Chapter 6 : Shadows

I. INTRODUCTION

This chapter assesses the potential for significant adverse impacts due to shadows cast by the Proposed Project on sunlight-sensitive resources. Section 200 of Chapter 8 of the *2014 City Environmental Quality Review (CEQR) Technical Manual* states that a shadows assessment is necessary for projects that would either result in new structures (or additions to existing structures) of 50 feet in height or more, or be located adjacent to, or across the street from, a sunlight-sensitive resource. Sunlight-sensitive resources are those that depend on sunlight or for which direct sunlight is necessary to maintain the resource's usability or architectural integrity and include public open spaces, historic architectural resources, and natural resources.

As described in Chapter 1, "Project Description," the Applicant is seeking a set of Proposed Actions in the form of discretionary approvals to include zoning map and text amendments, a large-scale general development (LSGD) special permit, a City Map Amendment to re-establish a portion of Beach 52nd Street south of Rockaway Beach Boulevard to reconnect with Rockaway Freeway , and public funding and/or financing from various City and New York State agencies and/or programs related to affordable housing development on the Project Site. The Project Site is situated in Queens Community District 14 (CD 14). The Proposed Actions would facilitate the Proposed Project to consist of an approximately 2,371,000 gross square feet (gsf) development on the Project Site, comprised of 11 buildings with approximately 2,200 income-restricted dwelling units (DUs), of which 1,927 DUs would be income-restricted up to 80% of the Area Median Income (AMI), to include approximately 201 DUs set aside for Affordable Independent Residences for Seniors senior housing, with the remaining 273 DUs restricted to income levels not exceeding 130% of AMI. In addition to the residential DUs, the Proposed Project would include approximately 72,000 gsf of retail space, including a fitness center and a supermarket; approximately 77,000 gsf of community facility space, approximately 24,000 square feet (sf) of publicly-accessible open space, and approximately 973 accessory parking spaces.

Building heights for the Proposed Project would range between approximately 90 feet and 200 feet. Since the Proposed Project would have a building height greater than 50 feet, a shadows assessment was prepared in conformance to guidelines in the *CEQR Technical Manual*.

II. PRINCIPAL CONCLUSIONS

A detailed shadows analysis was conducted and found that the Proposed Project would not have a significant adverse shadows impact. The analysis did find that incremental shadows from the Proposed Project would have the potential to affect two potential sunlight-sensitive resources of concern: the Arverne Playground and the Conch Playground. However, the analysis determined that the Proposed Project would not result in a significant adverse shadows impact on these two open space resources on any of the four analysis days. New incremental shadows on the Arverne Playground would be of short duration and would not fall on any sunlight-sensitive features that would affect the utilization of the resource. New incremental shadows would be cast on the southern portions of the Conch Playground for less than a half-hour during the analysis period. However, since the new shadow coverage would move from west to east throughout the day and that the December analysis day falls outside of the plant growing season, it would not result in a significant adverse impact on the playground.

III. METHODOLOGY

As prescribed in the *CEQR Technical Manual,* the shadows assessment begins with a preliminary screening assessment to ascertain whether the shadow cast by a project may reach any sunlight-sensitive resources at any time of the year. Sunlight-sensitive resources of concern, are those resources that depend on sunlight or require direct sunlight to maintain their usability or architectural integrity. The *CEQR Technical Manual* defines the following as sunlight-sensitive resources:

- ***Public open space*** (e.g., parks, beaches, playgrounds, plazas, schoolyards, greenways, and landscaped medians with seating). Planted areas within unused portions of roadbeds that are part of the Greenstreets program are also considered sunlight-sensitive resources. The uses and vegetation in an open space establish its sensitivity to shadows. This sensitivity is assessed for both (1) warm-weather-dependent features like wading pools and sand boxes, 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; as well as such activities as gardening, or children's wading pools and sprinklers. Where lawns are actively used, the turf requires extensive sunlight. Vegetation requiring direct sunlight includes the tree canopy, flowering plants, and plots in community gardens. Generally, four to six hours a day of sunlight, particularly in the growing season, is a minimum requirement for healthy growth and maintenance.

- ***Features of historic architectural resources that depend on sunlight for their enjoyment by the public***. When evaluating the impact on historic architectural resources, only the sunlight-sensitive features of these resources are considered, as opposed to the entire architectural resource. Sunlight-sensitive features include the following: design elements that are part of a recognized architectural style that depend 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 colors that depend on direct sunlight for visual character (e.g., the polychrome (multicolored) features found on Victorian Gothic Revival or Art Deco façades); historic landscapes, such as scenic landmarks including vegetation recognized as an historic 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 surface water bodies, wetlands, or designated resources such as coastal fish and wildlife habitats.

- ***Other Resources:*** Greenstreets (planted areas within unused portions of).

A preliminary screening assessment was completed in conformance with a tiered assessment process prescribed in the *CEQR Technical Manual*. Major steps in the preliminary screening process included:

- ***Base Map.*** Development of a base map that illustrates the proposed site location in relationship to nearby sunlight-sensitive resources.

- ***Tier 1 Screening Assessment.*** Development of the longest shadow area. The longest shadow study area encompasses the Project Site and a perimeter around the site's boundary with a radius equal to the longest shadow that a structure can cast in New York City. According to the *CEQR Technical Manual*, the longest shadow that a structure can cast in New York City, except for periods close to dawn or dusk, is 4.3 times its height. The purpose of the Tier 1 Screening Assessment is

to determine whether sunlight-sensitive resources are located within the longest shadow study area.

