Chapter 6: Shadows

6.1 Introduction

This chapter assesses the potential for the Proposed Actions to result in incremental shadows long enough to reach any nearby publicly accessible open spaces or other sunlight-sensitive resources. Public open spaces, historic resources, and natural resources are all potentially sunlight-sensitive resources, and, thus, this chapter is closely linked to the information presented in other chapters of the environmental impact statement (EIS), particularly Chapter 5, "Open Space," and Chapter 7, "Historic and Cultural Resources."

According to the *City Environmental Quality Review (CEQR) Technical Manual*, a shadows assessment is required if a proposed action would result in structures (or additions to existing structures) of 50 feet in height or greater, or those that would be located adjacent to, or across the street from, a sunlight sensitive resource. As discussed in Chapter 1, "Project Description," the Reasonable Worst-Case Development Scenario (RWCDS) for the Proposed Actions identifies 60 projected development sites and 36 potential development sites in the Affected Area. The redevelopment of the projected development sites, and the less likely development of the potential development sites is expected to result in new buildings greater than 50 feet in height over the No-Action condition at most development sites. As such, a detailed shadows analysis was prepared to determine the potential for the Proposed Actions to result in significant adverse impacts on sunlight-sensitive resources.

6.2 Principal Conclusions

A detailed shadows analysis was conducted and concluded that development resulting from the Proposed Actions would result in significant adverse shadow impacts on three sunlight-sensitive resources. The projected and potential development sites identified in the RWCDS would result in incremental shadow coverage on seven sunlight-sensitive resources. The detailed shadows analysis identified significant adverse impacts at three sunlight-sensitive resources. The analysis determined that a portion of Pelham Parkway, the Greenstreet at Sacket Avenue, and a small portion of the larger 129-acre Parkchester Special Planned Community Preservation District would not receive adequate sunlight during the growing season (at least the six to eight hour minimum specified in the *CEQR Technical Manual*) as a result of incremental shadow coverage, and vegetation at these resources could be significantly impacted.

6.3 Methodology

According to the *CEQR Technical Manual*, the longest shadow a structure will cast in New York City, except for periods close to dawn or dusk, is 4.3 times its height. For projects or actions resulting in structures less than 50 feet tall, a shadow assessment is generally not necessary, unless the site is adjacent to a park, historic resource, or important natural feature (if the feature that makes the structure significant depends on sunlight).

First, a preliminary screening assessment must be conducted to ascertain whether shadows resulting from a project could reach any sunlight-sensitive resource at any time of year. 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[1]:

- *Public open space* (e.g., parks, playgrounds, plazas, schoolyards, greenways, and landscaped medians with seating). Planted areas within unused portions or roadbeds that are part of the Greenstreets program are also considered sunlight-sensitive resources. The use of vegetation in an open space establishes its sensitivity to shadows. This sensitivity is assessed for both (1) warm-weather dependent features, like wading pools and sandboxes, or vegetation that could be affected by loss of sunlight during the growing season (i.e., March through October); and (2) features, such as benches, that could be affected by a loss of winter sunlight. Uses that rely on sunlight include: passive use, such as sitting or sunning; active use, such as playfields or paved courts; and such activities as gardening, or children's wading pools and sprinklers. Vegetation requiring direct sunlight includes the tree canopy, flowering plants, and plots, particularly plots for food production in community gardens. The amount of sunlight typically considered to be the minimum that plantings and vegetation would need is six to eight hours of direct sunlight. However, certain plantings and vegetation can tolerate partial sun, with a reduced minimum requirement of four to six hours of direct sunlight. Examples of areas that can tolerate partial sun are established tree canopies, shrubs or perennials.
- *Features of historic architectural resources that depend on sunlight for their enjoyment by the public.* Only the sunlight-sensitive features of an architectural resource are considered in a shadows analysis. Sunlight-sensitive features include the following: design elements that are part of a recognized architectural style that depends on the contrast between light and dark (e.g., deep recesses or voids, such as open galleries, arcades, recessed balconies, deep window reveals, and prominent rustication); elaborate, highly carved ornamentation; stained glass windows; exterior building materials and color that depend on direct sunlight for visual character (e.g., the polychromy [multicolored] features found on Victorian Gothic Revival or Art Deco facades); historic landscapes, such as scenic landmarks, including vegetation recognized as an historic

[1] According to the *CEQR Technical Manual*, city streets, sidewalks, and private open spaces (such as private residential front and back yards, stoops, and vacant lots) are not considered to be sunlight-sensitive resources.

feature of the landscape; and structural features for which the effect of direct sunlight is described as playing a significant role in the structure's importance as an historic landmark.

- *Natural resources where the introduction of shadows could alter the resource's condition or microclimate.* Such resources could include community gardens, surface water bodies, wetlands, or designated resources, such as coastal fish and wildlife habitats.

The preliminary screening assessment consists of three tiers of analysis. 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, which 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. 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.

If the third tier of analysis does not eliminate the possibility of new shadows on sunlight-sensitive resources, a detailed shadow analysis is required to determine the extent and duration of the incremental shadow (i.e. the additional, or new, shadow) resulting from the project. The detailed shadow analysis establishes a baseline condition (the No-Action condition) that is compared to the future condition resulting from the Proposed Actions (the With-Action condition) to illustrate the shadows cast by existing or future buildings and distinguish the additional (incremental) shadows cast by the development of projected and potential development sites. In accordance with the *CEQR Technical Manual*, shadows on sunlight-sensitive resources of concern were modeled for four representative days of the year. For the New York City area, the months of interest for an open space resource encompass the growing season (i.e., March through October) and one month between November and February representing a cold-weather month (usually December). Representative days for the growing season are generally the March 21 vernal equinox (or the September 21 autumnal equinox, which is approximately the same), the June 21 summer solstice, and a spring or summer day halfway between the summer solstice and equinoxes, such as May 6 or August 6 (which are approximately the same). For the cold- weather months, the December 21 winter solstice is included to demonstrate conditions when open space users rely most heavily on available sunlight warmth. As these months and days are representative of the full range of possible shadows, they are also used for assessing shadows on sunlight-sensitive historic and natural resources. 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.

The detailed analysis provides the data needed to assess the shadow impacts. The effects of incremental shadows on the sunlight-sensitive resources are described, and their degree of significance is considered. The result of the analysis and assessment are documented with graphics, a table of incremental shadow durations, and narrative text. As described in the *CEQR Technical Manual*, an incremental shadow is generally not considered significant when its duration is no longer than ten

minutes at any time of year and the resource continues to receive substantial direct sunlight. A significant shadow impact generally occurs when an incremental shadow of ten minutes or longer falls on a sunlight-sensitive resource and results in one of the following:

- *Vegetation:* a substantial reduction in sunlight duration available to sunlight-sensitive features of the resource to less than the time of its minimum sunlight needs (when there would be sufficient sunlight in the future without the project) or a reduction in direct sunlight exposure where the sensitive feature of the resource is already subject to substandard sunlight (i.e., less than the minimum sunlight needs).
- *Historic and cultural resources:* a substantial reduction in sunlight available for the enjoyment or appreciation of the sunlight-sensitive features of an historic or cultural resource.
- *Open space utilization:* a substantial reduction in the usability of open space as a result of increased shadow, including information regarding anticipated new users and the open space's utilization rates throughout the affected time periods.
- *For any sunlight-sensitive feature of a resource:* complete elimination of all direct sunlight on the sunlight-sensitive feature of the resource, when the complete elimination results in substantial effects on the survival, enjoyment, or, in the case of open space or natural resources, the use of the resource.

In general, a significant adverse shadow impact occurs when the incremental shadow added by a proposed project 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.

6.4 Preliminary Screening Assessment

First, an assessment of the 60 projected and 36 potential development sites was performed in order to determine which sites required a preliminary screening assessment. As noted above, pursuant to *CEQR Technical Manual* guidance, only new development or enlargement that would result in an incremental increase of 50 feet or more compared to the No-Action condition require assessment. In addition, any development site adjacent to, or across the street from, a sunlight sensitive resource requires a preliminary screening, regardless of its height.

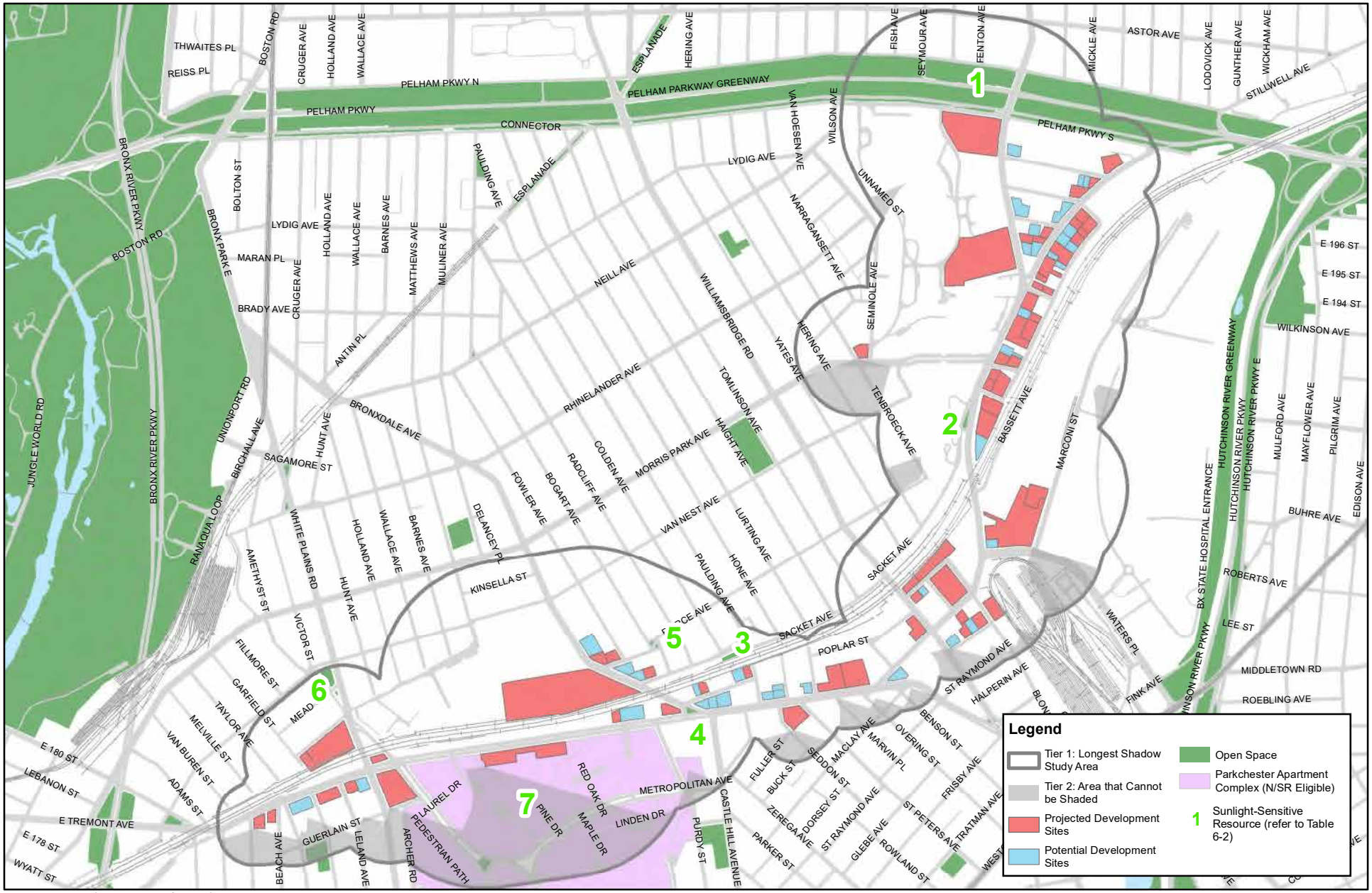
Table 6-1, "RWCDS Sites Warranting Preliminary Shadow Analyses," summarizes this initial screening. As indicated in the table, new structures of greater than 50 feet in incremental height are anticipated on 59 of the 60 projected development sites and all of the 36 potential development sites, and consequently require a preliminary screening assessment. Projected Development Site 6 would be developed to a height of less than 50 feet and would not be located adjacent to sunlight-sensitive resources, as defined in the *CEQR Technical Manual*, and therefore, no further analysis was warranted for this site.

A base map was prepared (see Figure 6-1, "Shadows Tier 1 and 2 Screening") showing the projected and potential development sites identified for analysis in Table 6-1, "RWCDS Sites Warranting Preliminary Shadow Analyses," as well as the Affected Area, the surrounding street layout, and all sunlight-sensitive resources (publicly-accessible open spaces, architectural resources, natural resources, historic resources, and Greenstreets).

Table 6-1: RWCDS Sites Warranting Preliminary Shadow Analyses

Sites Warranting Preliminary Shadow Analysis		Sites Not Warranting Preliminary Shadow Analysis
Sites with 50-Foot or Greater Height Increment[1]	**Sites with Less than 50-Foot Height Increment Adjacent to Sunlight Sensitive Resources**	**Sites with Less than 50-Foot Height Increment Not Adjacent to Sunlight Sensitive Resources**
Projected Sites		
1-5, 7-60	None	6
Potential Sites		
A-JJ	None	None
Notes: [1] Based on maximum zoning envelopes.		

Source: PHA, 2023.



Source: New York City Dept. of City Planning, 2023;
Metropolitan Transportation Authority (MTA), 2018-2019; STV Incorporated, 2023.

N

0 0.2 0.4 Mile

Figure 6-1

Bronx Metro-North Station Study

SHADOWS TIER 1 & 2 SCREENING

TIER 1 SCREENING ASSESSMENT

According to the *CEQR Technical Manual*, the longest shadow that a structure will cast in New York City, except for periods close to dawn or dusk, is 4.3 times its height. The maximum shadow radius for each of the 95 development sites warranting a preliminary shadow analysis was determined using each site's maximum zoning envelope. The maximum shadow radius for each development site was merged to form the longest shadow study area (Tier 1 Assessment).

Within this longest shadow study area, there are a number of potentially sunlight-sensitive open spaces. The Tier 1 screening area does not include any architectural or natural resources that would be considered sunlight-sensitive resources. Due to the presence of open space and historic resources within the Tier 1 screening area, further screening is warranted in order to determine whether any sunlight-sensitive resources could be affected by project-generated shadows.

TIER 2 SCREENING ASSESSMENT

Due to the path of the sun across the sky in the northern hemisphere, no shadow can be cast in a triangular area south of any given project site. In New York City, this area lies between -108 and +108 degrees from true north. The purpose of the Tier 2 screening is to determine whether the sunlight-sensitive resources identified in the Tier 1 screening are located within portions of the longest shadow study area that can receive shade from the projected and potential developments.

Figure 6-1, "Shadows Tier 1 and 2 Screening," provides a base map illustrating the results of the Tier 1 and Tier 2 screening assessments (i.e., the portion of the longest shadow study area lying within -108 degrees from the true north and +108 degrees from true north as measured from southernmost portions of the development sites). A total of six open space resources were identified as sunlight-sensitive resources that warranted further assessment. A list of all sunlight-sensitive resources that warranted further assessment is provided below in Table 6-2, "Sunlight-Sensitive Resources Warranting Further Analysis Based on Tier 1 and 2 Screening."

Table 6-2: Sunlight-Sensitive Resources Warranting Further Analysis Based on Tier 1 and 2 Screening

No.[1]	Sunlight-Sensitive Resources
1	Pelham Parkway
2	Greenstreet at Sackett Avenue
3	Morris Park Community Garden
4	Greenstreet at East Tremont Avenue
5	Greenstreet at Bogart Avenue
6	Van Nest Park
7	Parkchester Special Planned Community Preservation

Source: PHA, 2023.

TIER 3 SCREENING ASSESSMENT

According to the *CEQR Technical Manual*, a Tier 3 screening assessment should be performed to determine if, in the absence of intervening buildings, shadows resulting from a proposed action can reach a sunlight-sensitive resource, thereby warranting a detailed shadow analysis. The Tier 3 screening assessment is used to determine if shadows resulting from a proposed action can reach a sunlight-sensitive resource at any time between 1.5 hours after sunrise and 1.5 hours before sunset on representative analysis dates.

As project-generated shadows could reach a number of sunlight-sensitive resources, a Tier 3 assessment was performed using three dimensional (3D) computer mapping software. The 3D model was used to calculate and display project-generated shadows on individual representative analysis dates. The model contained 3D representations of the elements in the base map used in the preceding assessments and a 3D model of the projected and potential developments. At this stage of the assessment, surrounding buildings within the study area were not included in the model so that it may be determined whether project-generated shadows would reach any sunlight-sensitive resources.

The Tier 3 analysis showed that each of the sunlight-sensitive resources shown in Table 6-2, "Sunlight-Sensitive Resources Warranting Further Analysis Based on Tier 1 and 2 Screening," would receive incremental shadow on at least one analysis day. Table 6-3, "Tier 3 Assessment Results," presents a summary of the Tier 3 assessment, showing the six open spaces and one historic resource that could, in the absence of intervening buildings, receive project-generated shadows, and on which analysis days the new shadows would occur. Further analysis is warranted and is provided below.

Table 6-3: Tier 3 Assessment Results

No.[1]	Name	March 21/Sept. 21 7:36 AM – 4:29 PM	May 6/August 6 6:27 AM – 5:18 PM	June 21 5:57 AM – 6:01 PM	December 21 8:51 AM – 2:53 PM	Number of Analysis Days
Open Space Resources						
1	Pelham Parkway	YES	NO	YES	YES	4
2	Greenstreet at Sackett Avenue	YES	NO	YES	YES	4
3	Morris Park Community Garden	NO	NO	NO	YES	1
4	Greenstreet at East Tremont Avenue	YES	YES	YES	NO	3
5	Greenstreet at Bogart Avenue	NO	NO	NO	YES	1
6	Van Nest Park	NO	NO	NO	YES	1
7	Parkchester Special Planned Community Preservation District (N/SR Eligible)	YES	YES	YES	YES	4

Notes:
[1] Numbers keyed to Figure 6-1, "Shadows Tier 1 and 2 Screening"

Source: PHA, 2023.

6.5 Detailed Analysis of Shadow Impacts

SHADOWS ANALYSIS

Per *CEQR Technical Manual* guidance, shadow analyses were performed for the six sunlight-sensitive resources identified above on four representative days of the year: March 21/September 21, the equinoxes; May 6, the midpoint between the summer solstice and the equinox (and equivalent to August 6); June 21, the summer solstice and the longest day of the year; and December 21, the winter solstice and shortest day of the year. These four representative days indicate the range of shadows over the course of the year. *CEQR Technical Manual* guidance defines the temporal limits of a shadow analysis period to fall from 1.5 hours after sunrise to 1.5 hours before sunset. As discussed above, the results of the shadows analysis show the incremental difference in shadow impact between the No-Action and With-Action conditions (see Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)").

As shown in Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)," incremental project-generated shadows would reach all of the seven sunlight-sensitive resources identified in the Tier 3 assessment. Increases in shadow coverage would occur at four resources on March 21/September 21; four resources on May 6/August 6; three resources on June 21; and six resources on December 21. Figures 6-2 through 6-22, "Incremental Shadows," provided at the end of this chapter, show representative shadow views for the seven sunlight-sensitive resources of concern on each of the four representative analysis days.

Table 6-4: Duration of Shadows on Sunlight Sensitive Resources (Increment Compared to No-Action)

Resource	Analysis Day	March 21/Sept.	May 6/August 6	June 21	December 21
		7:36 AM – 4:29	**6:27 AM – 5:18**	**5:57 AM – 6:01**	**8:51 AM – 2:53 PM**
Pelham Parkway	Shadow enter-exit time	7:52 AM – 4:29 PM	12:52 –4:18 PM	-	8:51 AM – 2:53 PM
	Incremental shadow duration	8 hours 37 minutes	4 hours 26 minutes	-	6 hours 2 minutes
Greenstreet at Sackett Avenue	Shadow enter-exit time	7:36 – 11:02 AM	6:27 – 10:19 AM	5:57 – 10:11 AM	8:51 – 10:54 AM
	Incremental shadow	3 hours 26 minutes	3 hours 52 minutes	4 hours 14 minutes	2 hours 3 minutes
Morris Park Community Garden	Shadow enter-exit time	--	--	--	8:51 AM – 12:54 PM
	Incremental shadow duration	--	--	--	4 hours 3 minutes
Greenstreet at East Tremont Avenue	Shadow enter-exit time	3:09 – 4:29 PM	6:27 – 7:14 AM 2:59 – 5:18 PM	5:57 – 7:22 AM 3:25 – 6:01 PM	--
	Incremental shadow duration	1 hour 20 minutes	37 minutes 2 hours 19 minutes	1 hour 25 minutes 2 hours 36 minutes	--
Greenstreet at Bogart Avenue	Shadow enter-exit time	--	--	--	2:04 – 2:53 PM
	Incremental shadow	--	--	--	49 minutes
Van Nest Park	Shadow enter-exit time	--	--	--	10:29 AM – 1:05 PM
	Incremental shadow duration	--	--	--	2 hours 36 minutes
Parkchester Special Planned Community Preservation District	Shadow enter-exit time	11:50 AM – 4:29 PM	7:35 – 11:18 AM 11:55 AM – 5:18 PM	7:17 – 11:40 AM 11:51 – 6:01 PM	11:01 AM - 2:53 PM
	Incremental shadow duration	4 hours 39 minutes	3 hours 43 minutes 5 hours 23 minutes	4 hours 23 minutes 6 hours 10 minutes	3 hours 52 minutes

Note: All times are Eastern Standard Time; Daylight Savings Time was not accounted for per *CEQR Technical Manual* guidance.
Table indicates the entry and exit times and total duration of incremental shadow for each sunlight-sensitive resource.

Source: PHA, 2023.

It should be noted that, per the *CEQR Technical Manual*, all times reported herein are Eastern Standard Time and do not reflect adjustments for daylight savings time that is in effect from mid-March to early

November. As such, the times reported in this chapter for March 21/September 21, May 6/August 6, and June 21 need to have one hour added to reflect the Eastern Daylight-Savings Time.

Sunlight Sensitive Resources

Pelham Parkway

Pelham Parkway is a 2.5-mile long, parkway that connects Bronx Park and the Pelham Bay Park, two of the Bronx's largest parks. The 108.91-acre parkway encompasses three traffic lanes going in each direction, two large center segments between traffic lanes, one smaller segment between traffic lanes, two marginal streets, a greenway, and passive seating areas. This open space resource includes vegetation, passive seating areas, as well as bicycling and greenways. The greenway is the primary active recreational use within the open space. Benches are scattered throughout the open space and provide passive areas for visitors. The parkway also includes American elm trees. These trees can grow to heights of 120 feet and can withstand extremes in soil conditions and pH levels.

This open space resource would experience incremental shadow coverage during the March 21/September 21, May 6/August 6, and December 21 analysis days (see Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)"). Incremental shadow duration on these analysis days would range between four hours and 26 minutes on the May 6/August 6 analysis day (12:52 – 4:18 PM) and eight hours and 37 minutes on the March 21/September 21 analysis day (7:52 AM – 4:29 PM). As shown in Figures 6-2 through 6-4, "Incremental Shadows – Pelham Parkway," incremental shadow from the development at Projected Development Site 58 would be cast on Pelham Parkway between Seymour Avenue and Eastchester Road. The area cast in shadow includes a bus stop, vegetation, bicycle paths, and greenways.

Assessment

Though incremental coverage would occur for extended durations, Pelham Parkway would continue to receive some direct sunlight on all representative analysis days (see Figures 6-2 through 6-4, "Incremental Shadows – Pelham Parkway"). Across the three analysis days where Pelham Parkway would receive incremental shadow, the incremental shadow would only be cast on an approximately five-acre portion of the larger 108.91-acre open space resource. Incremental shadow would not alter the public's use and enjoyment of this resource. However, some areas of the Pelham Parkway may not receive adequate sunlight during the growing season (at least the six to eight hours specified in the *CEQR Technical Manual*), specifically the segment directly north of Projected Development Site 58 on the March 21/September 21 analysis day, and as a result, some trees found within this segment could be significantly impacted and this segment of the larger 108.91-acre Pelham Parkway may no longer be able to support a variety of plant life, as compared to the No-Action condition. Therefore, Pelham Parkway would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

Greenstreet at Sacket Avenue

At the intersection of Eastchester Road and Sacket Avenue is an approximately 0.08-acre Greenstreet. The Greenstreet includes five trees and other vegetation. As shown in Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)," incremental shadow coverage would occur on each of the four representative analysis days, ranging between two hours and three minutes on the December 21 analysis day and four hours 14 minutes on the June 21 analysis day.

On the March 21/September 21 analysis day, the Greenstreet would be cast in incremental shadow from 7:36 – 11:02 AM (approximately three hours 26 minutes). The Greenstreet would be completely cast in shadow by development at Projected Development Sites 31 and 32 and Potential Development Site U from approximately 7:36 AM – 9:22 AM (approximately one hour 46 minutes).

On the May 6/August 6 analysis day, the Greenstreet would be cast in incremental shadow from 6:27 – 10:19 AM (approximately three hours 52 minutes). The Greenstreet would be completely cast in shadow by development at Projected Development Sites 31 and 32 and Potential Development Site U from approximately 6:27 AM – 9:14 AM (approximately two hours 47 minutes).

