Chapter 22: Alternatives

A. INTRODUCTION

As described in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, alternatives selected for consideration in an environmental impact statement (EIS) are generally those that are feasible and have the potential to reduce, eliminate, or avoid any adverse impacts of a proposed action while meeting some or all of the goals and objectives of the action. As described in Chapter 1, "Project Description," the Proposed Actions consist of a series of zoning map amendments, zoning text amendments, and amendments to the Milbank Frawley Circle-East Urban Renewal Plans (collectively, the "Proposed Actions") to implement land use and zoning recommendations in the East Harlem Neighborhood Plan (EHNP). The Proposed Actions are intended to facilitate the development of affordable housing, create new commercial and manufacturing space to support job creation, and preserve existing neighborhood character. The affected area (the Project Area) comprises approximately 96 blocks of the East Harlem neighborhood in Manhattan Community District (CD) 11.

This chapter considers the following four alternatives to the Proposed Actions:

- A No Action Alternative, which is mandated by CEQR and the State Environmental Quality Review Act (SEQRA), and is intended to provide the lead and involved agencies with an assessment of the expected environmental impacts of no action on their part.
- A No Unmitigated Significant Adverse Impacts Alternative, which considers a development scenario that would not result in any identified significant, unmitigated adverse impacts.
- A Lower Density Alternative, which considers lower density zoning that would result in reduced residential development.
- The Sendero Verde Development Alternative, which considers the Proposed Actions and an additional projected development site bounded by Madison and Park Avenues, between East 111th and East 112th Streets. The Sendero Verde Development would be undertaken by the Department of Housing Preservation and Development (HPD).

The alternatives analyses are qualitative, except in those technical areas where significant adverse impacts for the Proposed Actions have been identified. The level of analysis provided depends on a preliminary assessment of project impacts as determined by the analysis connected with the appropriate tasks. Of the four alternatives assessed in this chapter, only the Sendero Verde Development Alternative is a quantified alternative. Quantification is accomplished by applying the same methodology used for assessment of the Proposed Actions.

B. PRINCIPAL CONCLUSIONS

NO ACTION ALTERNATIVE

The No Action Alternative examines future conditions within the Project Area, but assumes the absence of the Proposed Actions (i.e., none of the discretionary approvals proposed as part of the Proposed Actions would be adopted). Under the No Action Alternative, existing zoning would

remain in the area affected by the Proposed Actions. It is anticipated that Project Area would experience growth under the No Action Alternative by 2027. Fifty-nine of the 68 projected development sites are expected to be redeveloped, or undergo conversion, in the No Action Alternative. Significant growth in market-rate development is expected, with a total of 2,472 dwelling units (DU) (of which only 27 are expected to be affordable DUs). In addition to residential development, approximately 562,748 square feet (sf) of commercial space (including 385,009 sf of retail space, 32,974 sf of hotel space, and 76,559 sf of office space), 7,395 sf of community facility space, and 22,777 sf of industrial space is expected. The significant adverse impacts related to shadows, historic resources, traffic, and construction that would occur with the Proposed Actions would not occur with the No Action Alternative.

Under the No Action Alternative, there would be no change to zoning and MIH would not apply to the Project Area. The substantial amount of affordable housing expected under the Proposed Actions would not be provided. Under the No Action Alternative, it is anticipated that the socioeconomic gap between higher income and lower income East Harlem residents would continue to grow. In addition, as compared to the Proposed Actions, the benefits associated with improved economic activity, preservation of existing built character in certain mid-block areas and enhanced pedestrian conditions would not to be realized.

NO UNMITIGATED SIGNIFICANT ADVERSE IMPACTS ALTERNATIVE

The No Unmitigated Significant Adverse Impacts Alternative examines a scenario in which the density and other components of the Proposed Actions are changed specifically to avoid the unmitigated significant adverse impacts associated with the Proposed Actions. There is the potential for the Proposed Actions to result in unmitigated significant adverse impacts related to shadows, historic and cultural resources (architectural and archaeological resources), transportation (traffic and transit), and construction (noise).

This alternative considers development that would not result in any significant adverse impacts that could not be fully mitigated. However, to eliminate all unmitigated significant adverse impacts, the Proposed Actions would have to be modified to a point where the principal goals and objectives of the Proposed Actions would not be fully realized.

The Proposed Actions would result in significant adverse shadow impacts on El Catano Community Garden, Eugene McCabe Field, and Jackie Robinson Community Garden. The duration or extent of incremental shadow cast on these open spaces would be great enough to significantly impact the use of the open space or its ability to support vegetation. Potential mitigation measures for the identified impacts vary by resource. As discussed in Chapter 21, "Mitigation," between the Draft Environmental Impact Statement (DEIS) and the Final Environmental Impact Statement (FEIS), the Department of City Planning (DCP) and the Department of Parks and Recreation (NYC Parks) will explore potential mitigation measures. As discussed below, in order to avoid these impacts, portions of the rezoning area would need to be eliminated or building heights reduced on certain development sites. If feasible mitigation is found, the impacts will be considered partially mitigated. In the absence of feasible mitigation, the significant adverse impacts to El Catano Community Garden would be unavoidable.

The Proposed Actions have the potential to result in an unmitigated significant adverse archaeology impact associated with human remains on Potential Development Site V, which is under private ownership. There is no mechanism in place to require a developer to conduct archaeological testing or require the preservation or documentation of archaeological resources,

should they exist. Because there is no mechanism to avoid or mitigate potential impacts at Potential Development Site V, the significant adverse impact would be unmitigated.

The Proposed Actions would result in significant adverse construction-related impacts to four eligible architectural resources located within 90 feet of projected or potential development sites. Designated New York City Landmarks (NYCL) or S/NR-listed architectural resources located within 90 feet of a projected or potential new construction site are subject to the protections of the DOB's TPPN #10/88. The three impacted resources are not NYCLs or S/NR-listed, therefore they would not be afforded any of the protections under TPPN #10/88.

In addition, the Proposed Actions would result in significant adverse traffic impacts at 26 study area intersections during one or more analyzed peak hours. Because of the anticipated congestion at a total of 31 intersections in the No Action Condition even small increases in incremental With Action traffic volumes at some of the congested intersection approach movements would result in significant adverse impacts that could not be fully mitigated during one or more analysis peak hours, and almost any new development in the rezoning area could result in unmitigated traffic impacts. Therefore, no reasonable alternative could be developed to completely avoid such impacts without substantially compromising the Proposed Actions' stated goals.

Six stairs at three subway stations served by Nos. 4, 5 and/or 6 trains operating along the Lexington Avenue Line, which would be significantly adversely impacted by incremental demand from the Proposed Actions in one or both peak hours. These would include one street stair at the 103rd Street station, one street stair at the 116th Street station, and two street stairs and two platform stairs at the 125th Street station. Completion of three new subway stations in proximity to the Project Area under Phase II of the Second Avenue Subway would substantially reduce demand at existing Lexington Avenue Line stations, as well as provide new and/or expanded entrances and pedestrian circulation spaces at the 125th Street Lexington Avenue Line station. Therefore, some, if not all of the subway stair impacts would not occur with implementation of Second Avenue Subway Phase II. Irrespective of whether Second Avenue Subway Phase II advances, possible mitigation measures will be evaluated with NYCT between the Draft EUS and Final EIS. In the absence of Phase II of the Second Avenue Subway, or other mitigation measures, the subway stair impacts would remain unmitigated.

As presented in Chapter 20, "Construction," noise level increases exceeding *CEQR Technical Manual* impact criteria would occur at several locations throughout the rezoning area. Construction activity is expected to follow the requirements of the NYC Noise Control Code. In order to completely avoid significant adverse construction noise impacts, project-generated construction would have to be restricted in such a manner as to not occur on the same block as, or within one to two blocks from, existing sensitive receptors, which would require elimination of the proposed rezoning area in the vicinity of these sensitive receptors. This would severely limit the Proposed Actions' goals and objectives. Overall, given the above-described limitations, in order to fully mitigate all identified significant adverse impacts, the Proposed Actions would have to be modified to a point where their principal goals and objectives would not be realized.

LOWER DENSITY ALTERNATIVE

The Lower Density Alternative was developed for the purpose of assessing whether lower density residential development in some portions of the Project Area would eliminate or reduce the significant, adverse impacts of the Proposed Actions while also meeting the goals and objectives of the Proposed Actions. Under the Lower Density Alternative, Lexington Avenue

and portions of Second Avenue and East 116th Street would be removed from the Project Area. The removal of portions of the Project Area would result in fewer projected and potential development sites. Twenty-six projected development sites would be removed under this alternative. The remaining 42 projected development sites would contain approximately 388,340 sf of retail space, 211,873 sf of office space, 106,317 sf of community facility space, 155,171 sf of industrial space, and 5,005 DUs. Seven fewer potential development sites would occur under this alternative. The Lower Density Alternative would result in the same mix of uses as the Proposed Actions. However, the total amount of development would be reduced by approximately 15 percent under the Lower Density Alternative.

It is noted that for CEQR impact areas that are density related (e.g., community facilities, open space, traffic, etc.), the effects of this alternative are reduced in magnitude since there would be fewer dwelling units, and therefore, fewer residents than under the Proposed Actions. However, since the projected and potential development sites for the Lower Density Alternative are the same as for the Proposed Actions, site-specific impacts (e.g., hazardous materials) would be the similar under both scenarios. As compared to the Proposed Actions, the significant adverse impacts expected under the Lower Density Alternative would be generally the same, although the duration and/or extent of the impacts would be less due to the smaller number of projected and potential development sites and overall lower density. The Lower Density Alternative would result in the same significant adverse impacts related to shadows, historic and cultural resources, transportation (traffic, pedestrians, and transit) and construction. Mitigation measures for the impacts under the Lower Density Alternative would be similar to mitigation measures under the Proposed Actions. However, mitigation measures for the significant adverse transportation impacts would be somewhat different due to the overall decrease in density and difference in the location of projected development sites as compared to the Proposed Actions.

The Lower Density Alternative would support, to a lesser degree, the Proposed Actions' goals of promoting affordable housing development by increasing residential density and establishing MIH, encouraging economic development by mapping new commercial districts and increasing density in a highly transit accessible area of the City, and creating pedestrian-friendly streets through active ground floor retail uses. However, as the Lower Density Alternative would result in fewer residential units, it would be less supportive of the Proposed Action's objectives while continuing to result in significant adverse impacts related to shadows, historic and cultural resources, transportation, and construction noise.

SENDERO VERDE DEVELOPMENT ALTERNATIVE

In addition to the Proposed Actions analyzed in the EIS, the Sendero Verde Development Alternative considers a series of actions needed to facilitate an HPD-sponsored affordable housing development proposed on the site bounded by East 111th and East 112th Streets and Park and Madison Avenue. The affected property is a public, City-owned site comprised of Manhattan Block 1617/Lots 20, 22, 23, 25, 28, 29, 31, 33, 35, 37-43, 45, 46, 48, 50-54, 121, and 122. The site is over 76,500 square feet in size and encompasses community gardens. In the past, HPD licensed the vacant portion for use to a private league on an interim basis. Currently, the remainders of the City-owned sites are vacant. In February 2017, the City designated a development team to develop a three-phased mixed-use, sustainable development containing residential and community facility and commercial space. In addition to the development expected under the Proposed Actions, this alternative assesses 663 affordable DUs, 12,637 sf of retail space, 152,831 sf of community facility space, and new community gardens.

As discussed in further detail below, the Sendero Verde Development Alternative would result in the same significant adverse shadow and historic and cultural resources impacts as the Proposed Actions. Like the Proposed Actions, the Sendero Verde Development Alternative would result in significant adverse impacts in the areas of transportation impacts (traffic, transit/bus, transit/subway station elements and pedestrians) and construction, but the extent and severity of the impacts would be different than those of the Proposed Actions. In addition, the Sendero Verde Development would result in significant adverse impact related to indirect effects to open space. The open space ratio for the combined user population (workers and residents) in the non-residential (¼-mile) study area would decrease by more than 5 percent (the open space ratio would decrease by 5.05 percent as compared to the No Action Condition). These significant adverse impacts and possible mitigation measures are discussed below.

Mitigation measures for the Sendero Verde Development Alternative would be similar to the mitigation under the Proposed Actions for shadows, historic and cultural resources, transportation and construction noise. In addition, the Sendero Verde Development Alternative could require full or partial mitigation for the significant adverse impact related to indirect open space effects. Mitigation could include the provision of new open space on the Sendero Verde Site. The Sendero Verde Development would include new publicly accessible passive open space and community gardens. As discussed below, between DEIS and FEIS, DCP will explore additional mitigation measures with NYC Parks and HPD.

The Sendero Verde Development Alternative would meet the goals and objective of the Proposed Actions. The alternative would provide more affordable housing as compared to the Proposed Actions. The benefits associated with improved economic activity and the preservation of existing built character in certain mid-block areas would be the same as the Proposed Actions. However, the Sendero Verde Development Alternative may result in significant adverse impacts that could not be mitigated to the degree that could be achieved for the Proposed Actions. In comparison to the Proposed Actions, the Sendero Verde Development Alternative would result in improved pedestrian conditions, as enhanced pedestrian conditions would extend further south along Park Avenue to East 111th Street and the new public walkway and other open space planned for the Sendero Verde Site would result in improved east-west pedestrian connectivity.

C. NO ACTION ALTERNATIVE

The No Action Alternative examines future conditions within the Project Area, but assumes the absence of the Proposed Actions. Under the No Action Alternative, there would be no change to zoning and Mandatory Inclusionary Housing regulations (MIH) would not apply to the Project Area. The existing voluntary Inclusionary Housing Program would apply to Park Avenue between East 124th and East 126th Streets. It is anticipated that Project Area would experience growth by 2027under the No Action Alternative. Fifty-nine of the 68 projected development sites are expected to be redeveloped, or undergo conversion, in the No Action Alternative. Significant growth in market-rate development is expected, with a total of 2,472 DUs (of which only 27 are expected to be affordable DUs). In addition to residential development, approximately 562,748 sf of commercial space (including 385,009 sf of retail space, 32,974 sf of hotel space, and 76,559 sf of office space), 7,395 sf of community facility space, and 22,777 sf of industrial space is expected. The significant adverse impacts related to shadows, historic resources, traffic, and construction that would occur with the Proposed Actions would not occur with the No Action Alternative.

Under the No Action Alternative, existing land use trends are expected to continue. The current trend of market-rate residential development, increased rents, and the introduction of higher income residents to the area would continue. Under the No Action Alternative scenario it is anticipated that the socioeconomic gap between higher income and lower income East Harlem residents would continue to grow.

LAND USE, ZONING, AND PUBLIC POLICY

With the No Action Alternative, it is expected that the current land use trends and general development patterns would continue. These trends and patterns are characterized by a mix of uses and primarily include residential, commercial and community facility development. Fifty-nine of the 68 projected development sites are expected to be redeveloped, or undergo conversion with a residential, commercial, community facility or a mix of these uses. Significant growth in market-rate development is expected, with a total of 2,472 DUs (of which only 27 are expected to be affordable DUs). In addition to residential development, approximately 562,748 sf of commercial space (including 385,009 sf of retail space, 32,974 sf of hotel space and 76,559 sf of office space), 7,395 sf of community facility space, and 22,777 sf of industrial space is expected. Zoning and public policies affecting the primary land use study area are expected to remain unchanged as compared with existing conditions. MIH would not apply and affordable housing would continue to be in short supply. Underutilized conditions would remain on nine projected development sites.

SOCIOECONOMIC CONDITIONS

Under the No Action Alternative, it is anticipated that 59 of the 68 projected development sites would be redeveloped, or undergo conversion. Development or conversions on these 59 projected development sites under the No Action Alternative would result in an increment of 1,786,426 sf of residential floor area (1,889 market-rate DUs and 27 affordable DUs), 24,691 sf of commercial uses, and 7,395 sf of community facility uses, as well as an incremental reduction of 11,070 sf of industrial uses on the projected development sites as compared with the existing condition. The following summarizes the potential socioeconomic effects of the No Action Alternative as compared with those of the Proposed Actions for the five issues of socioeconomic concern under CEQR.

DIRECT RESIDENTIAL DISPLACEMENT

Neither the No Action Alternative nor the Proposed Actions would result in significant adverse impacts due direct residential displacement. Both the Proposed Actions and the No Action Alternative would result in potential direct residential displacement, but the numbers of potentially displaced residents would fall well below the *CEQR Technical Manual* threshold of 500 displaced residents, which indicates the potential for significant adverse impacts. The No Action Alternative could result in the direct displacement of an estimated 344 residents residing in 160 DUs from 15 projected development sites, while the Proposed Actions would result in the potential direct displacement of an estimated 27 residents residing in 11 DUs on 2 of the 68 projected development sites. Similar to the Proposed Actions, the amount of direct residential displacement under the No Action Alternative would not be large enough to substantially alter the socioeconomic character of the neighborhood.

DIRECT BUSINESS DISPLACEMENT

Like the Proposed Actions, the No Action Alternative would not result in significant adverse impacts due to direct business displacement. Both the Proposed Actions and the No Action

Alternative would result in direct business displacement. The No Action Alternative could result in the direct displacement of approximately 86 businesses affecting an estimated 977 workers in real estate and rental and leasing; accommodation and food services; retail trade; health care and social assistance; "other services" (except public administration); finance and insurance; educational services; and transportation and warehousing on 40 of the 68 projected development sites. As with the Proposed Actions, the directly displaced businesses do not provide products or services that would no longer be available to local residents or businesses, nor are they the subject of regulations or publicly adopted plans aimed at preserving, enhancing, or otherwise protecting them in their current location. The businesses are not unique to the ½-mile socioeconomic study area, nor do they serve a user base that is dependent on their location within the study area.

INDIRECT RESIDENTIAL DISPLACEMENT

Neither the No Action Alternative nor the Proposed Actions would be expected to have a significant adverse indirect residential displacement impact. Under the No Action Alternative, approximately 2,472 DUs would be constructed or undergo conversion on 59 of the 68 projected development sites. Given the trends experienced in the neighborhoods that comprise the study area, it is estimated that only 27 of the 2,472 DUs would be affordable. Therefore, it is likely that rents within the study area would significantly increase under the No Action Alternative as compared with the Proposed Actions, which would introduce more overall housing, but substantially more affordable housing. Current real estate data show a trend towards higher rents and household incomes. Based on upward trends in income and real estate values in the study area, it is likely that low-income households in unprotected units (at-risk households) would continue to experience indirect residential displacement pressures under the No Action Alternative. The anticipated socioeconomic benefits of the Proposed Actions, including promoting the development of permanently affordable housing and facilitating mixed-income communities by requiring affordable housing units to be included in any new residential development, would not be realized under the No Action Alternative. Through providing affordable housing and increasing the supply of housing, it is anticipated that the Proposed Actions would help to relieve displacement pressures. Unlike the Proposed Actions, the No Action Alternative would provide a minimal amount of affordable housing and in this respect would not further the City's goal of increasing affordable housing.

INDIRECT BUSINESS DISPLACEMENT

Neither the No Action Alternative nor the Proposed Actions are expected to result in significant adverse impacts due to indirect business displacement. Similar to the Proposed Actions, the No Action Alternative would not introduce new economic activities that would substantially alter existing economic patterns in the study area, nor would it alter the land use character of the study area. The ½-mile study area already has well-established commercial, residential, and industrial markets, and neither the Proposed Actions nor the No Action Alternative would substantially alter commercial real estate trends in the area.

Compared with the Proposed Actions, the No Action Alternative would result in less commercial, manufacturing, and residential development than would otherwise occur with the implementation of the Proposed Actions. There would be comparably fewer new jobs under the No Action Alternative. The anticipated socioeconomic benefits of the Proposed Actions, including creating opportunities for economic development while preserving the vitality of the existing commercial and manufacturing uses, improving the pedestrian experience, and preserving existing affordability, would not be realized under the No Action Alternative. Key

corridors in East Harlem such as Third Avenue, Park Avenue, and 116th Street are expected to continue to remain fragmented commercial corridors under this alternative.

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

Neither the Proposed Actions nor the No Action Alterative would result in significant adverse impacts on specific industries. A significant adverse impact on a specific industry would generally occur only in the case of a regulatory change affecting the City as a whole or in the case of a local action that affects an area in which a substantial portion of that sector is concentrated, relative to the City as a whole. Like the Proposed Actions, the No Action Alternative would not significantly affect business conditions in any industry or any category of business within or outside of the study area.

COMMUNITY FACILITIES AND SERVICES

The No Action Alternative would introduce fewer residents to the community facilities study area as compared with the Proposed Actions and, therefore, would result in a smaller increase in demand on area community facilities. As with the Proposed Actions, the No Action Alternative would not result in any significant adverse impacts with regard to public schools, child care facilities, library services, or police, fire, and emergency medical services.

OPEN SPACE

Like the Proposed Actions, the No Action Alternative would not result in significant adverse impacts on open space. However, under the No Action Alternative, it is possible that the Modesto "Tin" Flores community garden, located on Potential Development Site AD at Lexington Avenue near East 104th Street, could be developed under existing zoning with a new residential building containing ground-floor retail space. The garden contains ornamental plantings, a water feature, seating areas and a small stage. As the No Action Alternative would introduce fewer residents and workers than the Proposed Actions, in terms of indirect effects, the open space ratios for both the non-residential and residential study areas under the No Action Alternative would, therefore, generally be slightly higher than those under the Proposed Actions.

SHADOWS

Under the No Action Alternative, 9 of the 68 projected development sites would not be developed. The remaining 59 sites would be developed with structures of lower height and decreased bulk. The No Action Alternative would remove all incremental shadow from the affected sunlight-sensitive resources described in Chapter 6, "Shadows." The Proposed Actions would result in shadow impacts to three resources, which would all experience significant adverse shadow impacts due to a substantial potential change in user experience or the resource's ability to support vegetation: El Catano Community Garden, Eugene McCabe Field, and Jackie Robinson Community Garden. Without the new shadows on these resources, the experience of users would not be significantly altered and the resources would be able to support the same variety of plant life as in the No Action Condition. Therefore, the No Action Alternative would not result in a significant shadow impact on any sunlight-sensitive resources.

HISTORIC AND CULTURAL RESOURCES

As with the Proposed Actions, the No Action Alternative would result in direct effects associated with the demolition of historic resources and construction-related significant adverse impacts to architectural resources. Unlike the Proposed Actions, the No Action Alternative would not result in any significant adverse impacts to archaeological resources. Under the No

Action Alternative, the proposed rezoning would not occur, and projected and potential development sites would either remain unchanged from existing conditions or be redeveloped with as-of-right uses reflecting current trends. The No Action Alternative would result in the demolition of three historic resources shown below in **Table 22-1**.

Table 22-1
No Action Alternative—Direct Effects

Ref. No	Resource	Address	On Development Site	Adjacent Development Site[1]	No Action Condition
33	First Spanish United Methodist Church (S/NR-Eligible)	163 East 111th Street	Projected Site 41	Projected Site 42	Projected Site 41: developed with approximately 65-foot-tall building; Projected Site 42: developed with approximately 65-foot-tall building
34	Kress Building (S/NR-Eligible)	1915 Third Avenue	Potential Site U	Projected Site 33	Potential Site U: developed with approximately 95-foot-tall building; Projected Site 33: developed with approximately 95-foot-tall building
44	Former Congregation Uptown Talmud Torah Synagogue and School/ Former Commander John J. Shea Memorial School (S/NR-Eligible)	132-142 East 111th Street		Projected Site 42	Projected Site 42: developed with approximately 65-foot-tall building

In addition to direct impacts associated with demolition, the No Action Alternative would result in construction-related effects to several 16 historic resources. Additional protective measures apply to designated New York City Landmarks (NYCLs) and State/National Register (S/NR)-listed historic buildings located within 90 linear feet of proposed construction. For these structures, the New York City Department of Building's (DOB) Technical Policy and Procedure Notices (TPPN) #10/88 applies. TPPN #10/88 supplements the standard building protections afforded by the Building Code by requiring, among other things, a monitoring program to reduce the likelihood of construction damage to adjacent NYCL-designated or S/NR-listed architectural resources (within 90 feet) and to detect at an early stage the beginnings of damage so that construction procedures can be changed. The procedures and protections of the DOB's TPPN #10/88 apply to five NYCLs and/or S/NR-listed properties:

- Projected Development Site 8 is expected to be developed with an approximately 85-foot-tall building. It is directly adjacent to the former Mount Morris Bank (Resource #9, S/NR-listed, NYCL).
- Projected Development Site 12 is expected to be developed with an approximately 110-foot-tall building. It is within 90 feet of the Elmendorf Reformed Church (Resource #29, S/NR-Listed) and within 90 feet of The Harlem Courthouse (Resource #30, S/NR-listed, NYCL).
- Projected Development Site 21 is expected to be developed with an approximately 105-foot-tall building. It is within 90 feet of the Former Fire House and the 28th Police Precinct Station House (Resource #49 and Resource #50, S/NR-Eligible, NYCL).

There are two mechanisms to protect buildings in New York City from potential damage caused by adjacent construction. All buildings are provided some protection from accidental damage through DOB controls that govern the protection of any adjacent properties from construction activities, under Building Code Section 27-166 (C26-112.4). For all construction work, Building Code Section 27-166 (C26-112.4) serves to protect buildings by requiring that all lots, buildings, and service facilities adjacent to foundation and earthwork areas be protected and supported in accordance with the requirements of Building Construction Subchapter 7 and Building Code

Subchapters 11 and 19. While these regulations serve to protect all structures adjacent to construction areas, they do not afford special consideration for historic structures.

The second protective measure applies to NYCLs, properties within New York City Historic Districts, and NR-listed properties. For these structures, TPPN #10/88 applies. TPPN #10/88 supplements the standard building protections afforded by Building Code C26-112.4 by requiring a monitoring program to reduce the likelihood of construction damage to adjacent NYCLs and NR-listed properties (within 90 feet) and to detect at an early stage the beginnings of damage so that construction procedures can be changed.

Approximately 15 architectural resources that are not NYCLs or S/NR-listed properties could experience accidental construction damage under the No Action Alternative from anticipated development on adjacent projected and potential developments sites. While these resources would be offered some protection through DOB controls governing the protection of adjacent properties from construction activities, without additional protection provided by TPPN #10/88, potential construction related impacts could occur.

URBAN DESIGN AND VISUAL RESOURCES

Like the Proposed Actions, the No Action Alternative would not have significant adverse impacts on urban design, view corridors, and visual resources. Under the No Action Alternative, it is anticipated that current urban design trends and general development would continue. These trends and patterns are characterized by a mix of uses, including residential, commercial, and community facility development. Under the No Action Alternative, development would occur along the avenues, particularly along Third and Second Avenues, with the construction of new buildings of similar height and footprint on currently vacant lots or underutilized sites. Fifty-nine of the projected development sites are anticipated to be developed with primarily mixed-use buildings with ground-floor retail and residential above. These buildings would be between 2 and approximately 10 stories and would be built out to the lot line. These new buildings would continue the trend of slightly taller new buildings being constructed among smaller, older buildings and would continue to improve the pedestrian experience with additional ground-floor retail spaces. The Park Avenue corridor would continue to lack pedestrian activity, with little or no retail uses found along the corridor. Five projected development sites along Park Avenue would not be redeveloped with the No Action Alternative and would continue to remain underutilized with vacant lots and parking. As such, the No Action Alternative would not have the Proposed Actions' beneficial streetscape effects of facilitating high transparency, active ground-floor uses that would improve the pedestrian experience. In addition, while the No Action Alternative developments would be significantly smaller in scale, and less noticeable as a change than under the Proposed Actions, no contextual zoning districts would be mapped in the Project Area's core residential streets, and the ongoing trend of new residential development that is inconsistent with the streetwall of the area's older building stock would continue.