- ***Tier 2 Screening Assessment.*** If any portion of a sunlight-sensitive resource lies within the longest shadow study area, a Tier 2 Screening Assessment is warranted. 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 Assessment is to determine whether the sunlight-sensitive resources identified in the Tier 1 Screening Assessment are located within portions of the longest shadow study area that can receive shadows from a proposed project.
- ***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 project can reach a sunlight-sensitive resource, thereby warranting a detailed shadow analysis. As prescribed in *CEQR Technical Manual,* the Tier 3 Screening Assessment is used to determine if shadows resulting from a proposed project 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.

  For the New York City area, the months of interest for an open space resource encompass the growing season (March through October) and one month between November and February (usually December 21st, the winter solstice) representing a cold-weather month. Representative days for the growing season are generally the March 21st vernal equinox (or September 21st autumnal equinox), the June 21st summer solstice, and a spring or summer day halfway between the summer solstice and equinoxes such as May 6th or August 6th (which are approximately the same). As the sun rises in the east and travels across the southern part of the sky to set in the west, a project's earliest shadows would be cast in a westward direction. Throughout the day, the shadows would shift clockwise (moving northwest, then north, then northeast) until sunset. Therefore, a project's earliest shadow on a sunlight-sensitive resource would occur in a similar pattern, depending on the location of the resource in relation to the site.

If the preliminary screening analyses do not rule out the possibility that project-generated shadows would reach a sunlight-sensitive resource, then a detailed shadows analysis is warranted. The detailed shadows analysis establishes a baseline condition (the "No-Action" condition) that is compared to the future condition resulting from the proposed project (the "With-Action" condition) to illustrate the shadows cast by existing or future buildings and to distinguish the additional (incremental) shadow cast by the project.

The results of the preliminary screening analyses for the Proposed Project did not rule out the possibility that shadows cast by the Proposed Project would reach a sunlight-sensitive resource. Consequently, a detailed analysis was performed for the Proposed Project using a three-dimensional (3D) digital model of the study area using PLUTO™ 17v1 data to characterize the building footprints and approximate heights. To evaluate the extent of the shadows, the 3D model was geo-located to the Project Site so that sunlight and shadow conditions would be accurately approximated in the model. The results of the detailed analysis were documented in graphic form and accompanied by a table summarizing the extent and duration of the incremental shadows produced by the Proposed Project.

Impact Significance

The detailed shadows analysis provided in this chapter includes a description of the effects of incremental shadows on sunlight-sensitive resources within the longest shadow area and determines whether those effects constitute significant adverse impacts under CEQR. As described in the *CEQR Technical Manual,* an incremental shadow is generally not considered significant when its duration is no longer than 10 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 10 minutes or longer falls on a sunlight-sensitive resource and results in one of the following conditions:

- Vegetation: a substantial reduction in sunlight available to a sunlight-sensitive feature of the resource to less than the minimum time necessary for its survival (when there was 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 time necessary for its survival).
- 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 due to 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 shadows impact occurs when the incremental shadow added by a proposed project falls on a sunlight-sensitive resource and substantially reduces or eliminates direct sunlight exposure, thereby significantly altering the public use of the resource or threatening the viability of vegetation or other resources.

IV. SCREENING ANALYSIS

Tier 1 Screening Assessment

In conformance with guidance in Section 312 of Chapter 8 of the *CEQR Technical Manual*, a Tier 1 Screening Assessment was completed that identified the longest shadow that could be cast by the Proposed Project, which is 4.3 times the height of the structure (**Figure 6-1: Tier I Shadow Analysis**). The Tier 1 Screening Assessment is a conservative estimate of the longest possible shadow coverage cast from the entire Project Site. As shown on **Figure 6-1**, the Proposed Project would rise to approximately 200 feet and would cast a shadow to a maximum radius of 860 feet from the Project Site. Review of open space and databases for historic resources show no historic architectural resources of concern and five open space resources within 860-foot radius of the Project Site (**Table 6-1: Sunlight-Sensitive Resources of Concern**). Therefore, further screening was warranted to determine whether any resources would be affected by incremental shadows that would be cast by the Proposed Project.

Table 6-1: Sunlight-Sensitive Resources of Concern

Map No.*	Potential Sunlight-Sensitive Resource
OPEN SPACE RESOURCES	
1	Arverne Playground
2	Conch Playground
3	Cardozo Playground
4	Rockaway Community Park
5	Rockaway Beach Boardwalk

*Keyed to Figure 6-1

Tier 2 Screening Assessment

Since there are five sunlight-sensitive resources of concern that lie within the longest shadow study area, as described in Section 313 of Chapter 8 of the *CEQR Technical Manual*, a Tier 2 Screening Assessment was performed. **Figure 6-2: Tier 2 Shadow Analysis** depicts the area that could not be shaded due to the Proposed Project. Due to the path that the sun travels across the sky in the northern hemisphere, no shadow can be cast in a triangular area south of any given project site. In New York City, this area lies between -108 and +108 degrees from true north. As indicated in **Figure 6-2**, incremental shadows due to the Proposed Project would not cast shadows on the Rockaway Beach Boardwalk (#5) but could still potentially cast shadows on four sunlight-sensitive resources. As a result, a Tier 3 Screening Assessment was performed.