On the June 21 analysis day, the Greenstreet would be cast in incremental shadow from 5:57 – 10:11 AM (approximately four hours 14 minutes). The Greenstreet would be completely cast in shadow by development at Projected Development Sites 31 and 32 and Potential Development Site U from approximately 5:57 AM – 9:39 AM (approximately three hours 42 minutes).

On the December 21 analysis day, the Greenstreet would be cast in incremental shadow from 8:51 – 10:54 AM (approximately two hours three minutes). The Greenstreet would be completely cast in shadow by development at Projected Development Sites 31 and 32 and Potential Development Site U from approximately 8:51 AM – 10:13 AM (approximately one hour 22 minutes).

Assessment

As shadows are not static and move from west to east throughout the day, the Greenstreet would continue to receive some direct sunlight on all representative analysis days (see Figures 6-5a through 6-8b, "Incremental Shadows – Greenstreet – Sackett Avenue"). However, some areas of the Sacket Avenue Greenstreet may not receive adequate sunlight during the growing season (at least the six to eight hours specified in the *CEQR Technical Manual*) and as a result, some trees found within the Greenstreet could be significantly impacted and the Greenstreet may no longer be able to support a variety of plant life, as compared to the No-Action condition. Therefore, the Sacket Avenue Greenstreet would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

Morris Park Community Garden

Morris Park Community Garden is a 0.11-acre community garden located at the intersection of Sacket Avenue and Colden Avenue. As shown in Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)," incremental shadow from Projected Development Site

16 and Potential Development Site K would be cast on the community garden on the December 21 analysis day for approximately four hours and three minutes (8:51 AM – 12:54 PM). As shown in Figure 6-9a, "Incremental Shadows – December 21 Morris Park Community Garden," incremental shadow would cover a large portion of the sunlight sensitive resource during the morning hours. Shadows would decrease in size during the morning hours before exiting the sunlight sensitive resource at 12:54 PM (refer to Figure 6-9b, "Incremental Shadows – December 21 Morris Park Community Garden").

Assessment

The December 21 analysis day falls outside of the growing season, and the community garden would not experience incremental shadows on the other three representative analysis days during the growing season. During the December 21 analysis day, incremental shadows would temporarily affect seating areas within the garden, which are typically utilized less during the winter months. Therefore, the incremental shadows that could result from the Proposed Actions are not anticipated to adversely impact Morris Park Community Garden.

Greenstreet at East Tremont Avenue

At the intersection of Bronxdale Avenue and East Tremont Avenue is an approximately 0.07-acre Greenstreet. The Greenstreet includes five trees and other vegetation. These trees are concentrated along the southern edge of the Greenstreet. Other vegetation is located along the western and northern edges of the Greenstreet. As shown in Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)," incremental shadow coverage would occur on the March 21/September 21, May 6/August 6, and June 21 analysis days. Incremental shadow would range between one hour 20 minutes on the March 21/September 21 analysis day and four hours and one minute on the June 21 analysis day.

On the March 21/September 21 analysis day, incremental shadow would be cast for approximately one hour and 20 minutes (3:09 – 4:29 PM). Incremental shadow would be cast by Projected Development Site 14 over the northwestern edge of the Greenstreet. As the afternoon continues, incremental shadow would move east and south throughout the sunlight sensitive resource. Vegetation and trees would continue to receive six to eight hours of direct sunlight on this analysis day (refer to Figure 6-10, "Incremental Shadows – March 21/September 21 Greenstreet – East Tremont Avenue").

On the May 6/August 6 analysis day, incremental shadow would be cast by Potential Development Site H from 6:27 – 7:14 AM (37 minutes). During the morning hours, incremental shadow would be cast over the northern half of the Greenstreet before moving north and east and exiting the open space. Projected Development Site 14 would cast incremental shadow from 2:59 – 5:18 PM (two hours and 19 minutes). Incremental shadow would be cast Vegetation and trees would continue to receive six to eight hours of direct sunlight on this analysis day (refer to Figures 6-11a and 6-11b, "Incremental Shadows – May 6/August 6 – Greenstreet – East Tremont Avenue").

On the June 21 analysis day, incremental shadow would be cast from 5:57 – 7:22 AM and 3:25 – 6:01 PM (combined total of four hours and one minute). As shown in Figure 6-12a, "Incremental Shadows – June 21 – Greenstreet – East Tremont Avenue," the Greenstreet would be completely cast in shadow from Potential Development Site H from 5:57 until 6:27 AM (approximately 30 minutes). Shadow would move east through the morning and exit the Greenstreet at approximately 7:22 AM. Incremental shadow from Projected Development Site 14 would enter the Greenstreet at approximately 3:25 PM. Incremental shadow would enter the western half of the Greenstreet and move southeast throughout the afternoon.

Assessment

As shadows are not static and move from west to east throughout the day, the Greenstreet would continue to receive some direct sunlight on all representative analysis days (see Figures 6-10 through 6-12c, "Incremental Shadows – Greenstreet – Tremont Avenue"). As shown in Figure 6-12a, "Incremental Shadows – June 21 – Greenstreet – Tremont Avenue," the Greenstreet would be completely cast in shadow from Potential Development Site H from 5:57 until 6:27 AM (approximately 30 minutes) on June 21. However, the size and duration of incremental shadow at the Greenstreet would allow the vegetation to receive at least the six to eight hours of direct sunlight, as specified in the *CEQR Technical Manual*. Therefore, the East Tremont Avenue Greenstreet would not experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

Greenstreet at Bogart Avenue

At the intersection of Bogart Avenue and Pierce Avenue is an approximately 0.03-acre Greenstreet. As shown in Figure 6-13, "Incremental Shadows – December 21 – Greenstreet – Bogart Avenue," the Greenstreet is comprised of two separate areas. The southeastern Greenstreet contains two trees, and the northwestern Greenstreet includes four trees and other vegetation. As shown in Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)," Projected Development Site 13 and Potential Development Sites E and F would cast incremental shadow on the Greenstreet on the December 21 analysis day for approximately 49 minutes (2:04 – 2:53 PM) (refer to Figure 6-13).

As shown in Figure 6-13, "Incremental Shadows – December 21 – Greenstreet – Bogart Avenue," incremental shadow would enter the northwestern Greenstreet on the December 21 analysis day at approximately 2:04 PM and move eastward, growing in size until the end of the analysis day. By 2:20 PM, the northwestern Greenstreet would be completely cast in shadow until the end of the December 21 analysis day. At 2:19 PM, incremental shadow would enter the southeastern Greenstreet. By 2:26 PM, the southeastern Greenstreet would be completely cast in incremental shadow until the end of the December 21 analysis day.

Assessment

Incremental shadow as a result of the Proposed Actions would be cast over the Greenstreet at Bogart Avenue for approximately 49 minutes on the December 21 analysis day (2:04 – 2:53 PM). As this incremental shadow would not occur during the growing season, incremental shadow as a result of the

Proposed Actions would not negatively impact plant survival at this sunlight-sensitive resource. As there is no seating at this resource, incremental shadow would not impact the use and enjoyment of the resource. Therefore, the Bogart Avenue Greenstreet would not experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

Van Nest Park

At the intersection of Van Nest Avenue and White Plains Road is the 0.40-acre Van Nest Park. The park includes a playground, spray showers, seating areas, and the Van Nest Memorial. The Van Nest Memorial is a granite monument commemorated to veterans of World War I, World War II, the Korean War, and the Vietnam War.

As shown in Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)," the park would receive incremental shadow on the December 21 analysis day for approximately two hours and 36 minutes (10:29 AM – 1:05 PM). As shown in Figures 6-14a and 6-14b, "Incremental Shadow – December 21 – Van Nest Park," incremental shadow cast by future development at Projected Development Site 5 would occur over the monument area. Incremental shadow would not be cast over the playground.

Assessment

Incremental shadow cast by future development at Projected Development Site 5 would occur only on the December 21 analysis day, outside the growing season. Therefore, incremental shadow would not negatively impact vegetation within this sunlight-sensitive resource. Incremental shadow would primarily be cast over the granite monument and surrounding area. Incremental shadow would also not be cast on the playground. As incremental shadow would not threaten the use or enjoyment of the playground within the park, no significant adverse impacts would occur at this park.

Parkchester Special Planned Community Preservation District (N/SR-Eligible)

The Parkchester Special Planned Community Preservation District is a 129-acre complex that consists of approximately 12,271 apartments in 171 red-brick buildings grouped into 51 clusters. The complex is bounded by East Tremont Avenue and the Hell Gate Line right-of-way to the north, by Castle Hill Avenue to the east, by McGraw Avenue to the south, and by White Plains Road to the west. The complex was constructed between 1938 and 1941. According to the New York State Office of Parks, Recreation, and Historic Preservation's Resource Evaluation Report, the complex is significant for its open space, traffic calming, limited access, affordability, and for its outstanding terra cotta ornamentation that represent animal and human figures designed by Joseph Kiselewski and Raymond Granville Barger, which are situated throughout the complex.

The complex is also fully landscaped and includes recreational areas, playgrounds, ball fields, gardens, sitting areas, green malls, and tree-lined walkways between the buildings. As these terra cotta sculptures are not considered sunlight-sensitive, (i.e., possessing design elements that depends on the contrast

between light and dark), the analysis for potential adverse shadows impacts at this resource will focus on the complex's landscaping.

As shown in Table 6-4, "Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)," Projected Development Sites 7 and 8 would cast incremental shadow on the complex's landscaping on each of the four representative analysis days ranging from approximately three hours 52 minutes on the December 21 analysis day to approximately ten hours and 33 minutes on the June 21 analysis day. On the March 21/September 21 analysis day, incremental shadow would be cast for approximately four hours and 39 minutes (11:50 AM – 4:29 PM). Incremental shadow would be cast by Projected Development Site 7 on portions of the yard between 1596-1598 Unionport Road and the street (refer to Figures 6-15a and 6-15b, "Incremental Shadows – March/September 21 – Parkchester Apartment Complex"). The area to be cast in incremental shadow by the development of Projected Development Site 7 includes grass, trees, and shrubs. As shown in Figures 6-19a and 6-19b, "Incremental Shadows – March 21/September 21 – Parkchester Apartment Complex," incremental shadow from the development of Projected Development Site 8 would be cast over a tree-lined pedestrian path during the afternoon hours on this analysis day. This would reduce direct sunlight to existing vegetation in this area. It is likely that vegetation in the Affected Area of the yard between 1596-1598 Unionport Road and the street would receive less than the necessary six to eight hours of direct sunlight on this analysis day. The tree-lined pedestrian path adjacent to Projected Development Site 8 would continue to receive six to eight hours of direct sunlight on this analysis day.

On the May 6/August 6 analysis day, incremental shadow would be cast by Projected Development Sites 7 and 8 for approximately nine hours and seven minutes (7:35 – 11:18 AM and 11:55 AM – 5:18 PM). In the morning hours, Projected Development Site 8 would cast incremental shadow west of the site on a tree-lined pedestrian path from approximately 7:35 – 11:18 AM (three hours 43 minutes) (refer to Figure 6-16a, "Incremental Shadows – May 6/ August 6 – Parkchester Apartment Complex"). This pedestrian path would receive less than six to eight hours of direct sunlight. During the afternoon hours, Projected Development Sites 7 and 8 would cast shadow on portions of the yard between 1596-1598 Unionport Road and the street, a tree-lined pedestrian path east of Projected Development Site 8, and the Parkchester North Condominium Park athletic field (refer to Figures 6-16 and 6-20, "Incremental Shadows May 6/August 6 – Parkchester Apartment Complex"). Projected Development Site 7 would cast incremental shadow during the later afternoon hours. Vegetation on the yard between 1596-1598 Unionport Road and the street would continue to receive six to eight hours of direct sunlight on this analysis day. Projected Development Site 8 would cast shadow on a tree-lined pedestrian path and a portion of the Parkchester North Condominium Park athletic field towards the end of the analysis day. The tree-lined pedestrian path and athletic field would continue to receive six to eight hours of direct sunlight.

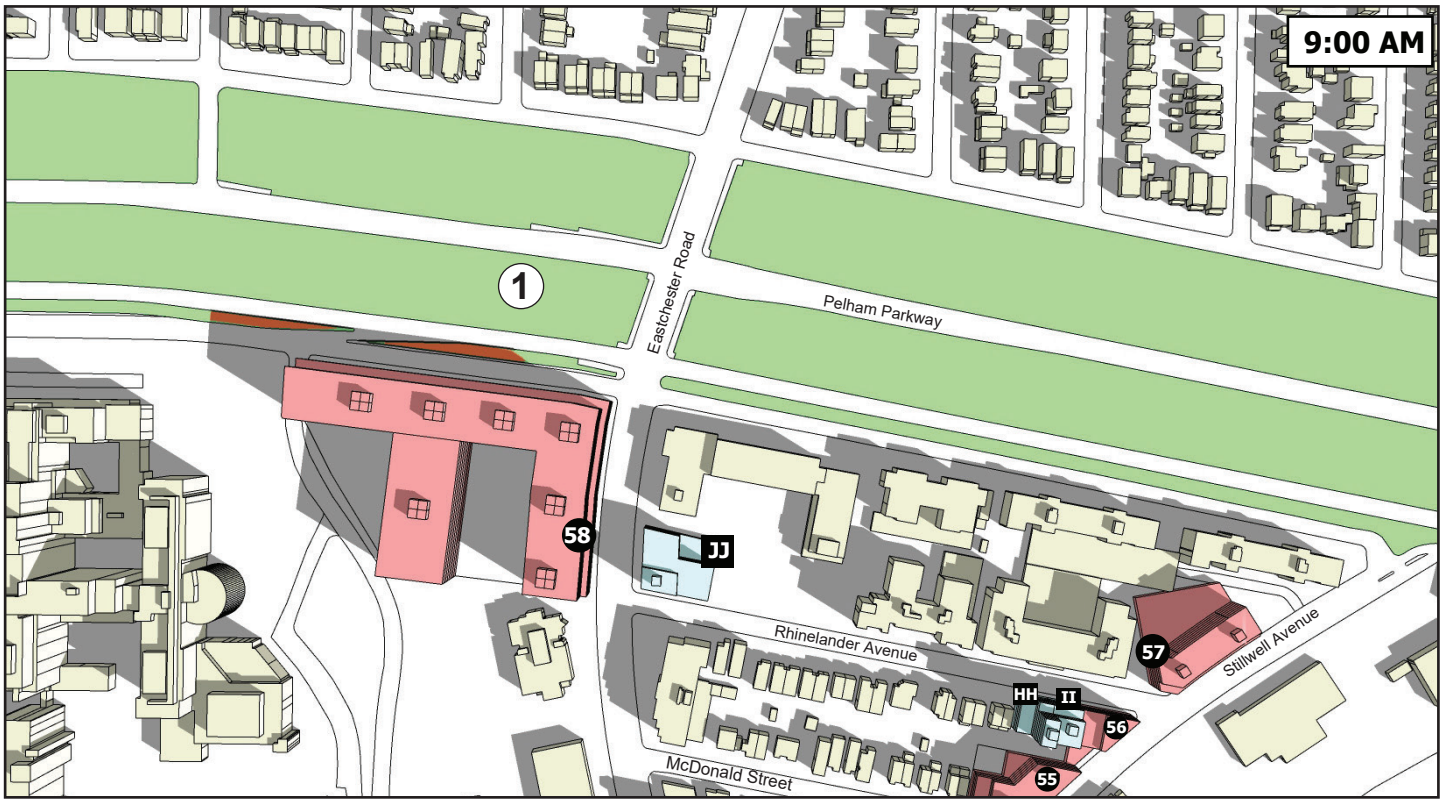
On the June 21 analysis day, an incremental shadow would be cast on the Parkchester Special Planned Community Preservation District's landscaping from 7:17 – 11:40 AM (four hours and 23 minutes) and 11:51 – 6:01 PM (six hours and ten minutes). Projected Development Site 7 would cast an incremental

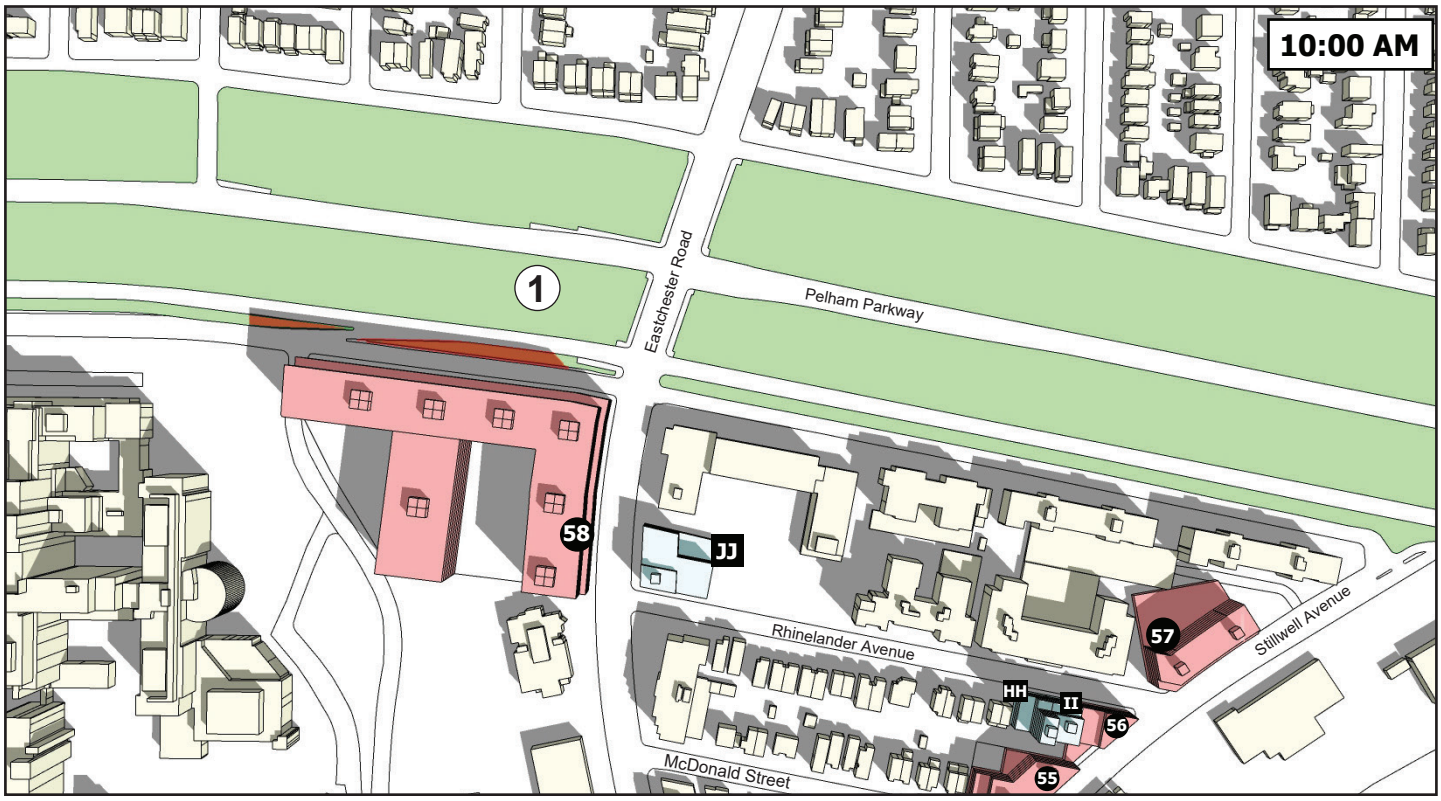
shadow on portions of the yard between 1596-1598 Unionport Road and the street (refer to Figures 6-17a and 6-17b, "Incremental Shadows – June 21 – Parkchester Apartment Complex"). Vegetation on the yard between 1596-1598 Unionport Road and the street would continue to receive six to eight hours of direct sunlight on this analysis day. In the morning hours, Projected Development Site 8 would cast an incremental shadow on a tree-lined pedestrian path for approximately four hours and 23 minutes (refer to Figures 6-17 and 6-21, "Incremental Shadows – June 21 – Parkchester Apartment Complex"). Vegetation in this area would continue to receive six to eight hours of direct sunlight. As shown in Figures 6-17 and 6-21, "Incremental Shadows – June 21 – Parkchester Apartment Complex," incremental shadow cast by Projected Development Site 8 would occur during the late afternoon hours. An incremental shadow would be cast on a tree-lined pedestrian path and the athletic field.

On the December 21 analysis day, incremental shadow would be cast by Projected Development Sites 7 and 8 over portions of the Parkchester Special Planned Community Preservation District's landscaping for approximately three hours and 52 minutes (11:01 AM – 2:53 PM). Projected Development Site 7 would cast an incremental shadow on portions of the yard between 1596-1598 Unionport Road and the street (refer to Figures 6-18 and 6-22). Projected Development Site 8 would cast shadow over a portion of a tree-lined pedestrian path east of the site. However, the December 21 analysis day is not considered part of the growing season, and, thus, the viability of any existing vegetation would not be threatened.

Assessment

The complex's 129-acre area would continue to receive direct sunlight on all representative analysis days (see Figures 6-15 through 6-22). However, vegetation in the yard between 1596-1598 Unionport Road and the street and the pedestrian path between Projected Development Site 8 and 1950-1970 E Tremont Avenue may no longer receive adequate sunlight during the growing season (at least the six to eight hours specified in the *CEQR Technical Manual*) as a result of development at the projected development sites. Therefore, vegetation in this area could be significantly impacted and this small portion of the larger 129-acre area may no longer be able to support a variety of plant life, as compared to the No-Action condition. Therefore, a small portion of the larger 129-acre Parkchester Special Planned Community Preservation District's landscaping would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

