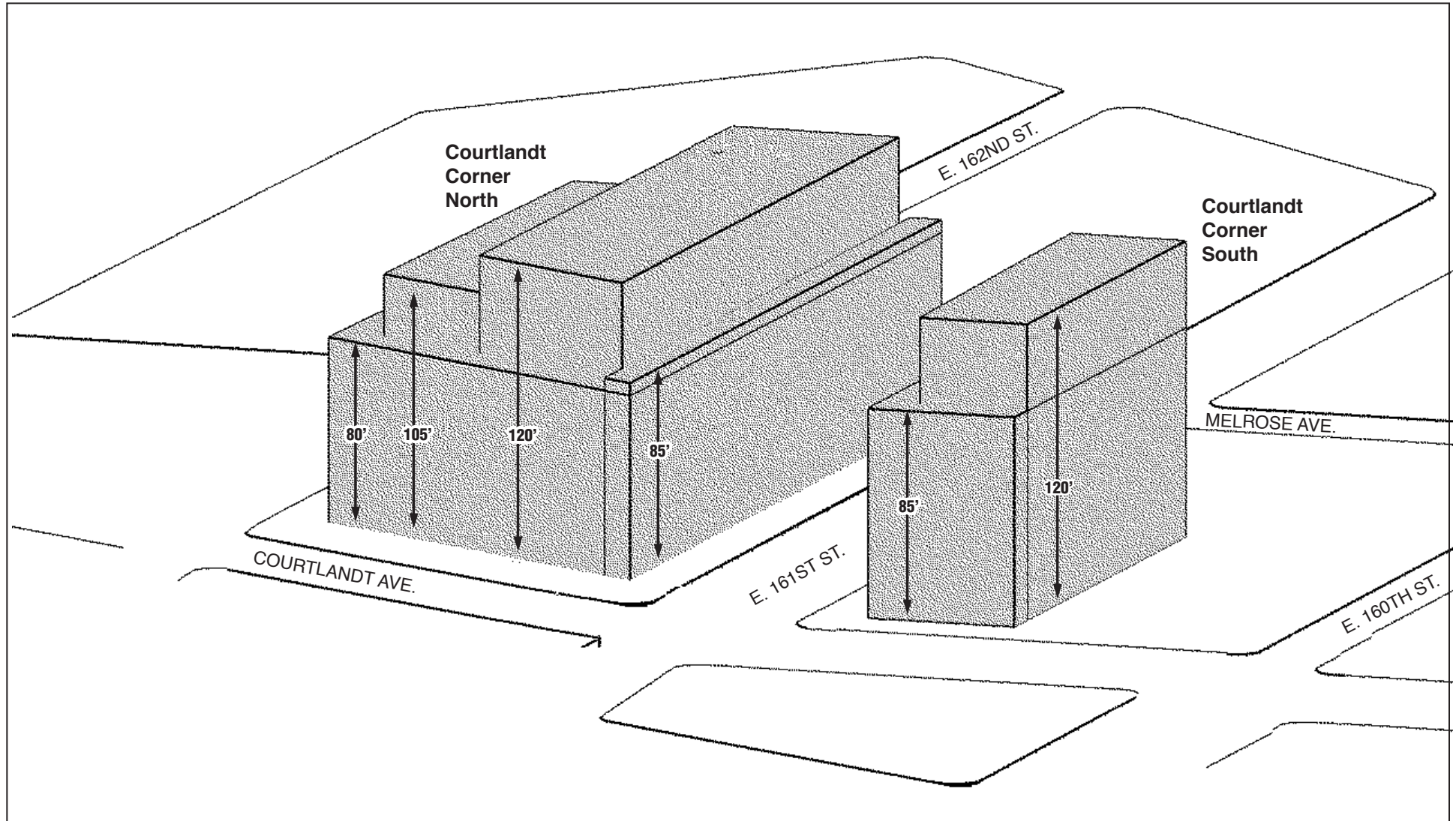


A. INTRODUCTION

The proposed and future actions, which include amendments to the Melrose Commons Urban Renewal Plan (URP) and zoning map changes, would facilitate the full build-out of the Melrose Commons Urban Renewal Area (URA). The proposed and future actions would allow for the development of the proposed Boricua Village and future Courtlandt Corners projects. The proposed Boricua Village project would result in the construction of new residential buildings along St. Ann's, Third and Elton Avenues between East 163rd and East 161st Streets, and a 14-story college building at the intersection of East 161st Street and Washington Avenue. The future Courtlandt Corners project would result in the construction of new residential buildings on the north and south side of East 161st Street between Courtlandt and Melrose Avenues. It is expected that as a result of the proposed and future actions, new development would also occur on parcels 15, 51, 52, 53, 62, and 64, in addition to the Boricua Village and Courtlandt Corners sites. To account for maximum likely development, it is assumed that Courtlandt Corners sites would be developed according to the New York City Zoning Resolution's Quality Housing program, which allows an overall building height of up to 75 feet on a narrow street and 80 feet on a wide street in R7 districts. In R8 districts, the Quality Housing program permits a maximum building height of 105 feet on a narrow street and 120 feet on a wide street. East 161st Street, Melrose Avenue, and Elton Avenue are wide streets. Renderings of the proposed Boricua Village project are provided in Figures 1-7A through 1-7G in Chapter 1, "Project Description." Figure 6-1 shows an illustrative bulk diagram of the potential future buildout of the Courtlandt Corners North and South sites under R8 zoning.

Based on the analysis presented in this chapter, it is not anticipated that the proposed and future actions would result in any significant adverse impacts to the open spaces in the surrounding area. For the most part, the incremental shadows are limited to the morning and early afternoon hours. While the incremental shadows would reach some of the open spaces for the entire analysis day, the size of the incremental shadow would be small and would allow for the majority of the open space to be in sun in the afternoon hours. Overall, the shadows created by the proposed projects' new buildings would not rest on any area for a significant amount of time, nor would they remove all of the sunlight from an open space. One new open space, a planned park west of Elton Avenue between East 161st and East 163rd Streets (hereafter referred to as "Elton Avenue Park") would receive incremental shadows for the entire analysis period on the spring, fall, and winter analysis days. However, the park is expected to include predominantly active recreational amenities, and shade-tolerant plantings could be selected for landscaping. Therefore, significant adverse shadow impacts are not anticipated.



B. METHODOLOGY

Following the guidelines of the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, a shadows assessment is appropriate when the project site is adjacent to a public open space, a historic resource with significant sun-sensitive features, or an important natural feature, and when the proposed action would result in a building 50 feet in height or greater. The sites of the proposed projects and the undeveloped URA parcels are in the vicinity of several public open spaces, but not in the vicinity of any historic resources with sun-sensitive features or important natural resources. In identifying potential impacts, CEQR focuses on uses and users of the open space, landscaping and vegetation, historic resources with significant sunlight-dependant features, and important natural resources. Based on *CEQR Technical Manual* methodology, this analysis considers shadows on four representative days of the year:

- March 21, the vernal equinox (equivalent to September 21, the autumnal equinox);
- May 6, the midpoint between the equinox and summer solstice (equivalent to August 6);
- June 21, the summer solstice and the day on which shadows are the shortest; and
- December 21, the winter solstice and the day on which shadows are longest.

The CEQR methodology does not consider shadows within 1½ hours of sunrise or sunset. Therefore, the analysis period is between 1½ hours after sunrise and 1½ hours before sunset.

The *CEQR Technical Manual* identifies the following as situations when a significant shadow impact may occur:

- Substantial reduction in sunlight where a sensitive use is already subject to substandard sunlight (i.e., less than the minimum time necessary for survival);
- Reduction in sunlight available to a sensitive use from more to less than the minimum time necessary for its survival;
- Substantial reduction in sunlight to a sun-sensitive use or feature; and
- Substantial reduction in the usability of the open space.

Analysis of these four criteria forms the basis for the determination that the project would not create significant shadow impacts.

C. RESOURCES OF CONCERN

The tallest element of the proposed Boricua Village project would be a building with a height of 180 feet, and the proposed Courtlandt Corners project would result in a building of up to 120 feet. Buildings of these heights would be expected to cast shadows up to 774 feet and 516 feet, respectively. Development on the remaining URA parcels would range in height from 60 to 120 feet. There are a number of open spaces within the potential area for new shadows from the proposed and projected developments. The features of the identified open spaces are described in this section and mapped on each of the shadow diagrams. There are no historic resources with sun-sensitive features or significant natural features in the maximum potential area for new shadows. There are no open spaces, historic resources with sun-sensitive features, or significant natural features in the maximum potential area for shadows from Parcel 15; therefore, this parcel is not included in this analysis.

EXISTING PUBLIC OPEN SPACES

Railroad Park, located along Courtlandt Avenue between East 161st and 162nd Streets, contains a playground, paths, a lawn, seating areas, and a comfort station. The seating areas are located along the western edge, with an additional row near the northern end of the park. The play areas are located near the northeast corner of the park.

The East 160th Street Community Garden is located on the north side of East 160th Street between Melrose and Courtlandt Avenues. It contains seating areas, play areas, and plantings.

O'Neil Triangle is located at the intersection of Elton and Washington Avenues, north of East 161st Street. This 0.17-acre open space contains landscaped paths, drinking fountains, and seating areas. Seating areas are located near Washington Avenue, along the east side of the triangle. The triangle is underutilized, and the area around it is mostly underdeveloped, with the exception of the Pyramid Residential Center, located along the southern side.

PROPOSED PUBLIC OPEN SPACES

The URP identified several areas for new open spaces, one of which is located within area for potential shadow impacts. This proposed Elton Avenue Park would be 1.61 acres in the area bounded by Brook and Elton Avenues, between East 162nd and 163rd Streets. It is expected that this open space would be programmed primarily for active recreational use.

As part of the proposed Boricua Village project a new public open space would be created on the Boricua Village project site between Elton and Third Avenues and would cover part of the East 161st Street between Brook and Third Avenues, which has already been demapped. The proposed Courtlandt Corners project would also include a new public open space that would be located along East 160th Street between Courtlandt and Melrose Avenues.

D. THE FUTURE WITH THE PROPOSED AND FUTURE ACTIONS

INTRODUCTION

The sun rises in the east and casts its earliest shadows towards the west. Later in the morning, the sun rises higher in the sky, casting shorter shadows towards the northwest. At noon (1 PM during daylight savings time), the sun is at its highest point in the sky and casts the shortest shadows of the day directly to the north. In the afternoon, the sun continues to move west and begins to cast longer shadows toward the northeast and east.

In its yearly cycle, the height of the sun in the sky and the time and directional location at which it rises and sets varies by season. In the winter, the sun travels in a low arc across the southern sky, rising late in the southeast and setting early in the southwest. Because it is so low in the sky, it casts longer shadows. In the spring and fall, the sun arcs through the sky at a somewhat higher angle, rises earlier in the east, and sets later in the west. In these seasons, shadows are of moderate length. In the summer, the sun arcs through the sky at its highest angle, rising almost directly overhead at noon, making summer shadows shortest. However, as the sun also travels from the northeast to the northwest in the summer, it casts shadows in more directions than in other seasons, and its early sunrise and late sunset create shadows over a longer period than in other seasons.

