure will cast in New York City is 4.3 times its height. For actions resulting in structures less than 50 feet high, a shadows assessment is generally not necessary unless the site is adjacent to a park, historic resource, or important sunlight dependent natural feature.

The *CEQR Technical Manual* defines sunlight-sensitive resources as those resources that depend on sunlight or for which direct sunlight is necessary to maintain the resource's usability or architectural integrity. The following are considered to be sunlight-sensitive resources:

- *Public open space* (e.g., parks, beaches, playgrounds, plazas, schoolyards, greenways, landscaped medians with seating). Planted areas within unused portions of roadbeds that are part of the Greenstreets program are also considered sunlight-sensitive resources.
- *Features of architectural resources that depend on sunlight for their enjoyment by the public.* Such sunlight-sensitive features might include: design elements that depend on the contrast between light and dark (e.g., recessed balconies, arcades, deep window reveals); elaborate, highly carved ornamentation; stained glass windows; historic landscapes and scenic landmarks; and features for which the effect of direct sunlight is described as playing a significant role in the structure's importance as a historic landmark. Only the sunlight-sensitive features need be considered, as opposed to the entire resource.
- *Natural resources* where the introduction of shadows could alter the resource's condition or microclimate. Such resources could include surface water bodies, wetlands, or designated resources such as coastal fish and wildlife habitats.

In general, shadows on city streets and sidewalks or on other buildings are not considered significant. In addition, shadows occurring within an hour and a half of sunrise or sunset generally are also not considered significant. An adverse shadow impact is considered to occur when the incremental shadow (additional, or new shadow that a building or other built structure resulting from a proposed project would cast on a sunlight-sensitive resource during the year) from a proposed action falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight exposure, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other resources.

As described in Chapter 1.0 "Project Description," the proposed actions are expected to facilitate a development with a maximum height of 138 feet.

2.3.2 Methodology

In accordance with the *CEQR Technical Manual*, a preliminary screening assessment is conducted to ascertain whether shadows resulting from a project could reach any sunlight-sensitive resource at any time of year. This preliminary screening assessment consists of three tiers of analysis:

1. Tier 1 Screening: The first tier determines a simple radius around the proposed buildings representing the longest shadow that could be cast. If there are sunlight-sensitive resources within the radius, the analysis proceeds to the second tier;
2. Tier 2 Screening: The second tier analysis reduces the area that could be affected by project-generated shadows by accounting for a specific range of angles that can never receive shade in New York City due to the path of the sun in the northern hemisphere. According to the *CEQR Technical Manual*, shadows cannot be cast within New York City within 108 degrees from True North;
3. Tier 3 Screening: If the second tier of analysis does not eliminate the possibility of new shadows on sunlight-sensitive resources, a third tier of screening analysis further refines the area that could be reached by new shadows by looking at specific representative days of the year and determining the maximum extent of shadow over the course of each representative day.

The following analysis methodology was undertaken in accordance with the *CEQR Technical Manual* guidelines to determine the potential for the proposed project to result in a significant adverse shadow impact:

1. Review the proposed project, including the existing, future No-Action, and future With-Action conditions.
2. Prepare a base map that identifies public open spaces, landmarks, and natural resources.
3. Perform a Tier 1 screening. Specifically, identify a study area with a radius 4.3 times the maximum building height that could be developed as a result of the proposed action and identify any potentially sunlight-sensitive resources.
4. If potential sunlight-sensitive resources were identified within the study area, perform a Tier 2 screening to identify whether the potentially sunlight-sensitive resources would be located in areas that could receive shadows cast as a result of the proposed project (within 108 degrees of True North from the southern-most portion of the project area). If no resources are identified within this area, no further analysis is necessary.
5. In three-dimensional modeling software with the capacity to model shadows (Sketchup), the maximum building envelope that could be achieved as a result of the proposed action(s) is modeled and geo-located within the program. Terrain provided by the modeling software is also incorporated into the model to account for how changes in elevation throughout the study area can influence shadows that could be cast by the proposed project. A Tier 3 screening is then undertaken to demonstrate the potential shadows that could be cast as a result of the proposed project on December 21 (winter solstice), June 21 (summer solstice), March 21 (vernal equinox), and May 6 (halfway between the solstice and equinox). The modeling software is also used to approximate times that shadows cast from the proposed project could enter and exit a resource.
6. If the Tier 3 screening indicates that, in the absence of intervening buildings, shadows from the proposed building would reach two sunlight-sensitive resources on three of the representative

analysis days, a detailed shadow analysis would be warranted. Because existing buildings may already cast shadows on a sun-sensitive resource (or a future building could be expected to cast shadows), the proposed project may not result in additional (incremental) shadows upon that resource. The detailed shadow analysis, if warranted, models a baseline condition (future No-Action) that is compared to the future condition resulting from the proposed project (future With-Action) to illustrate the shadows cast by existing or future buildings and distinguish the additional (incremental) shadow cast by the project.

As described in Section 1.0 “Project Description,” the proposed actions would allow for the development of a new 633,890 gross square foot (gsf) Continuing Care Retirement Community (CCRC), with a maximum height of approximately 138 feet.

2.3.3 Assessment

In accordance with the *CEQR Technical Manual*, the following assessment follows the methodology described in Section 2.3.2 above and determines that no further analysis is necessary.

Tier 1 Screening

As illustrated in Figures 2.3-1a and 2.3-1b, there is one sunlight-sensitive resource within the 593.4-foot maximum shadow screening radius for the proposed project, the Hudson River, a natural resource which is located directly west of the project site.

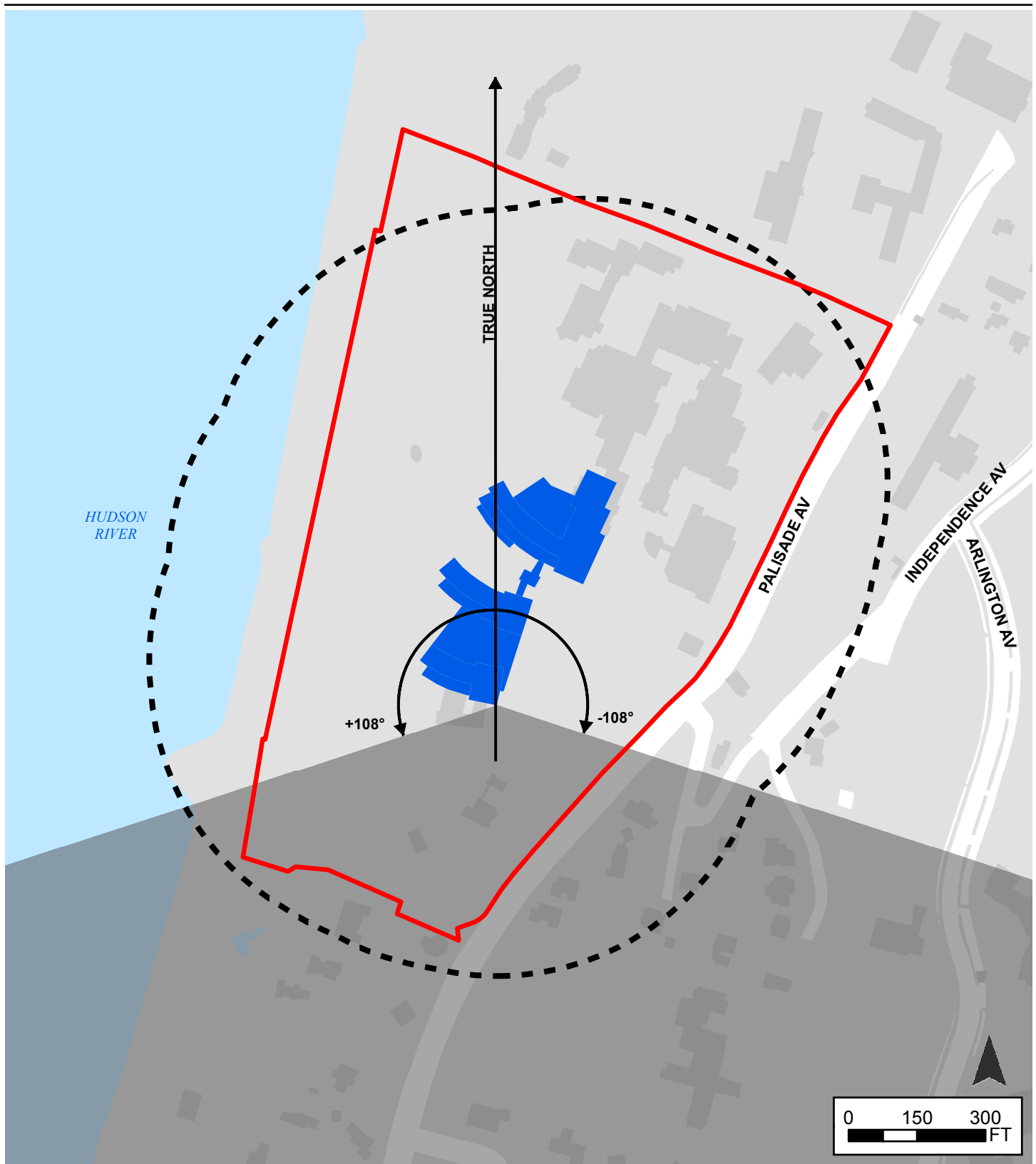
No open space resources or historic resources with sunlight-sensitive features are found within the maximum shadow screening radius for the proposed project.

It should be noted that, as illustrated on Figure 2.3-2, there is a relatively substantial elevation decrease in the western portion of the project site, from 100 feet above mean sea level (amsl) to 0 feet amsl with a slope of approximately 25 percent. Such a decrease in topography has the effect of lengthening shadows cast to the west by the proposed project, such that the maximum shadow screening radius for the proposed project does not capture the true extent of potential shadows cast from the proposed project.

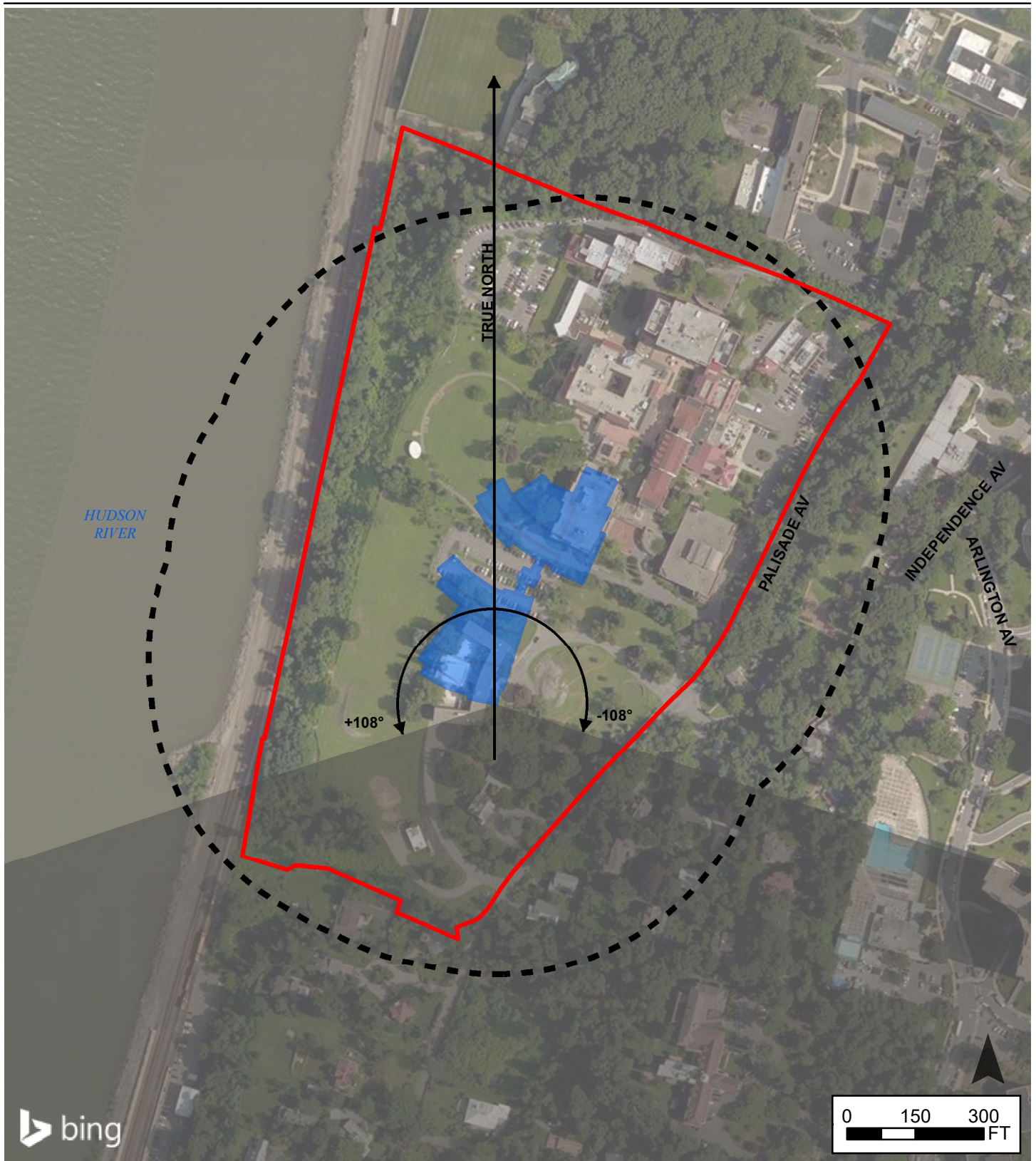
Natural Resources

Pursuant to the *CEQR Technical Manual*, natural resources to be considered as part of the shadow impacts analysis include those resources where the introduction of shadows may alter the resource’s condition or microclimate, including surface water bodies, wetlands resources, upland resources, and significant, sensitive, or designated resources (e.g., coastal fish and wildlife habitats).

The Hudson River is an aquatic resource that would receive shadows that could be generated by the proposed project, and is therefore considered in the Tier 2 screening.



- | | |
|--|--|
| Project Area | Open Space and Recreation |
| Proposed Building Footprint | Historic Landmark |
| 593.4-Foot Shadow Screening Radius | |
| Area that Cannot be Shaded by the Proposed Action | |

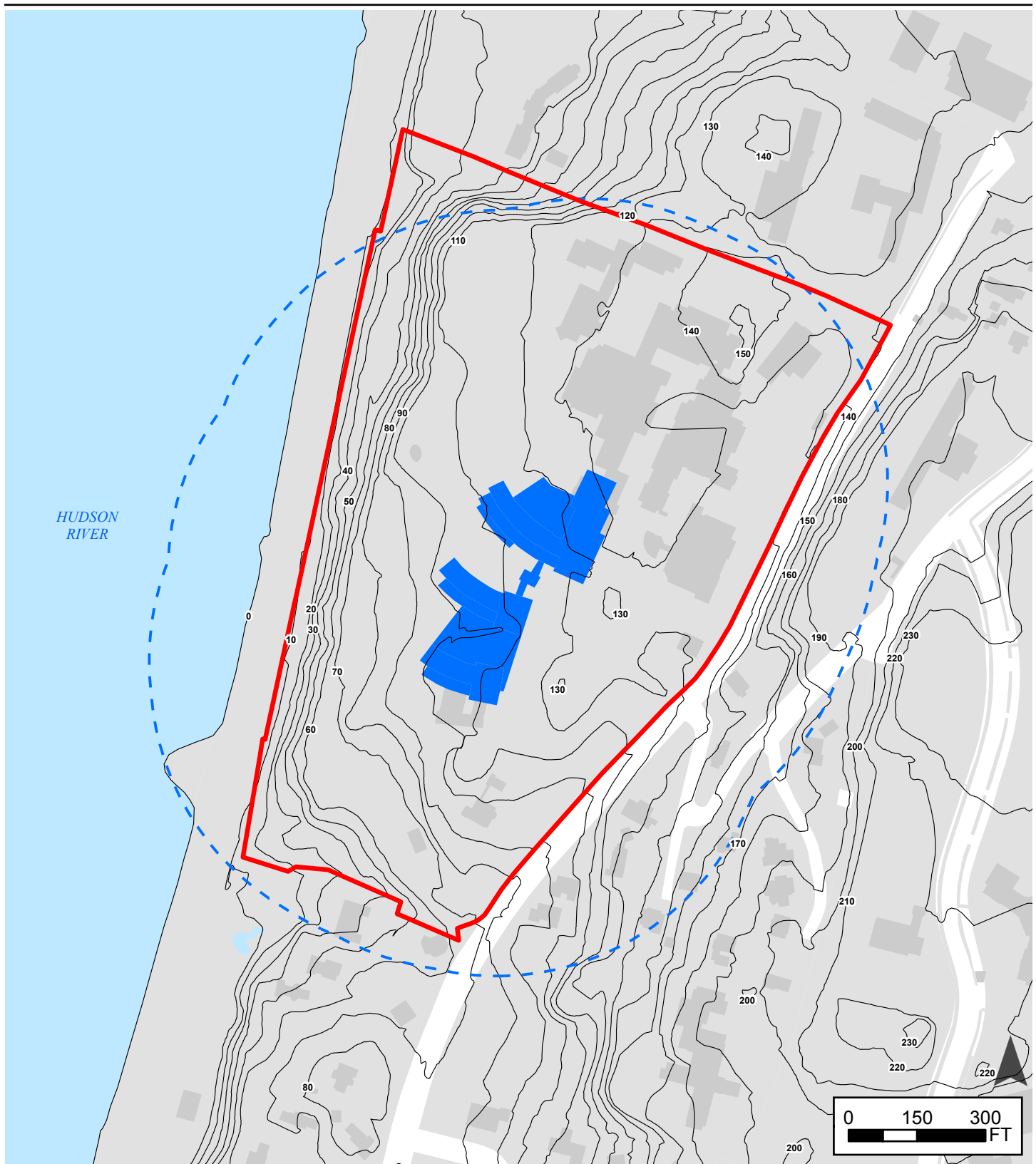


- Project Area
- Proposed Building Footprint
- 593.4-Foot Shadow Screening Radius
- Area that Cannot be Shaded by the Proposed Action

Hebrew Home at Riverdale
The Bronx, New York

**Tier 1 and 2 Shadow Screening
Assessment - Aerial**

**Figure
2.3-1b**



- Project Area
- Proposed Development
- 593.4-Foot Shadow Screening Radius
- Topographic Contour Line (10-Foot Interval)

Hebrew Home at Riverdale
The Bronx, New York

**Elevation Contours in the area
of the Proposed Project**

**Figure
2.3-2**

Tier 2 Screening

As the portion of the Hudson River identified within the Tier 1 screening was not fully ruled out for potential significant adverse impacts, a Tier 2 screening was undertaken.

Natural Resources

As illustrated in Figures 2.3-1a and 2.3-1b, a small area of the Hudson River (approximately 3.9 acres in size) to the west of the project site falls within the area of the longest shadow for the proposed project. Based on this finding, a Tier 3 screening was conducted.

Tier 3 Screening

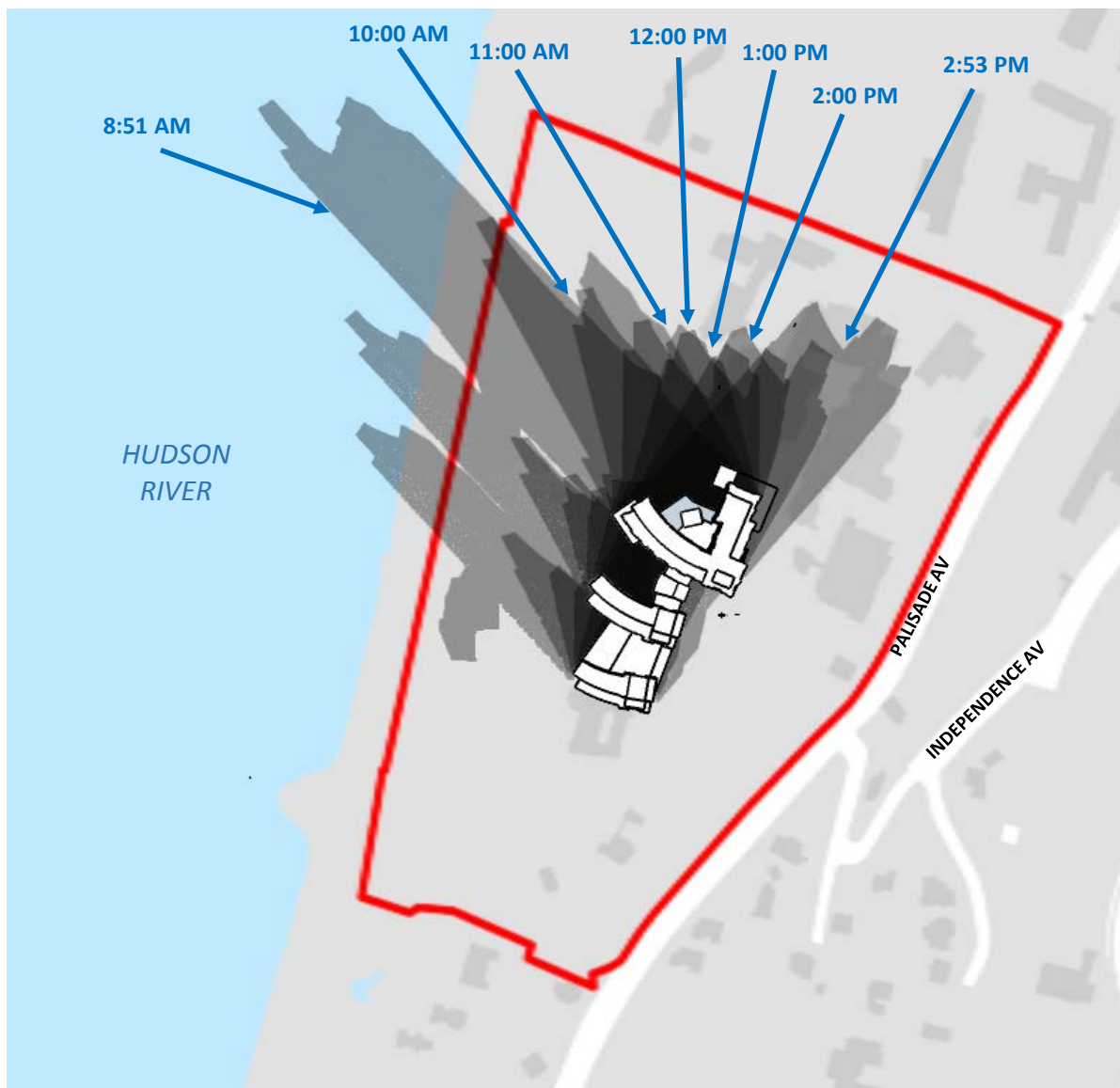
In accordance with the *CEQR Technical Manual*, a Tier 3 screening assessment was performed because the Tier 1 and Tier 2 assessments identified the Hudson River as resources of concern within ± 108 degrees of True North and within the area of the longest shadow that could be cast by the proposed project.

As the sun travels across the sky during the day, shadows fall in a curve on the ground opposite the sun. When the sun rises, shadows fall to the west. Because the sun rises in the east and travels across the southern part of the sky throughout the day to set in the west, a project's earliest shadows would be cast almost entirely westward. Throughout the day, shadows would shift clockwise, until sunset, when they would fall east. Midday shadows are always shorter than those at other times of the day because the sun is highest in the sky at that time. Further, because of the tilt of the earth's axis, the angle at which the sun's rays strike the earth varies throughout the year, so that during the summer, the sun is higher in the sky and shadows are shorter than during the winter. Winter shadows, although the longest, move the most quickly along their paths and do not affect the growing season of outdoor trees and plants.

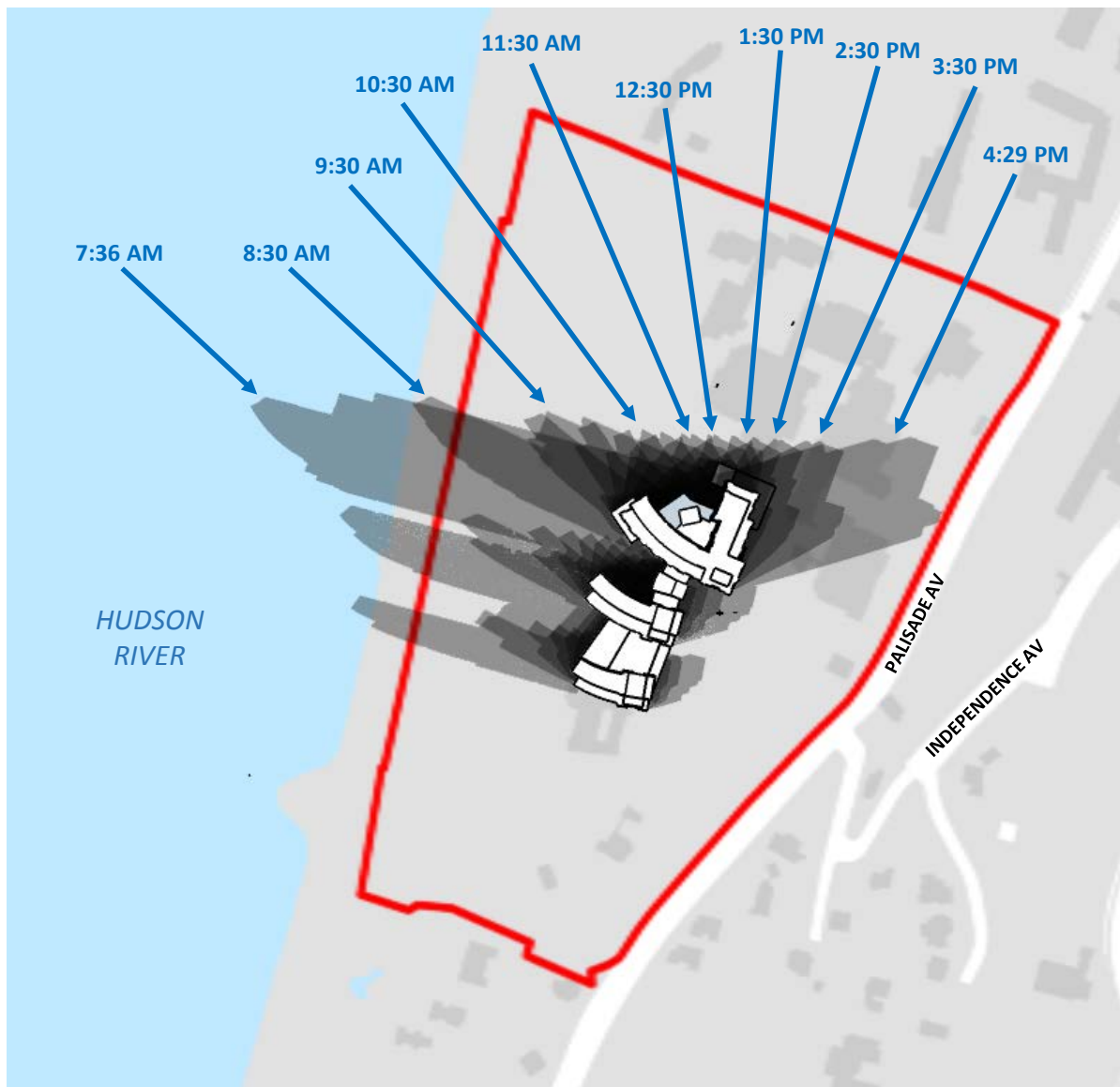
This Tier 3 screening assessment was performed for the four representative days of the year set forth in the *CEQR Technical Manual*: December 21, the winter solstice and shortest day of the year; March 21 / September 21, the equinoxes; May 6 / August 6, the midpoints between the summer solstice and the equinoxes; and June 21, the summer solstice and the longest day of the year. The *CEQR Technical Manual* defines the temporal limits of a shadow analysis period to fall from an hour and a half after sunrise to an hour and a half before sunset.

In accordance with the *CEQR Technical Manual*, a model of the proposed project was developed in a three-dimensional computer program (Trimble Sketchup). The model was geo-located and the surrounding terrain was imported into the model to account for differences in topography. It should be noted that the Tier 3 shadow screening shows the shadows that could be cast as a result of the proposed project, but does not account for existing intervening buildings which may already cast shadows on the identified resources.

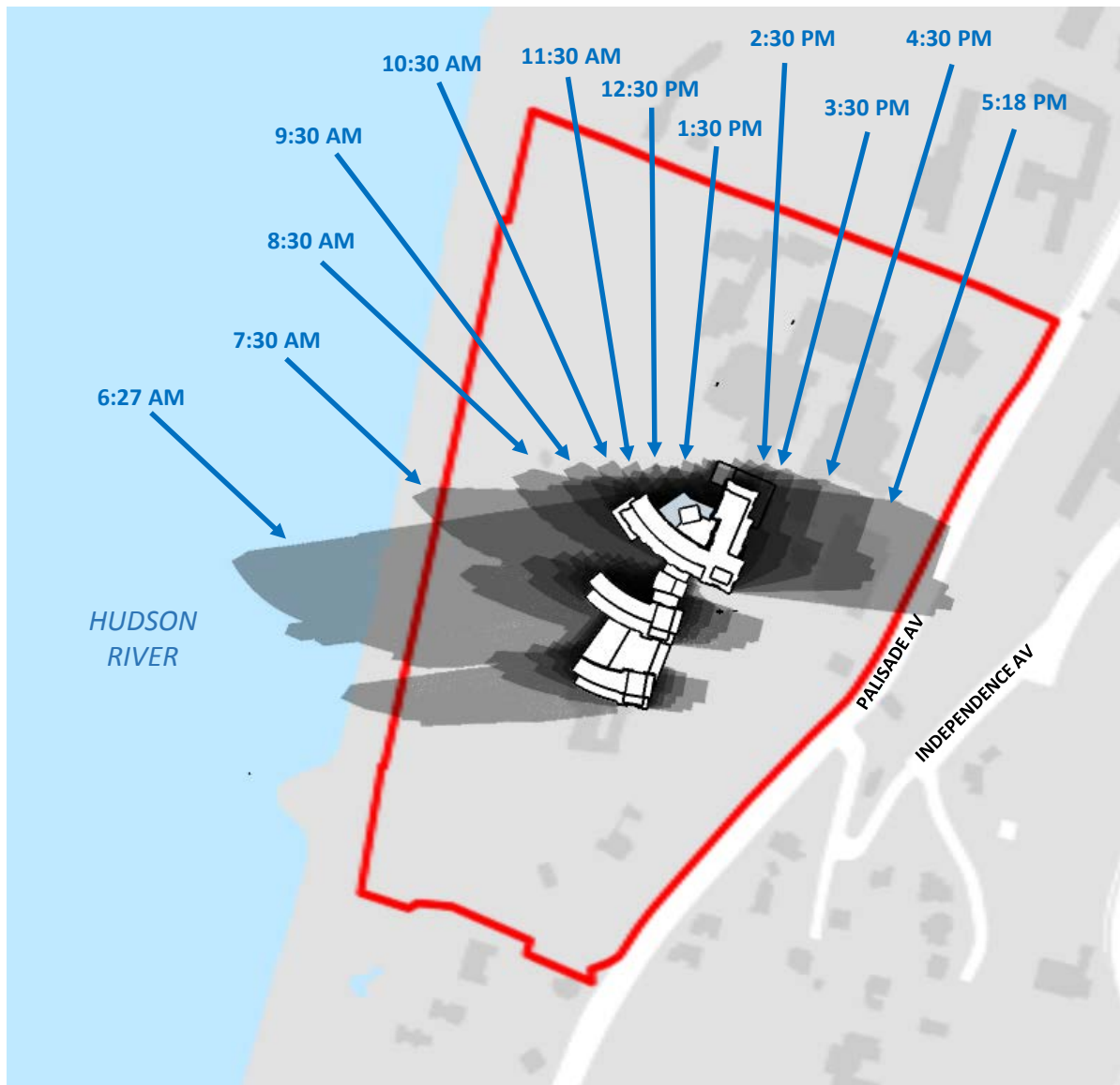
The results of the Tier 3 shadow assessment for the proposed project are illustrated in Figures 2.3-3a through 2.3-3d and described in Table 2.3-1 below on a resource-by-resources basis, based on the three-dimensional modeling.



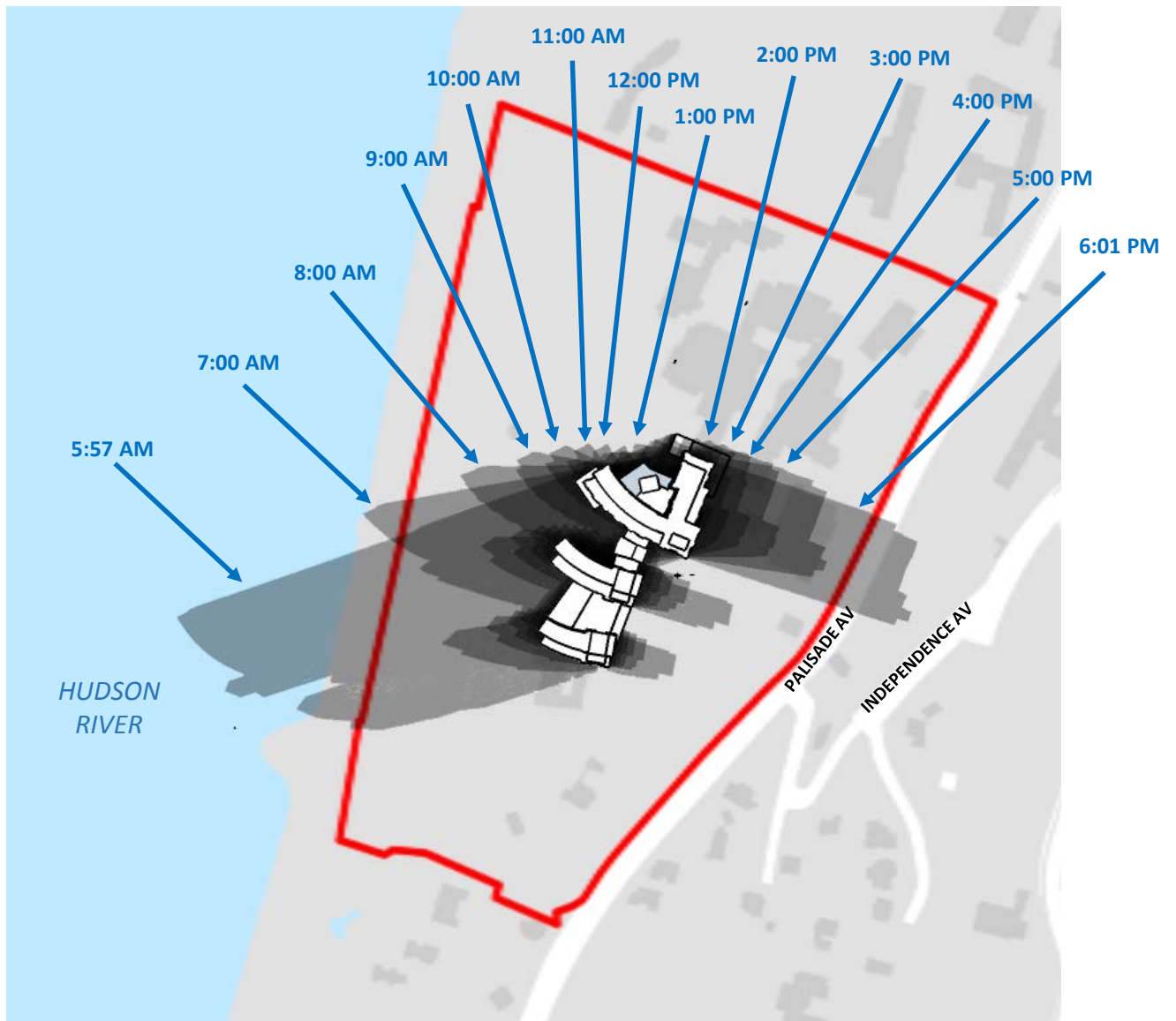
- Project Area
- Projected Shadows from the Proposed Development



- Project Area
- Projected Shadows from the Proposed Development



- Project Area
- Projected Shadows from the Proposed Development



- Project Area
- Projected Shadows from the Proposed Development

Table 2.3-1: Projected Shadow Duration from the Proposed Project on Identified Resources

Analysis Day	December 21	March 21 / September 21	May 6 / August 6	June 21
Analysis Timeframe Window	8:51 AM – 2:53 PM	7:36 AM – 4:29 PM	6:27 AM – 5:18 PM	5:57 AM – 6:01 PM
Hudson River				
Shadow Enter – Exit Times	8:51 AM – 9:50 AM	7:36 AM – 8:30 AM	6:27AM – 7:23 AM	5:57 AM – 7:03 AM
Shadow Duration	59 minutes	54 minutes	56 minutes	1 hour, 6 minutes
Notes: ¹ Daylight savings time not used; times shown are eastern standard time (EST) ² All times are approximate				

As indicated in Table 2.3-1 and Figures 2.3-3a through 2.3-3d, the proposed project is projected to cast shadows on the Hudson River at the start of all four analysis periods for durations ranging from 54 minutes to one hour, six minutes. As such, these shadows would be in very short duration and diffuse. Diffuse shadows are not considered a significant change to habitat conditions, as they are temporary and unlikely to change the habitat condition. Further, the aquatic life of the river is continuously carried by strong and tidal currents and would be exposed to these shadows for short durations. Therefore, the shadows cast on the river would not create adverse impacts on fish and wildlife species within the river.