NATURAL RESOURCES

Like the Proposed Actions, the No Action Alternative would not result in any significant adverse impacts to natural resources. With the No Action Alternative, the identified projected development sites are assumed to either remain unchanged from existing conditions, or become occupied by uses that are as-of-right under existing zoning and reflect current trends. No significant changes to natural resources are anticipated.

HAZARDOUS MATERIALS

The No Action Alternative, like the Proposed Actions, would involve building construction, additions, and conversions. However, construction on new buildings for as-of-right uses under the current zoning may occur without regulatory oversight such that environmental conditions of these sites are not addressed, and residual contamination could be encountered by construction workers or the general public without their knowledge. It is assumed that all construction and required removal or handling of hazardous materials would be conducted in accordance with applicable state and federal requirements, thereby minimizing the potential for exposure.

A greater amount of ground disturbance in areas where soil is potentially contaminated from hazardous materials would occur under the Proposed Actions, as compared with the No Action Alternative, since some projected development sites would be redeveloped under the Proposed Actions but not under the No Action Alternative. However, development under the Proposed Actions would be conducted in accordance with the testing and remediation requirements required pursuant to the (E) designations or comparable measure that would be placed on the projected development sites under the Proposed Actions. As such, the No Action Alternative would involve less soil disturbance, but any development under this alternative would potentially be held to less stringent oversight than that with the Proposed Actions.

WATER AND SEWER INFRASTRUCTURE

Neither the Proposed Actions nor the No Action Alternative would result in significant adverse impacts on the City's water supply, wastewater treatment, or stormwater conveyance infrastructure. Compared with the Proposed Actions, the No Action Alternative would generate less demand on the City's water supply and wastewater treatment infrastructure. Similar to the Proposed Actions, the incorporation of selected best management practices (BMPs) would be required as part of the New York City Department of Environmental Protection (DEP) site connection application process for new buildings.

SOLID WASTE AND SANITATION SERVICES

Neither the Proposed Actions nor the No Action Alternative would adversely affect solid waste and sanitation services or place a significant burden on the City's solid waste management system. While solid waste generated by the projected development sites would increase under both the No Action Alternative and the Proposed Actions, the No Action Alternative would generate less demand on New York City's solid waste services and sanitation services.

ENERGY

Neither the Proposed Actions nor the No Action Alternative would result in significant adverse impacts with respect to the transmission or generation of energy. Like the Proposed Actions, the No Action Alternative would generate increased demands on New York City's energy services, but the demand generated under the No Action Alternative would be considerably less than for the Proposed Actions. However, under both the Proposed Actions and the No Action Alternative, the annual increase in demand would represent a negligible amount of the City's forecasted annual energy requirements for 2030.

TRANSPORTATION

As discussed below, unlike the Proposed Actions, the No Action Alternative would not result in any significant adverse impacts with respect to transportation. Unlike the Proposed Actions, the No Action Alternative would not result in significant adverse traffic impacts to 19,

12, 22, and 16 intersections in the weekday AM, midday, and PM and Saturday peak hours, respectively. The Proposed Actions' significant adverse impacts to six stairs at three subway stations and to southbound M15 SBS buses in the AM peak hour would not occur under the No Action Alternative. Furthermore, the Proposed Actions' significant adverse impact to one sidewalk in all peak hours would not occur under the No Action Alternative. Like the Proposed Actions, demand for off-street and on-street parking spaces within the parking study area would exceed capacity during the weekday midday peak period, but there would be available on-street parking capacity in the overnight period.

In the No Action Alternative, traffic, parking, transit, and pedestrian demand in the study area would increase as a result of background growth, development that could occur pursuant to existing zoning (i.e., as-of-right development), and other development projects likely to occur within and in the vicinity of the Project Area.

TRAFFIC

Independent of the Proposed Actions, traffic levels of service (LOS) at many locations in the study area would experience congested conditions in the future. Under the No Action Alternative, a total of 31 intersections (all signalized) would have at least one congested lane group in one or more peak hours; this is compared with a total of 32 intersections (all signalized) with at least one congested lane group in one or more peak hours under the Proposed Actions. There would be no intersections with significant adverse traffic impacts under the No Action Alternative compared with 19, 12, 22, and 16 impacted intersections during the weekday AM, midday, and PM and Saturday peak hours, respectively, under the Proposed Actions.

TRANSIT

Subway

Subway Stations

Under the No Action Alternative, the four analyzed subway stations would experience an increase in demand as a result of background growth and future developments anticipated within and in the vicinity of the Project Area. No pedestrian elements (stairs and fare arrays) at any of these stations would experience significant adverse impacts under this alternative. By comparison, under the Proposed Actions one street stair at the 103rd Street station, one street stair at the 116th Street station and two street stairs and two platform stairs at the 125th Street station would be significantly adversely impacted by With Action demand in one or both peak hours. Like the No Action Alternative, there would be no significant adverse impacts to any fare arrays at analyzed subway stations under the Proposed Actions.

Subway Line Haul

Under the No Action Alternative, subway trains serving stations in proximity to the Project Area would experience increased ridership through their maximum load points as a result of background growth and new development. Neither the No Action Alternative nor the Proposed Actions would result in significant adverse subway line haul impacts.

Bus

Under the No Action Alternative, demands on the local bus services operating in the vicinity of the rezoning area are expected to increase compared with existing ridership as a result of background growth and new development. The existing level of bus service would not be sufficient to provide adequate supply to meet projected demand under the No Action Alternative on the northbound M101 Limited (LTD) service in both the AM and PM peak hours and the

southbound M15 Select Bus Service (SBS) service in the AM peak hour. Based on a loading guideline of 85 passengers per articulated bus, one additional northbound M101 LTD bus would be needed in both the AM and PM peak hours (for a total of 7 buses and 10 buses, respectively), along with one additional southbound M15 SBS bus in the AM, in order to accommodate projected demand. The Proposed Actions' significant adverse impact to southbound M15 SBS service in the AM peak hour would not occur under the No Action Alternative.

PEDESTRIANS

Under the No Action Alternative, pedestrian volumes along analyzed sidewalks, crosswalks and corner areas are expected to increase compared with existing levels as a result of background growth as well as demand from new development.

Sidewalks

Under the No Action Alternative, all analyzed sidewalks are expected to operate at an acceptable LOS C or better in all peak hours with the exception of the south sidewalk on East 126th Street between Park and Lexington Avenues, which would operate at a congested LOS E in the weekday AM, midday and PM peak hours, and at a marginal LOS D in the Saturday peak hour. The Proposed Actions' significant adverse impact to this sidewalk in all peak hours would not occur under the No Action Alternative.

Crosswalks

Under the No Action Alternative, all analyzed crosswalks are expected to operate at an acceptable LOS C or better in all peak hours with the exception of the north and south crosswalks on Park Avenue at East 125th Street which would both operate at a marginal LOS D in the AM and PM. Like the Proposed Actions, the No Action Alternative would not result in any significant adverse crosswalk impacts in any peak hour.

Corners

Under the No-Action Alternative all analyzed corner areas are expected to operate at an uncongested LOS A or B in all peak hours. Like the Proposed Actions, the No Action Alternative would not result in any significant adverse corner impacts in any peak hour.

PARKING

Under the No Action Alternative, it is anticipated that demand for both off-street and on-street parking would increase due to new development and general background growth, and four existing public parking facilities with a total capacity of 462 spaces would be displaced by new development. Two additional existing public parking facilities with a total of 110 spaces that would be displaced under the Proposed Actions would remain under this alternative. Under both the No Action Alternative and the Proposed Actions, pedestrian improvement measures associated with recently proposed DOT initiatives and mitigation associated with No Action developments would eliminate a total of 22 on-street spaces within the overall parking study area in the midday period and eight spaces in the overnight period.

Under the No Action Alternative, the combined supply of on-street and public off-street parking capacity within ¼-mile of projected development sites would be sufficient to accommodate overnight demand and would operate at capacity in the weekday midday period. Under the Proposed Actions, the combined supply of on-street and public off-street parking capacity would also be sufficient to accommodate overnight demand; however, there would be a deficit of approximately 174 spaces of on-street and off-street public parking capacity in the weekday

midday period. As parking shortfalls in this area of Manhattan are not considered a significant adverse impact under *CEQR Technical Manual* criteria, significant impacts are not anticipated under the No Action Alternative or the Proposed Actions.

AIR QUALITY

MOBILE SOURCES

In the No Action Alternative, emissions from traffic demand in the air quality study area would increase as a result of background growth and development that could occur pursuant to existing zoning (i.e., as-of-right-development). As reported in Chapter 15, "Air Quality," under the No Action Alternative, no exceedances of the national ambient air quality standards for carbon monoxide or particulate matter less than 10 microns in diameter. Significant adverse mobile source impacts are therefore not anticipated under this alternative.

STATIONARY SOURCES

As outlined in Chapter 15, while some development within the study area would occur under the No Action Alternative, the Proposed Actions would result in more development and therefore the emissions from heat and hot water systems associated with the Proposed Actions would cumulatively be greater than the emissions from heat and hot water systems in the No Action Alternative. However, unlike the Proposed Actions, the as-of-right development on 59 of the 68 projected development sites would not have an environmental assessment of air quality exposure as conducted for the Proposed Actions, and thus, such development would not be subject to any air quality (E) designations. Specifically, they would not have the restrictions specified in Chapter 15 for the control of emissions for fossil fuel-fired heating, ventilation, and air conditioning (HVAC) systems, which would be designed to ensure that there would be no significant adverse air quality impacts at nearby receptor locations.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

GREENHOUSE GAS EMISSIONS

In the No Build Alternative, greenhouse gas (GHG) emissions associated with land uses in the Project Area would change over the years due to changes in development that would occur under existing zoning rules depending on changes in the local real estate market, and due to changes in the mix of fuel in the electricity provided to building, fuels used locally for heating, and vehicle technology and fuel.

RESILIENCE TO CLIMATE CHANGE

The resilience challenges associated with sea level rise and the future increase in potential severe storm levels, and the City's response to those challenges, would be the same as those described for the Proposed Actions, but potentially affecting the lesser development that would occur in the area without the zoning changes.

NOISE

In the No Action Alternative, traffic volumes would increase in the area due to general background growth and trips associated with new development that would be independent of the Proposed Actions. These increases in traffic would in general result in small changes in noise levels but, as outlined in Chapter 17, "Noise," the maximum increase in Leq noise levels would be 1.2 dBA. Changes of this magnitude would be barely perceptible. Like the Proposed Actions, the No Action Alternative would not result in significant adverse impacts. However, unlike the

Proposed Actions, the as-of-right development on projected or potential development sites would not have an environmental assessment of air quality exposure as conducted for the Proposed Actions, and thus, such development would not be subject to any noise (E) designations. Specifically, they would not have the restrictions specified in Chapter 17 for window-wall attenuation.

PUBLIC HEALTH

Neither the Proposed Actions nor the No Action Alternative would result in significant adverse public health impacts. Under the No Action Alternative, no unmitigated significant adverse impacts would occur in the areas of hazardous materials, air quality, noise, or construction, and thus there would be no significant adverse public health impacts associated with construction or operation of the new development anticipated under the No Action Alternative.

NEIGHBORHOOD CHARACTER

According to the *CEQR Technical Manual*, a proposed action could have a significant adverse neighborhood character impact if it would have the potential to affect the defining features of the neighborhood, either through the potential for a significant adverse impact in any relevant technical area, or through a combination of moderate effects in those technical areas. The Proposed Actions would not result in significant adverse impacts in the areas of land use, zoning, and public policy; socioeconomic conditions; open space; urban design and visual resources; traffic; and noise. As discussed in Chapter 19, "Neighborhood Character," although significant adverse impacts would occur with respect to historic resources, shadows, and transportation, these impacts would not result in significant adverse impacts to neighborhood character. The significant adverse historic resources, shadows, and traffic impacts would not affect any defining feature of neighborhood character, nor would a combination of moderately adverse effects affect such a defining feature. New development that could occur under the No Action Alternative would include substantial amounts of new market-rate housing and commercial space. The provision of affordable dwelling units required under MIH would not occur, and the existing trend of increasing rents in East Harlem would continue unabated. The disparity in income levels would continue under the No Action Alternative, as the rental market for housing grows increasingly expensive, forcing long-time residents to move out of the neighborhood. The East Harlem study area would continue to be characterized by major transportation infrastructure. A variety of uses would continue to be found along the neighborhood's major corridors, with shopping and retail in close proximity to residential areas, and the pockets of industrial and auto-related uses intermingled with residential and community facility uses would remain under the No Action Alternative. Unlike the Proposed Actions, the No Action Alternative would result in changes in the socioeconomic composition of East Harlem residents. Although this does not constitute a significant adverse impact, the trend of new wealthier residents moving in and older, long-time residents of the neighborhood being forced to move out in order to find more affordable housing elsewhere in the region and beyond, would continue unencumbered.

CONSTRUCTION

As the amount of new construction under the No Action Alternative would be less as compared with the Proposed Actions, the No Action Alternative would not generate as much temporary construction disruption. The No Action Alternative would result in shorter durations of construction-related noise and traffic than the Proposed Actions, and may also result in fewer potential construction-related impacts to non-designated historic resources in the area.

Neither the Proposed Actions nor the No Action Alternative would result in significant adverse construction impacts with respect to land use and neighborhood character, socioeconomic conditions, community facilities, open space, hazardous materials, air quality, or vibration. The No Action Alternative would involve less soil disturbance; however, it is possible that the regulatory controls on its performance would not be as stringent as under the Proposed Actions.

With the No Action Alternative, there could be new construction if parcels within the area are developed independent of the Proposed Actions. It is anticipated that this construction, if it were to occur, would be much smaller in scale and of a shorter duration than what would be undertaken for the Proposed Actions. Therefore, construction noise impacts would not be expected at the locations identified as having the potential to experience significant adverse construction impacts under the Proposed Actions.

Under both the No Action Alternative and the Proposed Actions, 30 architectural resources that are not NYCLs or S/NR-listed properties could experience accidental construction damage from anticipated development on adjacent projected and potential developments sites. While these resources would be offered some protection through DOB controls governing the protection of adjacent properties from construction activities, without additional protection provided by TPPN #10/88, potential construction-related impacts could occur.

D. NO UNMITIGATED SIGNIFICANT ADVERSE IMPACTS ALTERNATIVE

Based on the analyses presented in other chapters of this EIS, there is the potential for the Proposed Actions to result in a number of significant adverse impacts for which no practicable mitigation has been identified. Specifically unmitigated impacts were identified with respect to shadows, historic and cultural resources (architectural and archaeological resources), transportation (traffic and subway), and construction noise. This alternative considers development that would not result in any significant adverse impacts that could not be fully mitigated. However, to eliminate all unmitigated significant adverse impacts, the Proposed Actions would have to be modified to a point where the principal goals and objectives of the Proposed Actions would not be fully realized.

SHADOWS

As discussed in Chapter 6, "Shadows," the Proposed Actions would result in significant shadow impacts on El Catano Community Garden, Eugene McCabe Field, and Jackie Robinson Community Garden. Potential mitigation measures for the identified impacts vary by resource. As discussed below and in Chapter 21, "Mitigation," between the DEIS and FEIS, DCP and NYC Parks will explore potential mitigation measures. As discussed below, in order to avoid these impacts, portions of the rezoning area would need to be eliminated or building heights reduced on certain development sites. If feasible mitigation is found, the impacts will be considered partially mitigated. In the absence of feasible mitigation, the significant adverse impacts would remain unmitigated. The specific modifications to the Proposed Actions that would eliminate significant adverse shadow impacts on the three open spaces resources are described below.

EL CATANO COMMUNITY GARDEN

El Catano Community Garden is located on East 110th Street directly west of Potential Development Site AH and across Third Avenue from Projected Development Site 17. The With Action Condition shadows assessment found that due to the duration and breadth of the new

shadows the open space would experience a significant impact on its ability to support vegetation. The removal of Potential Development Site AH from the RWCDS in the With Action Condition as well as a 100-foot reduction in the height of the tower of Projected Development Site 17 would eliminate most incremental shadow from El Catano Community Garden and the resource would continue to be able to support a similar variety of plant life as it would in the No Action Condition. Removing Potential Development Site AH and reducing the height of the building on Projected Development Site 17 would not meet the purpose and need of the Proposed Actions; therefore, modifications to the Proposed Actions are not a practicable mitigation measure.

EUGENE MCCABE FIELD

Eugene McCabe Field is located on the west side of Park Avenue between East 120th and East 121st Streets. The field is directly adjacent to Projected Development Sites 2, 6, and 24. The With Action Condition shadows assessment found that due to the duration and breadth of the new shadows the open space would experience a significant impact to its utilization. Decreasing the height of the tower of Projected Site 2 by 50 feet, the tower and base of Projected Development Site 6 by 150 and 100 feet, and the tower of Projected Development Site 24 by 100 feet would remove the majority of incremental shadow from open space resource. With the reduced bulk of the projected development projects, the extent of new shadow on the resource throughout the year would be significantly decreased. Within the spring and summer, resource would be cast in less shadow in the early morning and no new shadows would fall on the field in the late morning and afternoon. Eugene McCabe Field would continue to be utilized as it is in the No Action Condition and would not experience a significant shadows impact. Reducing the building heights of Projected Development Sites 2, 6, and 24 would not meet the goals and objectives of the Proposed Actions because the reduced heights would result in a substantial loss of residential floor area.

JACKIE ROBINSON COMMUNITY GARDEN

Jackie Robinson Community Garden is located directly east of Projected Development Site 69 on East 122nd Street. In the With Action Condition, Jackie Robinson Community Garden would experience a shadow impact due to the significant reduction of direct sunlight on the garden within the growing season. Removal of Projected Development Site 69 would eliminate almost all incremental shadow from the garden within the growing season. The resource would be able to support the same variety of plant life as it would in the No Action Condition and would not experience a significant shadow impact. In order to eliminate the significant adverse impact, the east side of Park Avenue between East 122nd and East 123rd Streets would need to be eliminated from the rezoning area, which would result in fewer affordable units and no ground floor commercial space, which would not meet the purpose and need of the Proposed Actions; therefore, modifications to the Proposed Actions are not a practicable mitigation measure.

HISTORIC AND CULTURAL RESOURCES

As discussed in Chapter 21, "Mitigation," the Proposed Actions have the potential to result in a significant adverse impact to archaeological resources on Potential Development Site V and Projected Development Site 4 and significant adverse construction-related impacts to four architectural resources.

ARCHAEOLOGICAL RESOURCES

The Phase 1A documented the presence of the former churchyard and burial vaults of Saint Andrew's Church on both project sites and determined that the sites were sensitive for human remains. Projected Development Site 4 contains a City-owned lot under the jurisdiction of the HPD. Development of Projected Development Site 4 would be in accordance with HPD requirements, including measures to require prospective sponsors to conduct archaeological testing and if warranted, recovery of human remains. Measures to require a Phase 1B and mitigation, if warranted, would be required through provisions in the Land Disposition Agreement (LDA) between HPD and the project sponsor. Additional archaeological investigations, including a Phase 1B, would be required on Projected Development Site 4. Phase 1B testing is designed to confirm the presence or absence of archaeological resources in any areas of archaeological sensitivity that are identified in the Phase 1A study. Prior to the completion of the Phase 1B archaeological investigation, a Phase 1B Testing Protocol and Human Remains Discovery Plan would be prepared and submitted to LPC for review and concurrence.

Potential Development Site V is owned by a private entity. There is no mechanism in place to require a developer to conduct archaeological testing or require the preservation or documentation of archaeological resources, should they exist. Because there is no mechanism to avoid or mitigate potential impacts at Potential Development Site V, the significant adverse impact would be unavoidable. Since there is no implementation mechanism, any development on Potential Development Site V would have the potential to result in unmitigated impacts. The removal of Potential Development Site V from the RWCDS in the With Action Condition would eliminate the impact on potential archaeological resources. In the event that human remains are encountered during the construction of an as-of-right project, it is expected that the developer would contact the NYPD and the New York City Office of the Chief Medical Examiner.

ARCHITECTURAL RESOURCES

The Proposed Actions would result in significant adverse construction-related impacts to three eligible architectural resources located within 90 feet of projected or potential development sites. The impacted resources include:

- St. Paul's Rectory and School (Resource #17, S/NR-Eligible) is located within 90 feet of Potential Development Site C, which would be developed with an approximately 280-foot-tall building.
- Chambers Memorial Baptist Church (Resource #28, S/NR-Eligible) is located within 90 feet of Potential Development Site AI, which would be developed with an approximately 210-foot-tall building.
- 166 East 124th Street (Resource #27, S/NR-Eligible) is located within 90 feet of Projected Development Site 11, which would be developed with an approximately 275-foot-tall.
- The Park Avenue Viaduct (Resource #39, S/NR-Eligible) is located within 90 feet of several projected and potential development sites.

Designated New York City Landmarks (NYCL) or S/NR-listed architectural resources located within 90 feet of a projected or potential new construction site are subject to the protections of the DOB's TPPN #10/88. The resources listed above are not NYCLs or S/NR-listed, therefore they would not be afforded any of the protections under TPPN #10/88. In order to avoid construction-related impacts to the four resources listed above, the Proposed Actions would

require modifications that eliminate the rezoning area such that no project-generated development could ever occur on several projected and potential development sites that could cause inadvertent construction-related damage.

Designated New York City Landmarks (NYCL) or S/NR-Listed architectural resources located within 90 feet of a projected or potential new construction site are subject to the protections of DOB's TPPN #10/88. The resources listed above are not NYCLs or S/NR-Listed, therefore they would not be afforded any of the protections under TPPN #10/88. If the eligible resources are designated in the future prior to the initiation of construction, the protective measures of TPPN #10/88 would apply and significant adverse impacts from construction would be avoided. Should the resources remain undesignated, the additional protective measures of TPPN #10/88 would not apply and the potential for significant adverse construction-related impacts would be unavoidable. In order to make TPPN #10/88 or comparable measures applicable to the eligible historic resources in the absence of site-specific discretionary approval, a mechanism would have to be developed to ensure implementation and compliance, since it is not known and cannot be assumed that owners of these properties would voluntarily implement the mitigation.

Overall, given the above-described limitations, in order to fully mitigate all identified significant adverse impacts, the Proposed Actions would have to be modified to a point where their principal goals and objectives would not be realized.

TRANSPORTATION

As presented in Chapter 21, "Mitigation," the Proposed Actions would result in significant adverse traffic impacts at 26 study area intersections during one or more analyzed peak hours; specifically, 19 intersections during the weekday AM peak hour, 12 intersections during the weekday midday peak hour, 22 intersections during the weekday PM peak hour, and 16 intersections during the Saturday peak hour. Implementation of traffic engineering improvements, such as signal timing changes or modifications to curbside parking regulations would provide mitigation for many of the anticipated traffic impacts. Specifically, the significant adverse impacts would be fully mitigated at all but seven lane groups at two intersections in the weekday AM peak hour, eight lane groups at three intersections in the weekday PM peak hour, and one lane group at one intersection in each of the weekday midday and Saturday peak hours.

Because of existing congestion at a number of these intersections, even a minimal increase in traffic would result in unmitigated impacts. Specifically, in the No Action Condition, a total of 31 intersections would have at least one congested lane group in one or more peak hours, and a total of 16, 8, 17 and 13 intersections would have one or more lane groups operating at or over capacity in the weekday AM, midday, PM, and Saturday peak hours, respectively. According to the *CEQR Technical Manual*, for a lane group that would operate at LOS F in the No Action Condition, a projected delay of three or more seconds is considered a significant impact. As such, small increases in incremental With Action traffic volumes at some of the congested intersection approach movements would result in significant adverse impacts that could not be fully mitigated during one or more analysis peak hours, and almost any new development in the rezoning area could result in unmitigated traffic impacts. Therefore, no reasonable alternative could be developed to completely avoid such impacts without substantially compromising the Proposed Actions' stated goals.

CONSTRUCTION

NOISE

As presented in Chapter 20, "Construction," noise level increases exceeding *CEQR Technical Manual* impact criteria would occur at several locations throughout the rezoning area.

Construction activities would follow the requirements of the *NYC Noise Control Code* (also known as Chapter 24 of the Administrative Code of the City of New York, or Local Law 113) for construction noise control measures. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the *NYC Noise Control Code*. These measures could include a variety of source and path controls. In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures would be implemented in accordance with the *NYC Noise Control Code*:

- Equipment that meets the sound level standards specified in Subchapter 5 of the *NYC Noise Control Code* would be utilized from the start of construction.
- As early in the construction period as logistics would allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as welders, water pumps, bench saws, and table saws (i.e., early electrification) to the extent feasible and practicable.
- Where feasible and practicable, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes at the construction site based upon Title 24, Chapter 1, Subchapter 7, Section 24-163 of the *NYC Administrative Code*.
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.

In terms of path controls (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors), the following measures for construction would be implemented to the extent feasible and practicable:

- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations.
- Noise barriers constructed from plywood or other materials would be erected to provide shielding; and
- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents, where feasible) for certain dominant noise equipment would be employed to the extent feasible and practical based on the results of the construction noise calculations.

Construction activity is expected to follow the requirements of the NYC Noise Control Code. However, the implementation of these measures would not eliminate the identified significant adverse construction noise impacts predicted to occur during hours when the loudest pieces of construction equipment are in use. In order to completely avoid significant adverse construction noise impacts, project-generated construction would have to be restricted in such a manner so as to not occur on the same block as, or within one to two blocks from, existing sensitive receptors, which would require elimination of the proposed rezoning area in the vicinity of these sensitive receptors. This would severely limit achievable development density and the Proposed Actions' goals and objectives.

Overall, given the above-described limitations, in order to fully mitigate all identified significant adverse impacts, the Proposed Actions would have to be modified to a point at which the Proposed Actions' goals and objectives would not be realized.