The following analysis accounts for existing buildings in the area and focuses on shadows from the proposed projects and from the potential development on the remaining URA parcels.

Melrose Commons

Building heights for the potential development were based on the maximum height which would be allowed with the proposed amendments. The shadow diagrams and analysis presented below were developed using existing building envelope information obtained from the New York City Department of City Planning. Shadows were modeled using the solar rendering capabilities of MicroStation V8 software, and images were created using Autodesk Map 3D.

IMPACT ON SENSITIVE RESOURCES

Table 6-1 identifies the entering and exiting times for the incremental shadows on each of the open spaces. The times in bold indicate the incremental shadows from the proposed projects, while the times in italics indicate the incremental shadows from the potential buildings on the undeveloped URA parcels. The proposed Boricua Village project includes replacing an existing four-story building, located to the east of O'Neil Triangle, with a 14-story building that has a three-story base and a tower on top. This would result in both new shadow on this open space (from the 11-story tower) and a reduction in shadow (from the three-story base). The underlined times indicate where there would be a decrease in the amount of shadow. Due to the amount of shadow from the existing buildings, neither the Courtlandt Corners' open space nor the community garden along East 160th Street would experience any new shadows due to development resulting from the proposed and future actions.

Table 6-1
Shadow Durations

Open Space	March 21/ September 21 7:36 AM-4:29 PM EST	May 6/ August 6 7:27 AM-6:18 PM DST	June 21 6:57 AM-7:01 PM DST	December 21 8:51 AM-2:53 PM EST
Railroad Park	7:36 AM – 11:45 AM	7:27 AM – 10:15 AM <i>7:27 AM – 7:45 AM</i>	6:57 AM – 9:15 AM <i>6:57 AM – 8:00 AM</i>	8:51 AM – 1:45 PM
Elton Avenue Park	7:36 AM – 11:30 AM <i>11:30 AM – 4:29 PM</i>	7:27 AM – 8:45 AM <i>4:15 PM – 6:18 PM</i>	<i>4:00 PM – 7:01 PM</i>	8:51 AM – 12:30 PM <i>9:15 AM – 2:53 PM</i>
O'Neil Triangle	7:36 AM – 12:00 PM <u>7:36 AM – 10:00 AM</u>	7:27 AM – 12:15 AM <u>9:00 AM – 11:30 AM</u>	6:57 AM – 12:15 PM <i>6:30 PM – 7:01 PM</i>	<u>9:45 AM – 12:15 PM</u>
Boricua Village Open Space	7:36 AM – 4:29 PM	7:27 AM – 6:18 PM	6:57 AM – 7:01 PM	8:51 AM - 2:53 PM
Notes: September 21 is the equivalent of March 21, but one hour later. August 6 is the equivalent of May 6. EST—Eastern Standard Time; DST—Daylight Saving Time Bold: Duration of shadow from the proposed projects Italics: Duration of shadow from the potential build projects Underline: Reduction in the amount of shadow with the proposed and future actions				

RAILROAD PARK

Railroad Park would experience incremental shadow on all four analysis days. On the May/August and June analysis days, the potential development on Site 64 would also cast shadow on this open space. On the March/September and December analysis days, only the Courtlandt Corners development would cast incremental shadow on the park. The incremental shadows would primarily be limited to the morning hours, except on the December analysis day when the shadow would continue into the early afternoon. For each of the analysis periods, the incremental shadow would be greatest at the beginning of the analysis period.

On the March analysis day, the proposed Courtlandt Corner North project would cast the largest incremental shadows at 7:36 AM, covering almost three quarters of the open space (see Figure 6-2). Through the morning hours, the incremental shadow would move across the park and decrease in size; approximately two hours later, at 9:45 AM, the incremental shadows would cover about one-fourth of the park (see Figure 6-3), and by 11:45 AM, they would completely exit the park. Beginning at 3:00 PM, shadows from the existing buildings enter the Park and remain until the end of the analysis period (see Figure 6-4).

On the May analysis day, the incremental shadows would be greatest at 7:27 AM, the beginning of the analysis period when shadows from both the proposed Courtlandt Corner North development and potential development on parcel 64 would fall on the park (see Figure 6-5). The incremental shadow from parcel 64 would fall on the northeast corner of the park and exit quickly. By 9:30 AM, the incremental shadow from proposed Courtlandt Corner North project would decrease in size and only cover a sliver at the eastern edge of park (see Figure 6-6). These incremental shadows would completely exit the park by 10:15 AM. At 3:15 PM, shadows from the existing buildings would enter the western side of park, and by the end of the analysis period, they would almost completely cover the park (see Figure 6-7).

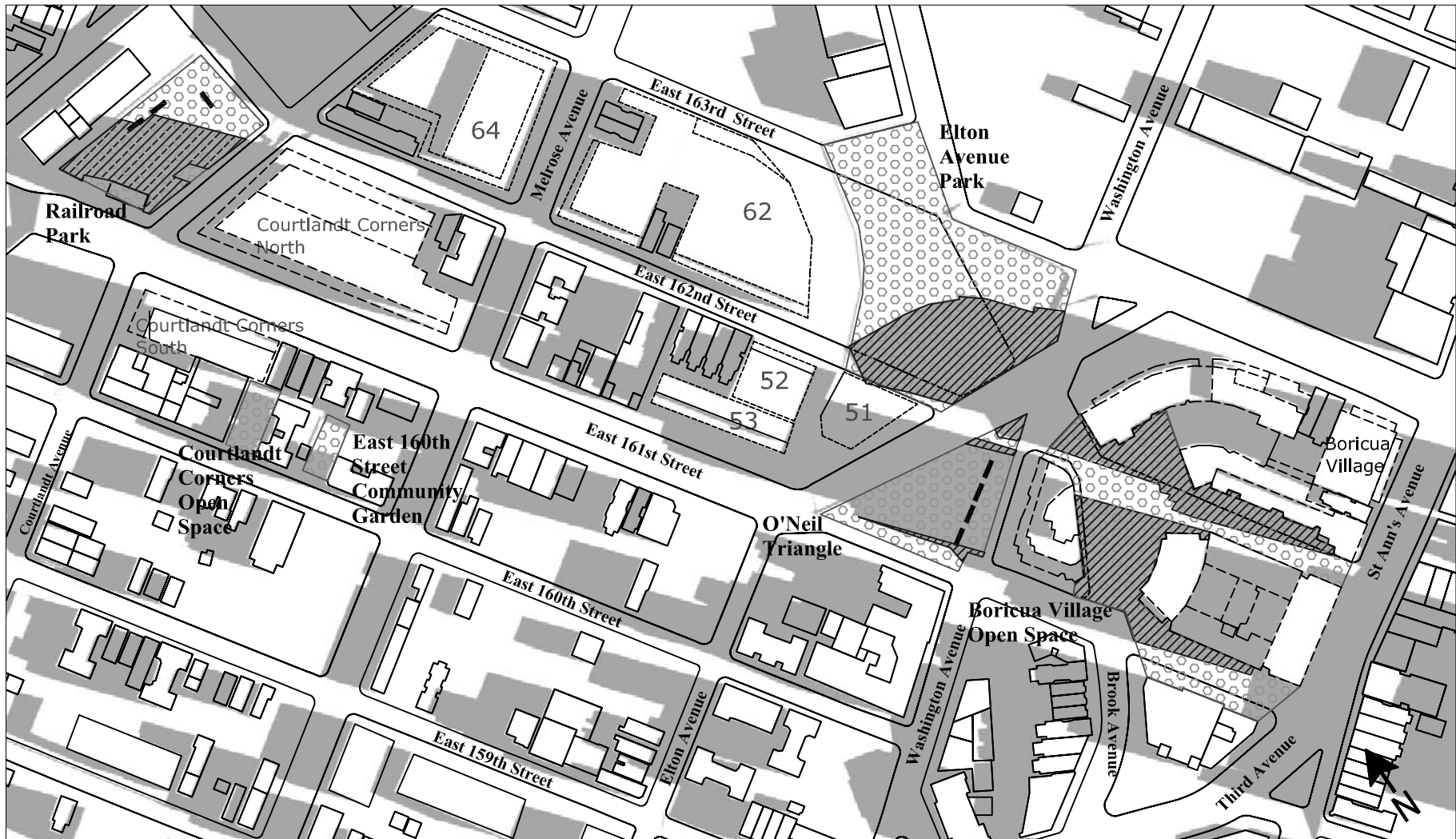
At the beginning of the June analysis day, 6:57 AM, the proposed Courtlandt Corner North project would cast a small amount of incremental shadow on the southeastern corner of the park while parcel 64 would cast incremental shadow on the northeast corner of the park (see Figure 6-8). The incremental shadow from parcel 64 would quickly decrease in size while the shadow from the proposed Courtlandt Corner North project would slightly increase. At 8:00 AM, this incremental shadow would cover a very small section of the park along its eastern edge; it would completely exit the park by 9:15 AM (see Figure 6-9). Later in the afternoon, at 3:00 PM, existing shadows would enter the park, and by 7:01 PM, the end of the analysis period, they would cover almost the entire park (see Figure 6-11).

At the beginning of the December analysis day, the buildings from the proposed Courtlandt Corners project would cast incremental shadow over much of the park, removing almost all of the sunlight from the park; shadow would cover about three quarters of the park not already in shadow (see Figure 6-12). At 11:00 AM, the incremental shadow would cover approximately half of the park (see Figure 6-13) and would continue to decrease in size until finally exiting the park at 1:45 PM. With the exception of the small amount of shadow from the comfort station, the park would be in sun for the rest of the analysis period (see Figure 6-14).