Based on the foregoing, no significant adverse impacts to the Hudson River related to shadows would be expected as a result of the proposed project, and no further analysis is warranted.

2.3.4 Conclusion

Shadows projected as a result of the proposed project could be cast on one sunlight-sensitive resource, the Hudson River. These shadows would be relatively short in duration, would cover a relatively small area of the river, and would not pose a threat to aquatic habitats the Hudson River supports. Therefore, there would be no significant adverse impacts to the public's enjoyment of this resource, its usability, or the viability of its habitats. Given these factors, the proposed project would not result in significant adverse shadow impacts to the Hudson River.

2.4 Urban Design and Visual Resources

2.4.1 Introduction

Urban design is the totality of components that may affect a pedestrian's experience of public space. To determine if a proposed action has the potential to change the pedestrian experience, an urban design assessment under CEQR guidelines focuses on the components of a proposed action that may have the potential to alter the arrangement, appearance, and functionality of the built environment from the pedestrian's perspective. In accordance with the *2014 CEQR Technical Manual*, a preliminary assessment of urban design is appropriate when there is the potential for a pedestrian to observe, from the street level, a physical alteration beyond that allowed by existing zoning regulations.

A visual resource is the connection from the public realm to significant natural or built features, including views of the waterfront, public parks, landmark structures or districts, otherwise distinct buildings or groups of buildings, or natural resources. As defined by the *CEQR Technical Manual*, one natural feature, the Hudson River, is within the 400-foot study area and is visible from the project site and portions of the surrounding area.

The following provides an assessment of urban design and visual resources within the 400-foot study area for the proposed project.

2.4.2 Methodology

In accordance with the *CEQR Technical Manual* guidelines, the following preliminary urban design and visual resources assessment considers a 400-foot radius study area where the proposed actions would be most likely to influence the built environment. As stipulated in the *CEQR Technical Manual*, since the purpose of the preliminary assessment is to determine whether any physical changes resulting from the proposed project would significantly impact elements of urban design and visual resources, the following information, if known, is included in a preliminary assessment:

- A concise narrative of the existing project area, and conditions under the future No-Action and With-Action conditions;
- An aerial photograph of the study area and ground-level photographs of the site area with immediate context;
- Zoning and floor area calculations of the existing and future With-Action conditions;
- Building massing and building heights; and
- A three-dimensional representation of the future With-Action and No-Action (if relevant) condition streetscape.

If the preliminary assessment determines that a change to the pedestrian experience is minimal and unlikely to disturb the vitality, walkability or the visual character of the area, then no further assessment is necessary. However, if it shows that changes to the pedestrian environment and/or

visual resources are significant enough to require greater explanation and further study, then a detailed analysis may be appropriate.

The following preliminary urban design and visual resources assessment follows these guidelines and provides a characterization of existing conditions followed by a description of urban design and visual resources under the future No-Action and With-Action conditions, and an analysis determining the extent to which physical changes resulting from the proposed actions would alter the pedestrian experience.

The urban design study area is typically defined as the area within 400 feet of the project site, which, for this project, is generally bounded by the Hudson River to the west, a line that runs between the intersection of Ladd Road and Palisade Avenue to the Hudson River to the south, a line midway between Independence and Arlington Avenues to the east, and West 261st Street to the north (see Figure 2.4-1).

2.4.3 Assessment

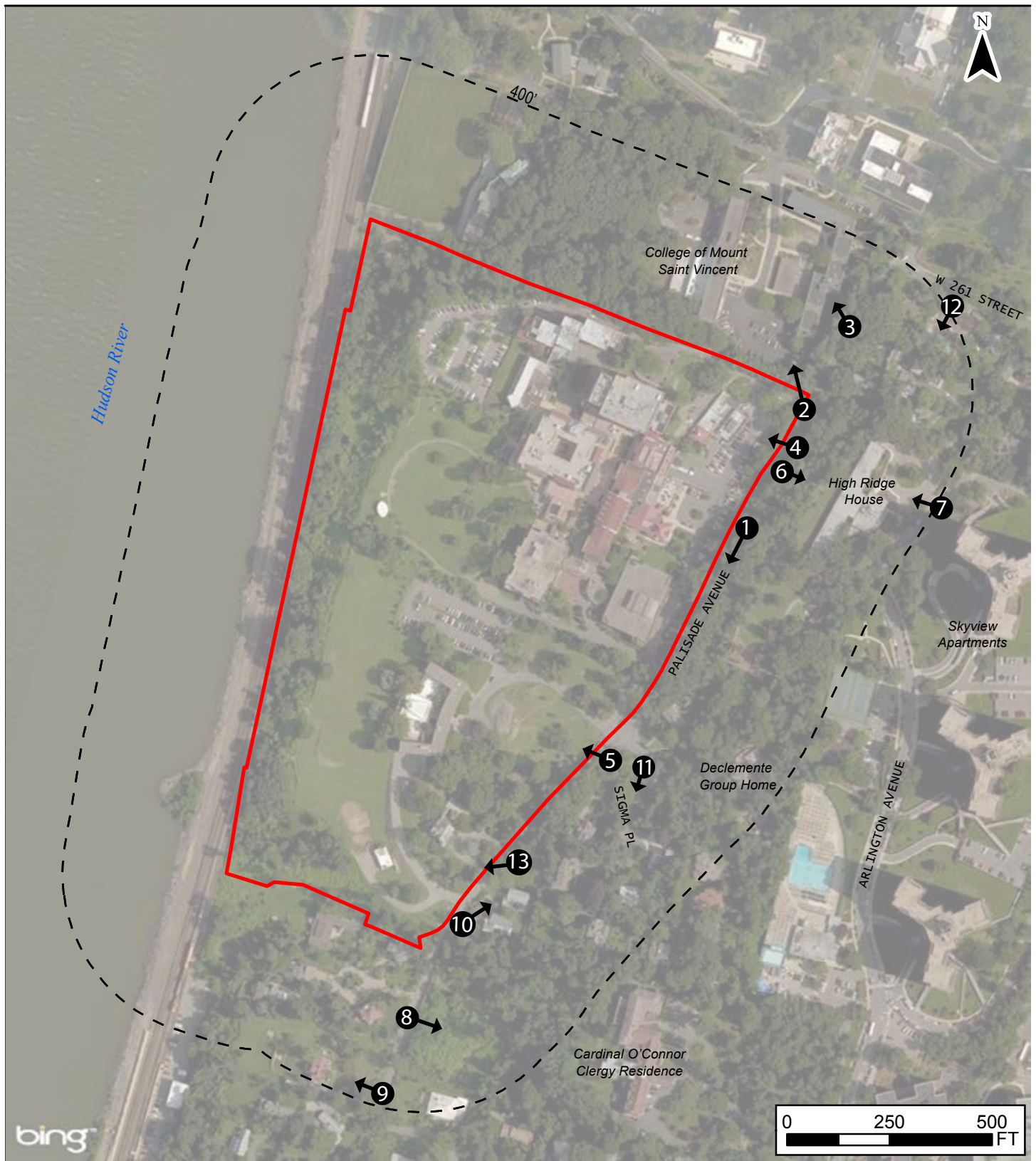
Existing Conditions

Project Site

The project site is a large roughly rectangular-shaped waterfront property and comprises Lots 55, 210, 224, 225, and 230 on Block 5933 in the Bronx. The project site consists of approximately 1,397,640 square feet (sf) of total lot area and is bounded by Palisade Avenue to the east, the Metro-North Hudson Line rail tracks to the west, a line approximately 380 feet south of West 261st Street to the north, and the southern boundary of Lot 55 to the south. The project site is split into a north site, consisting of Lots 210, 224, 225 and 230, and a south site, consisting of Lot 55.

The north site houses the existing Hebrew Home campus, which is composed of nine buildings that house or support its programming, concentrated in the eastern portion of the project site. These buildings include the Riverwalk building, Resnick Pavilion, Jacob Reingold Pavilion, Goldfine Pavilion, Gilbert Pavilion, Stoltz Pavilion, the staff dining building, the electrical building, and the service building. The north site also contains 240 surface parking spaces, concentrated to the west of the Riverwalk building and to the east of Resnick Pavilion. The south site currently contains with five buildings, including the Cardinal Spellman Retreat House (the “Retreat House”), once a retreat destination for Catholic Church members, and an old Victorian home and connected chapel, both currently vacant, as well as three utility buildings and a 107-space surface parking lot.

The existing buildings on the north and south sites are set back from Palisade Avenue. The buildings, with dates of construction ranging from 1842 to 2005, represent a diverse grouping of building styles, heights, and sizes, creating a project site with an eclectic architectural and urban design character. Table 2.4-1 below outlines the bulk, building coverage, and urban design features of each of the existing buildings. EAS Figures 5a through 5c provide photographs of the existing buildings; corresponding photograph numbers for each building are also indicated in the table below.



- Project Site
- 400-foot Study Area

Table 2.4-1: Existing Buildings, North and South Sites

	Date of Construction	Gross Square Feet (GSF)	Building Height (Stories/Feet)	Building Coverage	Building Material/ Design Features	Photo Reference (Figure 5)
NORTH SITE						
Riverwalk/ Riverwalk Dining	1980	125,851 gsf/ 5,754 gsf	8 stories/ ~81 ft	16,595 sf/ 2,740 sf	L-shaped building with a brick façade and rear glass pavilion facing the Hudson River	Photo 2, Figure 5a
Resnick Pavilion	1974	177,614 gsf	8 stories/ ~127 ft	22,084 sf	Brick façade with square or rectangular insets	Photo 1, Figure 5a
Stolz Pavilion (including Weill)	Stolz: 1903 Weill: 2000	90,528 gsf	4 stories/ ~76 ft	32,216 sf	Brick façade with white detailing and a stone base; roof dormers	Photo 1, Figure 5a
Goldfine Pavilion	1967	78,453 gsf	4 stories/ ~54 ft	24,339 sf	Concrete and brick	Photo 5, Figure 5b
Staff Dining	n/a	2,913 gsf	2 stories (second level)	2,775 sf	Brick façade	n/a
Service Building	~1907	5,882 gsf	1 story	8,875 sf	Brick façade with stone base; arched entryway	n/a
Electrical Building	n/a	868 sf	1 story	868 sf	Concrete	n/a
Reingold Pavilion	2005	124,635 gsf	5 stories/ ~71 ft	27,196 sf	Red and tan brick with detailing; pitched roof with clock	Photo 5, Figure 5b
Gilbert Pavilion	1986	66,943 gsf	3 stories/	23,000 sf	Brick façade with large windows and grey columns and detailing	Photo 6, Figure 5b
TOTAL NORTH SITE		679,441 gsf		160,688 sf		
SOUTH SITE						
Retreat House	1965	57,540 gsf	4 stories/ ~67 ft	23,666 sf	Tan brick four-story dormitory building surrounding a central chapel with a green roof and tower	Photo 7, Figure 5c
Home/Chapel	1842	6,076 gsf/ 883 gsf	2.5 stories/ 1 story	2,244 sf/ 841 sf	Victorian styles; red and green wood scalloped siding with decorative trim and porch	Photo 8, Figure 5c
Utility Buildings 1 – 3	n/a	3,665 gsf (combined)	1 story	3,665 sf (combined)	Tan brick	n/a
TOTAL SOUTH SITE		68,164 gsf		30,416		
TOTAL NORTH AND SOUTH SITES:		747,605 gsf		191,104 sf		

Total building coverage for the project site is 191,104 sf, compared to the total project site area of 1,397,640 sf (project site coverage of 13.7 percent). Other than the three main surface parking lots and existing buildings described above, the project site contains several landscaped gardens, sculptures, and walking paths which provide significant views of the Hudson River and the Palisades across the river (see Figure 5b, Photo 4).

Study Area

Urban Design

Overall, the urban design character of the study area is defined by a mix of large institutional uses, and single-family homes on large lots. It is also influenced greatly by the surrounding topography and vegetation. For example, though the Metro-North Hudson Line rail tracks run alongside the waterfront within the study area, given the steep topography sloping down to the Hudson River, this transportation use is not visible from much of the study area. The topography and vegetation also play an important role in the pedestrian experience along Palisade Avenue, with a significant wooded incline to the east that masks adjacent land uses, as discussed in further detail below.

Palisade Avenue provides vehicular and pedestrian access to the project site and is the main roadway that runs through the study area, running north/south immediately adjacent to the project site. The single-lane two-way road does not have sidewalks, with the exception of the west side of the roadway just north of the project site. A chain-link fence has been erected along the entire length of the project site to provide separation from Palisade Avenue, although it does not fully obstruct views to the project site. Given the size of the project site, the existing buildings (detailed above) significantly influence the urban design character of the study area. See Figure 2.4-1a, Photos 1, 2 and 3, for the character of Palisade Avenue adjacent to the project site and a pedestrian's view of the project site from Palisade Avenue.

Aside from Palisade Avenue, there are a few other streets within the study area, including the largely residential West 261st Street and Sigma Place, which connect directly with Palisade Avenue, and Arlington Avenue, which turns into Independence Avenue within the study area. Like Palisade Avenue, each of these streets are single-lane, two-way roadways. Independence Avenue and West 261st Street provide sidewalks on one side.

Three large institutional uses are located wholly or partially within the study area, including the College of Mount Saint Vincent to the north of the project site, the High Ridge House (a Christian Science nursing care facility) to the east, and the Cardinal O'Connor Clergy Residence building to the southeast. Similar in character to the Hebrew Home campus, the buildings associated with the College of Mount Saint Vincent represent different architectural styles, with several large brick buildings, three to four stories high, immediately to the north of the project site (see Figure 2.4-1a and 2.4-1b, Photos 4 and 5). Similar to the project site, buildings are set back from Palisade Avenue, and there is a chain-link fence separating the College of Mount Saint Vincent campus from Palisade Avenue.

The High Ridge House, a one-story brick building constructed in 1971, is located uphill from Palisade Avenue, to the east of the project site. Given the steep incline from the roadway and heavily wooded hillside, views of the High Ridge House from Palisade Avenue are highly obstructed. The High Ridge House is constructed on the flatter portion of the lot, closer to Independence Avenue, and is therefore much more visible from that roadway (see Figure 2.4-1b, Photo 7). However, the building is still set back from the roadway, with parking and a pick-up/drop-off circle located between the sidewalk and the High Ridge House building. By contrast, the taller Skyview Apartments to the east of Arlington Avenue are more visible to pedestrians along this portion of Palisade Avenue (see Figure 2.4-1b, Photo 6). Located just to the east of the study area, these three large, brick multi-family residential buildings are each 20 stories high and contain over 1,300 residential units. Though just outside of the



Photo 1 View looking southwest along Palisade Avenue, adjacent to the north site parking area



Photo 2 View looking west from Palisade Avenue at the service building and Resnick Pavilion behind it



Photo 3 View looking west at the Cardinal Spellman Retreat House from Palisade Avenue just south of Sigma Place



Photo 4 View looking northwest at the College of Mount Saint Vincent campus from the corner of Palisade Avenue and the northern project site entrance

The Hebrew Home at Riverdale

The Bronx, New York

Views of the Study Area

Figure
2.4-1a



Photo 5 View looking northwest at the College of Mount Saint Vincent Alumnae Hall from Palisade Avenue



Photo 7 View looking west at the High Ridge House from Independence Avenue



Photo 6 View looking east from Palisade Avenue uphill towards the High Ridge House and Skyview Apartments



Photo 8 View looking east from Palisade Avenue uphill towards the Cardinal O'Connor Clergy Residence; property wall in the foreground

study area, the Skyview Apartments influence its urban design character with tall, visible residential towers.

The Cardinal O'Connor Clergy Residence property is also located partially within the study area, to the southeast of the project site. The two-story, stone building was constructed in 1931 and is located on a very large through-lot between Arlington and Palisades Avenues. The building is set back from both avenues. Similar to the High Ridge House, the steep incline and wooded hillside obstruct views of the Clergy Residence building from Palisade Avenue. There is also a large wall that has been constructed along Palisade Avenue, which further blocks views up the hillside (Figure 2.4-1b, Photo 8).

Overall, these institutional uses vary in their influence on the urban design character of the area, based on the surrounding topography and tree coverage. In addition to the three institutional uses discussed above, there is a fourth small institutional use, the Joseph Declemente Group Home, a small supported living residence located along Independence Avenue, which is two stories and residential in character. It is similar to the single-family residences that compose a significant portion of the study area.

Single-family homes on large lots are located to the east and south of the project site primarily along Palisade Avenue, West 261st Street, and Sigma Place. Examples of single-family homes in the area are included in Figure 2.4-1c, Photos 9 through 12. Homes range from two to three stories, are generally set back from the roadway, and represent diverse architectural styles. Many homes are separated from the roadway by stone walls or fences.

Visual Resources

The Hudson River and the Palisades across the river are large natural visual resources within the study area. Given the topography of the surrounding area, views of the Hudson River and the Palisades are achievable from higher elevations, including from homes and apartment units. However, due to the topographic changes on the project site, as well as the width of the project block and existing buildings, notable views of the water and beyond are only available to pedestrians along certain portions of Palisade Avenue within the study area. In particular, given the general slope of the south site down toward the southwest corner of the project site, pedestrians along Palisade Avenue within the study area are only afforded significant river views and views to the other side of the river while generally facing southwest and standing south of the Cardinal Spellman Retreat House, where there is no sidewalk, as shown in Figure 2.4-1d, Photo 13. As per the *CEQR Technical Manual*, the view corridors under review include those from which visual resources are publicly viewable, and therefore views from apartments and private residences are not subject to review.

Future No-Action Condition

As described in Section 1.0, "Project Description," absent the proposed actions (the future No-Action condition), the project site would primarily remain in its existing condition, as there would be no special permit to allow for the Long Term Care Facility (LTCF) use on the south site.

As discussed in Section 2.1, "Land Use, Zoning and Public Policy," the applicant is currently renovating and converting the Gilbert Pavilion, which previously housed 144 skilled nursing beds, to accommodate 70 assisted living units. This work is expected to be complete in 2019. In addition to the work on Gilbert Pavilion, Resnick and Reingold Pavilions are also currently undergoing interior



Photo 9 View looking west at a single-family home along Palisade Avenue south of the project site



Photo 10 View looking northeast at single-family homes along Palisade Avenue to the east of the project site



Photo 11 View looking south of single-family homes along Sigma Place



Photo 12 View looking south to single-family home from West 261st Street



Photo 13 View looking southwest at the south site and the Hudson River from Palisade Avenue, adjacent to the Victorian home and chapel

renovations to accommodate an additional 32 skilled nursing beds (16 beds in each building). However, the planned renovations will not impact the exterior of the buildings or their urban design features. In addition, as part of the proposed restoration plan, the applicant plans to construct a cogeneration facility on the north site, attached to the existing service and electrical buildings located at the northeast corner of the project site. These buildings will be renovated to accommodate the functions of the cogeneration facility. Figure 1-6 in Section 1.0, "Project Description," depicts the proposed footprint of the cogeneration facility. Given the small size and use of the existing service and electrical buildings, these buildings do not contribute to the overall character of design on the project site. In addition, the incorporation of the cogeneration facility next to these buildings would minimize any effects it might have on urban design. Therefore, there will be no substantial change to urban design or visual resources at the project site or within the study area.

Future With-Action Condition

Facilitated by the proposed actions, the proposed project would involve the demolition of the existing Goldfine Pavilion on the north site and the Cardinal Spellman Retreat House and the three existing utility buildings on the south site. Three new buildings would be constructed, two in the place of the Retreat House and surface parking lot on the south site and the third in place of the Goldfine Pavilion on the north site (the future With-Action condition). Figure 1-2 in Section 1.0, "Project Description," provides an overlay of the existing and proposed site plans, depicting where the proposed buildings would be located in relation to the existing buildings and parking lot.

The two buildings on the south site, together known as CCRC South, would be four and six stories and built to a height of approximately 53 feet and 74 feet, respectively. These buildings would have a combined building square footage of 190,700 gsf and a building coverage of 44,050 sf. CCRC North would be 12 stories and built to a height of approximately 138 feet; the building square footage would be approximately 443,190 gsf and building coverage would be 43,800 sf. Together, the new development would amount to 633,890 gsf. The amount of gross square footage to be demolished as a result of the proposed actions (including the Goldfine Pavilion and the Retreat House) is approximately 135,993 gsf.

See Figures 2.4-2a through 2.4-2c and 2.4-3 for comparative renderings and elevations of the future No-Action and With-Action conditions.

Project Site and Study Area

Urban Design

The proposed actions would allow for greater bulk and density on the project site compared with the future No-Action condition. The three new buildings to be constructed under the proposed project would be most visible from Palisade Avenue, the main roadway within the study area.

Figures 2.4-2a through 2.4-2c show comparative views from different locations along Palisade Avenue in the winter and summer in the No-Action and With-Action conditions. Figure 2.4-3 depicts the existing and proposed elevations from Palisade Avenue. As shown, the two buildings on the south site (on the left side in the elevation diagrams) are consistent with the height of the existing buildings on the project site. These buildings would be constructed in place of the existing Retreat

No-Action Condition



Winter View facing Northwest

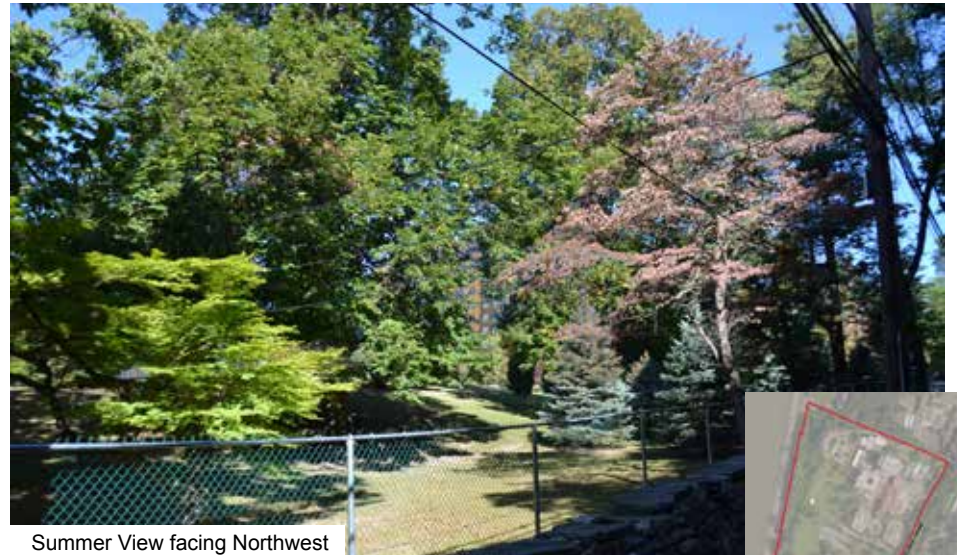


Summer View facing Northwest

With-Action Condition



Winter View facing Northwest



Summer View facing Northwest



Source: Perkins Eastman
For Illustrative Purposes Only

The Hebrew Home at Riverdale
The Bronx, New York

**Building Massings: No-Action
compared to With-Action Conditions**

Figure
2.4-2a

No-Action Condition



Winter View facing West



Summer View facing West

With-Action Condition



Winter View facing West



Summer View facing West



Source: Perkins Eastman
For Illustrative Purposes Only

The Hebrew Home at Riverdale
The Bronx, New York

**Building Massings: No-Action
compared to With-Action Conditions**

Figure
2.4-2b

No-Action Condition



With-Action Condition



Source: Perkins Eastman
For Illustrative Purposes Only

The Hebrew Home at Riverdale
The Bronx, New York

**Building Massings: No-Action
compared to With-Action Conditions**

Figure
2.4-2c



For Illustrative Purposes Only

House and surface parking lot on the south site. The southernmost building would be constructed with four stories to a height of 53 feet, lower than the existing Retreat House spire, which is approximately 67 feet tall. The six-story CCRC South building height would be in keeping with the scale of the existing buildings on the north site.

The proposed 12-story CCRC North building would be constructed to a height of 138 feet, which, in comparison to the existing Goldfine Pavilion (to be demolished), would be approximately 84 feet taller. In comparison to Resnick Pavilion, the tallest existing building on the project site, CCRC North would be approximately 11 feet taller. Therefore, the 12-story CCRC North building (to the right in the figures) would be the most prominent of the proposed project's buildings within the study area.

However, the future With-Action condition would be consistent with the urban design character of the project site and overall study area. As discussed, the project site and the study area are composed of buildings that represent an eclectic set of architectural styles as opposed to a unifying style. Therefore, the demolition of Goldfine Pavilion and the Retreat House, and the introduction of new buildings on the project site, would not significantly impact the architectural character of the area. Furthermore, the taller residential-style buildings would be consistent with the height of the Resnick Pavilion at the north end of the project site.

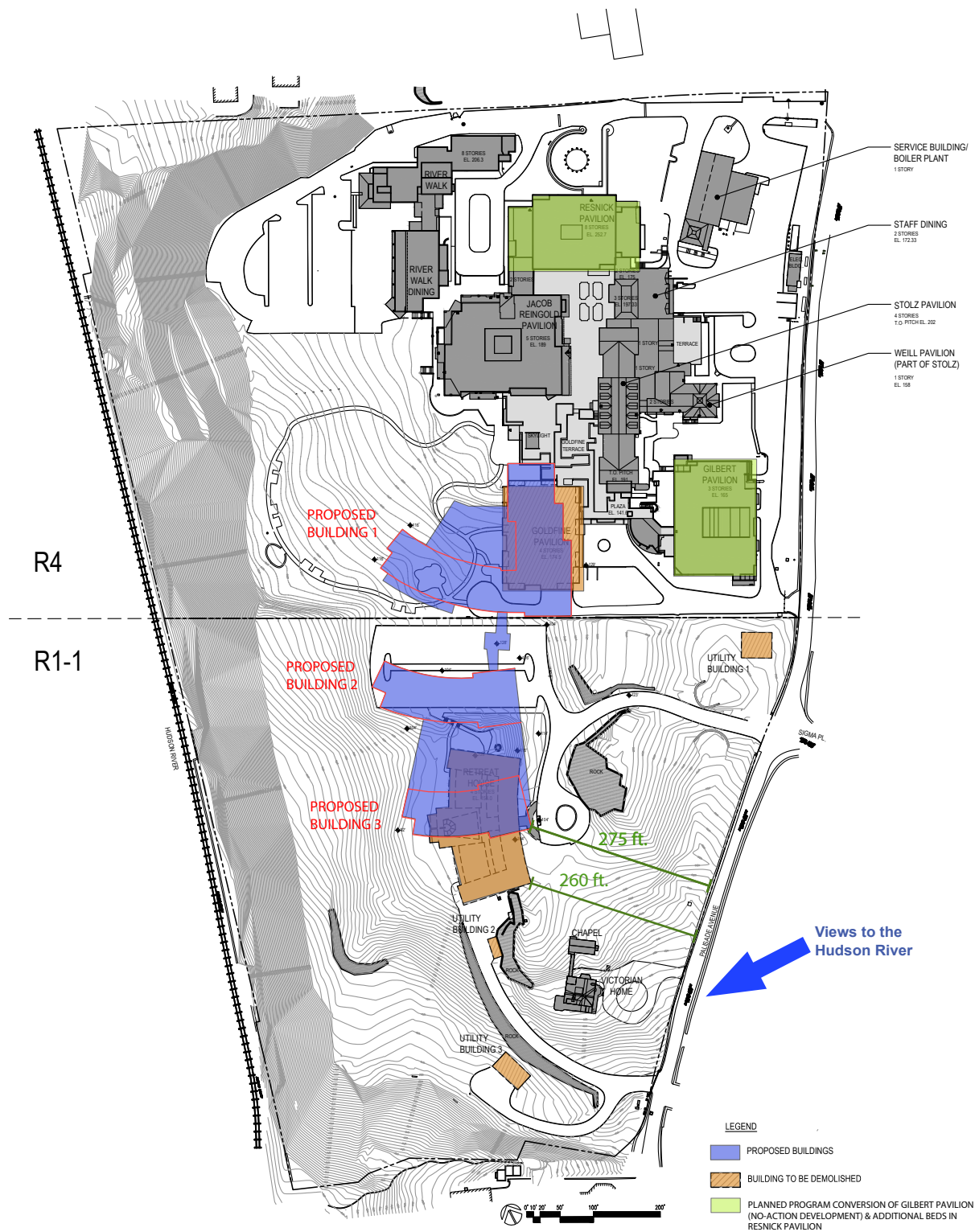
In addition to its architectural compatibility, the proposed site plan and design features of the proposed project would help temper the visual influence of the CCRC North building. All three buildings, including CCRC North, would be set back a distance of at least 345 feet from Palisade Avenue. This setback is consistent with the existing conditions on the project site and with the character of the other uses in the study area, particularly the other institutional uses. The tree coverage on the project site, close to Palisade Avenue, would also provide a visual buffer particularly when leaves are on the trees (see Figure 2.4-2b), further minimizing any changes to the urban design character.

In addition, the proposed buildings would be oriented generally perpendicular to Palisade Avenue, maintaining existing view corridors from the roadway as much as possible and hiding the additional bulk proposed for the project site. Finally, as mentioned in Section 2.1, "Land Use, Zoning, and Public Policy," all three proposed buildings would be in compliance with floor area and site coverage regulations set forth in the Zoning Resolution.

As a result of these design features, the proposed project would not result in any adverse impacts to the urban design character of the study area.

Visual Resources

The proposed project site plan has been designed to maintain existing view corridors to the Hudson River and the Palisades across the river. As mentioned above, and demonstrated in Figure 2.4-1d, Photo 13, views of the water are achievable generally looking southwest, from the Cardinal Spellman Retreat House and south along Palisade Avenue. The clustering of the proposed buildings near the existing Hebrew Home campus, as shown in the overlay existing and proposed site plans provided Figure 2.4-4, preserves the existing view corridor toward the southwest. In addition, the three utility buildings on the south site would be demolished as part of the proposed project, meaning in some cases the views to the water would be improved. Therefore, the proposed actions would not result in significant adverse impacts on these visual resources.



2.4.4 Conclusion

The future With-Action condition would result in the demolition of five existing buildings on the project site and construction of three new buildings in close proximity to the existing Hebrew Home campus. Overall, the With-Action condition would be compatible with the building form and design of the project site, and would be consistent with the character of the study area.

Additionally, the proposed project site plan has been designed to maintain the existing limited southwest-facing view corridors to the Hudson River and the Palisades by clustering the proposed buildings near the existing buildings and orienting them to minimize the visual impacts of the additional bulk proposed for the project site.

Therefore, the future With-Action condition would not have a significant adverse impact on urban design and visual resources.

2.5 Natural Resources

2.5.1 Introduction

This section assesses the potential for a proposed action to result in significant adverse impacts on natural resources, which are defined as the City's biodiversity (plants, wildlife, and other organisms); any aquatic or terrestrial areas capable of providing suitable habitat to sustain the life processes of plants, wildlife, and other organisms; and any areas capable of functioning in support of the ecological systems that maintain the City's environmental stability.

The proposed project would result in the development of a 633,890-gross square foot Continuing Care Retirement Community/Long Term Care Facility at 5701–5961 Palisade Avenue. The project is located primarily along the bank of the Hudson River within the Riverdale section of the Bronx. The site is situated within the Special Natural Area District 2 (SNAD-2) which contains natural features identified in the *Zoning Resolution Article X: Special Purpose Districts, Chapter 5: Special Area Natural District*, including steep slopes, rock outcrops, ponds, brooks, swampy areas and mature trees.

This section assesses the potential for the proposed project to directly and indirectly affect natural resources within the project site. Potentially relevant direct effects of the project include:

- Removal of vegetation.
- Development of roadways, parking lots, buildings, and other paved surfaces on previously vegetated or unpaved surfaces.
- Introduction of buildings or structures that cast prolonged shadows on a natural resource, or otherwise alter its microclimate.

Potentially relevant indirect effects of the project include:

- A change, such as loss and/or change in the health of vegetation, dewatering, soil compaction, site clearance, excavation, introduction of impervious surfaces, or any other change in drainage patterns that would alter the way in which surface or ground water flows from the project site to a nearby natural resource or vice versa.
- A change in on-site activities that would either increase the number of people, number of domestic animals, or noise level, thereby increasing disturbance to on-site or nearby natural resources.
- A change in on-site conditions that would alter the amount of light that reaches natural resources on or near the site.

2.5.2 Methodology

In accordance with CEQR guidelines, resources from several government agencies pertaining to the study area were reviewed, including maps and documents by the New York Department of State (NYSDOS), New York Nature Explorer, the New York Natural Heritage Program (NYNHP), the

United States Department of Agriculture (USDA), the New York State Department of Environmental Conservation (NYSDEC), and the United States Fish and Wildlife Service (USFWS). In addition, a 2001 Environmental Assessment Statement prepared by The Sam Schwartz Company for the Hebrew Home project campus (2001 EAS) was reviewed.

2.5.3 Assessment

Existing Conditions

Habitat/Vegetation

The project site is located adjacent to a portion of NYSDOS's Significant Coastal Fish and Wildlife Habitat (Lower Hudson Reach). The Lower Hudson Reach includes portions of the Hudson River starting from Battery Park and extending to Yonkers near Glenwood. The eastern boundary includes the developed shorelines along Manhattan, Bronx, and Yonkers. This section of the Hudson River receives pollutants from stormwater runoff, sewage effluents, and industrial or commercial point sources. Despite extensive disturbance from development and impaired water quality, the Lower Hudson Reach remains an important habitat for a variety of fish, waterfowl, and plankton.

The habitat is characterized by limited natural shoreline and wetland vegetation, with the exception of Spuyten Duyvil at Inwood Hill Park. Most of the shoreline along the habitat has been extensively disturbed due to development. In regards to the project site, natural vegetation remains in the western portion of the site. Deep vegetated buffer and existing specimen trees are present along Palisade Avenue and the Hudson River. Currently, the project site contains 760 trees for 2,073 tree credits.

Rare/Protected Species

The New York Nature Explorer website indicates that there are seven rare plants that may be potentially present at or in the vicinity of the site, including the bent sedge (*Carex styloflexa*), field beadgrass (*Paspalum laeve*), narrow-leaved sedge (*Carex amphibola*), Schweinitz's sedge (*Carex schweinitzii*), stiff tick-trefoil (*Desmodium obtusum*), swamp oats (*Sphenopholis pensylvanica*), and woodland agrimony (*Agrimonia rostellata*). With the exception of field beadgrass, these plants were last documented in the Bronx over 100 years ago.