E. LOWER DENSITY ALTERNATIVE

The Lower Density Alternative was developed for the purposes of assessing whether lower density residential development in some portions of the Project Area would eliminate or reduce the significant, adverse impacts of the Proposed Actions while also meeting the goals and objectives of the Proposed Actions. Under the Lower Density Alternative, the proposal analyzed is the same as that with the Proposed Actions except for the locations indicated below and shown in **Figure 22-1**. Under the Lower Density Alternative, Lexington Avenue and portions of Second Avenue and East 116th Street would be removed from the Project Area (see **Table 22-2**). Specifically:

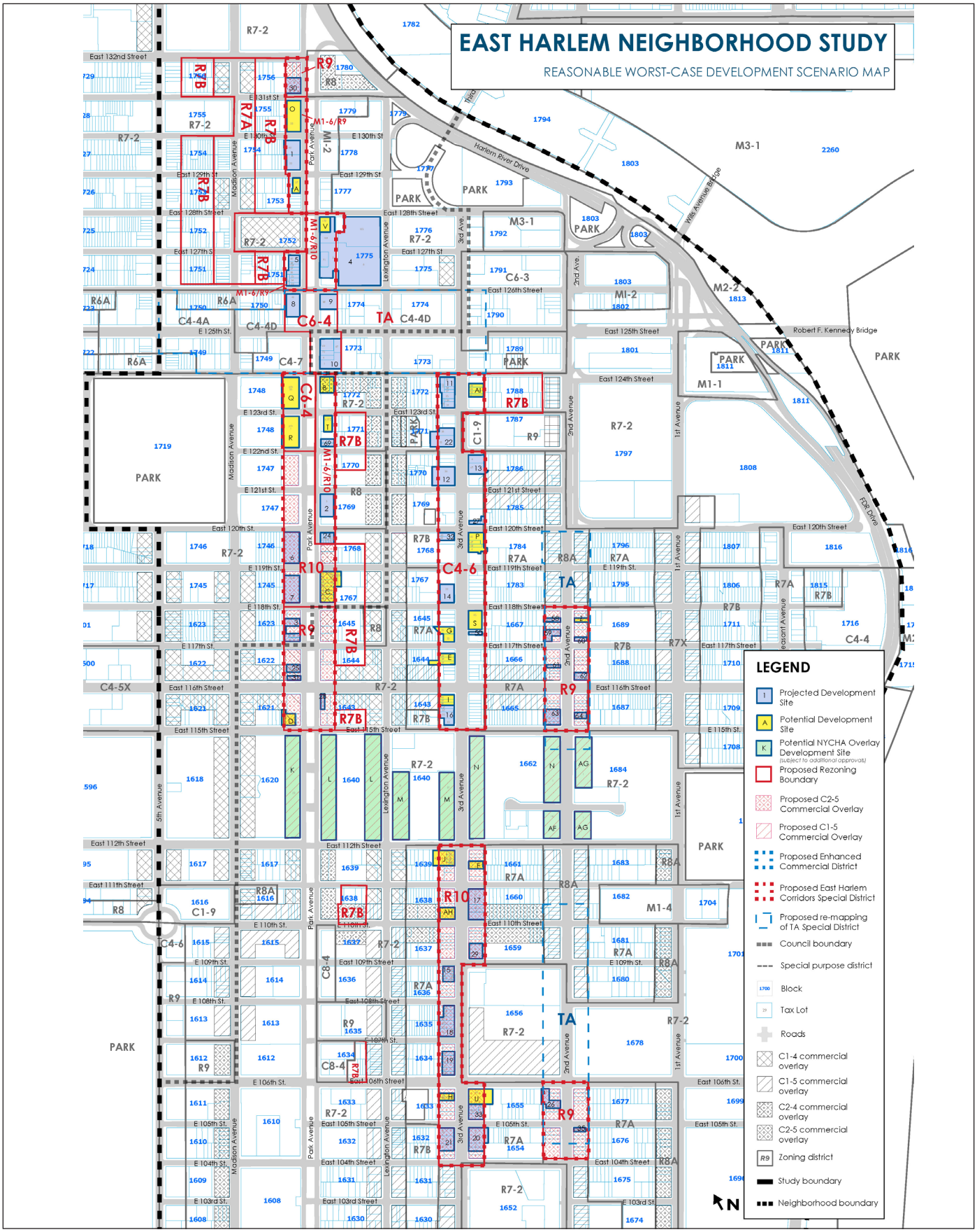
- Second Avenue north of East 118th Street and between East 108th and East 112th Streets would not be rezoned and would remain mapped as an R8A district. However, like the Proposed Actions, the Special Transit Land Use District (TA) would be mapped along Second Avenue in anticipation of the second phase of the Second Avenue Subway;
- The midblock areas of East 116th Street generally between Park and Second Avenues would not be rezoned and would remain mapped as R7-2 and R7A districts. However, like the Proposed Actions, the nodes (intersections of East 116th Street with Park, Third and Second Avenues) would be mapped as an R9 district;
- The Lexington Avenue corridor would be removed entirely from the Project Area and the existing R7-2 and R8 zoning districts would remain.

The removal of portions of these corridors from the Project Area would result in fewer projected and potential development sites. Twenty-six projected development sites and seven potential development sites would be removed under this alternative. The remaining projected development sites would contain approximately 388,340 sf of retail space, 211,873 sf of office space, 106,317 sf of community facility space, 155,171 sf of industrial space, and 5,005 DUs (see **Table 22-3**).

Table 22-2
Comparison of Zoning Changes Under the Lower Density Alternatives

Proposed Zoning—With Action			Proposed Zoning—Lower Density Alternative			RWCDS Projected and Potential Development Sites Affected
District	Maximum FAR	Max. Bldg. Height (ft)	District	Maximum FAR	Max. Bldg. Height (ft)	
R9	8.5	175	R8A	7.2[1]	120	53, 54, 55, 56, 57, 65, 66, 67; X, Y, AA
R9	8.5	175	R7-2	4.0[2]	Sky Exposure Plane	23, 38, 68
R7D	5.6[1]	115	R7-2	4.0[2]	Sky Exposure Plane	36, 37, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 68; AB, AC, AD
R7D	5.6[1]	115	R7A	4.6[1]	80	49, 51; AE

Notes:
[1] With ***Inclusionary Housing designated area*** bonus.
[2] FAR for wide streets outside of the ***Manhattan Core***. The ***Manhattan Core*** is defined by the New York City Department of City Planning (DCP) as the area extending from the southern tip of Manhattan at The Battery to West 110th Street on the West Side and East 96th Street on the East Side.
Source: New York City DCP Handbook.



Reasonable Worst-Case Development Scenario
Lower Density Alternative

Figure 22-1

Table 22-3
Comparison of RWCDS for Projected Development Sites—With Action vs. Lower Density Alternatives

Site	Residential (DU)		Retail/ Restaurant		Grocery Store		Office		Industrial		Comm. Facility		Total Building Floor Area	
	WA[1]	LDA[2]	WA	LDA	WA	LDA	WA	LDA	WA	LDA	WA	LDA	WA[1]	LDA[2]
All Sites	5,960	5,005	470,051	360,932	37,500	27,408	219,771	211,873	155,171	155,171	112,413	106,317	6,433,375	5,440,315

Notes:
[1] WA = With Action (Sites 1-33, 35-69).
[2] LDA = Lower Density Alternative (Sites 1-22, 24-35, 50, 58-64, 69).

The Lower Density Alternative would result in the same mix of uses as the Proposed Actions. As shown in **Table 22-4**, the total amount of development would be reduced by approximately 15 percent under the Lower Density Alternative. The Lower Density Alternative would support, to a lesser degree, the Proposed Actions' goals of promoting affordable housing development by increasing residential density and establishing MIH, encouraging economic development by mapping new commercial districts and increasing density in a highly transit accessible area of the City, and creating pedestrian-friendly streets through active ground floor retail uses. However, as the Lower Density Alternative would result in fewer residential units, it would be less supportive of the Proposed Action's objectives while continuing to result in significant adverse impacts related to community facilities, open space, transportation, noise, and construction.

It is noted that for CEQR impact areas that are density related (e.g., community facilities, open space, traffic, etc.), the effects of this alternative are reduced in magnitude since there would be fewer dwelling units, and therefore, fewer residents than under the Proposed Actions. However, since the projected and potential development sites for the Lower Density Alternative are the same as for the Proposed Actions, site-specific impacts (e.g., hazardous materials) would be the same under both scenarios. As compared to the Proposed Actions, the significant adverse impacts expected under the Lower Density Alternative would be generally the same, although the duration and/or extent of the impacts would be less due to the smaller number of projected and potential development sites and overall lower density. The Lower Density Alternative would result in the same significant adverse impacts related to shadows, historic and cultural resources, transportation (traffic, pedestrians, and transit) and construction. Mitigation measures for the impacts under the Lower Density Alternative would be similar to mitigation measures under the Proposed Actions.

Table 22-4
Comparison of Total RWCDS for Projected Development Sites under With Action Conditions vs. Lower Density Alternative

Land Use	No Action Condition	With Action Condition	Lower Density Alternative	No Action to With Action Increment	No Action to Lower Density Alternative Increment	Difference
Residential						
Total Res. DU	2,472	5,960	5,005	3,488	3,078	-410
Commercial						
Retail[1]	385,009	507,551	388,340	122,542	126,922	4,380
Auto Related	10,592	0	0	-10,592	-10,592	0
Hotel	32,974	0	0	-32,974	-32,974	0
Office	76,559	219,771	211,873	143,212	135,314	-7,898
Warehouse/ Storage	57,614	0	0	-57,614	-57,614	0
Total Commercial SF	**562,748**	**727,322**	**600,213**	**164,955**	**161,437**	-3,518
Other Uses						
Industrial	22,777	155,171	155,171	132,394	132,394	0
Community Facility	7,395	112,437	106,317	105,042	98,922	-6,120
Parking						
Parking Spaces	345	293	293	-53	-53	0
Population						
Residents	5,959	14,364	12,062	8,405	7,419	-986
Workers	1,723	3,265	2,784	1,543	1,464	-79

Note: [1] Retail is composed of the following uses; local retail, restaurant, grocery store, and destination retail.

LAND USE, ZONING, AND PUBLIC POLICY

As under the Proposed Actions, no significant adverse impacts on land use, zoning, or public policy are anticipated under the Lower Density Alternative. Both the Proposed Actions and the Lower Density Alternative would result in an overall increase in residential, commercial, community facility, and industrial uses, when compared with conditions in the future without the Proposed Actions. As noted above, the Lower Density Alternative would result in the same amount of industrial development as the Proposed Actions. However, this alternative would lead to the production of fewer housing units, including fewer affordable housing units, and less commercial and community facility development, as compared with the Proposed Actions. The Lower Density Alternative would include similar zoning actions as the Proposed Actions (zoning map amendments and zoning text changes), but the zoning changes would affect a smaller area. The Lower Density Alternative, like the Proposed Actions, would increase density along Park and Third Avenues and portions of Second Avenue. As under the Proposed Actions, the highest permitted floor area ratio (FAR) under the Lower Density Alternative would generally be along Park and Third Avenues, with up to 12.0 FAR permitted for residential uses. The Lower Density Alternative, like the Proposed Actions, would include mapping contextual zoning districts that would protect the existing built context of East Harlem by requiring new development in select midblock locations to better match the form of existing buildings. Both the Proposed Actions and the Lower Density Alternative would also map new commercial overlays and new mixed-use (MX) districts to incentivize mixed-use development, permit industrial uses to expand in select areas, facilitate active streetscapes, and encourage new retail development to support the anticipated residential development in the area.

The Lower Density Alternative would support, to a slightly lesser degree, the housing goals of the Proposed Actions. Like the Proposed Actions, this alternative would change zoning designations within the Project Area in a manner that is intended to promote affordable housing development, encourage economic development, create pedestrian friendly streets, and introduce new community resources to foster a more equitable neighborhood. Although this alternative would increase the supply of housing available in East New York and increase the supply of affordable housing, which is consistent with City housing policy, the additional housing built would not be as extensive as that built under the Proposed Actions, nor would this alternative introduce as much affordable housing as that introduced under the Proposed Actions. Therefore, since this alternative would lead to the production of fewer housing units, the beneficial effects of the Lesser Density Alternative would not be as great as those produced under the Proposed Actions.

SOCIOECONOMIC CONDITIONS

Neither the Proposed Actions nor the Lower Density Alternative would result in significant adverse impacts. While residential and business displacement would occur under the Proposed Actions and the Lower Density Alternative, the Lower Density Alternative would result in comparatively less displacement because the size of the Project Area would be decreased significantly. Far fewer projected and potential development sites are identified under the Lower Density Alternative. Consequently, less displacement would occur with the Lower Density Alternative.

Similar to the Proposed Action, the Lower Density Alternative would not result in significant adverse impacts due to changes in socioeconomic conditions. This alternative would result in 4,506,109 gsf of residential floor area (5,005 DUs), 600,213 sf of commercial floor area, 106,317 sf of community facility floor area, and 155,171 sf of manufacturing floor area. When compared with the Proposed Actions, the Lower Density Alternative results in 955 (16 percent) fewer DUs, including fewer affordable DUs. In addition, the Lower Density Alternative would result in 127,109 (17.5 percent) fewer square feet of commercial area, and 6,120 (5.44 percent) fewer square feet of community facility space. In total, the number of workers introduced in the Project Area under the Lower Density Alternative would be approximately 1,463 lower than under the Proposed Actions.

The Lower Density Alternative would result in less direct residential and business/institutional displacement as compared with the Proposed Actions. As with the Proposed Actions, the direct displacement of these uses would not constitute a significant adverse impact. The Proposed Actions and Lower Density Alternative would not displace a substantial or significant portion of the study area population, nor would they result in the direct displacement of businesses/institutions that provide products or services essential to the local economy that would no longer be available to local residents and businesses due to the difficulty of relocating, or the subject of regulations or publicly adopted plans to preserve, enhance, or protect them.

Like the Proposed Actions, the Lower Density Alternative would map mixed-use districts. The proposed MX districts are intended to retain and support the growth and expansion of existing commercial and light manufacturing uses, while allowing active ground-floor retail uses and residential growth to occur. The MX district under both the Proposed Actions and the Lower Density Alternative would allow for high-performance manufacturing and support a mix of land uses including light industrial, automotive, warehousing/storage, residential, as well as vehicle and open storage uses; however, there would be fewer of these uses in the Lower Density Alternative.

Like the Proposed Actions, the Lower Density Alternative would expand the opportunity for additional housing and promote the development of affordable housing within the Project Area, although the total number of housing units as compared with the Proposed Actions would be lower. Like the Proposed Actions, this alternative would serve to support housing growth and affordable housing in the project area. The additional housing units would provide added supply to meet the increasing housing demands in New York City, although there would be fewer affordable units than under the Proposed Action as noted above. With fewer residential units, the market may be less likely to meet the long-term demand for new housing in the area.

COMMUNITY FACILITIES AND SERVICES

The Lower Density Alternative would introduce fewer residents to the study area as compared with the Proposed Actions, and therefore, would result in a smaller increase in demand on area community facilities. Neither the Proposed Actions nor the Lower Density Alternative would result in significant adverse impacts to public schools, child care facilities, library services, or police, fire, and emergency medical services.

OPEN SPACE

The Lower Density Alternative, like the Proposed Actions, would not result in significant adverse open space impacts. As the Lower Density Alternative would introduce fewer residents and workers than the Proposed Actions, in terms of indirect effects, the open space ratios for both the non-residential and residential open space study areas under the Lower Density Alternative would, therefore, generally be slightly higher than those under the Proposed Actions.

SHADOWS

The Lower Density Alternative would reduce the duration and extent of incremental shadow throughout the year on several sunlight-sensitive open spaces and historic resources when compared with the Proposed Actions. The Lower Density Alternative would not reduce shadow on any of the resources significantly impacted by new shadow with the Proposed Actions. Therefore, the Lower Density Alternative would significantly impact the same three sunlight-sensitive resources as the Proposed Actions: El Catano Community Garden, Eugene McCabe Field, and Jackie Robinson Community Garden.

On the March 21 analysis day, the Lower Density Alternative would reduce the duration of incremental shadow on six sunlight-sensitive open space resources: Carver Community Garden, Corozal Family Garden, the East 120th Street & Second Avenue Greenstreet, La Casita Community Garden, Poor Richard's Playground, and Wagner Playground. Carver Community Garden, Corozal Family Garden, the East 120th Street & Second Avenue Greenstreet, La Casita Community Garden, and Wagner Playground would no longer be cast in any incremental shadow on March 21. The central portion of Poor Richard's playground would receive up to 40 minutes of additional direct sunlight.

On the May 6 analysis day, the Lower Density Alternative would reduce the duration of incremental shadow on eleven open space sunlight-sensitive resources: Carver Community Garden, Corozal Family Garden, the East 120th Street & Second Avenue Greenstreet, East 124th Street & Second Avenue Greenstreet, La Casita Community Garden, Papo's Garden, Poor Richard's Playground, Triboro Plaza, Wagner Houses Pool, and Wagner Houses Recreation Areas. Of these resources, Carver Community Garden, the East 120th Street & Second Avenue Greenstreet, East 124th Street & Second Avenue Greenstreet, La Casita Community Garden, Triboro Plaza, Wagner Playground, Wagner Houses Pool, and Wagner Houses Recreation Areas

would no longer be cast in any incremental shadow on May 6. The central portion of Corozal Family Garden would receive approximately 15 additional minutes of direct sunlight. The northern edge of Dr. Ronald E. McNair Playground along East 123rd Street would receive up to 30 minutes of additional direct sunlight. The front portion of Papo's Garden would receive up to 1 hour of additional direct sunlight. The eastern corner of Poor Richard's playground along Second Avenue would receive up to 1 hour and 15 minutes of additional direct sunlight.

On the June 21 analysis day the Lower Density Alternative would reduce the duration of incremental shadow on twelve open space sunlight-sensitive resources: Carver Community Garden, Corozal Community Garden, Dr. Ronald E. McNair Playground, the East 120th Street & Second Avenue Greenstreet, the East 124th Street & Second Avenue Greenstreet, Neighbors of Vega Baja Community Garden, Papo's Garden, Poor Richard's Playground, Triboro Plaza, Wagner Playground, Wagner Houses Pool, and Wagner Houses Recreation Areas. Of these resources, Carver Community Garden, the East 120th Street & Second Avenue Greenstreet, the East 124th Street & Second Avenue Greenstreet, Neighbors of Vega Baja Community Garden, Papo's Garden, Triboro Plaza, Wagner Playground, Wagner Houses Pool, and Wagner Houses Recreation Areas would no longer be cast in any incremental shadow on June 21. The northern edge of McNair Playground along East 123rd Street would receive up to 30 minutes of additional direct sunlight. The rear half of the Corozal Family Garden would receive up to 1 hour and 15 minutes of additional direct sunlight. The eastern corner of Poor Richard's playground along Second Avenue would receive up to 1 hour and 30 minutes of additional direct sunlight.

On the December 21 analysis day the Lower Density Alternative would reduce the duration of incremental shadow on three sunlight-sensitive open space resources and one historic resource: Corozal Family Garden, Dream Street Park, Jefferson Houses Recreation Areas, and Saint Paul's Roman Catholic Church. Dream Street Park and Saint Paul's would no longer be cast in any incremental shadow on December 21. The entrance of Corozal Family Garden would receive approximately 30 minutes of additional direct sunlight and the playground behind Jefferson Houses building would receive 20 minutes of additional direct sunlight.

HISTORIC AND CULTURAL RESOURCES

Like the Proposed Actions, the Lower Density Alternative would result in significant adverse impacts to architectural resources as a result of potential inadvertent construction-related damage. The Lower Density Alternative would result in the same significant adverse construction-related impacts that would occur with the Proposed Actions.

URBAN DESIGN AND VISUAL RESOURCES

Like the Proposed Actions, the Lower Density Alternative would not result in significant adverse impacts on urban design, view corridors, and visual resources. With the Lower Density Alternative, Lexington Avenue and portions of Second Avenue and East 116th Street would not be rezoned, which would result in less residential development and pedestrian activity as compared with the Proposed Actions.

NATURAL RESOURCES

Like the Proposed Actions, the Lower Density Alternative would not result in significant adverse impacts to natural resources. With the Lower Density Alternative, the identified projected development sites are assumed to either remain unchanged from existing conditions, or

become occupied by uses that are as-of-right under existing zoning and reflect current trends. No significant changes to natural resources are anticipated.

HAZARDOUS MATERIALS

Like the Proposed Actions, development sites identified under the Lower Density Alternative would be mapped with (E) designations to preclude exposure to hazardous materials. However, 25 fewer projected development sites and seven fewer potential development sites would be mapped with an (E) designation under the Lower Density Alternative. With respect to these development sites, there would be no controls to minimize exposure to hazardous materials.

WATER AND SEWER INFRASTRUCTURE

Neither the Proposed Actions nor the Lower Density Alternative would result in significant adverse impacts on the City's water supply, wastewater treatment, or stormwater conveyance infrastructure. Compared with the Proposed Actions, the Lower Density Alternative would generate less demand on the City's water supply and wastewater treatment infrastructure. Similar to the Proposed Actions, the incorporation of selected BMPs would be required as part of DEP's site connection application process for new buildings.

SOLID WASTE AND SANITATION SERVICES

Neither the Proposed Actions nor the Lower Density Alternative would adversely affect solid waste and sanitation services or place a significant burden on the City's solid waste management system. While solid waste generated by the projected development sites would increase under both the Lower Density Alternative and the Proposed Actions, the Lower Density Alternative would generate less demand on New York City's solid waste services and sanitation services.

ENERGY

Neither the Proposed Actions nor the Lower Density Alternative would result in significant adverse impacts with respect to the transmission or generation of energy. Like the Proposed Actions, the Lower Density Alternative would generate increased demands on New York City's energy services, but the demand generated under the Lower Density Alternative would be considerably less than for the Proposed Actions. However, under both the Proposed Actions and the Lower Density Alternative, the annual increase in demand would represent a negligible amount of the City's forecasted annual energy requirements for 2027.

TRANSPORTATION

The removal of 26 projected development sites under the Lower Density Alternative would generally result in fewer action generated vehicle and transit trips and less demand for on-street and off-street public parking compared with the Proposed Actions. There would also be fewer total pedestrian trips (walk-only trips plus pedestrians en route to/from subway stations and bus stops) in all peak hours except the weekday midday when a greater amount of local retail uses under the Lower Density Alternative's RWCDS would result in a modest increase in pedestrian demand compared with the Proposed Actions. Based on the transportation planning factors detailed in Chapter 14, "Transportation," the Lower Density Alternative would generate approximately 324, 316, and 274 fewer incremental person trips in the weekday AM, PM, and Saturday peak hours, respectively (see **Table 22-5**). Depending on peak hour, this represents an approximately five percent to eight percent decrease in action generated person trips compared with the Proposed Actions. In the weekday midday period, the Lower Density Alternative would generate approximately 252 more person trips (a seven percent increase) compared with the Proposed

Actions. Overall, it is anticipated that the Lower Density Alternative would result in similar or fewer significant adverse traffic, subway and bus impacts. Given that the relatively small increase in pedestrian trips in the midday peak hour compared with the Proposed Actions would be dispersed throughout the Project Area, additional significant pedestrian impacts over and above the one sidewalk impact identified under the Proposed Actions are not anticipated under the Lower Density Alternative. While both the Proposed Actions and the Lower Density Alternative are expected to result in a parking shortfall in the weekday midday, the shortfall under the alternative would be somewhat smaller than under the Proposed Actions, and there would be no significant adverse parking impacts under either scenario based on CEQR Technical Manual criteria.

Table 22-5
Comparison of Incremental Peak Hour Person Trips by Mode
Proposed Actions vs. Lower Density Alternative

Scenario	Auto	Taxi	Subway/ Railroad	Bus	Walk/ Other	Total
Weekday AM						
Proposed Actions	400	88	2,350	511	665	4,014
Lower Density Alternative	365	82	2,093	463	687	3,690
Net Difference	***(35)***	***(6)***	***(257)***	***(48)***	***22***	***(324)***
Weekday Midday						
Proposed Actions	238	150	1,296	325	1,559	3,568
Lower Density Alternative	225	138	1,215	320	1,922	3,820
Difference	***(13)***	***(12)***	***(81)***	***(5)***	***363***	***252***
Weekday PM						
Proposed Actions	481	108	2,716	617	1,460	5,382
Lower Density Alternative	444	97	2,436	566	1,523	5,066
Difference	***(37)***	***(11)***	***(280)***	***(51)***	***63***	***(316)***
Saturday						
Proposed Actions	404	123	2,101	575	1,835	5,038
Lower Density Alternative	374	108	1,887	526	1,869	4,764
Difference	***(30)***	***(15)***	***(214)***	***(49)***	***34***	***(274)***

TRAFFIC

As presented in **Table 22-6**, compared with the Proposed Actions, the Lower Density Alternative would generate approximately 42, 25, 44, and 26 fewer incremental vehicle trips during the weekday AM, midday, and PM and Saturday peak hours, respectively. Depending on the peak hour, this represents a decrease of approximately seven percent to nine percent as compared with the incremental vehicle trips that would be generated under the Proposed Actions. Consequently, the number of lane groups and intersections with significant adverse traffic impacts under the Lower Density Alternative would likely be comparable to or less than the number under the Proposed Actions. As discussed in Chapter 14, "Transportation," under the Proposed Actions there would be a total of 31 impacted lane groups at 19 intersections in the weekday AM peak hour, 15 impacted lane groups at 12 intersections in the midday, 32 impacted lane groups at 22 intersections in the PM, and 19 impacted lane groups at 16 intersections in the Saturday peak hour.

Table 22-6
Comparison of Incremental Peak Hour Vehicle Trips by Mode Proposed Actions vs. Lower Density Alternative

Scenario	Auto	Taxi	Truck	Total
Weekday AM				
Proposed Actions	340	136	8	484
Lower Density Alternative	308	126	8	442
Net Difference	***(32)***	***(10)***	***0***	***(42)***
Weekday AM				
Proposed Actions	146	204	20	370
Lower Density Alternative	137	190	18	345
Net Difference	***(9)***	***(14)***	***(2)***	***(25)***
Weekday PM				
Proposed Actions	384	156	0	540
Lower Density Alternative	354	142	0	496
Net Difference	***(30)***	***(14)***	***0***	***(44)***
Saturday				
Proposed Actions	206	132	10	348
Lower Density Alternative	194	120	8	322
Net Difference	***(12)***	***(12)***	***(2)***	***(26)***

TRANSIT

Subway

Subway Stations

As shown in **Table 22-5**, the Lower Density Alternative would generate 257 and 280 fewer incremental subway trips during the weekday AM and PM peak hours, respectively, than would the Proposed Actions. There would likely be fewer trips at all four analyzed Lexington Avenue Line subway stations. Consequently, the number of subway station impacts under the Lower Density Alternative would likely be comparable to or less than the number under the Proposed Actions. As discussed in Chapter 14, "Transportation," under the Proposed Actions, one street stair at the 103rd Street station, one street stair at the 116th Street station, and two street stairs and two platform stairs at the 125th Street station would be significantly adversely impacted by With Action demand in one or both peak hours, and there would be no significant adverse impacts to any fare arrays at analyzed subway stations.

It is anticipated that both No Action and With Action demand at the four analyzed Lexington Avenue Line stations would be reduced with completion of Second Avenue Subway Phase II in 2027. Therefore, like the Proposed Actions, some, if not all, significant peak hour stair impacts that would occur at Lexington Avenue Line stations under the Lower Density Alternative would potentially not occur with implementation of Phase II of the Second Avenue Subway.

Subway Line Haul

Under the Proposed Actions, no analyzed subway line would be significantly adversely impacted in either the weekday AM or PM peak hour under *CEQR Technical Manual* impact criteria. As the Lower Density Alternative would generate fewer new subway trips than the Proposed Actions, this alternative is also not expected to result in significant adverse subway line haul impacts in either period.