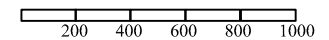
ELTON AVENUE PARK

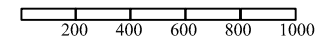
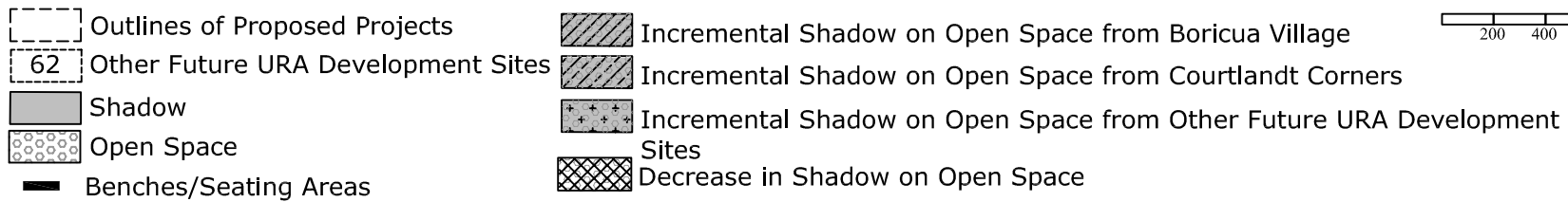
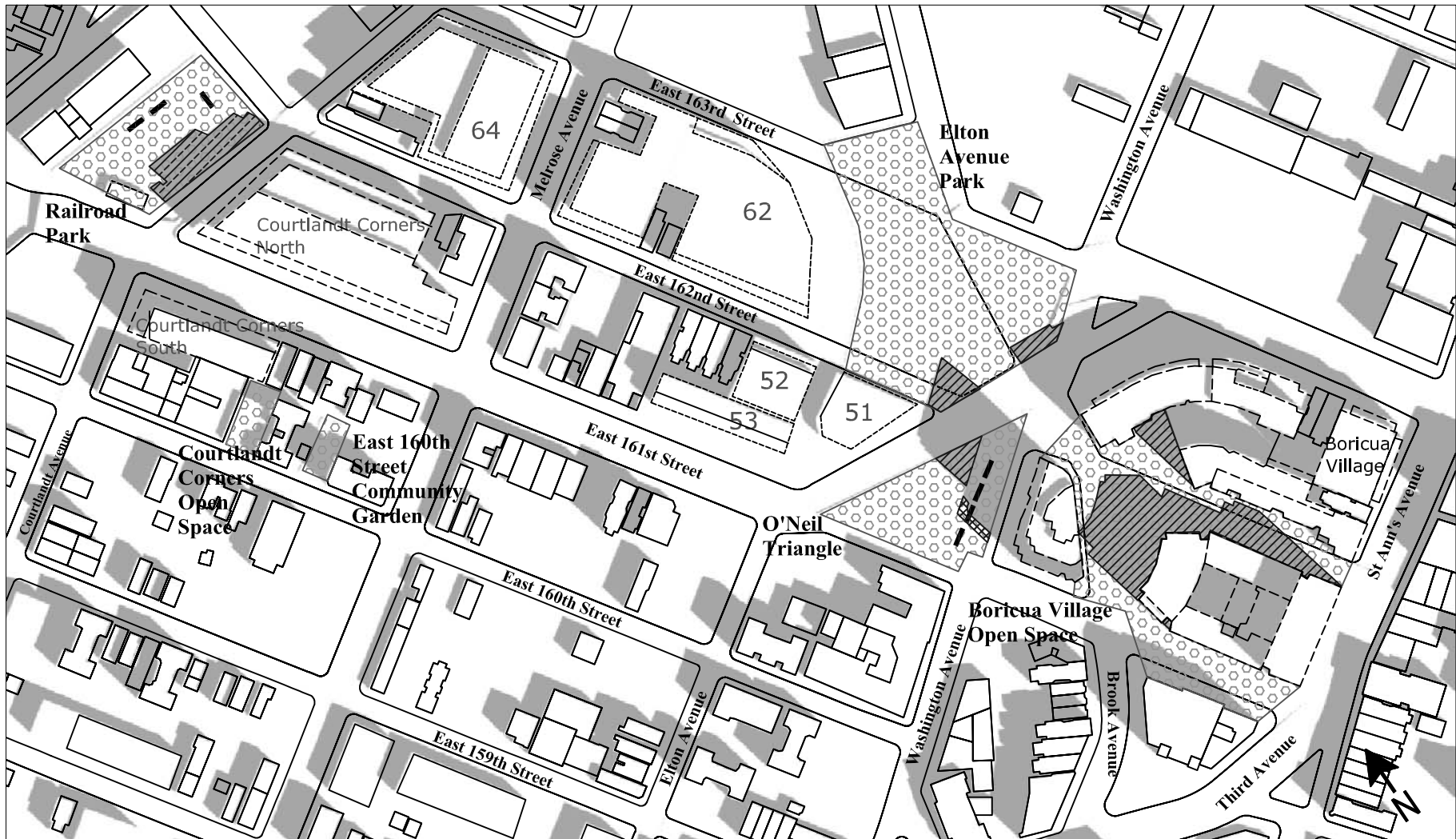
The proposed Boricua Village project would cast shadow on the Elton Avenue Park on all of the analysis days except June 21. Development on URA parcels 51, 52 and 62 would cast incremental shadows on this park on all four of the analysis days. These shadows would reach the park during the late afternoon hours for the May/August and June analysis days. On the March/September and December analysis days, the incremental shadow would be present from the morning until the end of the analysis period. Combined with the incremental shadow from the proposed Boricua Village project, there would be incremental shadow on the park for the entire analysis period in March and December. On the December analysis day, potential development on the URA parcels would fall on the park for almost the entire analysis period.

On March 21, the proposed Boricua Village project would cast the largest shadow at the beginning of the analysis period (see Figure 6-2). The incremental shadow would move quickly across the park, and approximately two hours later it would only cover a small amount of the park (see Figure

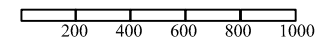
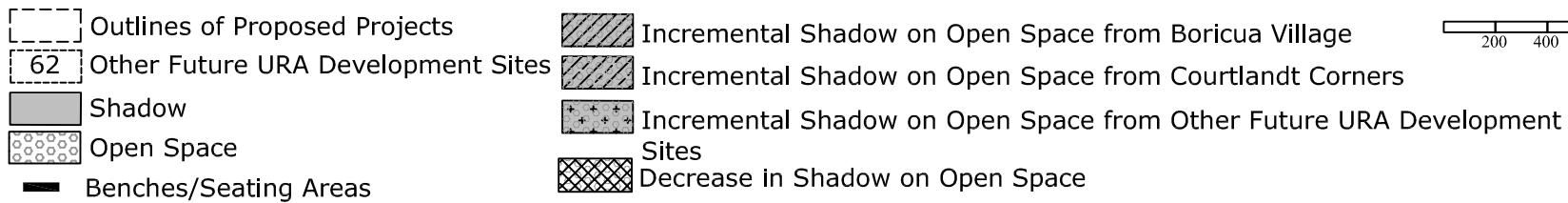
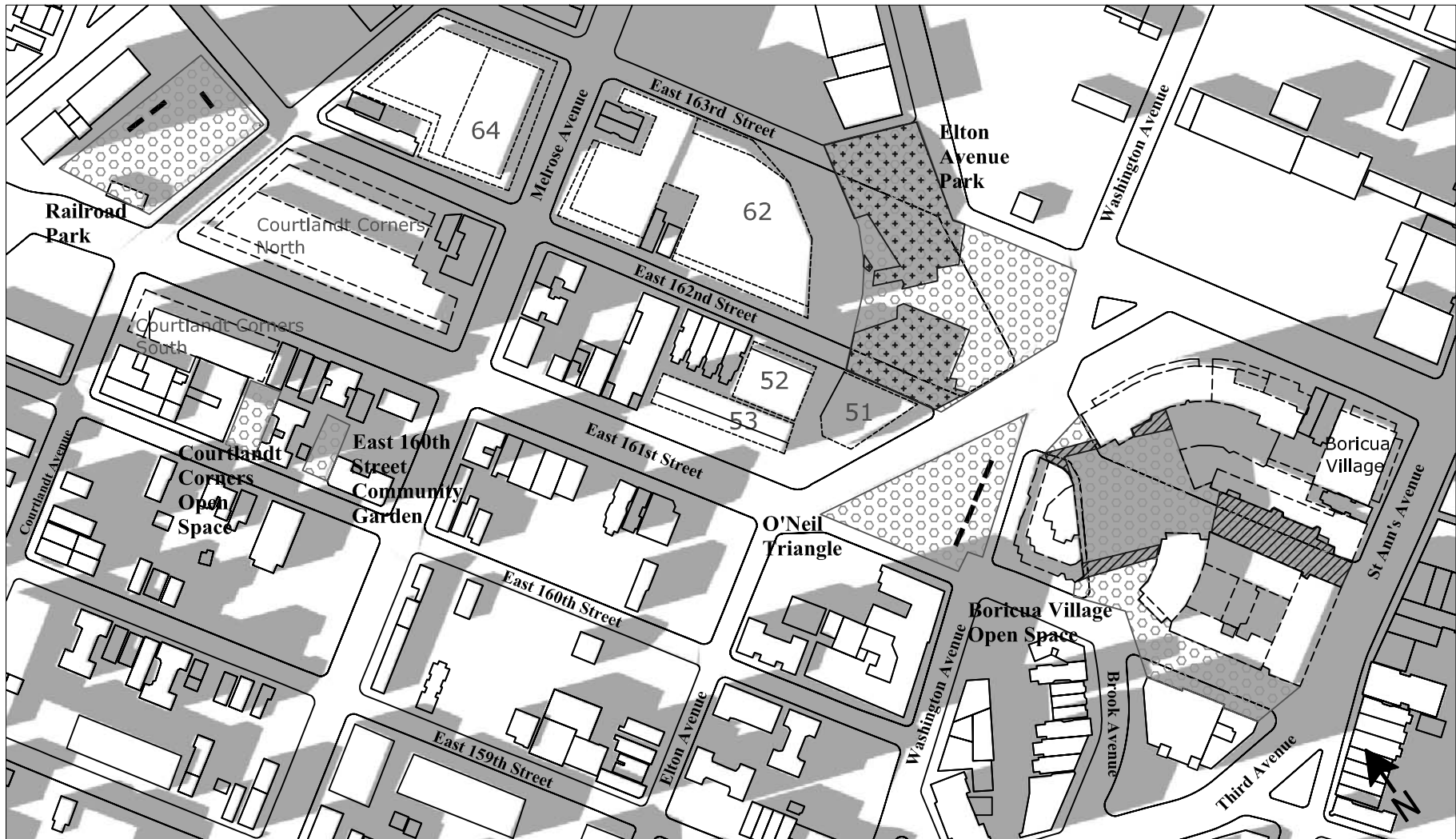