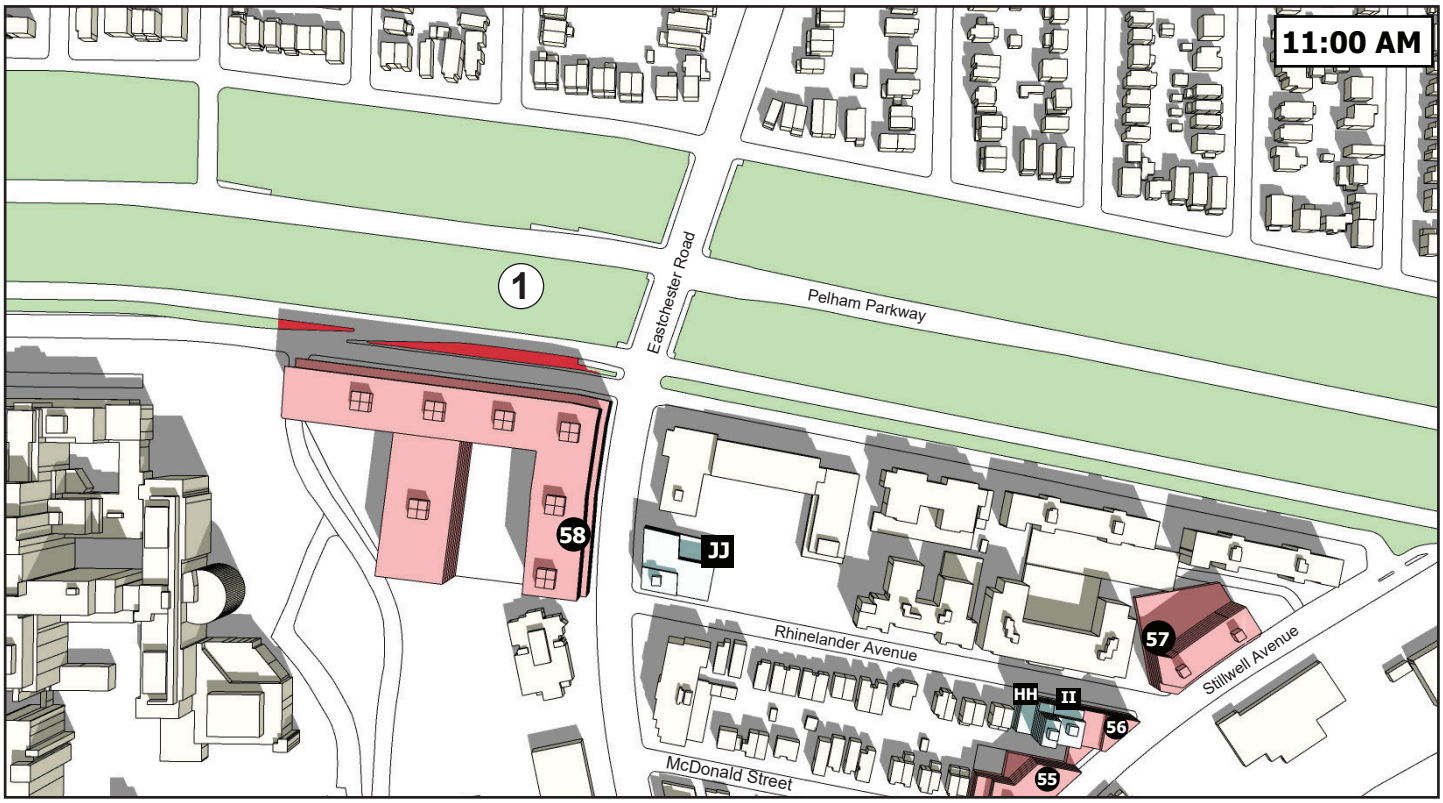
Incremental Shadow

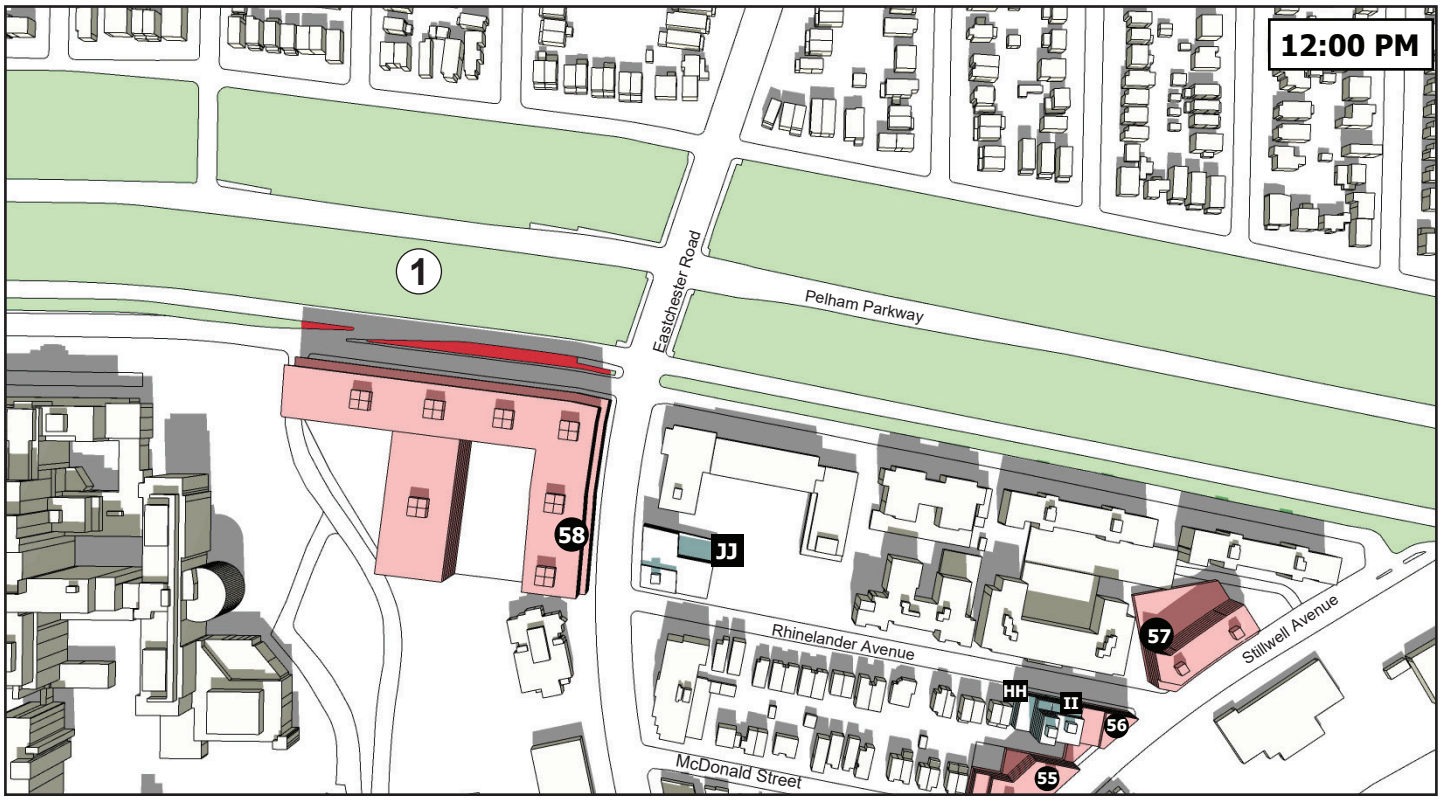
N

Figure 6-2a

INCREMENTAL SHADOWS - March/September 21
PELHAM PARKWAY

Bronx Metro-North Station Study





1 Projected Development Site

A Potential Development Site

1 Sunlight-sensitive Resource (refer to Table 6-4)

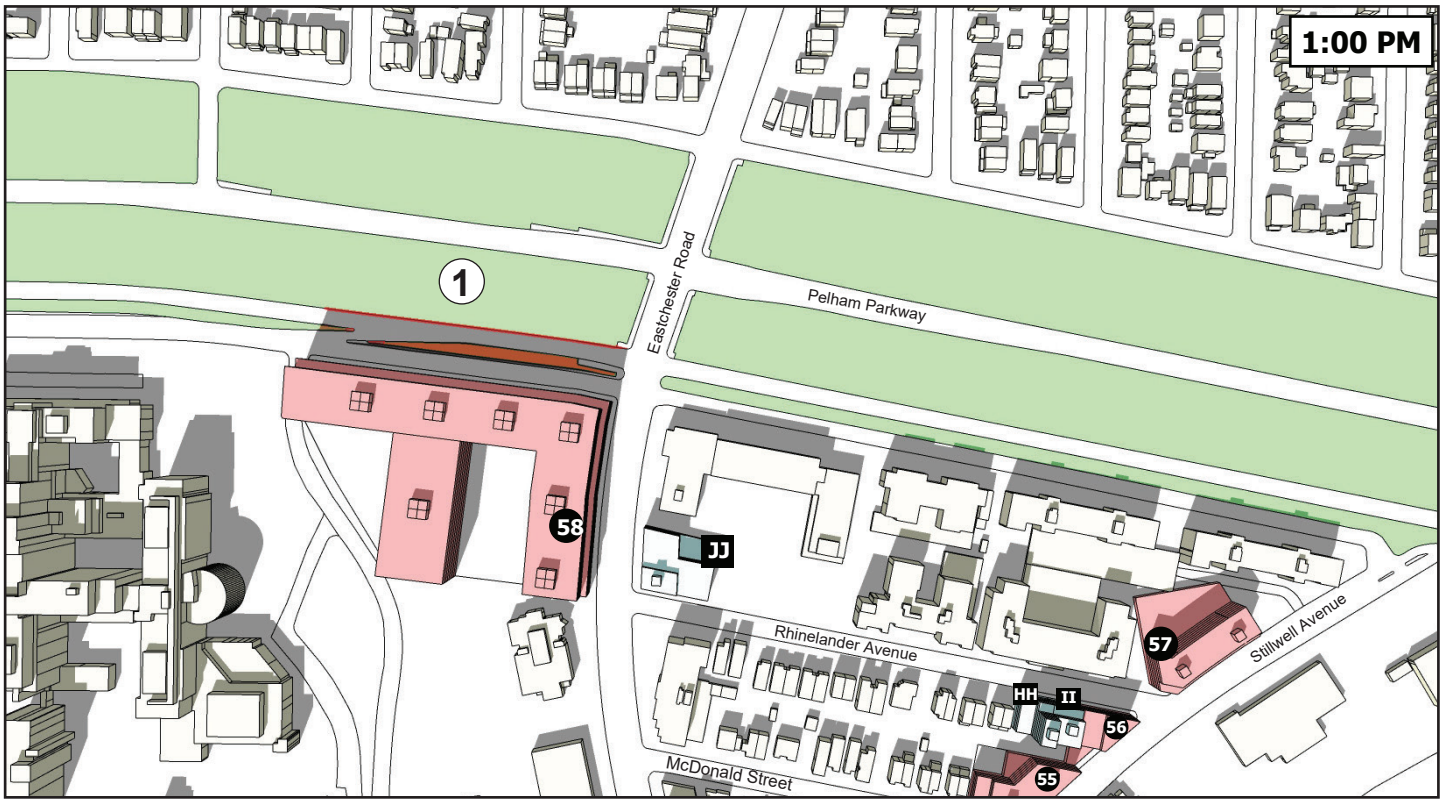
Incremental Shadow

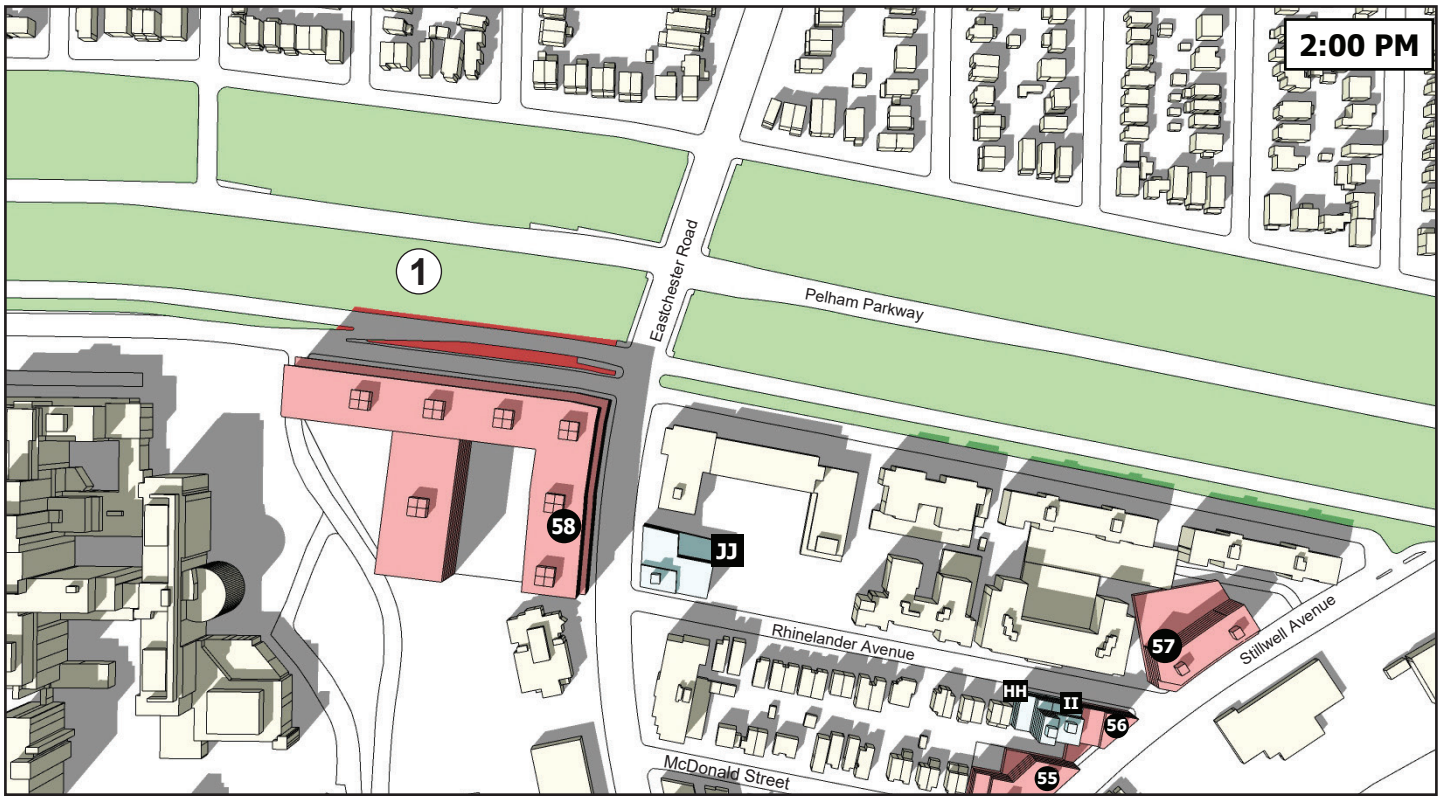
N

Figure 6-2b

INCREMENTAL SHADOWS - March/September 21
PELHAM PARKWAY

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

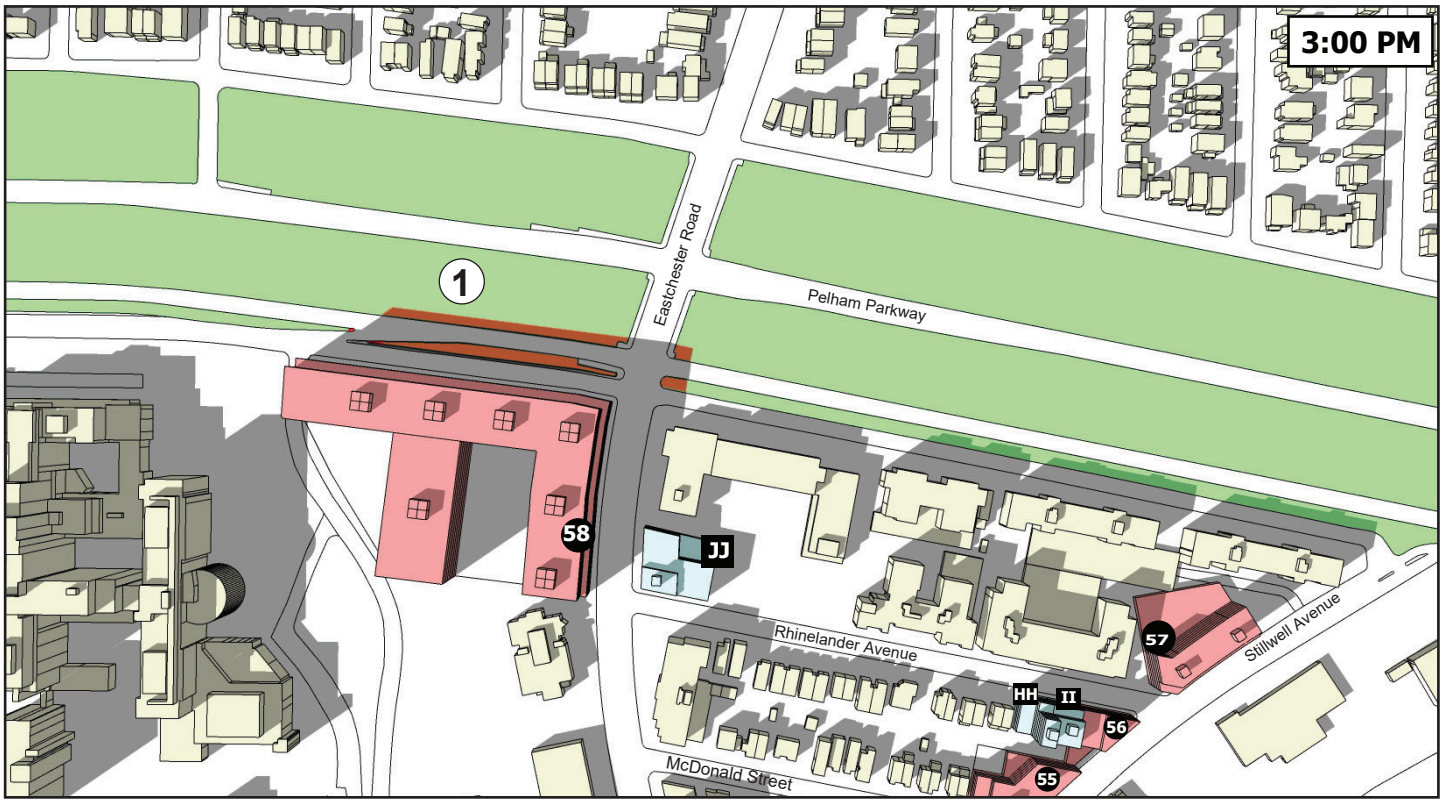
Incremental Shadow

N

Figure 6-2c

INCREMENTAL SHADOWS - March/September 21
PELHAM PARKWAY

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

1 Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-2d

INCREMENTAL SHADOWS - March/September 21
PELHAM PARKWAY

Bronx Metro-North Station Study



Projected Development Site (1)

Potential Development Site (A)

1 Sunlight-sensitive Resource (refer to Table 6-4)

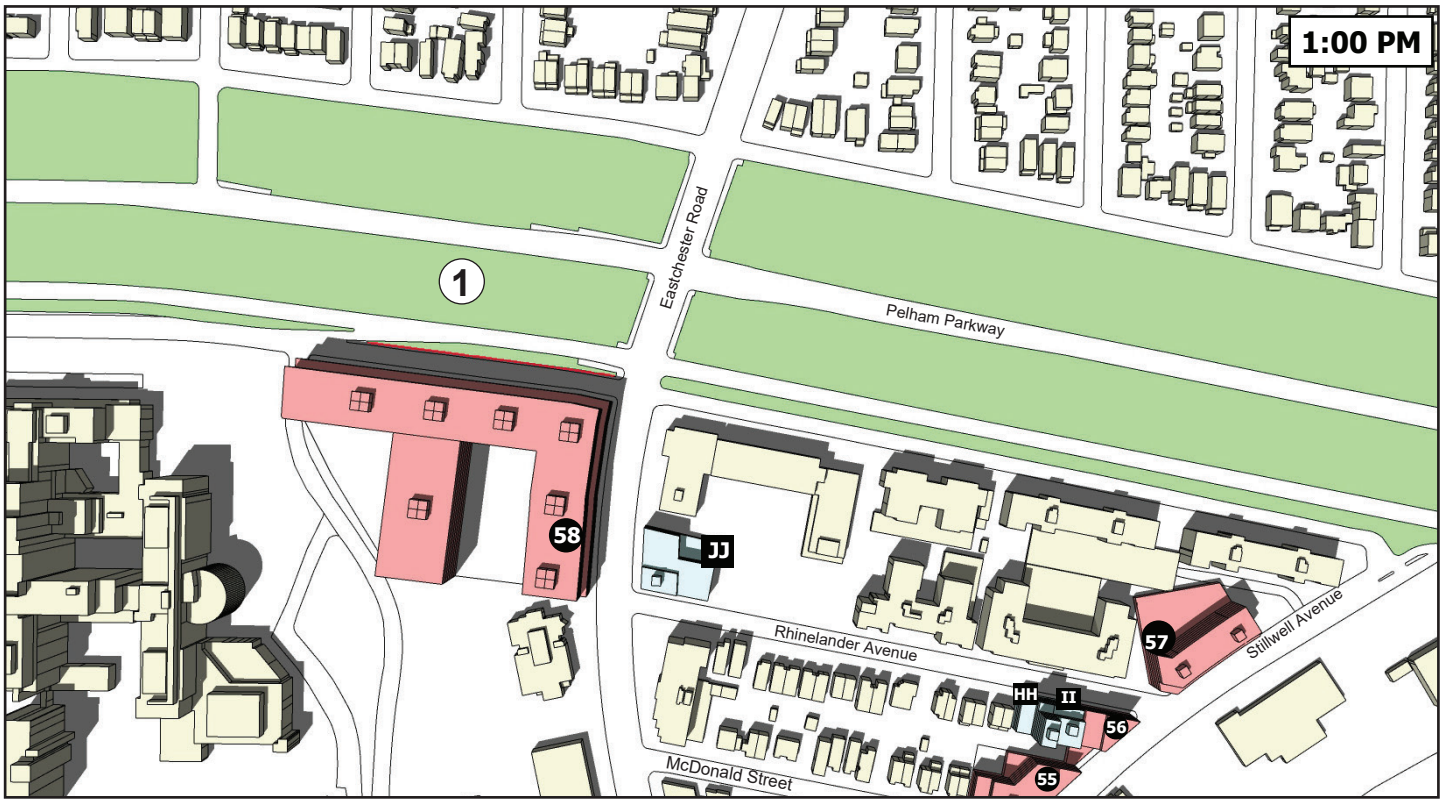
Incremental Shadow

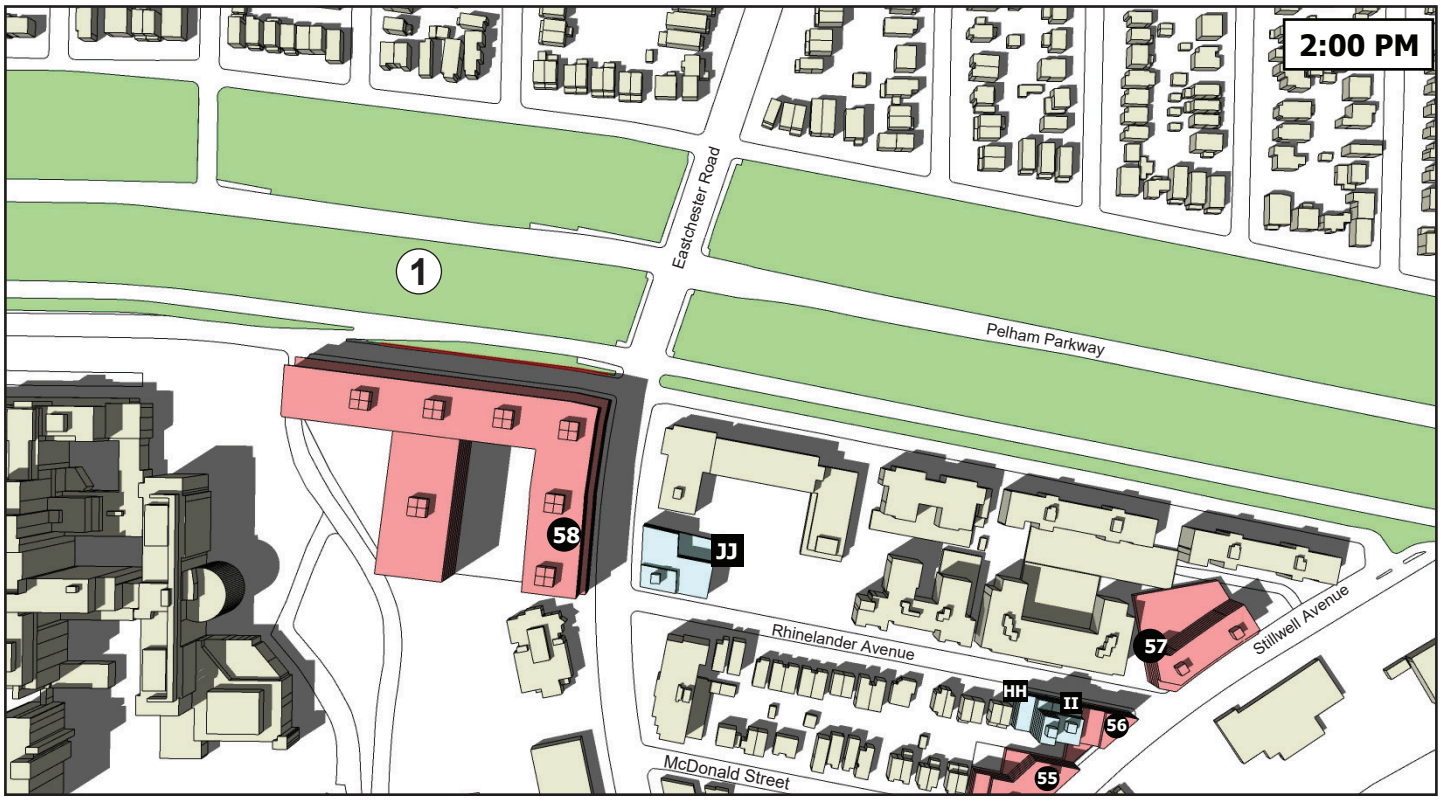
N

Figure 6-2e

INCREMENTAL SHADOWS - March/September 21
PELHAM PARKWAY

Bronx Metro-North Station Study





Projected Development Site (1)

Potential Development Site (A)

Sunlight-sensitive Resource (refer to Table 6-4) (1)

Incremental Shadow

N

Figure 6-3a

INCREMENTAL SHADOWS - May/August 6
PELHAM PARKWAY

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-3b

INCREMENTAL SHADOWS - May/August 6
PELHAM PARKWAY

Bronx Metro-North Station Study





Projected Development Site (1)

Potential Development Site (A)

Sunlight-sensitive Resource (refer to Table 6-4) (1)