The NYNHP was consulted to determine whether records exist for the presence of rare or New York State-listed species at the site. In correspondence dated August 10, 2016, the NYNHP indicated that they could not provide a definitive statement on the presence or absence of these species.

Topography

The site's topography varies but consists of mostly gentle slopes, though steeper slopes exist to the southern and western parts of the site. As indicated in Section 1.0, "Project Description", the project site is a Tier I SNAD site with an average slope of 8.8 percent. In accordance with SNAD zoning regulations, steep slopes are defined as those exceeding 25 percent. The site contains 269,687 square

feet of steep slope, equivalent to 19.3 percent of the project site, which is located primarily along the bank of the Hudson River.

Surface runoff from higher elevations in the site tends to flow down-slope to the south and to the west, with most of overland runoff flowing toward the Metro-North railroad tracks in the west. This runoff enters the Metro-North drainage system, which drains to the Hudson River. The site also contains nine rock outcroppings totaling 14,474 square feet of the project site, which are in the South Site of the project.

Future No-Action Condition

As described in Section 1.0, “Project Description,” under the future No-Action, the applicant will have completed its renovation and conversion of the Gilbert Pavilion, which previously housed 144 skilled nursing beds, to accommodate 70 assisted living units. This work is expected to be complete in 2019. In addition to the work on Gilbert Pavilion, Resnick and Reingold Pavilions are also currently undergoing interior renovations to accommodate an additional 32 skilled nursing beds (16 beds in each building).

The applicant will also seek a certification pursuant to Section 105-45 (Certification of Restoration Plan) for its proposed restoration plan in regards to natural features that were previously altered without prior City Planning Commission (CPC) approval. The proposed restoration plan includes: an addition to the Riverwalk dining building; location of the walking paths that differs from the 2001 approved site plan; fill and grading changes; changes to parking area curbs; an additional staircase to access the Riverwalk dining building; and additional glass volumes at the Riverwalk dining connector.

In addition, as part of the proposed restoration plan, the applicant plans to construct a cogeneration facility on the north site, attached to the existing service and electrical buildings located at the northeast corner of the project site. This work would not change natural resources as the site as it would occur in already developed areas of the site and would include renovation of the service and electrical buildings to accommodate the functions of the cogeneration facility. A separate DEC State Facility Air Permit will be issued for this work, which is expected to be complete and the facility operational by July 2018.

Future With-Action Condition

Habitat/Vegetation

Implementation of the future With-Action condition would facilitate the development of a CCRC/LTCF campus, which includes the construction of three new buildings – two on the South site and one on the North site. According to the *CEQR Technical Manual*, construction of new buildings may cast prolonged shadows on sunlight-sensitive resources of concern, which include natural resources such as surface water bodies, wetland resources, upland resources, and designated resources such as coastal and wildlife habitats. Based on the *CEQR* definition, the Hudson River is a sunlight-sensitive resource located within the vicinity of the project site. As described in detail in Section 2.3, “Shadows,” the shadows cast on the river would not adversely impact fish and wildlife species in the river because these shadows that fall within a small area of the Hudson River

(approximately 3.9 acres) would be of short duration and diffuse. Diffuse shadows are temporary, and it is unlikely that such shadows would have a significant impact on or change habit conditions.

The With-Action condition would also result in the removal of 161 trees within the project site to build CCRC North and CCRC South, resulting in the loss of 386 tree credits. However, there would be 599 trees worth 1,432 tree credits that would remain, exceeding the tree requirements for the project site. In addition, the applicant proposes to add 215 new 3" caliper trees to make up for the trees being removed. Accordingly, the removal of limited trees as part of the proposed project would not result in a significant adverse impact to the botanic environment.

Rare/Protected Species

As discussed above, there are seven threatened/endangered species that may potentially be present at or near the project site. Although the NYNHP was unable to confirm the presence or absence of these species, the USDA Plants Database and NYNHP Conservation Guides were reviewed to further determine possible presence. The bent sedge, Schweinitz's sedge, and swamp oats are listed as wetland plants last documented in the Bronx over 100 years ago. Based on the NYSDEC and the USFWS National Wetlands Inventory (NWI), there are no wetlands at the site. The Hudson River, a NYSDEC and NWI wetland, is located adjacent to the site. Given the lack of wetlands, there is no on-site habitat for the three wetland plants listed above. The site supports habitat for field beadgrass, the narrow-leaved sedge, stiff tick-trefoil, and woodland agrimony, particularly within the sloped area of the site. It should be noted that the narrow-leaved sedge, stiff tick-trefoil, and woodland agrimony were last recorded in the Bronx over 100 years ago. The presence of field beadgrass was last confirmed in 1997.

The With-Action condition would result in an increase of approximately five percent of impervious area with the construction of three new buildings, one hard-court tennis court, and a driveway. However, construction would be concentrated only on the developed portion of the project site away from natural features and steep slopes and would consist of limited tree removal. In addition, the applicant plans to preserve the deep vegetated buffer and existing specimen trees along Palisade Avenue and the Hudson River. Therefore, the proposed project would not result in a significant adverse impact on these rare plant species.

Topography

Under the With-Action condition, a hard-court tennis court, 60 feet by 120 feet, would be constructed immediately west of the chapel in the South site, adjacent to a natural rock outcrop. However, the proposed actions would also avoid construction activities on the steep slopes, which will minimize erosion impacts and preserve the unique natural characteristic of the area as outlined in SNAD guidelines.

As described in Section 2.7, "Water and Sewer Infrastructure," runoff from the site flows to the Metro-North drainage system which drains into the Hudson River. The proposed buildings would be constructed at the highest elevations on the site, which may increase runoff volume to the Metro-North drainage system. However, according to the 2001 EAS, the drainage conditions at the project site are very good due to the composition of the soils, which tend to be highly permeable and allow for infiltration of runoff into the soil. Since most of the construction is concentrated on already

developed areas of the site, no significant adverse impacts to drainage are anticipated under the With-Action condition.

2.5.4 Conclusion

The proposed project includes tree removals and the construction of three new buildings, a tennis court, and a driveway. The shadows cast on the Hudson River, a sunlight-sensitive resource, from the development of the buildings would not pose a threat to the aquatic habitat because the shadows would be of short duration. While the project includes removal of trees, 215 new 3" caliper trees would be planted to make up for the 161 trees being removed. The total tree credits would exceed the tree requirements for the project site. There are four rare plants that may be present within the sloped area of the site. However, construction would be concentrated on the already developed areas of the site and would avoid the steep slopes and the vegetated buffer located in the western section of the site where these rare plants could exist. In addition, although runoff volume may increase because of the construction, the high permeability of the soil would allow for infiltration of runoff and would limit runoff flowing down-slope to the Metro-North drainage system into the Hudson River. Therefore, this analysis finds that the future With-Action condition would not result in significant adverse impacts to natural resources.

2.6 Hazardous Materials

2.6.1 Introduction

A hazardous material is any substance that poses a threat to human health or the environment. Substances that can be of concern include, but are not limited to, heavy metals, volatile and semi-volatile organic compounds, methane, polychlorinated biphenyls (PCBs), and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive or toxic). According to the *CEQR Technical Manual*, the potential for significant impacts from hazardous materials can occur when: a) hazardous materials exist on a site and b) an action would increase pathways to their exposure; or c) an action would introduce new activities or processes using hazardous materials.

As indicated in the *CEQR Technical Manual*, the hazardous materials (E) designation is an institutional control that may be placed on a site to establish a hazardous materials review and approval framework. It provides a mechanism to ensure that testing for and remediation of hazardous materials, if necessary, are completed prior to future development of an affected site, thereby eliminating the potential for a hazardous materials impact. (E) designated parcels are administered under the authority of the New York City Mayor's Office of Environmental Remediation (OER).

This section presents the findings of the hazardous materials assessment and identifies potential issues of concern with respect to workers, the community, and/or the environment during construction and after implementation of the proposed project.

2.6.2 Methodology

The potential for hazardous materials was evaluated based on a Phase I Environmental Site Assessment (ESA), dated October 6, 2017 prepared by VHB Engineering, Surveying and Landscape Architecture, P.C. (VHB). The Phase I ESA was prepared in accordance with the American Society for Testing and Materials (ASTM) Practice E1527-13, inclusive of the "All Appropriate Inquiry" requirement amended in the Federal Register on December 30, 2013. The USEPA "All Appropriate Inquiry" requirement establishes specific regulatory requirements for conducting appropriate inquiries into the previous ownership, uses, and environmental conditions of a property for the purposes of qualifying for certain landowner liability protections under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The proposed project would include construction of three new buildings, two on the south site and one on the north site. The new building on the north site, CCRC North, would be built in place of the existing Goldfine Pavilion, which is the southernmost existing building on the north site, and would be demolished. CCRC North would be 12 stories and built to a height of approximately 138 feet; the building square footage would be approximately 443,190 gsf and building coverage would be 43,800 sf. CCRC North would house 271 independent senior living units. The two buildings on the south site, together known as CCRC South, would be four and six stories (approximately 53 feet and 74 feet high, respectively). These buildings would have a combined building square footage of 186,750 gsf,

a building coverage of 44,050 sf, and would hold 117 new independent senior living units (Use Group 3). The proposed buildings would be concentrated to the north of the south site, close to the existing Hebrew Home campus.

2.6.3 Assessment

Existing Conditions

Project Site

The project site is located at 5701–5961 Palisade Avenue and comprises Lots 55, 210, 224, 225, and 230 on Block 5933 in the Riverdale neighborhood of the Bronx, Community District 8. The project site is bounded by Palisade Avenue to the east, the Metro-North Hudson Line rail tracks to the west, a line approximately 380 feet south of West 261st Street to the north, and the southern boundary of Lot 55 to the south. The project site is split into a north site and a south site; the zoning district boundary between the R4 district and the R1-1 district marks the boundary between the two sites

The north site is currently improved with nine buildings that house or support the above programming, concentrated in the eastern portion of the site. These buildings include the Riverwalk/Riverwalk dining building, Resnick Pavilion, Jacob Reingold Pavilion, Goldfine Pavilion, Gilbert Pavilion, Stoltz Pavilion, the staff dining building, electrical building and the service building.

The south site currently contains five buildings, including the Cardinal Spellman Retreat House, once a retreat destination for Catholic Church members (Use Group 4), and an old home and connected chapel (Use Group 3), both currently vacant, as well as three utility buildings.

Phase I Environmental Site Assessment

VHB's Phase I ESA was prepared for the project site. The scope of the Phase I ESA included portions of the site that would be redeveloped under the proposed action. These areas included the following:

- *Goldfine Pavilion*, located on the southern portions of Lot No. 225, a four-story brick building with basement. The Goldfine Pavilion is utilized as a nursing home.
- *Retreat House*, located on the central portions of Lot No. 55, is a three-story vacant brick building with basement that consists of rooms and gathering areas.
- *Utility Building No. 1*, located on the northeast corner of Lot No. 55, is a one-story masonry building that is currently vacant, but was reportedly formerly utilized for maintenance/grounds keeping purposes and may have been utilized as a pump house for water supply.
- *Utility Building No. 2*, located to the south of the Retreat House, just off the loading dock. This building is a condenser tower for the Retreat House that is enclosed in a masonry vault.
- *Utility Building No. 3*, located on the southern portions of Lot No. 55, is a one-story brick boiler building that services the Retreat House. The building consists of garage doors along the western side and is improved with a fuel oil-fired boiler system.

- *Exterior Redevelopment Areas*, located along the western exterior of the Goldfine Pavilion, consisting of grassy parklike areas with pedestrian walkways and landscaping. Also located within the redevelopment areas is the parking lot along the northern portions of Lot No. 55, along the northern exterior of the Retreat House.

The following site features, surrounding uses and other relevant site conditions were provided in VHB's Phase I ESA:

- At the time of VHB's Phase I ESA, the site consists of portions four (4) contiguous tax parcels that total approximately 32.37 acres. The site is improved with multiple institutional-use buildings of varying sizes that are utilized as the Hebrew Home of Riverdale.
- The site is located at an elevation that ranges from approximately 55-to-150 feet above mean sea level (amsl). No water table elevation maps are available for Bronx County. As such, it was assumed that the approximate depth-to-groundwater ranged from 50-to-150 feet below grade surface (bgs) depending on location. Groundwater flow was assumed to mimic surface topography, and flows to the west, toward the Hudson River.
- Working quantities of maintenance products, including household cleaning agents were observed throughout the buildings at the site, specifically in buildings utilized for nursing home purposes. In addition, given the nature as a nursing home, it was assumed that pharmaceutical, medical and biohazard wastes are generated at the site. According to site contacts, these wastes are appropriately manifested and shipped off-site for appropriate disposal.
- Based upon a review of relevant database registrations and the site reconnaissance, the following petroleum storage tanks were identified within the project area:
 - One (1) 275-gallon diesel underground storage tank (UST) associated with the Goldfine Pavilion emergency backup generator.
 - One (1) 6,000-gallon lube cube aboveground storage tank (AST) along the exterior of Utility Building No. 3. The fuel oil AST is associated with the boiler house.
- Sanitary wastes generated at the occupied buildings discharge into the New York City municipal sewer.
- Stormwater generated at the site discharges into on-site storm drains and infiltrates to the ground in unpaved areas. Storm drains reportedly discharges into the New York City storm sewers or outfalls into the Hudson River to the west.
- Potable water is provided to the site by the New York City Department of Environmental Protection (NYCDEP).
- One hydraulic passenger elevator was observed within the Retreat House with the potential to contain PCB-containing hydraulic fluid. Fluorescent light fixtures were observed throughout the building spaces. The ballasts associated with the fixtures have the potential to contain PCBs. Furthermore, given the ages of the majority of the buildings, there is a potential for building materials (including window caulking) to contain PCBs. No additional

site features (i.e., transformers, hydraulic lifts, etc.) were identified with the potential to contain PCBs.

- No major debris, dumping or surficial staining was observed within the majority of the project site areas. There was damaged building materials including ceiling tiles attributed to water damage throughout the building spaces of the Retreat House. Furthermore, no representation could be made with regard to interior conditions in Utility Building No. 1. However, it was not expected that any potential debris in Utility Building No. 1 was hazardous in nature.
- Given the ages of the buildings in the project area, there is a potential for lead-based paint (LBP) to be present.
- As part of the visual inspection, a visual survey was conducted of accessible areas for the presence of suspect asbestos-containing materials (ACM). Suspect ACM pipe insulation was observed within the building basements. Given the ages, there is potential for additional building materials (i.e., floor tiles, mastics, roofing materials, etc.) to be considered ACM.
- Visual evidence of mold and mildew growth was identified within the vacant Retreat House during the site reconnaissance.

In addition to the above, several previous environmental site assessments prepared for portions of the project site were provided to VHB for review and incorporation into the Phase I ESA. These previous assessments included the following:

- Phase I ESA, prepared by Team Environmental Consultants, Inc. (Team), dated July 25, 2011.
- Phase I ESA, prepared by IVI Environmental (IVI), dated November 24, 2014.
- Phase II ESA, prepared by IVI, dated March 2, 2014.

The Team Phase I ESA included an asbestos survey that revealed the significant presence of ACM within the Retreat House. The Team Phase I ESA also indicated that a potential UST was investigated as part of a Geophysical Survey at Utility Building No. 1, which revealed no such tanks exists within or proximate to same. The Team Phase I ESA recommended abatement and off-site disposal of ACM as part of any potential redevelopment of the Retreat House.

A Phase II ESA, prepared by IVI, dated March 2, 2014 was analyzed as part of VHB's Phase I ESA. The Phase II ESA was prepared as a follow-up investigation to a Phase I ESA, also prepared by IVI, dated November 24, 2014 (not included in VHB's Phase I ESA), where the following RECs were identified:

- Existing USTs – the 275-gallon UST located along the east side of the Goldfine Pavilion and the 500-gallon UST located along the east side of the Gilbert Pavilion represented a REC, as no information regarding tank integrity was provided to IVI during preparation of the Phase I ESA.
- Removed/Closed-in-place USTs – There were five documented tank closures, two closed-in-place and three removals of heating oil USTs in 1991. There were no records provided to IVI

regarding soil conditions during the tank abandonment and removals. Therefore, IVI considered the five tanks a REC.

- Suspect USTs - vent pipes associated with the service building may be indicative of additional USTs on the site. IVI considered these potential USTs a REC.

As a follow-up to the Phase I ESA and prior to preparation of the Phase II ESA, IVI prepared a Geophysical Survey and Underground Storage Tank Tightness Testing Report, dated January 20, 2015. Although not provided to VHB, this document was summarized in the Phase II ESA prepared by IVI. IVI oversaw a Geophysical Survey and UST tightness testing. A tightness test was conducted on the 275-gallon diesel UST associated with the Goldfine Pavilion. The tank passed the UST tightness test.

The geophysical survey was also conducted to determine the reported location of a former 4,000-gallon UST between the Riverwalk Pavilion and the Resnick Pavilion (west of the redevelopment areas). However, no anomalies indicative of the UST were identified. Based upon the results of the geophysical survey and tightness testing, IVI recommended, as a conservative measure, a subsurface investigation at the site in order to determine if any potential contamination was present in association with former and existing USTs.

With respect to the project area and surrounding areas on the Hebrew Home campus, soil borings were installed within areas proximate to the existing USTs located along the exteriors of the Goldfine and Gilbert Pavilions. Furthermore, soil borings were installed topographically downgradient from the Resnick Pavilion (to the east) and the former UST/existing 2,500-gallon vaulted AST, within the paved driveway of the central heating plant building. Soil samples were analyzed for petroleum constituents (volatile organic compounds [VOCs] and semi-volatile organic compounds [SVOCs]). The results of the soil sampling event indicated that no relevant soil cleanup objectives (SCOs) were exceeded within each soil sample. However, there were several SVOCs detected in one soil sample that was considered within or proximate to the proposed redevelopment area (soil boring installed to the east of the Gilbert Pavilion within paved driveway).

Although not within the project area, one groundwater sample was collected as part of the IVI Phase II ESA activities, along the northeastern exterior of the existing boiler building located on the northeastern portions of the subject property. The groundwater sample results indicated the presence of SVOCs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene and chrysene) were detected at concentrations that exceed applicable NYSDEC guidance values.

Several NYSDEC spill incidents were identified in VHB's Phase I ESA. Records were provided by the NYSDEC through the Freedom of Information Law (FOIL), which were appended in VHB's Phase I ESA. The following spill incidents were identified for the site and are summarized as follows:

- NYSDEC Spill No. 89-07376, this spill is related to a 15,000-gallon No. 2 fuel oil tank failed a tightness test. The spill was issued a letter of no further action by the NYSDEC on November 2, 1992. The tank is associated with a removed 15,000-gallon UST previously located proximate to the centralized boiler building. Given the closure status, is unlikely to represent a significant environmental risk to the redevelopment areas.
- NYSDEC Spill No. 89-07575, this spill is related to a 7,500-gallon No. 2 fuel oil tank failed a tightness test. The spill was issued a letter of no further action on November 2, 1992. The

- 7,500-gallon UST was reportedly closed in-place in 1992. There were no abandoned USTs within the project site areas. Given the closure status, it is unlikely this spill incident represents a significant environmental risk to the redevelopment areas.
- NYSDEC Spill No. 89-08038, this spill is related to a 25,000-gallon No. 2 fuel oil tank failed a tightness test. The spill was issued a letter of no further action on November 2, 1992. The 25,000-gallon UST was reportedly closed in-place in 1991. Based upon the site reconnaissance and information provided by on-site personnel, there are no fuel oil USTs utilized by the existing buildings within the project site areas. Given the closure status, it is unlikely this spill represents a significant environmental risk to the project site.
 - NYSDEC Spill No. 99-06260, this spill is related to one quart of oil released to 150 gallons of water within an electric vault. The spill was issued a letter of no further action by the NYSDEC on November 22, 1999. There was no evidence that suggests this spill represents a significant environmental risk to the project site.
 - NYSDEC Spill No. 08-13446, this spill is related to staining near a transformer and PCB-contaminated oils were leaked into surrounding soils. Fifty drums of contaminated media, including soils, wash fluid and personal protection equipment (PPE) were generated as a result of the remediation. Endpoint samples collected proximate to the transformer indicated that remaining soil was at or below method detection limits (MDLs) except for one slightly elevated sample above MDLs (below action level). The NYSDEC issued a letter of no further action on September 23, 2009. Based upon the spill closure, is unlikely this spill represents a significant environmental risk to the project site.
 - NYSDEC Spill No. 08-12638, this spill is related to a four-gallon release of dielectric fluid. The release was remediated, and the NYSDEC issued a letter of no further action on March 30, 2009. Given the limited quantity of the product released, it is unlikely that this spill represents a significant environmental risk to the project site.
 - NYSDEC Spill No. 14-11325, this spill is related to findings associated with the aforementioned IVI Phase II ESA. A total of 12 borings were advanced within five areas by IVI. Soil samples collected from the borings indicated that all target analytes were below regulatory standards. A single groundwater sample collected indicated SVOCs slightly above regulatory standards. The NYSDEC required no additional investigation and issued a letter of no further action on April 23, 2015. It should be noted that the spill does not meet regulatory cleanup standards.
 - NYSDEC Spill No. 00-03066, this spill incident is related to sheen observed on approximately 350 gallons of water in a vault. Approximately 100 gallons of water and four (4) ounces of oil were removed from the vault and the NYSDEC issued a letter of no further action on April 7, 2004. Given the limited quantity of the release, and information provided in the spill records, it is unlikely this spill incident represents a significant environmental risk to the project site.

- NYSDEC Spill No. 07-01944, this spill is related to the removal of an 8,000-gallon UST. No contamination was identified with respect to the tank removal effort. The NYSDEC issued a letter of no further action on May 20, 1997. There is no reported evidence that suggests this spill represents a significant environmental risk to the project site.

Based on the results of the previous environmental site assessments, FOIL responses and site reconnaissance, the following RECs were identified in VHB's Phase I ESA:

- SVOC-impacted groundwater at the site was documented in the IVI Phase II ESA, which was provided by the NYSDEC as part of a FOIL response for spill records concerning NYSDEC Spill No. 14-11325. Documented impacts to groundwater quality beneath the site represents a REC.
- SVOC-impacted soils were identified in one soil boring proximate to the east of the Gilbert Pavilion in the IVI Phase II ESA, which was provided by the NYSDEC as part of a FOIL response for spill records concerning NYSDEC Spill No. 14-11325. The documented impacts to soils proximate to the project site represents a REC.

In addition to the above, the following additional environmental concerns were identified with the project site:

- Given the ages of the buildings within the redevelopment area, there is a potential for LBP to be present. It is VHB's understanding that each of the buildings identified within the proposed redevelopment areas will be demolished. Therefore, any potential LBP would be disposed of as part of standard demolition practices as construction and demolition (C&D) debris. However, a LBP survey should be conducted in accordance with applicable regulations prior to any potential future renovation of the buildings within the proposed redevelopment areas, as any potential LBP may require abatement due to the sensitive uses at the subject property.
- Suspect ACM pipe insulation was observed within the building basements. Furthermore, given the ages of the buildings within the redevelopment areas, there is a potential for additional building materials (i.e., floor tiles, mastics, roofing materials, etc.) to be considered ACM. The suspected presence of ACM would be subject to abatement regulations and procedures prior to any potential renovation or demolition within the proposed redevelopment areas.
- Fluorescent light fixtures were observed the building spaces within the proposed redevelopment areas. Given the ages of the majority of the buildings within the redevelopment area (Resnick and Goldfine Pavilions, Retreat House and Utility Buildings 1, 2 and 3), there is a potential for ballasts associated with these fixtures to contain PCBs. Furthermore, given the ages of the majority of the buildings in the redevelopment area (Resnick and Goldfine Pavilions, Retreat House and Utility Buildings 1, 2 and 3), there is a potential for building materials including window caulking to contain PCBs. PCBs are subject to federal disposal restrictions and should be deal as part of standard demolition/renovation procedures.

- Visual evidence of water damage, including damaged drop ceiling tiles was observed within the vacant Retreat House during the visual inspection. As such, there is a potential for mold/mildew to be present above the drop ceiling within areas that could not be visually observed during the site reconnaissance. It is VHB's understanding that the Retreat House will be demolished as part of the proposed redevelopment activities. Therefore, no further action is required for the abatement of mold/mildew. However, should the building be identified for renovation and reoccupation, then proper mold/mildew abatement requirements should be followed in accordance with New York State Department of Health (NYSDOH) regulations.

Based upon review of the Phase I ESA, the New York City Department of Environmental Protection (NYCDEP) requested the applicant prepare a Phase II ESA Work Plan and Health and Safety Plan (HASP) in order to investigate potential contamination relating to the project site. A Phase II ESA Work Plan and site-specific HASP has been prepared and approved by NYCDEP. The Phase II ESA Work Plan provides a sampling plan relating to soil, groundwater and soil vapor within the project area.

A hazardous materials (E) designation (E-477) would be placed on the project site in order to address potential impacts relating to hazardous materials located within the project area. The (E) designation (E-477) would involve implementation or modification/implementation of the approved NYCDEP Work Plan, completion of a Remedial Investigation Report (RIR) and preparation and implementation of a Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP) under the administration OER.

Future No-Action Condition

Absent the proposed actions (the future No-Action condition), the project site would primarily remain in its existing condition. However, certain renovations of existing buildings on the project site are currently underway and would be completed under the future No-Action condition. The applicant is renovating and converting the Gilbert Pavilion, which previously housed 144 skilled nursing beds, to accommodate 70 assisted living units. The Gilbert Pavilion has been vacant in anticipation of this work, which is expected to be complete in the second or third quarter of 2019. The building will undergo a complete renovation of the existing three floors and a new terrace will be constructed off the northwest corner of the third floor. In addition to the work on Gilbert Pavilion, the Resnick and Reingold Pavilions are also currently undergoing interior renovations to accommodate an additional 32 skilled nursing beds (16 beds in each building). Renovations to these three buildings are being undertaken to meet current demand and no state discretionary approval is required; therefore, they are not subject SEQRA.

Under the future No-Action condition, the applicant plans to construct a cogeneration facility on the north site, attached to the existing service and electrical buildings located at the northeast corner of the project site. These buildings will be renovated to accommodate the functions of the cogeneration facility. A separate NYSDEC State Facility Air Permit will be issued for this work, which is expected to be complete and the facility operational by July 2018. There will be no change of use or occupancy resulting from this work.

Under the No-Action condition, any contaminated media within the project site (if present) would go unmitigated, as no (E) designation currently exists on the project site. Furthermore, mold-infested/water damaged surfaces located within the Retreat House would also go unmitigated. The existing petroleum UST located within the project site would remain in-place. However, regulatory requirements pertaining to building materials containing ACM, LBP and PCBs would be addressed under prevailing regulations as part of standard renovation practices.

Future With-Action Condition

The proposed project would include construction of three new buildings, two on the south site and one on the north site. The new building on the north site, CCRC North, would be built in place of the existing Goldfine Pavilion, the southernmost existing building on the north site, which would be demolished. CCRC North would be 12 stories and built to a height of approximately 138 feet; the building square footage would be approximately 428,750 gsf and building coverage would be 43,800 sf. CCRC North would house 271 independent senior living units. The two buildings on the south site, together known as CCRC South, would be four and six stories (approximately 53 feet and 74 feet high, respectively).

Based upon the results of the previous investigations, groundwater beneath the site is expected to be impacted with minor concentrations of SVOCs. Given the topographical conditions of the site, including uneven terrain with shallow/exposed bedrock, it is expected that groundwater is likely perched on bedrock, and that minimal groundwater (if any) would be encountered as part of the site redevelopment. Should any dewatering be required during redevelopment, same would be conducted in accordance with applicable regulations, including appropriate discharge to the municipal sewer through applicable permitting. In addition, petroleum storage tanks located within the redevelopment areas would be removed in accordance with applicable State and local regulations. Given the isolated SVOC impacts in soils adjacent to the Gilbert Pavilion, contingency measures would be in-place to address any visually contaminated soils that may be encountered as part of redevelopment activities, including removal and/or NYSDEC spill hotline notification. Should any contaminated soils be encountered during tank removal or excavation, same would be properly handled, stockpiled, manifested and disposed off-site in accordance with applicable regulations. Furthermore, grossly contaminated soils would be handled through the NYSDEC spill program under the regulatory oversight provided by the spill case and HASP have been prepared and approved by NYCDEP.

The proposed action would include an (E) designation (E-477) for hazardous materials for the project site. As a result, compliance in association with hazardous materials would be conducted under the administration of OER. The applicable text for the (E) designation (E-477) would be as follows:

Task 1: Sampling Protocol

Prior to construction, the applicant submits to OER, for review and approval, a Phase II Investigation protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented.

No sampling should begin until written approval of a protocol is received from OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source of suspected contamination (i.e., petroleum-based contamination and non-petroleum-based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of the sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2: Remediation Determination and Protocol

A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER.

If remediation is indicated from the test results, a proposed Remedial Action Work Plan (RAWP) must be submitted to OER for review and approval. The applicant must complete such remediation as determined necessary by OER in accordance with the approved RAWP. The applicant should then provide proper documentation that remedial action has been satisfactorily completed.

An OER-approved construction-related Health and Safety Plan (CHASP) would be implemented during evacuation and construction and activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This plan would be submitted to OER for review and approval prior to implementation.

Notwithstanding the requirements mandated under the (E) designation, regulatory requirements pertaining to building materials containing ACM, LBP, PCBs as well as mold/mildew identified in the Retreat House would be addressed under prevailing regulations as part of standard manager. Confirmatory endpoint samples would be collected as part of the removal of contaminated soils. A Phase II ESA Work Plan demolition and redevelopment practices. Given these conditions, the With-Action Condition would not result in any significant adverse impacts with respect to hazardous materials.

2.6.4 Conclusion

In order to reduce the potential for exposure to future site occupants, under the proposed action, any potential impacts on the project site would be identified and investigated prior to subsurface disturbance as required by an (E) designation for hazardous materials. Any potential remedial action that may be required would also be administered as part of the (E) designation (E-477) protocol under the regulatory oversight of OER. Furthermore, any future development on the project site would be subject to (E) Designation requirements, thereby eliminating potential impacts that are present on the site.

In addition to the above, regulatory requirements pertaining to building materials containing ACM, LBP, PCBs as well as mold/mildew-infested surfaces associated with the Retreat House would be addressed under prevailing regulations as part of standard demolition and redevelopment practices.

Given these conditions, the With-Action Condition would not result in any significant adverse impacts with respect to hazardous materials.

2.7 Water and Sewer Infrastructure

2.7.1 Introduction

This section evaluates the potential effects of the proposed project on the City's water supply, wastewater treatment, and stormwater management infrastructure, in accordance with the *2014 CEQR Technical Manual*. New York City's water and sewer network is fundamental to the operation, health, safety and quality of life of the City and its surrounding environment, and it must be sized to fit the users and surface conditions in order to function adequately. Ensuring these systems have adequate capacity to accommodate land use or density changes and new development is critical to avoid environmental and health problems such as sewer back-ups, street flooding, or pressure reductions.

As described in Section 1.0, "Project Description," the proposed project consists of the development of a 615,500-gross square foot (gsf) Continuing Care Retirement Community (CCRC)/Long Term Care Facility (LTCF) at the existing Hebrew Home campus located at 5701-5961 Palisade Avenue). The proposed project would include the construction of three new buildings and additional site improvements, including the renovation of two existing buildings, demolition of five existing buildings and structures, and accommodation of 90 additional parking spaces on the project site.

According to the *CEQR Technical Manual*, actions that would increase density or change drainage conditions require a water and sewer infrastructure analysis. Specifically, developments that would result in an exceptionally large demand for water (more than one million gallons per day [mgd]) or that are located in an area that experiences low water pressure require an analysis of potential impacts on the water supply system. Additionally, projects involving development on a site five acres or larger where the amount of impervious surface would increase, or development located in a combined sewer area exceeding incremental development thresholds (above the predicted No-Action Condition) of 400 residential units or 150,000 square feet (sf) of commercial, public facility, and institution and/or community facility space or more in the Bronx, require an analysis of potential impacts on the wastewater and stormwater conveyance and treatment system.

The proposed project, which is located in a combined sewer area, would result in an incremental increase of 475,842 gross square feet of community facility space over the No-Action Condition. Given that the proposed incremental development exceeds the CEQR threshold of 150,000 square feet, an analysis of the proposed project's potential impacts on the wastewater and stormwater conveyance and treatments system is required.

2.7.2 Methodology

Water Supply

According to the *CEQR Technical Manual*, a preliminary water supply infrastructure analysis is necessary if the project would result in an exceptionally large demand for water (i.e., over one million

gallons per day), or is located in an area that experiences low water pressure (i.e., areas at the end of the water supply distribution system such as the Rockaway Peninsula and Coney Island). The proposed project is not located in an area that experiences low water pressure and would result in an incremental water demand of approximately 2,233 gpd (see Tables 2.7-1 and 2.7-4) as compared with the No-Action Condition. A preliminary water supply analysis is not required since the projected water demand for the With-Action condition does not exceed the CEQR threshold of one million gpd.

Wastewater and Stormwater Conveyance and Treatment

A preliminary sewer analysis is warranted if a project site is over five acres and would result in an increase of impervious surfaces on the site, or if a project is located in a combined sewer area in the Bronx and would result in incremental development in excess of 400 residential units or 150,000 sf of commercial, public facility and institution and/or community facility space. As described above, the proposed CCRC/LTCF campus is just greater than nine acres and would result in an increase in the amount of impervious surface. The project site is also located in a combined sewer area and would result in a net addition of 475,842 gsf, exceeding the *CEQR Technical Manual* threshold of 150,000 square feet of commercial, public facility, and institution and/or community facility space in the Bronx. Therefore, a sewer analysis is warranted and provided below.

Existing and future water demand and sanitary sewage generation are calculated based on use generation rates provided in the *CEQR Technical Manual*. The New York City Department of Environmental Protection (NYCDEP) Flow Volume Calculation Matrix is then used to calculate the overall sanitary sewage and stormwater runoff volume discharged to the separate sewer systems for four rainfall volume scenarios with varying durations. The ability of the City's sewer infrastructure to handle the anticipated demand from the proposed project is assessed by estimating existing sewage generation rates, and then comparing these existing rates with the future No-Action and future With-Action conditions.

2.7.3 Assessment

Existing Conditions

Stormwater and Sanitary Sewage Conveyance System

The project site is served by a combined sewer system that collects both sanitary sewage and storm water; however, the site is divided into two portions: a portion that is served by the combined system and a portion in which stormwater flows directly to the Hudson River.

For the portion of the project site served by the combined system, there are six catch basins within the site that drain stormwater to a 30-inch reinforced concrete combined sewer main in Palisade Avenue. Sanitary sewage from the project site is also directed to this combined sewer main. From

there, the combined sewage flows downstream to a regulator¹ located between West 254th Street and Ladd Road in Palisade Avenue and into the interceptor² which then carries the flow to the Wards Island Waste Water Treatment Plant (WWTP), which has a maximum permitted capacity of 275 mgd.

Based on data retrieved from “Open Sewer Atlas NYC,” there is an existing pump station located near the intersection of West 254th Street and Palisade Avenue. Pump stations direct combined and separate water flows to downstream locations in the City’s sewer infrastructure when gravity cannot direct the flow.

For the portion of the project site where stormwater flows directly to the Hudson River, this flow reaches the Hudson River via combined sewer overflow (CSO) outfall WI-053, which is located near the end of West 254th Street.

Water and Sanitary Flow

As described in Section 1.0, “Project Description,” the project site is divided into the north and south site. The north site is the location of the existing Hebrew Home campus and is currently improved with nine buildings totaling 679,441 gsf. These buildings include the Riverwalk Apartments/Riverwalk dining building, Resnick Pavilion, Jacob Reingold Pavilion, Goldfine Pavilion, Stoltz Pavilion, the staff dining building, electrical building and the service building.