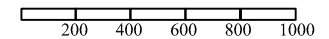
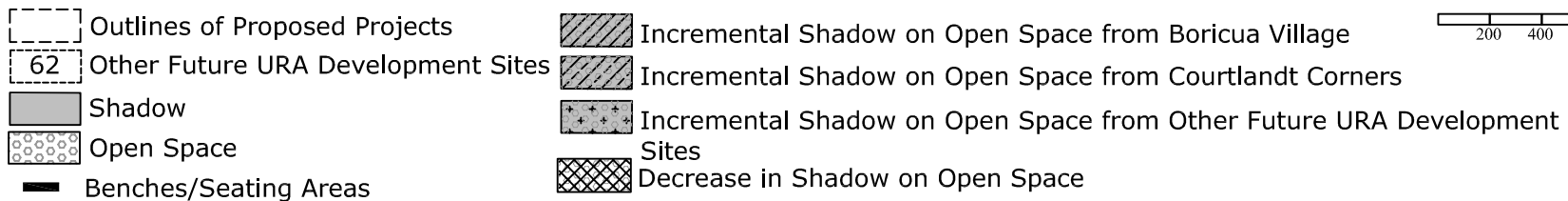
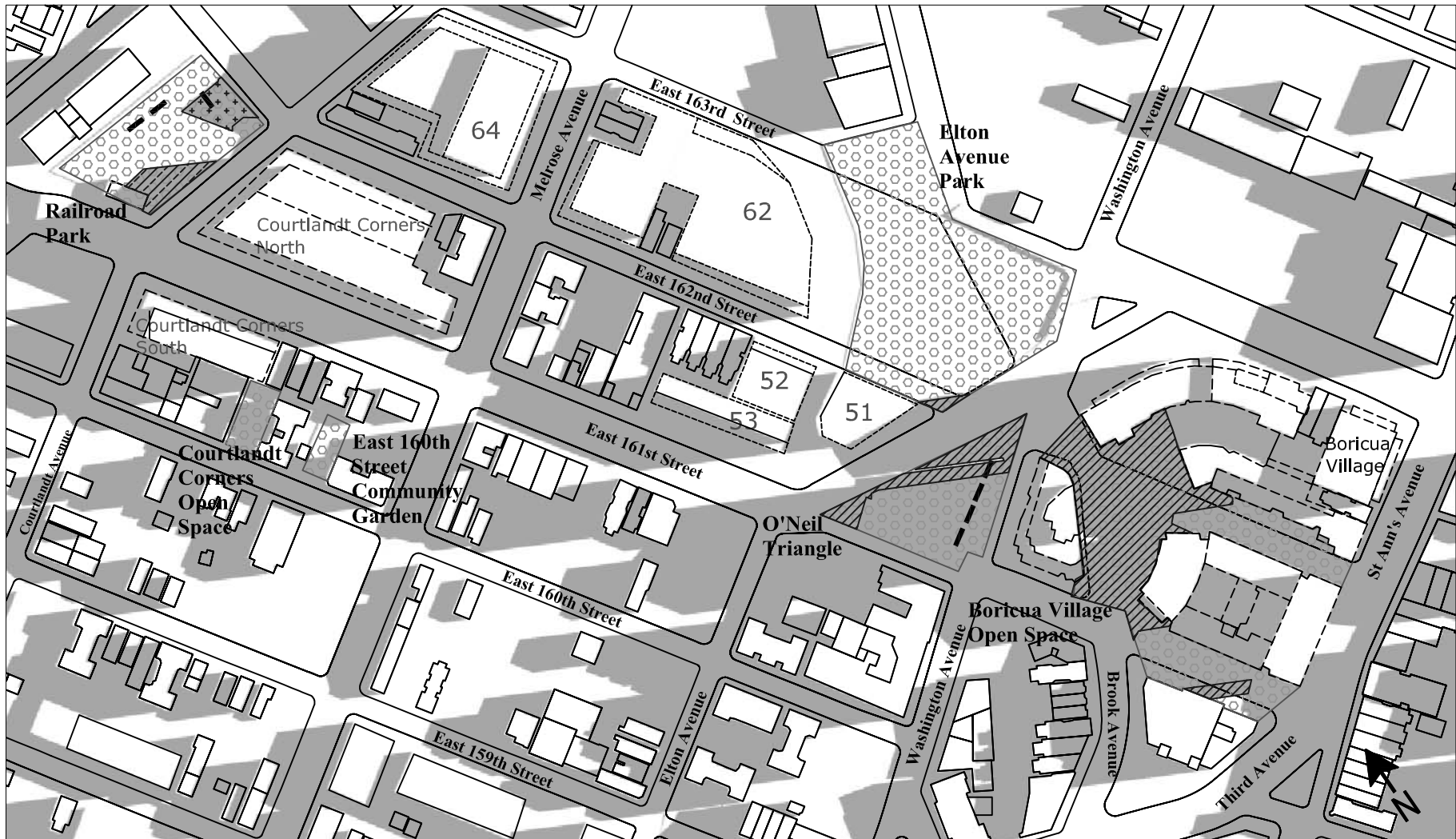
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| Outlines of Proposed Projects | Incremental Shadow on Open Space from Boricua Village |
| Other Future URA Development Sites | Incremental Shadow on Open Space from Courtlandt Corners |
| Shadow | Incremental Shadow on Open Space from Other Future URA Development Sites |
| Open Space | Decrease in Shadow on Open Space |
| Benches/Seating Areas | |





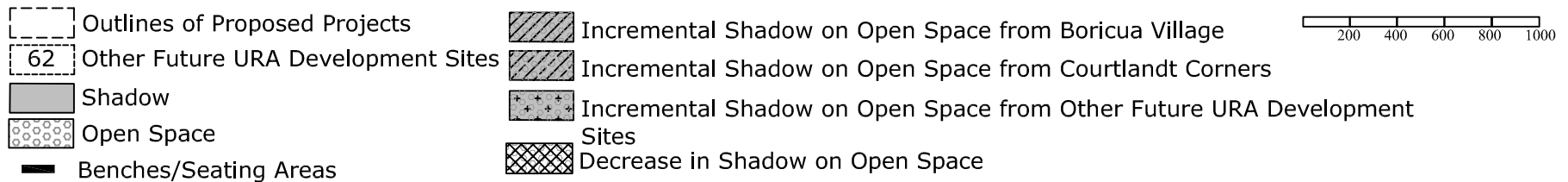
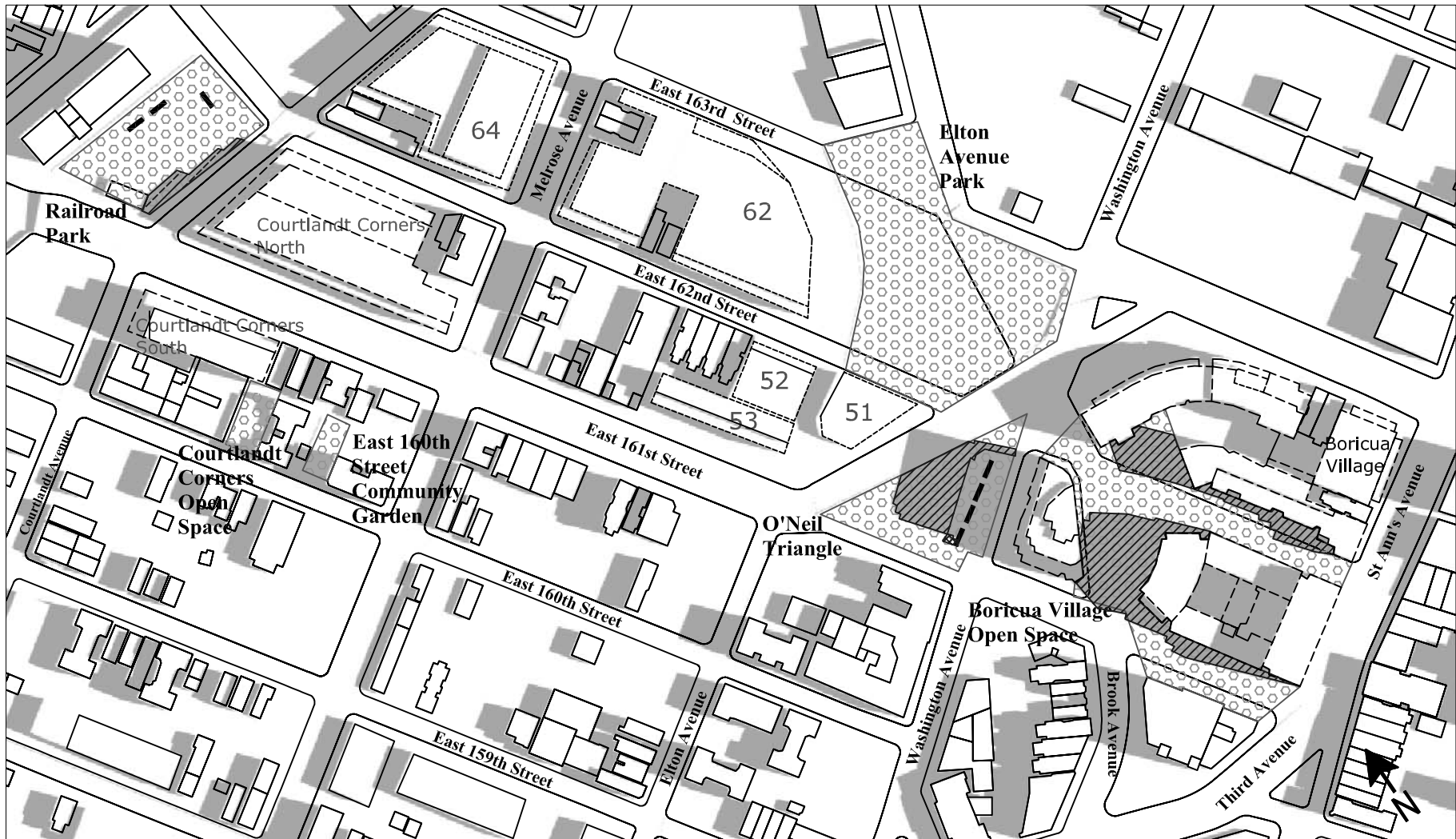
Shadow Diagram
 March 21 - 9:45 AM EST
 Figure 6-3