Incremental Shadow

N

Figure 6-4a

INCREMENTAL SHADOWS - December 21
PELHAM PARKWAY

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

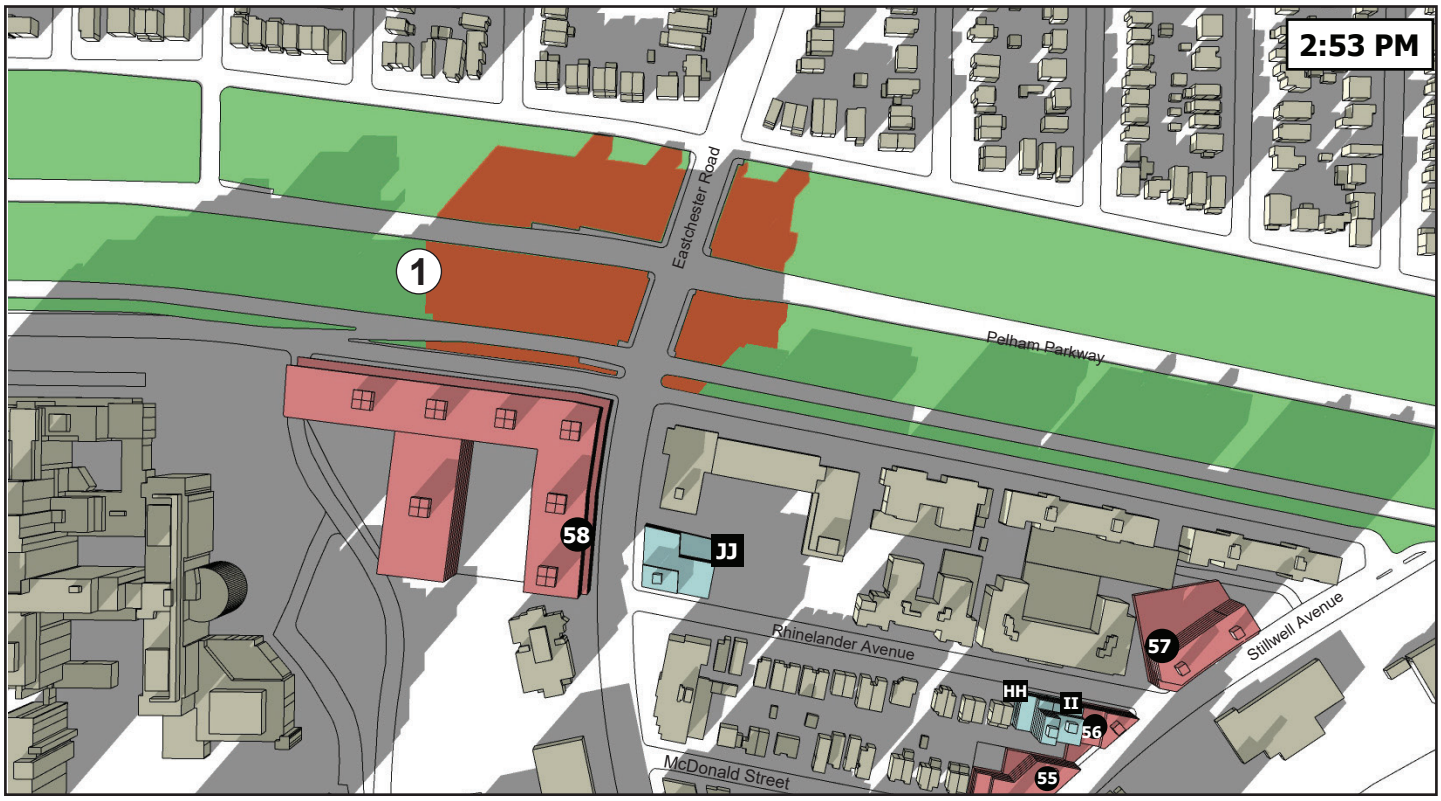
N

Figure 6-4b

INCREMENTAL SHADOWS - December 21
PELHAM PARKWAY

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

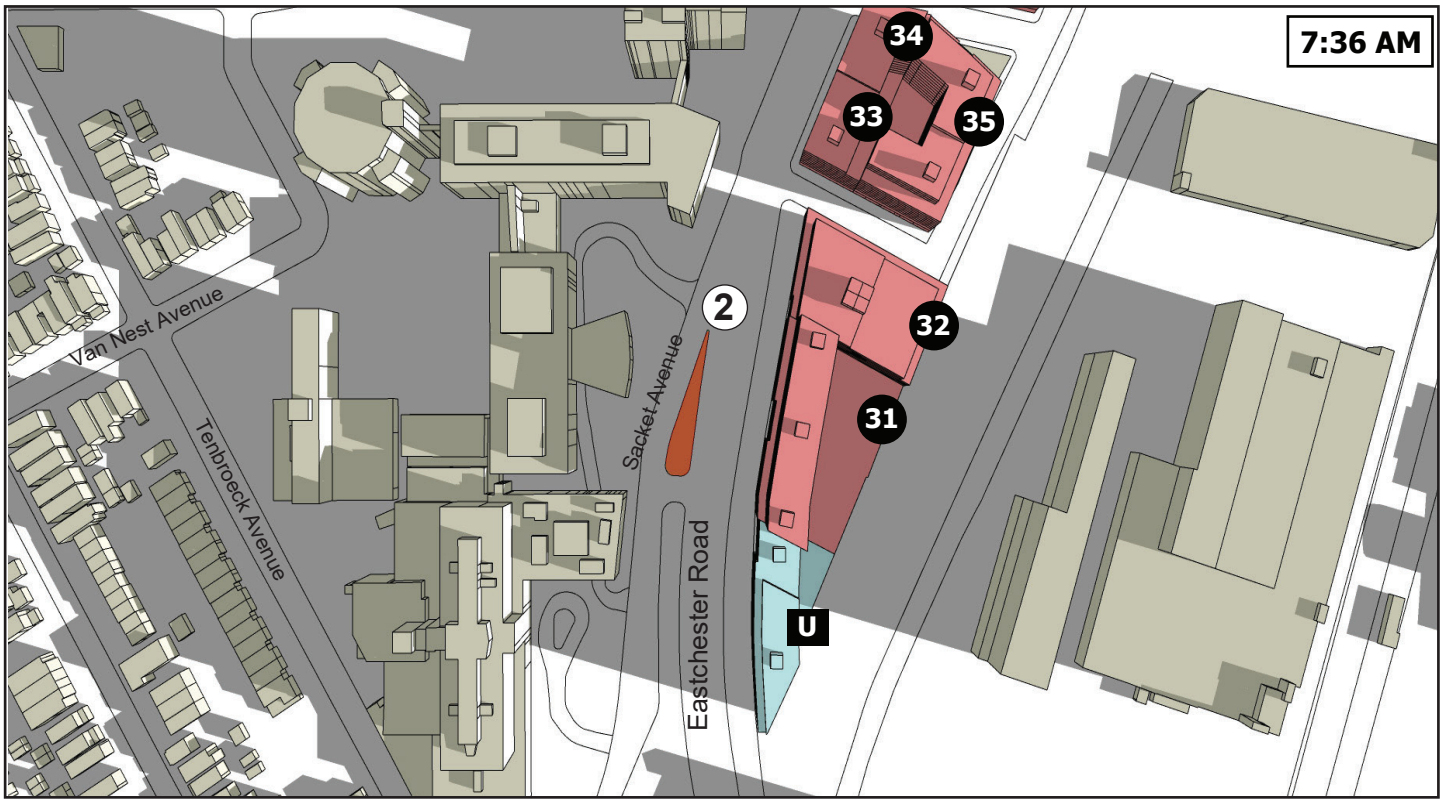
Incremental Shadow

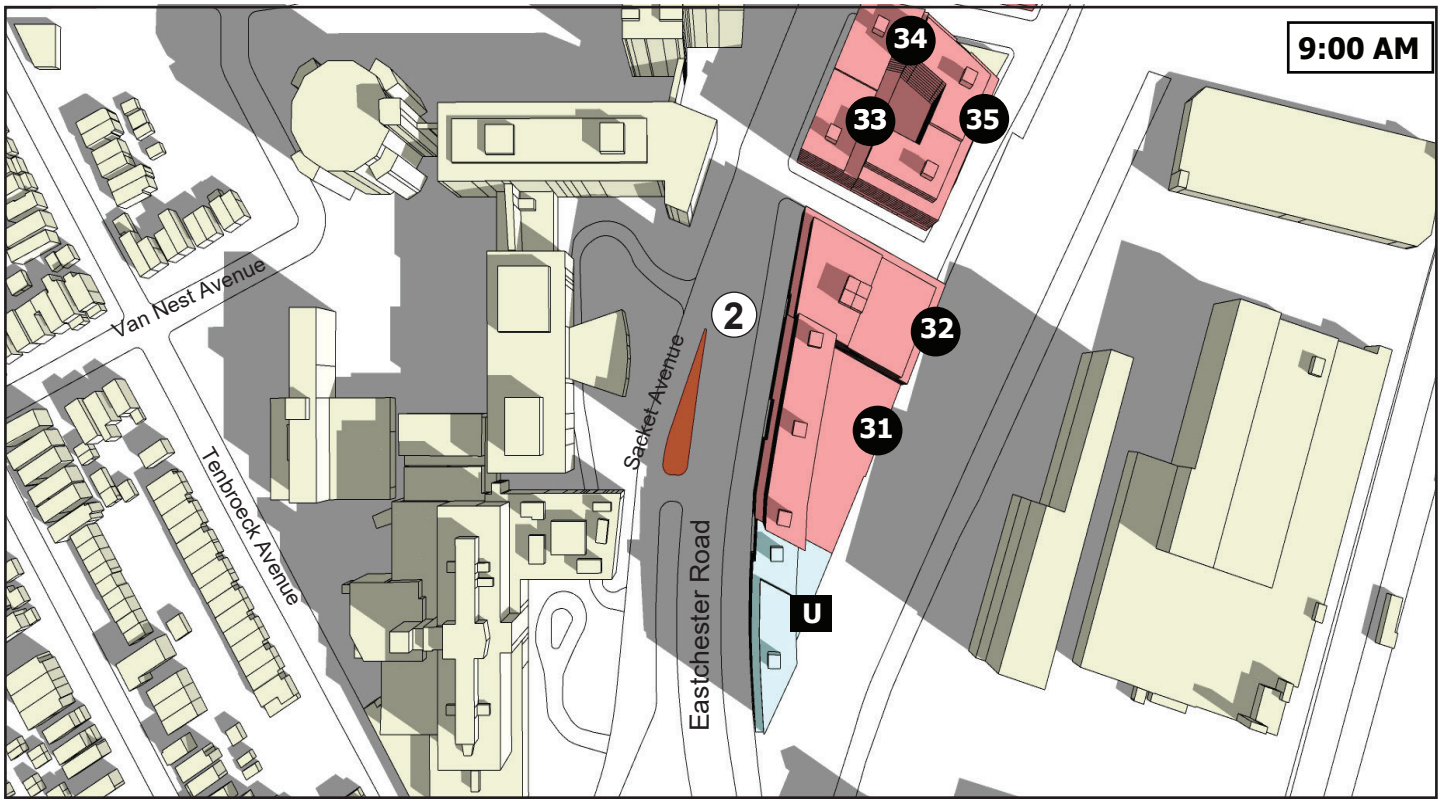
N

Figure 6-4c

INCREMENTAL SHADOWS - December 21
PELHAM PARKWAY

Bronx Metro-North Station Study





Projected Development Site (1)

Potential Development Site (A)

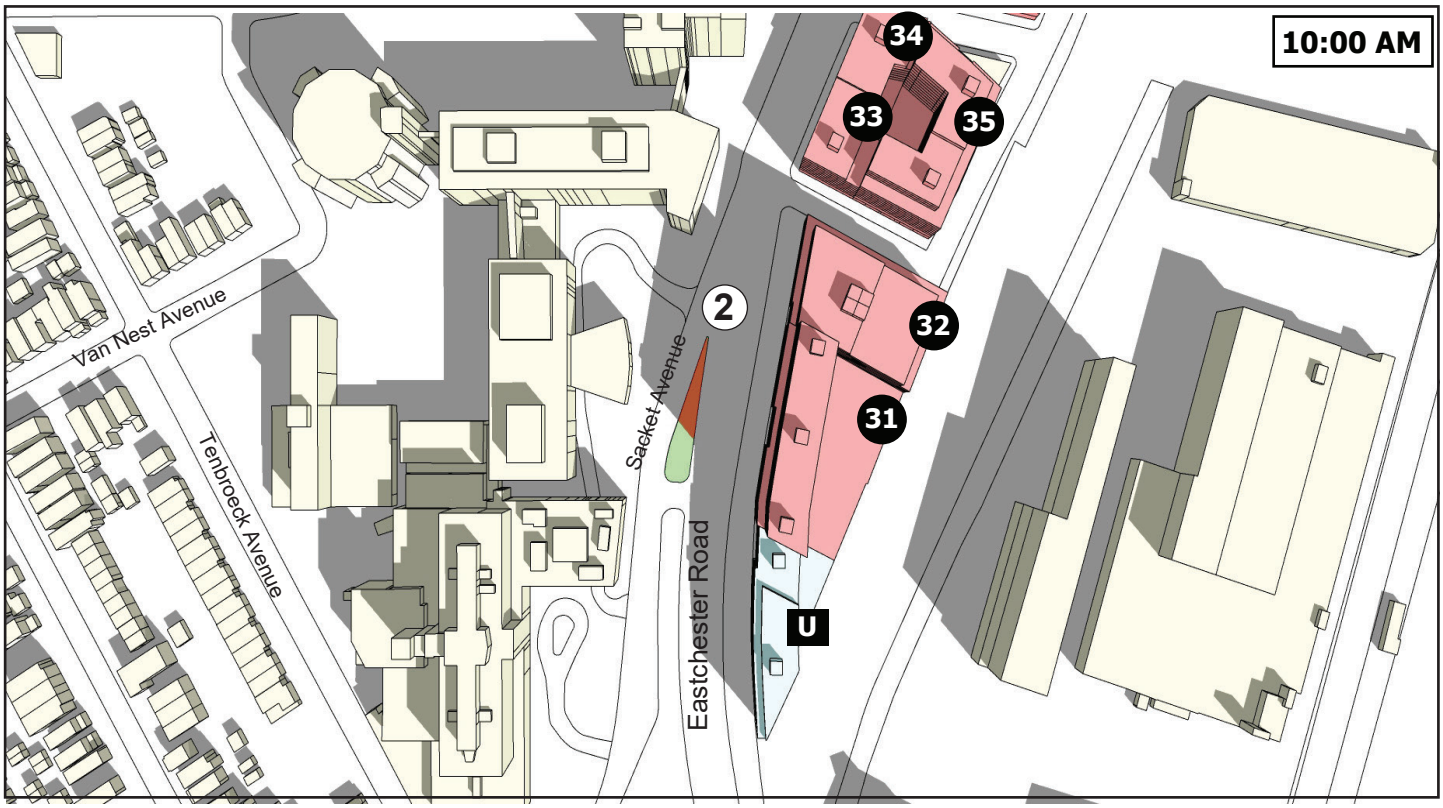
Sunlight-sensitive Resource (refer to Table 6-4) (1)

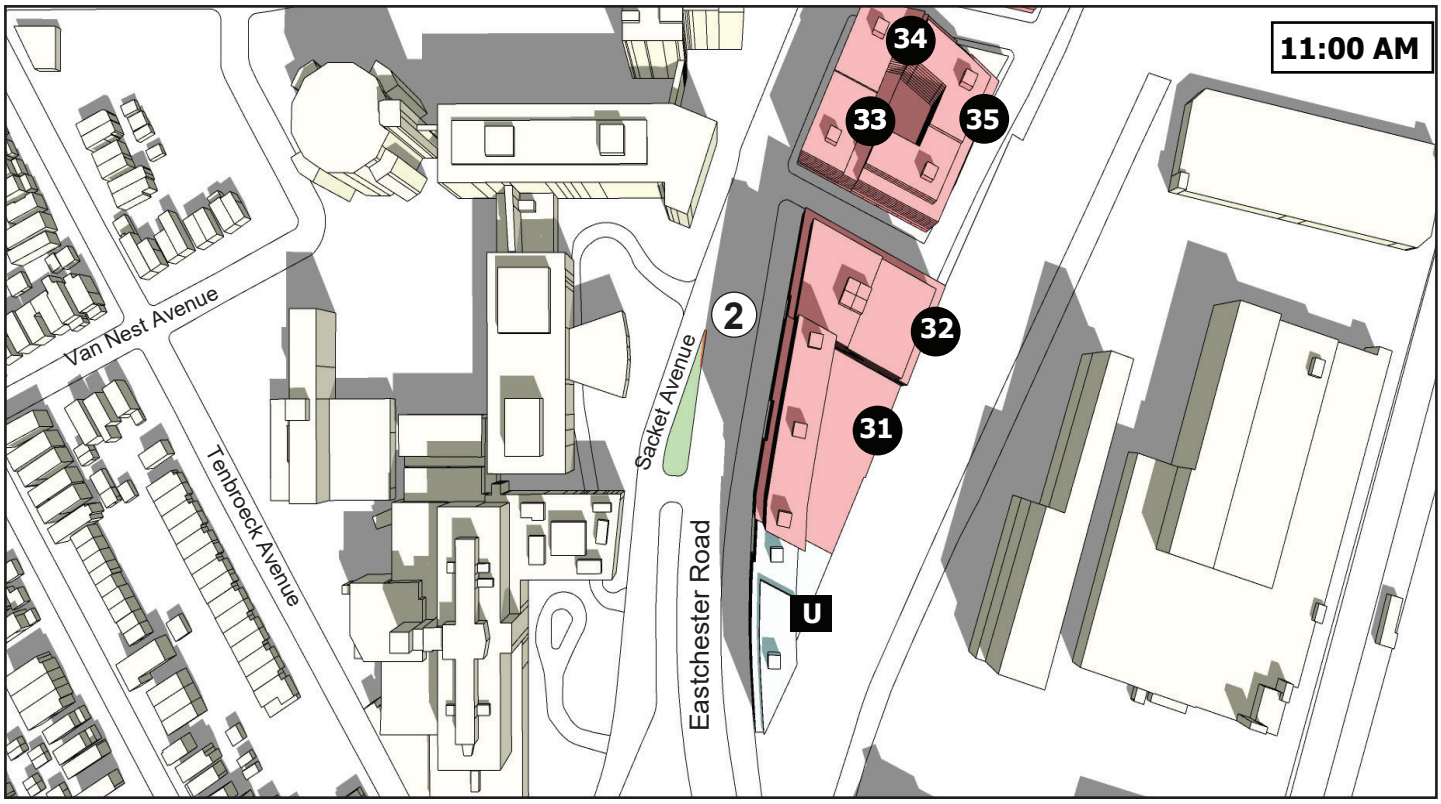
Incremental Shadow

N

Figure 6-5a

INCREMENTAL SHADOWS - March/September 21
GREENSTREET - SACKET AVENUE





Projected Development Site (1)

Potential Development Site (A)

Sunlight-sensitive Resource (refer to Table 6-4) (1)

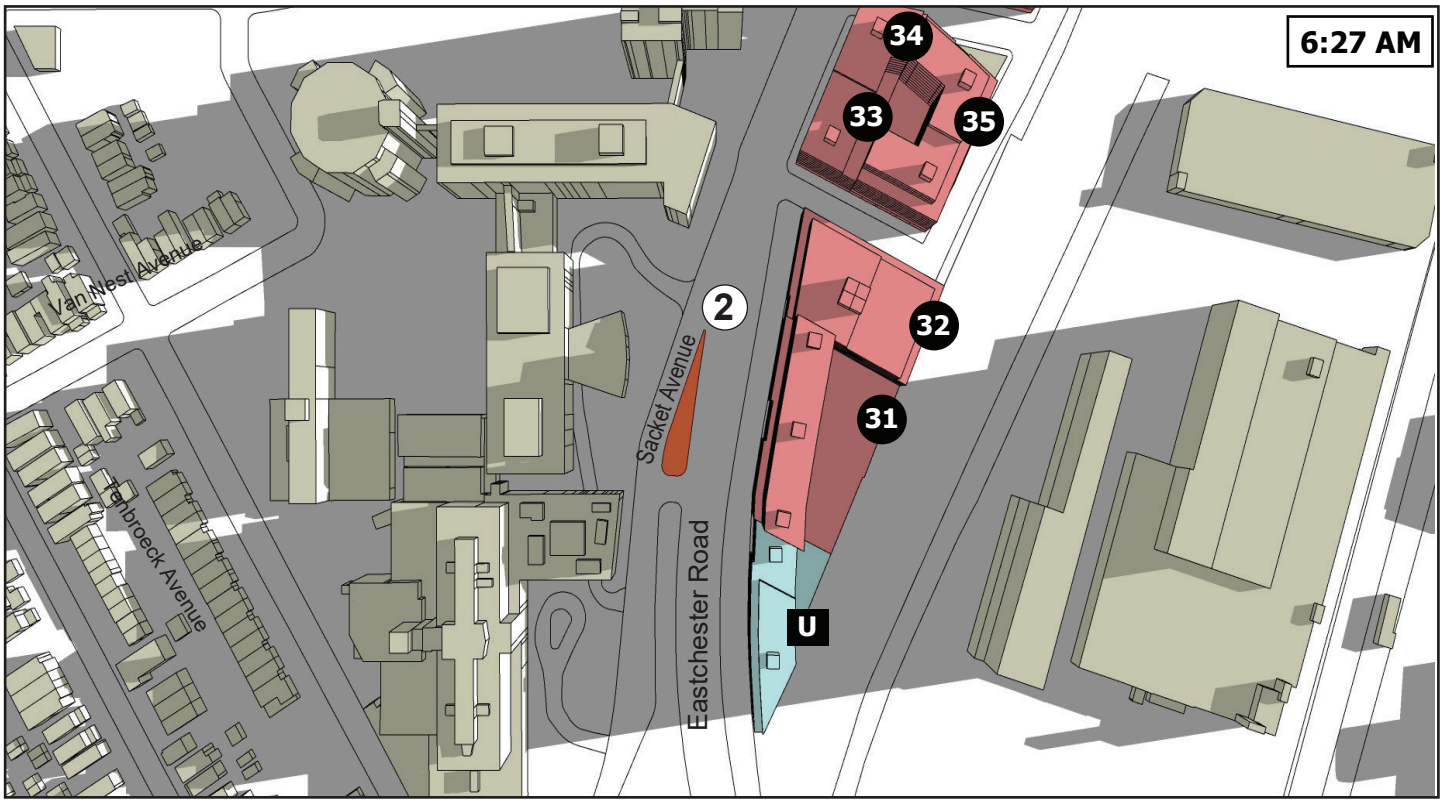
Incremental Shadow

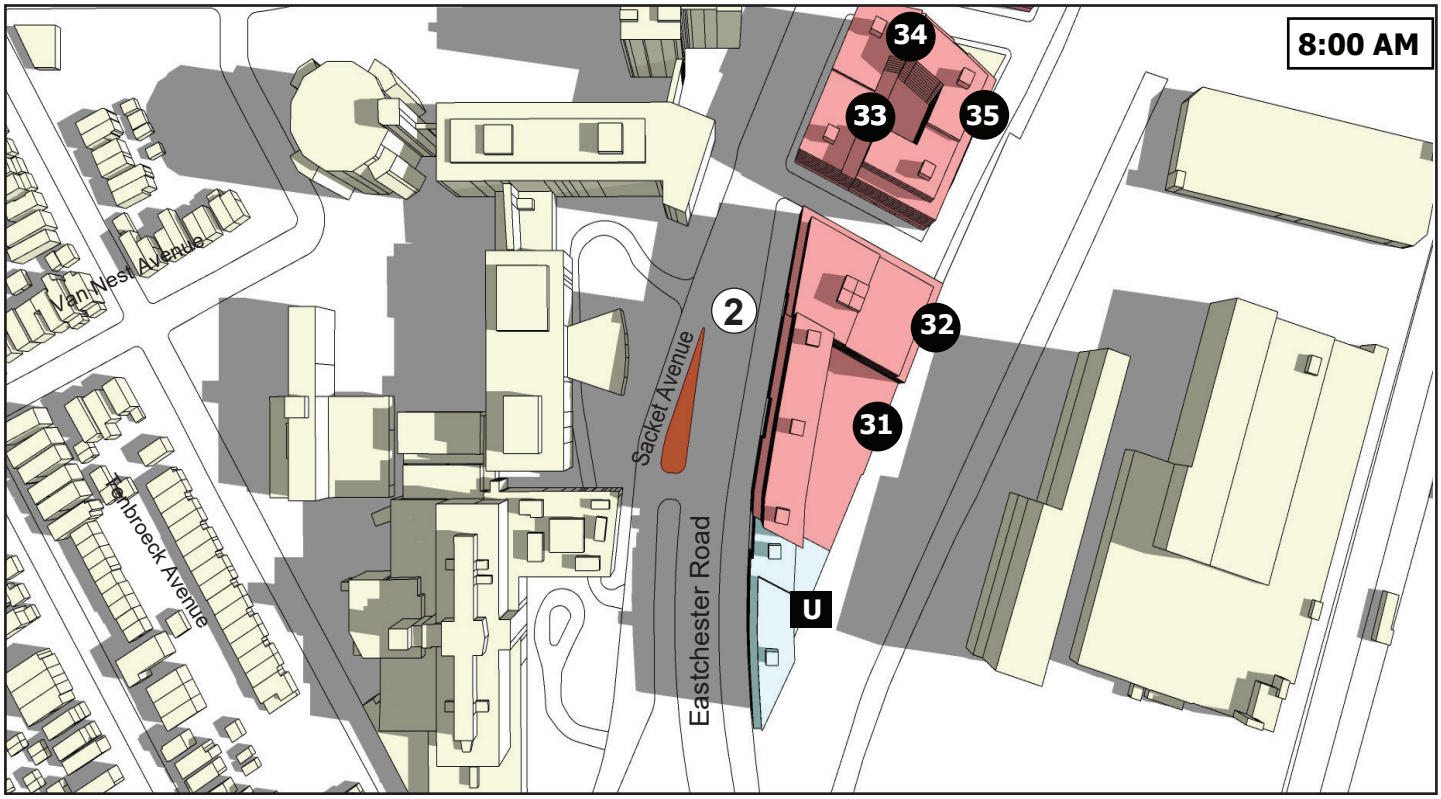
N

Figure 6-5b

INCREMENTAL SHADOWS - March/September 21
GREENSTREET - SACKET AVENUE

Bronx Metro-North Station Study





Projected Development Site (1)

Potential Development Site (A)