Tier 3 Screening Assessment

The analysis timeframe considers shadows which occur 90 minutes following sunrise and 90 minutes preceding sunset. In conformance to *CEQR Technical Manual* guidelines, daylight savings time is not used to determine the timeframes for analysis; all times are listed in Eastern Standard Time. The Tier 3 Assessment does not account for the effect of intervening buildings on incremental shadows due to the Proposed Project and is a conservative assessment of shadow coverage as projected from the entire Project Site.

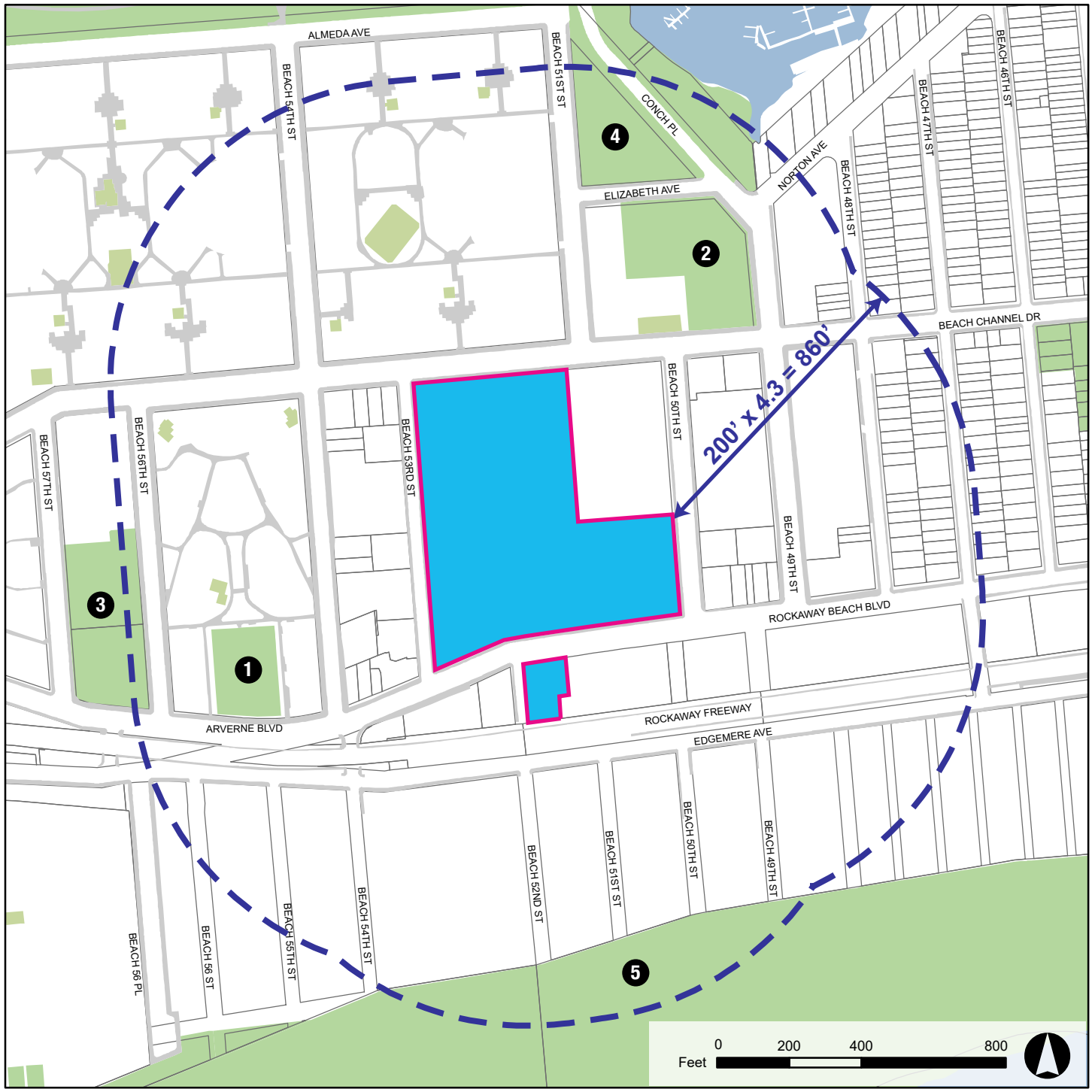
Figures 6-3 through **Figure 6-6** show the Tier 3 Screening Assessment for the representative days of December 21st, March 21st, May 6th, and June 21st. For December 21st **(Figure 6-3)**, shadows from the Proposed Project may be cast on one open space resource: parts of the Conch Playground (#2) may be cast in shadow from 2:00 P.M. EST to the end of the analysis day.

On the March 21st analysis day **(Figure 6-4)**, shadows from the Proposed Project may be cast on two open space resource: parts of the Conch Playground (#2) may be cast in shadow from 3:30 P.M. EST to the end of the analysis day, and parts of the Arverne Playground (#1) may be cast in shadow from the start of the analysis day (7:28 A.M. EST) to 7:45 A.M. EST.