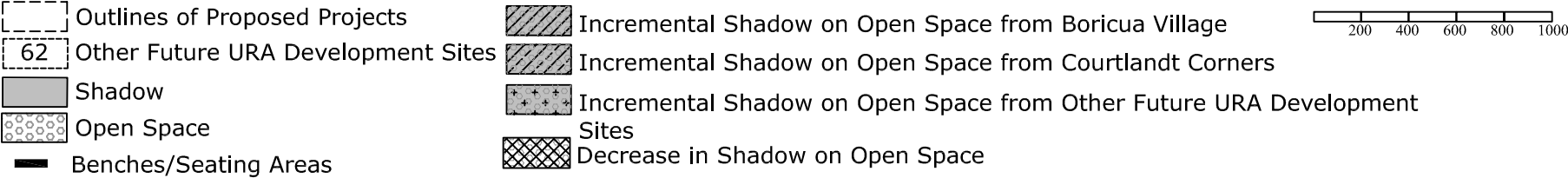
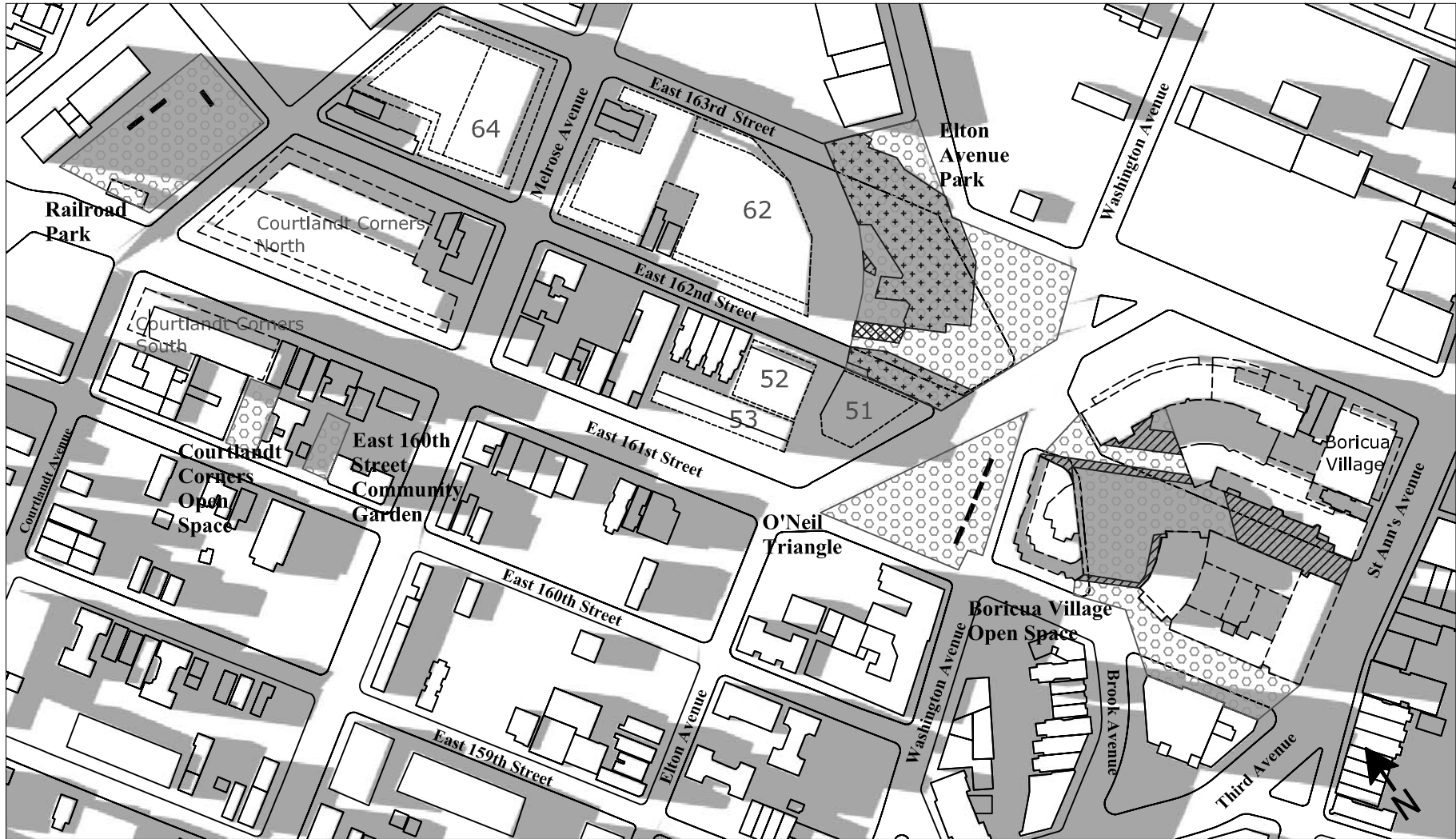
MELROSE COMMONS

Shadow Diagram
May 6 - 7:27 AM EST
Figure 6-5

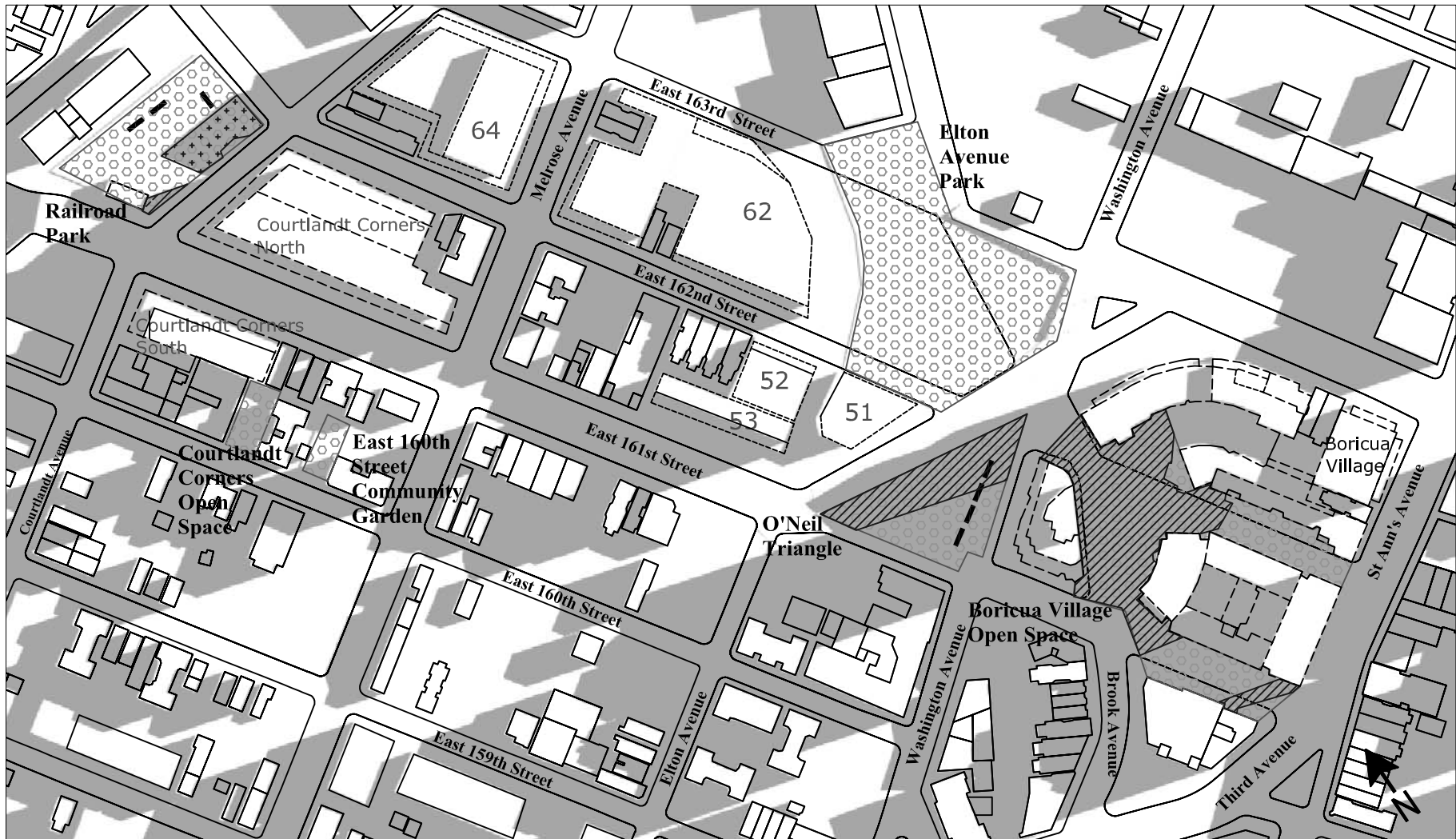


MELROSE COMMONS

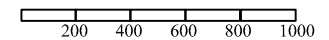
Shadow Diagram
May 6 - 9:30 AM EST
Figure 6-6



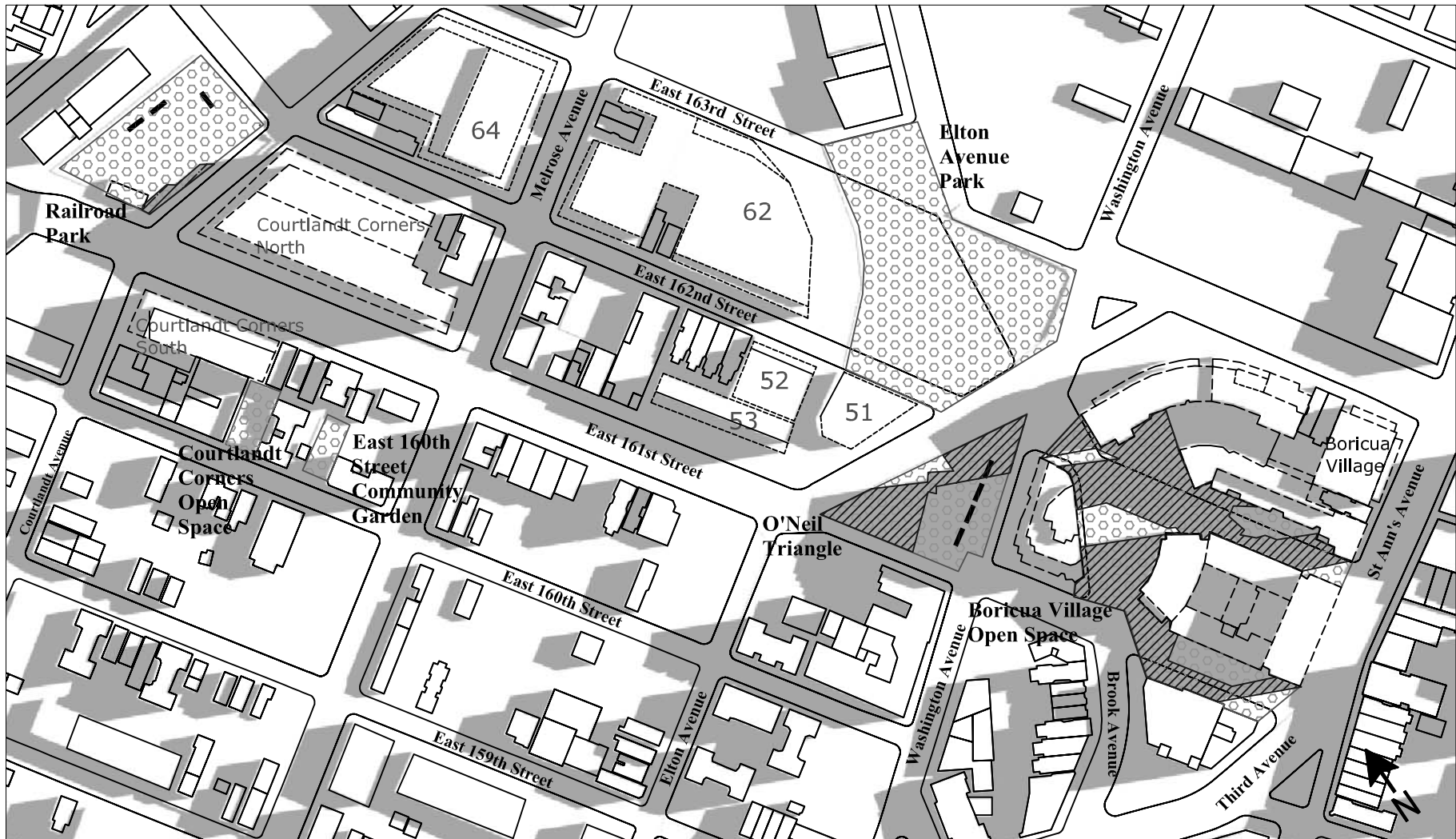
Shadow Diagram
May 6 - 6:18 PM EST
Figure 6-7



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| | Outlines of Proposed Projects | | Incremental Shadow on Open Space from Boricua Village |
| | Other Future URA Development Sites | | Incremental Shadow on Open Space from Courtlandt Corners |
| | Shadow | | Incremental Shadow on Open Space from Other Future URA Development Sites |
| | Open Space | | Decrease in Shadow on Open Space |
| | Benches/Seating Areas | | |