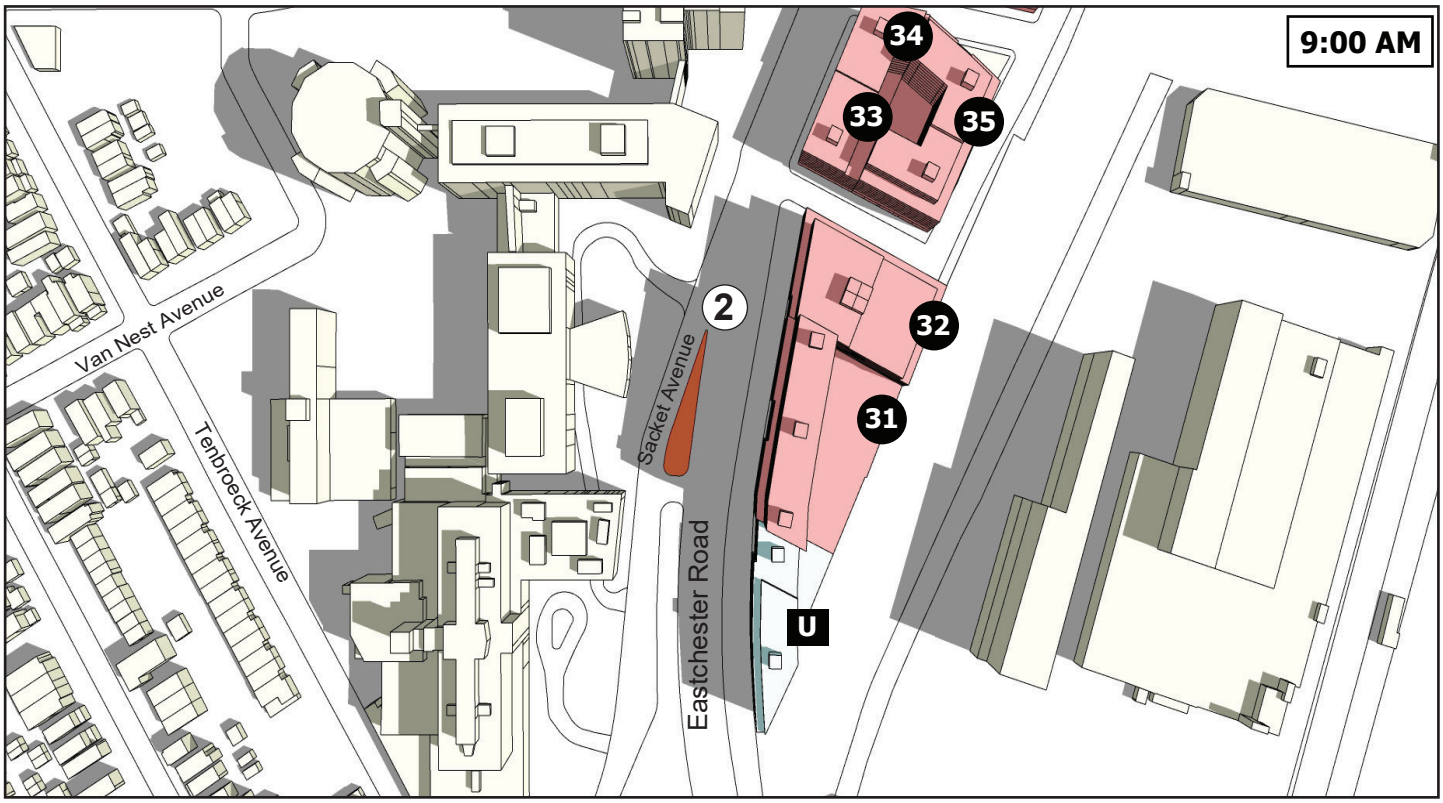
Sunlight-sensitive Resource (refer to Table 6-4) (1)

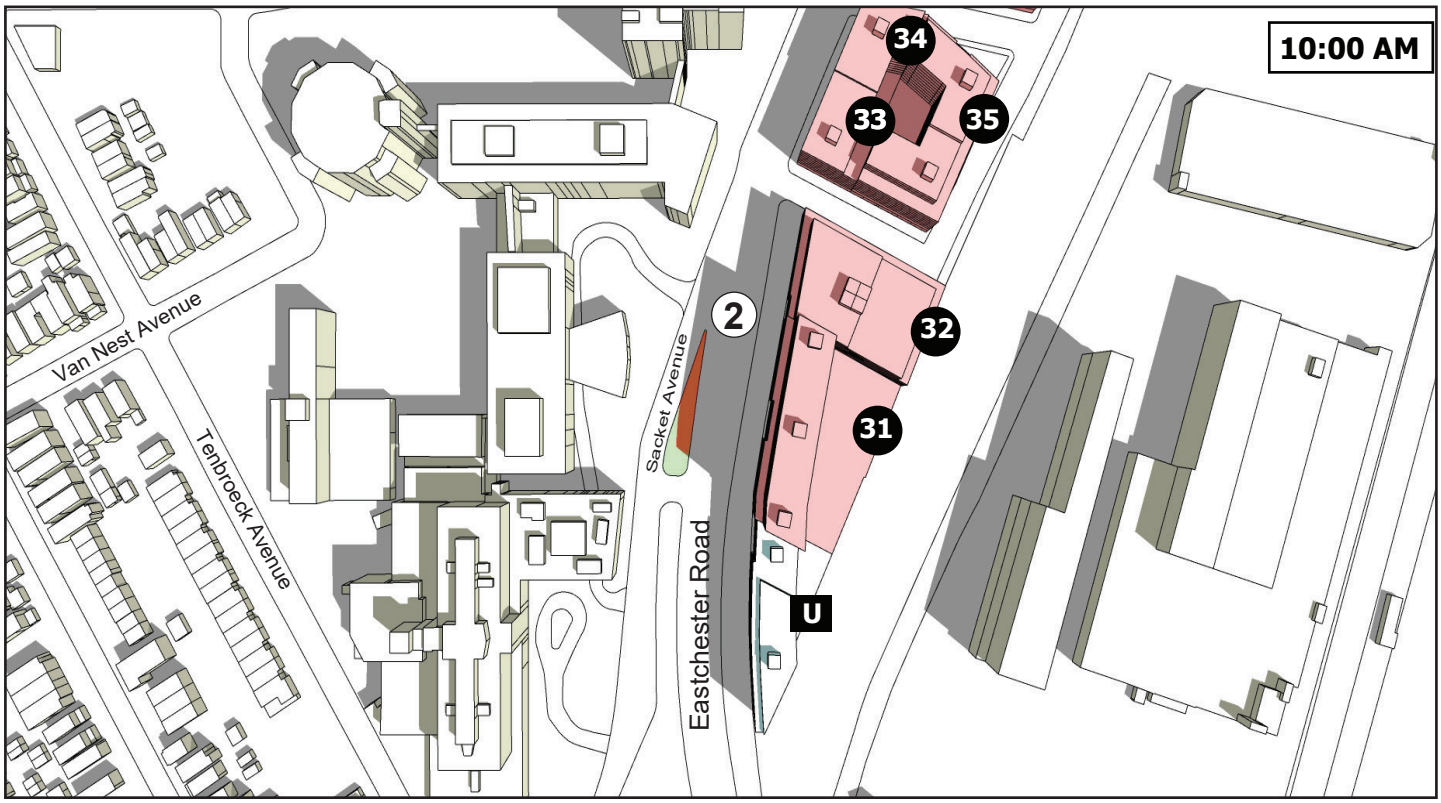
Incremental Shadow

N

Figure 6-6a

INCREMENTAL SHADOWS - May 6/August 6
GREENSTREET - SACKET AVENUE





Projected Development Site (1)

Potential Development Site (A)