On the May 6th analysis day **(Figure 6-5)**, the Proposed Project may cast shadows on one open space resource. From the start of the analysis day (6:19 A.M. EST) to 7:00 A.M. EST, shadows may be cast on parts of the Arverne Playground (#1).

On the June 21st analysis day **(Figure 6-6)**, the Proposed Project may cast shadows on one open space resource. From the start of the analysis day (5:55 A.M. EST) to 7:00 A.M. EST, shadows may be cast on parts of the Arverne Playground (#1).

Since the Tier 3 Screening Assessment indicated that the Proposed Project could potentially cast shadows on three resources of concern, a detailed shadow analysis was completed to quantify the extent of these effects on the four analysis days for the Arverne Playground, and the Conch Playground.



Source: 2016 Pluto, DCP

Project Site

Longest Shadow Study Area Boundary

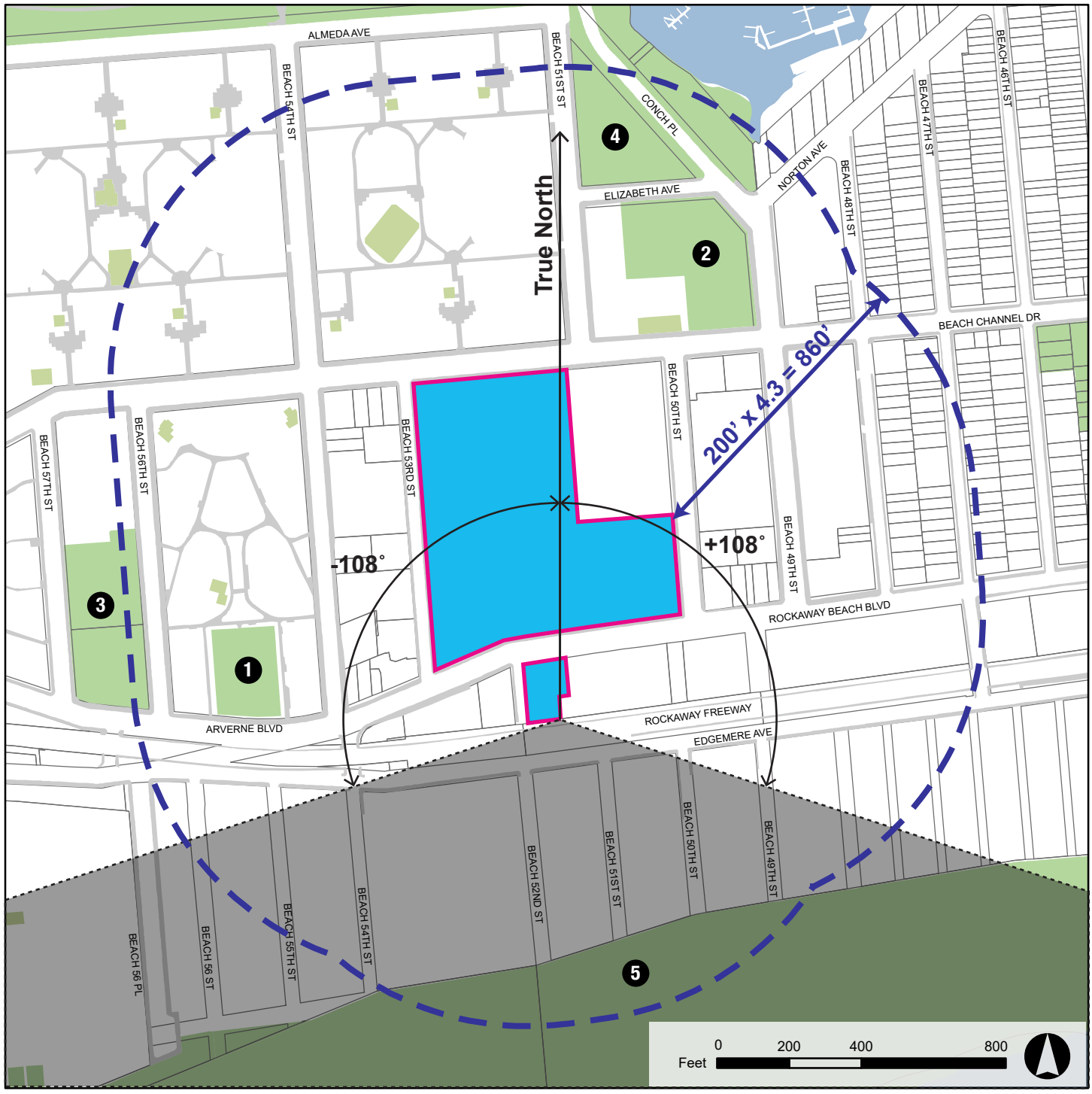
Existing Open Space

Sunlight-Sensitive Resource Keyed to Table 6-1

TIER 1 SHADOW ANALYSIS

Figure 6-1

Peninsula Hospital Site Redevelopment



Source: 2016 Pluto, DCP

Project Site

Longest Shadow Study Area Boundary

Area that cannot be shaded by the Proposed Project

Existing Open Space

Sunlight-Sensitive Resource Keyed to Table 6-1

TIER 2 SHADOW ANALYSIS

Figure 6-2

Peninsula Hospital Site Redevelopment

Source: 2016 Pluto, DCP

Project Site

Longest Shadow Study Area Boundary

Existing Open Space

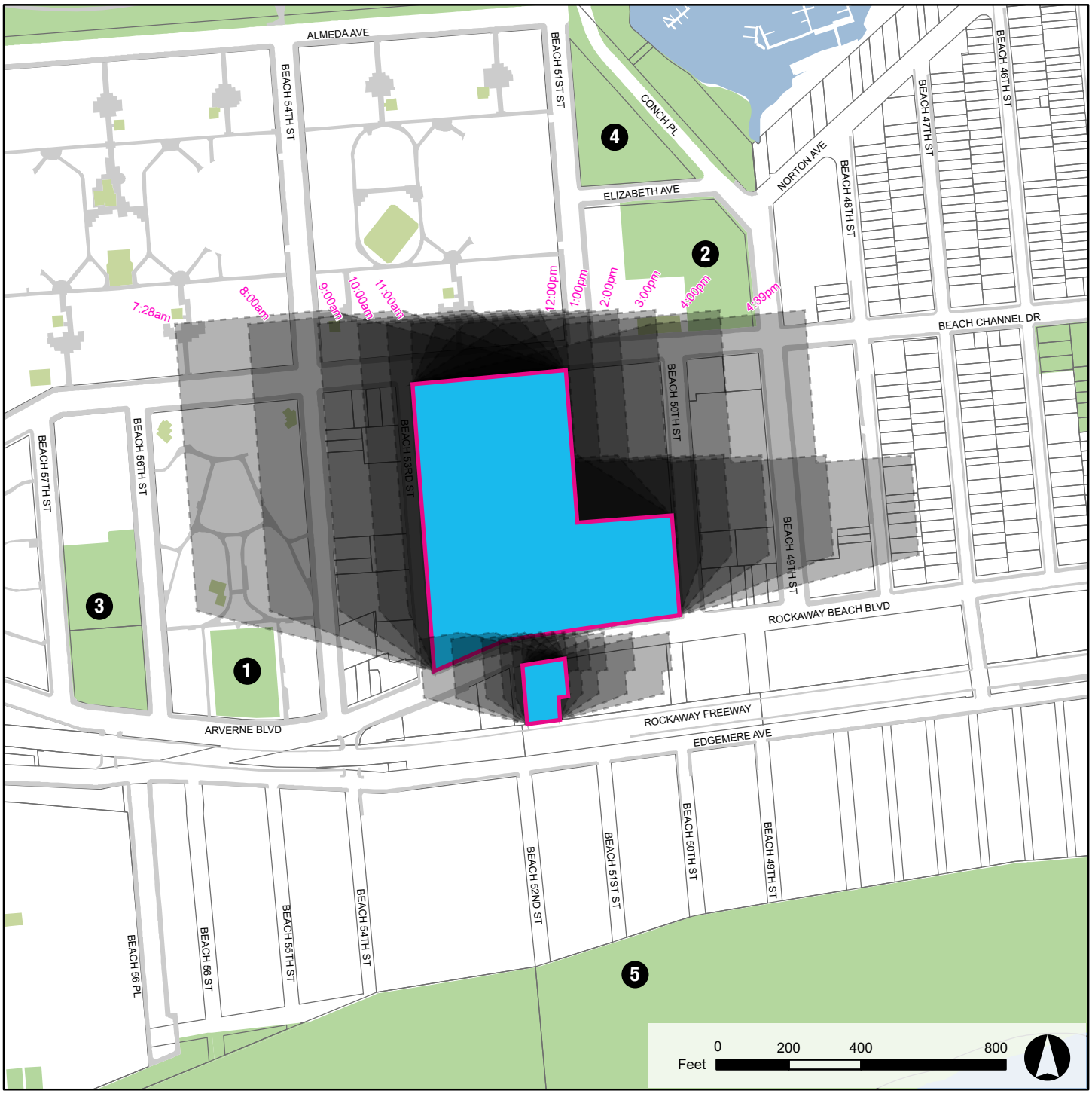
Sunlight-Sensitive Resource Keyed to Table 6-1