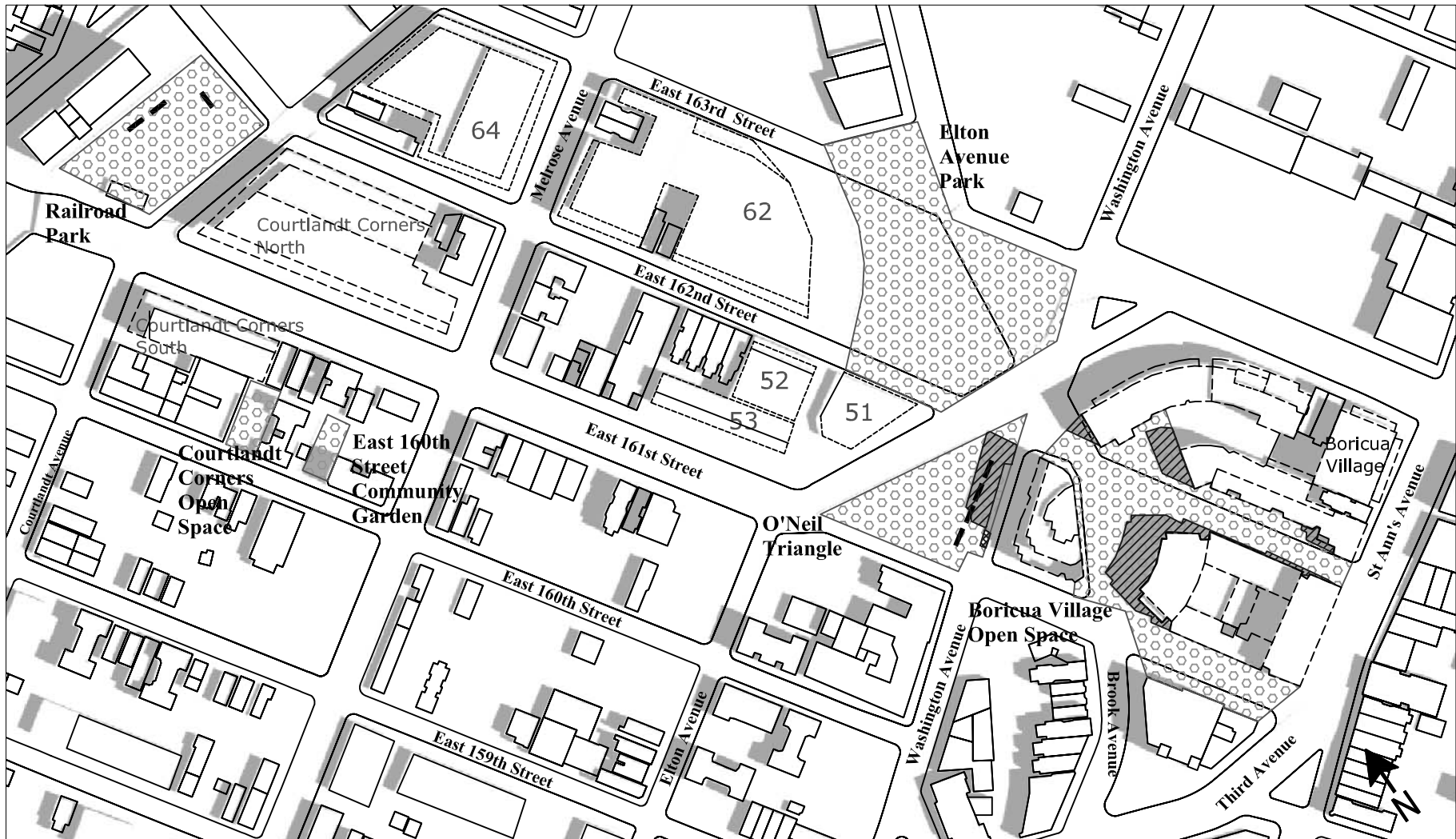


Shadow Diagram
June 21 - 6:57 AM EST
Figure 6-8

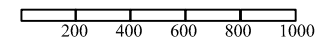


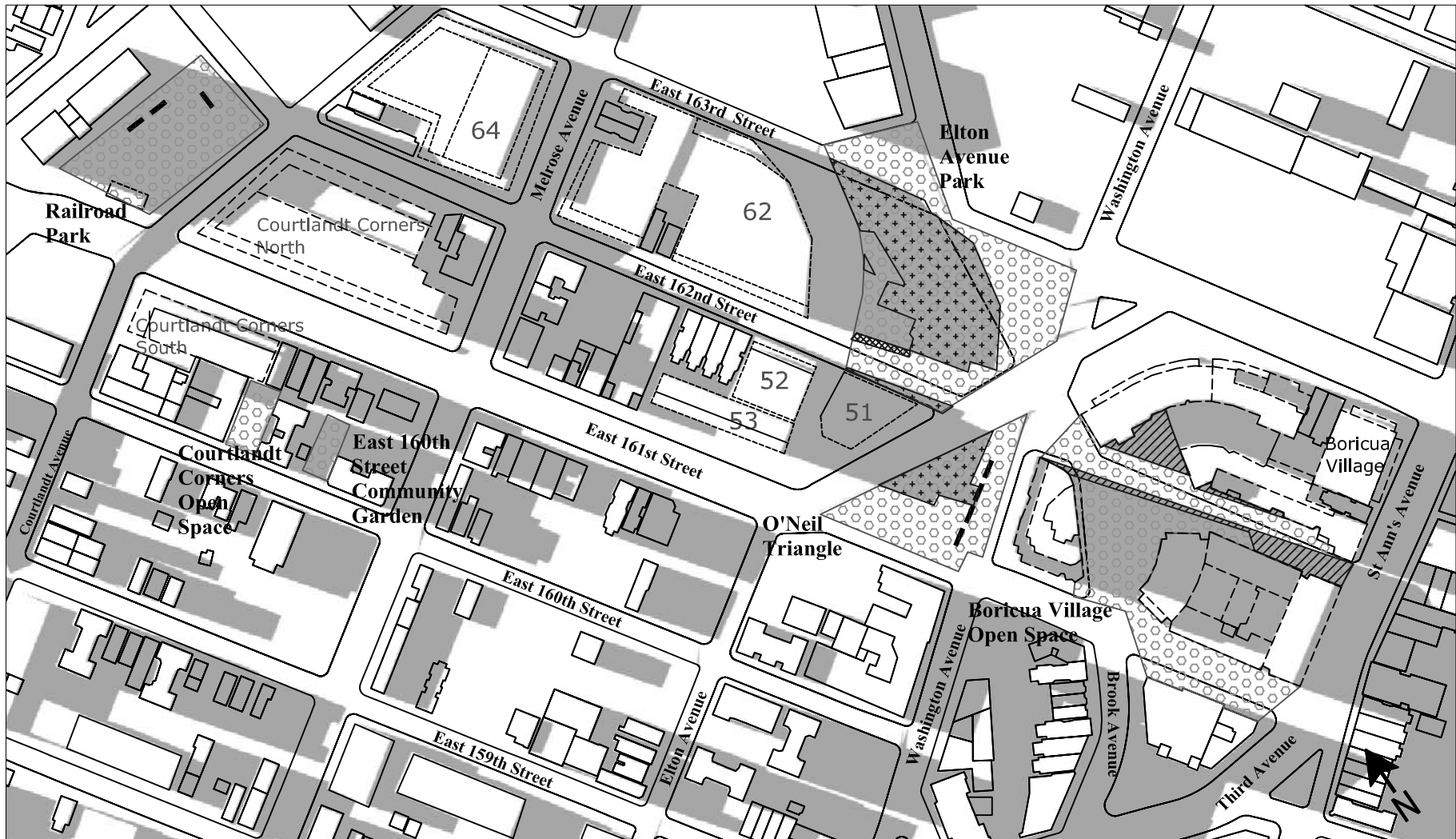
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| Outlines of Proposed Projects | Incremental Shadow on Open Space from Boricua Village |
| Other Future URA Development Sites | Incremental Shadow on Open Space from Courtlandt Corners |
| Shadow | Incremental Shadow on Open Space from Other Future URA Development Sites |
| Open Space | Decrease in Shadow on Open Space |
| Benches/Seating Areas | |

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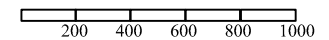


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| | Outlines of Proposed Projects | | Incremental Shadow on Open Space from Boricua Village |
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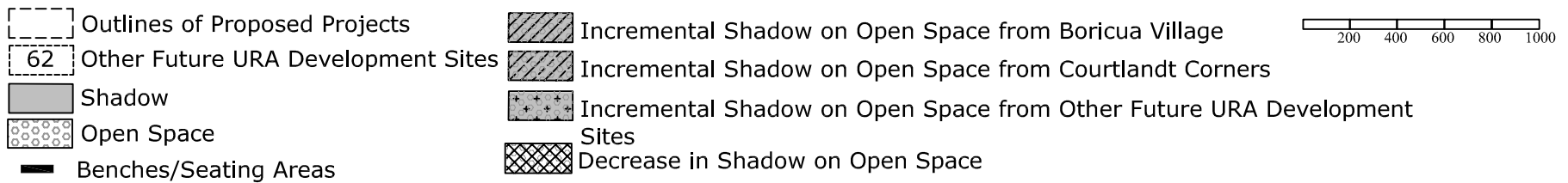
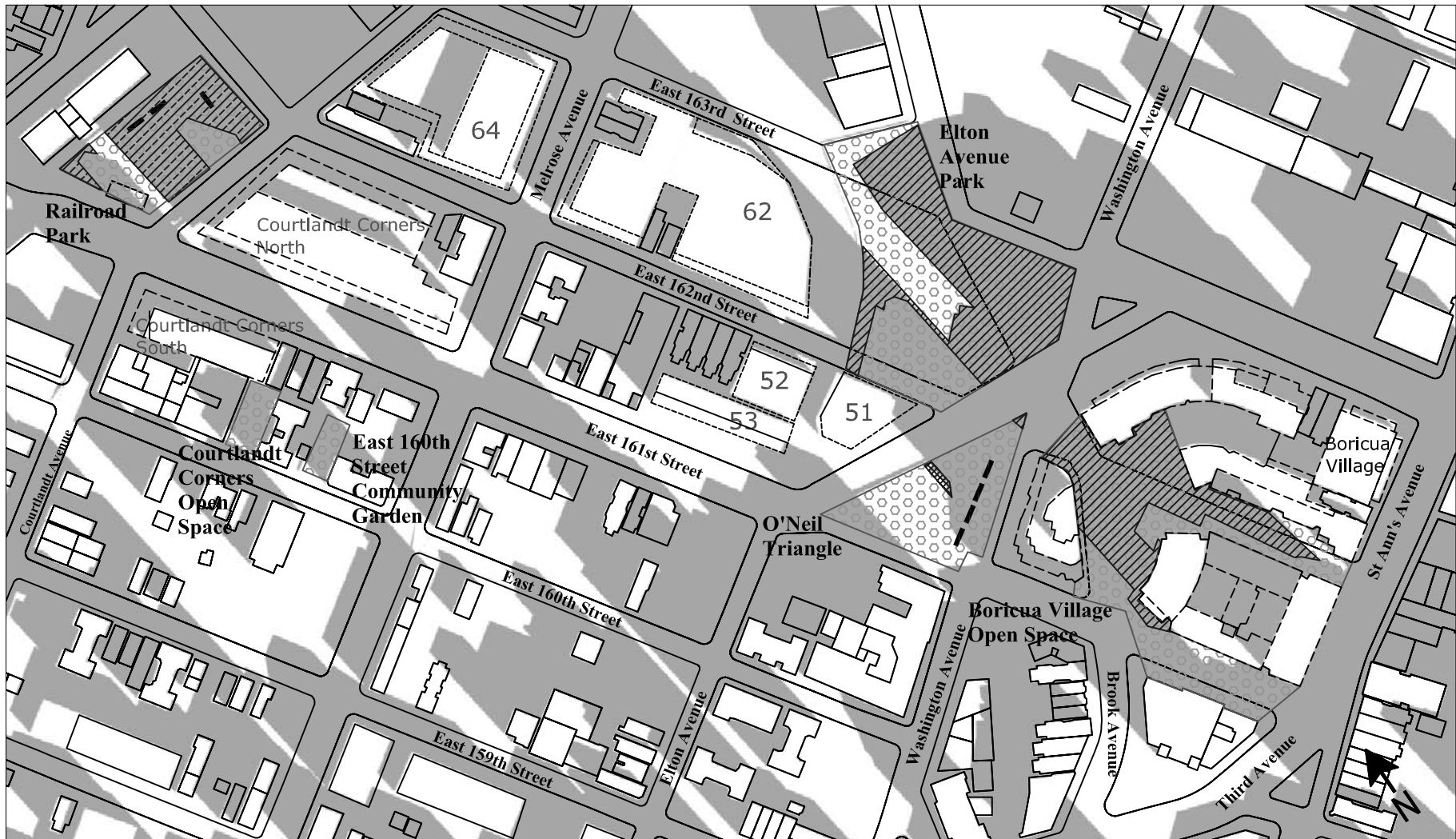