The south site currently contains five buildings, including the Cardinal Spellman Retreat House and an old home and connected chapel, which are both vacant, and three utility buildings (68,164 gsf). Total development of the combined campus is 747,605 gsf. The site is predominantly comprised of pervious surface.

Table 2.7-1 shows total water consumption and sewage generation at the site. Under existing conditions, sanitary wastewater generation at the project site is approximately 130,254 gpd and total water consumption is approximately 143,335 gallons per day (gpd).

Stormwater Flows

Under existing conditions, a portion of the stormwater from the campus is conveyed to the combined sewer in Palisade Avenue and the rest is discharged directly to the Hudson River via CSO outfall WI-053. In the area of the proposed CCRC/LTCF campus, the total area of the runoff being directed to the combined sewer is 4 acres, and the area being directly discharged to the Hudson River is 5.1 acres. Table 2.7-2 shows the breakdown of existing site coverage and the associated runoff coefficients.

¹ Regulators are devices used in the City’s combined sewers to control or regulate the diversion of sewage flow to the WWTPs during dry and wet weather. During wet weather, to control the amount of flow that reaches the WWTP, the regulators allow only approximately two times the amount of design dry weather flow into the interceptors. The interceptor then takes the allowable flow to the WWTP, while the excess flow is discharged to the nearest waterbody as combined sewer overflow (CSO).

² Interceptors are larger sewers that connect the combined sewer system to the City’s WWTPs.

Table 2.7-1: Existing Conditions, Water Consumption and Wastewater Generation

Land Use	Rate	Water Consumption and Wastewater Generation				
		Unit	Size	Water / Wastewater (gpd)	Air Conditioning (gpd)	Total (gpd)
Nonprofit residences for the Elderly (NPRES), assisted living units, nursing facility ¹	Domestic: 100 gpd/person	person	1,017	101,700	N/A	101,700
Administrative, service and support, common areas ¹	Domestic: 0.10 gpd/sf Air Conditioning: 0.17 gpd/sf	SF	76,944	7,694.4	13,080.48	20,774.88
Open Space ^{1,2}	Domestic: 2,000 gpd/ac	acre (ac)	5.5	11,000	N/A	11,000
Other – Facility employees	Domestic: 10 gpd/person	person	986	9,860	N/A	9,860
Total Water Consumption						143,334.88
Total Sewage Generation						130,254.4
Source: CEQR Technical Manual Table 13-2 for consumption rate assumptions.						
Notes:						
¹ Assumes residential use for NPRES, assisted living units, and the nursing facility; commercial / office use for administrative, service and support, and common areas; and parkland use for open space.						
² Per NYCDEP drainage plan criteria, domestic wastewater usage for parkland is approximately 2,000 gpd/ac.						

Table 2.7-2: Existing Conditions, Weighted Runoff Coefficient (C)

Surface Type	Roof	Pavement / Walks	Other	Grass / Softscape	Total
Area (%)	13%	27%	0%	60%	100%
Surface Area (sf)	52,272	108,900	0	239,580	400,752
Runoff Coefficient	1.00	0.85	0.85	0.20	0.48*
Notes:					
Runoff coefficients for each surface type as per NYCDEP, as provided in the CEQR NYCDEP Flow Volume Calculation Matrix.					
* Weighted runoff coefficient calculations are based on the NYCDEP Flow Volume Calculation Matrix provided in the CEQR Technical Manual.					

The total sewage and stormwater flows generated in the area of the proposed CCRC/LTCF campus under existing conditions, during different storm events, are presented in million gallons (MG) in Table 2.7-3.

Table 2.7-3: NYCDEP Flow Volume Matrix – Existing Conditions, Sewage and Stormwater Generation During Different Storm Events

Rainfall Volume (in.)	Rainfall Duration (hr.)	Total Area (Acre)	Weighted Runoff Coefficient (C)	Sewage and Stormwater to Combined Sewer System (MG)	Stormwater Runoff (MG)
0.00	3.80	9.2	0.48	0.04	0.00
0.40	3.80	9.2	0.48	0.06	0.03
1.20	11.30	9.2	0.48	0.18	0.08
2.50	19.50	9.2	0.48	0.34	0.17

Future No-Action Condition

Under the future No-Action Condition, the project site is expected to remain primarily in its existing condition. However, the applicant would seek a certification pursuant to Section 105-45 (Certification of Restoration Plans) for its proposed restoration plan with respect to natural features that were previously altered without prior approval of the CPC. The existing service and electrical buildings would be renovated to accommodate the functions of a cogeneration facility. A separate DEC State Facility Air Permit will be issued for this work, which is expected to be complete and the facility operational by July 2018. In addition, the applicant is currently renovating and converting the Gilbert Pavilion, which previously housed 144 skilled nursing beds, to accommodate 70 assisted living units. This work is expected to be complete in 2019. Resnick and Reingold Pavilions are also currently undergoing interior renovations to accommodate an additional 32 skilled nursing beds (16 beds in each building). There would be no change in surface coverage from existing conditions resulting from these renovations. As such, the volume of sewage and stormwater being directed to the combined sewer system or directly discharged to the Hudson River would remain the same under the future No-Action Condition.

Future With-Action Condition

Conveyance System

Under the future With-Action condition, the proposed project would continue to be served by the 30-inch sewer main in Palisade Avenue.

Water and Sanitary Flows

Table 2.7-4 shows the estimated water consumption and sewage generation under the proposed project.

Table 2.7-4: Future With-Action Condition, Water Consumption and Wastewater Generation

Land Use	Rate	Water Consumption and Wastewater Generation				
		Unit	Size	Water / Wastewater (gpd)	Air Conditioning (gpd)	Total (gpd)
NPRE units, assisted living units, nursing facility ¹	Domestic: 100 gpd/person	person	1,218	121,800	N/A	121,800
Administrative, service and support, common areas ¹	Domestic: 0.10 gpd/sf Air Conditioning: 0.17 gpd/sf	SF	16,622	987.2	1,678.24	4,487.94
Open Space ^{1,2}	Domestic: 2,000 gpd/ac	acre (ac)	4.9	9,800	N/A	9,480
Other – Facility employees	Domestic: 10 gpd/person	person	948	9,480	N/A	9,800
Total Water Consumption						145,567.94
Total Sewage Generation						142,742.2
Source: CEQR Technical Manual Table 13-2 for consumption rate assumptions.						
Notes:						
¹ Assumes residential use for NPRE units, assisted living units, and the nursing facility; commercial / office use for administrative, service and support, and common areas; and parkland use for open space.						
² Per NYCDEP drainage plan criteria, domestic wastewater usage for parkland is approximately 2,000 gpd/ac.						

The proposed project is expected to generate approximately 142,742 gpd of daily sanitary sewage with a total water demand of 145,568 gpd. The estimated sanitary flow of 142,742 gpd would represent approximately 0.05 percent of the average daily flow capacity of 275 mgd at the Wards Island WWTP. Therefore, the anticipated sanitary flow from the proposed project would not exceed the capacity of the facility and would not result in significant adverse impacts on the city's sewage treatment system.

Stormwater Flows

The proposed project would increase the amount of impervious roof area, decrease the amount of impervious pavement surfaces and pervious softscape, and therefore result in an increase by 0.06 of the stormwater coefficient in the future With-Action condition as compared to the future No-Action condition, from 0.48 to 0.55. This results in a slight increase in stormwater runoff for the future With-Action condition as compared to the future No-Action condition. Table 2.7-5 shows the proposed site coverage and the associated runoff coefficients in the With-Action condition.

Table 2.7-5: With-Action Condition, Weighted Runoff Coefficient (C)

Surface Type	Roof	Pavement / Walks	Other	Grass / Softscape	Total
Area (%)	29%	17%	0%	53%	100%
Surface Area (sf)	117,612	69,696	0	213,444	400,752
Runoff Coefficient	1.00	0.85	0.85	0.20	0.55*
Notes: Runoff coefficients for each surface type as per NYCDEP, as provided in the CEQR NYCDEP Flow Volume Calculation Matrix. * Weighted runoff coefficient calculations are based on the NYCDEP Flow Volume Calculation Matrix provided in the <i>CEQR Technical Manual</i> .					

As noted previously, under the With-Action Condition, all landscape and pavement west of the proposed buildings would continue to discharge directly to the Hudson River. Both proposed buildings and all landscape and pavement east of the proposed buildings would be detained via roof detention and detention ponds and discharged to the combined sewer in Palisade Avenue. The total area of the proposed CCRC/LTCF campus runoff being directed to the combined sewer under the With-Action Condition is 6.2 acres, and the area being directly discharged to the Hudson River is 3 acres. This represents an increase of 2.2 acres in the total area of runoff being directed to the combined sewer system. Since the proposed area discharging directly to the Hudson River (a tidal wetland) is greater than one acre, a Stormwater Pollution Prevention Plan (SWPPP) would be required.

Table 2.7-6 contains a review of the stormwater generation from the area of the proposed CCRC/LTCF campus for the future With-Action condition during different storm events.

Table 2.7-6: NYCDEP Flow Volume Matrix – Future With-Action, Sewage and Stormwater Generation During Different Storm Events

Rainfall Volume (in.)	Rainfall Duration (hr.)	Total Area (Acre)	Weighted Runoff Coefficient (C)	Sewage and Stormwater to Combined Sewer System (MG)	Stormwater Runoff (MG)
0.00	3.80	9.2	0.55	0.04	0.00
0.40	3.80	9.2	0.55	0.08	0.02
1.20	11.30	9.2	0.55	0.24	0.05
2.50	19.50	9.2	0.55	0.46	0.11

The calculations from the Flow Volume Calculation Matrix determine the change in peak wastewater flow volumes to the combined sewer system from the Existing/future No-Action to future With-Action Conditions during various rainfall scenarios chosen by NYCDEP. Table 2.7-7 shows the incremental change in flow volumes to the combined sewer system from the Existing/future No-Action to future With-Action Condition, which are taken from the NYCDEP Flow Volume Calculation Matrix.

Table 2.7-7: NYCDEP Flow Volume Matrix – Existing/Future No-Action and Future With-Action Volume Comparison

Rainfall Volume (in.)	Rainfall Duration (hr.)	Total Volume to Combined Sewer System (MG)		Increment	
		Existing/Future No-Action Conditions	Future With-Action Condition	Increased Volume to Combined Sewer System (MG)	Percent Change from Existing/Future No-Action (%)
0.00	3.80	0.04	0.04	0	0.0
0.40	3.80	0.06	0.08	0.02	33.3
1.20	11.30	0.18	0.24	0.06	33.3
2.50	19.50	0.34	0.46	0.12	35.3

As shown in the table, the proposed project would result in an incremental increase of approximately 0.02 to 0.12 MG to the subcatchment area, depending on the rainfall volume and duration. The corresponding percent change in flow volumes to the combined sewer system over Existing/future No-Action Conditions are also shown in the table.

As described previously, sanitary sewage generated by the project site would be 142,742 gpd, a 12,488 gpd increase from the future No-Action Condition. In addition, the amount of impervious surface on the site would increase by 26,136 square feet (0.6 acres) from the future No-Action Condition and the total area of the site's runoff being directed to the combined sewer would also increase. These changes would be responsible for the percentage increases in the table.

However, the Flow Volume Matrix calculations do not reflect the use of any sanitary or stormwater source control best management practices (BMPs) to reduce sanitary and stormwater runoff volumes to the combined sewer system. As noted in the *CEQR Technical Manual*, if NYCDEP-approved BMPs are incorporated into the project design, further detailed analysis of the proposed project's potential impacts on the sewer system is not warranted. As noted earlier, the proposed project would incorporate BMPs designed to control stormwater runoff from the project site such as rooftop detention and detention ponds. With the incorporation of these BMPs, the overall volume of sanitary sewer discharge and storm water runoff, and the peak storm-water-runoff rate is expected to be reduced to allowable flow requirements. As sewer conveyance near the project site and wastewater treatment capacity at the Wards Island WWTP are both sufficient to handle wastewater flow that would result from the proposed project, there would not be any significant adverse impacts on wastewater treatment or storm water conveyance infrastructure.

2.7.4 Conclusion

The estimated amount of water supply demand by the proposed project and the sanitary sewage generated from domestic water use on the project site would represent approximately 0.05 percent of the average daily flow at the Wards Island WWTP, and would not result in an exceedance of the plant's permitted capacity. As a result of the increase in sanitary sewage being generated by the proposed project and the increase in impervious surface, there would be an increase in wastewater and stormwater runoff being conveyed to the combined sewer system in Palisade Avenue. To offset this increase, the proposed project would incorporate BMPs—such as rooftop detention and detention ponds—designed to control stormwater runoff from the project site. With the BMPs, the overall volume of sanitary sewer discharge and storm water runoff, and the peak storm water runoff rate would be reduced to allowable flow requirements.

Overall, the analysis concludes that the proposed project would not result in significant adverse impacts on the city's water supply, or on its wastewater and stormwater conveyance and treatment infrastructure.

2.8 Transportation

2.8.1 Introduction

The objective of the transportation analysis, according to the *CEQR Technical Manual*, is to determine if the proposed actions may result in significant adverse impacts to travelers (private car, taxi cab, subway and rail, bus, ferry, bicycle and by foot) within their respective study areas near the project area, and to identify measures to mitigate significant impacts if they do.

The proposed project would develop continuing care living facilities on the Hebrew Home at Riverdale (HHAR) campus. This would include the construction of approximately 388 independent senior living apartment units and 90 on-campus parking spaces, and would also result in the removal of 144 existing nursing home beds. The HHAR campus currently features 850 nursing home beds, 137 independent senior living apartment units, and 35 assisted living units, and 435 on-campus parking spaces. Absent the proposed project, it is expected that the HHAR would convert 112 existing nursing home beds to 70 assisted living units. The independent senior living units would house seniors mostly aged 78 and over, and would be self-contained individual units, with at least one meal per day provided in campus facilities. These units would have relatively low staff support. The assisted living units would be a health-related facility for seniors mostly aged 78 and over that need medical assistance with at least two activities of daily living (i.e., eating, dressing, bathing, walking, toileting). These units would be smaller and have no kitchens (three daily meals would be provided in campus facilities). Residents of both types of units would also have access to a variety of on-campus amenities and services including a pool, gym facilities, meeting rooms and music rooms, among others. Since most residents would be near the age of 80 or older, many would likely no longer be driving. Because of this and the variety of on-site services provided, overall vehicle ownership and usage for residents of both types of the proposed units are expected to be low.

2.8.2 Methodology and Analytical Framework

According to the *CEQR Technical Manual* procedures for transportation analysis, a two-tiered screening process is to be undertaken to determine whether a quantified analysis is necessary. The first step, the Level 1 (Trip Generation) screening, determines whether the volume of peak hour person and vehicle trips generated by the proposed actions would remain below the minimum thresholds for further study.

These thresholds are:

- 50 peak hour vehicle trip ends;
- 200 peak hour subway/rail or bus transit riders; and
- 200 peak hour pedestrian trips.

If the proposed actions result in increases that would exceed any of these thresholds, a Level 2 (Trip Assignment) screening assessment is usually performed. Under this assessment, project-generated

trips that exceed Level 1 thresholds are assigned to and from the site through their respective networks (streets, bus and subway lines, sidewalks, etc.) based on expected origin-destination patterns and travel routes. This determines the volumes of peak hour vehicle traffic that would be added per intersection, the volume of riders that would be added per subway line or bus route, and the walk trips that would be added per individual pedestrian network element (crosswalk, corner reservoir area, etc.). If the Level 2 screening assessment determines that any specific traffic location, transit line or station element, or pedestrian network element would experience an increase of trips beyond the above thresholds for any peak hour, then a detailed analysis is typically warranted.

2.8.3 Level 1 (Trip Generation) Screening Assessment

Trip generation rates, modal splits, and other travel demand assumptions were developed for each land use in the proposed program, as well as uses that would be removed, to determine the net number of new trips that would be generated by the project during weekday peak hours (AM, midday, afternoon, and PM). These estimates were based on the findings of a survey conducted on a typical Wednesday (Wednesdays and Thursdays typically have the highest number of trips during the week) at the HHAR campus for the nursing and independent living uses, and the results from a survey conducted by the New York City Department of Transportation (NYCDOT) for an assisted living facility in Manhattan, as provided by the New York City Department of City Planning (DCP). Survey results for the existing HHAR assisted living use were not used because of small sample size (the HHAR has 35 assisted living units); the NYCDOT survey was conducted at a larger facility with an acceptable survey sample size. Travel demand factors used to calculate trips generated by each land use are summarized in Table 2.8-1 and described in detail below.

Table 2.8-1 – Travel Demand Assumptions

Rates	Independent Living			Assisted Living	Nursing Home		
	Employee	Resident	Visitor		Employee	Patient	Visitor
Weekday Person Trip Generation Rate	0.91 ¹	0.56 ¹	0.35 ¹	3.70 ²	3.16 ¹	0.38 ¹	1.43 ¹
	per unit			per unit	per bed		
With Action Increment	388			0	-144		
Temporal Distribution							
Weekday AM Peak Hour	6.8% ¹			13% ²	7.0% ¹		
Weekday Midday Peak Hour	6.6% ¹			4% ²	5.8% ¹		
Weekday Afternoon Peak Hour	9.5% ¹			16% ²	9.7% ¹		
Weekday PM Peak Hour	6.8% ¹			10% ²	7.1% ¹		
Modal Split							
Auto	38% ¹	18% ¹	79% ¹	65% ³	66% ¹	0% ¹	79% ¹
Auto Pick-up/Drop-off/Taxi	10% ¹	32% ¹	17% ¹	8% ³	7% ¹	28% ¹	7% ¹
Bus (includes subway)	42% ¹	0% ¹	4% ¹	11% ³	14% ¹	0% ¹	7% ¹
Metro North Rail	10% ¹	8% ¹	0% ¹	10% ³	12% ¹	0% ¹	7% ¹
Shuttle Bus/Jitney/Ambulette	0% ¹	42% ¹	0% ¹	6% ³	1% ¹	72% ¹	0% ¹
Vehicle Occupancy							
Auto	1.06 ¹	1.00 ¹	1.27 ¹	1.24 ³	1.22 ¹	N/A	1.30 ¹
Auto Pick-up/Drop-off/Taxi	1.00 ¹	1.71 ¹	1.33 ¹	1.41 ³	1.27 ¹	2.35 ¹	1.18 ¹
Shuttle Bus/Jitney/Ambulette	N/A	5.33 ¹	N/A	2.20 ³	1.00 ¹	2.53 ¹	N/A
Directional Split							
Weekday AM Peak Hour	62% in/ 38% out ¹			74% in/ 26% out ²	63% in/ 37% out ¹		
Weekday Midday Peak Hour	48% in/ 52% out ¹			55% in/ 45% out ²	50% in/ 50% out ¹		
Weekday Afternoon Peak Hour	55% in/ 45% out ¹			38% in/ 62% out ²	27% in/ 73 % out ¹		
Weekday PM Peak Hour	29% in/ 71% out ¹			19% in/ 81% out ²	25% in/ 75% out ¹		
Rates	Independent Living			Assisted Living	Nursing Home		
Weekday Truck Trip Generation Rate	0.031			0.072	0.061		
	per unit			per unit	per bed		
Truck Temporal Distribution							
Weekday AM Peak Hour	9.6% ¹			17% ²	9.6% ¹		
Weekday Midday Peak Hour	23.1% ¹			13% ²	23.1% ¹		
Weekday Afternoon Peak Hour	3.8% ¹			0% ²	3.8% ¹		
Weekday PM Peak Hour	5.8% ¹			0% ²	5.8% ¹		
Truck Trip Directional Split - 50% in/ 50% out							
Source: (1) Based on surveys conducted on Wednesday, June 7, 2017 at the HHAR campus (2) Rates provided from NYCDOT survey of an assisted living facility in Manhattan (3) Assisted living use modal splits and vehicle occupancies are assumed to be similar to those of the nursing home use (aggregated modal splits and vehicle occupancies)							

Independent Living

For independent living apartment units, daily weekday person trip generation rates were categorized based on employees, residents, and visitors, and were based on the survey of the HHAR site. Daily weekday person trip generation rates of 0.91 employee trips per unit, 0.56 resident trips per unit, and 0.35 visitor trips per unit were determined. These trip generation rates are lower than typical residential uses because, as mentioned above, residents would generally be over the age of 78 and provided with amenities and services on-site. Of the 137 independent living apartment units serviced, only 38 independent living residents were surveyed leaving the HHAR campus. Trips generated by this land use are expected to consist mostly of employees.

The other travel demand factors, such as temporal and directional distributions, modal splits, and vehicle occupancies, were also based on the findings of the survey at the HHAR. The weekday AM and PM peak hours had a temporal distribution of 6.8 percent, a temporal distribution of 6.6 percent during the weekday midday peak hour, and a temporal distribution of 9.5 percent for the weekday afternoon peak hour. The directional distributions were 62 percent “in” during the weekday AM peak hour, 48 percent “in” during the weekday midday peak hour, 55 percent “in” during the weekday afternoon peak hour, and 29 percent “in” during the weekday PM peak hour. The modal splits were calculated separately for employee, resident, and visitor trips. The modal split for employee trips is 38 percent by auto (vehicle occupancy of 1.06 persons per auto), 10 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.00 passengers per vehicle), 42 percent by bus (includes bus-to-subway trips), and 10 percent by Metro North. The modal splits for resident trips is 18 percent by auto (vehicle occupancy of 1.00 persons per auto), 32 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.71 passengers per vehicle), 0 percent by bus (includes bus-to-subway trips), 8 percent by Metro North, and 42 percent by shuttle, jitney bus, or ambulette (vehicle occupancy of 5.33 passengers per vehicle). The modal splits for visitor trips is 79 percent by auto (vehicle occupancy of 1.27 persons per auto), 17 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.33 passengers per vehicle), and 4 percent by bus (includes bus-to-subway trips). Auto usage would be lower than typical residential uses since there are many on-site services and amenities at HHAR, and since there is a Metro North shuttle serving the area.

Daily truck trip generation rates of 0.03 trips per unit for a weekday, and temporal distributions (9.6 percent during the weekday AM peak hour, 23.1 percent during the midday peak hour, 3.8 percent during the weekday afternoon peak hour, and 5.8 percent during the weekday PM peak hour) were obtained from the survey of HHAR.

Assisted Living

To calculate trips generated by assisted living units, a daily weekday person trip generation rate of 3.7 trips per unit was used based on the findings of a NYCDOT survey of an assisted living facility in Manhattan. Survey results for the existing HHAR assisted living use were not used because of small sample size (the HHAR has 35 assisted living units); the NYCDOT survey was conducted at a larger facility with an acceptable survey sample size. Similar to the independent living use, this land use would generate fewer trips than a typical residential use. Trips generated by this use would be made primarily by staff and visitors. Weekday peak hour temporal distributions (13 percent during the weekday AM peak hour, 4 percent during the weekday midday peak hour, 16 percent during the weekday afternoon peak hour, and 10 percent during the weekday PM peak hour) and directional splits (74 percent “in” in the AM peak hour, 55 percent “in” in the midday peak hour, 38 percent “in” in the afternoon peak hour, and 19 percent “in” in the PM peak hour) were also obtained from the NYCDOT survey. The modal splits and vehicle occupancies were assumed to be similar to those of the nursing home use (aggregated modal splits and vehicle occupancies) which would be expected to be comparable as compared to the NYCDOT survey due to the difference in local travel characteristics between a site in Manhattan and a site in Riverdale. The modal split used was 65 percent by auto (vehicle occupancy of 1.24 persons per auto), 8 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.41 passengers per vehicle), 11 percent by bus (includes bus-to-subway trips), 10 percent by Metro North, and 6 percent by shuttle, jitney bus, or ambulette (vehicle occupancy of 2.20 passengers per vehicle).

For truck deliveries, a daily truck trip generation rate of 0.07 trips per unit for a weekday, and temporal distributions of 17 percent during the weekday AM peak hour, 13 percent during the weekday midday peak hour, 0 percent during the weekday afternoon peak hour, and 0 percent during the weekday PM peak hour were obtained from the NYCDOT survey.

Nursing Home

To calculate trips generated by nursing home beds, daily weekday person trip generation rates were categorized based on employees, patients, and visitors, and were based on the survey of the HHAR site. Daily weekday person trip generation rates of 3.16 employee trips per bed, 0.38 patient trips per bed, and 1.43 visitor trips per bed for visitors were determined. Similar to assisted living, trips generated by this use would primarily be by staff or visitors; nursing homes are very staff-intensive. Weekday peak hour temporal distributions (7.0 percent during the weekday AM peak hour, 5.8 percent during the weekday midday peak hour, 9.7 percent during the weekday afternoon peak hour, and 7.1 percent during the weekday PM peak hour) and directional splits (63 percent “in” during the weekday AM peak hour, 50 percent “in” during the weekday midday peak hour, 25 percent “in” during the weekday afternoon peak hour, and 27 percent “in” during the weekday PM peak hour) were obtained from the survey of the HHAR campus. Modal splits and vehicle occupancies were also obtained from the survey of the HHAR campus and were calculated separately for employee, patient, and visitor trips. The employee modal splits used were 66 percent by auto (vehicle occupancy of 1.22 persons per auto), 7 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.27 passengers per vehicle), 14 percent by bus (includes bus-to-subway trips), 12 percent by Metro North, and 1 percent by shuttle, jitney bus, or ambulette (vehicle occupancy of 1.00 passengers per vehicle). The patient modal splits used were 28 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 2.35 passengers per vehicle), and 72 percent by shuttle, jitney bus, or ambulette (vehicle occupancy of 2.53 passengers per vehicle). The visitor modal splits used were 79 percent by auto (vehicle occupancy of 1.30 persons per auto), 7 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.18 passengers per vehicle), 7 percent by bus (includes bus-to-subway trips), and 7 percent by Metro North.

For truck deliveries, a daily truck trip generation rate of 0.06 trips per bed for a weekday, and temporal distributions of 9.6 percent during the weekday AM peak hour, 23.1 percent during the midday peak hour, 3.8 percent during the afternoon peak hour, and 5.8 percent during the PM peak hour were obtained from the survey of the HHAR campus.

Level 1 Screening Results

Transit and Pedestrians

Table 2.8-2 summarizes the net increment of person trips that would be generated during peak hours as result of the proposed project. This table indicates that the net change in hourly bus (includes bus-to-subway) or commuter rail trips (an increase of up to two trips per hour) is well under 200 trips during all weekday peak hours, and no further transit or pedestrian analyses would be necessary. This is because the decrease in the number of nursing beds, which is a major generator of trips, outweighs the increase in trips generated by the independent living units which is a lower trip generator.

Table 2.8-2 – Trip Generation Summary – Person Trips

Independent Living - Employee												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	6	3	9	4	5	9	7	6	13	3	6	9
Auto Pick-Up/Drop-off/Taxi	1	1	2	1	1	2	2	2	4	1	2	3
Bus (includes subway)	6	4	10	5	5	10	8	6	14	3	7	10
Metro North Rail	1	1	2	1	1	2	2	2	4	1	2	3
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	0	0	0	0	0
Total	14	9	23	11	12	23	19	16	35	8	17	25
Independent Living - Patient												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	2	1	3	1	1	2	2	2	4	1	2	3
Auto Pick-Up/Drop-off/Taxi	3	2	5	2	2	4	4	3	7	1	3	4
Bus (includes subway)	0	0	0	0	0	0	0	0	0	0	0	0
Metro North Rail	1	0	1	1	1	2	1	1	2	0	1	1
Shuttle Bus/Jitney/Ambulette	4	2	6	3	3	6	5	4	9	2	4	6
Total	10	5	15	7	7	14	12	10	22	4	10	14
Independent Living - Visitor												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	5	3	8	3	4	7	6	5	11	2	5	7
Auto Pick-Up/Drop-off/Taxi	1	1	2	1	1	2	1	1	2	0	1	1
Bus (includes subway)	0	0	0	0	0	0	0	0	0	0	0	0
Metro North Rail	0	0	0	0	0	0	0	0	0	0	0	0
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	0	0	0	0	0
Total	6	4	10	4	5	9	7	6	13	2	6	8
Nursing Home - Employee												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-13	-8	-21	-9	-9	-18	-8	-21	-29	-5	-16	-21
Auto Pick-Up/Drop-off/Taxi	-1	-1	-2	-1	-1	-2	-1	-2	-3	-1	-2	-3
Bus (includes subway)	-3	-2	-5	-2	-2	-4	-2	-5	-7	-1	-3	-4
Metro North Rail	-2	-1	-3	-2	-2	-4	-1	-4	-5	-1	-3	-4
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	-1	-1	0	0	0
Total	-19	-12	-31	-14	-14	-28	-12	-32	-44	-8	-24	-32
Nursing Home - Patient												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	0	0	0	0	0	0	0	0	0	0	0	0
Auto Pick-Up/Drop-off/Taxi	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Bus (includes subway)	0	0	0	0	0	0	0	0	0	0	0	0
Metro North Rail	0	0	0	0	0	0	0	0	0	0	0	0
Shuttle Bus/Jitney/Ambulette	-2	-1	-3	-1	-1	-2	-1	-3	-4	-1	-2	-3
Total	-3	-1	-4	-1	-1	-2	-1	-4	-5	-1	-3	-4

Table 2.8-2 – Trip Generation Summary – Person Trips (cont.)

Nursing Home - Visitor												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-7	-4	-11	-5	-5	-10	-4	-11	-15	-3	-9	-12
Auto Pick-Up/Drop-off/Taxi	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Bus (includes subway)	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Metro North Rail	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	0	0	0	0	0
Total	-10	-4	-14	-5	-5	-10	-4	-14	-18	-3	-12	-15
Assisted Living												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	0	0	0	0	0	0	0	0	0	0	0	0
Auto Pick-Up/Drop-off/Taxi	0	0	0	0	0	0	0	0	0	0	0	0
Bus (includes subway)	0	0	0	0	0	0	0	0	0	0	0	0
Metro North Rail	0	0	0	0	0	0	0	0	0	0	0	0
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Net Increment												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-7	-5	-12	-6	-4	-10	3	-19	-16	-2	-12	-14
Auto Pick-Up/Drop-off/Taxi	2	3	5	3	3	6	6	2	8	1	2	3
Bus (includes subway)	2	2	4	3	3	6	6	0	6	2	3	5
Metro North Rail	-1	0	-1	0	0	0	2	-2	0	0	-1	-1
Shuttle Bus/Jitney/Ambulette	2	1	3	2	2	4	4	1	5	1	2	3
Total	-2	1	-1	2	4	6	21	-18	3	2	-6	-4

Traffic

As shown in Table 2.8-3, the net change in vehicle trip ends (“ins” plus “outs”) would be below the 50 peak hour trip threshold for vehicle trips during all peak hours. During the weekday AM, midday, and afternoon peak hours, the number of vehicle trips would be expected to increase by five trips, and would be decreased by two trips during the weekday PM peak hour. Again, this is because the decrease in the number of nursing beds, which are a major traffic generator, outweighs the increase in traffic generated by the independent living which is a lower traffic generator. Because the number of vehicle trips that would be generated by the proposed project would be well below the 50 vehicle trip threshold during all weekday peak hours, no additional analysis is needed and it can be concluded that there is no potential for significant traffic impacts.

Table 2.8-3 – Trip Generation Summary – Vehicle Trips

Independent Living - Employee												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	6	3	9	4	5	9	7	6	13	3	6	9
Taxi	2	2	4	2	2	4	4	4	8	3	3	6
Truck	1	1	2	1	1	2	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	9	6	15	7	8	15	11	10	21	6	9	15
Independent Living - Patient												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	2	1	3	1	1	2	2	2	4	1	2	3
Taxi	3	3	6	2	2	4	4	4	8	3	3	6
Truck	1	1	2	1	1	2	0	0	0	0	0	0
Shuttle Bus	1	0	1	1	1	2	1	1	2	0	1	1
Total	7	5	12	5	5	10	7	7	14	4	6	10
Independent Living - Visitor												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	4	2	6	2	3	5	5	4	9	2	4	6
Taxi	2	2	4	2	2	4	2	2	4	1	1	2
Truck	1	1	2	1	1	2	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	7	5	12	5	6	11	7	6	13	3	5	8
Nursing Home - Employee												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-11	-7	-18	-7	-7	-14	-7	-17	-24	-4	-13	-17
Taxi	-1	-1	-2	-1	-1	-2	-1	-2	-3	-1	-2	-3
Truck	0	0	0	-1	-1	-2	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	-12	-8	-20	-9	-9	-18	-8	-19	-27	-5	-15	-20
Nursing Home - Patient												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	0	0	0	0	0	0	0	0	0	0	0	0
Taxi	0	0	0	0	0	0	0	0	0	0	0	0
Truck	0	0	0	-1	-1	-2	0	0	0	0	0	0
Shuttle Bus	-1	-0	-1	0	0	0	0	-1	-1	0	-1	-1
Total	-1	0	-1	-1	-1	-2	0	-1	-1	0	-1	-1

Table 2.8-3 – Trip Generation Summary – Vehicle Trips (cont.)

Nursing Home - Visitor												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-5	-3	-8	-4	-4	-8	-3	-8	-11	-2	-7	-9
Taxi	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Truck	0	0	0	-1	-1	-2	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	-6	-3	-9	-5	-5	-10	-3	-9	-12	-2	-8	-10
Assisted Living												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	0	0	0	0	0	0	0	0	0	0	0	0
Taxi	0	0	0	0	0	0	0	0	0	0	0	0
Truck	0	0	0	0	0	0	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Total Vehicle Trips												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-4	-4	-8	-4	-2	-6	4	-13	-9	0	-8	-8
Taxi	4	4	8	4	4	8	6	6	12	3	3	6
Truck	3	3	6	0	0	0	0	0	0	0	0	0
Shuttle Bus	0	0	0	1	1	2	1	0	1	0	0	0
Total	3	3	6	1	3	4	11	-7	4	3	-5	-2

Parking

The total number of existing parking spaces on campus is 435 parking spaces (347 surface parking spaces, and 88 parking spaces located in the garage of the Gilbert Pavilion), and could accommodate the existing HHAR parking demand. Once the Proposed Project is completed, the project site would contain a combined 525 parking spaces, a 90 space increase from existing conditions. The north site would contain a total of 408 spaces (249 surface spaces and 159 garage spaces) and the south site would contain 117 garage spaces, to be located under the proposed south site buildings.

Table 2.8-4 below shows the hourly incremental differences in parking demand once the Proposed Project is completed. It is expected the overnight parking demand on the HHAR campus would increase by approximately 20 vehicles overnight due to the increase in independent living residents, some of which would be expected to own personal autos (during this time there would also be a decrease in overnight staff which predominately serves the nursing home use). However, during the period of 9 AM to 4 PM, parking demand would be expected to decrease because there would be less auto trips entering and leaving the HHAR campus. The projected parking demand is expected to decrease slightly (at most by seven parking spaces at hour during this period). Since the parking demand is less than the proposed increase in parking supply (90 parking spaces), the HHAR would be able to accommodate the projected future parking demand and the Proposed Project would not result in a parking shortfall.