Bus

As presented in **Table 22-5**, the Lower Density Alternative would generate 48 and 51 fewer incremental bus trips during the weekday AM and PM peak hours, respectively, than would the Proposed Actions. Consequently, there would likely be fewer trips on both analyzed bus routes—the M15 SBS and the M101 LTD—and the Proposed Action's significant adverse AM

peak hour impact to southbound M15 SBS buses would potentially not occur under the Lower Density Alternative. As under the Proposed Actions, a significant adverse impact to southbound M15 SBS service under the Lower Density Alternative could be mitigated by increasing the number of southbound buses from 15 to 16 in the weekday AM peak hour. The over-capacity condition on the southbound M15 SBS service in the AM would likely not occur in 2027 with completion Phase II of the Second Avenue Subway.

PEDESTRIANS

As discussed above, under the Lower Density Alternative there would be fewer total pedestrian trips (walk-only trips plus pedestrians en route to/from subway stations and bus stops) in all peak hours except the weekday midday when a greater amount of local retail uses under this alternative's RWCDS would result in an increase in pedestrian demand compared with the Proposed Actions. As shown in **Table 22-7**, the Lower Density Alternative is expected to generate 3,243, 3,457, 4,525 and 4,282 incremental pedestrian trips (including walk-only trips and trips to/from area transit services) in the weekday AM, midday and PM and Saturday peak hours, respectively, compared with the 3,526, 3,180, 4,793, and 4,511 incremental pedestrian trips that would be generated under the Proposed Actions during these same periods, respectively. Compared with the Proposed Actions, pedestrian demand under this alternative would be from five percent to eight percent less in the weekday AM and PM and Saturday peak hours, but would be nine percent higher during the weekday midday.

Table 22-7
Comparison of Incremental Peak Hour Pedestrian Trips
Proposed Actions vs. Lower Density Alternative

Scenario	Total
Weekday AM	
Proposed Actions	3,526
Lower Density Alternative	3,243
Net Difference	***(283)***
Weekday Midday	
Proposed Actions	3,180
Lower Density Alternative	3,457
Net Difference	***277***
Weekday PM	
Proposed Actions	4,793
Lower Density Alternative	4,525
Net Difference	***(268)***
Saturday	
Proposed Actions	4,511
Lower Density Alternative	4,282
Net Difference	***(229)***
Notes: Includes walk-only trips and trips en route to/from area transit services.	

As noted above, a total of 26 projected development sites would be removed under the Lower Density Alternative. The net increase in midday pedestrian demand under this alternative would be primarily generated by six of these sites (Nos. 38, 41, 46, 52, 53, and 55) where a greater amount of local retail space would remain under the Lower Density Alternative's RWCDS than under the Proposed Actions' RWCDS. As these six sites are distributed throughout the Project Area along Second, Third, and Lexington Avenues, the increase in pedestrian demand in the midday compared with the Proposed Actions would be widely dispersed, and the number of

additional midday trips occurring on any one analyzed sidewalk or crosswalk would likely be relatively small. It should also be noted that all pedestrian elements that would be used by trips generated by these sites are projected to operate at good levels of service—LOS A, B, or C—in all peak hours under the Proposed Actions.

As discussed in Chapter 14, "Transportation," the Proposed Actions would result in a significant adverse impact to the south sidewalk on East 126th Street between Park and Lexington Avenues in all periods. As discussed above, pedestrian demand under the Lower Density Alternative would be less than under the Proposed Actions in all periods but the weekday midday, the additional weekday midday trips would be widely dispersed among six projected development sites, and all sidewalks and crosswalks that would be used by these additional trips would operate at good levels of service under the Proposed Actions. It is therefore anticipated that pedestrian conditions under the Lower Density Alternative would be generally comparable to, or better than those under the Proposed Actions in all periods, and that there would be no new significant adverse pedestrian impacts under this alternative.

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

A review of NYCDOT crash data for the 3-year reporting period between January 1, 2012, and December 31, 2014 identified eight intersections in the traffic and pedestrian study areas as high crash accident locations. Under both the Proposed Actions and the Lower Density Alternative, additional improvements to increase pedestrian/bicyclist safety at high crash locations could include signal timing modifications to accommodate slower walking speeds, improved street lighting and the installation of high visibility crosswalks.

PARKING

Under both the Proposed Actions and the Lower Density Alternative, two existing public parking facilities with a total of 110 spaces would be displaced, and it is assumed that 341 accessory parking spaces would be developed on projected development sites. However, the elimination of 26 projected development sites under the Lower Density Alternative would result in less demand for on-street and off-street public parking compared with the Proposed Actions.

Under the Proposed Actions, the combined supply of on-street and public off-street parking capacity would be sufficient to accommodate overnight demand; however, there would be a deficit of approximately 174 spaces of on-street and off-street public parking capacity in the weekday midday period. It is anticipated that there would be a comparable albeit slightly smaller parking deficit under the Lower Density Alternative. As parking shortfalls in this area of Manhattan are not considered a significant adverse impact under *CEQR Technical Manual* criteria, significant impacts are not anticipated under either the Proposed Actions or the Lower Density Alternative.

AIR QUALITY

MOBILE SOURCES

In the Lower Density Alternative, emissions from traffic demand in the study area would increase as a result of background growth, development that could occur pursuant to existing zoning (i.e., as-of-right-development), and other development projects likely to occur within and in the vicinity of the Project Area. Like the Proposed Actions, the Lower Density Alternative would not result in significant adverse mobile source impacts.

STATIONARY SOURCES

While some development within the study area would occur under the Lower Density Alternative, the Proposed Actions would result in more development and therefore the emissions from heat and hot water systems associated with the Proposed Actions would cumulatively be greater than the emissions from heat and hot water systems in the Lower Density Alternative. However, unlike the Proposed Actions, the Lower Density Alternative would result in 26 fewer projected development sites and 7 fewer potential development sites, which would result in fewer sites being mapped with an (E) designation requiring an environmental assessment of air quality exposure as conducted for the Proposed Actions. Specifically, nine of the projected development sites and two of the potential development sites would not have the restrictions specified in Chapter 15 for the control of emissions from heat and hot water systems, which would be designed to ensure that there would be no significant adverse air quality impacts at nearby receptor locations.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

GREENHOUSE GAS EMISSIONS

With less development than under the Proposed Actions, the Lower Density Alternative would have less energy use and would therefore result in fewer carbon dioxide equivalent (CO_2e) emissions per year. Neither the Proposed Actions nor the Lower Density Alternative would result in significant GHG emission or climate change impacts.

RESILIENCE TO CLIMATE CHANGE

Similar to the Proposed Actions, since sites would be developed as a result of the Lower Density Alternative but would not otherwise be controlled by the City, and since implementing specific resilience measures for each site prior to design while considering local street and utility elevations and the effect on existing buildings is not practicable, addressing resilience through the Lower Density Alternative is not practicable. Resilience for the Project Area will be addressed in the future as part of the resilience process for the City overall.

Regarding the impact of the Lower Density Alternative on resilience in the area and on other environmental effects as they may be affected by climate change, the Proposed Actions would not result in any development in the water or on the waterfront, and therefore other considerations identified in WRP Policy 6.2 such as providing protection to avoid coastal erosion, protecting other properties, and other design considerations for waterfront areas, are not relevant for the Lower Density Alternative. The Lower Density Alternative would also not adversely affect other resources (including ecological systems, public access, visual quality, water-dependent uses, infrastructure, and adjacent properties) due to climate change.

NOISE

Under the Lower Density Alternative, less development would occur as compared to the Proposed Actions, resulting in fewer vehicular trips. Traffic volumes would be lower as compared to the Proposed Actions. The Lower Density Alternative would result in 26 fewer projected development sites and 7 fewer potential development sites, which would not be mapped with an E designation requiring an environmental assessment of noise exposure as conducted for the Proposed Actions. Specifically, they would not have the restrictions specified in Chapter 17 for window-wall attenuation.

PUBLIC HEALTH

Neither the Proposed Actions nor the Lower Density Alternative would result in significant adverse public health impacts. Under the Lower Density Alternative, no unmitigated significant adverse impacts would occur in the areas of hazardous materials, air quality, noise, or construction, and thus there would be no significant adverse public health impacts associated with construction or operation of the new development anticipated under the Lower Density Alternative.

NEIGHBORHOOD CHARACTER

Like the Proposed Actions, the Lower Density Alternative would not result in significant adverse impacts. According to the *CEQR Technical Manual*, a proposed action could have a significant adverse neighborhood character impact if it would have the potential to affect the defining features of the neighborhood, either through the potential for a significant adverse impact in any relevant technical area, or through a combination of moderate effects in those technical areas. The Proposed Actions would not result in significant adverse impacts in the areas of land use, zoning, and public policy; socioeconomic conditions; open space; urban design and visual resources; traffic; and noise.

As discussed in Chapter 19, "Neighborhood Character," although significant adverse impacts would occur with respect to historic resources, shadows and traffic, these impacts would not result in significant adverse impacts to neighborhood character. The significant adverse historic resources, shadows and traffic impacts would not affect any defining feature of neighborhood character, nor would a combination of moderately adverse effects affect such a defining feature. The Lower Density Alternative would result in fewer affordable units as compared with the Proposed Actions.

CONSTRUCTION

The Lower Density Alternative would result in the same construction noise impacts that would occur with the Proposed Actions. As the amount of new construction under the Lower Density Alternative would be less as compared with the Proposed Actions, the Lower Density Alternative would not generate as much temporary construction disruption. Neither the Proposed Actions nor the Lower Density Alternative would result in significant adverse construction impacts with respect to land use and neighborhood character, socioeconomic conditions, community facilities, open space, hazardous materials, air quality, or vibration. The Lower Density Alternative would involve less soil disturbance, but potentially the controls on its performance would not be as stringent as under the Proposed Actions.

Under the Lower Density Alternative, Lexington Avenue and portions of Second Avenue and East 116th Street would be removed from the Project Area. The removal of portions of these corridors from the Project Area would result in the removal of 26 projected development sites under this alternative. The construction transportation analysis is based on the overall peak worker and truck trips during construction under the Proposed Actions. With the removal of 26 projected development sites, the overall peak work and truck trips during construction under the Lower Density Alternative are expected to be less than those under the Proposed Actions. Therefore, the potential for significant adverse transportation impacts under the Lower Density Alternative would be reduced when compared with those under the Proposed Actions.

The construction processes and phasing under the Lower Density Alternative for the remaining projected development sites are expected to be similar to those for the Proposed Actions.

Therefore, it is anticipated that the predicted noise levels due to peak construction-related activities at these locations under the Lower Density Alternative would be similar to the Proposed Actions. However, since the Lower Density Alternative would result in fewer projected development sites, the extent of the significant adverse noise impacts under this alternative would be reduced when compared with those under the Proposed Actions.

As discussed above, like the Proposed Actions, the Lower Density Alternative would result in significant adverse impacts to architectural resources as a result of demolition and construction or through inadvertent construction-related damage. The Lower Density Alternative would result in the same significant adverse construction-related impacts that would occur with the Proposed Actions.

MITIGATION MEASURES REQUIRED FOR THE LOWER DENSITY ALTERNATIVE

SHADOWS

Similar to the Proposed Actions, the Lower Density Alternative would result in new shadows that would significantly impact three sunlight-sensitive resources: El Catano Community Garden, Eugene McCabe Field, and Jackie Robinson Community Garden. The duration or extent of incremental shadow cast on these open spaces would be great enough to significantly impact the use of the open space or its ability to support vegetation.

Like the Proposed Actions, in the Lower Density Alternative possible measures that could mitigate significant adverse shadow impacts on open spaces may include relocating sunlight-sensitive features within an open space to avoid sunlight loss; relocating or replacing vegetation; undertaking additional maintenance to reduce the likelihood of species loss; or providing replacement facilities on another nearby site. Other potential mitigation strategies include the redesign or reorientation of the open space site plan to provide for replacement facilities, vegetation, or other features. Other measures could include strategies to reduce or eliminate shadow impacts, including modifications to the height, shape, size, or orientation of a proposed development that creates the significant adverse shadow impact.

HISTORIC AND CULTURAL RESOURCES

Like the Proposed Actions, the Lower Density Alternative would result in significant adverse impacts to three architectural resources as a result of potential inadvertent construction-related damage. The Lower Density Alternative would result in the same significant adverse construction-related impacts that would occur with the Proposed Actions.

ARCHITECTURAL RESOURCES

Possible mitigation may include measures comparable to TPPN #10/88 applicable to the eligible historic resources. In the absence of site-specific approval, a mechanism would have to be developed to ensure implementation and compliance, since it is not known and cannot be assumed that owners of these properties would voluntarily implement the mitigation. Should no feasible mitigation be identified, the significant adverse construction impact on the historic resources would be unavoidable.

ARCHAEOLOGICAL RESOURCES

Mitigation measures include Phase 1B testing, which is designed to confirm the presence or absence of archaeological resources in areas of archaeological sensitivity that are identified in the Phase 1A study. Based on the results of the Phase 1B investigation and in consultation with

the New York City Landmarks Preservation Commission (LPC), if the Phase 1B investigation reveals the presence of human remains, recovery of human remains would be required. Prior to the completion of the Phase 1B archaeological investigation, a Phase 1B Testing Protocol and Human Remains Discovery Plan would be prepared and submitted to LPC for review and concurrence.

Projected Development Site 4 contains a City-owned lot under New York City Department of Housing Preservation and Development (HPD) jurisdiction. Development of Projected Development Site 4 would be in accordance with HPD requirements, including measures to require prospective sponsors to conduct archaeological testing and if warranted, recovery of human remains. Potential Development Site V is owned by a private entity. There is no mechanism in place to require a developer to conduct archaeological testing or require the preservation or documentation of archaeological resources, should they exist. Because there is no mechanism to avoid or mitigate potential impacts at Potential Development Site V, the significant adverse impact would be an unavoidable.

TRANSPORTATION

For both the Proposed Actions and the Lower Density Alternative, the identified bus transit and pedestrian impacts could be fully mitigated, and some, if not all, of the subway station impacts would likely not occur with implementation of Phase II of the Second Avenue Subway. Due to the existing congested conditions at many study area intersections, it is anticipated that a number of the significant adverse traffic impacts under the Lower Density Alternative could not be fully mitigated through standard traffic improvement measures, as would be the case under the Proposed Actions. However, it expected that fewer study area lane groups would have unmitigated significant impacts under the Lower Density Alternative than under the Proposed Actions.

Traffic

As shown in Table 21-3 and discussed in Chapter 21, "Mitigation," the Proposed Actions' traffic mitigation plan would include implementation of traffic engineering improvements such as signal timing changes and modifications to curbside parking regulations. The recommended measures would provide mitigation for many of the traffic impacts anticipated under the Proposed Actions. However, unmitigated significant impacts would remain at a total of seven lane groups at two intersections in the weekday AM peak hour, eight lane groups at three intersections in the weekday PM peak hour, and one lane group at one intersection in each of the weekday midday and Saturday peak hours.

As discussed previously, compared with the Proposed Actions, the Lower Density Alternative would generate approximately 42, 25, 44, and 26 fewer incremental vehicle trips during the weekday AM, midday, and PM and Saturday peak hours, respectively. It is therefore anticipated that the traffic mitigation measures recommended for the Proposed Actions would be similarly effective at addressing the traffic impacts that would occur under the Lower Density Alternative. In addition, given the reduction in vehicle trips under this alternative, some of the impacts that would remain unmitigated under the Proposed Actions may potentially be mitigated under the Lower Density Alternative.

Transit

Subway

Substantial reductions in both No Action and With Action demand expected to occur at Lexington Avenue Line subway stations with implementation of Second Avenue Subway Phase II, which is also expected to include improvements to pedestrian circulation elements at the 125th Street station. Therefore, it is anticipated that some, if not all, of the subway stair impacts under this alternative would not occur with implementation of Second Avenue Subway Phase II. Irrespective of whether Second Avenue Subway Phase II advances, possible mitigation measures will be evaluated with NYCT between the Draft EIS and Final EIS. In the absence of Phase II of the Second Avenue Subway or practicable mitigation measures, the subway stair impacts would remain unmitigated, as would be the case under the Proposed Actions.

Bus

The Lower Density Alternative would generate 48 and 51 fewer incremental bus trips during the weekday AM and PM peak hours, respectively, than would the Proposed Actions. Consequently, there would likely be fewer trips on the M15 SBS route, and the Proposed Action's significant adverse AM peak hour impact to southbound M15 SBS buses would potentially not occur under the Lower Density Alternative. However, as under the Proposed Actions, a significant adverse impact to southbound M15 SBS service under the Lower Density Alternative could be mitigated by increasing the number of southbound buses from 15 to 16 in the weekday AM peak hour. The general policy of the Metropolitan Transportation Authority (MTA) is to provide additional bus service where demand warrants, taking into account fiscal and operational constraints. It should also be noted that an over-capacity condition on the southbound M15 SBS service in the AM would be unlikely to occur in 2027 with completion Phase II of the Second Avenue Subway.

Pedestrians

The Proposed Actions would result in a significant adverse impact to the south sidewalk on East 126th Street between Park and Lexington Avenues in all peak hours, and this impact would also potentially occur under the Lower Density Alternative. Removal of a tree pit at the most constrained point on this sidewalk would fully mitigate the impact under the Proposed Actions, and would also mitigate any potential impact to this sidewalk under the Lower Density Alternative.

CONSTRUCTION

Like the Proposed Actions, the Lower Density Alternative would be required to follow the requirements of the NYC Noise Control Code for construction noise control measures. Specific noise control measures would be incorporated in noise mitigation plan(s), as required under the NYC Noise Code. These measures could include a variety of source and path controls.

In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures would be implemented in accordance with the NYC Noise Code:

- Equipment that meets the sound level standards specified in Subchapter 5 of the NYC Noise Control Code would be utilized from the start of construction. See Chapter 20, "Construction," for the noise levels for typical construction equipment and the mandated noise levels for the equipment that would be used for construction under the Proposed Actions.

- As early in the construction period as logistics would allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as welders, water pumps, bench saws, and table saws (i.e., early electrification) to the extent feasible and practicable.

In terms of path controls (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors), the following measures for construction would be implemented to the extent feasible and practicable:

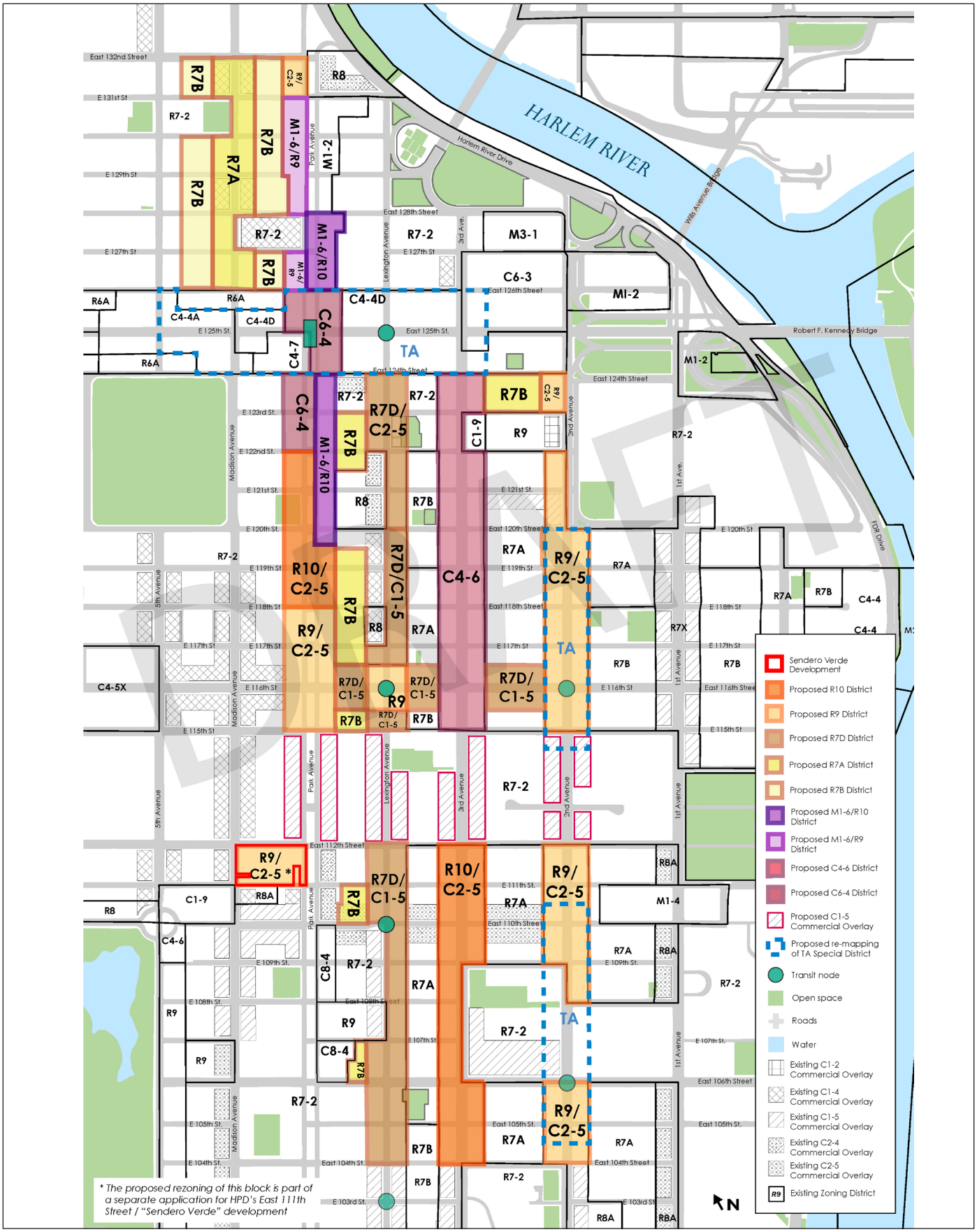
- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations.
- Noise barriers constructed from plywood or other materials would be erected to provide shielding.
- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents, where feasible) for certain dominant noise equipment would be employed to the extent feasible and practical based on the results of the construction noise calculations. The details to construct portable noise barriers, enclosures, tents, etc. are shown in DEP's "Rules for Citywide Construction Noise Mitigation."
- Where feasible and practicable, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes at the construction site based upon Title 24, Chapter 1, Subchapter 7, Section 24-163 of the NYC Administrative Code.
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.

In the event no practical or feasible mitigation measures are selected, the significant adverse construction noise impacts would be unavoidable.

F. SENDERO VERDE DEVELOPMENT ALTERNATIVE

The Sendero Verde Development Alternative analyzes the Proposed Actions and associated development under the RWCDS along with several additional actions sought by the Department of Housing Preservation and Development (HPD) and a development team (the "project sponsor") recently selected by HPD. The Sendero Verde Development Alternative would result in the development of three mixed-use buildings on City-owned property located on the block bounded by East 111th and East 112th Streets and Park and Madison Avenues. The development on the Sendero Verde Site ("the Site," or "the Development Site") is identified as Projected Development Site 70 (Site 70) in the RWCDS developed for the alternative (see **Figure 22-2**). In addition to assuming development expected from the Proposed Actions, the alternative would facilitate the new construction of three mixed-use buildings ranging from 9 to 35 stories, containing a mix of residential, community facility, and retail space (the "Sendero Verde Development").

The Sendero Verde Development Alternative would meet the goals and objective of the Proposed Actions. The alternative would provide more affordable housing as compared to the Proposed Actions. The benefits associated with improved economic activity and the preservation of existing built character in certain mid-block areas would be the same as the Proposed Actions. In comparison to the Proposed Actions, the Sendero Verde Development Alternative would result in improved pedestrian conditions, as enhanced pedestrian conditions would extend



RWCDS Sendero Verde Development Alternative

Figure 22-2

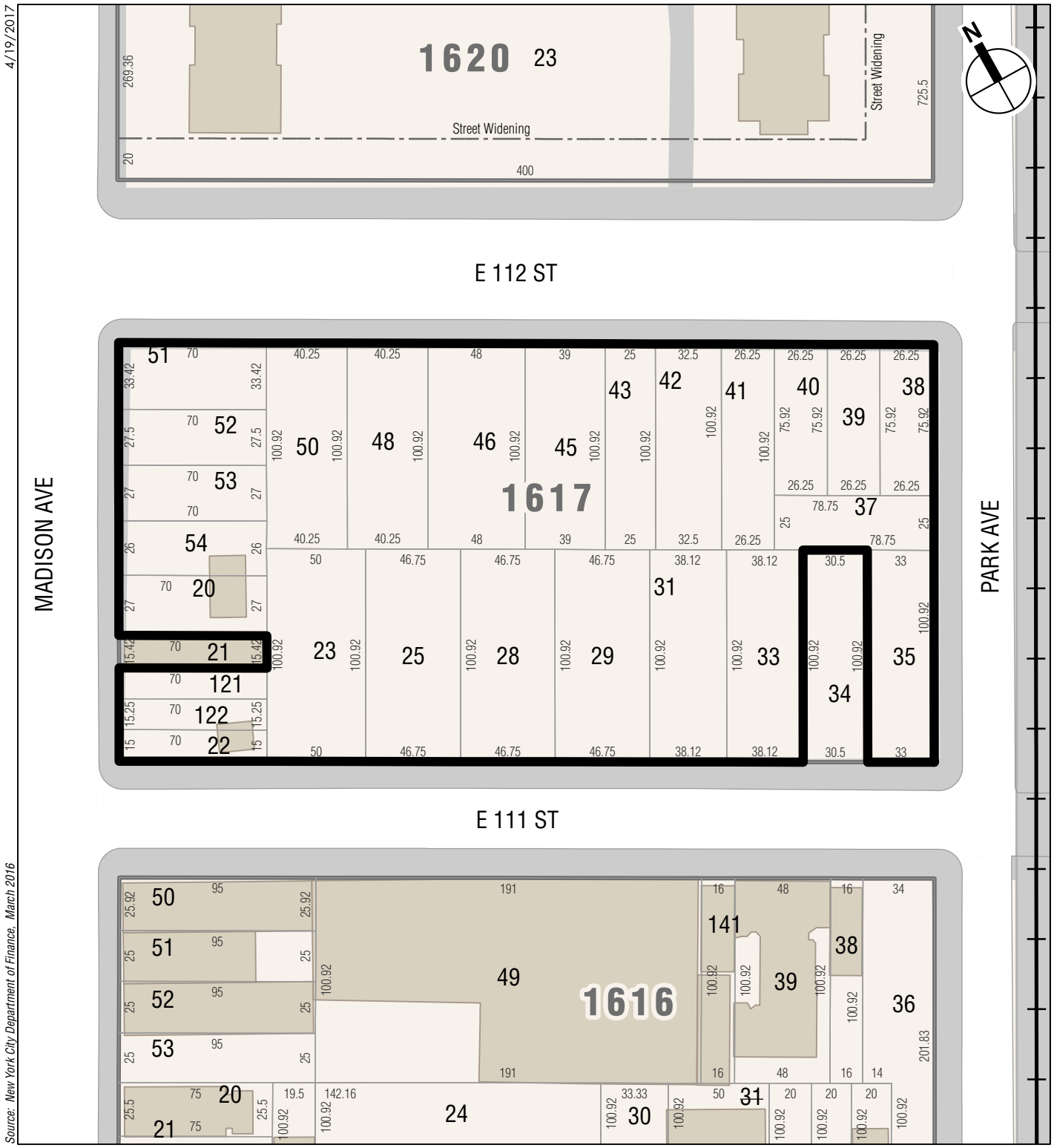
further south along Park Avenue to East 111th Street and the new public walkway and other open space planned for the Sendero Verde Site would result in improved east-west pedestrian connectivity.