TIER 3 SHADOW ANALYSIS

December 21st Analysis Day

Figure 6-3

Peninsula Hospital Site Redevelopment



Source: 2016 Pluto, DCP

Project Site

Longest Shadow Study Area Boundary

Existing Open Space

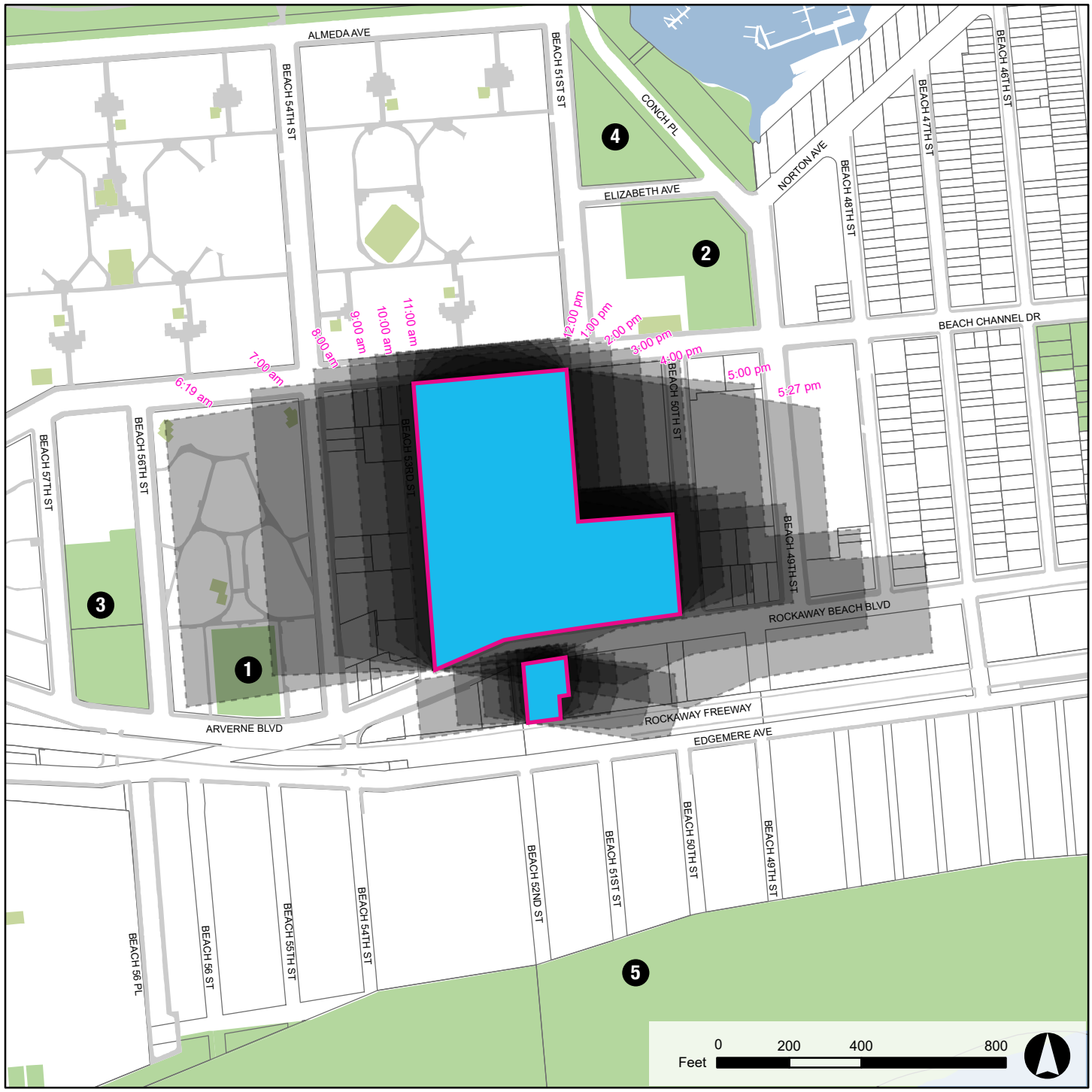
Sunlight-Sensitive Resource Keyed to Table 6-1

TIER 3 SHADOW ANALYSIS

March 21st Analysis Day

Figure 6-4

Peninsula Hospital Site Redevelopment



Source: 2016 Pluto, DCP

Project Site

Longest Shadow Study Area Boundary

Existing Open Space

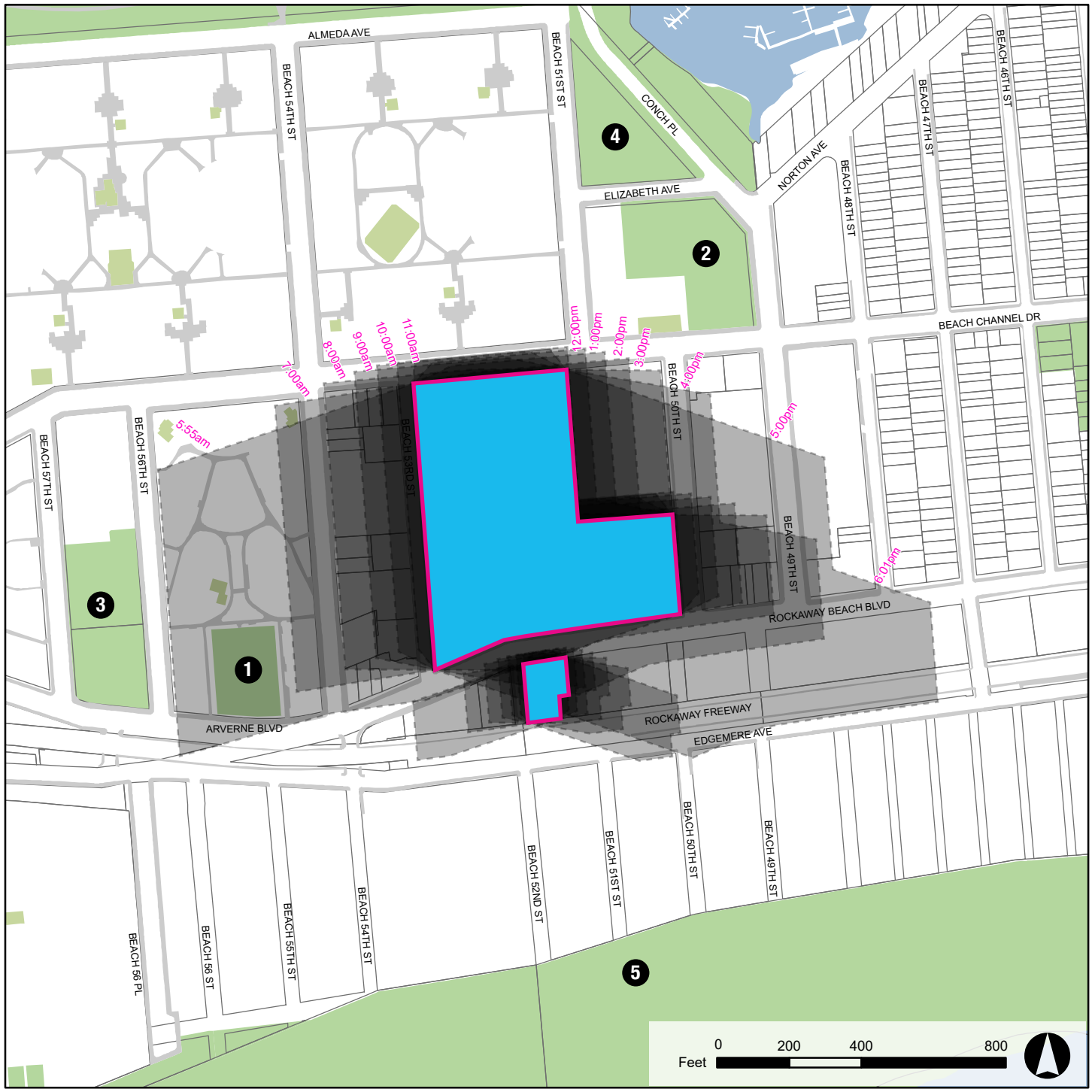
Sunlight-Sensitive Resource Keyed to Table 6-1