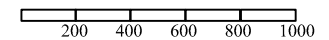
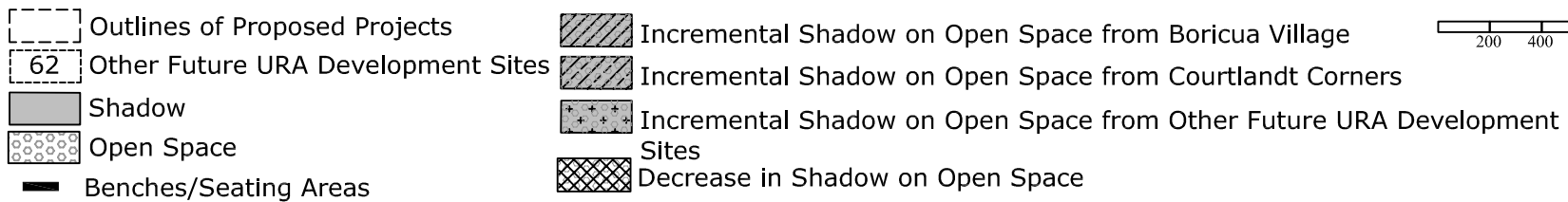
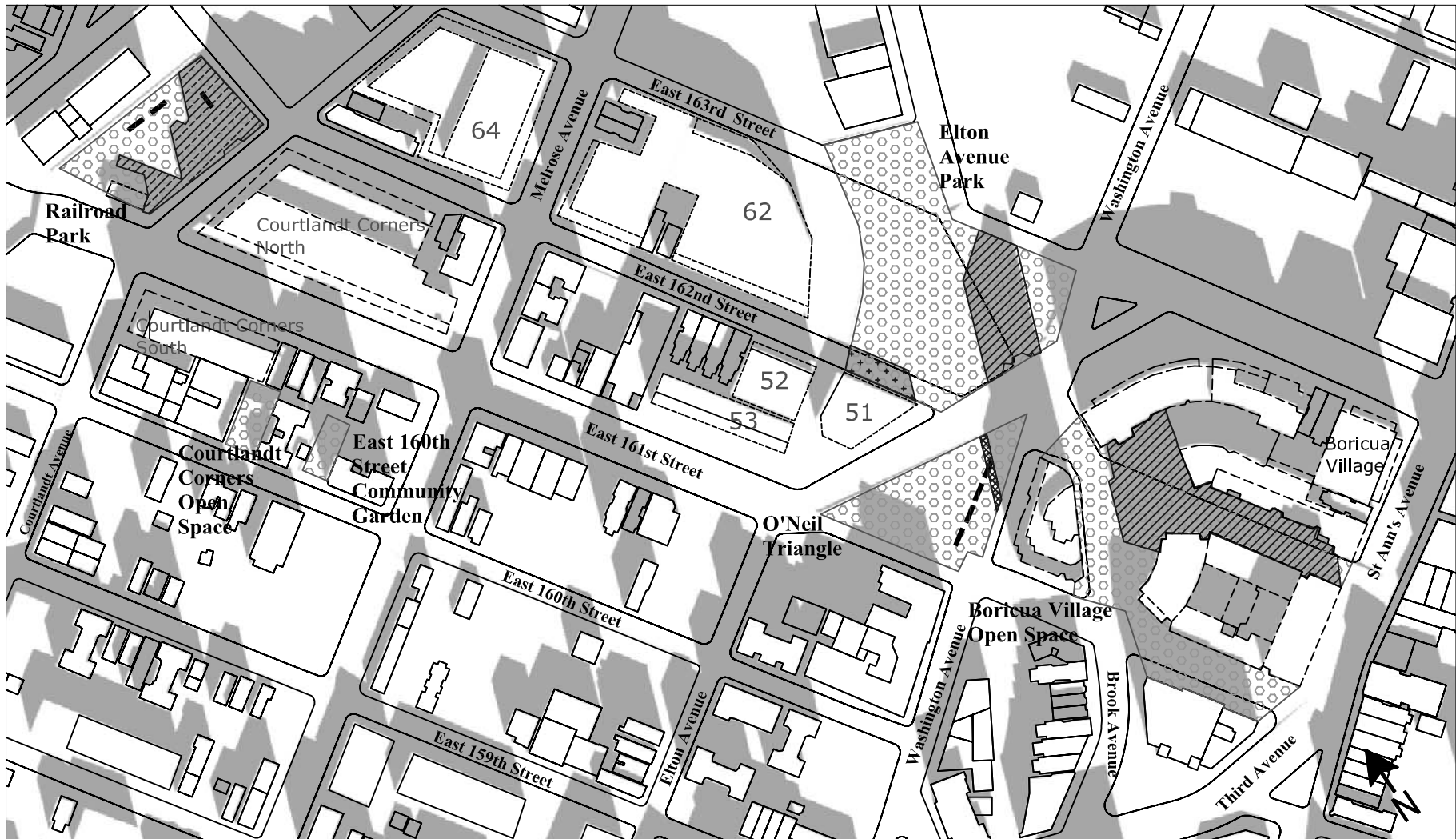


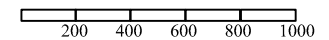
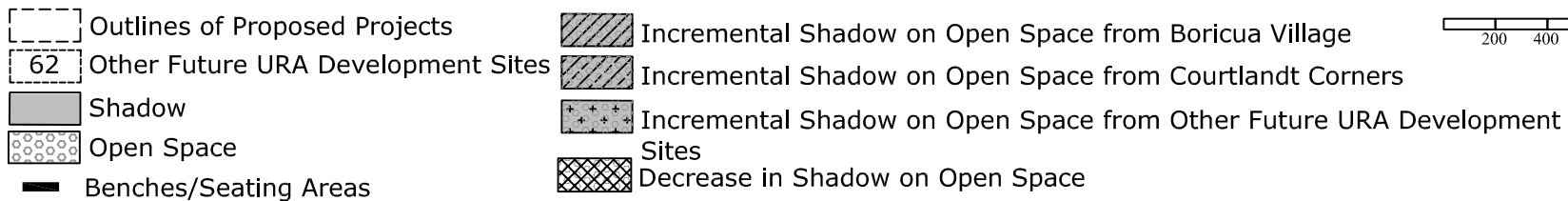
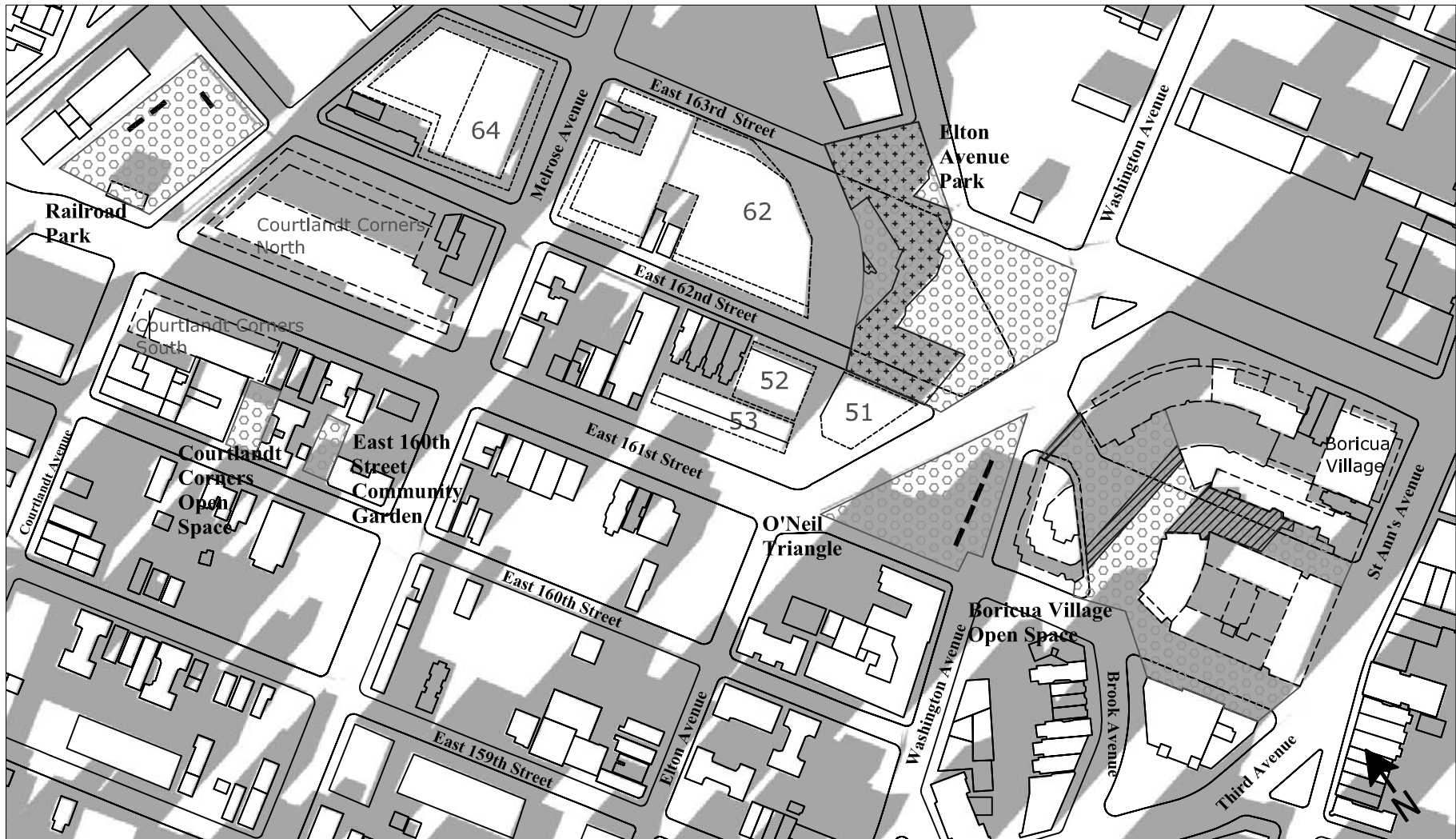
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| Outlines of Proposed Projects | Incremental Shadow on Open Space from Boricua Village |
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| Shadow | Incremental Shadow on Open Space from Other Future URA Development Sites |
| Open Space | Decrease in Shadow on Open Space |
| Benches/Seating Areas | |