As discussed in further detail below, the Sendero Verde Development Alternative would result in the same significant adverse shadow and historic and cultural resources impacts as the Proposed Actions. Like the Proposed Actions, the Sendero Verde Development Alternative would result in significant adverse impacts in the areas of transportation impacts (traffic, transit/bus, transit/subway station elements and pedestrians) and construction, but the extent and severity of the impacts would be different than those of the Proposed Actions. In addition, the Sendero Verde Development would result in significant adverse impact related to indirect effects to open space. The open space ratio for the combined user population (workers and residents) in the non-residential (¼-mile) study area would decrease by more than 5 percent (the open space ratio would decrease by 5.05 percent as compared to the No Action Condition). These significant adverse impacts and possible mitigation measures are discussed below.

The affected property is a City-owned site comprised of Manhattan Block 1617/Lots 20, 22, 23, 25, 28, 29, 31, 33, 35, 37-43, 45, 46, 48, 50-54, 121, and 122 (the "Development Site," "Site" or "Site 70"). In addition to the Development Site, Block 1617 contains two outparcels on Lots 21 and 34 which are under private ownership, and would not be redeveloped with the Sendero Verde Development, but would be affected by the proposed zoning changes (see **Figure 22-3**). Lot 21 (1679 Madison Avenue) is improved with a single building. Constructed in 1910, the building is four stories, comprising approximately 4,100 sf of floor area and containing eight DUs, as well as two commercial units. Lot 34 is currently utilized for surface parking and storage. The Development Site and two outparcels are collectively identified as the "Project Area."

The Sendero Verde Development Site is over 76,576 sf in size and currently contains six GreenThumb Gardens, located on City-owned parcels along Park and Madison Avenues. These gardens operate under a temporary license agreement with HPD. HPD proposes to acquire a portion of the Site after construction, to accommodate four of the gardens along East 111th Street. The four gardens that would be relocated onto Block 1617 following project completion are currently licensed to occupy Lots 38, 39, 40, 51, 52, and 53 and the lot area of those lots constitutes the minimum amount required for the relocation space. Upon completion of the Sendero Verde Development and acquisition of the garden space by the City, the gardens would be placed under the jurisdiction of the Department of Parks and Recreation (NYC Parks). The other two community gardens located on the Site have been offered relocation sites on other nearby existing NYC Parks gardens pursuant to the Garden Rules. In prior years, part of the Site was used as a baseball field by a private league under a temporary license agreement with HPD. The license expired and the private league has obtained a permit through NYC Parks to play on a nearby NYC Parks field (as of the start of spring 2017).

The RWCDS prepared for the alternative assumes the Sendero Verde Development would contain 663 DUs, 159,840 sf of community facility space, 15,065 sf of retail space and 24,803 sf of office space. The development assumed under the alternative is somewhat greater than what is proposed by the project sponsor because the alternative conservatively assumes unused air rights from the two outparcels. The project sponsor proposes approximately 655 DUs and less commercial space compared to the RWCDS. With the Sendero Verde Development Alternative, the Site would be developed with three predominantly residential buildings which would provide housing for individuals and families at a mix of incomes governed by MIH requirements and any



Sendero Verde Site

Study Area (400-foot boundary)

16124 *Tax Block Boundary*

Tax Lot Boundary

33 *Tax Lot Number*

0 100 FEET

Tax Map
Sendero Verde Development Alternative

EAST HARLEM REZONING

Figure 22-3

applicable HPD funding program (see **Figure 22-4**). The Sendero Verde Development would include a number of community facility uses, including space for a non-profit fitness center, a charter school, and a non-profit office. These community facility spaces would occupy most of the street frontage along East 111th Street and the middle portion of East 112th Street. The Sendero Verde Development Alternative would also include space for medical offices and retail. The proposed retail would occupy the Madison Avenue frontage of the Site. The height of the three buildings ranges from nine to 39 stories and between 115 and 441 feet to the top of the mechanical bulkhead. The three buildings are referenced as Buildings A, B, and C, and are described in more detail below.

Building A is proposed to be located at the intersection of Madison Avenue and East 112th Street. It is proposed to have a five-story base that would rise to between 47 feet and up to 85 feet. Above the base, the building would set back the required 10 feet from the street line, and then rise to 39 stories, with a roof height of 441 feet (see **Figure 22-4a**).

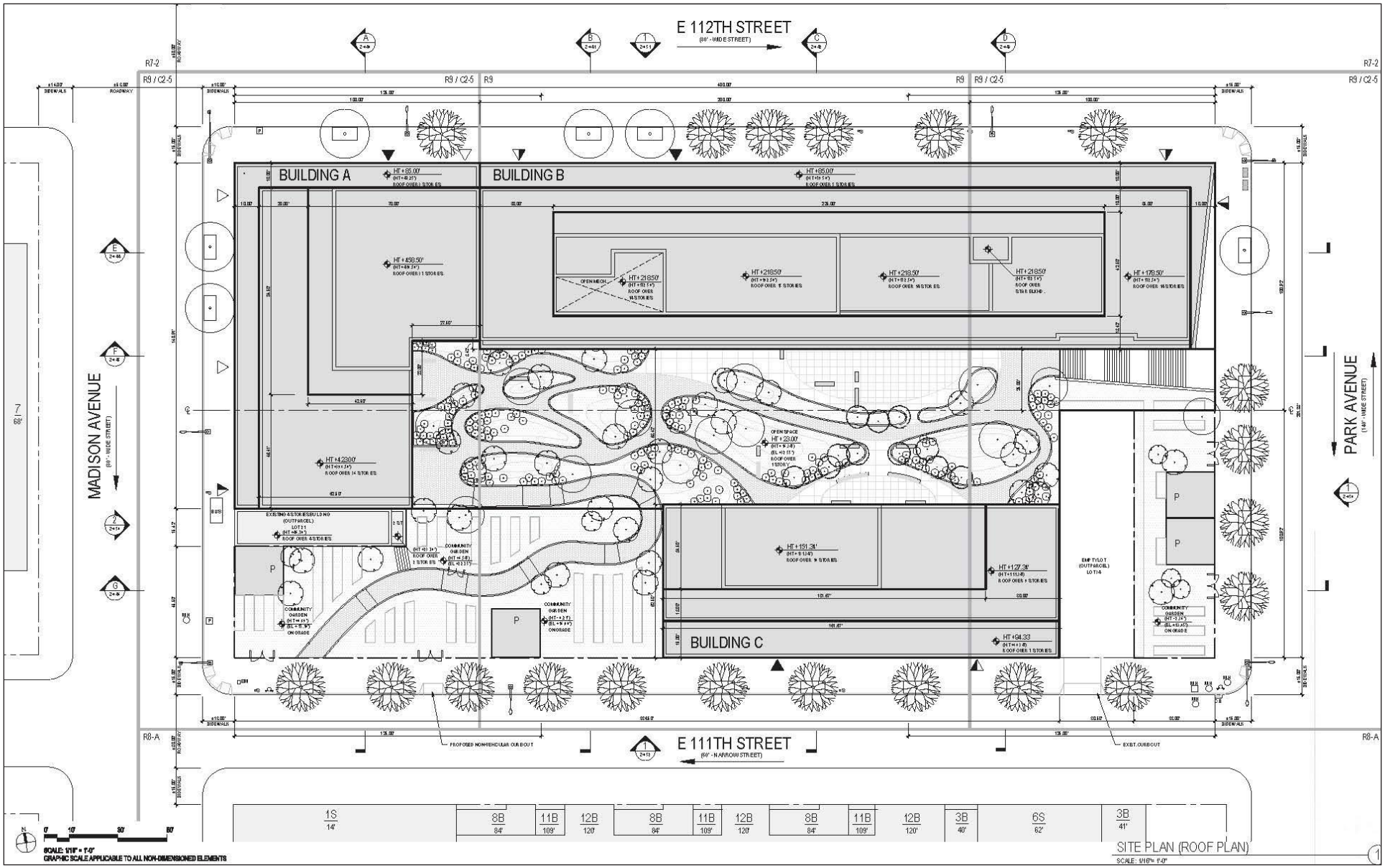
Building B is proposed to be located along the remainder of the East 112th Street frontage, and wrap around along Madison Avenue for a depth of approximately 72 feet. It is proposed to have up to a five-story base that would rise to approximately 85 feet above the base plane. Above the base, the building would set back the required 10 feet from the street line, then rise to a height of 15 stories, with a building height of 184 feet, and a bulkhead height of approximately 210 feet (see **Figure 22-4b**).

Building C is proposed to be located on the mid-block frontage of East 111th Street. It is proposed to have a base height of approximately 92 feet above base plane. Above the base, the building would rise to a height of nine stories, with a roof height of 115 feet above the base plane, and a bulkhead height of approximately 151 feet (see **Figure 22-4c**).

The façade of the buildings would recede and project, providing articulation and breaking up the bulk of the building profile. Alternating paneling along the building façade, as well as different treatments for the base of the buildings, would provide further visual variability to the overall design. Extensive glazing along the ground floor of the buildings would encourage active streets and further enhance the aesthetic variety of the design.

Buildings A, B, and C would be built to Passive House standards. To achieve passive certification, the Sendero Verde Development would employ a number of sustainability features, including a stormwater detention tank to provide recycled water to the on-site community gardens, bio swales and street trees on the sidewalks surrounding the site, photovoltaic arrays on each of the bulkheads, and green roofs with featuring solar pergolas with photovoltaic arrays.

Accessory parking is not required for the community facility, retail, or income-restricted DUs within the Sendero Verde Development. Accessory off-street parking, however, is required for a minimum of 40 percent of the non-income-restricted dwelling units. As part of its Uniform Land Use Review Procedure (ULURP) application, HPD would request to waive all accessory parking required for the non-income-restricted DUs within the Sendero Verde Development. With this waiver no parking would be required for the entire Sendero Verde Development. Within the center of the Sendero Verde Development, the courtyards formed by the proposed buildings would provide passive, landscaped recreation space. Public entrances to the courtyards would be provided along Park Avenue, through a staircase and elevator, as well as along East 111th Street, through an ADA-accessible path. The courtyard would also be accessible through rear entrances in the adjoining community facility spaces.

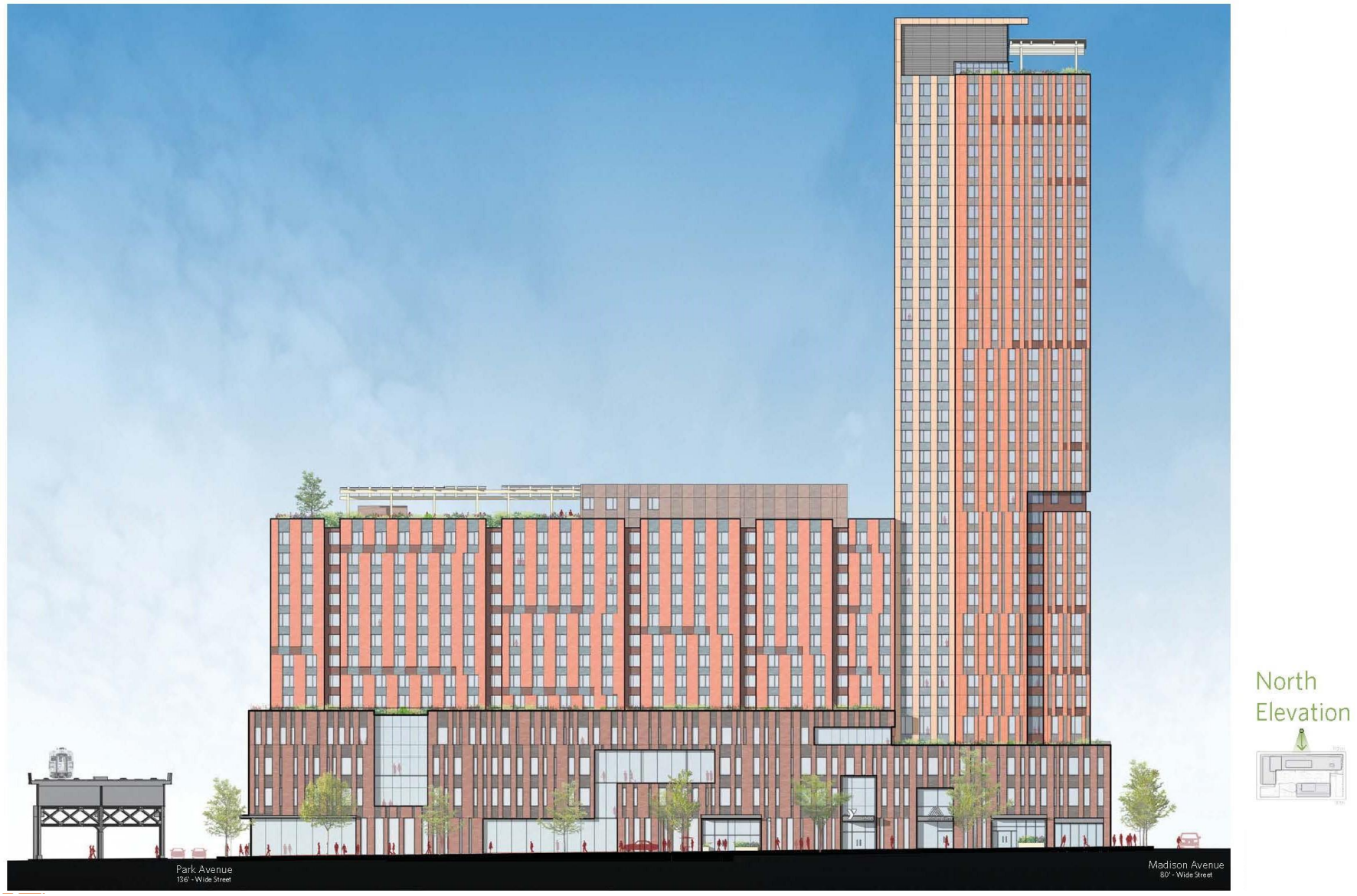


Sendero Verde Development Alternative
Site Plan
Figure 22-4



NOTE: FOR ILLUSTRATIVE PURPOSES ONLY

Sendero Verde Development Alternative
Building A - West Elevation
Figure 22-4a



NOTE: FOR ILLUSTRATIVE PURPOSES ONLY

Sendero Verde Development Alternative
Building B - North Elevation
Figure 22-4b



NOTE: FOR ILLUSTRATIVE PURPOSES ONLY

Sendero Verde Development Alternative
Building C - South Elevation
Figure 22-4c

In connection with the Proposed Actions, the City would seek to acquire the community gardens upon completion of the project. The community garden space would accommodate four of the existing interim GreenThumb gardens with frontages along Park Avenue, East 111th Street, and Madison Avenue. Upon acquisition by the City, the community garden space would ultimately be placed under the jurisdiction of NYC Parks, which would enter into a license agreement with the community gardens.

The community gardens would be located on the corner of Park Avenue and East 111th Street, on the corner of Madison Avenue and East 111th Street, and on East 111th Street extending in a terraced fashion towards the elevated courtyard described above. A dedicated community room and a bathroom, which would be available to members of all four gardens, would be located within Building A. An additional bathroom would be located adjacent to the community gardens on Park Avenue. Additionally, a public pathway would pass through the gardens located along East 111th Street and connect to the interior courtyard. This pathway would be maintained by the future owner of the Sendero Verde Development and remain accessible to the public during hours to be determined through negotiations between the City and the development team.

The Sendero Verde Development Alternative considers the full development expected as a result of the Proposed Actions on the 68 projected development sites and the additional development expected with the Sendero Verde Development which includes 663 affordable DUs, 15,065 sf of retail space, 24,803 sf of office space, 159,840 sf of community facility space, and new community gardens. As discussed above, for conservative analysis purposes, additional floor area from the outparcels on the same block has been included in the Sendero Verde Development. (At this time, the development team's program does not contemplate the utilization of air rights from these parcels.) The development program assessed under this alternative is shown in **Table 22-8**. Based on the average household size of 2.41 persons per household for Manhattan Community District 11 and standard ratios for estimating employment for commercial and community facility uses, **Table 22-8** also provides an estimate of the number of residents and workers generated by the Sendero Verde Development Alternative. As shown in **Table 22-8**, this alternative would result in a net increment of 9,984 residents and a net increase of 2,194 workers.

Table 22-8
Sendero Verde Development Alternative—No Action and With Action Land Uses

Land Use	No Action Condition	With Action Condition	Increment
Residential			
Total Residential	***2,480 DU***	***6,623 DUs***	***+ 4,143 DU***
Commercial			
Commercial Retail[1]	387,059 sf	522,616 sf	+ 135,557 sf
Hotel	32,974 sf	0 sf	- 32,974 sf
Office	76,559 sf	244,574 sf	+ 168,015 sf
Auto-related	10,592 sf	0 sf	- 10,592 sf
Storage	57,614 sf	0 sf	- 57,614 sf
Total Commercial	***564,798sf***	***767,190 sf***	***+ 202,393 sf***
Other Uses			
Total Community Facility	***7,395 sf***	***272,277 sf***	***+ 264,882 sf***
Total Industrial	***22,777***	***155,171 sf***	***+ 132,394 sf***
Population[2]			
Residents	5,978	15,962	+ 9,984
Workers	1,729	3,923	+ 2,194

Notes:

1. Retail is composed of the following uses; local retail, restaurant, grocery store, and destination retail.

2. Assumes 2.41 persons per DU for residential units in Manhattan Community District 11. Estimate of workers based on standard industry rates, as follows: 1 employee per 250 sf of office; 3 employees per 1,000 sf of retail, 1 employee per 25 DU, 1 employee per 2.67 hotel rooms (400 sf per hotel room), 1 employee per 1,000 sf of industrial, 1 employee per 15,000 sf of warehouse uses, 1 employee per 11.4 students in Pre-K school uses, 3 employees per 1,000 sf of all other community facility uses, 1 employee per 50 parking spaces, 1 employee per 200 sf restaurant, 1 employee per 250 sf grocery store, and 1 employee per 25 DUs (residential).

The discretionary land use approvals sought under the Proposed Actions would also be required under the Sendero Verde Development Alternative. In addition, the land use approvals sought by HPD in connection with the Sendero Verde Development would be subject to ULURP. HPD is expected to certify its ULURP application concurrent with the Proposed Actions. The Sendero Verde Development would require City Planning Commission approval of the following discretionary land use actions:

- Rezoning of the Site from R7-2/C1-4 to R9/C2-5;
- Zoning text amendment to designate the Site as a Mandatory Inclusionary
- Housing Area (MIHA);
- Designation and project approval of the Site as an Urban Development Action Area Project (UDAAP);
- Disposition of City-owned property;
- Acquisition of a portion of the Site by the City for community garden use;
- Special Permits to establish a Large Scale General Development (LSGD), modify the bulk regulations within a LSGD to modify height and setback restrictions and yard requirements applicable to the Sendero Verde Development, waive accessory parking, and allow commercial use above the second story; and
- Certification pursuant to ZR Section 32-435 to waive the requirement that a minimum of 50 percent of a building wall facing upon a wide street be occupied at the ground level by commercial uses.

The requested actions are described in more detail below.

DISPOSITION AND UDAAP DESIGNATION

HPD is seeking UDAAP designation, project approval and approval for the disposition of City-owned parcels including Block 1617, Lots 20, 22, 23, 24, 25, 28, 29, 31, 33, 35, 37, 38, 39 40, 41, 42, 43, 45, 46, 48, 50, 51, 52, 53, 54, 121, and 122. Additionally, HPD seeks approval to acquire a portion of the Site for use as four community gardens upon project completion.

ZONING MAP AMENDMENT

HPD seeks a Zoning Map Amendment to change the Project Area from an R7-2 district with C1-4 commercial overlays along the Park and Madison Avenue frontages to a R9 district with C2-5 commercial overlays along the Park and Madison Avenue frontages.

ZONING TEXT AMENDMENT

HPD seeks to amend Appendix F of the Zoning Resolution to establish a Mandatory Inclusionary Housing Area (MIHA) over the Project Area. HPD is proposing to utilize Option 2, and therefore requests that the CPC and City Council allow the MIH affordable housing requirements to be met by complying with the Section 23-154(d)(3)(ii) requirements and providing no less than 30 percent of residential floor area to households earning an average of 80 percent of AMI.

CPC SPECIAL PERMITS

The following actions, described below, are specific to the Sendero Verde Development.

LARGE SCALE GENERAL DEVELOPMENT (LSGD)

HPD, in conjunction with the project sponsor, seeks a Special Permit, pursuant to ZR Section 74-743, to modify the bulk regulations within a Large Scale General Development (LSGD) to modify height and setback restrictions and yard requirements applicable to the Sendero Verde Development. Upon approval, the project sponsor would enter into a Restrictive Declaration (RD), a legally binding mechanism tied to the Sendero Verde Development Site that governs the provisions of the LSGD.

COMMERCIAL USE ABOVE THE SECOND STORY

HPD and the project sponsor seek a Special Permit pursuant to ZR Section 74-744(b), to allow commercial use above the level of the second story in a mixed use building contrary to the provisions set forth in ZR Section 32-42 and 32-435(c). Section 32-42 does not permit commercial uses within a predominantly residential building to be located above the second level. The Sendero Verde Development Alternative includes space for health care-related offices on the second and third levels of Building A. This Special Permit is necessary to allow health care or other related commercial offices to be located above the second level of Building A.

WAIVER OF ACCESSORY PARKING

HPD, in conjunction with the project sponsor, seeks a Special Permit pursuant to ZR Section 74-532, to waive up to 78 accessory off-street parking spaces required in connection with the up to 194 non-income restricted dwelling units within the proposed development. Under the proposed Rezoning, accessory off-street parking spaces are required for a minimum of 40 percent of non-income restricted dwelling units. Providing the required parking spaces would make it infeasible to provide the important amenities in the Sendero Verde Development Alternative, including below-grade community facility amenities and common open spaces as well as the community gardens. Accordingly, a waiver of the parking requirement is requested to facilitate the development of the income-restricted dwelling units.

CPC CERTIFICATION

Certification pursuant to ZR Section 32-435 to waive the requirement that a minimum of 50 percent of a building wall facing upon a wide street be occupied at the ground level by commercial uses.

LAND USE, ZONING, AND PUBLIC POLICY

Like the Proposed Actions, the Sendero Verde Development Alternative would not result in any significant adverse impacts to land use, zoning, or public policy. Development under the alternative would be consistent with existing uses and is not expected to significantly affect the mix of existing land uses in the area. The Sendero Verde Development Alternative would not adversely affect surrounding land uses, nor would it generate land uses that would be incompatible with existing zoning. Like the Proposed Actions, the Sendero Verde Development Alternative would bring benefits to East Harlem—including opportunities for new affordable housing, increased economic activity, and improved pedestrian conditions. In addition, the Sendero Verde Development Alternative would transform a large City-owned site that has lain underutilized for decades with new affordable housing, needed community facilities and retail, and improved open space. The Sendero Verde Development is a sustainable, passive house development that would greatly improve East Harlem and provide substantial benefits in the

form of permanently affordable housing, community amenities including a new charter school, athletic facilities, community meeting space, and greatly improved community gardens.

LAND USE

No significant adverse impacts to land use are anticipated under this alternative. The alternative considers the full development projected to occur under the Proposed Actions and the development of three new, mixed-use buildings known as Buildings A, B, and C on the Sendero Verde Site. The buildings would range in height from 9 to 39 stories.

The Sendero Verde Site currently contains six GreenThumb Gardens. These gardens are located on City-owned Parcels along Madison Avenue and Park Avenue. Site 70 also includes a vacant, mid-block parcel of City-owned land that was previously leased on an interim basis to a private league for use as a baseball field. In addition, Block 1617 contains two outparcels on Lots 21 and 34 which are under private ownership, and would not be redeveloped with the Sendero Verde Development, but would be affected by the proposed zoning changes. Lot 21 (1679 Madison Avenue) is improved with a single building. Constructed in 1910, the building is four stories, comprising approximately 4,100 sf of floor area and containing eight DUs, as well as two commercial units. Lot 34 is currently utilized for surface parking and storage.

The new land uses on Site 70 would complement the existing land uses contained in the primary and secondary study areas assessed in Chapter 2, "Land Use, Zoning, and Public Policy." The proposed residential, community facility and retail development generated under the Sendero Verde Development Alternative would support existing and planned residential and commercial development expected in East Harlem. The provision of permanent affordable housing on Site 70 along with the affordable units generated under the Proposed Actions represents a significant increase in the supply of housing, including permanent affordable housing. The introduction of retail uses along Madison Avenue and community facility uses along East 112th Street and Park Avenue would enliven the pedestrian experience in this location of East Harlem, and serve to knit together disconnected blocks surrounding the Development Site.

The Sendero Verde Development would preserve the maximum amount of open space that currently exists within the Development Site. The open courtyard created at the center of the Sendero Verde Development provides a distribution of landscaped open spaces that would benefit the occupants of the affordable dwelling units located in the upper portions of the buildings, as well as the community facility users located at the base of the buildings.

The design offers a contextual juxtaposition to the tower in the park developments located directly to the north, and a contextual counterpart to mid-rise development in the surrounding area. The contextual street walls and height of the proposed buildings provides a balanced composition and various heights of the three buildings, provides visual variety, and orients bulk toward the wider streets surrounding the Development Site—Madison Avenue, Park Avenue, and East 112th Street.

The proposed modifications of applicable zoning regulations would allow a building design that provides for a more efficient massing of dwelling units and utilization of residential floor area that results in the development of more affordable housing units than would otherwise be possible. Waiver of the tower on a base height and setback regulations and rear yard equivalent requirements allows for more floor area to fit within the building footprint than would otherwise be achievable if the Proposed Development were required to strictly comply with such regulations. Given the wide street nature of Madison Avenue, the requested waivers will allow for majority of the floor area located within the Sendero Verde Development to be towards the

Avenue without sacrificing the building's efficiency. The resultant provision of affordable housing units benefits the neighborhood and the City as a whole.

The proposed design offers many benefits to the neighborhood and surrounding developments. The Sendero Verde Development offers a consistent street wall along the perimeter of the Development Site. Currently completely vacant, the introduction of retail uses along Madison Avenue and community facility uses along East 112th Street and Park Avenue will enliven the pedestrian experience in this location of East Harlem, and serve to knit together disconnected blocks surrounding the Development Site.

The Sendero Verde Development Alternative would continue to build off of the Proposed Actions' mission to facilitate changes in land use that would support the revitalization of East Harlem with substantial amounts of affordable housing and new commercial space. Similar to the Proposed Actions, the Sendero Verde Development Alternative would not adversely affect land use in the primary or the secondary study areas.