TIER 3 SHADOW ANALYSIS

May 6th Analysis Day

Figure 6-5

Peninsula Hospital Site Redevelopment



Source: 2016 Pluto, DCP

Project Site

Longest Shadow Study Area Boundary

Existing Open Space

Sunlight-Sensitive Resource Keyed to Table 6-1

TIER 3 SHADOW ANALYSIS

June 21st Analysis Day

Figure 6-6

Peninsula Hospital Site Redevelopment

V. DETAILED ANALYSIS

The detailed shadow analysis compares the extent of shading that would occur in the No-Action condition to the extent of shading that would occur in the With-Action condition. The purpose of the detailed analysis is to determine the extent and duration of new incremental shadows that would fall on sunlight-sensitive resources due to the Proposed Project.

For the detailed analysis, a 3D model of the Project Site and surrounding area was developed to evaluate the incremental shadows cast by the Proposed Project.

In conformance to CEQR guidelines, shadow analyses were performed for the two sunlight-sensitive resources identified in the Tier 3 Screening Assessment: the Arverne Playground (#1) and the Conch Playground (#2).

The analyses were performed for four representative days of the year during which the resources of concern would potentially be affected by shadows from the Proposed Project: March 21st (the vernal equinox), the June 21st summer solstice, May 6th (the spring day halfway between the summer solstice and equinoxes), and December 21st, the winter solstice. CEQR guidelines define the temporal limits of a shadow analysis period to be one and a half hours after sunrise to one and a half hours before sunset. As discussed above, the results of the shadow analysis show the incremental difference in shadows between the No-Action and With-Action conditions.

Table 6-2: Analysis Summary summarizes the entry and exit times and total duration of incremental shadows on each affected sun-sensitive resource when they occur. **Figures 6-7** through **6-18** graphically depict the results of the analysis based on the computer animation of times when incremental shadow would fall on a sun-sensitive resource. The figures illustrate the extent of existing shading of the sun-sensitive resources in both the No-Action and With-Action Conditions, and shown in red, the new incremental shadow that would result due to the Proposed Project.

Table 6-2: Analysis Summary

Sunlight-Sensitive Resource	Analysis Day Timeframe Window	December 21st 8:47 A.M. - 3:02 P.M.	March 21st 7:28 A.M. - 4:39 P.M.	May 6th 6:19 A.M. - 5:27 P.M.	June 21st 5:55 A.M. - 6:01 P.M.
Arverne Playground (#1)	Shadow Enter - Exit Times	No Shadow Coverage	No Shadow Coverage	6:19 A.M. – 6:34 A.M.	5:55 A.M. – 6:05 A.M.
	Incremental Shadow Duration	-	---	15 min	10 min
Conch Playground (#2)	Shadow Enter - Exit Times	2:35 P.M. – 3:02 P.M.	No Shadow Coverage	No Shadow Coverage	No Shadow Coverage
	Incremental Shadow Duration	27 min	---	---	---

Open Space Resources of Concern

For open space and natural resources, the uses and features of the resource indicate its sensitivity to shadows. Sensitivity is assessed for both (i) warm-weather dependent features like wading pools and sand boxes, or vegetation that could be affected by a loss of sunlight during the growing season; and (ii) features, such as benches that could be affected by a loss of winter sunlight.

Arverne Playground (#1)

Arverne Playground is an approximately 0.99-acre playground that was recently renovated and includes jungle gyms, swings, benches, spray showers, basketball courts, and handball courts. Operated by NYC Parks, it is located on Arverne Boulevard between Beach 56th Street and Beach 54th Street.