Table 2.8-4 – Weekday Parking Demand Increment

Time	Autos In	Autos Out	Total Auto Trip Increment	Incremental Difference in Parking Demand
12:00 AM	-1	-1	-2	20
1:00 AM	-1	0	-1	19
2:00 AM	0	0	0	19
3:00 AM	-1	-1	-2	19
4:00 AM	-1	0	-1	18
5:00 AM	-1	0	-1	17
6:00 AM	-10	-1	-11	8
7:00 AM	-4	-4	-8	8
8:00 AM	-8	-1	-9	1
9:00 AM	-7	-1	-8	-5
10:00 AM	-2	-2	-4	-5
11:00 AM	-3	-1	-4	-7
12:00 PM	-2	-5	-7	-4
1:00 PM	-4	-2	-6	-6
2:00 PM	4	-13	-9	11
3:00 PM	-14	0	-14	-3
4:00 PM	-2	-7	-9	2
5:00 PM	0	-8	-8	10
6:00 PM	-2	-5	-7	13
7:00 PM	-2	-3	-5	14
8:00 PM	-1	-2	-3	15
9:00 PM	-1	-2	-3	16
10:00 PM	-3	-2	-5	15
11:00 PM	0	-5	-5	20

2.8.4 Conclusion

The number of vehicle, pedestrian, and transit trips generated under the With-Action condition compared to the No-Action condition would not exceed CEQR Level 1 (trip generation) screening thresholds for further transportation analyses. Therefore, the proposed project would not be expected to result in significant adverse transportation impacts.

2.9 Air Quality

2.9.1 Introduction

This section examines the potential for air quality impacts from the proposed actions. According to the *CEQR Technical Manual*, air quality impacts can be characterized as either direct or indirect impacts. Direct impacts result from emissions generated by stationary sources, such as stack emissions from on-site fuel burned for boilers and heating, ventilation, and air conditioning (HVAC) systems. Indirect effects are caused by off-site emissions associated with a project, such as emissions from on-road motor vehicles (“mobile sources”) traveling to and from a project site.

The key air quality issues associated the proposed actions include the following:

- **Mobile Sources:** The potential for changes in vehicular travel associated with proposed development activities to result in significant adverse mobile source (vehicular-related) air quality impacts;
- **Parking Facilities:** The potential impact from vehicular emissions generated by the exhaust proposed parking facilities;
- **HVAC Systems:** The potential for emissions from the HVAC systems to significantly impact other proposed development buildings (project-on-project impacts), and existing land uses (project-on-existing impacts);
- **Air Toxics:** The potential for significant air quality impacts on the proposed development from emissions of air toxics generated by existing manufacturing/processing facilities within 400 feet; and
- **Major or Large Source:** The potential for significant air quality impacts on the proposed development from existing large emission source (i.e., the cogeneration facility) within 1,000 feet.

As described in Section 2.8, “Transportation,” the proposed actions would generate less vehicle trips under the With-Action condition as compared to the No-Action condition. Thus, it is anticipated that the number of incremental trips generated by the proposed actions would be lower than the *CEQR Technical Manual* screening thresholds that would warrant a detailed air quality assessment of on-street mobile source emissions. Therefore, traffic from the proposed actions would not result in a significant adverse impact on mobile source air quality and a detailed mobile source analysis would not be warranted.

Additionally, the proposed development is located within a residential zone, and no manufacturing/processing facilities are identified within a 400-foot radius. Thus, no significant adverse impact would be expected from emissions of air toxics from existing land uses, and no further analysis is warranted.

Therefore, the following assessment is limited to the discussion of potential air quality impacts resulting from the proposed parking facilities, proposed HVAC systems, and existing major or large sources.

Pollutants of Concern

Air pollution is of concern because of its demonstrated effects on human health. Of special concern are the respiratory effects of the pollutants and their potential toxic effects, as described below. The United States Environmental Protection Agency (EPA) has identified six common air pollutants, which are known as criteria pollutants (Carbon Monoxide, Lead, Particulate Matter, Sulfur Dioxide, Ozone and Nitrogen Dioxide), as being of concern nationwide. Emissions of volatile organic compounds (VOCs), nitrogen oxides, and other precursors to criteria pollutants are also regulated by EPA.

Carbon Monoxide

Carbon monoxide (CO) is a colorless and odorless gas that is a product of incomplete combustion. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease. It can cause headaches, nausea, and at sustained high concentration levels, can lead to coma and death.

Lead

Airborne lead emissions are currently associated principally with industrial sources. Lead in gasoline has been banned under the Clean Air Act (CAA) and would not be emitted from any other component of the proposed actions. Therefore, an analysis of this pollutant was not warranted.

Particulate Matter

Particulate matter is made up of small solid particles and liquid droplets. PM₁₀ refers to particulate matter with a nominal aerodynamic diameter of 10 micrometers or less, and PM_{2.5} refers to particulate matter with an aerodynamic diameter of 2.5 micrometers or less. Particulates can enter the body through the respiratory system. Particulates over 10 micrometers in size are generally captured in the nose and throat and are readily expelled from the body. Particulates smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli) in the lungs. Particulates are associated with increased incidence of respiratory diseases, cardiopulmonary disease, and cancer.

Sulfur Dioxide

Sulfur Dioxide (SO₂) emissions are the main components of the "oxides of sulfur," a group of highly reactive gases from fossil fuel combustion at power plants, other industrial facilities, industrial processes, and burning of high sulfur containing fuels by locomotives, large ships, and non-road equipment. High concentrations of SO₂ will lead to formation of other sulfur oxides. By reducing the SO₂ emissions, other forms of sulfur oxides are also expected to decrease. When oxides of sulfur react with other compounds in the atmosphere, small particles that can affect the lungs can be formed. This can lead to respiratory disease and aggravate existing heart disease.

Nitrogen Oxides, VOCs, and Ozone

When combustion temperatures are extremely high, such as in engines, atmospheric nitrogen gas may combine with oxygen gas to form various oxides of nitrogen. Of these, nitric oxide (NO) and nitrogen dioxide (NO₂) are the most significant air pollutants. This group of pollutants is generally referred to as nitrogen oxides or NO_x. Nitric oxide is relatively harmless to humans but quickly converts to NO₂. Nitrogen dioxide has been found to be a lung irritant and can lead to respiratory illnesses. Nitrogen

oxides, along with VOCs, are also precursors to ozone formation.

Non-criteria Pollutants

In addition to the criteria pollutants discussed above, non-criteria pollutants may be of concern. Non-criteria pollutants are emitted by a wide range of man-made and naturally occurring sources. These pollutants are sometimes referred to as hazardous air pollutants (HAP) and when emitted from mobile sources, as Mobile Source Air Toxics (MSATs). An analysis of these pollutants was not warranted under the proposed actions.

Impact Criteria

The predicted concentrations of pollutants of concern associated with a proposed project are compared with either the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants or ambient guideline concentrations for non-criteria pollutants. In general, if a project would cause the standards for any pollutant to be exceeded, it would likely result in a significant adverse air quality impact. In addition, for CO from mobile sources and for PM_{2.5}, the City's *de minimis* criteria are also used to determine significance of impacts.

National Ambient Air Quality Standards

The CAA requires the EPA to set standards on the pollutants that are considered harmful to public health and the environment. The NAAQS were implemented as a result of the CAA, amended in 1990 (see Table 2.9-1)¹. The NAAQS applies to six criteria pollutants as previously described.

Table 2.9-1: National and New York State Ambient Air Quality Standards

Pollutant	Averaging Time	Standard
Carbon Monoxide (CO)	1-Hour	35 ppm (40,000 µg/m ³)
	8-Hour	9 ppm (10,000 µg/m ³)
Nitrogen Dioxide (NO ₂)	Annual	53 ppb (100 µg/m ³)
	1-Hour	100 ppb (188 µg/m ³)
Ozone	8-Hour	0.075 ppm
Particulate Matter (PM ₁₀)	24-Hour	150 µg/m ³
Particulate Matter (PM _{2.5})	Annual	12.0 µg/m ³
	24-Hour	35.0 µg/m ³
Sulfur Dioxide (SO ₂)	Annual	0.03 ppm (80 µg/m ³)
	24-Hour	0.14 ppm (365 µg/m ³)
	3-Hour	0.5 ppm (1,300 µg/m ³)
	1-Hour	75 ppb (196 µg/m ³)
Source: CEQR Technical Manual		

¹ United States Environmental Protection Agency (October 2011). National Ambient Air Quality Standards. Retrieved from <http://www.epa.gov/air/criteria.html>.

CO De *Minimis* Criteria

New York City has developed *de minimis* criteria to assess the significance of the increase in CO concentrations that would result from the impact of proposed projects or actions on mobile sources, as set forth in the *CEQR Technical Manual*. These criteria set the minimum change in CO concentration that defines a significant adverse environmental impact. Significant increases of CO concentrations in New York City are defined as: (i) an increase of 0.5 ppm or more in the maximum 8-hour average CO concentration at a location where the predicted No-Action eight-hour concentration is equal to or between 8.0 and 9.0 ppm; or (ii) 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 8.0 ppm.

PM_{2.5} De *Minimis* Criteria

New York City uses *de minimis* criteria to determine the potential for significant adverse PM_{2.5} impacts under CEQR. The *de minimis* criteria are as follows:

- Predicted increase of more than half the difference between the background concentration and the 24-hour standard;
- Annual average PM_{2.5} concentration increments which are predicted to be greater than 0.1 µg/m³ 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 at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or
- Annual average PM_{2.5} concentration increments which are predicted to be greater than 0.3 µg/m³ at a discrete receptor location (elevated or ground level).

2.9.2 Methodology

Parking Facilities

The proposed project would introduce 90 more parking spaces (including surface spaces and garage spaces) as compared to the No-Action condition, exceeding the threshold triggering a quantitative parking facility analysis. As such, an air quality analysis would be warranted to assess the potential impact from vehicular emissions generated by the proposed parking facilities, according to Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*.

The proposed actions would facilitate an increment of nine surface parking spaces and 71 garage spaces on the north site, and result in a decrease of 107 surface parking spaces and an increase of 117 garage spaces on the south site. For purposes of conducting a conservative assessment, an air quality analysis was conducted for the largest parking garage (under proposed Buildings 2 and 3, with a total of 117 spaces) on the south site, to assess the greatest potential for an air quality impact from vehicular emissions generated by the proposed parking garage.

A quantitative air quality analysis was conducted following the *CEQR Technical Manual* guidelines. The 1-hour and 8-hour CO concentrations, and 24-hour and annual PM_{2.5} concentrations were estimated near the exhaust vent of the garage at ground level receptors as well as elevated receptors at nearby windows. Appropriate background levels were added to project-generated emissions to

estimate the total concentration. The maximum total CO and PM_{2.5} concentrations were estimated and compared to the NAAQS or the *de minimis* criteria.

HVAC Systems

The proposed actions would result in three new buildings, one (Building 1) on the north side and two (Buildings 2 and 3) on the south side. The new buildings would use fossil fuels (i.e., fuel oil or natural gas) for the proposed HVAC systems, therefore, as described in Section 220 and Section 321 in Chapter 17 of the *CEQR Technical Manual*, an air quality assessment would be warranted for the proposed project to evaluate the potential to significantly impact existing land uses (project-on-existing impacts), as well as other proposed development buildings (project-on-project impacts).

HVAC Screening

A HVAC screening analysis was initially conducted, and if failed, a more refined analysis would be required. The *CEQR Technical Manual* provides screening nomographs based on fuel type, stack height, minimum distance from the source to the nearest receptor buildings with similar or greater heights, and floor area of development resulting from the proposed project. There are three different curves representing three different stack heights (30 feet, 100 feet and 165 feet) on the figures, and the height closest to but not higher than the proposed stack height should be selected. The HVAC screening methodology utilizes information regarding the type of fuel to be used, the maximum development size and the HVAC exhaust stack height to determine the minimum required distance from the source to the nearest receptor of similar or greater height, beyond which a significant adverse impact would not occur. If the distance from the source to the nearest building of similar or greater height was less than the minimum required distance, there is the potential for a significant adverse air quality impact to occur.

For purposes of conducting a conservative assessment, a HVAC screening analysis was initially conducted assuming the use of No. 2 fuel oil. If the screening analysis failed with the use of No. 2 fuel oil, a screening analysis assuming the use of natural gas was performed. If the screening analysis still failed with the use of natural gas, further analysis was conducted using EPA's AERMOD dispersion model.

Refined HVAC Analysis

A more refined HVAC analysis was conducted using EPA's AERMOD model (version 16216) for buildings that failed both No. 2 oil and natural gas screening analysis. For the refined HVAC analysis, natural gas was assumed as the fuel type used for the HVAC systems. The criteria pollutants associated with natural gas combustion are NO₂ and PM_{2.5}.

AERMOD is a state-of-the-art 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 is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain, including updated treatments of the boundary layer theory, understanding of turbulence and dispersion and includes handling of terrain interactions. The AERMOD model calculates pollutant concentrations from one or more points (e.g., exhaust stacks) based on hourly meteorological data, and has the capability to calculate pollutant concentrations at locations where the plume from the exhaust stack is affected by the aerodynamic wakes and eddies (downwash) produced by nearby structures. The analyses of potential impacts from exhaust stacks was performed assuming stack tip downwash, urban dispersion and surface roughness length, and

elimination of calms. AERMOD can be run with and without building downwash (the building downwash option accounts for the effects on plume dispersion created by the structure the stack is located on, and other nearby structures). The analysis was performed using the AERMOD with and without building downwash options to assess the worse-case impact from these sources.

Emission Rates and Stack Parameters

Emission rates of air pollutants from the proposed HVAC systems were calculated using the development size as defined in Section 1, "Project Description," the energy consumption data from *CEQR Technical Manual*, and emission factors from EPA's AP-42 (Section 1.4, Natural Gas Combustion). Stack parameters such as stack diameter, stack exhaust temperature and exhaust velocity were estimated based on the New York City Department of Environmental Protection (DEP) boiler database.

A few assumptions are listed as follows:

- The fuel consumption data for commercial buildings will be used for the proposed development: 45.2 ft³/ft²/year for natural gas;
- The emission factors used for NO₂ and PM_{2.5} for natural gas combustion are 100 lb/10⁶ ft³ and 7.6 lb/10⁶ ft³, respectively;
- Short-term emission rates for the proposed buildings were estimated based on an assumption that all fuel will be consumed in 100 days (3 coldest months of the year or 2,400 hours) of winter heating season, with no emissions for the rest of the year;
- Annual emission rates were calculated assuming that the total emissions will be averaged out over 24 hours per day and 365 days per year;
- The 1-hour NO₂ concentrations were estimated using AERMOD's Tier 3 Ozone Limiting Method (OLM) option to account for NO₂/NO_x conversion. An in-stack ratio of 0.1² and the equilibrium NO₂/NO_x ratio of 0.9 were assumed³;
- The annual NO₂ concentrations were estimated based on a NO₂/NO_x conversion ratio of 0.75, as described in EPA's Guideline on Air Quality Models at 40 CFR part 51 Appendix W, Section 5.2.4;
- It is assumed that exhaust stacks will rise three feet above the highest tier of the proposed buildings, and the stacks will be located ten (10) feet away from the edge of roof per New York City Fuel Gas code § 503.5.4.

Meteorological Data

The refined HVAC analysis was conducted using the latest five consecutive years (2012-2016) of meteorological data. Surface data are obtained from La Guardia Airport and upper air data are obtained from Brookhaven station, New York. Data will be processed using the current EPA AERMET version and the EPA procedure. These meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevations over the 5-year period.

² <http://www.epa.gov/ttn/scram/no2_isr_database.htm>

³ USEPA. Technical Support Document (TSD) for NO₂-related AERMOD modifications (July 2015).

Receptor Locations

Sensitive receptor buildings were identified with heights similar or greater than the source. Discrete receptors were placed on each floor of the receptor building along each building façade where operable windows and air intakes are located.

Major or Large Source Analysis

According to Chapter 17, Sections 220 and 312 of the *CEQR Technical Manual*, an air quality assessment may be warranted if a project would result in new sensitive uses within 1,000 feet of a major or large emission source. Major sources are identified as those sources located at Title V facilities that require Prevention of Significant Deterioration permits. Large sources are identified as sources located at facilities that require a State Facility Permit.

A review of existing permitted facilities was conducted. Sources of information reviewed include the New York State Department of Environmental Conservation (NYSDEC) Title V and State Facility Permit websites and available aerial photos provided by Google and Bing.⁴ Based on review of available information, such major or large sources do not exist within 1,000 feet of the project site.

However, the applicant plans to construct a cogeneration facility on the northern side of the project site, attached to the existing service and electrical buildings located at the northeast corner of the project site under the future No-Action condition with a State Facility Permit application submitted to NYSDEC. It is expected to be complete and operational by July 2018, prior to completion of the proposed project. Thus, an air quality analysis would be warranted to assess the potential for combined emissions from the cogeneration facility (as an existing emission source at the time the proposed project is operational) and HVAC systems from the existing buildings on the site, to impact the new sensitive receptors introduced by the proposed project.

A detailed air quality analysis was conducted using EPA's AERMOD model (version 16216) following the same methodology as previously described in the "Refined HVAC Analysis" section.

Emission Rates and Stack Parameters

The emissions sources at the existing facility include the following:

- Four Rock Mills boilers (two MP-300 units with 12.6 MMBTU/hr each, and two MP-400 units with 16.5 MMBTU/hr each) burning natural gas primarily, and distillate No. 2 Oil as a backup fuel. The facility currently operates three boilers. Once the new cogeneration plant starts operating, only one or two boilers will be running concurrently with the two cogeneration engines depending upon the demand in different seasons. As a worst-case scenario, two MP-400 boilers will be running simultaneously. Thus, the two MP-400 boilers were included in the analysis for conservative purposes.
- Seven exempt TecoDrive chiller engines (161 hp each) burning natural gas. These chiller engines will only operate in the summer and they all have 3-way catalyst at the exhaust. Therefore, emissions generated by the chiller engines are expected to be negligible, thus were eliminated from the analysis.

⁴ NYSDEC Title V- http://www.dec.ny.gov/dardata/boss/afs/issued_atv.html;
State Permit- http://www.dec.ny.gov/dardata/boss/afs/issued_asf.html.

- Two new Caterpillar Lean-Burn cogeneration engines (1,150 hp each) burning natural gas, with oxidation catalyst at the exhaust. These two engines were included in the analysis.
- 17 small HVAC units, including two exempt Weil McLain boilers, four AAON rooftop units, and eleven (11) Riverwalk boilers/hot water heaters. Each of these HVAC units has very low heating input and thus were eliminated from the analysis.
- Seven existing emergency generators (one diesel and six gas-fired), all exempt (none participates in any demand response program). These generators would operate with very limited hours (less than 40 hours per year according to 2016 operation record), only when usual supply of power is unavailable. Thus, these generators were also eliminated from the analysis.

Therefore, two MP-400 boilers and two cogeneration engines were included in the analysis, based on the following assumptions:

- Emission factors were obtained from EPA's AP-42 (Section 1.4, Natural Gas Combustion) for boilers, and from the manufacturer for the cogeneration engines.
- Each emission source is exhausted through a separate stack. Stack parameters were obtained from the Mechanical, Electrical and Plumbing (MEP) consultant (AKF Group).
- Short-term emission rates were calculated based on the maximum capacity for the boilers (16.5 MMBTU/hr each) and cogeneration engines (1,150 hp each).
- Annual emission rates for the boilers were estimated based on current annual consumption rate (approximately 48 MMscf/yr of natural gas, and 10,000 gal/yr of No.2 fuel oil), because it is anticipated that the future fuel consumption from the boilers will be similar or less than that under existing conditions, with the cogeneration plant in place. Annual emission rates for the cogeneration engines were estimated based on the maximum short-term emission rates, assuming the cogeneration plant will be running at maximum capacity all year round.
- The latest five years (2012-2016) of meteorological data were used. Surface data are obtained from La Guardia Airport and upper air data are obtained from Brookhaven station, New York.
- The 1-hour NO₂ concentrations were estimated using AERMOD's Tier 3 Ozone Limiting Method (OLM) option to account for NO₂/NO_x conversion. An in-stack ratio of 0.1² and the equilibrium NO₂/NO_x ratio of 0.9 were assumed³;
- Annual NO₂ concentration was estimated using a NO₂/NO_x conversion ratio of 0.75, as described in EPA's Guideline on Air Quality Models at 40 CFR part 51 Appendix W, Section 5.2.4;
- The analysis was performed using massing diagrams for the proposed project. Discrete receptors were placed on each floor of the three proposed buildings along each building façade where operable windows and air intakes could be located.

2.9.3 Assessment

Existing Conditions

The total concentrations experienced at receptors include background concentrations from existing surrounding emission sources. Background concentrations are ambient pollution levels associated with existing stationary, mobile, and other area emission sources. The NYSDEC maintains an air quality

monitoring network and produces annual air quality reports that include monitoring data for CO, NO_x, PM₁₀, PM_{2.5}, and SO₂. To develop background levels, the latest available pollutant concentrations from monitoring sites located closest to the project site were used. If the pollutant concentration from the nearest monitoring station is not available or the data is not for background concentrations determination (e.g., data collected from Tapered Element Oscillating Microbalance [TEOM] sampler), the next closest monitoring station is selected, and so forth. Table 2.9-2 summarizes the background concentrations for each of the pollutants.

Table 2.9-2: Background Concentrations

Pollutant	Averaging Time	Monitoring Location	Background Concentration
Carbon Monoxide (CO)	1-Hour ¹	Botanical Garden, Bronx	1.76 ppm
	8-Hour ¹	Botanical Garden, Bronx	1.0 ppm
Nitrogen Dioxide (NO ₂)	1-Hour ²	Botanical Garden, Bronx	108.3 µg/m ³
	Annual ³	Botanical Garden, Bronx	32.7 µg/m ³
Particulate Matter (PM ₁₀)	24-Hour ⁴	IS 52, Bronx	32 µg/m ³
Particulate Matter (PM _{2.5})	24-Hour ⁵	Botanical Garden, Bronx	24 µg/m ³
Sulfur Dioxide (SO ₂)	1-Hour ⁶	Botanical Garden, Bronx	28.8 µg/m ³
Notes: ¹ 1-hour CO and 8-hour CO background concentrations are based on the highest second max value from the latest five years of available monitoring data from NYSDEC (2012-2016) ² 1-hour NO ₂ background concentration is based on three-year average (2014-2016) of the 98th percentile of daily maximum 1-hour concentrations from available monitoring data from NYSDEC. ³ Annual NO ₂ background concentration is based on the maximum annual average from the latest five years of available monitoring data from NYSDEC (2012-2016). ⁴ 24-hour PM ₁₀ is based on the highest second max value from the latest three years of available monitoring data from NYSDEC (2014-2016). ⁵ The 24-hour PM _{2.5} background concentration is based on maximum 98th percentile concentration averaged over three years of data from NYSDEC (2014-2016). ⁶ 1-hour SO ₂ background concentration is based on maximum 99th percentile concentration averaged over the latest three years of available monitoring data from NYSDEC (2014-2016). Source: NYSDEC Ambient Air Quality Report, 2016, http://www.dec.ny.gov/chemical/8536.html .			

Annual PM_{2.5} impact is assessed on an incremental basis and compared with the PM_{2.5} *de minimis* criteria, without considering the annual background. Therefore, the annual PM_{2.5} background is not presented in the table.

Future No-Action Condition

As described in Section 1.0, "Project Description," absent the proposed actions (the No-Action condition), the project site would primarily remain in its existing condition. However, under the future No-Action condition, the applicant plans to construct a cogeneration facility on the north site, attached to the existing service and electrical buildings located at the northeast corner of the project site. These buildings would be renovated to accommodate the functions of the cogeneration facility. A separate NYSDEC State Facility Air Permit will be issued for this work, which is expected to be complete and the facility operational by July 2018. There would be no change of use or occupancy resulting from this work.

In addition, the applicant is currently renovating and converting the Gilbert Pavilion, which previously housed 144 skilled nursing beds, to accommodate 701 assisted living units. This work is expected to be

complete in 2019. Resnick and Reingold Pavilions are also currently undergoing interior renovations to accommodate an additional 32 skilled nursing beds (16 beds in each building).

Future With-Action Condition

The proposed actions would result in the demolition of the existing Goldfine Pavilion on the north site and the Cardinal Spellman Retreat House and the three existing utility buildings on the south site, as well as the construction of three new buildings: two on the south site and the third in place of the Goldfine Pavilion on the north site.

The proposed development sizes and maximum building heights for the three new buildings are summarized in Table 2.9-3.

Table 2.9-3: Development Sites Parameters

Proposed Building	Development Size (gsf)	Ground Elevation (ft)	Roof Height (ft)	Maximum Height (Including Bulkhead) (ft)
Building 1	443,190	128	134	146
Building 2	114,450	116	68	80
Building 3	76,250	116	48	60

Parking Facilities

The proposed project would introduce 90 more parking spaces (including surface spaces and garage spaces) as compared to the No-Action condition, exceeding the threshold triggering a quantitative parking facility analysis. As such, an air quality analysis would be warranted to assess the potential impact from vehicular emissions generated by the proposed parking facilities, according to Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*.

The results of the parking garage analysis are presented in Table 2.9-4.

Table 2.9-4: Summary of Parking Garage Analysis

Pollutant Concentration	At-grade Receptors	Window Above	Maximum Concentration ¹	NAAQS / De Minimis	Pass / Fail
1-Hour CO Concentration (ppm) ¹	1.768	1.767	1.768	35	Pass
8-Hour CO Concentration (ppm) ²	1.007	1.007	1.007	4.5	Pass
24-hour PM _{2.5} Concentration (µg/m ³) ³	0.051	0.048	0.051	5.5	Pass
Annual PM _{2.5} Concentration (µg/m ³) ³	0.009	0.008	0.009	0.3	Pass
Notes: ¹ The predicted 1-hour CO concentration includes a background concentration of 1.76 ppm. ² The predicted 8-hour CO concentration includes a background concentration of 1.0 ppm. ³ The 24-hour and annual PM _{2.5} concentrations were estimated were compared to the de minimis criteria, without considering background concentrations.					

As shown in Table 2.9-4, the predicted maximum 1-hour concentration was below the NAAQS threshold, and the maximum 8-hour CO, and 24-hour and annual PM_{2.5} concentrations were below their respective *de minimis* criteria thresholds. Therefore, no significant adverse air quality impact would be expected from emissions from the proposed parking garage, and no further analysis would be warranted.

HVAC Systems

HVAC Screening Analysis

A HVAC screening analysis was initially conducted using the methodologies as previously described, to evaluate the potential for emissions from the proposed HVAC systems to significantly impact existing land uses (project-on-existing impacts), as well as other proposed development buildings (project-on-project impacts). The screening results are presented in Table 2.9-5.

Table 2.9-5: Summary of HVAC Screening Analysis

Proposed Building	Development Size (gsf)	Maximum Building Height (ft)	Closest Receptor Building of Similar or Greater Height (ft)	Closest Receptor Building Height (ft)	Distance to Nearest Receptor (ft)	Oil Screening Result	Natural Gas Screening Result
Building 1	443,190	146	n/a	n/a	400 ¹	Pass	Pass
Building 2	114,450	80	Building 1	146	75	Fail	Fail
Building 3	76,250	60	Building 2	80	75	Fail	Pass
Note: n/a - not applicable ¹ There are no existing or proposed buildings that are taller than Building 1 within a 400-foot radius. Therefore, the screening analysis was conducted assuming that the distance between the source and the receptor is 400 feet, in accordance with							

As indicated in Table 2.9-5, Building 2 failed both Oil and Natural Gas screening analyses, therefore, a more refined air quality analysis was conducted using EPA's AERMOD dispersion model.

Refined HVAC Analysis - AERMOD

A refined HVAC analysis was performed for the Building 2 using the EPA's AERMOD model (version 16216), assuming natural gas would be used as the fuel type for the HVAC system, following the methodologies as described above. Additionally, it was assumed that the stack would be located at the bulkhead and will rise three feet above the bulkhead, reaching a maximum height of 83 feet above grade. An (E) designation (E-477) restricting the fuel type and stack location, as described above, would be placed on the development site to avoid impacts. The language specifying (E) designation and the appropriate HVAC restrictions is provided at the end of HVAC analysis section.

Table 2.9-6 presents the HVAC emission rates and stack parameters used in the AERMOD modeling for Building 2, and Table 2.9-7 presents the results of the refined HVAC analysis.

Table 2.9-6: HVAC Emission Rates and Stack Parameters for Building 2

Parameters	Value
Emission Rates (g/s)	
1-Hour NO ₂	0.03552
Annual NO ₂	9.73E-03
24-Hour PM _{2.5}	2.70E-03
Annual PM _{2.5}	7.40E-04
Stack Parameters	
Stack Height (m)	25.3
Stack Diameter (m)	0.305
Exhaust Velocity (m/s)	4.583
Exhaust Temperature (°F)	426

Table 2.9-7: Summary of Refined HVAC Analysis for Building 2

Pollutant	Modeled Concentration (µg/m ³)		Background Concentration (µg/m ³)	Maximum Concentration ³ (µg/m ³)	NAAQS / De Minimis (µg/m ³)	Pass / Fail
	Downwash	No Downwash				
1-Hour NO ₂ ¹	175.5	176.3	-	176.3	188	Pass
Annual NO ₂	1.1	1.4	32.7	34.1	100	Pass
24-hour PM _{2.5} ²	1.74	2.2	-	2.2	5.5	Pass
Annual PM _{2.5} ²	0.09	0.11	-	0.11	0.3	Pass
Notes: ¹ Hourly NO ₂ background concentration was added to the modeled 1-hour NO ₂ concentration in AERMOD to predict the total maximum 1-hour NO ₂ concentration. ² The 24-hour and annual PM _{2.5} concentrations were estimated were compared to the de minimis criteria, without considering background concentrations. ³ Maximum concentration represents the higher pollutant level predicted from "Downwash" and "No Downwash" options.						

As shown in Table 2.9-7, the predicted 1-hour NO₂ concentrations and annual NO₂ concentrations were below their respective NAAQS, and 24-hour and annual PM_{2.5} concentrations were less than their respective *de minimis* criteria thresholds. Based on the AERMOD analysis, there would be no significant adverse air quality related to emissions from the proposed HVAC system at Building 2, and no further analysis would be warranted.

To ensure that there are no significant adverse impacts from HVAC systems of the proposed buildings, certain restrictions would be required though the mapping of an (E) designation (E-477) for air quality regarding fuel type and stack location.

The text of the (E) designation would be as follows:

Block 5933, Lot 225:

Any new residential and/or community facility development for Proposed Building 1 (North Site) on Block 5933, Lot 225 must ensure that the heating, ventilation, and air conditioning stack(s) is located at the highest tier or at least 149 feet above grade to avoid any significant adverse air quality impacts.

Block 5933, Lot 55:

Any new residential and/or community facility development for Proposed Building 2 (South Site) on Block 5933, Lot 55 must exclusively use natural gas as the type of fuel for HVAC systems, and ensure that the heating, ventilation, and air conditioning stack(s) is located at the highest tier or at least 83 feet above grade to avoid any significant adverse air quality impacts.

Any new residential and/or community facility development for Proposed Building 3 (South Site) on Block 5933, Lot 55 must exclusively use natural gas as the type of fuel for HVAC systems, and ensure that the heating, ventilation, and air conditioning stack(s) is located at the highest tier or at least 63 feet above grade to avoid any significant adverse air quality impacts.

Major or Large Source Analysis

A detailed air quality analysis was conducted using EPA's AERMOD model (version 16216) to determine the potential for combined emissions from the cogeneration facility and existing HVAC systems on the site, to significantly impact the new sensitive receptors introduced by the proposed project.

Table 2.9-8 presents the emission rates and stack parameters from the analyzed emission sources as previously discussed. The results of the detailed AERMOD analysis are presented in Table 2.9-9.

Table 2.9-8: Emission Rates & Stack Parameters for Cogeneration Analysis

Emission Sources	Emission Points	Emission Rate (g/s)							Stack Ht (m)	Stack Temp (K)	Velocity (m/s)	Diameter (m)
		1-Hour NO _x	Annual NO _x	1-Hour CO	8-Hour CO	24-Hour PM _{2.5}	Annual PM _{2.5}	24-Hour PM ₁₀				
Two MP-400 Boilers	EP003	0.2079	0.0360	0.1746	0.1746	0.0158	0.0028	0.0158	15.54	755	9.14	1.07
	EP004	0.2079	0.0360	0.1746	0.1746	0.0158	0.0028	0.0158	15.54	755	9.14	1.07
Two Cogeneration Engines	EP012	0.1629	0.1629	0.0639	0.0639	0.0030	0.0030	0.0030	11.28	428	27.94	0.41
	EP013	0.1629	0.1629	0.0639	0.0639	0.0030	0.0030	0.0030	11.28	428	27.94	0.41

Table 2.9-9: Summary of Cogeneration Analysis

Pollutant	Modeled Concentration ($\mu\text{g}/\text{m}^3$)		Background Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Concentration ⁵ ($\mu\text{g}/\text{m}^3$)	NAAQS / De Minimis ($\mu\text{g}/\text{m}^3$)	Pass / Fail
	Downwash	No Downwash				
1-Hour NO ₂ ¹	160.6	179.3	-	179.3	188	Pass
Annual NO ₂ ²	2.1	2.7	32.7	35.4	100	Pass
1-Hour CO ³	61.3	63.0	2015	2,078	40,000	Pass
8-Hour CO ³	31.3	46.1	1145	1,191	10,000	Pass
24-hour PM _{2.5} ⁴	1.16	1.54	-	1.54	5.5	Pass
Annual PM _{2.5} ⁴	0.07	0.09	-	0.09	0.3	Pass
24-hour PM ₁₀	1.7	2.5	32	34.5	150	Pass
Notes: ¹ Hourly NO ₂ background concentration was added to the modeled 1-hour NO ₂ concentration in AERMOD to predict the total maximum 1-hour NO ₂ concentration. ² The annual NO ₂ concentration was estimated based on a NO ₂ /NO _x conversion ratio of 0.75, in accordance with EPA guidance. ³ The 24-hour and annual PM _{2.5} concentrations were estimated were compared to the de minimis criteria, without considering background concentrations. ⁴ The CO concentrations were converted from ppm to $\mu\text{g}/\text{m}^3$ based on a conversion factor of 1,145 $\mu\text{g}/\text{m}^3$ per ppm. ⁵ Maximum concentration represents the higher pollutant level predicted from "Downwash" and "No Downwash" options.						

As shown in Table 2.9-9, the predicted maximum 1-hour and annual NO₂, 1-hour and 8-hour CO, and 24-hr PM₁₀ concentrations are below their respective NAAQS values. Additionally, the maximum 24-hour and annual PM_{2.5} concentrations were below their respective *de minimis* criteria thresholds.

Therefore, it is anticipated that the combined emission from the cogeneration facility and existing HVAC systems would not result in a significant adverse air quality impact on the proposed buildings, and no further analysis would be warranted.

2.9.4 Conclusion

Based on the findings of the detailed HVAC analysis, there would be no potential for significant adverse stationary source air quality impacts from the proposed HVAC systems. Additionally, no industrial sources associated with air toxics emissions were identified in a 400-foot radius of the project site. The detailed major or large source analysis demonstrated that, there would be no significant adverse impact on the proposed buildings resulting from the combined emissions from the cogeneration facility and existing on-site HVAC systems.

Therefore, there would be no significant adverse air quality impacts as a result of the proposed actions.

2.10 Noise

The purpose of this section is to determine whether the proposed project may increase noise exposure at existing sensitive receptors and whether new receptors would be introduced into an acceptable ambient noise environment.

2.10.1 Introduction

The proposed project would facilitate the development of a new long-term care facility comprised of three new buildings that would accommodate 388 independent senior living units. As such, the proposed development would introduce new noise-sensitive receptors in the area. The purpose of the noise assessment under CEQR is to determine if:

1. The proposed development would significantly increase sound levels from mobile and stationary sources at existing noise receptors adjacent to the project site, including residential, commercial, and institutional land uses; and
2. New noise receptors introduced at the project site would be in an acceptable ambient sound level environment.

Per the *CEQR Technical Manual*, a noise analysis is appropriate if an action would generate mobile or stationary sources of noise or would be located in an area with high ambient noise levels. Mobile sources include vehicular traffic; stationary sources include rooftop equipment such as emergency generators, cooling towers, and other mechanical equipment.