ZONING

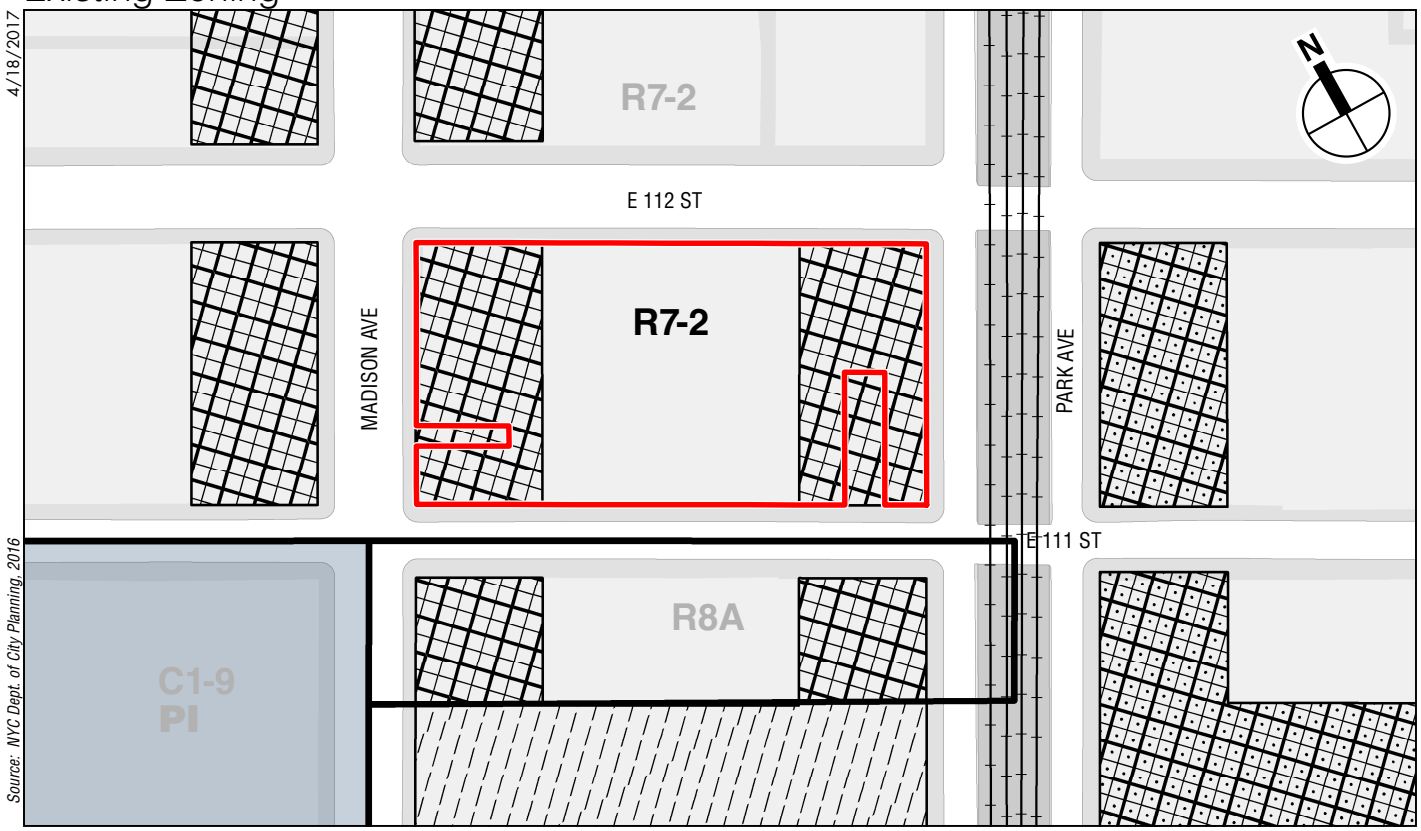
Like the Proposed Actions, the zoning changes sought under the Sendero Verde Development Alternative would not result in significant adverse impacts. In order to facilitate the construction of the Sendero Verde Development, HPD and the project sponsor seek a rezoning from R7-2/C1-4 to R9/C2-5; zoning text amendment to designate the Project Area as a Mandatory Inclusionary Housing Area (MIHA); Special Permits to establish a Large Scale General Development (LSGD), modify the bulk regulations within a LSGD to modify height and setback restrictions and yard requirements applicable to the Sendero Verde Development, waive accessory parking, and allow commercial use above the second story.

The Sendero Verde Site has a zoning designation of R7-2, with C1-4 and C2-4 commercial overlays along Madison and Park Avenues (see **Figure 22-5**). R7 districts are medium-density apartment house districts governed by height factor regulations to encourage lower apartment buildings on smaller zoning lots and, on larger lots, taller buildings with less lot coverage. R7-2 districts permit residential development within a range of 0.87—3.44 FAR and community facility development with a FAR of up to 6.5. Buildings governed by height factor regulations cannot penetrate a sky exposure plane that begins 60 feet above curb level. It should be noted that as an alternative to height factor regulations, buildings can be constructed under the Quality housing Program which allows an FAR of 3.44, maximum required lot coverage of 80 percent on corner lots, 65 percent on interior lots, and are subject to a maximum building height of 75 feet.

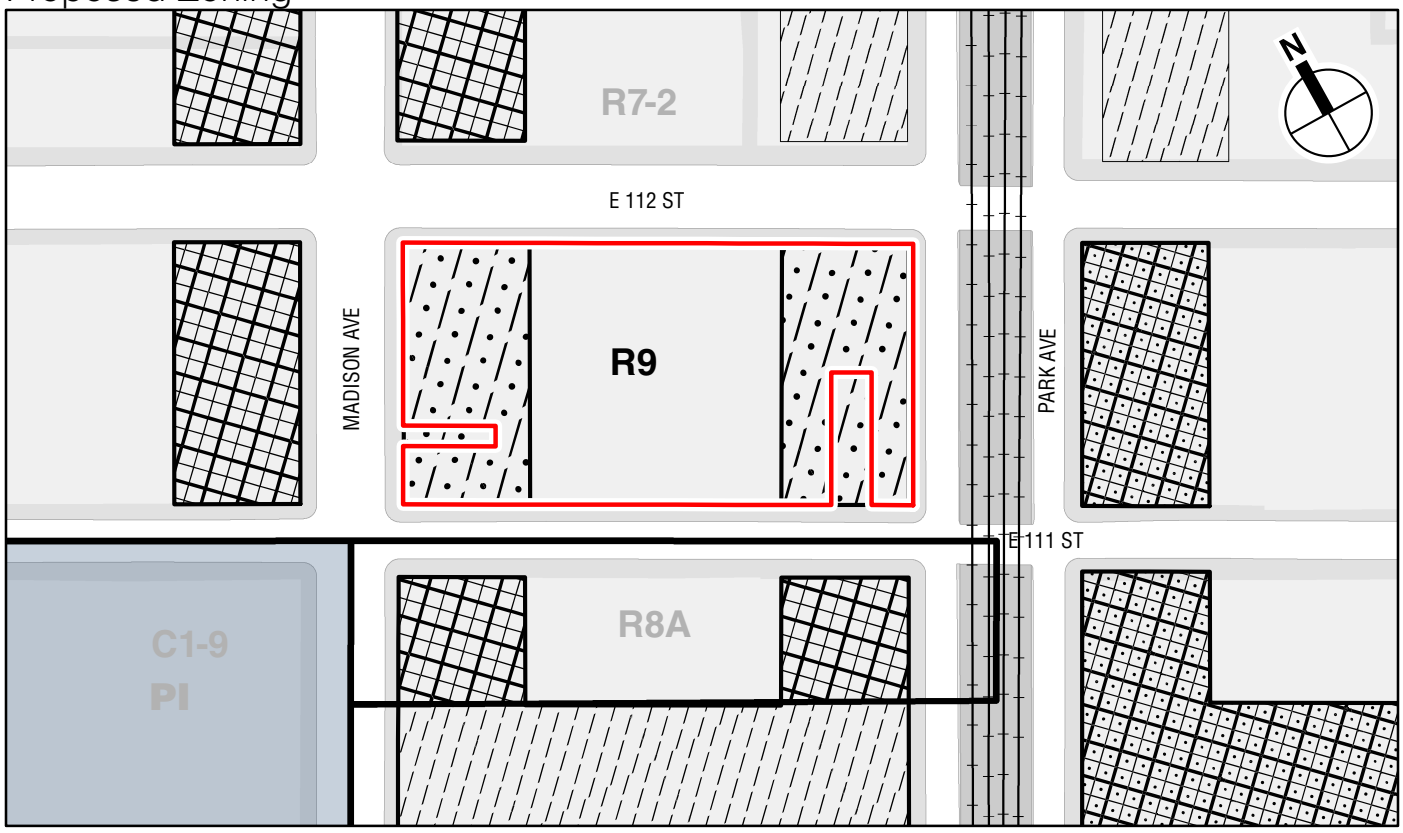
Under the Sendero Verde Development Alternative, the Project Area would be rezoned to an R9 district with C2-5 commercial overlays mapped to a depth of 100 feet along Park and Madison Avenues. HPD is also proposing a text amendment to establish a MIHA over the Project Area. As a result of the zoning change and MIHA designation, a mix of uses could be developed on the Project Area with a maximum FAR of 10.0, all of which could be developed as community facility, and 8.0 of which could be developed as residential subject to the requirements of the Mandatory Inclusionary Housing Program (MIH). Commercial uses within the C2-5 commercial overlay districts could be developed up to a maximum of 2.0 FAR.

The existing R7-2 zoning mapped on the Development Site hinders the viability of affordable housing. The proposed R9 district is consistent with the context of the buildings in the surrounding area. All of the blocks located immediately north of the Development Site contain buildings arranged in a tower-in-the-park and rise to 20 stories. The block located immediately

Existing Zoning



Proposed Zoning



Sendero Verde Site

Zoning Districts

Special District

C1-1 C1-2 C1-3 C1-4 C1-5 C2-4 C2-1 C2-2 C2-3 C2-5

Proposed Zoning Changes
Sendero Verde Development Alternative

EAST HARLEM REZONING

Figure 22-5

to the east of the Development Site contains a seven story residential building built to the lot line. South of the development site is an R8A district containing a twelve story residential building. The R9 district bulk regulations proposed for the Development Site permit buildings up to 175 feet in height that must be located at the street line, and provide a permitted bulk envelope at the Development Site location that serves to mediate the existing tower-in-the-park high-rise developments located to the north and west from the existing mid-rise buildings located to the west and south. The proposed C2-5 overlay would permit the development of the two proposed grocery stores. The proposed C2-5 overlay is consistent with commercial overlays included under the Proposed Actions.

The proposed R9/C2-5 district would facilitate the Sendero Verde Development, which has been designed with a zoning envelope and bulk arrangement that is an appropriate addition to the neighborhood and facilitates the reincorporation of community gardens onto the site. The proposed R9 zoning would facilitate the development of affordable housing, as well as providing continuity on the Madison Avenue commercial corridor and provide community facility space to serve the surrounding neighborhood. Overall, the discretionary actions required to construct the Sendero Verde Development Alternative would construct a building in keeping with surrounding area, and would work to bring much needed affordable housing to the area. Therefore, this alternative would not result in a significant adverse impact to zoning.

PUBLIC POLICY

Similar to the Proposed Actions, the Sendero Verde Development Alternative would be consistent with the public policies that impact the study areas, including the City's Waterfront Revitalization Program (WRP). In addition, the Sendero Verde Development Alternative would further support the goals of Housing New York, ONENYC, and PLANYC.

HOUSING NEW YORK

Similar to the Proposed Actions, the Sendero Verde Development Alternative directly supports the goals and principles outlined in *Housing New York*, as discussed below:

Foster Diverse, Livable Neighborhoods

The Sendero Verde Development Alternative, like the Proposed Actions, is the result of a community engagement process in which the City worked with East Harlem residents and community groups to understand the neighborhood's current and future housing needs, identified appropriate strategies and investments to meet those needs, and craft neighborhood-specific plan that provides housing for a range of New Yorkers. Under the Sendero Verde Development Alternative, MIH would be required, ensuring permanent affordable housing is provided on the Development Site. By requiring developers to provide permanently affordable housing whenever public action creates substantial capacity for new housing, MIH ensures that affordable housing is stitched into the fabric of neighborhoods across the city. Compared with MIH programs in other cities, New York City's program requires a higher percentage of affordable housing, serves lower income families and a broader range of households, and will result in more affordable housing being located in the same building as the market rate housing. MIH proposed under the Sendero Verde Development Alternative would ensure the units developed under the alternative will always be affordable.

Building New Affordable Housing for All New Yorkers

Under the Sendero Verde Development Alternative, Site 70 would provide housing for New Yorkers with a range of incomes, from the very low- to middle-income households. The

alternative maximizes the provision of affordable housing because it would be developed on publicly owned land. As land prices rise and the number available development sites declines, underused public sites provide an opportunity to maximize affordable housing. Lastly, the Sendero Verde Development incorporates Passive House standards into the proposed development. Buildings certified to Passive House standards reliably reduce energy needed for heating and cooling by 90 percent and use up to 75 percent less energy overall than existing buildings. Residents benefit from better indoor air quality, comfortable and even temperatures, significantly reduced energy bills, and quieter homes.

ONENYC

Similar to the Proposed Actions, the Sendero Verde Development Alternative is consistent with the goals of OneNYC. This Alternative would help create affordable housing and support the development of a vibrant neighborhood, make streets safer, improve commercial services and provide access to jobs, all of which are key goals of OneNYC. In particular, the alternative would support OneNYC's land use goals by enhancing the Proposed Actions mission of creating substantial new housing opportunities at a range of incomes; focusing development in areas that are served by mass transit like East Harlem; and fostering walkable commercial corridors. The Sendero Verde Development Alternative would support "A Growing, Thriving City" by expanding economic activity through ground floor commercial activity and providing substantial amounts of quality affordable housing for New Yorkers with a range of incomes. Furthermore, this alternative reduces the disparity in rental costs through the introduction of a substantial amount of new affordable housing, which would be made available to current residents of East Harlem and New York City. Absent the Proposed Actions and this alternative, the trend of increasing rents would continue, potentially forcing long-time residents and others who cannot afford higher market rents to leave the neighborhood. The increase of permanently affordable housing provided under the Sendero Verde Development Alternative demonstrates support for OneNYC's goal of creating a more equitable City for all New Yorkers. Lastly, the urban design controls proposed under the zoning changes would enliven the streetscape and enhance pedestrian conditions. This would encourage residents to walk more and be more active.

PLANYC 2030: A GREENER, GREATER NEW YORK

Similar to the Proposed Actions, the Sendero Verde Development Alternative would facilitate new development that would address many of the components of PLANYC 2030 and therefore would be compatible with this public policy.

Land Use

The Sendero Verde Development Alternative would be consistent with PLANYC's land use goals. The Proposed Actions encourage increased development in an area of Manhattan served by existing subway lines, the Metro-North Railroad, and multiple bus routes. Similarly, through the Sendero Verde Development Alternative the proposed rezoning of the Development Site would result in mixed-use development, including residential, commercial, community facility, further promoting walkable destinations for retail and other services. The proposed rezoning would result in the incremental development of 655 residential units; 10,587 sf of commercial space (retail); 152,831 sf of community facility space over the Proposed Actions, which would enhance the existing commercial corridors within East Harlem. In addition, the proposed zoning text amendment would make MIH applicable to the Development Site, resulting in a Sendero Verde Development Alternative with 100 percent affordability.

Open Space

The Sendero Verde Development Alternative would be in keeping with the open space goals of PLANYC 2030. The proposed development would include a courtyard, landscaped recreation space and four GreenThumb gardens. The courtyard would provide passive recreation space for residents as well as the public. The community gardens would be located on the corner of Park Avenue and 111th Street, and on 111th Street extending in a terraced fashion towards an elevated courtyard. In addition, a public pathway would pass through the gardens located along East 111th Street connecting to the interior courtyard. The community garden space would be placed under the jurisdiction of NYC Parks. The inclusion of open space into this alternative will help to maintain the attractive and active streetscape already promoted by the Proposed Actions. The Sendero Verde Development Alternative would provide accessible open space for residents and the community and therefore would be consistent with PLANYC's open space goals.

Sustainability

The Sendero Verde Development Alternative consists of the development of three buildings: Buildings A, B, and C. The Sendero Verde Development would include a stormwater detention tank to provide recycled water to the on-site community gardens. Green roofs, bio swales and street trees on site would assist in managing storm water. Photovoltaic arrays located on the bulkheads and solar pergolas would lower operating costs and increase the long term feasibility of the development. In addition to achieving a comprehensive green building certification, the Sendero Verde Development would be built and certified to Passive House standards, which would achieve up to a 75 percent reduction in energy used over conventional buildings. Through demonstrating cutting edge practices in sustainability, the Sendero Verde Development Alternative would continue to advance the goals of PLANYC.

WATERFRONT REVITALIZATION PROGRAM (WRP)

The proposed development under the Sendero Verde Development Alternative is located within the City's Coastal Zone. Therefore, the proposed development is subject to review for consistency with the policies of the WRP. The WRP includes policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. The WRP includes policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. The WRP Consistency Assessment Form (see **Appendix I**) lists the WRP policies and indicates whether the proposed project would promote or hinder that policy, or if that policy would not be applicable. The WRP policy assessment provides additional information for the policies that have been checked "promote" or "hinder" in the WRP Consistency Assessment Form. Similar to the Proposed Actions, the Sendero Verde Development Alternative would be consistent with and would not hinder the goals and policies of the WRP. Therefore, no significant adverse impacts to the WRP would result from this alternative.

SOCIOECONOMIC CONDITIONS

Like the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts related to socioeconomic conditions. Under the Sendero Verde Development Alternative, development would occur on all 68 development sites and the Sendero Verde Site ("Projected Development Site 70" or the "Site"). With Action Condition development on the 68 projected development sites would result in a net increase of 3,627,475 sf of residential floor area (4,143 DUs), 146,441 sf of commercial (restaurant, grocery, and

destination retail) uses, 264,882 sf of community facility uses, and 132,394 sf of manufacturing uses. The following summarizes the potential socioeconomic effects of the Sendero Verde Development Alternative.

DIRECT RESIDENTIAL DISPLACEMENT

Since the Site is currently vacant, development on Projected Development Site 70 would not displace any additional residents outside of those already disclosed as subject to displacement under the Proposed Actions (approximately 10 residents living in four DUs throughout the larger Project Area). Therefore, as concluded for the Proposed Actions, this direct displacement would not substantially alter the socioeconomic character of the neighborhood.

INDIRECT RESIDENTIAL DISPLACEMENT

Like the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts due to indirect residential displacement. The alternative would introduce 663 more DUs than the RWCDS associated with the Proposed Actions, and all of the 663 units would be affordable. As compared with the Proposed Actions, the Sendero Verde Development Alternative would introduce a population with a slightly lower overall average income and more closely aligns with the existing study area incomes. The alternative would introduce more affordable housing than the Proposed Actions, which would serve a more diverse demographic within the study area.

Both the Proposed Actions and the Sendero Verde Development Alternative would not result in significant adverse indirect residential displacement impacts. Although similar to the Proposed Actions, the Sendero Verde Development Alternative would introduce a new population with a higher average household income as compared with existing study area households; there is already a readily observable trend toward higher incomes and new market rate residential development in the study area in the future without the Proposed Actions. It should be noted the Sendero Verde Development Alternative would introduce 663 affordable units in addition to the number of dwelling units already being introduced to the Project Area by the Proposed Actions. The affordability of these units would be subject to MIH and the terms of the HPD Land Disposition Agreement (LDA) as well as applicable funding agreements with HPD. As is the case with other affordable housing developments on formerly City-owned land, the housing would be marketed by HPD with priority preference given to residents of the community district. This alternative would not introduce or accelerate the existing trend of increased rents and incomes, and therefore would not result in significant adverse impacts due to indirect residential development.

DIRECT BUSINESS DISPLACEMENT

Both the Proposed Actions and the Sendero Verde Development Alternative would not result in significant adverse impacts due to direct business displacement. Projected development under the Proposed Actions would displace 14 businesses and an estimated 209 jobs associated with those businesses. The Sendero Verde Development Alternative would not displace any additional businesses or jobs associated with any potentially displaced businesses. As described in Chapter 3, "Socioeconomic Conditions," the displacement by the Proposed Actions does not constitute a significant impact as defined by CEQR and the Proposed Actions would result in an incremental development of 146,441 sf of commercial (restaurant, grocery, and destination retail) uses, 132,394 sf of manufacturing space, and 264,882 sf of community facility space. Therefore, similar to the Proposed Actions, under the Sendero Verde Development Alternative

comparable services and employment opportunities would be provided to those directly displaced commercial businesses.

INDIRECT BUSINESS DISPLACEMENT

Similar to the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts due to indirect business displacement. The study area has well-established residential, retail, office and manufacturing uses and markets such that the this alternative would not add a new economic activity or add to a concentration of a particular sector of the local economy enough to significantly alter or accelerate existing economic patters. The Sendero Verde Development Alternative would add an increment of 4,143 DUs, including more permanently affordable units than the Proposed Actions, which would help to ensure a range of household incomes within the study area. Under this alternative, economic activity along commercial corridors would increase. Therefore, the Sendero Verde Development Alternative would not result in a significant adverse indirect business displacement.

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

Similar to the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts on specific industries. Business conditions in any particular industry or any particular category of businesses within or outside the study area would not be significantly affected.

COMMUNITY FACILITIES

Similar to the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse community facility impacts associated with any community facilities – schools, publicly funded child care facilities, libraries, and police, fire or health care facilities.

SCHOOLS

The Sendero Verde Development Alternative would result in an additional 663 residential units for a total increment of approximately 4,143 units over the No Action Condition. Based on the *CEQR Technical Manual* student generation rates, the alternative would generate up to approximately 497 elementary students, 166 intermediate students, and 249 high school students. As shown in **Table 22-9**, 664 units are located in Subdistrict 1/CSD 4, approximately 1,967 units are located in Subdistrict 2/CSD 4, and approximately 1,512 units are located in Subdistrict 1/CSD 5. Therefore, approximately 80 elementary students and 27 intermediate students would be introduced in Subdistrict 1/CSD 4; approximately 236 elementary students and 79 intermediate students would be introduced in Subdistrict 2/CSD 4; and approximately 181 elementary and 60 intermediate students would be introduced in Subdistrict 1/CSD 5.

Table 22-9
Estimated Student Generation in the Future with the Sendero Verde Development Alternative

Study Area	Proposed Incremental Housing Units	Students Introduced by Proposed Development Sites		
		Elementary	Intermediate	High School
Subdistrict 1/ CSD 4	664	80	27	--
Subdistrict 2/ CSD 4	1,967	236	79	--
Subdistrict 1/ CSD 5	1,512	181	60	--
Manhattan	4,143	--	--	249
Total		**497**	**166**	**249**

Source: See Table 6-1a of the *2014 CEQR Technical Manual*.

Elementary Schools

Under the Sendero Verde Development Alternative, elementary school enrollment in Subdistrict 1/CSD 4 would increase by 80 students to 3,732 (99.1 percent utilization) with a surplus of 33 seats (see **Table 22-10**). In Subdistrict 2/CSD 4, elementary school enrollment would increase by 236 students to 3,085 (98.3 percent utilization) with a surplus of 55 seats. Elementary school enrollment in Subdistrict 1/CSD 5 would increase by 181 students to 3,017 (75.2 percent utilization) with a surplus of 995 seats.

As noted above, a significant adverse impact may occur if a proposed project would result in both of the following conditions: (1) a utilization rate of school in the study area that is equal to or greater than 100 percent in the future with the Proposed Actions; and (2) an increase of five percentage points or more in the collective utilization rate between the future without and the future with the Proposed Actions.

For Subdistrict 1/CSD 4 and Subdistrict 1/CSD 5, the utilization rate of elementary schools would remain below 100 percent and would not result in an increase of five percentage points or more in the collective utilization rate between the future without and the future with the Sendero Verde Development Alternative. Although Subdistrict 2/CSD 4 would result in an increase of more than five percentage points, elementary utilization would remain below 100 percent. Therefore, the Sendero Verde Development Alternative would not result in a significant adverse impact to elementary schools.

Table 22-10
Estimated Public School Enrollment, Capacity, and Utilization: Future with the Sendero Verde Development Alternative

Study Area	No Action Enrollment	Students Introduced by the Proposed Actions	Total With Action Enrollment	Capacity	Available Seats	Utilization	Change in Utilization Compared with No Action
Elementary Schools							
Subdistrict 1/ CSD 4	3,652	80	3,732	3,765	33	99.1%	2.1%
Subdistrict 2/ CSD 4	2,849	236	3,085	3,140	55	98.3%	7.5%
Subdistrict 1/ CSD 5	2,836	181	3,017	4,012	995	75.2%	4.5%
Intermediate Schools							
Subdistrict 1/ CSD 4	1,374	27	1,401	2,006	605	69.8%	1.3%
Subdistrict 2/ CSD 4	1,248	79	1,327	1,863	536	71.2%	4.2%
Subdistrict 1/ CSD 5	1,287	60	1,347	1,964	617	68.6%	3.1%
High Schools							
Manhattan	48,579	249	48,828	68,118	19,290	71.7%	0.4%

Sources: DOE Enrollment Projections 2015-2024 by Grier Partnership; DOE, *Utilization Profiles: Enrollment/Capacity/Utilization*, 2015-2016;DOE 2015-2019 Proposed Five-Year Capital Plan, Amended February 2017; School Construction Authority.

Intermediate Schools

In the future with the Sendero Verde Development Alternative, intermediate school enrollment in Subdistrict 1/CSD 4 would increase by 27 students to 1,401 (69.8 percent utilization) with a surplus of 605 seats (see **Table 22-10**). In Subdistrict 2/CSD 4, intermediate school enrollment would increase by 79 students to 1,327 (71.2 percent utilization) with a surplus of 536 seats. Intermediate school enrollment in Subdistrict 1/CSD 5 would increase by 60 students to 1,347 (68.6 percent utilization) with a surplus of 617 seats.

For Subdistrict 1/CSD 4, Subdistrict 2/CSD 4, and Subdistrict 1/CSD 5, the utilization rate of intermediate schools would remain below 100 percent and would not result in an increase of five percentage points or more in the collective utilization rate between the future without and the future with the Sendero Verde Development Alternative. Therefore, the Sendero Verde Development Alternative would not result in a significant adverse impact to intermediate schools.

High Schools

In the future with the Sendero Verde Development Alternative, the total high school enrollment in Manhattan would increase by 249 students to 48,828 (71.7 percent utilization), resulting in a surplus of 19,290 seats (see **Table 22-10**). The new high school students introduced by the Sendero Verde Development Alternative would increase utilization in the borough by 0.4 percentage points, less than 1 percent over the No Action Condition.

As described above, DOE does not require high school students to attend a specific high school in their neighborhood; instead, they may attend any high school in the City depending on seating availability and admissions criteria. Utilization would remain under 100 percent. Further, the increase in the study area high school utilization rate would be less than one half of one percent, substantially lower than the five percentage point increase in utilization that, according to the *CEQR Technical Manual*, could be considered a significant adverse impact. Therefore, the Sendero Verde Development Alternative would not result in significant adverse impacts on high schools.

LIBRARIES

The possible future development of Site 70 would result in an increment of 655 residential units (or an additional 1,579 residents) for a total increment of approximately 4,143 units (or 9,984 residents) over the No Action Condition. Each of the residents associated with Site 70 has been assigned to the Aguilar Branch catchment area, since this is the closest library to the site. With this additional population, the New York City Public Library (NYPL) Aguilar Branch would serve 133,230 residents (approximately a 3.5 percent increase over the No Action Condition). The holdings per resident ratio for the NYPL Aguilar Branch would be 0.57 with Site 70. The catchment area population increases attributable to the Proposed Project with Site 70 are anticipated to be below the 5 percent threshold and therefore would not result in a noticeable change in the delivery of library services at this location.