1 Sunlight-sensitive Resource (refer to Table 6-4)

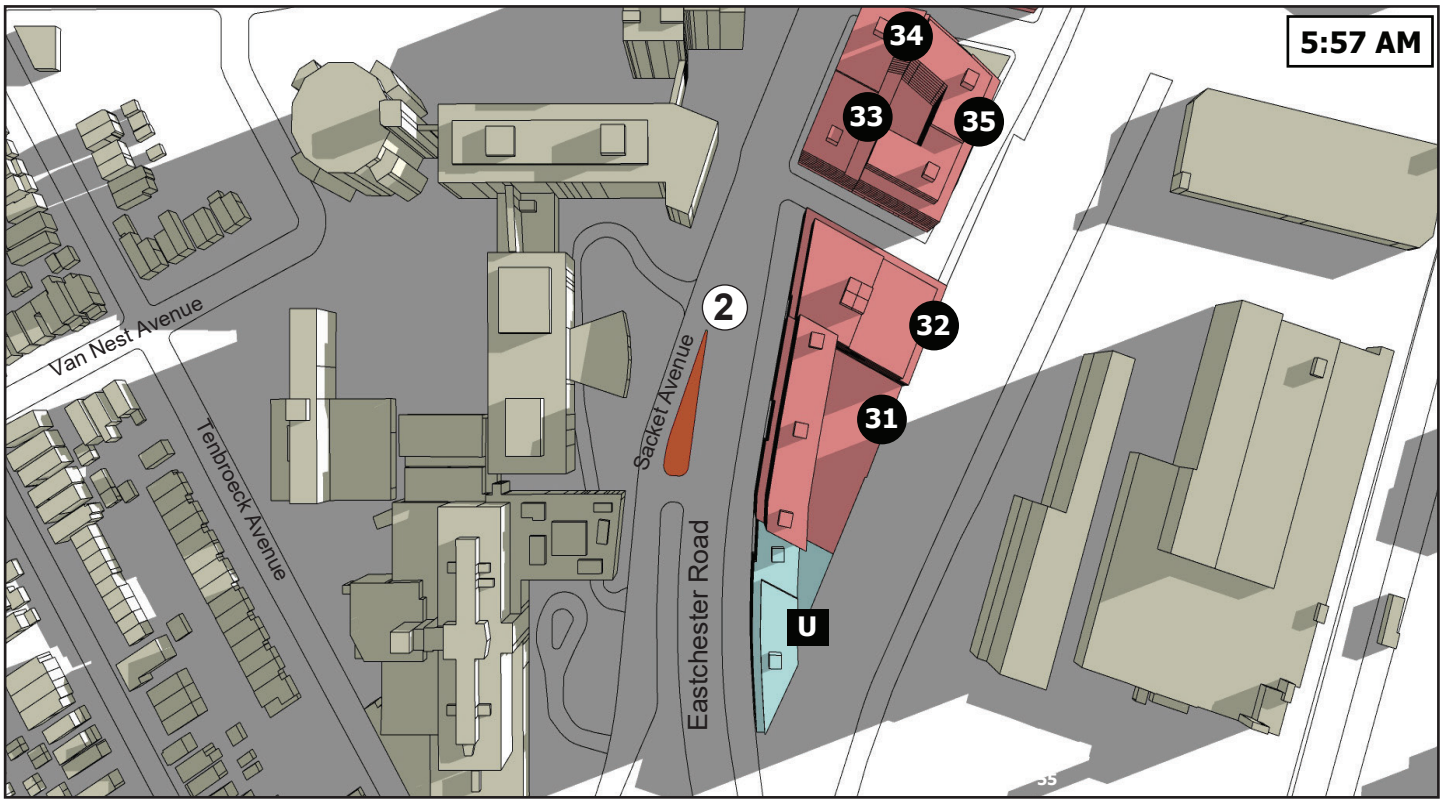
Incremental Shadow

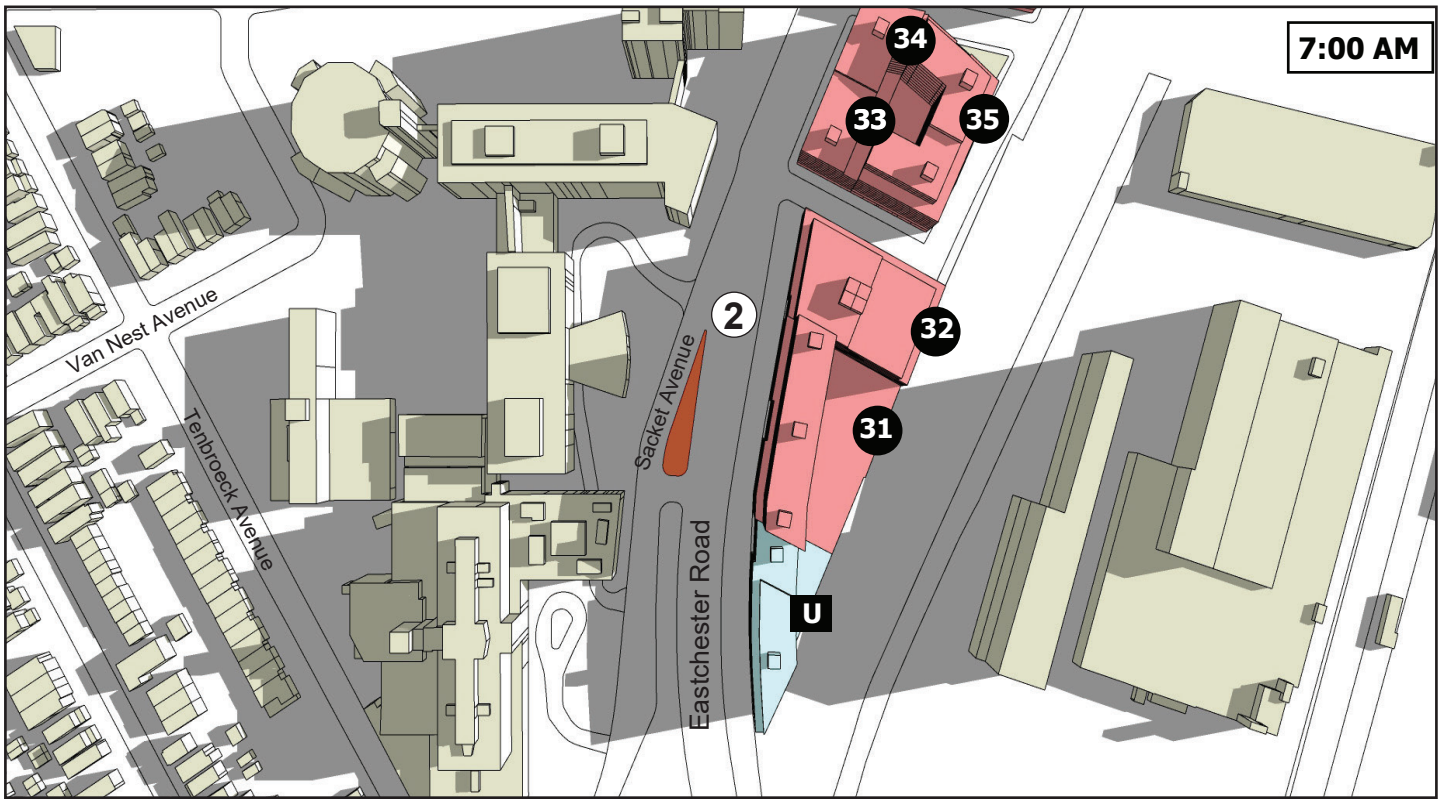
N

Figure 6-6b

INCREMENTAL SHADOWS - May 6/August 6
GREENSTREET - SACKET AVENUE

Bronx Metro-North Station Study





1 Projected Development Site

A Potential Development Site

1 Sunlight-sensitive Resource (refer to Table 6-4)

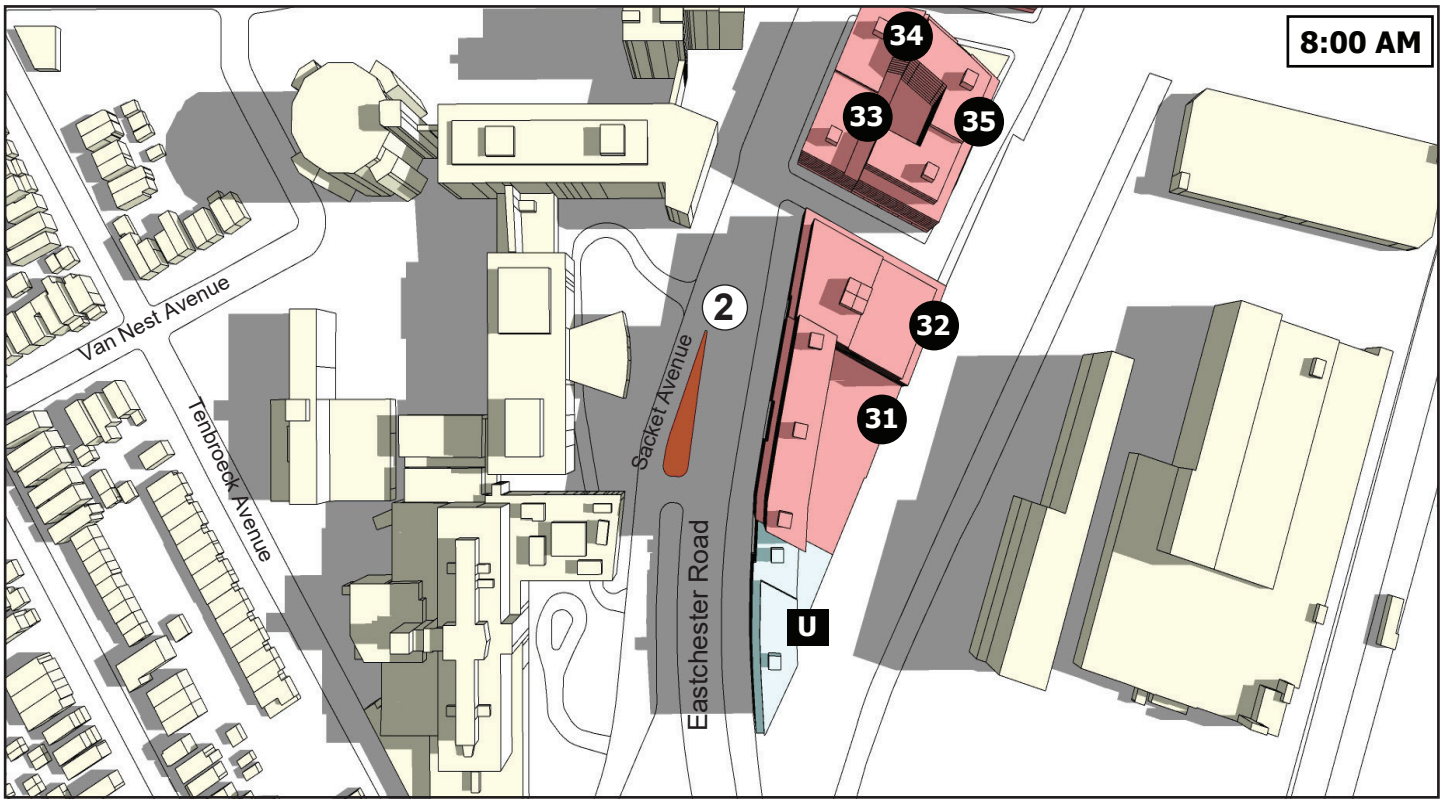
Incremental Shadow

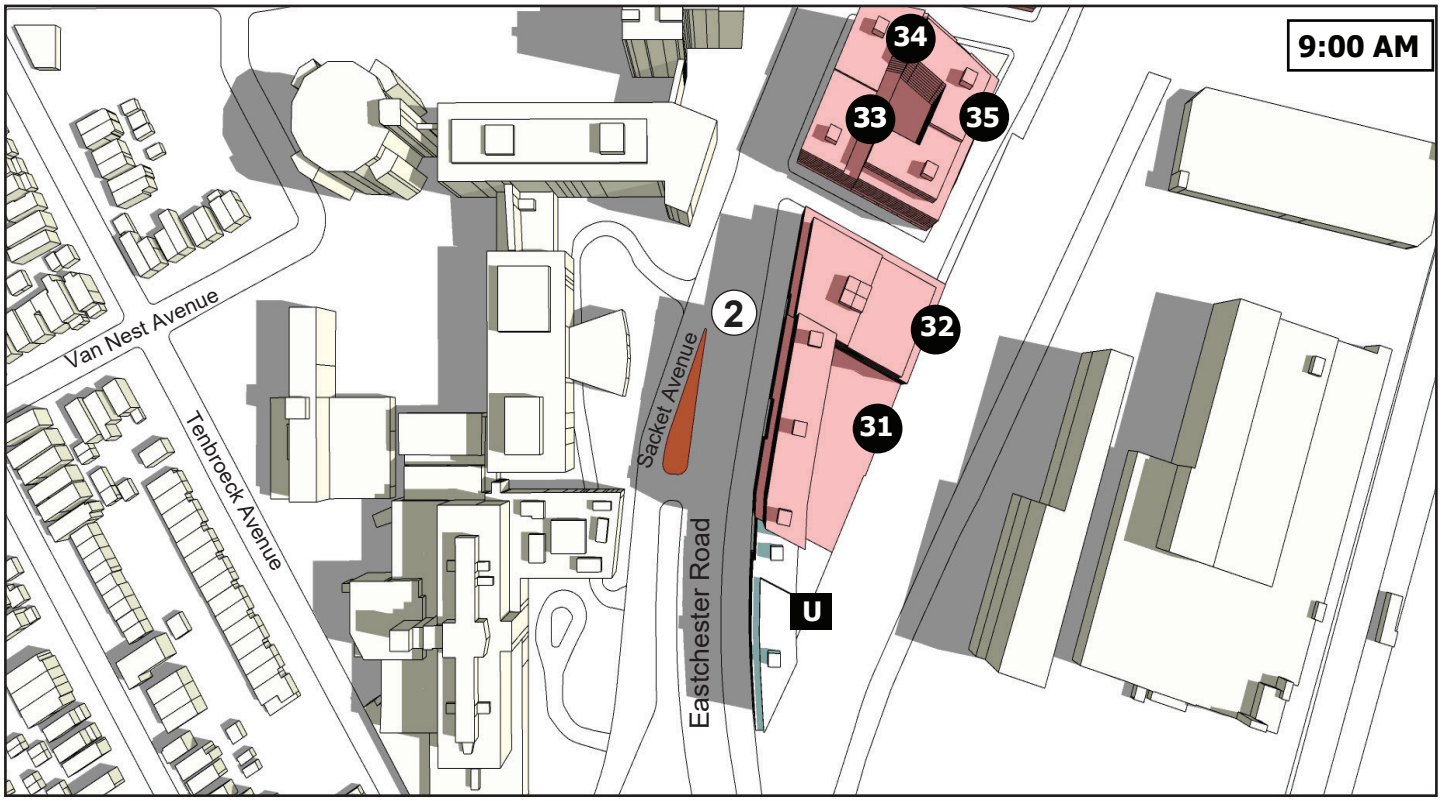
N

Figure 6-7a

INCREMENTAL SHADOWS - June 21
GREENSTREET - SACKET AVENUE

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

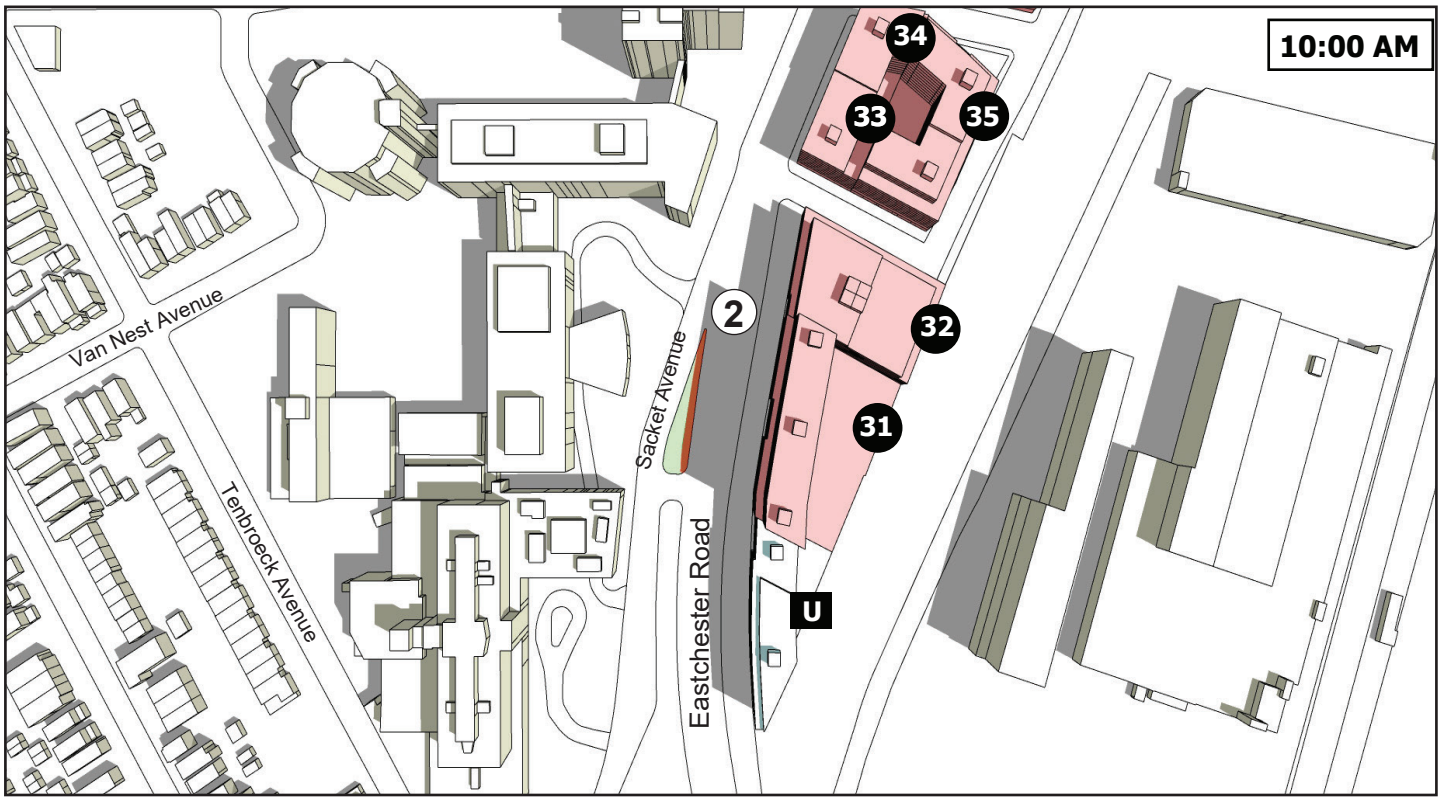
Incremental Shadow

N

Figure 6-7b

INCREMENTAL SHADOWS - June 21
GREENSTREET - SACKET AVENUE

Bronx Metro-North Station Study



Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

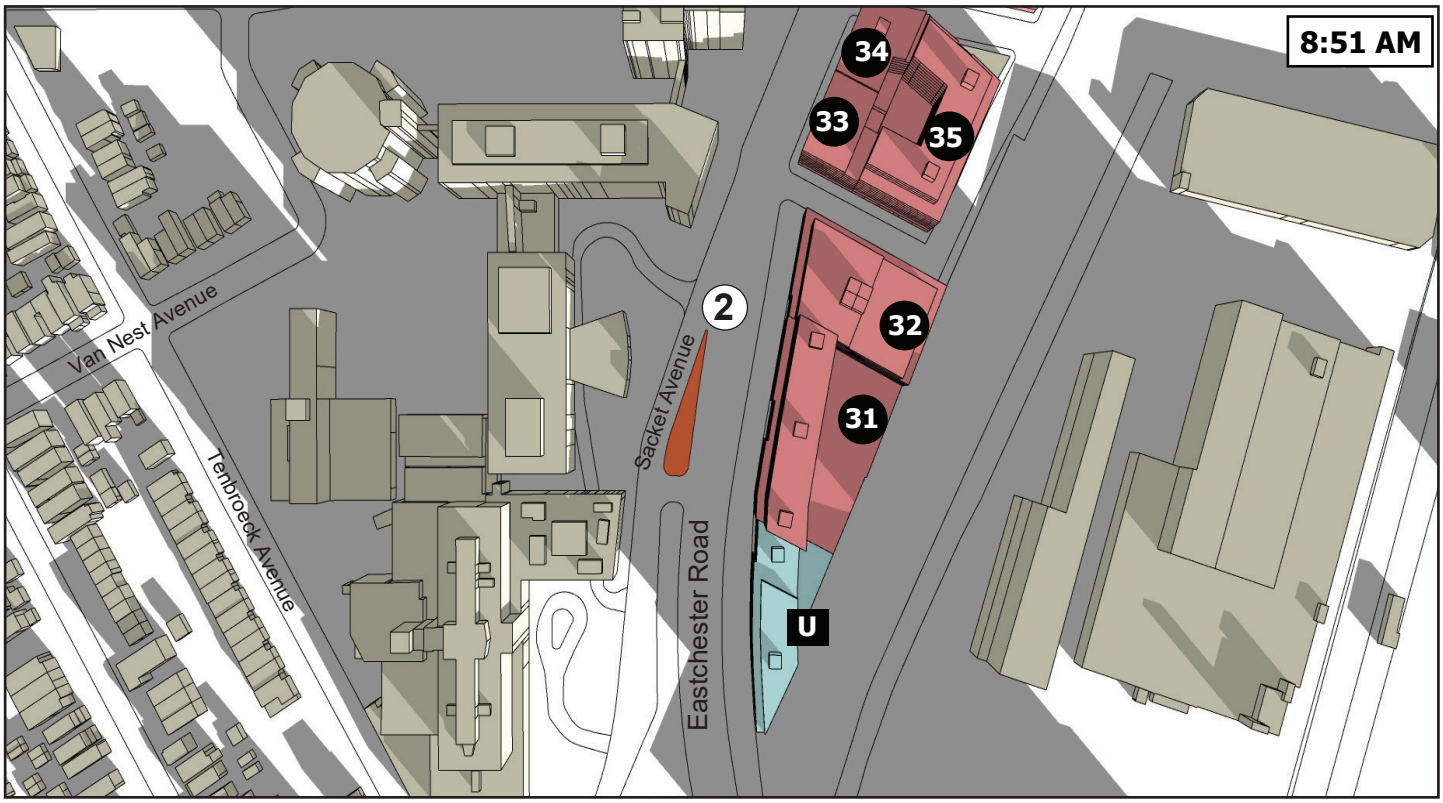
Incremental Shadow

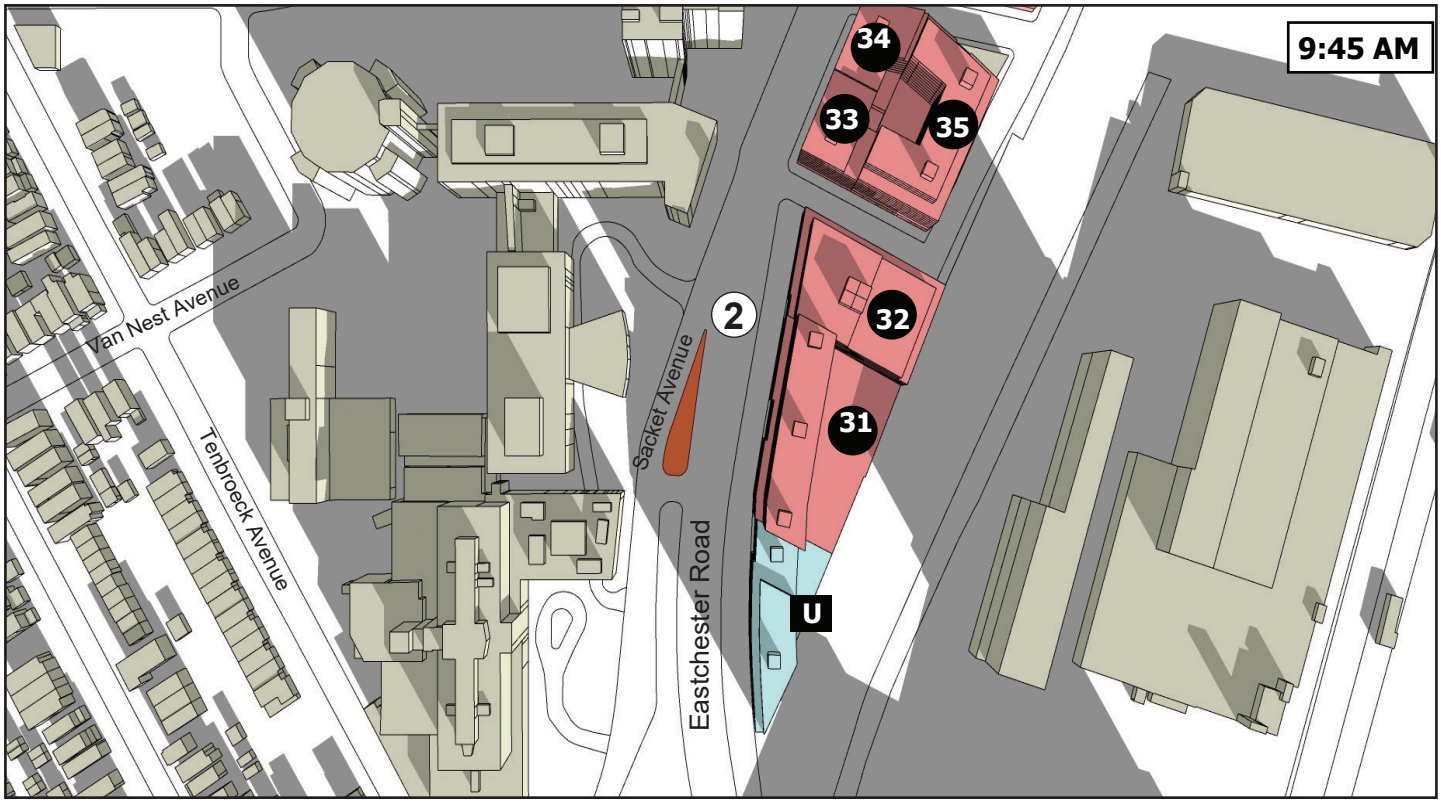
N

Figure 6-7c

INCREMENTAL SHADOWS - June 21
GREENSTREET - SACKET AVENUE

Bronx Metro-North Station Study





Projected Development Site (1)

Potential Development Site (A)

Sunlight-sensitive Resource (refer to Table 6-4) (1)