The following analysis includes:

- background on metrics used to describe noise;
- methodology and criteria used to assess potential impacts;
- assessment of the potential for the proposed development to significantly affect existing receptors due to the introduction of new mobile or stationary sources;
- results from a sound level monitoring program at the project site; and
- evaluation of the ambient sound levels at new receptor locations.

Noise Background

Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities such as sleep, work, or recreation. How people perceive sound depends on several measurable physical characteristics. These factors include:

- Intensity - Sound intensity is often equated to loudness.
- Frequency - Sounds are comprised of acoustic energy distributed over a variety of frequencies. Acoustic frequencies, commonly referred to as tone or pitch, are typically

measured in Hertz. Pure tones have all their energy concentrated in a narrow frequency range.

Sound levels are most often measured on a logarithmic scale of decibels (dB). The decibel scale compresses the audible acoustic pressure levels which can vary from the threshold of hearing (0 dB) to the threshold of pain (120 dB). Because sound levels are measured in dB, the addition of two sound levels is not linear. Adding two equal sound levels creates a 3 dB increase in the overall level. Research indicates the following general relationships between sound level and human perception:

- 3 dB increase is a doubling of acoustic energy and is the threshold of perceptibility to the average person
- 10 dB increase is a tenfold increase in acoustic energy but is perceived as a doubling in loudness to the average person

The human ear does not perceive sound levels from each frequency as equally loud. To compensate for this phenomenon in perception, a frequency filter known as A-weighted [dBA] is used to evaluate environmental noise levels. Table 2.10-1 presents a list of common outdoor and indoor sound levels.

Table 2.10-1: Common Indoor and Outdoor Sound Levels

Outdoor Sound Levels	Sound Pressure μ Pa		Sound Level dBA	Indoor Sound Levels
	6,324,555	-	110	Rock Band at 5 m
Jet Over-Flight at 300 m		-	105	
	2,000,000	-	100	Inside New York Subway Train
Gas Lawn Mower at 1 m		-	95	
	632,456	-	90	Food Blender at 1 m
Diesel Truck at 15 m		-	85	
Noisy Urban Area—Daytime	200,000	-	80	Garbage Disposal at 1 m
		-	75	Shouting at 1 m
Gas Lawn Mower at 30 m	63,246	-	70	Vacuum Cleaner at 3 m
Suburban Commercial Area		-	65	Normal Speech at 1 m
	20,000	-	60	
Quiet Urban Area—Daytime		-	55	Quiet Conversation at 1 m
	6,325	-	50	Dishwasher Next Room
Quiet Urban Area—Nighttime		-	45	
	2,000	-	40	Empty Theater or Library
Quiet Suburb—Nighttime		-	35	
	632	-	30	Quiet Bedroom at Night
Quiet Rural Area—Nighttime		-	25	Empty Concert Hall
Rustling Leaves	200	-	20	
		-	15	Broadcast and Recording Studios
	63	-	10	
		-	5	
Reference Pressure Level	20	-	0	Threshold of Hearing
μ PA MicroPascals describe pressure. The pressure level is what sound level monitors measure. dBA A-weighted decibels describe pressure logarithmically with respect to 20 μ Pa (the reference pressure level). Source: Highway Noise Fundamentals, Federal Highway Administration, September 1980.				

A variety of sound level indicators can be used for environmental noise analysis. These indicators describe the variations in intensity and temporal pattern of the sound levels. The following is a list of other sound level descriptors:

- L_{10} is the sound level which is exceeded for 10 percent of the time during the time period. Therefore, it represents the higher end of the range of sound levels. The unit is commonly used in the *CEQR Technical Manual* to evaluate acceptable thresholds for noise exposure for new receptors that would be introduced by a proposed development.
- L_{eq} is the energy-average A-weighted sound level. The L_{eq} is a single value that is equivalent in sound energy to the fluctuating levels over a period of time. Therefore, the L_{eq} considers how loud noise events are during the period, how long they last, and how many times they occur. L_{eq} is commonly used to describe environmental noise and relates well to human annoyance. In accordance with the *CEQR Technical Manual*, the L_{eq} sound level is used to assess the potential for significant increases in noise due to a proposed development at existing receptors in the study area.

Assessment Methodology

This noise analysis considers two receptor types when evaluating noise for the proposed development. Since the proposed development would introduce a new long term care facility, this is considered a “new receptor.” Additionally, the analysis considers “existing receptors” which are the current noise-sensitive uses such as commercial and residential properties surrounding the project site. The following describes the results of the noise assessment for these two types of receptors.

2.10.2 Noise Assessment for Existing Receptors

Noise impact at existing nearby sensitive receptors is assessed according to the relative increase between No-Action condition and With-Action condition sound levels. Noise impact is assessed according to the increase in the L_{eq} sound level in accordance with the *CEQR Technical Manual*. If mobile or stationary sources associated with the proposed development would increase L_{eq} sound levels by 3 dB or more and absolute levels would exceed 65 dBA L_{eq} , the proposed development would cause a significant adverse impact. Additionally, if No-Action condition noise levels are 60 dBA L_{eq} or less, a 5 dB increase would be considered a significant adverse noise impact.

Mobile Sources

As described in Section 2.8, “Transportation,” the proposed actions would generate less vehicle trips under the With-Action condition as compared to the No-Action condition. Thus, it is anticipated that the proposed development would not result in a doubling of noise passenger car equivalents (PCEs), which would be necessary to cause a 3 dBA increase in noise levels. Therefore, the proposed development would not cause a significant adverse vehicular noise impact and the existing noise measurements results are representative of the With-Action conditions.

Stationary Sources

The proposed project is not anticipated to include any substantial stationary source noise generators, such as unenclosed cooling or ventilation equipment, truck loading docks, loudspeaker systems, stationary

diesel engines, car washes, or other similar types of uses. The design and specifications for the mechanical equipment, such as heating, ventilation, and air conditioning, are not known at this time. However, the selection of equipment that would incorporate sufficient noise reduction devices would comply with applicable noise regulations and standards (including the standards contained in the revised New York City Noise Control Code), which would ensure that this equipment does not result in any significant increases in noise levels by itself or cumulatively with other project noise sources.

2.10.3 Noise Assessment for New Receptors

With-Action noise conditions at new sensitive receptors that would be introduced by the proposed development are evaluated according to absolute exterior level. The noise exposure guidelines for acceptable ambient conditions depend on the type of land use; for nursing homes, the goal is to maintain interior noise levels of 45 dBA or lower and external exposure to 65 dBA or lower. Both external and interior noise levels will be assessed for the With-Action condition.

With-Action exterior sound levels are used to determine if receptors would be in an acceptable interior sound level environment. It is generally assumed that without specific information on a building's window and wall construction, the outdoor-to-indoor noise reduction of the building is 25 decibels. Therefore, exterior ambient sound levels exceeding 70 dBA at nursing homes (which would equate to an interior noise level of 45 dBA) are considered to be Marginally Unacceptable and the need to provide window/wall sound attenuation that is sufficient to reduce interior sound levels to acceptable levels must be considered. This is slightly higher than the 65 dBA criteria that is considered Marginally Unacceptable for exterior areas at the nursing home.

Since the proposed development would introduce a long-term care facility near a rail source (the Metro-north Hudson Line), the highest of either the L_{10} or L_{eq} sound levels is used to evaluate whether the proposed project would introduce new receptors into an acceptable noise environment. The analysis presents the results of the ambient noise monitoring and the assessment of whether new receptors would be in a high ambient noise environment.

Noise Exposure Guidelines

The *CEQR Technical Manual* provides noise exposure guidelines for assessing ambient noise conditions at new residential and commercial receptors, as shown in Table 2.10-2.

Table 2.10-2: Noise Exposure Guidelines for Use in City Environmental Impact Review

Receptor Type	Time Period	Acceptable External Exposure	Marginally Acceptable External Exposure	Marginally Unacceptable External Exposure ¹	Clearly Unacceptable External Exposure
Hospital, Nursing Home	All	$L_{10} \leq 55$ dBA	$55 \leq L_{10} \leq 65$ dBA	$65 \leq L_{10} \leq 80$ dBA	$L_{10} > 80$ dBA
1. Internal exposure is considered Marginally Unacceptable when sound levels exceed 45 dBA. Assuming the window and wall construction would provide 25 dBA OITC sound reduction, a 70 dBA external exposure limit will be used to determine if window-wall sound attenuation is required. Source: Table 19-2, <i>CEQR Technical Manual</i> .					

Existing Sound Levels

Noise monitoring was conducted on Wednesday, June 7, 2017 and Thursday, June 8, 2017 to determine the existing sound levels near the project site. Noise measurements were conducted at four locations around the property. A long term monitor was setup for 24 hours on the west side of the property approximately 300 feet from the Metro-north Hudson Line. This is approximately where the western facades of the proposed buildings would be located. Three short-term measurements were located along Palisades Avenue near the central entrance to the site, the southern entrance to the site, and the northern entrance to the site. The measurement sites are shown in Figure 2.10-1. The microphones were located to have a direct line of sight to Palisades Avenue.

The noise monitors were placed with a minimum of four feet between the microphone and nearby reflecting surfaces. With roadway activity dominating the overall noise environment at the three eastern locations, 20-minute noise measurements were conducted during the weekday morning peak period (8:00 – 9:30 AM), midday period (12:00 – 1:30 PM) and evening peak period (5:00 – 6:30 PM). Table 2.10-3 summarizes the measurement results.

Table 2.10-3: Ambient Sound Levels Measured at Ground Level

Monitoring Location	Time Period	Duration	L _{eq}	L _{min}	L _{max}	L ₁	L ₁₀	L ₅₀	L ₉₀
1. Western Facades-300 feet from Metro-north Hudson Line	Loudest Hour ¹	1 hour	67.0	45.5	87.6	80.1	67.4	56.3	54.7
2. Palisades Avenue-Central Entrance	Morning	20 min	55.7	37.7	75.2	67.1	58.7	50.6	45.8
	Midday	20 min	52.8	40.0	67.9	63.5	56.2	48.4	43.3
	Evening	20 min	61.6	41.7	82.8	74.3	60.9	53.2	45.3
3. Palisades Avenue-Southern Entrance	Morning	20 min	57.5	42.7	76.7	66.9	61.1	51.2	45.0
	Midday	20 min	61.9	41.2	86.1	70.4	59.4	53.2	45.0
	Evening	20 min	59.8	39.8	79.9	71.5	61.2	53.5	46.2
4. Palisades Avenue-Northern Entrance	Morning	20 min	65.2	51.0	82.7	77.2	66.4	59.6	55.9
	Midday	20 min	57.4	47.9	70.4	68.5	60.0	52.0	49.3
	Evening	20 min	59.4	48.5	77.1	71.1	59.0	55.1	50.7
¹ Measurement conducted for 24 hours. The loudest hour (11 AM) is shown in this table. Source: Measurements conducted by VHB at ground-level on June 7-8, 2017.									

Measurements were conducted using a Type I sound level meter at ground level and followed the procedures outlined in the *CEQR Technical Manual*, which include documenting significant sources of sound and conducting spot counts of traffic by vehicle classification. The measured L_{eq} levels ranged between 53 and 67 dBA and the L₁₀ levels ranged between 56 and 67 dBA.

Cogeneration Facility Sound

The applicant will construct a cogeneration (combined heating and power) facility on the north site attached to the existing service and electrical buildings located at the northeast corner of the project site (see Figure 1-6 and 1-7). A separate New York State Department of Environmental Conservation State Facility Air Permit will be issued for this work, which is expected to be complete and the facility

operational by July 2018. Therefore, the cogeneration facility is considered part of the No-Action condition as it relates to the proposed project.

Sound from the cogeneration facility has been analyzed by the applicant in a memorandum prepared by JaffeHolden (Hebrew Home Cogeneration Plant Preliminary Acoustical Analysis, dated March 10, 2015). This memorandum includes detailed computer sound modeling of the proposed facility using Soundplan prediction software. The model includes all cogeneration facility sound-generating equipment, surrounding buildings, and terrain. The model assumes an acoustic enclosure for the generator would attenuate sound to 78 dBA at a distance of five feet. The sound study describes other features of the cogeneration facility design to comply with the New York City Noise Code including the use of silencers in the exhaust ductwork and sealing gaps in the cooling tower enclosure. The specific features to attenuate sound from the cogeneration facility will be refined as the system design advances, but the applicant is committed to keeping sound levels from the cogeneration facility below the New York City Noise Code requirements and similar to the predictions in the sound study.

The model output includes predicted sound levels at locations surrounding the facility. Since the sound from this facility was not present when ambient sound measurements were conducted as described in the previous section, the sound predicted from the cogeneration facility will be added to the measurements for assessing With-Action sound conditions.

Table 2.10-4 summarizes the measured ambient sound levels, predicted cogeneration facility sound levels, and the With-Action sound levels which combine the measured and predicted levels. This table shows that With-Action sound levels would be up to 0.5 dBA greater than measurement results due to the cogeneration facility.

Table 2.10-4: With-Action Sound Conditions

#	Measurement Location	Time	Measured L ₁₀ or L _{eq} Sound Level ¹	Cogeneration Facility Sound Level ²	With-Action L ₁₀ or L _{eq} Sound Level
1	Western Facades-300 feet from Hudson River	Loudest Hour ³	67.4	<42	67.4
2	Palisades Avenue- Central Entrance	Morning	58.7	<42	58.8
		Midday	56.2	<42	56.4
		Evening	61.6	<42	61.6
3	Palisades Avenue- Southern Entrance	Morning	61.1	<42	61.2
		Midday	61.9	<42	61.9
		Evening	61.2	<42	61.3
4	Palisades Avenue- Northern Entrance	Morning	66.4	50	66.5
		Midday	60.0	50	60.4
		Evening	59.4	50	59.9

1. Since the MTA Hudson line is nearby, the analysis evaluated the louder of the L₁₀ or the L_{eq} sound levels.
2. Measurement conducted for 24 hours. The loudest hour (11 am) is shown in this table.
3. Sound from cogeneration facility is less than 42 dBA at locations west of Resnick Pavilion and south of Stolz Pavilion.
Source: Measurements conducted by VHB June 7-8, 2017. Cogeneration sound predictions by JaffeHolden March 10, 2015.

Assessment

The *CEQR Technical Manual* provides noise exposure guidelines for assessing ambient sound levels, as shown in Table 2.10-2. Based on these noise exposure guidelines, noise impact has been assessed to

determine the level of acceptability for new sensitive receptors on all facades of the proposed building. Table 2.10-5 summarizes the highest of the With-Action L_{10} or L_{eq} sound level results and whether sound levels are considered acceptable according to the external exposure limits of the *CEQR Technical Manual*.

Table 2.10-5: Ambient Sound Levels Measured at Ground Level

Monitoring Location	Time	External With-Action L_{10} or L_{eq} Sound Level ¹	External Exposure Acceptability	Interior Exposure Acceptability
1. Western Facades-300 feet from Metro-north Hudson Line	Loudest Hour ²	67.4	Marginally Unacceptable	Marginally Acceptable
2. Palisades Avenue-Central Entrance	Morning	58.8	Marginally Acceptable	Marginally Acceptable
	Midday	56.4	Marginally Acceptable	Marginally Acceptable
	Evening	61.6	Marginally Acceptable	Marginally Acceptable
3. Palisades Avenue- Southern Entrance	Morning	61.2	Marginally Acceptable	Marginally Acceptable
	Midday	61.9	Marginally Acceptable	Marginally Acceptable
	Evening	61.3	Marginally Acceptable	Marginally Acceptable
4. Palisades Avenue- Northern Entrance	Morning	66.5	Marginally Unacceptable	Marginally Acceptable
	Midday	60.4	Marginally Unacceptable	Marginally Acceptable
	Evening	59.9	Marginally Acceptable	Marginally Acceptable
1. Since the Metro-north Hudson line is nearby, the analysis evaluated the louder of the L_{10} or the L_{eq} sound levels. 2. Measurement conducted for 24 hours. The loudest hour (11 AM) is shown in this table. Source: Measurements conducted by VHB at ground-level on June 7-8, 2017.				

External Exposures

Noise levels outside of the proposed buildings would be above the 65 dBA guideline for external exposure in *CEQR Technical Manual* at the nursing home during some time periods. In the future with the proposed project, sound levels at the on-site private open spaces would be in the high 50s and mid 60s dBA. There are no practical and feasible measures that could be implemented to reduce noise levels to below the 65 dBA guideline within this open space. Although noise levels in this area would be above the 65 dBA guideline noise level, they would be comparable to noise levels in a number of open space areas that are also located adjacent to heavily trafficked roadways and railways, including Hudson River Park, Riverside Park, Bryant Park, Fort Greene Park, and other urban open space areas. The 65 dBA guideline is a worthwhile goal for the exterior areas of nursing homes. However, due to the level of activity present at most New York City open areas (except for areas far away from traffic and other typical urban activities) this relatively low noise level is often not achieved. This would not constitute a significant adverse impact.

Internal Exposure

According to the noise exposure guidelines in the *CEQR Technical Manual*, interior With-Action sound levels are considered acceptable because the external sound levels are less than 70 dBA which means interior sound levels would be less than 45 dBA. Since interior sound levels would be less than 45 dBA, specific window-wall sound attenuation is not required, the proposed action would maintain acceptable interior noise levels and therefore, the proposed action would not result in any significant adverse noise impacts.

2.10.4 Conclusion

As described in Section 2.8, “Transportation,” the proposed actions would generate less vehicle trips under the With-Action condition as compared to the No-Action condition. Thus, it is anticipated that the proposed development would not result in a doubling of noise passenger car equivalents (PCEs), which would be necessary to cause a 3 dBA increase in noise levels. Therefore, the proposed project would not result in a significant adverse vehicular noise impact.

The applicant will construct a cogeneration (combined heating and power) facility on the north site attached to the existing service and electrical buildings located at the northeast corner of the project site in the No-Action condition. Therefore, the With-Action noise condition includes both the existing ambient sound measurements and the predicted sound from the cogeneration facility.

The proposed project is not anticipated to include any substantial stationary source noise generators. The design and specifications for the building’s mechanical equipment are not known at this time. However, the selection of equipment that would incorporate sufficient noise reduction devices would comply with applicable noise regulations and standards (including the standards contained in the revised New York City Noise Control Code).

Noise monitoring was conducted on June 7-8, 2017 to determine the existing sound levels near the project site. The measured L_{eq} levels ranged between 53 and 67 dBA and the L_{10} levels ranged between 56 and 67 dBA. Sound from the cogeneration facility is predicted to be 50 dBA at ambient measurement site 4 and less than 42 dBA at all other measurement locations. Consequently, the With-Action L_{10} sound levels would be 56 to 67 dBA.

With-Action sound levels are considered Marginally Unacceptable for exterior areas at nursing homes per the *CEQR Technical Manual* guideline. However, these sound levels are not uncommon for other open areas in the city near roadway and railway sources, no significant adverse impact is anticipated. Since interior sound levels would be less than 45 dBA, specific window-wall sound attenuation is not required, the proposed action would maintain acceptable interior noise levels and therefore, the proposed action would not result in any significant adverse noise impacts.

2.11 Construction

2.11.1 Introduction

Construction activities, although temporary in nature, can sometimes result in significant adverse environmental impacts. Consideration of several factors, including the location and setting of the project in relation to other uses, and the intensity and duration of the construction activities, may indicate that a project's construction activities warrant analysis.

The proposed actions would permit the development of a Continuing Care Retirement Community/Long-Term Care Facility (CCRC/LTCF) campus. The proposed project would include construction of three new buildings, two on the south site and one on the north site, and the demolition of five existing buildings (one on the north site and four on the south site). The new building on the north site, CCRC North, would be built in place of the existing Goldfine Pavilion, the southernmost existing building on the north site, which would be demolished. CCRC North would be 12 stories and built to a height of approximately 138 feet; the building square footage would be approximately 428,750 gsf and building coverage would be 43,800 sf. CCRC North would house 271 independent senior living units.

The two buildings on the south site, together known as CCRC South, would be four and six stories (approximately 53 feet and 74 feet high, respectively) and would replace the existing Retreat House building, which would be demolished. These buildings would have a combined building square footage of 186,750 gsf, a building coverage of 44,050 sf, and would hold 117 new independent senior living units (Use Group 3). The proposed buildings would be concentrated to the north of the south site, close to the existing Hebrew Home campus.

Based on a construction schedule developed by the applicant, construction activity associated with the proposed project is anticipated to last a total of approximately three and three-quarter years and would be undertaken within the north and south sites. Demolition of the five of the existing buildings on the sites would be completed before construction on the north site starts which would commence first, followed by construction on the south site. Because the construction period would be longer than two years ("long-term" per the 2014 *City Environmental Quality Review (CEQR) Technical Manual*), a preliminary assessment of potential construction impacts was prepared in accordance with the guidelines of the *CEQR Technical Manual*. This assessment is presented below.

2.11.2 Construction Regulations and General Practices

Construction Oversight

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

- The New York City Department of Buildings (DOB) has primary oversight of construction. DOB oversees compliance with the New York City Building Code to ensure that buildings are

structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect both workers and the general public during construction. Areas of oversight include installation and operation of equipment such as cranes and lifts, sidewalk sheds, safety netting, and scaffolding.

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

Construction Hours

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

In New York City, construction work typically occurs on weekdays and begins at 7:00 AM, with most workers arriving between 6:00 AM and 7:00 AM. Work typically ends at 4:00 PM, with some exceptions when certain critical tasks (e.g., finishing a concrete pour for a floor deck, completing the drilling of piles, or completing the bolting of a steel frame erected that day) require that the workday be extended beyond normal work hours. Any extended workdays generally last until approximately 5:30 PM or 6:00 PM and do not include all construction workers on-site, but only those involved in the specific task requiring additional work time. For work outside of normal construction hours, work permits are obtained from DOB prior to such work commencing. The numbers of workers and pieces of equipment in operation for work outside normal hours is generally limited to those needed to complete the particular authorized task. Overall, the level of activity for any work outside of normal construction hours is less than a normal workday.

Construction Practices

Access, Deliveries and Staging Areas

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

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

For the construction at the project site, trucks would deliver materials via three entrances along Palisade Avenue south of the main entrance and the majority of the existing facilities. This would be done to separate construction traffic from existing operational activity as much as possible. Construction activities would be staged completely within the project site on an existing parking area located between the CCRC North and CCRC Sites (at the northern end of the south site). Additionally, within the construction site, construction activity and materials storage would occur as far away from Palisade Avenue as possible so as to avoid to the extent possible potential temporary affects to adjacent properties caused by construction activities. Material deliveries to the site would be controlled and scheduled as discussed above.

Lane and Walkway Closures

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

For construction on the site, there would be no temporary closures of sidewalks or curb lanes adjacent to the project site; however, some temporary closures may occur on interior roadways, paths and walkways within the project site, which are not regulated by DOT. Should any path or walkway closures be needed within the project site during construction, signs informing pedestrians of the closures would be posted.

Public Safety

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

As noted above, flaggers would be posted at the site and no sidewalk closures are anticipated on public streets surrounding the project site (any pedestrian facility closures would occur internally within the site). In addition, as at other New York City construction sites, the proposed project would follow all DOB safety requirements to ensure that construction of the project is conducted with care so as to minimize the disruption to the community.

Rodent Control

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

2.11.3 Construction Schedule and Activities

Construction Schedule

The anticipated construction schedule is presented in Table 2.11-1 and reflects a reasonable assumption for construction activities at the site. Construction activities would begin with the demolition of the Goldfine Pavillion, Retreat House and three utility buildings in late-2020. It is assumed that development across the site would occur overtime and, based on a feasible development timeline, the full build out on the project site would be completed by the mid-2024. Altogether, it is projected that construction activities would occur on the site over a period of three and three-quarters years.

As shown in the schedule, demolition activities on both the south and the north sites would begin late-2020 and would take approximately five months to complete. The existing Goldfine pavilion building on the north site, and the existing Retreat House and three small utility buildings on the south site would be demolished. The construction of the north site development (CCRC North) would start first, with excavation and foundation work beginning in the second quarter of 2021 through the first month of the third quarter of the year. Work on the superstructure would commence in the second quarter of 2021 and last 11 months (into the second quarter of 2022). Interior buildout and completion work would commence at the end of the first quarter of 2022 and would continue through the beginning of the second quarter of 2023. Excavation and foundation work for the development on the south site (CCRC South) would begin during the end of the first quarter of 2022 and would last six months and be completed during the third quarter of 2022. This would be followed but superstructure work which would last 13 months and be completed at the end of the third quarter of 2023. Interior buildout and completion work would begin in the third quarter of 2023 and would continue through the end of the second quarter of 2024 (12 months).

Construction on both sites would overlap for approximately little over 12 months (from the second quarter of 2022 to the end of the first quarter of 2023); however, the most intensive construction phases for each site (excavation and foundation) would not overlap with each other. The north site would be complete at the beginning of the second quarter of 2022, and work would continue on the south site through the second quarter of 2024. Once CCRC North is completed and operational (as early as the beginning of the second quarter of 2023), it would become a new on-site receptor; however, at that point, most of the heavy construction activity (excavation/foundation/superstructure) at CCRC South would be completed, and any overlap of heavier construction at CCRC South and operations at CCRC North would be considered short-term.

Table 2.11-1 Anticipated Construction Schedule

	2020			2021												2022												2023												2024							
	Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2				
	N	D		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J		
Construction Phase	1	2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		
Demolition - North Site & South Site																																															
North Site																																															
Excavation/Foundation																																															
Structure																																															
Interior Buildout/Completion																																															
South Site																																															
Excavation / Foundation																																															
Structure																																															
Interior/Completion																																															

Source: Lend Lease, March 2018

Construction Activities

Construction of the proposed project would be subject to the government regulations and oversight detailed above in Section 2.11.2 (Construction Regulations and General Practices) and would employ the general construction practices described above.

Demolition and Site Preparation

Construction at the project site would begin with a number of activities to prepare the site for construction work. Early activities would involve the installation of public safety measures, such as Jersey barriers and fencing and pedestrian overhead protection measures. The construction site would be fenced off, with solid fencing to minimize interference between the persons passing by the site and the construction work. Gates for workers and for trucks would be erected. Trailers for the construction engineers and managers would be hauled to the site and installed. Also, portable toilets, dumpsters for trash, and water and fuel tankers would be brought to the site and installed. Temporary utilities would be connected to the construction trailers. During the startup period, permanent utility connections may be made, especially if the construction manager has obtained early electric power for construction use, but utility connections may be made almost any time during the construction sequence. Interior access roads and turnarounds would be established.

Following the initial site preparation activities, the existing four-story Goldfine Pavilion building on the north site, and the existing Retreat House and three small utility buildings on the south site would be demolished and removed. Materials would be hauled off-site and transported to appropriate receiving facilities.

For the proposed project, site preparation and demolition work on both the south site and the north site is anticipated to take five months to complete and would occur simultaneously from the fourth quarter of 2020 to the end of the first quarter of 2021 and the south site work extending the first quarter of 2022. The south site is anticipated to be used as staging area for the north site.

Excavation and Foundation

As part of the proposed project, excavators would be used for the task of digging foundations. Any excavated soil to be removed from the project site would be loaded onto dump trucks for transport to a licensed disposal facility or for reuse elsewhere on the project site or on another construction site that needs fill.

This stage of construction would also include the construction of the proposed buildings' foundation and below-grade elements. Columns and concrete walls would be built to the grade level. Concrete trucks would be used to pour the foundation and the below-grade structures. Excavation and foundation activities would also involve the use of hydraulic drills, cranes, dewatering pumps, generators, and compressors.

Overall, equipment in use during this phase of construction is expected to include: cranes, drill rigs, excavators, backhoes, pumps, vibrator plate compactors, concrete pumps, jackhammers, compressors, a variety of small tools, and dump trucks and concrete trucks.

To reduce the potential for public exposure to contaminants during excavation activities, construction activities would be performed in accordance with all applicable regulatory requirements as discussed in Section 2.6, “Hazardous Materials.”

The project site’s excavated areas could be subject to accumulated groundwater as well as collected rain and snow until the slab-on-grade is built. This accumulated water would need to be removed, and would be pretreated prior to discharge, if necessary. The decanted water would then be discharged into the City sewer system in accordance with DEP regulations, which specify maximum concentrations of pollutants. DEP can also impose project-specific limits, depending on the location of the project and contamination that has been found in nearby areas. Any groundwater discharged into the City’s sewer system would meet the applicable limits.

For the proposed project, excavation and foundation work is anticipated to occur over four months for the north site and six months for the south site, with north site work occurring over the first four months of 2021 and the south site work extending the end of the first quarter through the part of third quarter of 2022.

Core and Shell (Superstructure)

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

Equipment during this phase typically includes air compressors, cranes, delivery and concrete trucks, concrete pumps, concrete trowels, welding equipment, and a variety of handheld tools. Temporary construction elevators (hoists) would also be constructed for the delivery of materials and vertical movement of workers when necessary. Tower cranes would be used to lift structural components and other large materials. Superstructure activities would also require the use of mobile cranes, welders, impact wrenches, and variety of trucks. In addition, temporary construction elevators (hoists) would be used for the delivery of materials and vertical movement of workers during superstructure activities. Tower cranes are typically on-site for both the superstructure and exterior façade stages of construction.

For the proposed project, core and shell work is anticipated to occur over 11 months for the north site and 13 months for the south site. The north site work would occur over the last three quarters of 2021 and a portion of the first quarter of 2022 and the south site work would start at the end of the third quarter of 2022 and extend through the third quarter of 2023.

Interior Fit-out and Site Work (MEP, Core Finishes, Fit Out,)

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

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

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

For the proposed project, this work would begin on the lower floors of each of the buildings as the core and shell for each building is being completed (i.e., the various tasks for this effort would overlap). For the north site, this work is anticipated to begin with interior fit-out work starting in end of the fourth quarter of 2021 and would take approximately 13 months to complete, finishing at the end of 2022. For the south site, this work is anticipated to begin in the third quarter of 2023 and continue for approximately 12 months through the second quarter of 2024.

2.11.4 Assessment of Project Construction

In accordance with the guidelines of the *CEQR Technical Manual*, this preliminary assessment evaluates the effects associated with the proposed project's construction related activities—including transportation, air quality, and noise—on sensitive receptors located near the area of construction. Hazardous materials are discussed in Section 2.6, "Hazardous Materials."

As discussed in Chapter 2, "Land Use, Zoning, and Public Policy," the area immediately surrounding the site consists of predominantly single family residential, large institutional and transportation uses (Metro-North Hudson Line rail tracks and Riverdale Station). All construction activities would occur within the project site and both new development sites (CCRC North and CCRC South) where most of the construction work (and all of the heavy construction work) would occur would be at least 175 feet from public property. Therefore, construction activity from the proposed project would not have the potential to adversely affect surrounding land uses.

There would be on-site receptors (i.e., the existing senior housing uses) on the north site before the project's final build-out; however, most of these receptors are located at a distance from where the heavier construction activity would occur (CCRC North and CCRC South). Also, as detailed above, construction on CCRC South would still be occurring once CCRC North is completed; however, it would be sequenced such that by the time CCRC North was operational, most of the heavy construction activity (excavation/foundation/superstructure) at CCRC South would be completed, and any overlap of heavy construction at CCRC South and operations at CCRC North would be considered short-term.

Natural Resources

As described in Section 2.5, "Natural Resources, shadows cast on the Hudson River, a sunlight-sensitive resource, from the development of the buildings would not pose a threat to the aquatic habitat

because the shadows would be of short duration. Similarly, any shadows cast by construction activities would be of short duration and would be temporary.

While the project is located in a Special Natural Area District (NA-2) and includes removal of trees, the total tree credits would exceed the tree requirements for the project site. No trees would be affected during construction other than those that would be removed as part of the proposed project. There are four rare plants that may be present within the sloped area of the site. However, construction would be concentrated on the already developed areas of the site and would avoid the steep slopes and the vegetated buffer located in the western section of the site where these rare plants could exist. In addition, although runoff volume may increase because of the construction, the high permeability of the soil would allow for infiltration of runoff and would limit runoff flowing down-slope to the Metro-North drainage system into the Hudson River. Therefore, construction activities related to the proposed project would not result in significant adverse impacts to natural resources.

Transportation

Traffic and Parking

Construction of the proposed project would generate trips from construction workers traveling to and from the site as well as from the delivery of materials and equipment, and the removal of debris. The number of trips generated during construction was based on the construction sequencing discussed above; projections of worker and delivery trucks are shown in Table 2.11-2. Auto parking would not be provided on-site to reduce the number of vehicle trips in the residential areas where the proposed project is located. In accordance with the Restrictive Declaration to be recorded against the property, the applicant would provide offsite parking for worker trips by auto to be provided in Yonkers (since a significant portion of the local labor pool reside in Westchester) located approximately 10 to 15 minutes from the project site, and the applicant would provide a shuttle service to and from the project site for the duration of the construction period. Individual auto parking would not be allowed on the HHAR campus. Construction activities would occur between 2020 and 2024.

Table 2.11-2: Average Number of Daily Construction Vehicles by Quarter

	2020				2021				2022				2023				2024			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Workers	0	0	0	67	77	167	110	63	177	326	332	325	306	49	132	123	134	121	0	0
Autos (off-site)	0	0	0	47	54	117	77	44	124	228	232	228	214	34	92	86	94	85	0	0
Shuttles	0	0	0	4	6	10	8	4	10	20	20	20	18	4	8	8	8	8	0	0
Trucks	0	0	0	8	11	18	20	15	22	22	21	19	18	9	12	8	8	8	0	0
Vehicles	0	0	0	12	17	28	28	19	32	42	41	39	36	13	20	16	16	16	0	0
PCEs	0	0	0	22	31	51	52	36	59	74	72	68	63	24	36	28	28	28	0	0
Source: Lendlease, VHB																				

As shown in Table 2.11-2, it is projected that the highest number of construction vehicle trips to the project site would be generated during the second quarter of 2022. During this period, construction activities would generate on average 326 workers a day and 22 trucks a day. It is anticipated that

approximately 70 percent of construction workers would drive alone to and from the parking facilities, and 30 percent of construction workers would take mass transit directly to the project site; these assumptions were based on travel characteristics of recent local projects ran by the project's construction operator and were corroborated with the 2000 Census reverse journey to work data for the Construction industry¹. For the peak construction period, the average number of shuttle buses would be 20 per day. Each shuttle bus would have up to 48 seats but it is assumed each school bus would only carry about 25 workers and their equipment. Shuttle buses would run between 6 AM and 8 AM, and between 2:30 PM and 5 PM.

The total number of vehicle trips generated and accessing the project site would be approximately 84 vehicle trips per day (148 passenger car equivalents [PCEs] per day). Since larger vehicles such as shuttle buses and trucks typically make up a significant portion of construction traffic, a passenger car equivalent factor is applied to these vehicles to account for their size difference. Per the *CEQR Technical Manual*, it is assumed that one shuttle bus (2 axles) is equivalent to 1.5 passenger cars and one truck is equivalent to two passenger cars.

Construction activities would be expected to occur for a construction shift of 7 AM to 3:30 PM. For construction workers, typical arrival patterns show that most arrivals (approximately 80 percent) occur between 6 AM and 7 AM (the hour before the beginning of a regular day shift), and the same percentage of departure trips occurs between 3:30 PM and 4:30 PM (at the end of the shift). Truck delivery trips are generally distributed evenly throughout the construction work day but the peak activity (approximately 25 percent) would occur during the 6 AM to 7 PM peak hour. Table 2.11-3 shows that hourly construction worker parking demand at the parking facilities in Yonkers, and Table 2.11-4 shows the hourly construction vehicle trip projections accessing the project site.