Shadow Diagram
June 21 - 7:01 PM EST
Figure 6-11







6-3). By 11:30 AM, the incremental shadow would completely exit the open space while incremental shadow from URA Parcel 51 would cast a small amount of incremental shadow along the southern edge of the park. At 2:30 PM, the incremental shadow from URA Parcels 52 and 62 would enter the park and cover only a small amount of the park. The incremental shadows from the development on URA parcels would be greatest at 4:29 PM, the end of the analysis period, when they would cover approximately half of the park (see Figure 6-4).

At the beginning of the May analysis day, 7:27 AM, the proposed Boricua Village project would cast a small amount of new shadow on the southeast corner of the park (see Figure 6-5). The incremental shadow would be short in duration and would exit the park by 8:45 AM. At 4:15 PM on the May analysis day, incremental shadows from development on URA parcels 52 and 62 would enter the southwestern and northwestern corners of the park, respectively. The incremental shadows from development on the URA parcels would be greatest in size at the end of the analysis period, at 6:18 PM, when they would cover about three-quarters of the park (see Figure 6-7). URA parcel 51 would add a very small amount of incremental shadow starting at noon. However, since the proposed building would be relatively short (15 feet), the size of the incremental shadow would be small in comparison to the size of the park.

On the June analysis day, in the afternoon hours, the development on URA parcels 52 and 53 would only create incremental shadows on the Elton Avenue Park. The incremental shadows from development on these URA parcels would enter the park at 4:00 PM and would remain on the park until the end of the analysis period. The incremental shadows would be greatest in size at 7:01 PM, the end of the analysis period, when they would cover all of the middle of the park (see Figure 6-11).

On the December analysis day, the proposed Boricua Village project would cast incremental shadow on the Elton Avenue Park starting at the beginning of the analysis period, 8:51 AM, when the incremental shadows would be greatest (see Figure 6-12). The incremental shadow from the proposed Boricua Village project would exit the park by 12:30 PM. Incremental shadow from development on URA parcel 51 would enter the park at 9:15 AM, and at 1:00 PM, incremental shadow from development on parcel 62 would reach the park. These incremental shadows would remain on the park until 2:53 PM, the end of the analysis period, when they would be greatest in size and cover almost all of the western half of the park (see Figure 6-14).

O'NEIL TRIANGLE

The proposed Boricua Village project would cast shadow on O'Neil Triangle on the March/September, May/August and June analysis days in the morning and early afternoon hours. Since the proposed Boricua Village project would replace an existing four-story building with a new three-story building that has a 13-story tower; therefore, in the early morning hours, the low-rise part of the project would decrease the amount of shadow on some parts of the triangle.

At the beginning of the March analysis day, the proposed Boricua Village project would remove the sunlight from the northern and southeastern corners of the triangle. At this time, the incremental shadow would be greatest in size (see Figure 6-2). At 9:45 AM, the proposed Boricua Village project would only cast shadow only a small portion of the northern corner of the triangle; there would also be a slight reduction in the amount of shadow (see Figure 6-3). The incremental shadow would completely exit the triangle by noon. At 12:15, shadows from existing buildings would enter the southern edge of the triangle, where they would remain until the end of the analysis day (see Figure 6-4).

On the May analysis day, the proposed Boricua Village project would cast the greatest amount incremental shadow at the beginning of the analysis period. While the triangle is already largely in shadow, the proposed Boricua Village project would remove almost all of the remaining sun (see Figure 6-5). However, approximately two hours later, the incremental shadow would cover only about half of the triangle, and by 12:15 PM, it would completely exit the triangle (see Figure 6-6). In addition, from 9 AM until 11:30 AM, the triangle would also experience a reduction in the amount of shadow.

On the June analysis day, the proposed Boricua Village project would cast incremental shadow on the triangle from the beginning of the analysis period, 7:27 AM, until 12:15 PM. Similar to the March and May analysis days, the incremental shadow would be greatest in size at the beginning of the analysis period, when the square is already mostly in shadow; therefore, the proposed Boricua Village project would remove most of the remaining sunlight (see Figure 6-8). However by 11 AM, the proposed Boricua Village project would cast incremental shadow on only a small section of the northeastern area of the triangle (see Figure 6-10), and an hour and fifteen minutes later it would completely exit the triangle. Development on URA parcels 52 and 53 would cast incremental shadow on the triangle for the last half hour of the analysis period, 6:30 to 7:01 PM (see Figure 6-11). On the December analysis day, the triangle would experience a reduction in the amount of incremental shadow from 9:45 AM until 12:15 PM. The decrease in incremental shadow would occur along the northern corner of the open space (see Figure 6-12 and Figure 6-13).

BORICUA VILLAGE OPEN SPACE

As the Boricua Village open space would be located among the proposed Boricua Village buildings, it would experience shadows for the entire analysis period on all four analysis days. It would also be located just north of the three-story former Bronx Borough Courthouse, which would cast shadows on the proposed open space on all of the analysis days. On the March analysis day, the proposed Boricua Village open space would be mostly in shadow for the entire day (see Figures 6-2, 6-3 and 6-4). At the beginning of the May analysis day, almost the entire open space would be in shadow. As the morning progressed, the shadows would become smaller, allowing some sun on the open space (see Figures 6-5, 6-6, 6-7). On the June analysis day, the open space would be completely in shadow at the beginning of the analysis period (see Figure 6-8). As shadows are short during the afternoon hours of the June analysis period, the open space would receive only a small amount of shadow from 11 AM until 2 PM (see Figure 6-10). The shadows would remain on the open space until the end of the analysis day, when the shadows would reach the middle and northern sections of the open space (see Figure 6-11). At the beginning of the December analysis day, most of the open space would be in shadow (see Figure 6-12). As the day progressed, the incremental shadow would become smaller, allowing some sun on the open space in the late morning and afternoon hours (see Figures 6-13 and 6-14).

E. CONCLUSIONS

BORICUA VILLAGE

The proposed Boricua Village project would cast incremental shadows on O'Neil Triangle and the proposed Elton Avenue Park, as well as on its own open space. The incremental shadows on O'Neil Triangle would be limited to the morning and early afternoon hours. While they would eliminate the areas not already in shadow in the very early mornings of the March/September,

Melrose Commons

May/August, and June analysis days, the incremental shadows would move quickly, allowing some sun in the late morning and early afternoons. Also, the proposed building directly east of the park, on Parcel 62, would reduce some shadows on the triangle.

The proposed Boricua Village project would create incremental shadows on the Elton Avenue Park only during the morning and afternoon hours of the March/September, May/August and December analysis days. These shadows would cover almost half of the park at the beginning of the March analysis day, and almost all of park at the beginning of the December analysis day, but they would quickly move across the park and allow sun on the park by 9:45 AM and 11 AM, respectively. On the May/August analysis day, the incremental shadow would be small in size and short in duration, only lasting approximately one hour and 15 minutes.

The proposed Boricua Village project would cast shadows on some part of its own open space during the entire analysis day for each analysis day. However, as this open space is being created as part of the proposed Boricua Village project, the shadows on this open space are not considered a significant adverse impact. Nevertheless, those shadow effects could be reduced by providing active recreation facilities and selecting shade-tolerant plantings. Due to the times and brief durations of the incremental shadows on the O'Neil Triangle and the proposed Elton Avenue Park, the proposed Boricua Village project would not create any significant adverse shadow impacts to these open space resources.

COURTLANDT CORNERS

Incremental shadows from the proposed Courtlandt Corners project would reach Railroad Park during the morning hours of the March, May, and June analysis periods. While they would reach some of the seating areas at the beginning of the March analysis day, by 9:45 AM the proposed project would only add a small amount of new shadow that would exit the park before noon. On the May and June analysis days at the beginning of the analysis periods, the proposed Courtlandt Corners project buildings would cast incremental shadows that would be small in size and would only reach one of the seating areas. While the Courtlandt Corners' buildings would cast incremental shadows on the majority of the park at the beginning of the December analysis day, which would remain on the park for most of the analysis day, these shadows would not be considered a significant adverse impact, as it is unlikely the park, in particular the seating areas, would be used during December due to inclement weather. Therefore, the proposed Courtlandt Corners project would not create any significant adverse shadow impacts to Railroad Park.

URA PARCEL DEVELOPMENTS

The developments on URA parcels 51, 52, 53, 62, and 64 would cast incremental shadows on Railroad Park, O'Neil Triangle, and the proposed Elton Avenue Park. Development on URA parcel 64 would only reach Railroad Park during the early morning hours of the May and June analysis periods. The incremental shadows cast by URA parcel 64 would be relatively small in size and duration and would, therefore, not create a significant adverse impact on this open space.

Developments on URA parcels 52 and 53 would cast incremental shadow on the O'Neil Triangle for the last half hour of the June analysis day. O'Neil Triangle would not experience shadow from any of the other developments on the URA parcels on any of the other analysis days. Therefore, there would be no significant adverse shadow impacts on this open space from the developments on the URA parcels.

Developments on URA parcels 51 and 62 would cast incremental shadows on the proposed Elton Avenue Park during the afternoon and evening hours of the March and May analysis periods. Development on URA parcels 51, 52, and 62 would cast incremental shadows on the proposed park on the June and December analysis periods. As Elton Avenue Park would receive shadow from the proposed Boricua Village project as well as the developments on the URA parcels, it would be in shadow for the entire March/September and December analysis days. As the proposed programming for this park is active recreation and shade-tolerant species of plants can be selected for its landscaping, adverse impacts to the open space would be avoided.

Therefore, there would be no significant adverse shadow impacts on this open space. *