CHILD CARE

The future with the Proposed Actions and the Sendero Verde Development are estimated to introduce an increment of approximately 2,416 affordable housing units. In order to ensure a conservative analysis, it is assumed that all of these units would meet the financial and social eligibility criteria for publicly funded child care, even though—according to the *CEQR Technical Manual*—children from households earning above 80 percent AMI would not be eligible for publicly funded child care services. Based on the *CEQR Technical Manual* child care multipliers, this development would result in approximately 278 children under the age of six who would be eligible for publicly funded child care programs.

With the addition of these children, including the Sendero Verde Development, child care facilities in the study area would operate at 94.8 percent utilization with a surplus of 208 slots (see **Table 22-11**). Total enrollment in the study area would increase to 3,779 children,

compared with a capacity of 3,987 slots, which represents an increase in the utilization rate of 7.0 percentage points over the No Action Condition.

Table 22-11
Estimated Public Child Care Facility Enrollment, Capacity, and Utilization

	Enrollment	Capacity[1]	Available Slots	Utilization Rate	Change in Utilization
No Action Condition	3,501	3,987	486	87.8%	N/A
Future with the Proposed Actions and the Sendero Verde Development	3,779	3,987	208	94.8%	7.0%

Note: [1] According to ACS, a new publicly funded child care facility is anticipated to open at 510-516 West 145th Street and would provide 58 slots. Since this facility is expected to open in the near future, this capacity has been added in the future without the Proposed Actions.
Sources: ACS June 2016; AKRF, Inc.

As noted above, the *CEQR Technical Manual* guidelines indicate that a demand for slots greater than the remaining capacity of child care facilities and an increase in demand of five percentage points of the study area capacity could result in a significant adverse impact. In the future with the Proposed Actions and the development of Site 70, although the Sendero Verde Development Alternative would result in an increase in utilization of more than five percentage points, utilization would remain below 100 percent. Therefore, the Sendero Verde Development Alternative would not result in a significant adverse impact on child care facilities.

OPEN SPACE

Unlike the Proposed Actions, the Sendero Verde Development Alternative would result in a significant adverse impact related to indirect effects to open space. The open space ratio for the combined user population (workers and residents) in the non-residential (¼-mile) study area would fall short of the City's guidelines and would decrease by more than 5 percentage points as compared to the No Action condition. No other significant adverse impacts related to direct or indirect open space effects would occur under the alternative.

With respect to direct effects, like the Proposed Actions, the Sendero Verde Development Alternative would result in significant adverse shadow impacts as a result of incremental shadow cast on three open space resources, but the significant adverse shadow impacts would not result in open space impacts. As described further below under "Shadows," the height and massing introduced by the Sendero Verde Development would also cast new shadows on four sunlight-sensitive open space resources: Central Park, Duke Ellington Circle, Martin Luther King Houses' Recreation Areas, and Martin Luther King Playground. Two more NYCHA resources, Johnson Houses and Taft Houses' Recreation Areas, would be cast in additional incremental shadow under this alternative, as compared to the Proposed Actions. However, none of the shadows these resources would result in significant adverse impacts. In addition, the Sendero Verde Development Alternative would result in direct effects to six GreenThumb gardens currently located on the Sendero Verde Development site, but no significant adverse impacts are anticipated (described further below).

INDIRECT EFFECTS

The open space ratios for both the non-residential and residential study areas under the Sendero Verde Development Alternative would be slightly lower than those under the Proposed Actions. For the non-residential (¼-mile) study area, passive open space ratios were determined for the worker population and for the combined user (workers and residents) population. The open

space ratio for the non-residential worker population would decrease by 4.49 percent. The open space ratio for the non-residential combined user population would decrease by 5.05 percent, exceeding the CEQR threshold for a quantitative open space impact.

Similar to the Proposed Actions, all open space ratios for the residential (½-mile) study area would be below the *CEQR Technical Manual* open space guidelines for open space adequacy and citywide planning goals, and the percent change from the No Action Condition to the Sendero Verde Development Alternative's With Action Condition would remain lower than 5 percent. In the residential study area the total open space ratio would decrease by 4.68 percent, and passive space and active space would decrease by 4.73 percent and 4.62 percent, respectively. In addition, the passive open space for the combined user population in the residential study area would decrease by 4.44 percent. Therefore, no significant adverse impacts related to open space in the residential study area would occur.

Non-Residential (¼-Mile) Study Area

The Sendero Verde Development Alternative would result in a significant adverse impact related to the combined user population in the non-residential study area. The open space ratio for the combined user population in the non-residential study area would fall short of the City's guidelines and would decrease by 5.05 percent as compared to the No Action condition. Measures that could partially or fully mitigate the significant adverse impact are proposed below under the mitigation discussion for the Sendero Verde Development Alternative.Although the Sendero Verde Development Alternative would result in an impact on passive open space for the combined user population in the non-residential study area, the study area contains a prevalence of existing open space associated with public housing owned and operated by NYCHA. NYCHA developments contain substantial amounts of passive open space, including landscaped grounds between NYCHA buildings and passive open space features like walkways, seating and gardens. These NYCHA open spaces were not considered in the quantitative analysis, but use of these open spaces by NYCHA residents could offset demand placed on other passive open spaces which could then be utilized by workers. In addition, none of the community gardens located within the study area were included in the quantitative analysis. In total, there are over six acres of open space within the non-residential study area inclusive of NYCHA seating areas and community gardens. This acreage does not include the landscaped, tree-canopied grounds between NYCHA buildings.

Residential (½-Mile) Study Area

With regard to the open space ratios for the residential study area, the Sendero Verde Development Alternative would have slightly lower ratios with respect to overall open space, as well as passive and active open space. Under the Sendero Verde Development Alternative, the total, passive, and active open space ratios for the residential study area would be 0.795, 0.403, and 0.392 per 1,000 residents, respectively (compared with 0.801, 0.406, and 0.395, respectively, under the Proposed Actions). The passive open space ratio for the combined user population in the residential study area would be 0.301 per 1,000 total users, compared with 0.304 under the Proposed Actions.

Similar to the Proposed Actions, under the Sendero Verde Development Alternative the total, passive, and active open space ratios would be below the *CEQR Technical Manual* open space guidelines of 2.5 acres of open space per 1,000 residents, including 0.5 acres of passive open space and 2.0 acres of active open space.

As noted in the Chapter 5, "Open Space," and similar to the Proposed Actions, the residential population anticipated under the Sendero Verde Development Alternative is expected to have a somewhat higher percentage of young people (ages 10-19) than Manhattan and New York City as a whole. A larger population of pre-teens and teenagers would place a higher demand on both active and passive open space resources. Like the Proposed Actions, the NYCHA population residing within the residential study area represents a significant proportion of the existing residential population and of the population expected in the future. In particular, the open spaces within these NYCHA housing developments provide 14.46 acres of open space (12.67 acres of active space). These open space resources are solely for the use of NYCHA residents. With approximately 13 of the 18 NYCHA resources within the residential study area programmed with mostly active open space features, young people living in NYCHA developments would continue to have access to active open space facilities such as the Wagner Houses Pool and the playgrounds and basketball courts located at the Washington and Carver Houses, Lehman Village and other NYCHA developments (see Table 5-9). In addition, most NYCHA developments offer seating areas, such as those found at the UPACA Houses, Jackie Robinson Houses, and Lexington Houses, which can be used as a gathering place for young people, and more generally a place for all residents to relax. The prevalence of active recreational features at these NYCHA developments for use by NYCHA residents lessens the demand placed upon publicly accessible open space resources within the residential study area.

In addition, there are a total of 24 open space resources programmed with primarily active recreational features, including some major parks like Thomas Jefferson Park and Harlem River Park, as well as smaller open spaces like James Weldon Johnson Playground, Wagner Playground, Alice Kornegay Triangle, Marx Brothers Playground, Playground 103, Blake Hobbs Playground, Poor Richard's Playground, and Martin Luther King Playground. There are also a variety of active resources within the residential study area like swimming pools (seasonal swimming pools include Lasker Rink in Central Park, and pools at Marcus Garvey and Thomas Jefferson Parks) and community centers (Thomas Jefferson Park, Marcus Garvey Park, and Central Park), which would continue to be utilized by all age groups within the residential study area.

DIRECT EFFECTS

As mentioned, the Sendero Verde Development Alternative would result in the same direct effects as the Proposed Actions and would result in additional direct effects as well. Three open space resources would experience significant adverse shadow impacts as a result of incremental shadows from certain RWCDS Projected Development Sites. The Sendero Verde Development Alternative would also cast new shadow on four sunlight-sensitive open space resources (discussed in detail below): Central Park, Duke Ellington Circle, Martin Luther King Houses Recreation Areas, and Martin Luther King Playground. Two additional resources, Johnson Houses and Taft Houses Recreation Areas, would be cast in additional incremental shadow under this alternative, as compared with the With Action Condition. These incremental shadows as a result of the Sendero Verde Development would not be considered significant.

Unlike the Proposed Actions, the Sendero Verde Development Alternative would result in direct effects to six GreenThumb gardens located on Site 70. The six gardens include Villa Santurce Jardinera; Villa Santurce; Corner Green Garden (Friendly Garden); Chenchita's Community Garden; Mission Garden; and Little Blue House Garden. The gardens are located on City-owned parcels along Park and Madison Avenues and operate under a temporary license agreement with HPD.

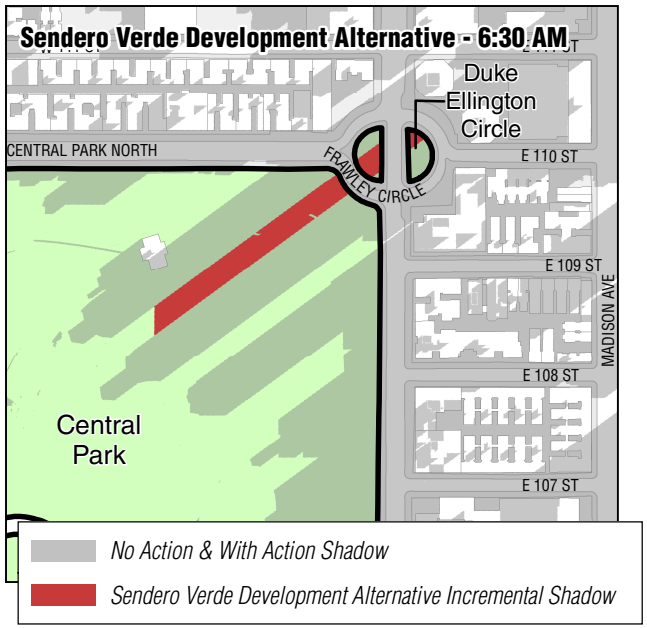
Four of the gardens that would be relocated onto Block 1617 following completion of the Sendero Verde Development Alternative and are currently licensed to occupy Lots 38, 39, 40, 51, 52, and 53. The four gardens include Villa Santurce Jardinera, Villa Santurce, Chenchita's Community Garden and Mission Garden. Upon completion of the Sendero Verde Development and reacquisition of the garden space by the City, the gardens would be placed under the jurisdiction of NYC Parks. The other two community gardens (Corner Green Garden/Friendly Garden and Little Blue House Garden) have been offered relocation sites on other nearby existing NYC Parks gardens pursuant to the Garden Rules. In prior years, part of the Site was used as a baseball field by a private league under a temporary license agreement with HPD. The license expired and the private league has obtained a permit through NYC Parks to play on a nearby NYC Parks field starting in spring 2017.

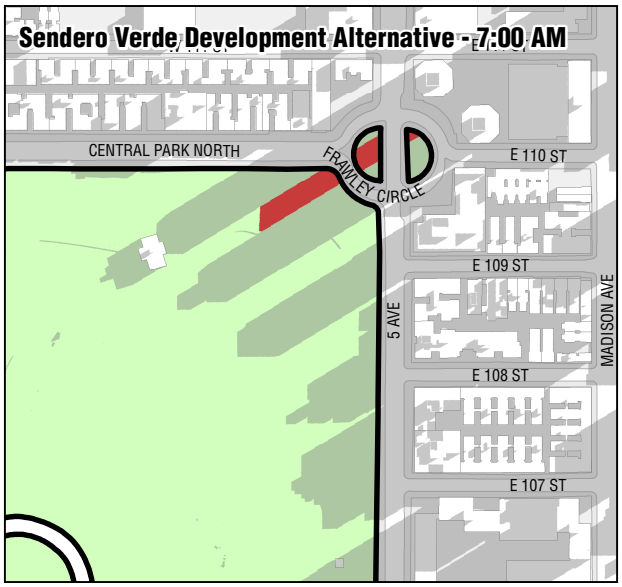
Under the Sendero Verde Development Alternative, the four gardens would be relocated along East 111th Street. The community gardens incorporated into the Sendero Verde Development would represent an improvement as compared with existing conditions and conditions on the Development Site under the Proposed Actions. The proposed southerly orientation maximizes sunlight and minimizes shadows that would be cast on the gardens by the Sendero Verde Development. The new gardens would be located on the corner of Park Avenue and East 111th Street, on the corner of Madison Avenue and East 111th Street, and on East 111th Street extending in a terraced fashion towards an elevated courtyard. Within the center of the Sendero Verde Development, the courtyards formed by the proposed buildings would provide passive, landscaped recreation space. Public entrances to the courtyards would be provided along Park Avenue, through a staircase and elevator, as well as along East 111th Street, through an ADA-accessible path. The courtyard would also be accessible through rear entrances in the adjoining community facility spaces. A dedicated community room and a bathroom, which would be available to members of all four gardens, would be located within Building A. An additional bathroom would be located adjacent to the gardens on Park Avenue. In addition, a public pathway would pass through the gardens located along East 111th Street connecting to the interior courtyard.

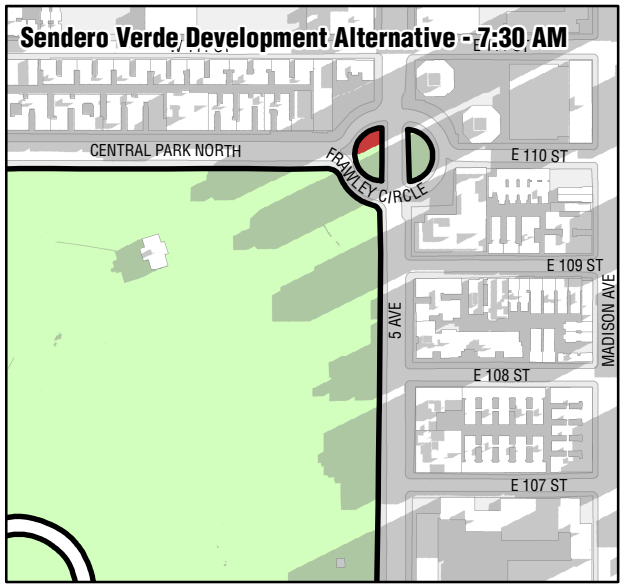
An easement would be established through these gardens to facilitate this pathway and the path would be part of the Large Scale General Development Restrictive Declaration. This pathway would need to be maintained by the future owner of the Sendero Verde Development and remain accessible to the public during hours to be determined through negotiations between the City and the development team. Upon reacquisition by the City, the community garden space would ultimately be placed under the jurisdiction of NYC Parks, which would enter into a license agreement with the community gardens. For the reasons discussed above, no significant adverse impacts related to direct effects would result from the Sendero Verde Development Alternative.

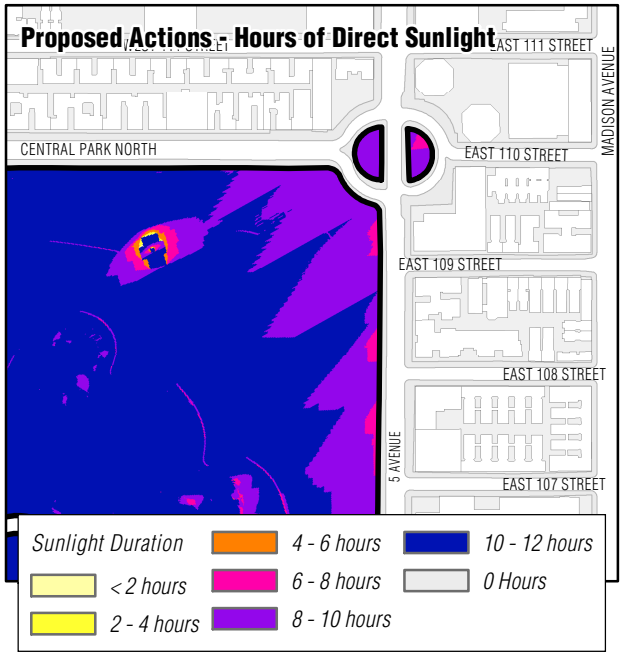
SHADOWS

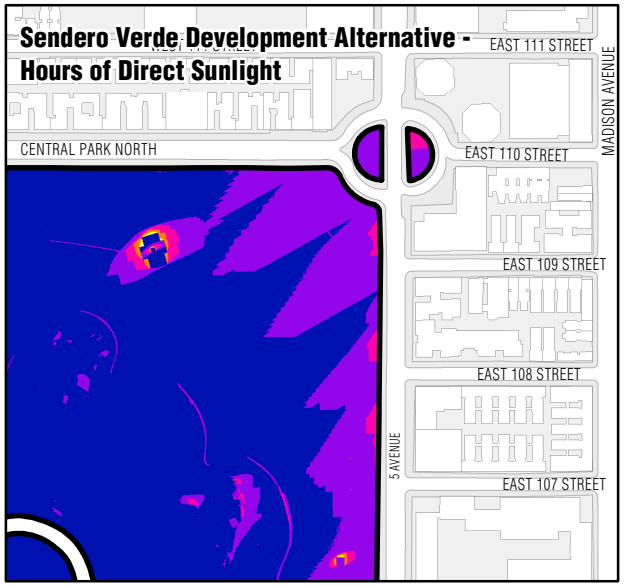
In addition to the 50 sunlight-sensitive resources that would be affected by incremental shadow by the Proposed Actions (identified in Chapter 6, "Shadows"), the Sendero Verde Development Alternative would cast new shadow on four sunlight-sensitive open space resources: Central Park, Duke Ellington Circle, Martin Luther King Houses Recreation Areas, and Martin Luther King Playground. Two additional resources, Johnson Houses and Taft Houses Recreation Areas, would be cast in additional incremental shadow under this alternative, as compared with the Proposed Actions. **Figures 22-6 to 22-14** illustrate the extent of additional shadow originating from Sendero Verde and its effect on the total duration of direct sunlight received by the open space resources throughout the day. The enter and exit times, and total duration of the additional shadow as compared with those of the Proposed Actions are described in **Table 22-12**.

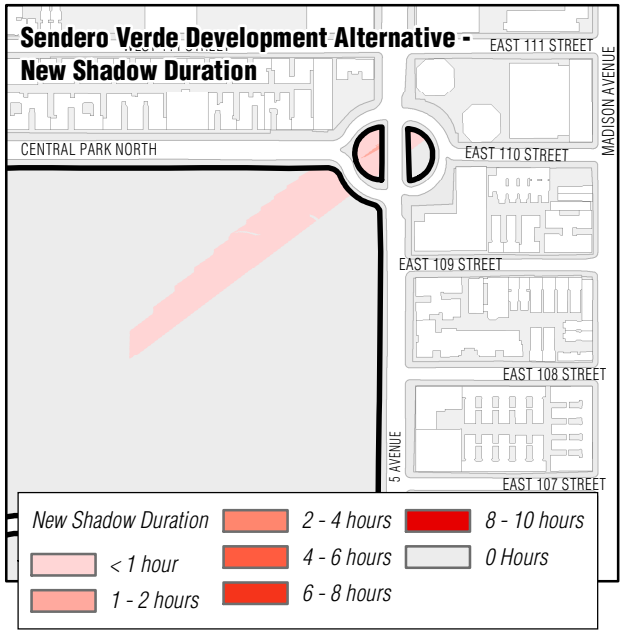






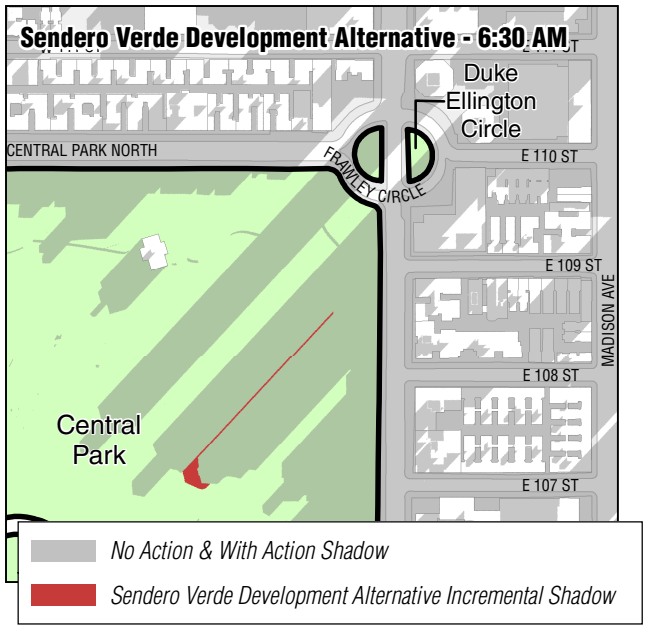


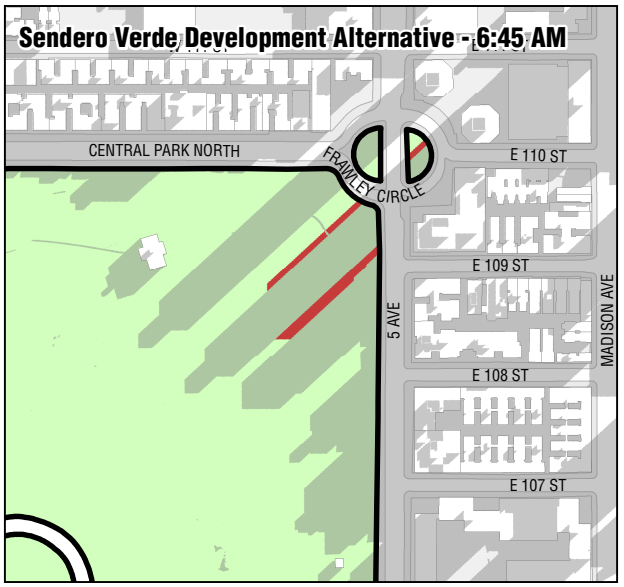


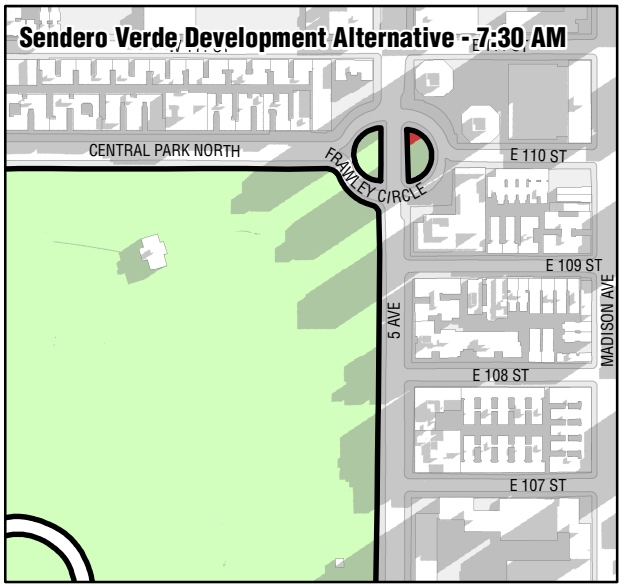


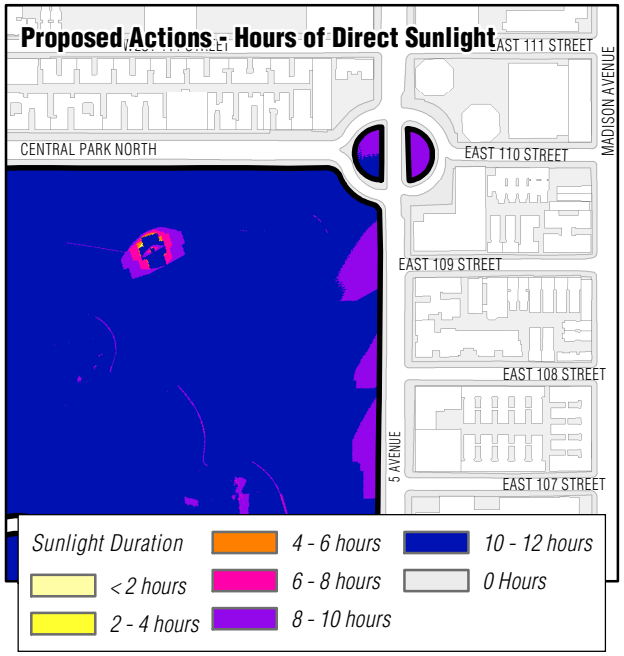
Sendero Verde Development Alternative
Detailed Analysis - May 6