Table 2.11-3: Projected Parking Demand at Yonkers Parking Facilities

Time	Autos In	Autos Out	Parking Demand
6 AM to 7 AM	182	0	182
7 AM to 8 AM	46	0	228
8 AM to 9 AM	0	0	228
9 AM to 10 AM	0	0	228
10 AM to 11 AM	0	0	228
11 AM to Noon	0	0	228
Noon to 1 PM	0	0	228
1 PM to 2 PM	0	0	228
2 PM to 3 PM	0	23	205
3 PM to 4 PM	0	182	23
4 PM to 5 PM	0	23	0
5 PM to 6 PM	0	0	0
6 PM to 7 PM	0	0	0
Total	228	228	

¹ 2000 Census reverse journey to work for the Construction industry in Bronx census tract 317 modal split is 73 percent by auto (1.07 persons per auto), 18 percent by subway or rail, and 9 percent by walk.

Table 2.11-4: Projected Hourly Construction Vehicles To and From Project Site

Time	Shuttle Bus Trips In	Shuttle Bus Trips Out	Truck Trips In	Truck Trips Out	Total Trips In	Total Trips Out	Total Vehicle Trips (PCEs)
6 AM to 7 AM	7	7	6	6	13	13	26 (45)
7 AM to 8 AM	3	3	2	2	5	5	10 (17)
8 AM to 9 AM	0	0	2	2	2	2	4 (8)
9 AM to 10 AM	0	0	2	2	2	2	4 (8)
10 AM to 11 AM	0	0	2	2	2	2	4 (8)
11 AM to Noon	0	0	2	2	2	2	4 (8)
Noon to 1 PM	0	0	2	2	2	2	4 (8)
1 PM to 2 PM	0	0	2	2	2	2	4 (8)
2 PM to 3 PM	1	1	1	1	2	2	4 (7)
3 PM to 4 PM	7	7	1	1	8	8	16 (25)
4 PM to 5 PM	2	2	0	0	2	2	4 (6)
5 PM to 6 PM	0	0	0	0	0	0	0 (0)
6 PM to 7 PM	0	0	0	0	0	0	0 (0)
Total	20	20	22	22	42	42	84 (148)

During the construction peak hour of 6 AM to 7 AM, the number of construction vehicle trips accessing the project site would be 26 trips (45 PCEs) which is below the *CEQR Technical Manual's* 50 vehicle trips threshold for when further construction traffic assessment would be needed. Therefore, it is unlikely that there would be the potential for significant adverse construction-related traffic impacts, and no further construction traffic analysis is needed.

Since parking will not be provided on-site, construction worker auto trips would need to park in parking facilities located in Yonkers. The parking demand from construction worker autos would be accommodated by these parking facilities and hence it is not expected that construction activities would result in significant parking impacts.

Transit and Pedestrians

It is expected that the vast majority of workers (80 percent) would arrive between 6 AM and 7 AM, and depart between 3:30 PM and 4:30 PM. Approximately 30 percent of workers would be expected to use mass transit to reach the project site. Construction activities would be expected to generate 78 pedestrian trips during the weekday AM and PM construction peak hours. Since the number of transit or pedestrian trips generated would be below the *CEQR Technical manual* thresholds of 200 pedestrian trips, construction activities are not expected to result in transit or pedestrian impacts, and no further analysis is necessary.

Air Quality

Construction impacts on air quality levels may occur because of particulate matter (fugitive dust) created by demolition, excavation, earth moving operations, etc., emissions from on-site diesel equipment and increased truck traffic to and from the construction site on local roadways or because of temporary road closings.

On-site construction related emissions

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

For the proposed project, the overall construction period would be longer than two years; however, the most intense construction activities in terms of air pollutant emissions is anticipated to occur for less than two years and there would be minimal overlap with other construction phases, thereby minimizing any potential impact. Specifically, demolition activities would only occur for three months for each site and excavation and foundation for the north site would only occur for four months while excavation and foundation for the south site would occur for seven months.

While existing uses on the project site will continue to operate during construction, demolition activities on the site are not anticipated to result in intense or long-term exposure to pollutants at any nearby sensitive receptor. In addition, these relatively intense construction activities would be sequenced to minimize the impact—demolition at both the north site (Goldfine Pavilion) and the south site (Retreat House and three utility buildings) scheduled for the fourth quarter of 2020, excavation and foundation of CCRC North during the second quarter and part of the third quarter of 2021; and excavation and foundation on the CCRC South in the end of the first quarter through the middle of the third quarter of 2022 (see Table 2.11-1). It should be noted that the demolition phase of construction would not require any pile driving and the concrete equipment would be electrified to minimize emissions. In addition, during the five months of demolition on the north site (the heaviest period of construction nearest the existing Hebrew Home buildings) the south and west façades of the existing Stoltz Pavilion would maintain a closed window condition to minimize effects to the residents.

As mentioned above, once CCRC North is completed and operational (as early as the beginning of the second quarter of 2023), it would become a new on-site receptor; however, at that point, most of the heavy construction activity at CCRC South would be completed. Then, as is typical for construction projects, air emissions would be lower in the latter stages of construction, particularly as activities would be dispersed throughout the different floors, and most of the equipment is powered by electricity, versus the diesel heavy equipment used for demolition and foundations. Specifically, there would only be five months during when exterior construction would be occurring (the structure phase of construction) and then the remaining construction on the south site would be interior for the completion of the building. Given the smaller equipment emissions during these latter phases of

construction in the South building, and the distance between the North and South buildings (over 110 feet); it is not anticipated that project construction would result in any significant adverse air quality impacts to nearby sensitive receptors.

Off-site construction related emissions

Mobile source emissions typically result from the operation trucks delivering materials and removing debris, workers' private vehicles, or occasional disruptions in traffic near the construction site. As described above in the Transportation section, the total peak-hour vehicle trip generation from construction is anticipated to be lower than the 2014 CEQR Technical Manual CO-based analysis screening threshold of 170 vehicles per hour, as well as the PM_{2.5}-based screening threshold (discussed in Chapter 17, Section 210 and 311 of the CEQR Technical Manual). Additionally, no traffic lane closures are anticipated as a result of construction activities. Therefore, a more detailed assessment of construction-related mobile source air quality analysis is not warranted since it is not anticipated that the project construction would result in any significant adverse mobile source air quality impacts.

Emission Reduction Measures

To address potential emissions during construction, the project would adhere to the applicable laws, regulations, and building codes in place that focus on clean fuel, dust suppression measures, and idling restrictions for on-road vehicles, specifically:

- **Clean Fuel.** Ultra-low sulfur diesel (ULSD) would be used for diesel engines throughout the construction site.²
- **Dust Control.** Fugitive dust control plans would be required as part of contract specifications. For example, stabilized truck exit areas would be established for washing off the wheels of all trucks that exit the construction site. Truck routes within the site would be watered as needed to avoid the re-suspension of dust. All trucks hauling loose material would be equipped with tight fitting tailgates and their loads securely covered prior to leaving the site. In addition to regular cleaning by the City, streets adjacent to the site would be cleaned as frequently as needed by the construction contractor. Water sprays would be used for all transfer of spoils to ensure that materials are dampened as necessary to avoid the suspension of dust into the air. All measures required by the portion of the *New York City Air Pollution Control Code* regulating construction-related dust emissions would be implemented.
- **Restrictions on Vehicle Idling.** In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time would also be restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or otherwise required for the proper operation of the engine.

In addition to adhering to the required laws and regulations, the proposed project would also implement the following emissions reductions measures to further reduce the effects of construction activities on air quality:

² The Environmental Protection Agency (EPA) required a major reduction in the sulfur content of diesel fuel intended for use in locomotive, marine, and non-road engines and equipment, including construction equipment. As of 2015, the diesel fuel produced by all large refiners, small refiners, and importers must be ULSD fuel. Sulfur levels in non-road diesel fuel are limited to a maximum of 15 parts per million.

- **Diesel Equipment Reduction.** Construction of the proposed project could minimize the use of diesel engines and use electric engines, to the extent practicable. This would reduce the need for on-site generators, and require the use of electric engines in lieu of diesel where practicable.
- **Best Available Tailpipe Reduction Technologies.** Non-road diesel engines with a power rating of 50 horsepower (hp) or greater could utilize the best available tailpipe (BAT) technology for reducing DPM emissions. Diesel particle filters (DPF) have been identified as being the tailpipe technology currently proven to have the highest reduction capability. Construction contracts would specify that all diesel non-road engines rated at 50 hp or greater would utilize DPFs, either installed on the engine by the original equipment manufacturer (OEM) or retrofit with a DPF verified by EPA or the California Air Resources Board (CARB), and may include active DPFs if necessary; or other technology proven to reduce DPM by at least 90 percent.
- **Utilization of Newer Equipment.** EPA's Tier 1 through 4 standards for non-road engines regulate the emission of criteria pollutants from new engines, including PM, CO, NO_x, and hydrocarbons (HC). All non-road construction equipment in the project could meet at least the Tier 2 emissions standard, and construction equipment meeting Tier 3 (with DPFs) and/or Tier 4 emissions standards would be used where conforming equipment is widely available, and the use of such equipment is practicable.
- **Source Location and Shielding.** In order to reduce the resulting concentration increments at sensitive receptors, large emissions sources and activities such as concrete trucks, generators and large compressors could be located away from the sensitive receptors to the extent practicable. This would reduce potential concentration increments from on-site sources at such locations by increasing the distance between the emission sources and the sensitive locations, resulting in enhanced dispersion of pollutants. Additionally, perimeter fencing around the construction site would reduce both fugitive dust and tailpipe emissions from reaching sensitive receptors.

Overall, these potential air emission control commitments by the applicant are expected to significantly reduce DPM emissions by a similar reduction level that would be achieved by applying the currently defined best available control technologies under New York City Local Law 77 of 2003, which are required only for publicly funded City capital projects.

Therefore, due to the factors described above and with the implementation of an emissions control program, the proposed project is not anticipated to result in any significant adverse impacts on air quality during construction.

Noise

Construction activities have the potential to affect the noise conditions of existing receptors (existing Hebrew Home buildings) near the proposed development and new receptors that would be introduced during the phased development. Construction noise can vary widely depending on the phase of construction (e.g., demolition, land clearing and excavations, foundation, steel and concrete erection, mechanical and interior fit out) and the specific task equipment and methods being used. The most significant construction noise sources at a construction site are generally the movement of trucks to and from a project site, back-up alarms and equipment such as excavators, hoe rams, line drillers, jackhammers, and cranes. The noisiest phase of construction is typically during demolition or excavation and foundation work.

For the proposed project, the overall construction period would be longer than two years; however, the most intense construction activities in terms of construction noise sources are anticipated to occur for less than two years. In addition, these relatively intense construction activities would be sequenced to minimize the impact. Specifically, demolition activities would only occur for five months at each site and excavation and foundation for the north site would occur for four months while excavation and foundation for the south site would occur for six months. Demolition and the excavation and foundation work phases at both sites would not overlap with each other, further reducing the overall duration of intense construction activities.

Noise from construction activities and some construction equipment is regulated by the New York City Noise Control Code and by the EPA. The New York City Noise Code (Section 24-228) limits noise from construction equipment to a maximum of 85 dBA as measured 50 feet from the source. The code also limits noise from paving breakers, such as jackhammers, to 95 dBA at a distance of 1 meter and requires that electrical, hydraulic, or pneumatic with a discharge muffler types be used. The absolute noise from construction as per code is 85 dBA and with a highest incremental at 15 dBA as per page 16 of the Local Laws of the City of NY No113 Section 24-228. The New York City Noise Control Code limits construction activities to weekdays between the hours of 7:00 AM and 6:00 PM, requires that a Construction Noise Mitigation Plan be implemented, and sets noise limits for specific pieces of construction equipment. Noise control measures would be described in the Construction Noise Mitigation Plan and could include a variety of source and path controls.

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

- The responsible party would self-certify that all construction tools and equipment have been maintained to not generate excessive or unnecessary noise and that the noise emissions would not exceed the levels specified in the Federal Highway Administration's Roadway Construction Noise Model User's Guide, January, 2006.
- All construction equipment would be equipped with necessary noise reduction equipment including mufflers. All equipment with internal combustion engines would be operated with the doors closed including noise-insulating materials and at the lowest engine speed allowable.
- Where feasible, practical and safe, the use of back-up alarms would be minimized and/or quieter back-up alarms would be installed in accordance with OSHA standards.
- Vehicles would not be allowed to idle more than three minutes in accordance with New York City Administrative Code §24-163.
- The contractor shall utilize a training program to inform workers on methods that can minimize construction noise.
- For impact equipment such as pile drivers and jackhammers, the quietest equipment shall be selected taking into consideration the structural and geotechnical conditions.
- The use of hoe rams shall include the use of acoustic shrouds or acoustic curtains to minimize noise.

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

- When the DOB regulations require a perimeter barrier or “construction fence” and the site is within 200 feet of a receptor, the barrier shall be constructed in a specific manner (as described in the New York City Noise Code) to provide sufficient sound attenuation. Section 3307.7 of the New York City Building Code requires a solid 12-foot wall made out of wood or other suitable material be constructed where a new building is being constructed or a building is being demolished to grade.
- Should noise complaints occur during construction, the contractor shall use path noise control measures such as temporary noise barriers, jersey barriers and/or portable noise enclosures for small equipment (jackets around equipment).
- In general, the quietest equipment and methods shall be used for excavators, dump trucks, cranes, auger drills and concrete saws to the extent feasible and practical.

Overall, construction of the proposed project would not involve any unusual or exceptional construction activities or practices for low- to mid-rise type buildings in New York City. As noted above, demolition, excavation and foundation work at the site are when the noisiest activities would be anticipated. Demolition at the north and south sites and excavation/foundation at the north site would be limited to a period of nine months beginning in late 2020. Excavation/foundation would occur over a period of six months at the south site starting at the beginning of 2022. The noisiest period of construction for existing receptors (Hebrew Home Jacob Reingold Pavilion and Stolz Pavilion buildings) is expected to occur during the demolition phase of the north site, when up to three jackhammers and two excavators may be used.

At the closest existing receptor locations (Jacob Reingold Pavilion and Stolz Pavilion buildings), which are located approximately 180 feet from the center of the CCRC North site, construction noise during demolition would be approximately 77 dBA (L_{10}) at the exterior of the building assuming that the three jackhammers and two excavators are operating simultaneously. The jackhammers are assumed to be the quietest jackhammers that are suitable to perform the work. Additionally, the distance to the center of the site is used due to the mobile nature of construction equipment, as the equipment is likely to be spread throughout the site at varying distances. When such jackhammers are used between 7:00 AM and 6:00 PM on weekdays, the New York City Noise Code does not require additional pathway noise control unless the work is conducted within 35 feet of an indoor receptor or there are complaints.

The applicant is committed to maintaining an acceptable interior noise condition for residential areas within the existing Hebrew Home buildings during construction. Residential windows would remain closed during construction and the relatively low area of fenestration at the existing Jacob Reingold Pavilion and Stolz Pavilion (see photos in the EAS) would provide substantial sound attenuation to reduce interior noise levels. Both of these buildings are furnished with double-glazed gas-filled windows and enveloped with brick masonry facades. It is assumed that with windows closed, the outdoor-to-indoor sound attenuation of the Jacob Reingold Pavilion and Stolz Pavilion is 33 dBA OITC or greater and interior noise levels during construction would be below 45 dBA (L_{10}).

If interior noise levels during construction with the quietest jackhammer suitable to perform the work exceed 45 dBA (L_{10}) or if noise complaints are received, the applicant would implement pathway noise control measures such as those described in the New York City Noise Code Construction Noise Mitigation Section 28-102, which include portable noise barriers made from concrete jersey barriers and ¾-inch plywood or portable noise tent enclosures made of steel frames wrapped with noise curtain material. Noise barriers or enclosures shall be free from gaps and holes and shall achieve a Sound Transmission Class rating of STC 30 or greater. The pathway control would be placed as close to the

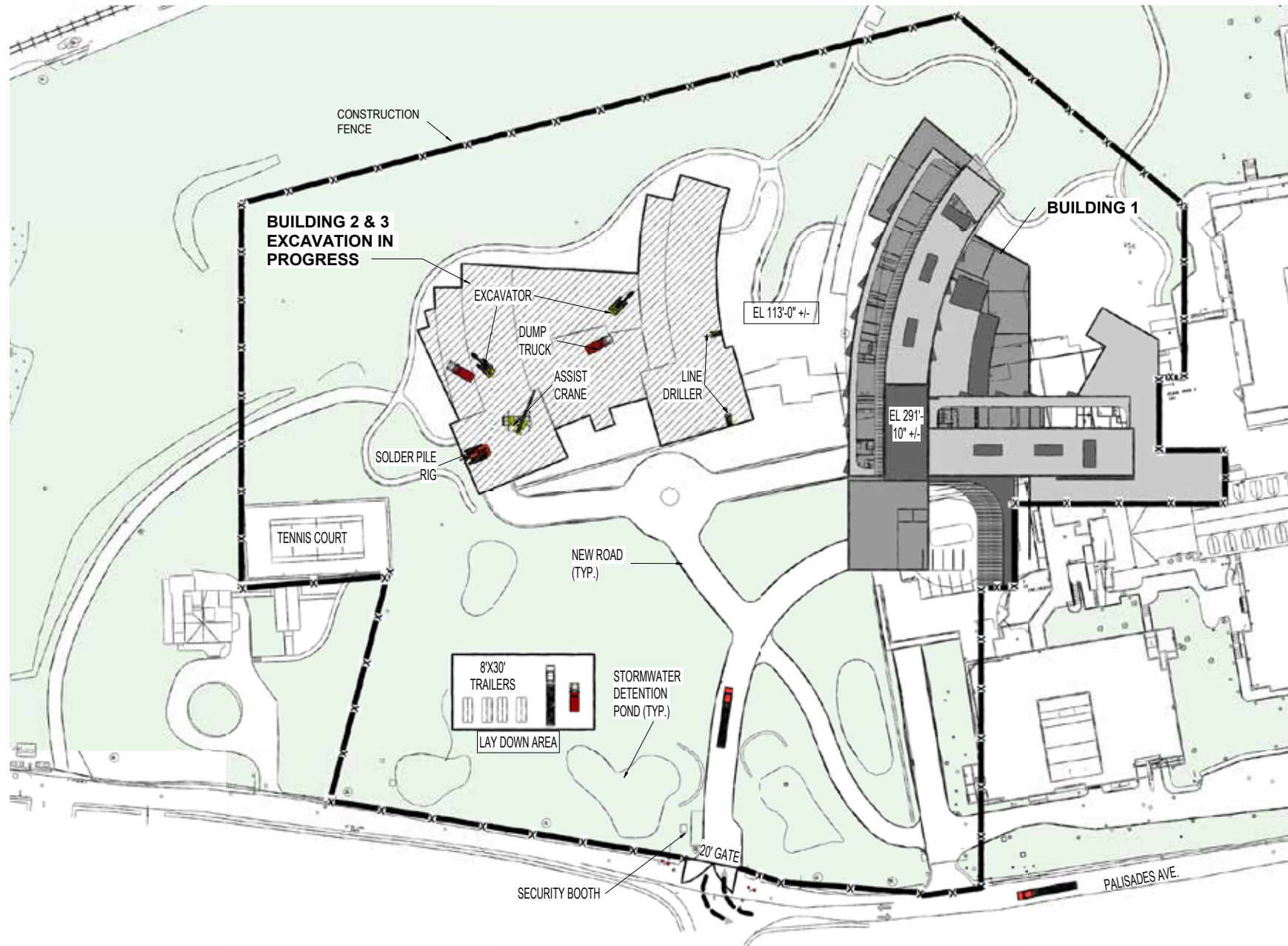
jackhammers as possible and would be designed to break the line of sight to any indoor receptor within 200 feet. Portable noise barriers or noise tents generally provide at least 5 dBA of sound attenuation.

Since CCRC North would be constructed and potentially occupied during superstructure construction of CCRC South on the south site, there is the potential for construction noise impacts to new receptors introduced by the proposed project. The loudest construction activities associated with the superstructure construction include air compressors and cranes. Exterior construction noise at CCRC North would be 71 dBA (L₁₀) during the superstructure phase at CCRC South. As described in Section 2.10, exterior With-Action noise conditions would be Marginally Acceptable and specific window-wall attenuation of the proposed development is not required to maintain acceptable interior noise conditions. The proposed project building would be constructed with materials that would provide an outdoor-to-indoor sound attenuation of 27 dBA OITC or greater which would keep interior noise conditions below 45 dBA (L₁₀) during construction of CCRC South.

With the adherence to existing construction noise regulations and the implementation of a Construction Noise Mitigation Plan, as required by the New York City Noise Code, construction the proposed project is not anticipated to result in significant adverse construction noise impacts at the nearest receptors - the existing Hebrew Home at Riverdale buildings.

Conclusion

Construction would last longer than 24 months and would have phased construction; however, the phasing be scheduled so that heavy construction activity which would be limited to short term duration, and would adhere to the applicable laws, regulations, and building codes that govern construction in New York City. Additionally, project components related to construction transportation have been incorporated into the project, and will be reflected in a Restrictive Declaration, to avoid the potential for significant adverse impacts related to construction (transportation). As detailed in the construction assessment above, the proposed project would not result in significant adverse construction impacts in the key technical areas of natural resources, transportation, air quality, and noise. Therefore, no further analysis is warranted, and the project would not result in construction-period significant adverse impacts.



Appendix A

Agency Correspondence



ARCHAEOLOGY

Project number: DEPARTMENT OF CITY PLANNING / 01DCP038X
Project: HEBREW HOME FOR THE AGED
Date received: 11/23/2016

Comments: as indicated below. Properties that are individually LPC designated or in LPC historic districts require permits from the LPC Preservation department. Properties that are S/NR listed or S/NR eligible require consultation with SHPO if there are State or Federal permits or funding required as part of the action.

This document only contains Archaeological review findings. If your request also requires Architecture review, the findings from that review will come in a separate document.

Properties with no Archaeological significance:

- 1) ADDRESS: 5901 PALISADES AVE, BBL: 2059330225, PROPERTY NAME: HEBREW HOME FOR THE AGED
- 2) ADDRESS: 5801 PALISADE AVENUE, BBL: 2059330055

Comments: The LPC is in receipt of the, "Phase 1A Archaeological Assessment Hebrew Home at Riverdale, Bronx County, New York," prepared by VHB and dated November 2016. We concur that there are no further archaeological concerns for the site. Please submit a pdf of the entire report and a bound copy of the report to the LPC.



11/30/2016

SIGNATURE
Amanda Sutphin, Director of Archaeology

DATE

File Name: 13085_FSO_ALS_11302016.doc



April 3, 2018

Robert Dobruskin
Director, Environmental Assessment and Review Division
New York City Department of City Planning
120 Broadway, 31st Floor
New York, NY 10271

Vincent Sapienza, P.E.
Commissioner

**Re: Hebrew Home for the Aged - Expansion
Block 5933, Lots 55, 210, 224, 225, and 230
CEQR # 18DCP134X**

Angela Licata
Deputy Commissioner of
Sustainability

59-17 Junction Blvd.
Flushing, NY 11373

Tel. (718) 595-4398
Fax (718) 595-4422
alicata@dep.nyc.gov

Dear Mr. Dobruskin:

The New York City Department of Environmental Protection, Bureau of Sustainability (DEP) has reviewed the March 2018 Environmental Assessment Statement, the October 2017 Phase I Environmental Site Assessment (Phase I), and the December 2017 Phase II Environmental Site Assessment Work Plan (Work Plan) and Health and Safety Plan (HASP) prepared by VHB on behalf of Hebrew Home for the Aged at Riverdale, Inc. (applicant) for the above referenced project. It is our understanding that the applicant is seeking a special permit pursuant to Zoning Resolution section 74-901 for a Long Term Care Facility (LTCF) within an R1-1 zoning district, as well as multiple authorizations pursuant to the Special Natural Area District 2 requirements from the New York City Department of City Planning (DCP) to facilitate the development of a 633,890-gross square foot (gsf) Continuing Care Retirement Community (CCRC)/LTCF at the existing Hebrew Home campus. The proposed project would include the construction of three new buildings, two on the south site and one on the north site. The new building on the north site, CCRC North, would be built in place of the existing Goldfine Pavilion, the southernmost existing building on the north site, which would be demolished. CCRC North would house 271 independent senior living units. The two buildings on the south site, together known as CCRC South, would hold 117 new independent senior living units. Additional site improvements include the demolition of the Cardinal Spellman Retreat House and three utility buildings currently on the south site. One hard-court tennis court, 60 feet by 120 feet, would be constructed immediately west of the existing chapel for private use by the residents on the project site. The project site would contain a combined 525 parking spaces, a 90-space increase from existing conditions. The subject property is bounded by Palisade Avenue to the east, the Metro-North Hudson Line rail tracks to the west, a line approximately 380 feet south of West 261st Street to the north, and the southern boundary of Lot 55 to the south in the Riverdale neighborhood of Bronx Community District 8.

The October 2017 Phase I revealed that historical on-site and surrounding area land uses consists of residential and commercial uses including nursing homes, an orphan asylum, residential buildings, monasteries, a chapel, dormitory buildings, a railroad, institutional buildings, parking lots, a dry cleaner, etc. Based on the age of the subject buildings, asbestos containing materials (ACM) and lead based paints (LBP) could be present in the on-site structures. In addition, fluorescent lighting fixtures and electrical equipment may include polychlorinated biphenyl (PCB)-containing components and/or mercury containing components. Regulatory databases identified 13 spills within 1/8 mile; 3 underground storage tank sites and 7 aboveground storage tank sites within 1/4 mile; 22 leaking storage tanks within 1/2 mile; and 1 National Priority List site within 1 mile of the subject property.

The December 2017 Work Plan proposes to advance twelve soil borings (SB-1 to SB-12). Two soil samples will be collected from each boring. One soil sample will be collected from 0 to 2 feet below grade surface (bgs) and one soil sample will be collected at the anticipated terminal excavation depth at each soil boring location. If bedrock is encountered, the deeper soil sample will be collected at refusal, or just above bedrock. Should any soils be observed that exhibit suspect characteristics (e.g., staining, odors, photoionization detector [PID] readings, etc.), an additional (third) soil sample will be collected, where appropriate, from the boring location. If an underground storage tank (UST) is confirmed to be present up to four soil borings will be advanced around the perimeter of the UST. Two soil samples will be collected from each boring. One soil sample will be collected from 0 to 2 feet bgs and one soil sample just below the base of the tank invert depth, or at refusal, if encountered will be collected at each boring location surrounding the UST. Should any soils be observed that exhibit suspect characteristics (e.g., staining, odors, PID readings, etc.), a third soil sample will be collected, where appropriate, from the boring location. Groundwater samples will be collected from three locations (GW-1, GW-2 and GW-3). Soil and groundwater samples will be analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) Method 8260, TCL semi-volatile organic compounds by EPA Method 8270, pesticides by EPA Method 8081, PCBs by EPA Method 8082, and Target Analyte List metals (total and dissolved for groundwater samples). Four soil vapor samples (SV-1 to SV-4) will be collected and analyzed for VOCs by EPA Method TO-15.

Based upon our review of the submitted documentation, we have the following comments and recommendations to DCP:

Work Plan

- DCP should inform the applicant that upon completion of the investigation activities, the consultant should submit a detailed Phase II report to DEP for review and approval. The report should include, at a minimum, an executive summary, narrative of the field activities, laboratory data and conclusions, comparison of soil, groundwater, and soil vapor analytical results (i.e., NYSDEC 6NYCRR Part 375, NYSDEC Water Quality Regulations, and the New York State Department of Health's October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York), updated site plans depicting sample locations, boring logs, and remedial recommendations, if warranted.

- DCP should inform the applicant that ACM, LBP, and suspected PCB-containing materials may be present in the on-site structures. These materials should be properly removed and/or managed prior to the start of any construction activities and disposed of in accordance with all federal, state, and local regulations.

DEP finds the December 2017 Phase II Work Plan and HASP for the proposed project acceptable as long as the aforementioned information is incorporated into the Phase II Work Plan. Future correspondence and submittals related to this project should include the following CEQR # **18DCP134X**. If you have any questions, you may contact me at (718) 595-4358.

Sincerely,



Wei Yu
Deputy Director, Hazardous Materials

c: R. Weissbard
T. Estesén
M. Wimbish
S. Shellooe – DCP
O. Abinader – DCP

Appendix B

Waterfront Revitalization Program



Waterfront Revitalization Program

Policy 1: Support and facilitate commercial and residential development in areas well-suited to such development.

Policy 1.1: Encourage commercial and residential development in appropriate Coastal Zone areas.

The Riverdale neighborhood of the Bronx is generally characterized by a mix of single- and multi-family residential uses, large institutional uses, and significant access to park space, including Riverdale Park to the south along the waterfront. The project site itself has a long history of institutional uses; institutional facilities have been located on the north site since the early 1920s and the south site since at least 1950. The proposed development of a Continuing Care Retirement Community (CCRC) /Long Term Care Facility (LTCF) campus, a residential-like community facility use, would be in keeping with this long history on the project site and surrounding properties (including the College of Mount Saint Vincent to the north and single-family residences to the south). In addition, the proposed project would redevelop the largely vacant and underutilized south site to accommodate additional residents and promote economic development through the creation of additional jobs on the project site. Therefore, the proposed project is consistent with this policy.

Policy 1.3: Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.

Overall, local facilities are adequate to handle the demands of the proposed project. The proposed project would connect existing water and sewer lines that are available at the project site. The proposed project would generate fewer trips and, therefore, the local street network is adequate to accommodate traffic generated by the project. In addition, given the proposed senior-oriented use, there would be no increase in demand on local public schools. Therefore, the proposed project supports this policy.

Policy 5: Protect and improve water quality in the New York City coastal area.

Policy 5.1: Manage direct or indirect discharges to waterbodies.

The proposed project would result in a five percent increase in impervious area on the project site resulting in an increase in stormwater runoff. Through the implementation of the proposed project, a portion of the stormwater would discharge directly to the Hudson River and a portion would be collected and treated by the proposed stormwater system. Stormwater runoff from landscape and pavement west of the proposed buildings would discharge directly to the Hudson River, and runoff from proposed buildings and all landscape and pavement east of the proposed building would be discharged to the combined sewer system.

The proposed project would incorporate BMPs – such as rooftop detention and detention ponds – to offset the increase in stormwater runoff from the project site. In addition, methods for decreasing impervious area include a comprehensive landscaping plan and green infrastructure projects, such as green roofs on the proposed buildings and a landscaped terrace to connect them.

Based upon the foregoing, the proposed project would be consistent with this policy.

Policy 5.2: Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.

The proposed project would incorporate a comprehensive landscaping plan, green roofs and a landscaped terrace to manage stormwater runoff and nonpoint source pollution from the project site. In addition, BMPs such as rooftop detention and detention ponds would be part of the proposed project. As such, the proposed project would be consistent with this policy.

Policy 7: Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environmental and public health and safety.

Policy 7.1: Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution, and prevent degradation of coastal ecosystems.

Documented subsurface impacts would be properly investigated, managed and/or removed and disposed off-site in accordance with applicable regulations as part of implementation of an approved Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP) under an (E) designation for hazardous materials, which would be applied to the project site. The (E) designation would be administered by the New York City Mayor's Office of Environmental Remediation (OER) Furthermore, any solid waste generated would be properly managed in accordance with applicable regulations. No hazardous wastes or toxic pollutants would be generated by the proposed project. Therefore, the proposed project would be consistent with this policy.

Policy 7.2: Prevent and remediate discharge of petroleum products.

An (E) designation for hazardous materials would be applied to the project site and would be administered by OER. The (E) designation program includes requirements to address to prevent and remediate potential discharge of petroleum products.

Policy 9: Protect scenic resources that contribute to the visual quality of the New York City coastal area.

Policy 9.1: Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.

Several design features of the proposed project would help protect the visual quality of the study area and minimize the visual impact of the proposed buildings on the project site. The proposed buildings would be set back a distance of at least 345 feet from Palisade Avenue, consistent with the existing conditions on the project site and with the character of the other uses in the study area. In addition, the proposed buildings would be oriented generally perpendicular to Palisade Avenue, maintaining existing view corridors from the roadway as much as possible and hiding the additional bulk proposed for the project site. Finally, the proposed landscaping plan would add to the visual appeal of the project site and improve the visual quality for pedestrians along Palisade Avenue. Given these measures, the proposed project is consistent with this policy.

Policy 9.2: Protect and enhance scenic values associated with natural resources.

The project site is located within the Special Natural Area District 2 (NA-2) and has scenic views of the Hudson River. From the public roadway, views of the water are achievable generally looking southwest, from the Cardinal Spellman Retreat House and south along Palisade Avenue. The proposed project site plan has been designed to maintain existing view corridors to the Hudson River. The clustering of the proposed buildings near the existing Hebrew Home campus preserves the existing view corridor toward the south. In addition, the three utility buildings on the south site would be demolished as part of the proposed project, meaning in some cases the views to the water would be improved. Finally, the proposed landscaping on the project site would protect the scenic quality associated with the natural features on the project site. Therefore, the proposed project is consistent with this policy.

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM

Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's Coastal Zone, must be reviewed and assessed for their consistency with the New York City Waterfront Revitalization Program (WRP) which has been approved as part of the State's Coastal Management Program.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, the New York City Department of City Planning, or other city or state agencies in their review of the applicant's certification of consistency.

A. APPLICANT INFORMATION

Name of Applicant: Hebrew Home for the Aged at Riverdale, Inc.

Name of Applicant Representative: Gary Tarnoff - Kramer Levin Naftalis & Frankel LLP

Address: 1177 Sixth Avenue, New York, NY 10036

Telephone: 212-715-7833 Email: gtarnoff@kramerlevin.com

Project site owner (if different than above): _____

B. PROPOSED ACTIVITY

If more space is needed, include as an attachment.

1. Brief description of activity

The applicant is seeking approval for a special permit pursuant to Zoning Resolution section 74-901 for a Long Term Care Facility (LTCF) (on the portion of the project site zoned R1-1) as well as multiple authorizations pursuant to the Special Natural Area District 2 requirements to facilitate the development of a Continuing Care Retirement Community (CCRC)/ LTCF at the existing Hebrew Home campus located at 5701-5961 Palisade Avenue in the Riverdale neighborhood of the Bronx. The applicant is also seeking a certification pursuant to Section 105-45 (Certification of Restoration Plan) for a proposed restoration plan with respect to natural features that were previously altered without prior approval of the CPC. The proposed project would include the renovation of an existing building, demolition of a building, and construction of three new buildings. Proposed programming includes: 137 Nonprofit Residences for the Elderly, 106 assisted living units, 588 skilled nursing beds, and 388 Independent Senior Living units, with 525 parking spaces. See also Section 1.0, "Project Description" of the attachments.

2. Purpose of activity

The proposed special permit pursuant to Zoning Resolution Section 74-901 is necessary to allow for the development of the CCRC in the R1-1 portion of the Project Site and given the location in the Special Natural Area District 2, authorizations are required under the NA regulations. These proposed actions would facilitate the first CCRC/LTCF in New York City, and would allow the applicant to adapt to changing standards of the senior living, elder care, and health care industries.

C. PROJECT LOCATION

Borough: Bronx Tax Block/Lot(s): Block 5933; Lots 55,210,224,225,230

Street Address: 5701-5961 Palisade Avenue

Name of water body (if located on the waterfront): Hudson River

D. REQUIRED ACTIONS OR APPROVALS

Check all that apply.