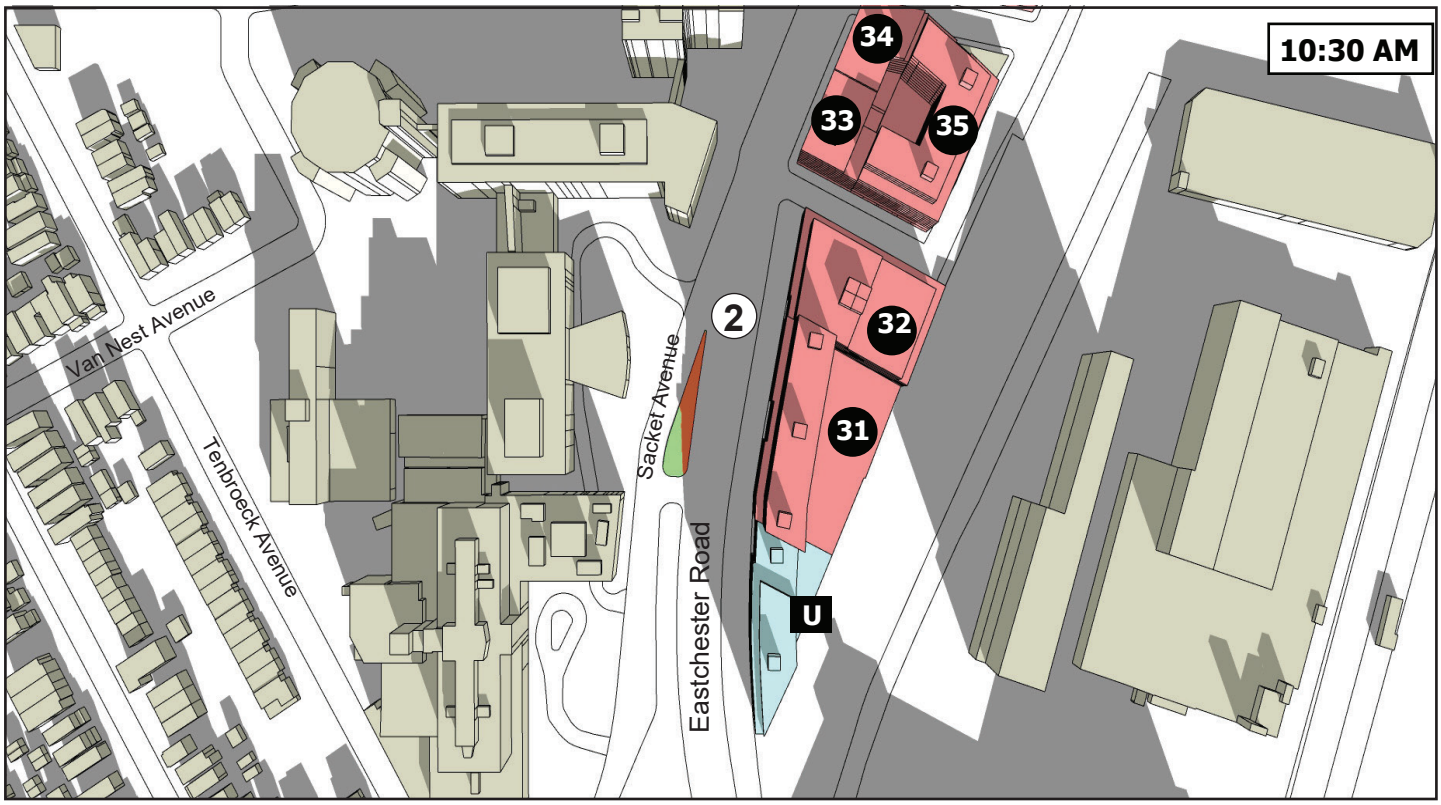
Incremental Shadow

N

Figure 6-8a

INCREMENTAL SHADOWS - December 21
GREENSTREET - SACKET AVENUE

Bronx Metro-North Station Study



Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

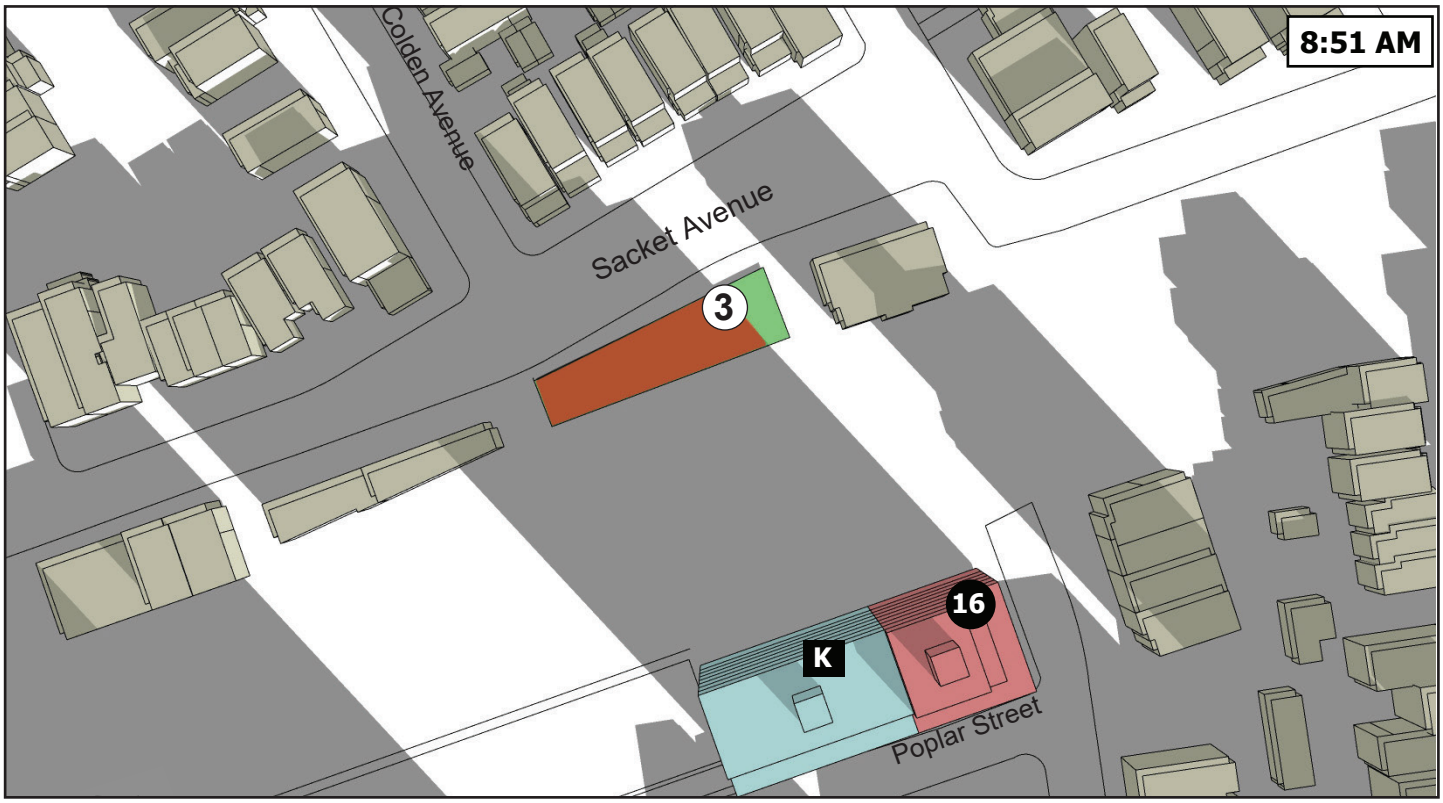
Incremental Shadow

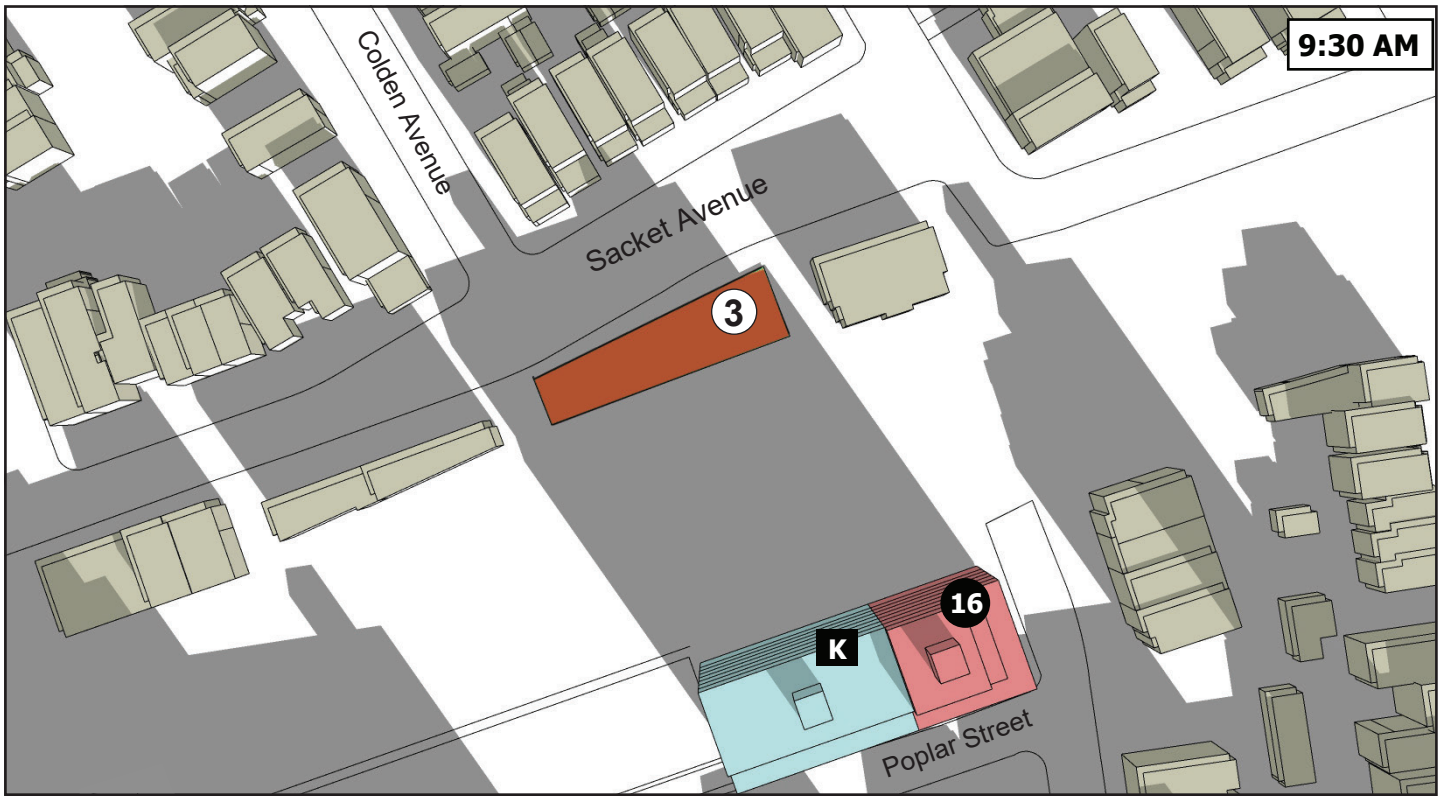
N

Figure 6-8b

INCREMENTAL SHADOWS - December 21
GREENSTREET - SACKET AVENUE

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

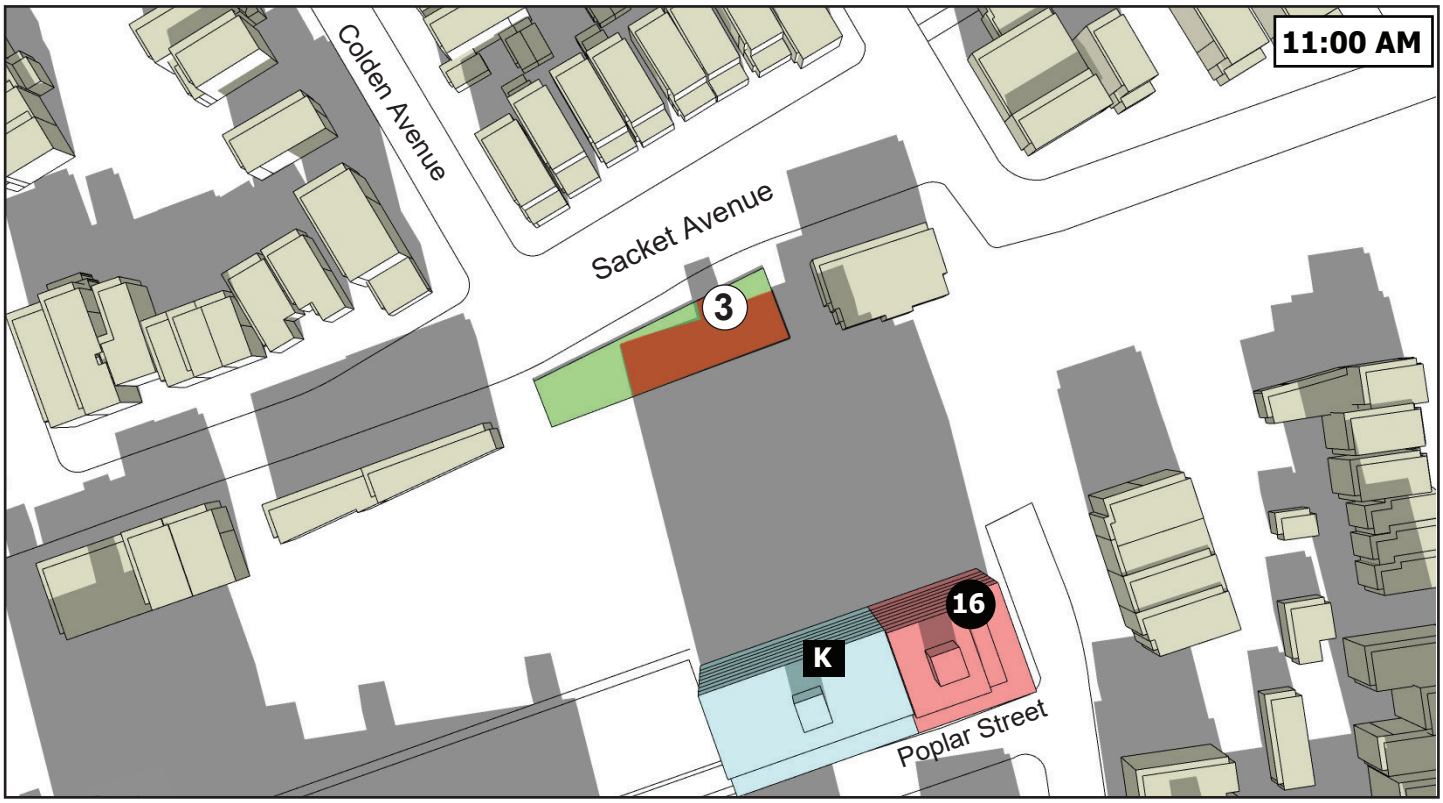
Incremental Shadow

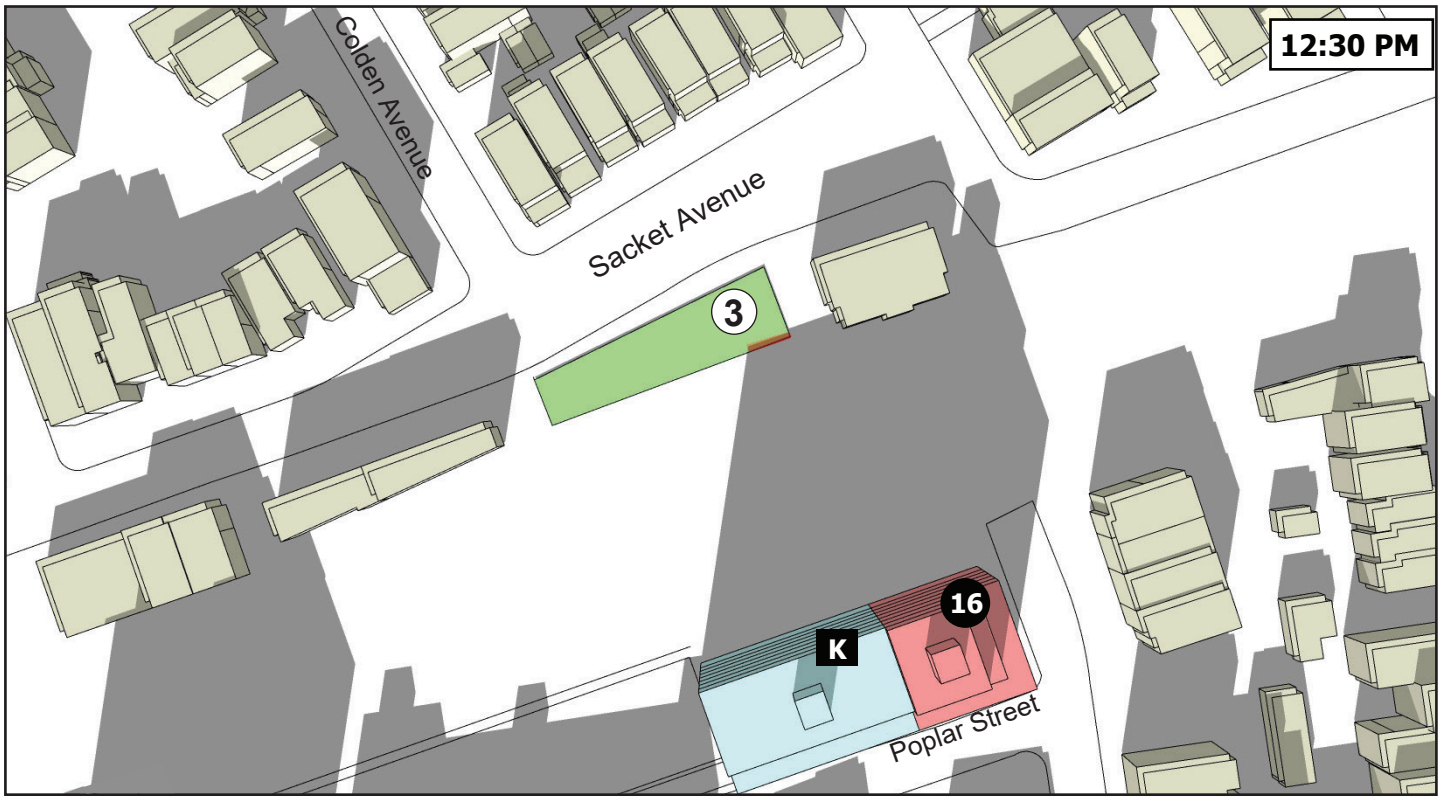
N

Figure 6-9a

INCREMENTAL SHADOWS - December 21
MORRIS PARK COMMUNITY GARDEN

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

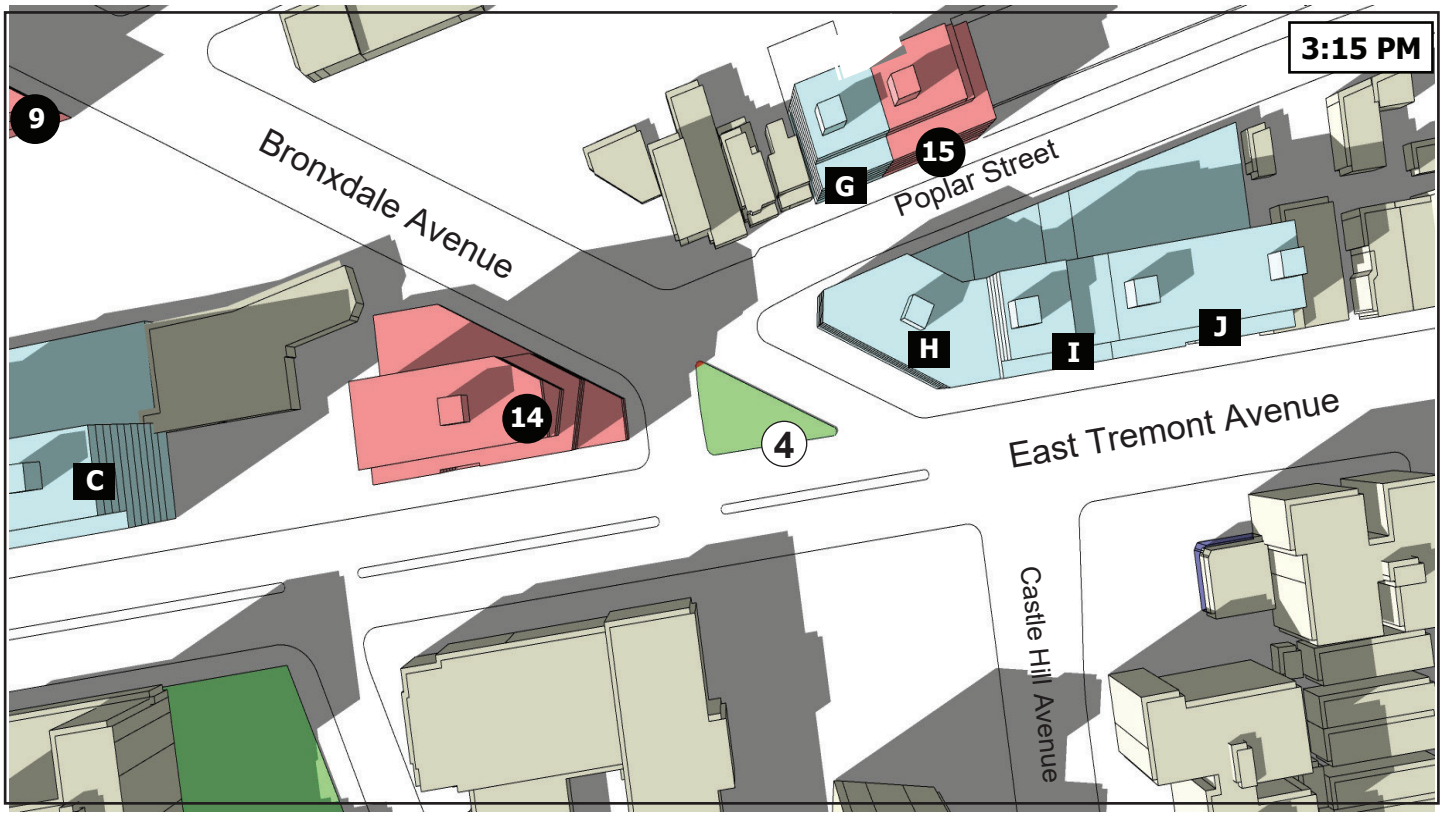
Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-9b

INCREMENTAL SHADOWS - December 21
MORRIS PARK COMMUNITY GARDEN





1 Projected Development Site

A Potential Development Site

1 Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-10

INCREMENTAL SHADOWS - March 21/September 21
GREENSTREET - EAST TREMONT AVENUE

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

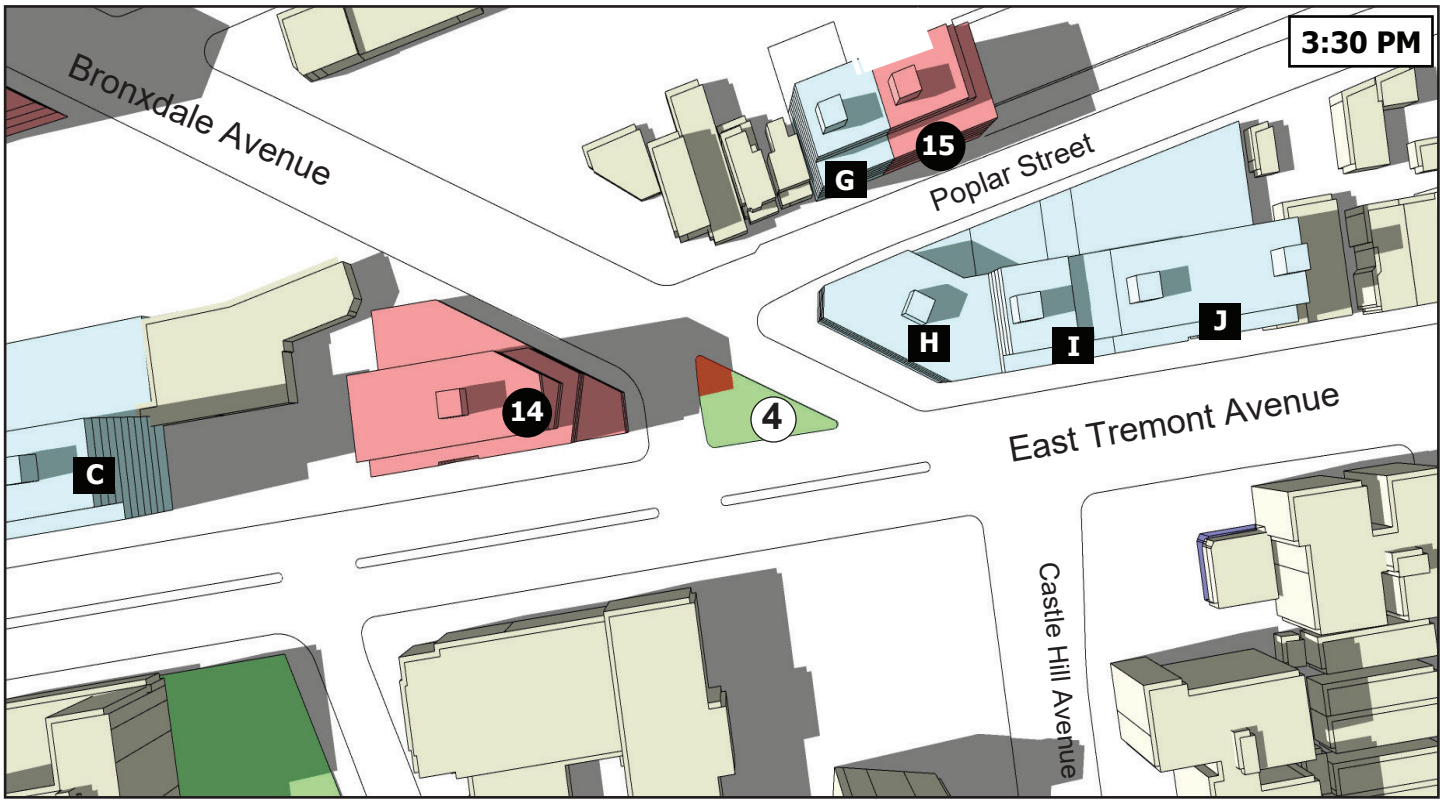
Incremental Shadow

N

Figure 6-11a

INCREMENTAL SHADOWS - May 6/August 6
GREENSTREET - EAST TREMONT AVENUE

Bronx Metro-North Station Study





Projected Development Site (1)

Potential Development Site (A)

Sunlight-sensitive Resource (refer to Table 6-4) (1)

Incremental Shadow

N

Figure 6-11b

INCREMENTAL SHADOWS - May 6/August 6
GREENSTREET - EAST TREMONT AVENUE

Bronx Metro-North Station Study





Projected Development Site (1)

Potential Development Site (A)

1 Sunlight-sensitive Resource (refer to Table 6-4)

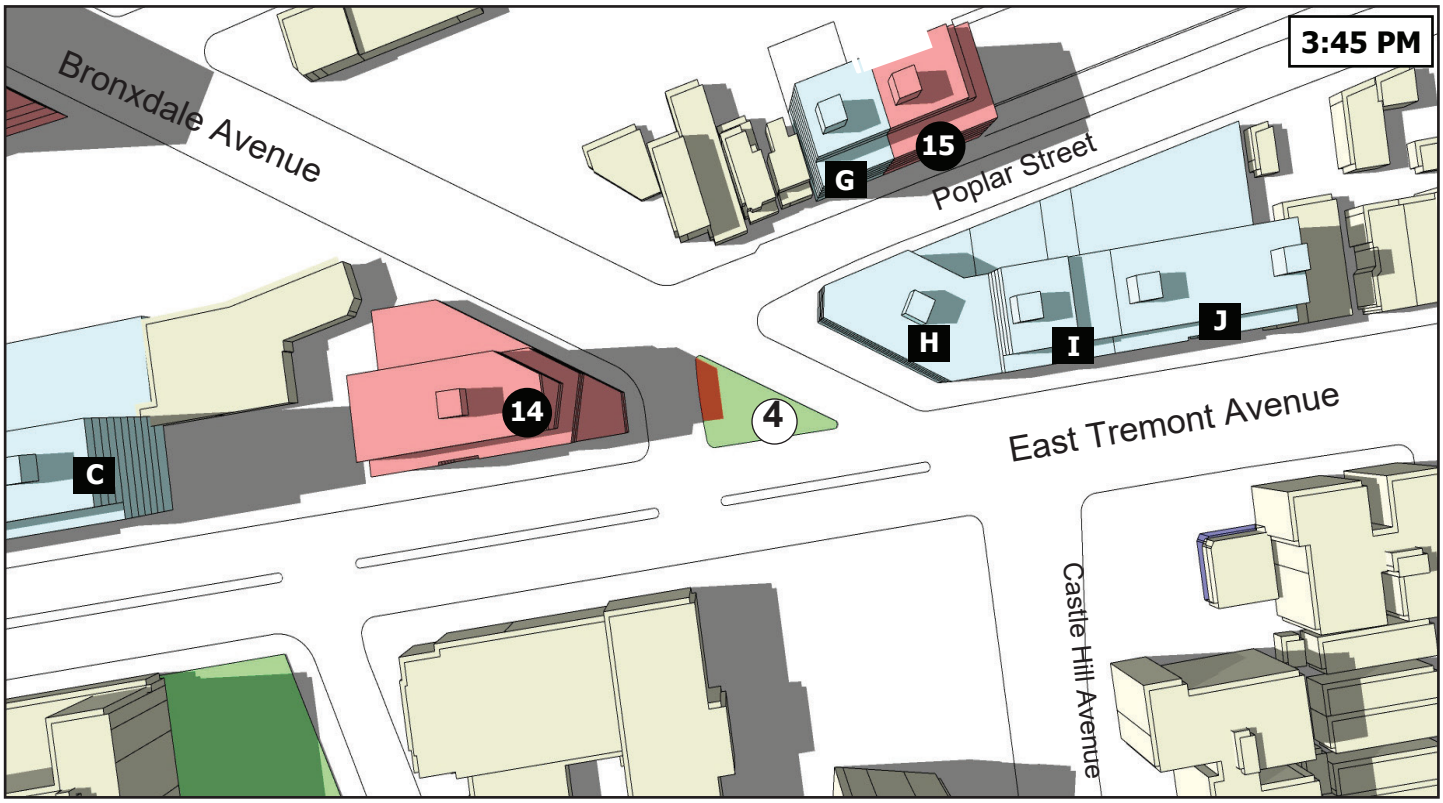
Incremental Shadow

N

Figure 6-12a

INCREMENTAL SHADOWS - June 21
GREENSTREET - EAST TREMONT AVENUE

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

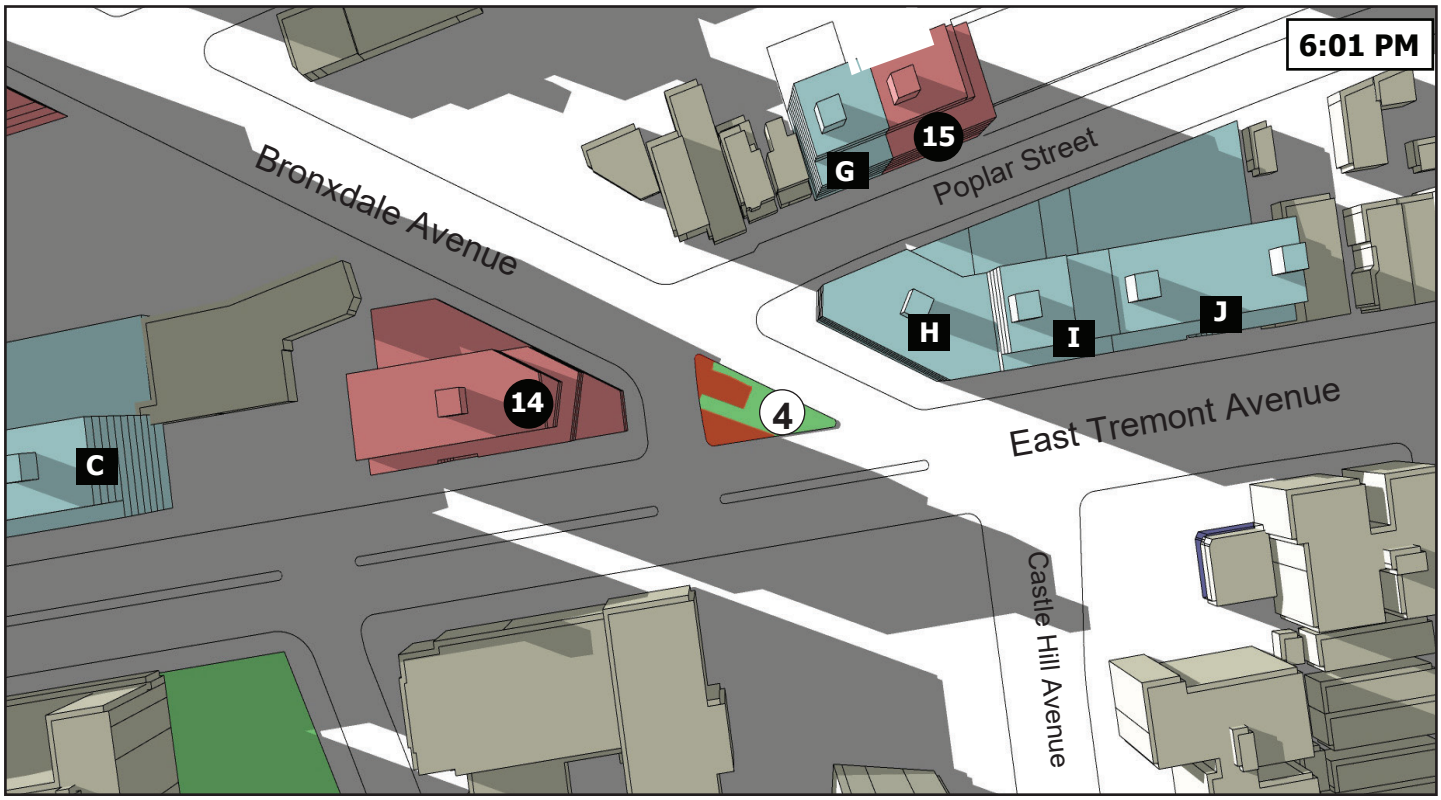
N

Figure 6-12b

INCREMENTAL SHADOWS - June 21
GREENSTREET - EAST TREMONT AVENUE

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

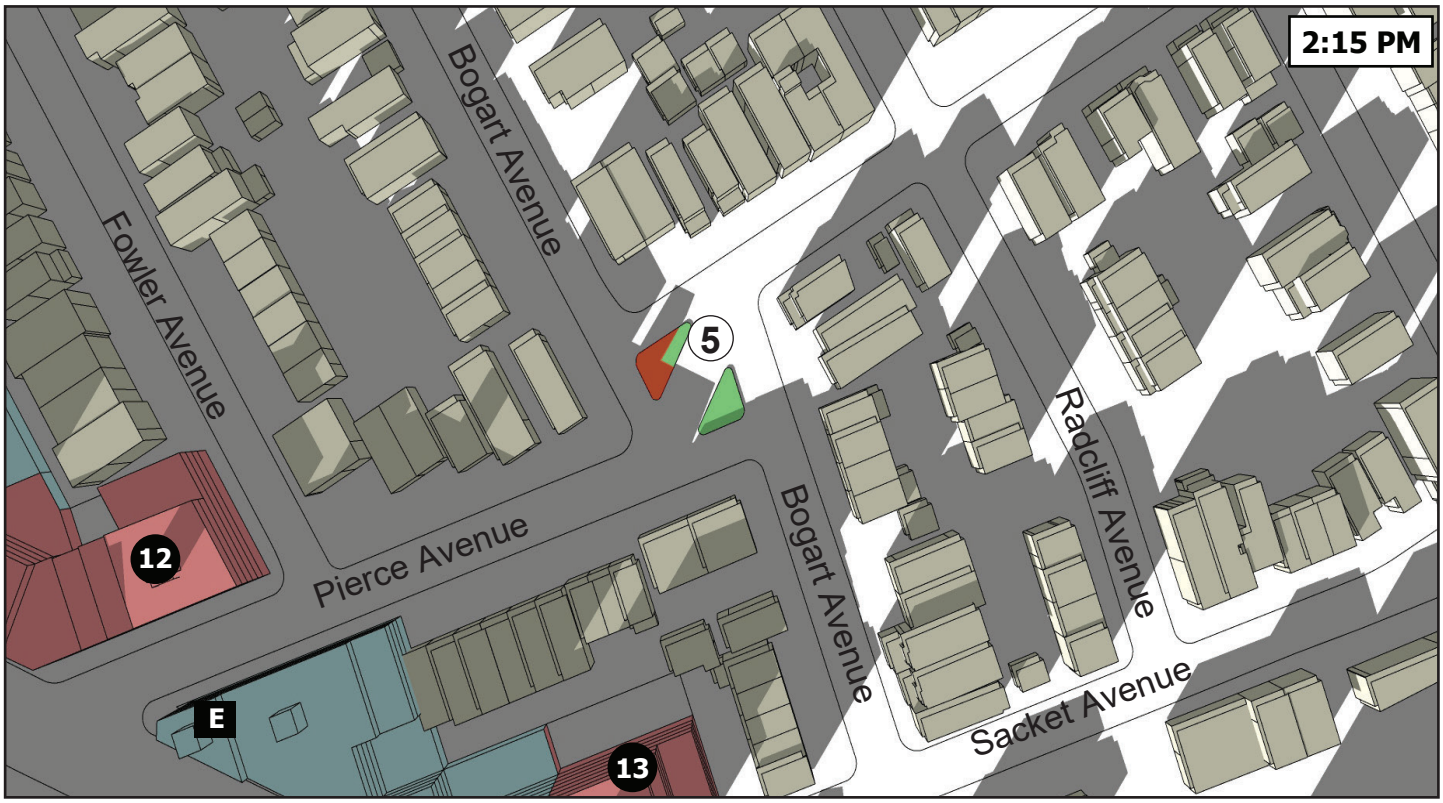
Incremental Shadow

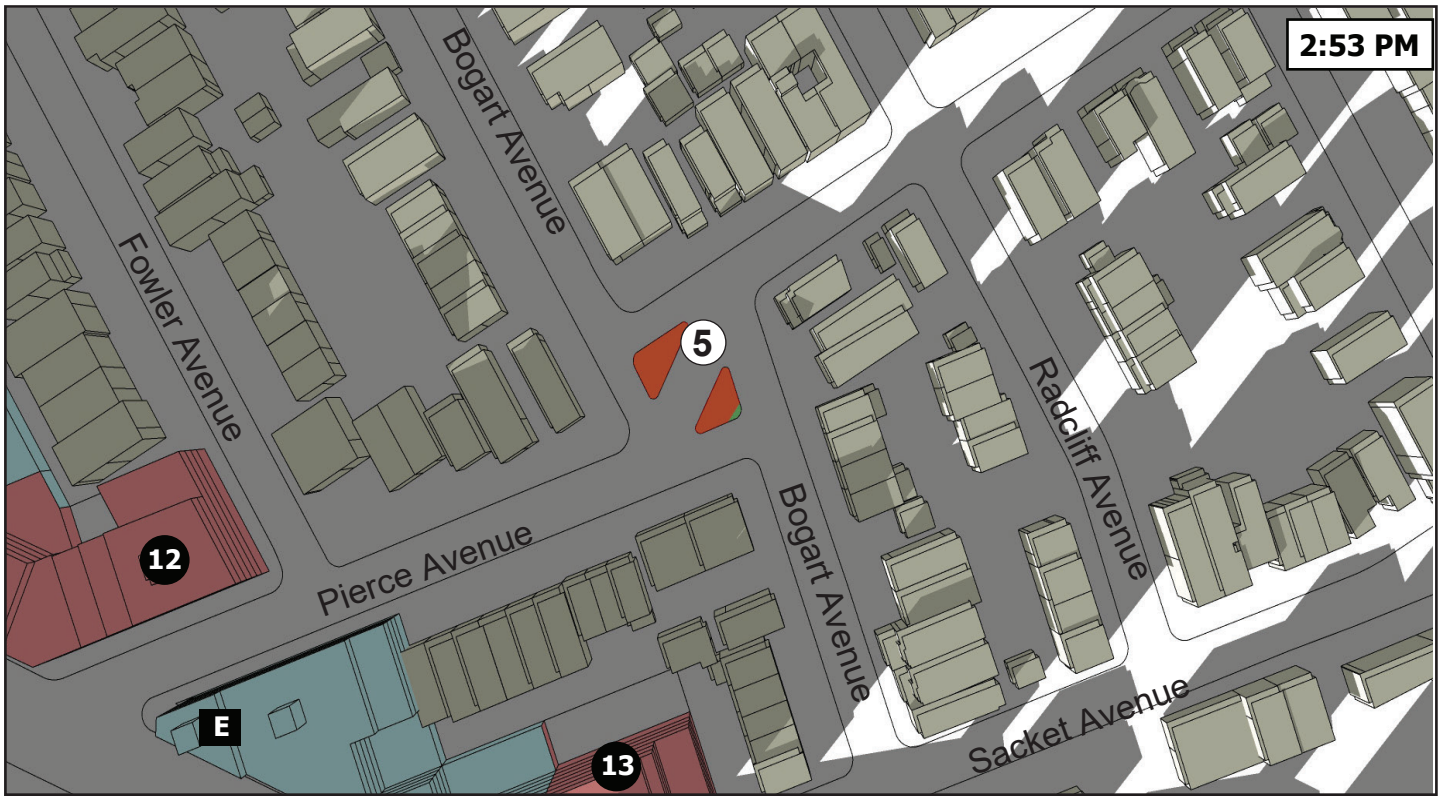
N

Figure 6-12c

INCREMENTAL SHADOWS - June 21
GREENSTREET - EAST TREMONT AVENUE

Bronx Metro-North Station Study





Projected Development Site (1)