The Proposed Project would cast incremental shadows on parts of the playground during the morning of both the May 6th and the June 21st analysis day. Incremental shadows on May 6th would be cast over a small area of the playground and would sweep eastward from 6:19 A.M. EST to 6:34 A.M. EST for a duration of 15 minutes (see **Figure 6-8** and **Figure 6-10**). Incremental shadows on June 21st would similarly be cast over a small area of the playground and sweep eastward from 5:55 A.M. EST to 6:05 A.M. EST for a duration of 10 minutes (see **Figure 6-12** and **Figure 6-14**). Affected portions of the playground are generally paved with small areas landscaped with street trees. Since the incremental shadow coverage is relatively short and is expected to be cast over areas of the playground not dependent on sunlight, there would not be a significant adverse impact on this resource.

Conch Playground (#2)

The 1.89-acre P.S. 105 playground, known as Conch Playground, is located at Beach 49th Street and Beach Channel. It has been recently renovated and includes amenities such as two handball courts, a softball field, a basketball courts, swings, jungle gyms, pavement games, and benches. As a jointly-operated park by NYC Parks and the Board of Education (BOE), the playground is open to the public outside of school hours.

The Proposed Project would cast incremental shadows on parts of the playground during the afternoon of the December 21st analysis day. Incremental shadows on that day would be cast over the southern portions of the playground and would sweep eastward from 2:35 P.M. EST to 3:02 P.M. EST at the end of the analysis day for a duration of 12 minutes (see **Figure 6-16** and **Figure 6-18**). As shadows are not static and move from west to east throughout the day, existing playground amenities would continue to receive direct sunlight on the December 21st analysis day when temperatures would also be colder and the use of active recreational space (handball and basketball courts) would not be as high (compared to warmer months) and would not affect the utilization or enjoyment of this resource. Vegetation would not be affected by incremental shadows since the December 21st analysis day falls outside the plant growing season as defined by the *CEQR Technical Manual*. Therefore, the incremental shadows that would be cast by the Proposed Project would not result in a significant adverse impact on this resource.

The Proposed Project would not result in a significant adverse impact on sunlight-sensitive resources based on the results of the detailed analyses. New incremental shadows would not reduce the usability of the open space resources analyzed herein, and during the growing season, there would be no vegetated areas that would receive less than four to six hours of sunlight on the analysis days.

Source: 2017 Pluto, DCP

No-Action Condition Development Scenario

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing and/or No-Action Shadows

NO-ACTION CONDITION SHADOW COVERAGE 6:19 AM

May 6th Analysis Day

Figure 6-7

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

0 125 250 500 Feet

Proposed Development

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing, No-Action and/or With-Action Shadows

Shadow Increment

WITH-ACTION CONDITION INCREMENTAL SHADOWS 6:19 AM

May 6th Analysis Day

Figure 6-8

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

No-Action Condition Development Scenario

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing and/or No-Action Shadows

NO-ACTION CONDITION SHADOW COVERAGE 6:34 AM

May 6th Analysis Day

Figure 6-9

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

0 125 250 500 Feet

Proposed Development

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing, No-Action and/or With-Action Shadows

Shadow Increment

WITH-ACTION CONDITION INCREMENTAL SHADOWS 6:34 AM

May 6th Analysis Day

Figure 6-10

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

No-Action Condition Development Scenario

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing and/or No-Action Shadows

NO-ACTION CONDITION SHADOW COVERAGE 5:55 AM

June 21st Analysis Day

Figure 6-11

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

0 125 250 500 Feet

Proposed Development

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing, No-Action and/or With-Action Shadows

Shadow Increment

WITH-ACTION CONDITION INCREMENTAL SHADOWS 5:55 AM

June 21st Analysis Day

Figure 6-12

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

No-Action Condition Development Scenario

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing and/or No-Action Shadows

NO-ACTION CONDITION SHADOW COVERAGE 6:05 AM

June 21st Analysis Day

Figure 6-13

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

0 125 250 500 Feet

Proposed Development

\# Sunlight-Sensitive Resource Keyed to Table 6-1

Existing, No-Action and/or With-Action Shadows

Shadow Increment

WITH-ACTION CONDITION INCREMENTAL SHADOWS 6:05 AM

June 21st Analysis Day

Figure 6-14

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

No-Action Condition Development Scenario

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing and/or No-Action Shadows

NO-ACTION CONDITION SHADOW COVERAGE 2:35 PM

December 21st Analysis Day

Figure 6-15

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

0 125 250 500 Feet

Proposed Development

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing, No-Action and/or With-Action Shadows

Shadow Increment

WITH-ACTION CONDITION INCREMENTAL SHADOWS 2:35 PM

December 21st Analysis Day

Figure 6-16

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

No-Action Condition Development Scenario

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing and/or No-Action Shadows

NO-ACTION CONDITION SHADOW COVERAGE 3:02 PM

December 21st Analysis Day

Figure 6-17

Peninsula Hospital Site Redevelopment

Source: 2017 Pluto, DCP

0 125 250 500 Feet

Proposed Development

Sunlight-Sensitive Resource Keyed to Table 6-1

Existing, No-Action and/or With-Action Shadows

Shadow Increment

WITH-ACTION CONDITION INCREMENTAL SHADOWS 3:02 PM

December 21st Analysis Day

Figure 6-18

Peninsula Hospital Site Redevelopment