City Actions/Approvals/Funding

City Planning Commission

☒ Yes ☐ No

- | | | |
|---|---|--|
| <input type="checkbox"/> City Map Amendment | <input type="checkbox"/> Zoning Certification | <input type="checkbox"/> Concession |
| <input type="checkbox"/> Zoning Map Amendment | <input checked="" type="checkbox"/> Zoning Authorizations | <input type="checkbox"/> UDAAP |
| <input type="checkbox"/> Zoning Text Amendment | <input type="checkbox"/> Acquisition – Real Property | <input type="checkbox"/> Revocable Consent |
| <input type="checkbox"/> Site Selection – Public Facility | <input type="checkbox"/> Disposition – Real Property | <input type="checkbox"/> Franchise |
| <input type="checkbox"/> Housing Plan & Project | <input type="checkbox"/> Other, explain: _____ | |
| <input checked="" type="checkbox"/> Special Permit | | |
- (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____

Board of Standards and Appeals ☐ Yes ☒ No

- ☐ Variance (use)
- ☐ Variance (bulk)
- ☐ Special Permit
- (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____

Other City Approvals

- | | |
|--|---|
| <input type="checkbox"/> Legislation | <input type="checkbox"/> Funding for Construction, specify: _____ |
| <input type="checkbox"/> Rulemaking | <input type="checkbox"/> Policy or Plan, specify: _____ |
| <input type="checkbox"/> Construction of Public Facilities | <input type="checkbox"/> Funding of Program, specify: _____ |
| <input type="checkbox"/> 384 (b) (4) Approval | <input type="checkbox"/> Permits, specify: _____ |
| <input type="checkbox"/> Other, explain: _____ | |

State Actions/Approvals/Funding

- ☐ State permit or license, specify Agency: _____ Permit type and number: _____
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☒ Other, explain: Seeking approval of a Certificate of Authority from the Continuing Care Retirement
Community Council under Article 46 of the New York Public Health Law

Federal Actions/Approvals/Funding

- ☐ Federal permit or license, specify Agency: _____ Permit type and number: _____
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☐ Other, explain: _____

Is this being reviewed in conjunction with a Joint Application for Permits? ☐ Yes ☒ No

E. LOCATION QUESTIONS

1. Does the project require a waterfront site? ☐ Yes ☒ No
2. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land under water or coastal waters? ☐ Yes ☒ No
3. Is the project located on publicly owned land or receiving public assistance? ☐ Yes ☒ No
4. Is the project located within a FEMA 1% annual chance floodplain? (6.2) ☐ Yes ☒ No
5. Is the project located within a FEMA 0.2% annual chance floodplain? (6.2) ☐ Yes ☒ No
6. Is the project located adjacent to or within a special area designation? See *Maps – Part III of the NYC WRP. If so, check appropriate boxes below and evaluate policies noted in parentheses as part of WRP Policy Assessment (Section F).* ☐ Yes ☒ No
 - ☐ Significant Maritime and Industrial Area (SMIA) (2.1)
 - ☐ Special Natural Waterfront Area (SNWA) (4.1)
 - ☐ Priority Maritime Activity Zone (PMAZ) (3.5)
 - ☐ Recognized Ecological Complex (REC) (4.4)
 - ☐ West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA) (2.2, 4.2)

F. WRP POLICY ASSESSMENT

Review the project or action for consistency with the WRP policies. For each policy, check Promote, Hinder or Not Applicable (N/A). For more information about consistency review process and determination, see **Part I** of the *NYC Waterfront Revitalization Program*. When assessing each policy, review the full policy language, including all sub-policies, contained within **Part II** of the WRP. The relevance of each applicable policy may vary depending upon the project type and where it is located (i.e. if it is located within one of the special area designations).

For those policies checked Promote or Hinder, provide a written statement on a separate page that assesses the effects of the proposed activity on the relevant policies or standards. If the project or action promotes a policy, explain how the action would be consistent with the goals of the policy. If it hinders a policy, consideration should be given toward any practical means of altering or modifying the project to eliminate the hindrance. Policies that would be advanced by the project should be balanced against those that would be hindered by the project. If reasonable modifications to eliminate the hindrance are not possible, consideration should be given as to whether the hindrance is of such a degree as to be substantial, and if so, those adverse effects should be mitigated to the extent practicable.

		Promote	Hinder	N/A
I	Support and facilitate commercial and residential redevelopment in areas well-suited to such development.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I.1	Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I.2	Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I.3	Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I.4	In areas adjacent to SMIA's, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I.5	Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Promote	Hinder	N/A
2	Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.1	Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.2	Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.3	Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.4	Provide infrastructure improvements necessary to support working waterfront uses.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.5	Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.1.	Support and encourage in-water recreational activities in suitable locations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.2	Support and encourage recreational, educational and commercial boating in New York City's maritime centers.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.3	Minimize conflicts between recreational boating and commercial ship operations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.4	Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.5	In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Protect and restore the quality and function of ecological systems within the New York City coastal area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.1	Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.2	Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.3	Protect designated Significant Coastal Fish and Wildlife Habitats.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.4	Identify, remediate and restore ecological functions within Recognized Ecological Complexes.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.5	Protect and restore tidal and freshwater wetlands.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.6	In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.7	Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.8	Maintain and protect living aquatic resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Promote	Hinder	N/A
5	Protect and improve water quality in the New York City coastal area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.1	Manage direct or indirect discharges to waterbodies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2	Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3	Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.4	Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.5	Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.1	Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.2	Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in <i>New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms</i>) into the planning and design of projects in the city's Coastal Zone.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.3	Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.4	Protect and preserve non-renewable sources of sand for beach nourishment.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.1	Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2	Prevent and remediate discharge of petroleum products.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.3	Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	Provide public access to, from, and along New York City's coastal waters.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.1	Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.2	Incorporate public access into new public and private development where compatible with proposed land use and coastal location.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.3	Provide visual access to the waterfront where physically practical.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.4	Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Promote	Hinder	N/A
8.5	Preserve the public interest in and use of lands and waters held in public trust by the State and City.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.6	Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Protect scenic resources that contribute to the visual quality of the New York City coastal area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.1	Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2	Protect and enhance scenic values associated with natural resources.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City coastal area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10.1	Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10.2	Protect and preserve archaeological resources and artifacts.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

G. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: Nancy Doon

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Applicant/Agent's Signature: Nancy Doon

Date: 4/2/2019

Submission Requirements

For all actions requiring City Planning Commission approval, materials should be submitted to the Department of City Planning.

For local actions not requiring City Planning Commission review, the applicant or agent shall submit materials to the Lead Agency responsible for environmental review. A copy should also be sent to the Department of City Planning.

For State actions or funding, the Lead Agency responsible for environmental review should transmit its WRP consistency assessment to the Department of City Planning.

For Federal direct actions, funding, or permits applications, including Joint Applicants for Permits, the applicant or agent shall also submit a copy of this completed form along with his/her application to the NYS Department of State Office of Planning and Development and other relevant state and federal agencies. A copy of the application should be provided to the NYC Department of City Planning.

The Department of City Planning is also available for consultation and advisement regarding WRP consistency procedural matters.

New York City Department of City Planning

Waterfront and Open Space Division
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New York State Department of State

Office of Planning and Development
Suite 1010
One Commerce Place, 99 Washington Avenue
Albany, New York 12231-0001
(518) 474-6000
www.dos.ny.gov/opd/programs/consistency

Applicant Checklist

- ☐ Copy of original signed NYC Consistency Assessment Form
- ☐ Attachment with consistency assessment statements for all relevant policies
- ☐ For Joint Applications for Permits, one (1) copy of the complete application package
- ☐ Environmental Review documents
- ☐ Drawings (plans, sections, elevations), surveys, photographs, maps, or other information or materials which would support the certification of consistency and are not included in other documents submitted. All drawings should be clearly labeled and at a scale that is legible.

Appendix C

Transportation





Memorandum

To: New York City Department of City
Planning

Date: April 2, 2018

cc: Gary Tarnoff and Toni Finger –
Kramer Levin Naftalis and Frankel

Project #: 28896.00

From: Marty Taub, Alfred Yeung, and
Claudia Vilcherrez – VHB

Re: Hebrew Home at Riverdale Modernization and Repositioning
Master Plan – Travel Demand Factors Memorandum

The following memorandum summarizes the transportation screening analysis for the proposed Hebrew Home at Riverdale campus expansion project, per *2014 City Environmental Quality Review (CEQR) Technical Manual* guidelines. It provides a detailed description of the project analysis framework and travel demand assumptions used to determine the number of expected project-generated trips. It is expected that the number of vehicle, transit and pedestrian trips would remain below their respective CEQR Level 1 screening thresholds and no further analyses are needed.

ANALYTICAL FRAMEWORK

The proposed project would develop continuing care living facilities on the Hebrew Home at Riverdale (HHAR) campus. This would include the construction of approximately 388 independent senior living apartment units and would also result in the removal of 144 existing nursing home beds. The HHAR campus currently features 850 nursing home beds, 137 independent senior living apartment units, and 35 assisted living units. Absent the proposed project, it is expected that the HHAR would convert 112 existing nursing home beds to 70 assisted living units. The independent senior living units would house seniors mostly aged 78 and over, and would be self-contained individual units, with at least one meal per day provided in campus facilities. These units would have relatively low staff support. The assisted living units would be a health-related facility for seniors mostly aged 78 and over that need medical assistance with at least two activities of daily living (i.e., eating, dressing, bathing, walking, toileting). These units would be smaller and have no kitchens (three daily meals would be provided in campus facilities). Residents of both types of units would also have access to a variety of on-campus amenities and services including a pool, gym facilities, meeting rooms and music rooms, among others. Since most residents would be near the age of 80 or older, many would likely no longer be driving. Because of this and the variety of on-site services provided, overall vehicle ownership and usage for residents of both types of the proposed units are expected to be low.

Trip generation calculations were first developed for the proposed new uses (independent living and assisted living units) to represent new project-generated trips. Next, trip generation calculations were also developed for the nursing home beds that would be removed as part of the project. These trips were then subtracted from the total new project-generated trips to yield the net project-generated trips that would result from the proposed project.

CEQR TRANSPORTATION ANALYSIS SCREENING

According to *2014 CEQR Technical Manual* procedures for transportation analysis, a two-tiered screening process is to be undertaken to determine whether a quantified analysis is necessary. The first step, the Level 1 (Trip Generation) screening, determines whether the number of peak hour person and vehicle trips generated by the proposed development would remain below the minimum thresholds for further study. These thresholds are:

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- 50 peak hour vehicle trips ends;
- 200 peak hour subway/rail or bus transit riders; and
- 200 peak hour pedestrian trips.

If project-generated trips would exceed any of these thresholds, a Level 2 (Trip Assignment) screening assessment is usually performed. Under this assessment, project-generated trips that exceed Level 1 thresholds are assigned to and from the site through their respective modal networks (streets, bus and subway lines, sidewalks, etc.) based on expected origin-destination patterns and travel routes.

Survey Findings

Since the proposed land uses are unique, a survey was conducted at the request of the New York City Department of City Planning of the existing facilities within the HHAR campus to develop the travel demand factors. The survey was conducted on Wednesday, June 14, 2017 (Wednesdays and Thursdays typically have the highest number of trips during the week). The survey included vehicle and pedestrian video counts at the campus' Main Entrance and at the secondary nursing employee entrance at Sigma Place, automatic traffic recorder (ATR) counts at the two entrances for an eight-day period, personal surveys at the campus' Main Entrance between 6 AM and 7 PM, and vehicle occupancy observations at the Sigma Place entrance. At the time of the June 2017 survey, the HHAR campus was 98 percent occupied.

The ATR counts were used to validate that Wednesday and Thursday are the peak days during a typical week, and that weekend traffic to the project site is significantly lower than on a typical weekday (HHAR operates with reduced staff during the weekends). The vehicle and pedestrian video counts were then tabulated to determine the number of vehicle trips and pedestrian walk trips. Pedestrian walk trips generally originate from MTA buses at Riverdale Avenue and West 261st Street, an approximately one-third mile walk from the project site, or from the Metro North Riverdale station, an approximately two-third mile walk from the project site (Hudson Rail Link bus service from the Metro North station is also provided on weekdays and stops at the Main Entrance). The vehicular volume was then adjusted to match the volumes shown for the ATR counts.

The personal survey data, which featured a sample size of over 1,600 surveys, were tabulated and used to determine the modal splits and vehicle occupancies which were applied to the vehicular volumes to determine the number of daily person trips on a typical weekday for the nursing and independent living uses (categorized by employee, resident/patient, and visitor trips). Employees that provide service to all residents within the HHAR campus, such as Administrative/Finance, Housekeeping, and Food Services staff, are located in the nursing home areas.¹ These employees consist of 38 percent of the nursing home employee trips surveyed (65 percent of nursing home trips surveyed were employees). These nursing employee trips were redistributed between the three uses within the HHAR

¹ Per the HHAR, during the day shift, there are approximately 400 employees that report to nursing areas, 15 to 20 employees that report to independent living areas, and three employees that report to assisted living areas. Of the employees reporting to the nursing areas, 34 employees are part of Administrative/Finance, 65 employees are part of Housekeeping, and 52 employees are part of Food Services; these employees also provide services to independent living and assisted living uses. The remaining employees that report to nursing areas are part of Nursing Care/Administration.

campus based on the number of beds/units. The travel demand factors developed for the nursing home and independent living uses are detailed below.

Level 1 Screening Assessment (Trip Generation)

Trip generation rates, modal splits, and other travel demand assumptions were developed for each land use in the proposed program, as well as uses that would be removed, to determine the net number of new trips that would be generated by the project during weekday peak hours (AM, midday, afternoon, and PM). These estimates were based on the findings of the survey conducted on a typical Wednesday (Wednesdays and Thursdays typically have the highest number of trips during the week) at the HHAR campus for the nursing and independent living uses, and the results from a survey conducted by the New York City Department of Transportation (NYCDOT) for an assisted living facility in Manhattan, as provided by the NYC Department of City Planning. Survey results for the existing HHAR assisted living use were not used because of small sample size (the HHAR has 35 assisted living units); the NYCDOT survey was conducted at a larger facility with an acceptable survey sample size. Travel demand factors used to calculate trips generated by each land use are summarized in Table 1 and described in detail below.

Table 1: Travel Demand Characteristics

Rates	Independent Living			Assisted Living	Nursing Home		
	Employee	Resident	Visitor		Employee	Patient	Visitor
Weekday Person Trip Generation Rate	0.91 ¹	0.56 ¹	0.35 ¹	3.70 ²	3.16 ¹	0.38 ¹	1.43 ¹
	per unit			per unit	per bed		
With Action Increment	388			0	-144		
Temporal Distribution							
Weekday AM Peak Hour	6.8% ¹			13% ²	7.0% ¹		
Weekday Midday Peak Hour	6.6% ¹			4% ²	5.8% ¹		
Weekday Afternoon Peak Hour	9.5% ¹			16% ²	9.7% ¹		
Weekday PM Peak Hour	6.8% ¹			10% ²	7.1% ¹		
Modal Split							
Auto	38% ¹	18% ¹	79% ¹	65% ³	66% ¹	0% ¹	79% ¹
Auto Pick-up/Drop-off/Taxi	10% ¹	32% ¹	17% ¹	8% ³	7% ¹	28% ¹	7% ¹
Bus (includes subway)	42% ¹	0% ¹	4% ¹	11% ³	14% ¹	0% ¹	7% ¹
Metro North Rail	10% ¹	8% ¹	0% ¹	10% ³	12% ¹	0% ¹	7% ¹
Shuttle Bus/Jitney/Ambulette	0% ¹	42% ¹	0% ¹	6% ³	1% ¹	72% ¹	0% ¹
Vehicle Occupancy							
Auto	1.06 ¹	1.00 ¹	1.27 ¹	1.24 ³	1.22 ¹	N/A	1.30 ¹
Auto Pick-up/Drop-off/Taxi	1.00 ¹	1.71 ¹	1.33 ¹	1.41 ³	1.27 ¹	2.35 ¹	1.18 ¹
Shuttle Bus/Jitney/Ambulette	N/A	5.33 ¹	N/A	2.20 ³	1.00 ¹	2.53 ¹	N/A
Directional Split							
Weekday AM Peak Hour	62% in/ 38% out ¹			74% in/ 26% out ²	63% in/ 37% out ¹		
Weekday Midday Peak Hour	48% in/ 52% out ¹			55% in/ 45% out ²	50% in/ 50% out ¹		
Weekday Afternoon Peak Hour	55% in/ 45% out ¹			38% in/ 62% out ²	27% in/ 73 % out ¹		
Weekday PM Peak Hour	29% in/ 71% out ¹			19% in/ 81% out ²	25% in/ 75% out ¹		

Table 1: Travel Demand Characteristics (cont.)

Rates	Independent Living	Assisted Living	Nursing Home
Weekday Truck Trip Generation Rate	0.03 ¹ <i>per unit</i>	0.07 ² <i>per unit</i>	0.06 ¹ <i>per bed</i>
Truck Temporal Distribution			
Weekday AM Peak Hour	9.6% ¹	17% ²	9.6% ¹
Weekday Midday Peak Hour	23.1% ¹	13% ²	23.1% ¹
Weekday Afternoon Peak Hour	3.8% ¹	0% ²	3.8% ¹
Weekday PM Peak Hour	5.8% ¹	0% ²	5.8% ¹
Truck Trip Directional Split - 50% in/ 50% out			
Source: (1) Based on surveys conducted on Wednesday, June 7, 2017 at the HHAR campus (2) Rates provided from NYCDOT survey of an assisted living facility in Manhattan (3) Assisted living use modal splits and vehicle occupancies are assumed to be similar to those of the nursing home use (aggregated modal splits and vehicle occupancies)			

Independent Living

For independent living apartment units, daily weekday person trip generation rates were categorized based on employees, residents, and visitors, and were based on the survey of the HHAR site. Daily weekday person trip generation rates of 0.91 employee trips per unit, 0.56 resident trips per unit, and 0.35 visitor trips per unit were determined. These trip generation rates are lower than typical residential uses because, as mentioned above, residents would generally be over the age of 78 and provided with amenities and services on-site. Of the 137 independent living apartment units surveyed, only 38 independent living residents were surveyed leaving the HHAR campus. Trips generated by this land use are expected to consist mostly of employees.

The other travel demand factors, such as temporal and directional distributions, modal splits, and vehicle occupancies, were also based on the findings of the survey at the HHAR. The weekday AM and PM peak hours had a temporal distribution of 6.8 percent, a temporal distribution of 6.6 percent during the weekday midday peak hour, and a temporal distribution of 9.5 percent for the weekday afternoon peak hour. The directional distributions were 62 percent “in” during the weekday AM peak hour, 48 percent “in” during the weekday midday peak hour, 55 percent “in” during the weekday afternoon peak hour, and 29 percent “in” during the weekday PM peak hour. The modal splits were calculated separately for employee, resident, and visitor trips. The modal split for employee trips is 38 percent by auto (vehicle occupancy of 1.06 persons per auto), 10 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.00 passengers per vehicle), 42 percent by bus (includes bus-to-subway trips), and 10 percent by Metro North. The modal splits for resident trips is 18 percent by auto (vehicle occupancy of 1.00 persons per auto), 32 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.71 passengers per vehicle), 0 percent by bus (includes bus-to-subway trips), 8 percent by Metro North, and 42 percent by shuttle, jitney bus, or ambulette (vehicle occupancy of 5.33 passengers per vehicle). The modal splits for visitor trips is 79 percent by auto (vehicle occupancy of 1.27 persons per auto), 17 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.33 passengers per vehicle), and 4 percent by bus (includes bus-to-subway trips). Auto usage would be lower than typical residential uses since there are many on-site services and amenities at HHAR, and since there is a Metro North shuttle serving the area.

Daily truck trip generation rates of 0.03 trips per unit for a weekday, and temporal distributions (9.6 percent during the weekday AM peak hour, 23.1 percent during the midday peak hour, 3.8 percent during the weekday afternoon peak hour, and 5.8 percent during the weekday PM peak hour) were obtained from the survey of HHAR.

Assisted Living

To calculate trips generated by assisted living units, a daily weekday person trip generation rate of 3.7 trips per unit was used based on the findings of a NYCDOT survey of an assisted living facility in Manhattan. Survey results for the existing HHAR assisted living use were not used because of small sample size (the HHAR has 35 assisted living units); the NYCDOT survey was conducted at a larger facility with an acceptable survey sample size. Similar to the independent living use, this land use would generate fewer trips than a typical residential use. Trips generated by this use would be made primarily by staff and visitors. Weekday peak hour temporal distributions (13 percent during the weekday AM peak hour, 4 percent during the weekday midday peak hour, 16 percent during the weekday afternoon peak hour, and 10 percent during the weekday PM peak hour) and directional splits (74 percent “in” in the AM peak hour, 55 percent “in” in the midday peak hour, 38 percent “in” in the afternoon peak hour, and 19 percent “in” in the PM peak hour) were also obtained from the NYCDOT survey. The modal splits and vehicle occupancies were assumed to be similar to those of the nursing home use (aggregated modal splits and vehicle occupancies) which would be expected to be comparable as compared to the NYCDOT survey due to the difference in local travel characteristics between a site in Manhattan and a site in Riverdale. The modal split used was 65 percent by auto (vehicle occupancy of 1.24 persons per auto), 8 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.41 passengers per vehicle), 11 percent by bus (includes bus-to-subway trips), 10 percent by Metro North, and 6 percent by shuttle, jitney bus, or ambulette (vehicle occupancy of 2.20 passengers per vehicle).

For truck deliveries, a daily truck trip generation rate of 0.07 trips per unit for a weekday, and temporal distributions of 17 percent during the weekday AM peak hour, 13 percent during the weekday midday peak hour, 0 percent during the weekday afternoon peak hour, and 0 percent during the weekday PM peak hour were obtained from the NYCDOT survey.

Nursing Home

To calculate trips generated by nursing home beds, daily weekday person trip generation rates were categorized based on employees, patients, and visitors, and were based on the survey of the HHAR site. Daily weekday person trip generation rates of 3.16 employee trips per bed, 0.38 patient trips per bed, and 1.43 visitor trips per bed for visitors were determined. Similar to assisted living, trips generated by this use would primarily be by staff or visitors; nursing homes are very staff-intensive. Weekday peak hour temporal distributions (7.0 percent during the weekday AM peak hour, 5.8 percent during the weekday midday peak hour, 9.7 percent during the weekday afternoon peak hour, and 7.1 percent during the weekday PM peak hour) and directional splits (63 percent “in” during the weekday AM peak hour, 50 percent “in” during the weekday midday peak hour, 25 percent “in” during the weekday afternoon peak hour, and 27 percent “in” during the weekday PM peak hour) were obtained from the survey of the HHAR campus. Modal splits and vehicle occupancies were also obtained from the survey of the HHAR campus and were calculated separately for employee, patient, and visitor trips. The employee modal splits used were 66 percent by auto (vehicle

occupancy of 1.22 persons per auto), 7 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.27 passengers per vehicle), 14 percent by bus (includes bus-to-subway trips), 12 percent by Metro North, and 1 percent by shuttle, jitney bus, or ambulette (vehicle occupancy of 1.00 passengers per vehicle). The patient modal splits used were 28 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 2.35 passengers per vehicle), and 72 percent by shuttle, jitney bus, or ambulette (vehicle occupancy of 2.53 passengers per vehicle). The visitor modal splits used were 79 percent by auto (vehicle occupancy of 1.30 persons per auto), 7 percent by auto pick-up/drop-off or taxi (vehicle occupancy of 1.18 passengers per vehicle), 7 percent by bus (includes bus-to-subway trips), and 7 percent by Metro North.

For truck deliveries, a daily truck trip generation rate of 0.06 trips per bed for a weekday, and temporal distributions of 9.6 percent during the weekday AM peak hour, 23.1 percent during the midday peak hour, 3.8 percent during the afternoon peak hour, and 5.8 percent during the PM peak hour were obtained from the survey of the HHAR campus.

Level 1 Screening Results

Transit and Pedestrians

Table 2 summarizes the net increment of person trips that would be generated during peak hours as result of the proposed project. This table indicates that the net change in hourly bus (includes bus-to-subway) or commuter rail trips (an increase of up to two trips per hour) is well under 200 trips during all weekday peak hours, and no further transit or pedestrian analyses would be necessary. This is because the decrease in the number of nursing beds, which is a major generator of trips, outweighs the increase in trips generated by the independent living units which is a lower trip generator.

Table 2: Trip Generation Summary – Person Trips

Independent Living - Employee												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	6	3	9	4	5	9	7	6	13	3	6	9
Auto Pick-Up/Drop-off/Taxi	1	1	2	1	1	2	2	2	4	1	2	3
Bus (includes subway)	6	4	10	5	5	10	8	6	14	3	7	10
Metro North Rail	1	1	2	1	1	2	2	2	4	1	2	3
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	0	0	0	0	0
Total	14	9	23	11	12	23	19	16	35	8	17	25
Independent Living - Patient												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	2	1	3	1	1	2	2	2	4	1	2	3
Auto Pick-Up/Drop-off/Taxi	3	2	5	2	2	4	4	3	7	1	3	4
Bus (includes subway)	0	0	0	0	0	0	0	0	0	0	0	0
Metro North Rail	1	0	1	1	1	2	1	1	2	0	1	1
Shuttle Bus/Jitney/Ambulette	4	2	6	3	3	6	5	4	9	2	4	6
Total	10	5	15	7	7	14	12	10	22	4	10	14
Independent Living - Visitor												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	5	3	8	3	4	7	6	5	11	2	5	7
Auto Pick-Up/Drop-off/Taxi	1	1	2	1	1	2	1	1	2	0	1	1
Bus (includes subway)	0	0	0	0	0	0	0	0	0	0	0	0
Metro North Rail	0	0	0	0	0	0	0	0	0	0	0	0
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	0	0	0	0	0
Total	6	4	10	4	5	9	7	6	13	2	6	8
Nursing Home - Employee												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-13	-8	-21	-9	-9	-18	-8	-21	-29	-5	-16	-21
Auto Pick-Up/Drop-off/Taxi	-1	-1	-2	-1	-1	-2	-1	-2	-3	-1	-2	-3
Bus (includes subway)	-3	-2	-5	-2	-2	-4	-2	-5	-7	-1	-3	-4
Metro North Rail	-2	-1	-3	-2	-2	-4	-1	-4	-5	-1	-3	-4
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	-1	-1	0	0	0
Total	-19	-12	-31	-14	-14	-28	-12	-32	-44	-8	-24	-32
Nursing Home - Patient												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	0	0	0	0	0	0	0	0	0	0	0	0
Auto Pick-Up/Drop-off/Taxi	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Bus (includes subway)	0	0	0	0	0	0	0	0	0	0	0	0
Metro North Rail	0	0	0	0	0	0	0	0	0	0	0	0
Shuttle Bus/Jitney/Ambulette	-2	-1	-3	-1	-1	-2	-1	-3	-4	-1	-2	-3
Total	-3	-1	-4	-1	-1	-2	-1	-4	-5	-1	-3	-4

Table 2: Trip Generation Summary – Person Trips (cont.)

Nursing Home - Visitor												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-7	-4	-11	-5	-5	-10	-4	-11	-15	-3	-9	-12
Auto Pick-Up/Drop-off/Taxi	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Bus (includes subway)	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Metro North Rail	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	0	0	0	0	0
Total	-10	-4	-14	-5	-5	-10	-4	-14	-18	-3	-12	-15
Assisted Living												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	0	0	0	0	0	0	0	0	0	0	0	0
Auto Pick-Up/Drop-off/Taxi	0	0	0	0	0	0	0	0	0	0	0	0
Bus (includes subway)	0	0	0	0	0	0	0	0	0	0	0	0
Metro North Rail	0	0	0	0	0	0	0	0	0	0	0	0
Shuttle Bus/Jitney/Ambulette	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Net Increment												
Mode	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-7	-5	-12	-6	-4	-10	3	-19	-16	-2	-12	-14
Auto Pick-Up/Drop-off/Taxi	2	3	5	3	3	6	6	2	8	1	2	3
Bus (includes subway)	2	2	4	3	3	6	6	0	6	2	3	5
Metro North Rail	-1	0	-1	0	0	0	2	-2	0	0	-1	-1
Shuttle Bus/Jitney/Ambulette	2	1	3	2	2	4	4	1	5	1	2	3
Total	-2	1	-1	2	4	6	21	-18	3	2	-6	-4

Traffic and Parking

As shown in Table 3, the net change in vehicle trip ends (“ins” plus “outs”) would be below the 50 peak hour trip threshold for vehicle trips during all peak hours. During the weekday AM, midday, and afternoon peak hours, the number of vehicle trips would be expected to increase by approximately five trips, and would be decreased by two trips during the weekday PM peak hour. Again, this is because the decrease in the number of nursing beds, which are a major traffic generator, outweighs the increase in traffic generated by the independent living units which is a lower traffic generator. Because the number of vehicle trips that would be generated by the proposed project would be well below the 50 vehicle trip threshold during all weekday peak hours, no additional analysis is needed and it can be concluded that there is no potential for significant traffic impacts.

Table 3: Trip Generation Summary – Vehicle Trips

Independent Living - Employee												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	6	3	9	4	5	9	7	6	13	3	6	9
Taxi	2	2	4	2	2	4	4	4	8	3	3	6
Truck	1	1	2	1	1	2	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	9	6	15	7	8	15	11	10	21	6	9	15
Independent Living - Patient												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	2	1	3	1	1	2	2	2	4	1	2	3
Taxi	3	3	6	2	2	4	4	4	8	3	3	6
Truck	1	1	2	1	1	2	0	0	0	0	0	0
Shuttle Bus	1	0	1	1	1	2	1	1	2	0	1	1
Total	7	5	12	5	5	10	7	7	14	4	6	10
Independent Living - Visitor												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	4	2	6	2	3	5	5	4	9	2	4	6
Taxi	2	2	4	2	2	4	2	2	4	1	1	2
Truck	1	1	2	1	1	2	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	7	5	12	5	6	11	7	6	13	3	5	8
Nursing Home - Employee												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-11	-7	-18	-7	-7	-14	-7	-17	-24	-4	-13	-17
Taxi	-1	-1	-2	-1	-1	-2	-1	-2	-3	-1	-2	-3
Truck	0	0	0	-1	-1	-2	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	-12	-8	-20	-9	-9	-18	-8	-19	-27	-5	-15	-20
Nursing Home - Patient												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	0	0	0	0	0	0	0	0	0	0	0	0
Taxi	0	0	0	0	0	0	0	0	0	0	0	0
Truck	0	0	0	-1	-1	-2	0	0	0	0	0	0
Shuttle Bus	-1	-0	-1	0	0	0	0	-1	-1	0	-1	-1
Total	-1	0	-1	-1	-1	-2	0	-1	-1	0	-1	-1

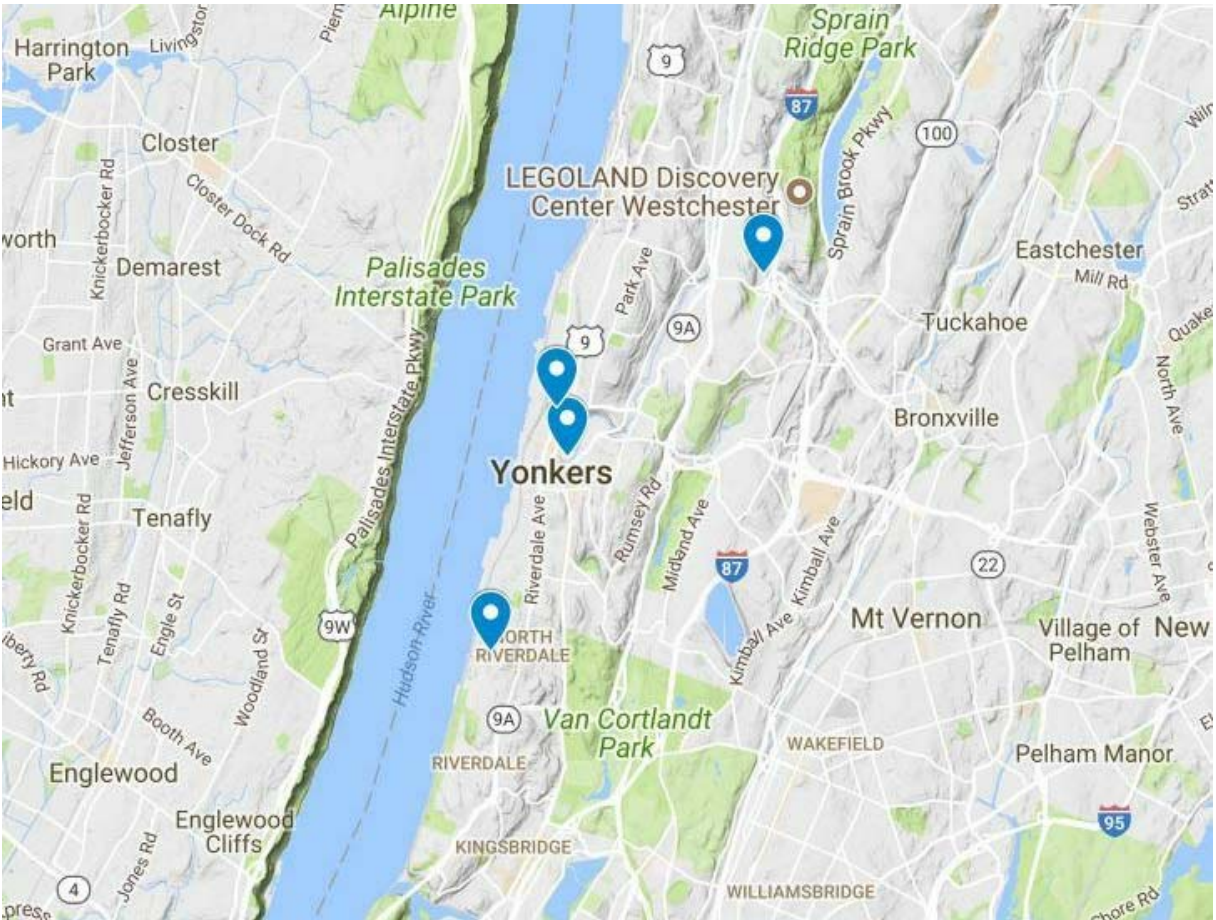
Table 3: Trip Generation Summary – Vehicle Trips (cont.)

Nursing Home - Visitor												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-5	-3	-8	-4	-4	-8	-3	-8	-11	-2	-7	-9
Taxi	-1	0	-1	0	0	0	0	-1	-1	0	-1	-1
Truck	0	0	0	-1	-1	-2	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	-6	-3	-9	-5	-5	-10	-3	-9	-12	-2	-8	-10
Assisted Living												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	0	0	0	0	0	0	0	0	0	0	0	0
Taxi	0	0	0	0	0	0	0	0	0	0	0	0
Truck	0	0	0	0	0	0	0	0	0	0	0	0
Shuttle Bus	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Total Vehicle Trips												
Vehicle Type	AM			Midday			Afternoon			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto	-4	-4	-8	-4	-2	-6	4	-13	-9	0	-8	-8
Taxi	4	4	8	4	4	8	6	6	12	3	3	6
Truck	3	3	6	0	0	0	0	0	0	0	0	0
Shuttle Bus	0	0	0	1	1	2	1	0	1	0	0	0
Total	3	3	6	1	3	4	11	-7	4	3	-5	-2

Appendix D

Construction





SHUTTLE SCHEDULE		
SHUTTLE	PROJECTED WORKERS	DEPARTURE FROM PARKING AREA TO PROJECT SITE
1A	1-25	6:00 AM
2A	26-50	6:00 AM
3A	51-75	6:00 AM
4A	76-100	6:00 AM
1B	101-125	6:30 AM
2B	126-150	6:30 AM
3B	151-175	6:30 AM
4B	176-200	6:30 AM
1C	201-225	7:15 AM
2C	226-250	7:15 AM
3C	251-275	7:15 AM
4C	276-300	7:15 AM

POTENTIAL PARKING SITES	
1	67 Sprain Rd Yonkers, NY
2	Henry Herz St 'Getty Square' Yonkers, NY
3	126 Warburton Yonkers, NY
PROJECT SITE	
5798 Palisades Ave Riverdale, NY	

KEY PLAN



NO.	DATE	REVISION

PROJECT

RIVER'S EDGE CCRC

A NEW BUILDING AT
RIVERDALE, NY

Shuttle Schedule and Map

SEAL & SIGNATURE	DATE:	03/16/18
	PROJECT No.:	72690.00
	DRAWING BY:	ARA
	CHECKED BY:	VB
		DWG No.
		SK-10
SCALE:	1/4" = 1'-0"	CADD FILE No. PAGE No.:
		of