Potential Development Site (A)

Sunlight-sensitive Resource (refer to Table 6-4) (1)

Incremental Shadow

N

Figure 6-13

INCREMENTAL SHADOWS - December 21
GREENSTREET - Bogart Avenue

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-14a

INCREMENTAL SHADOWS - December 21
VAN NEST PARK

Bronx Metro-North Station Study



Projected Development Site (1)

Potential Development Site (A)

1 Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-14b

INCREMENTAL SHADOWS - December 21
VAN NEST PARK

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-15a

INCREMENTAL SHADOWS - March/September 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





1 Projected Development Site

A Potential Development Site

7 Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-15b

INCREMENTAL SHADOWS - March/September 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-16a

INCREMENTAL SHADOWS - May 6/August 6
Parkchester Apartment Complex



Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-16b

INCREMENTAL SHADOWS - May 6/August 6
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

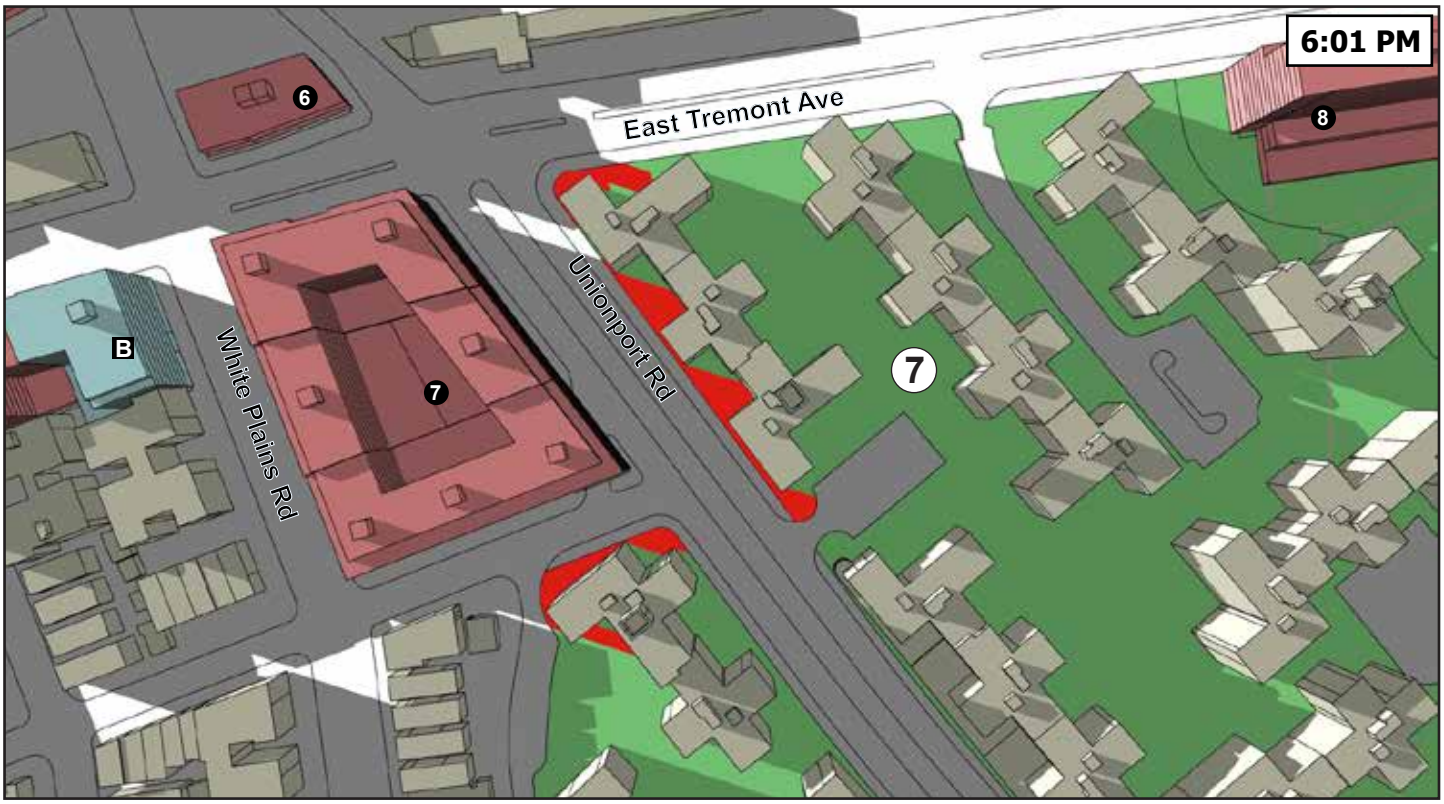
Incremental Shadow

N

Figure 6-17a

INCREMENTAL SHADOWS - June 21
Parkchester Apartment Complex

Bronx Metro-North Station Study



Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-17b

INCREMENTAL SHADOWS - June 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

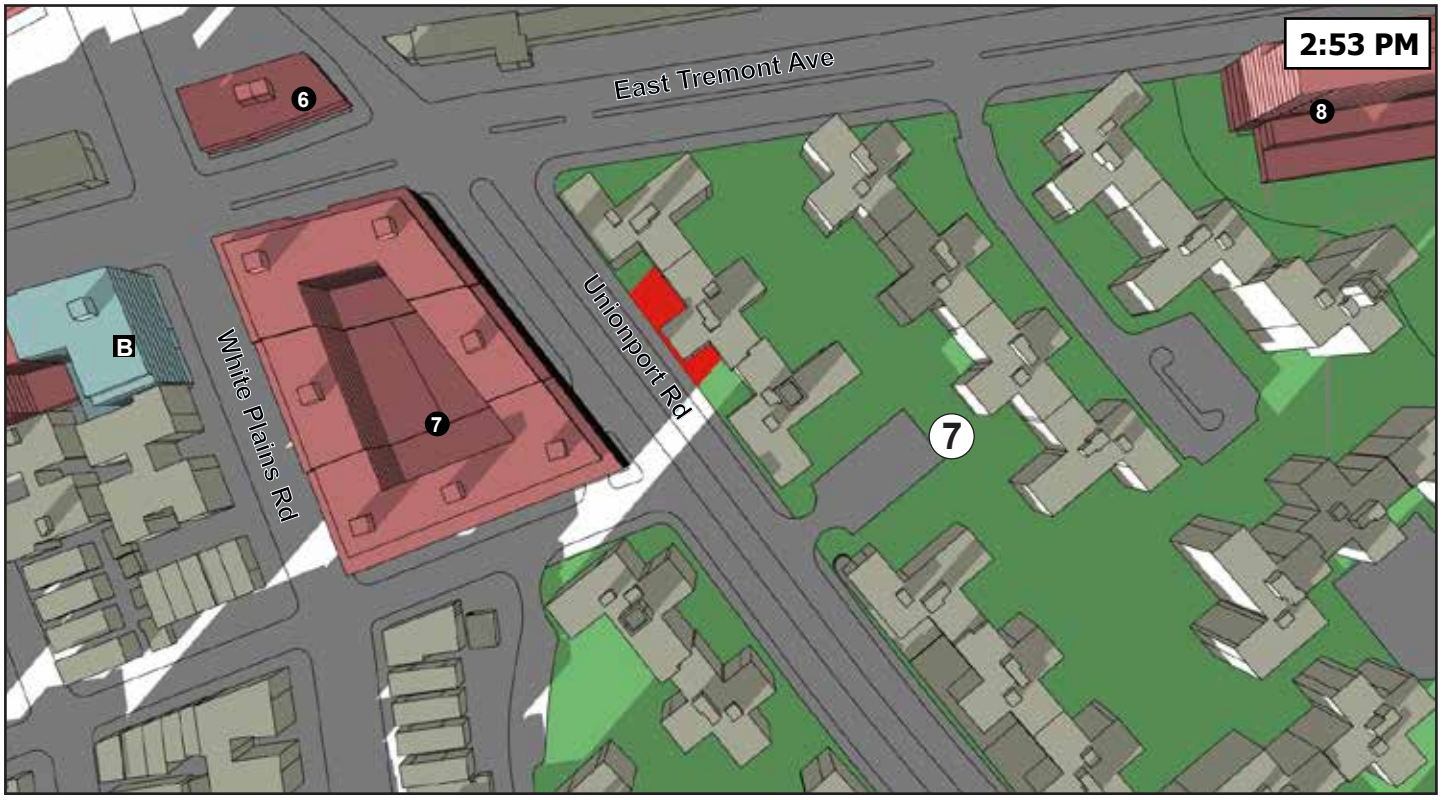
N

Figure 6-18a

INCREMENTAL SHADOWS - December 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-18b

INCREMENTAL SHADOWS - December 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-19a

INCREMENTAL SHADOWS - March 21/September 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-19b

INCREMENTAL SHADOWS - March 21/September 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-20a

INCREMENTAL SHADOWS - May 6/August 6
Parkchester Apartment Complex

Bronx Metro-North Station Study





1 Projected Development Site

A Potential Development Site

1 Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

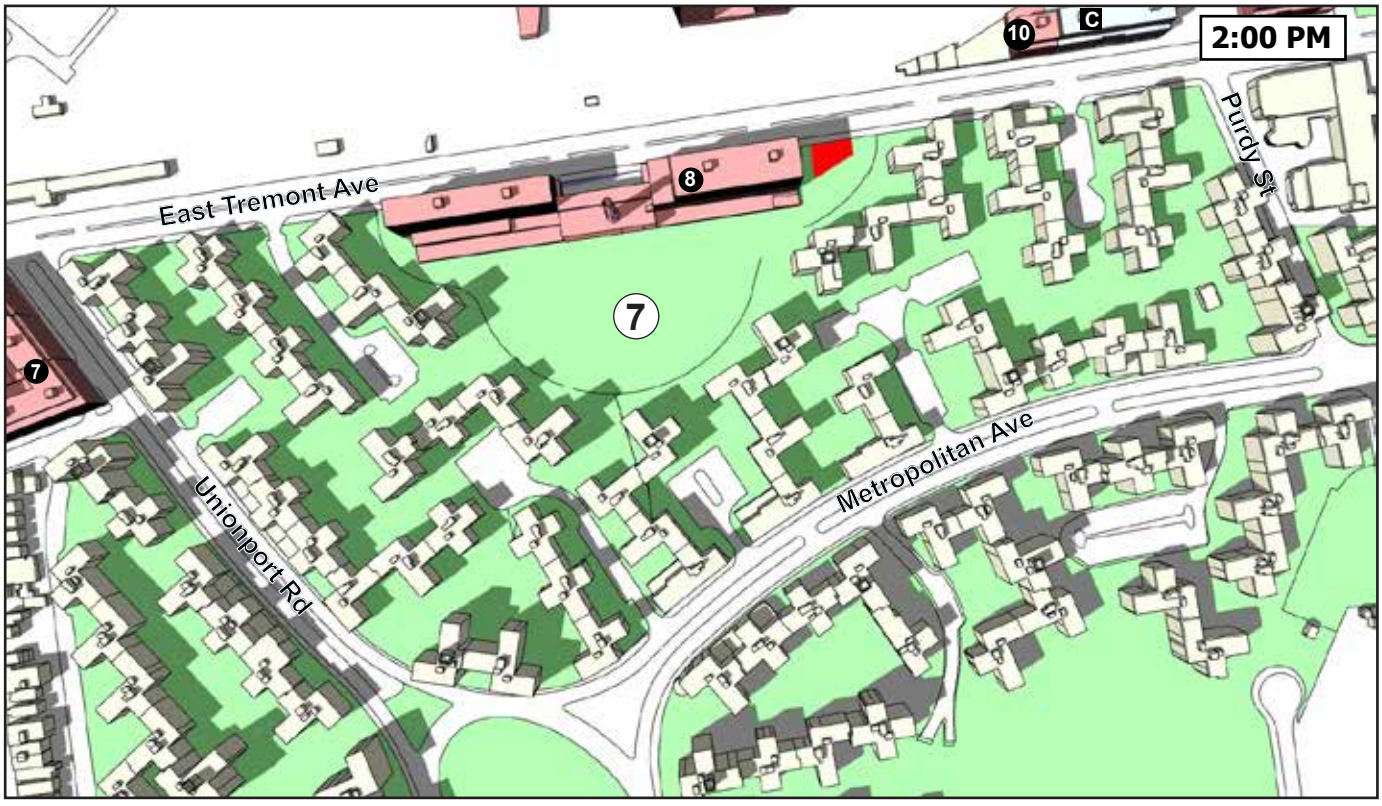
N

Figure 6-20b

INCREMENTAL SHADOWS - May 6/August 6
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-20c

INCREMENTAL SHADOWS - May 6/August 6
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

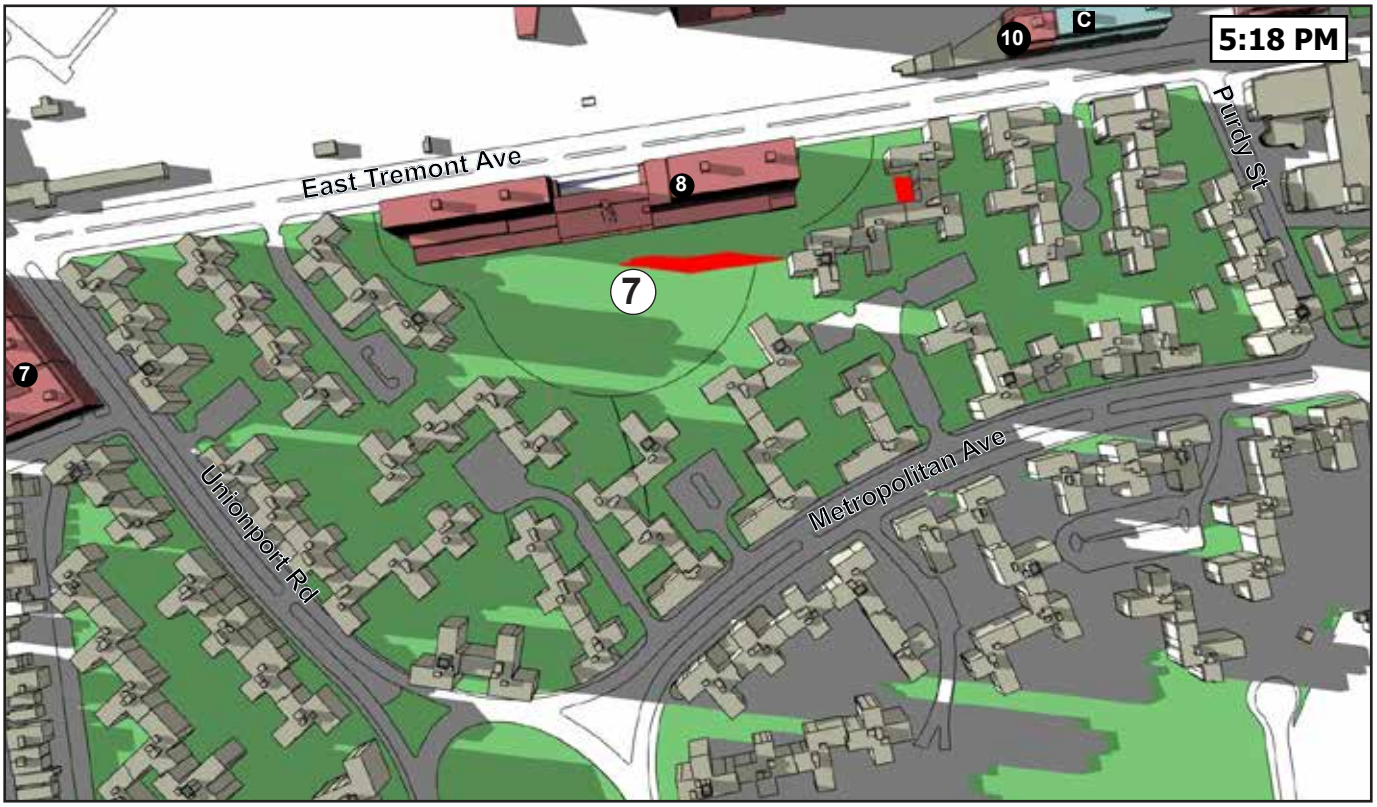
Incremental Shadow

N

Figure 6-20d

INCREMENTAL SHADOWS - May 6/August 6
Parkchester Apartment Complex

Bronx Metro-North Station Study



Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-20e

INCREMENTAL SHADOWS - May 6/August 6
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-21a

INCREMENTAL SHADOWS - June 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





1 Projected Development Site

A Potential Development Site

1 Sunlight-sensitive Resource (refer to Table 6-4)

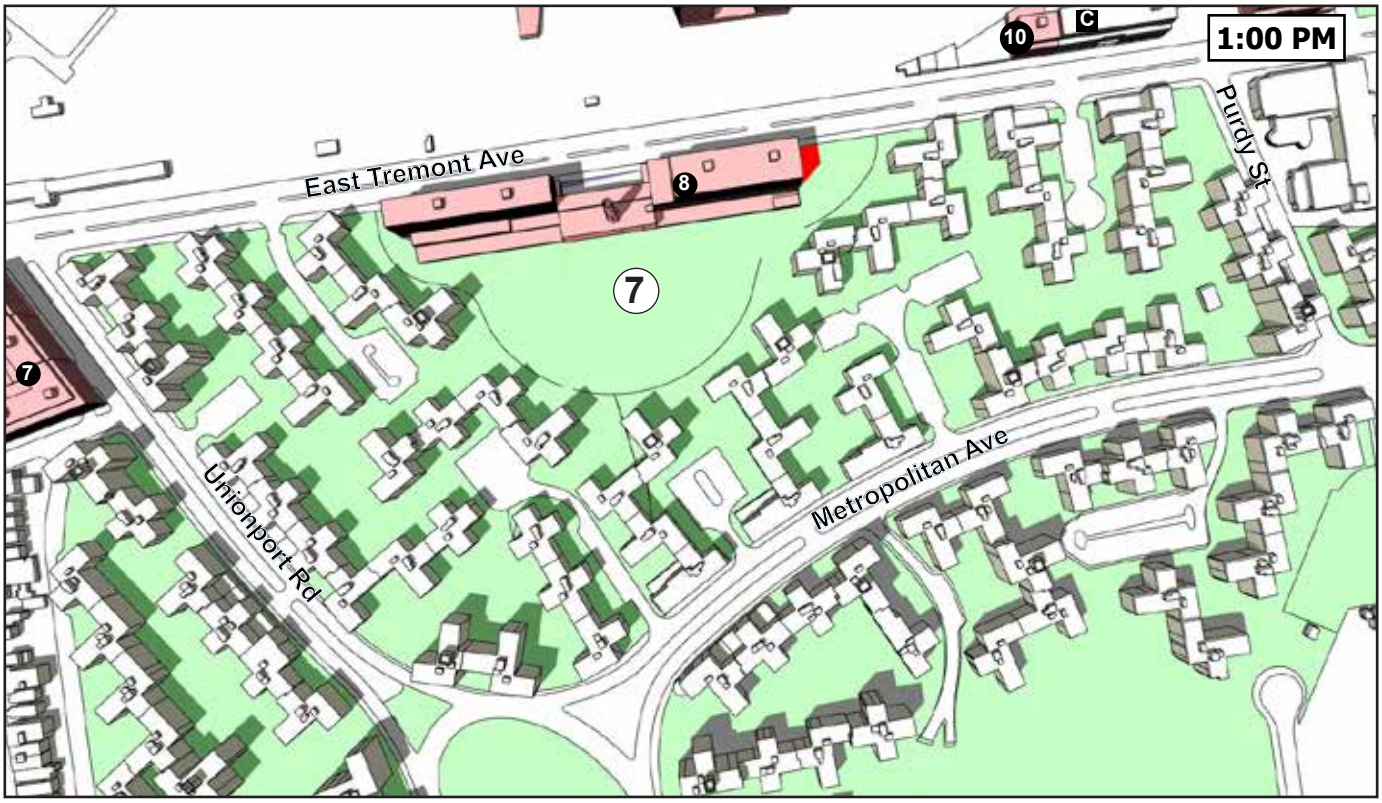
Incremental Shadow

N

Figure 6-21b

INCREMENTAL SHADOWS - June 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

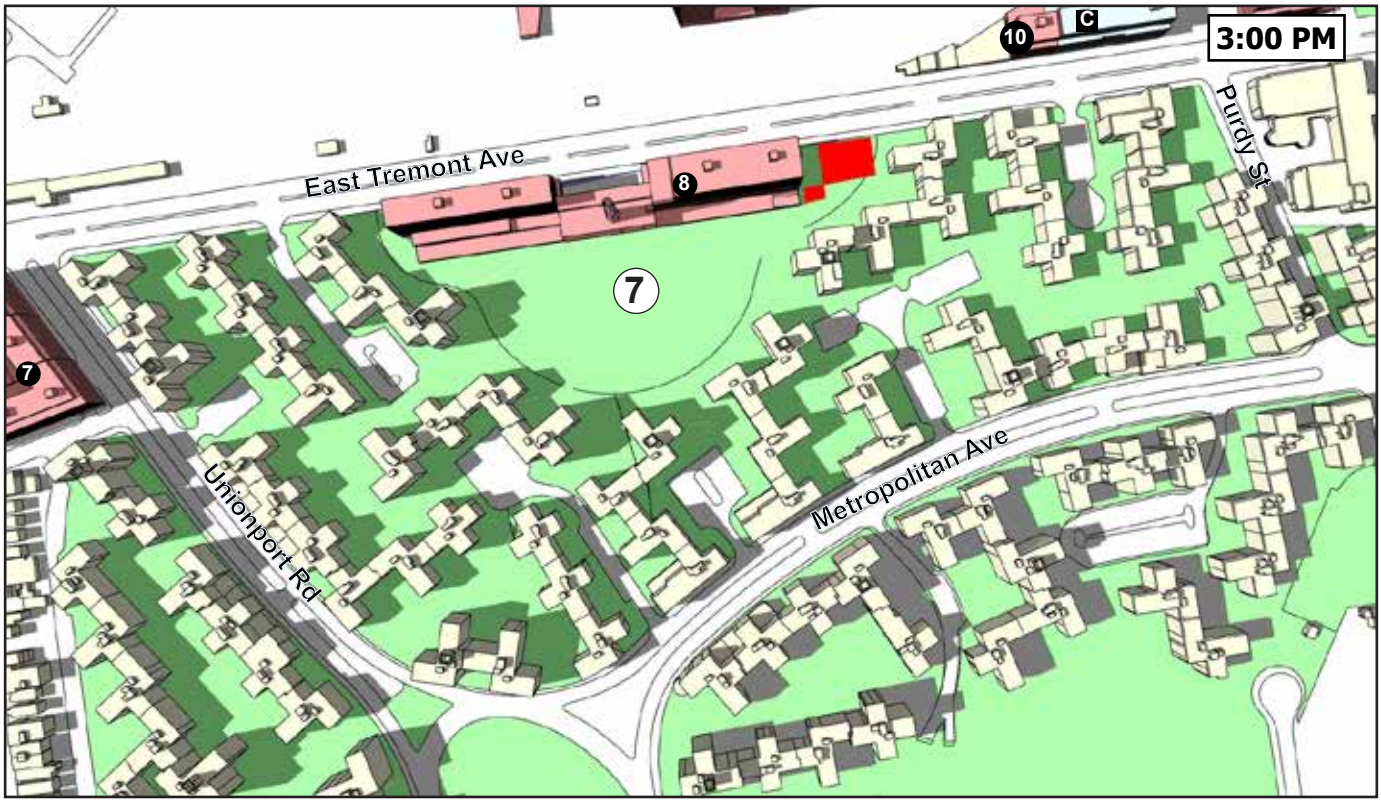
Incremental Shadow

N

Figure 6-21c

INCREMENTAL SHADOWS - June 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-21d

INCREMENTAL SHADOWS - June 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-21e

INCREMENTAL SHADOWS - June 21
Parkchester Apartment Complex

Bronx Metro-North Station Study





Projected Development Site

Potential Development Site

Sunlight-sensitive Resource (refer to Table 6-4)

Incremental Shadow

N

Figure 6-22a

INCREMENTAL SHADOWS - December 21
Parkchester Apartment Complex

Bronx Metro-North Station Study