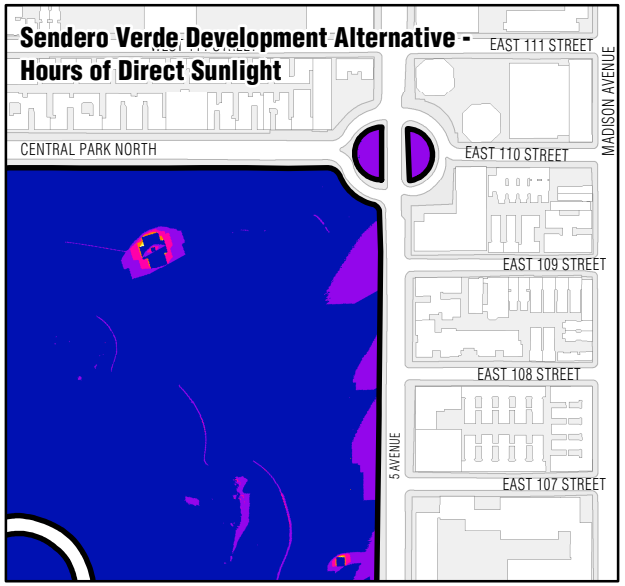
Figure 22-6

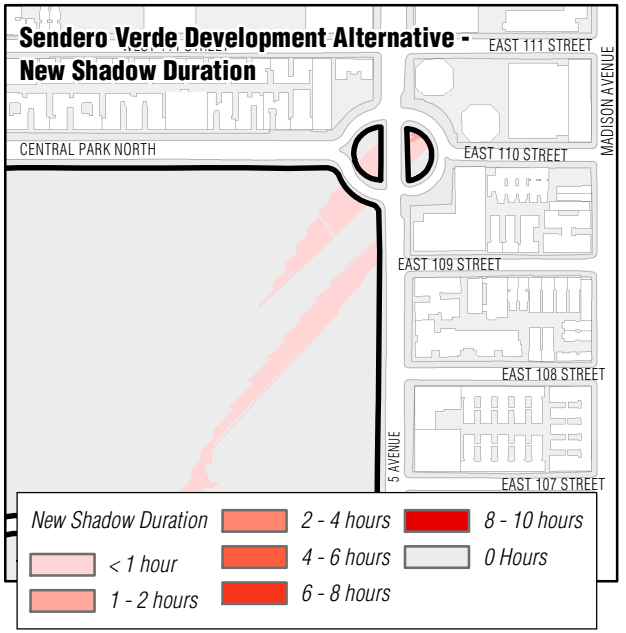






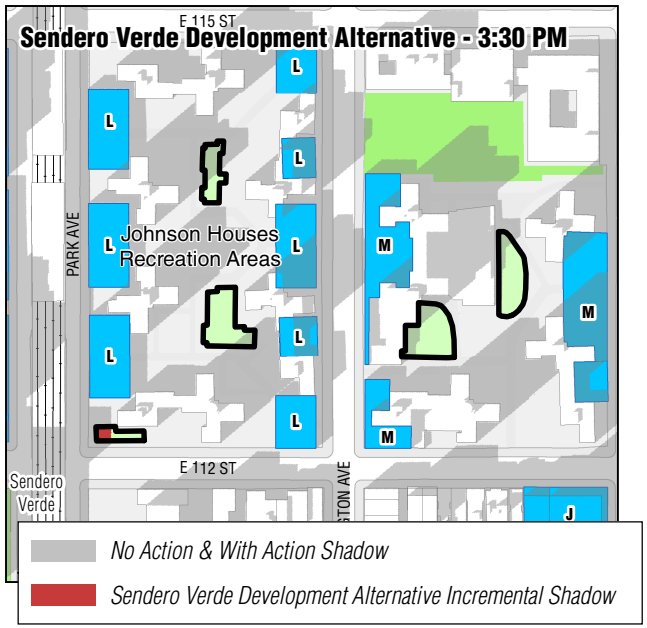


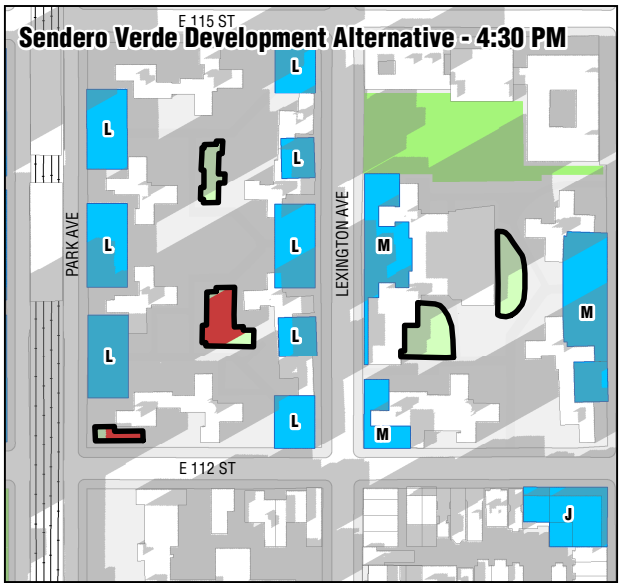


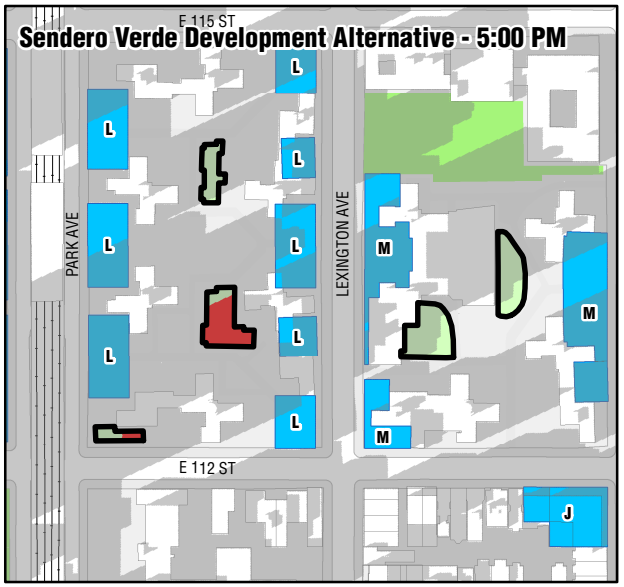


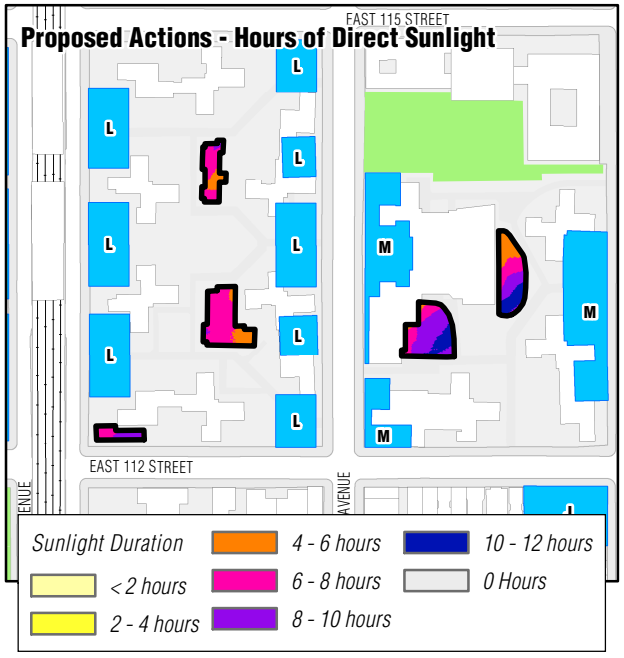
Sendero Verde Development Alternative
Detailed Analysis - June 21

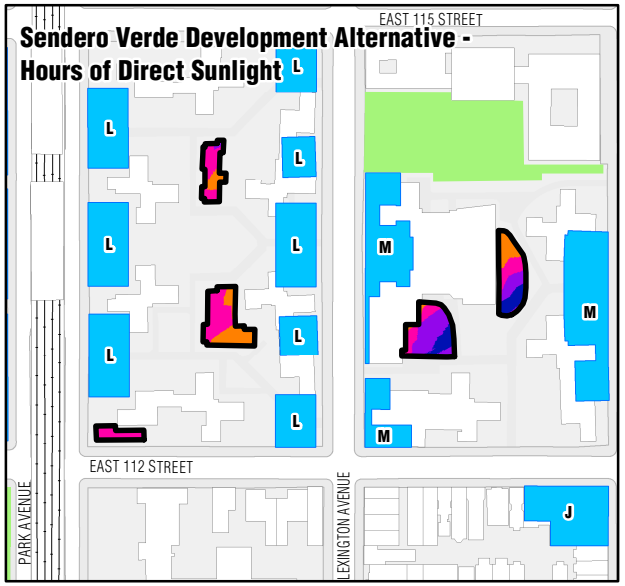
Figure 22-7

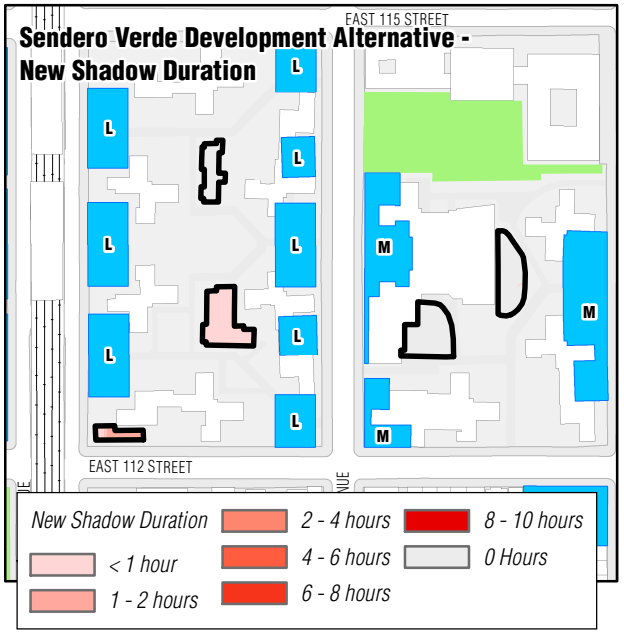






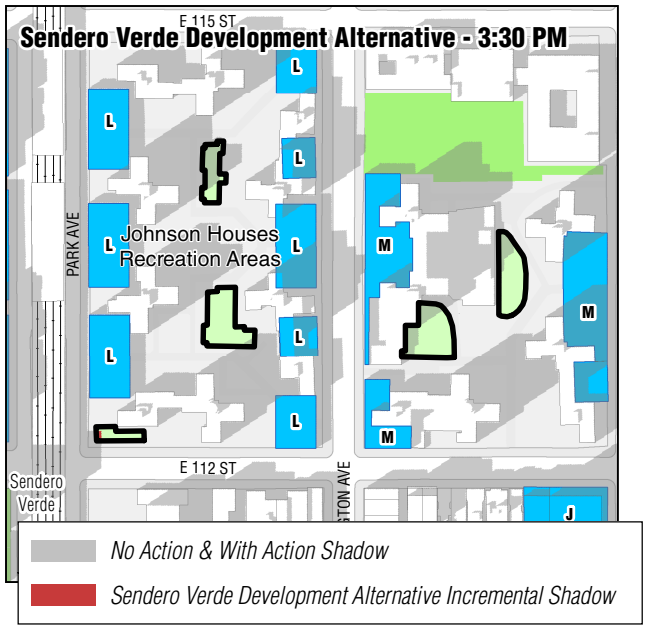


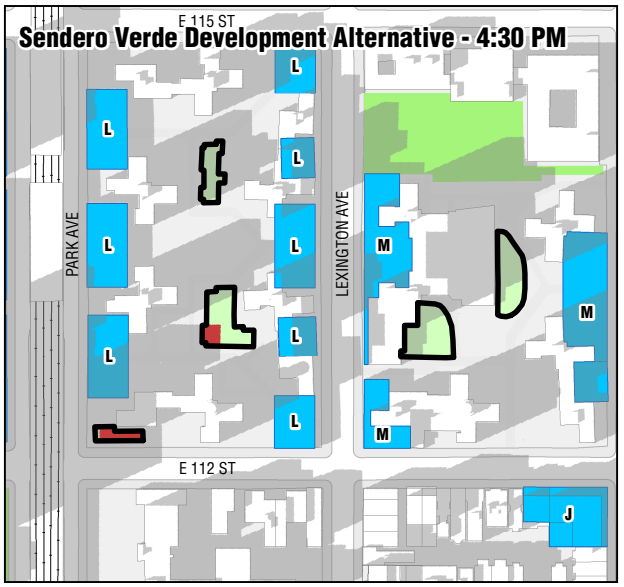


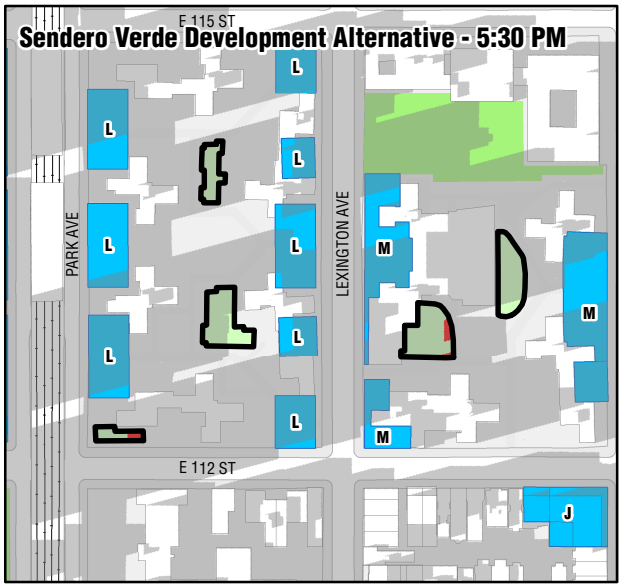


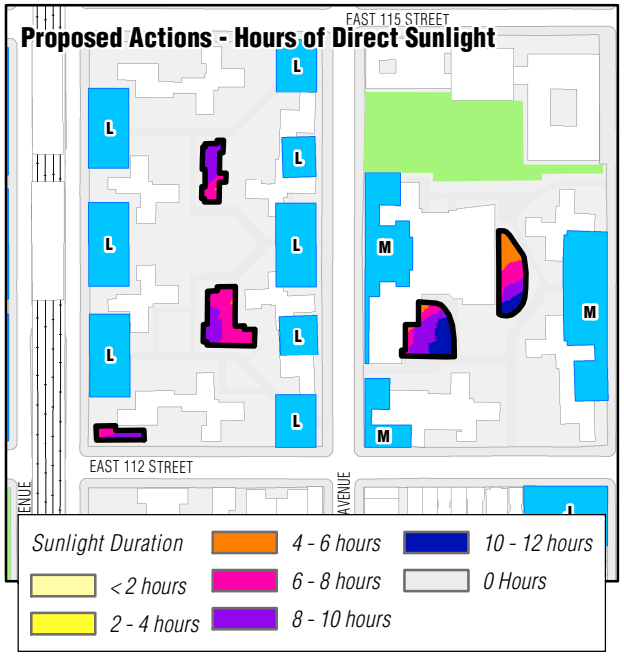
Sendero Verde Development Alternative
Detailed Analysis - May 6

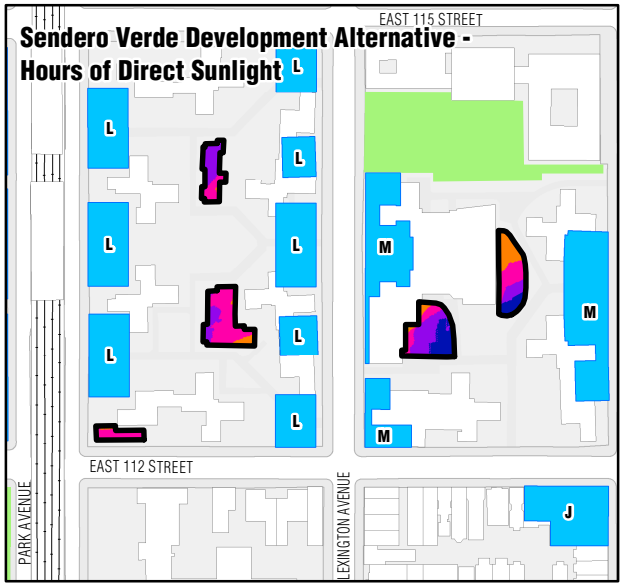
Figure 22-8

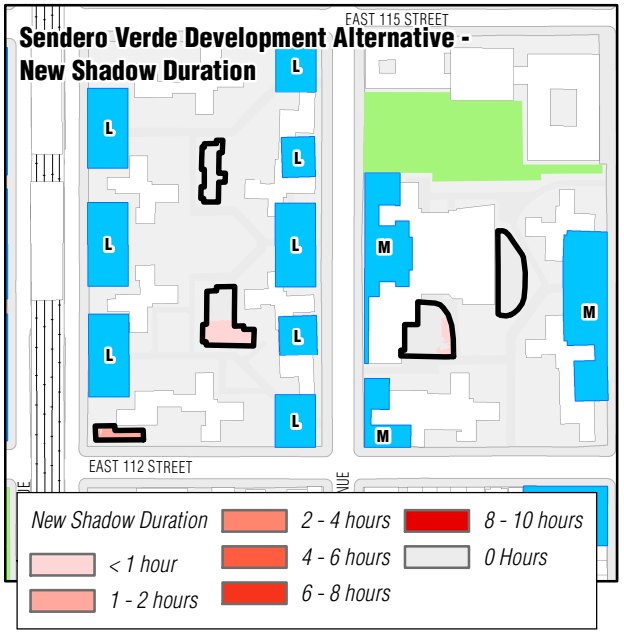








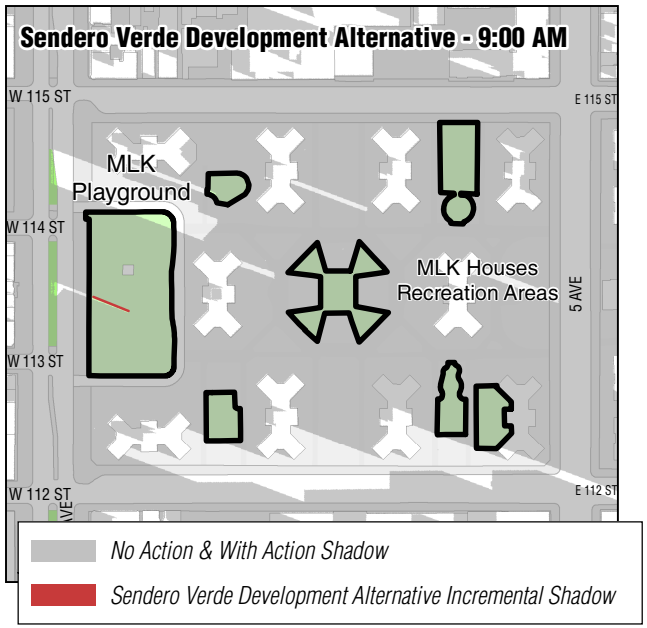


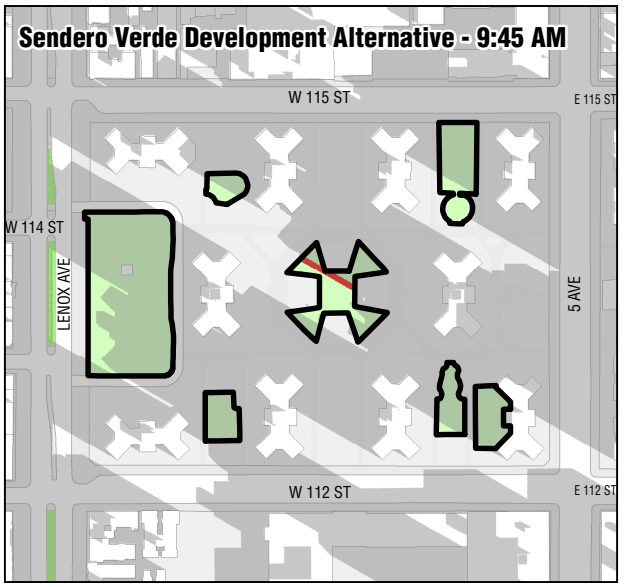


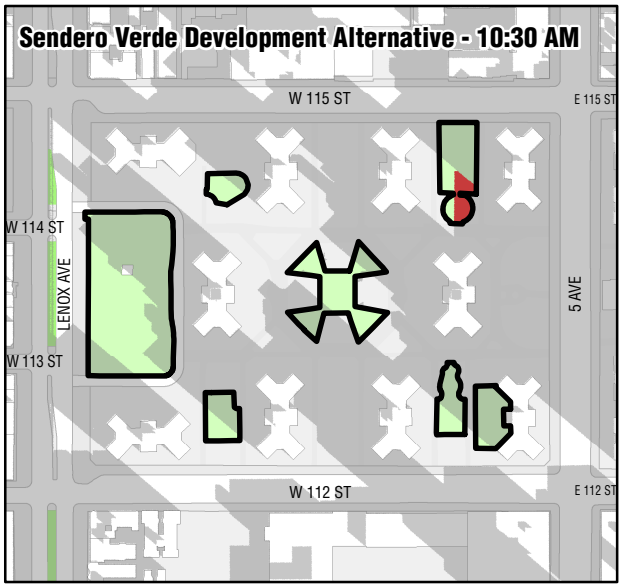
Sendero Verde Development Alternative
Detailed Analysis - June 21

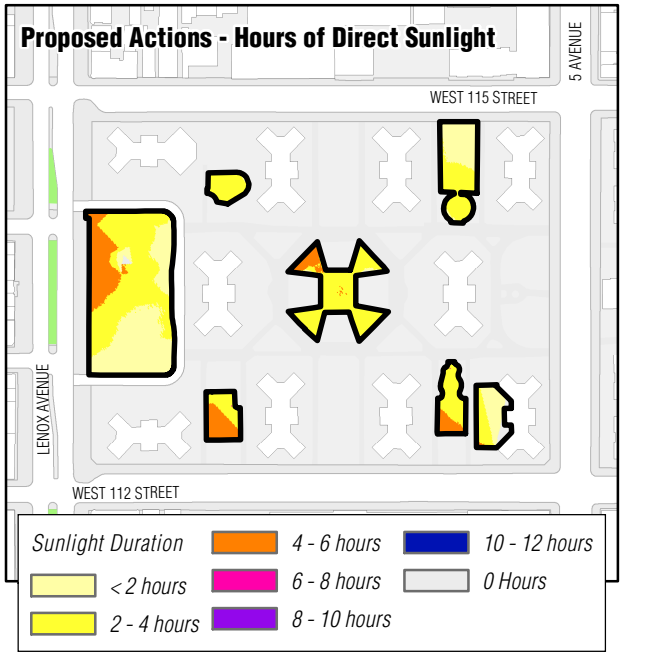
EAST HARLEM REZONING

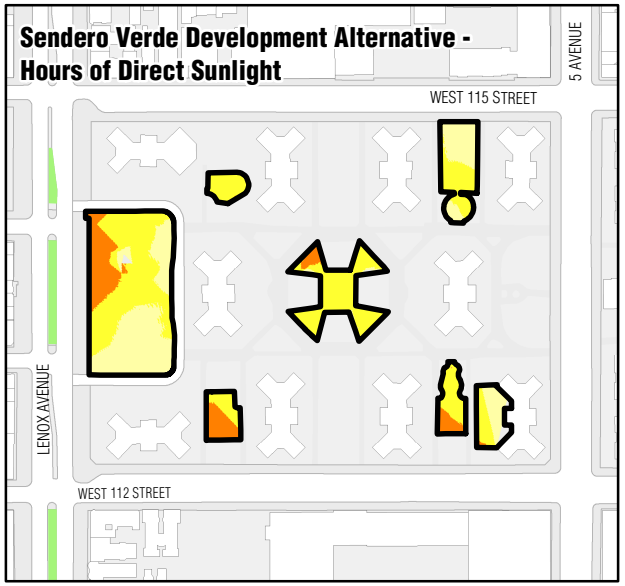
Figure 22-9

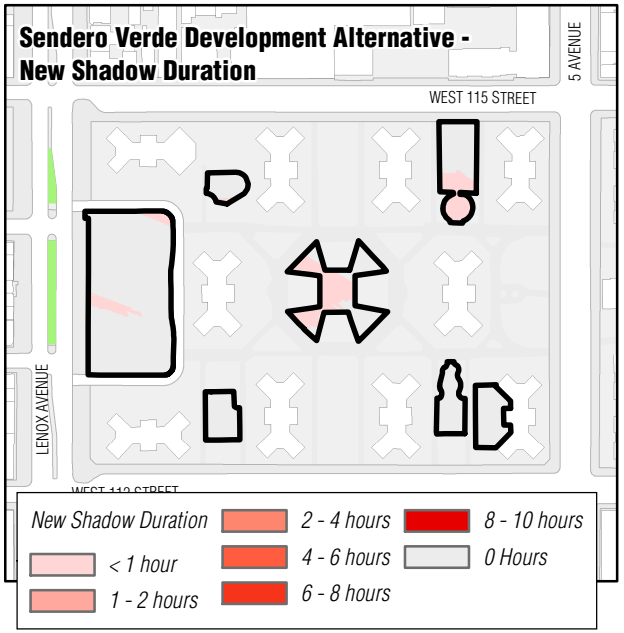








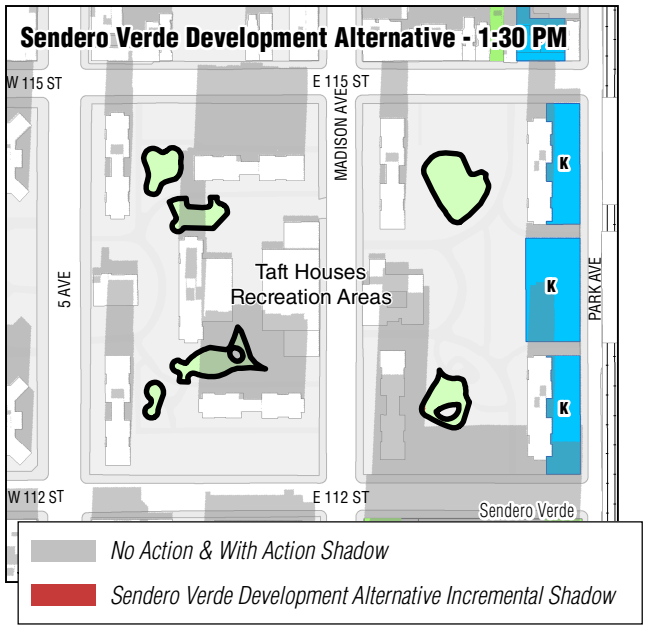


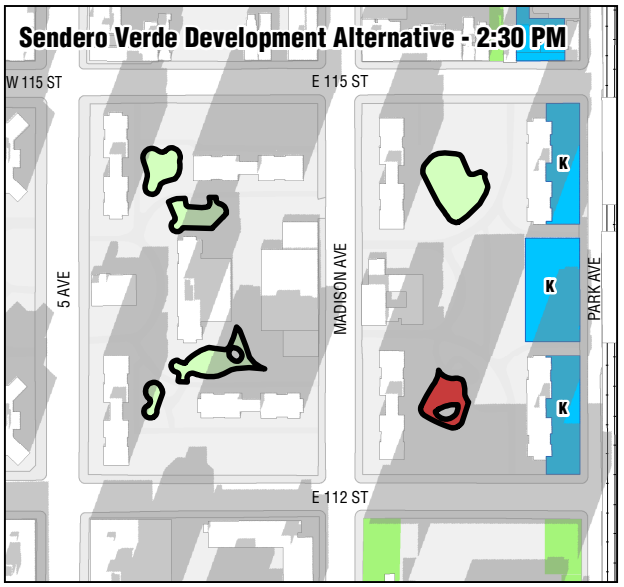


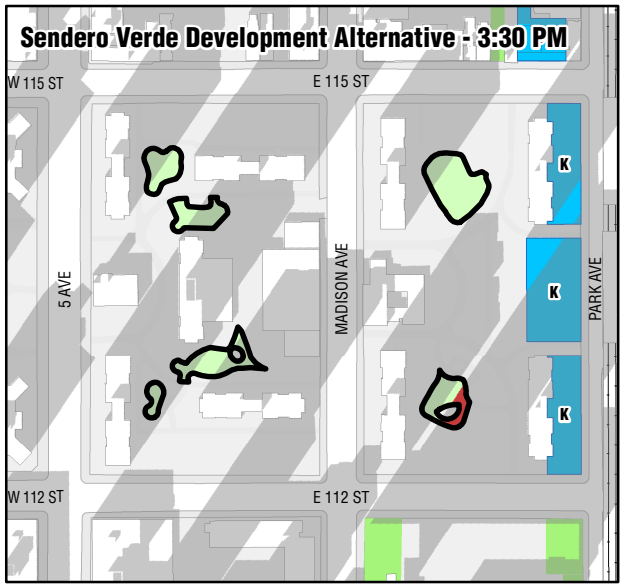
Sendero Verde Development Alternative
Detailed Analysis - December 21

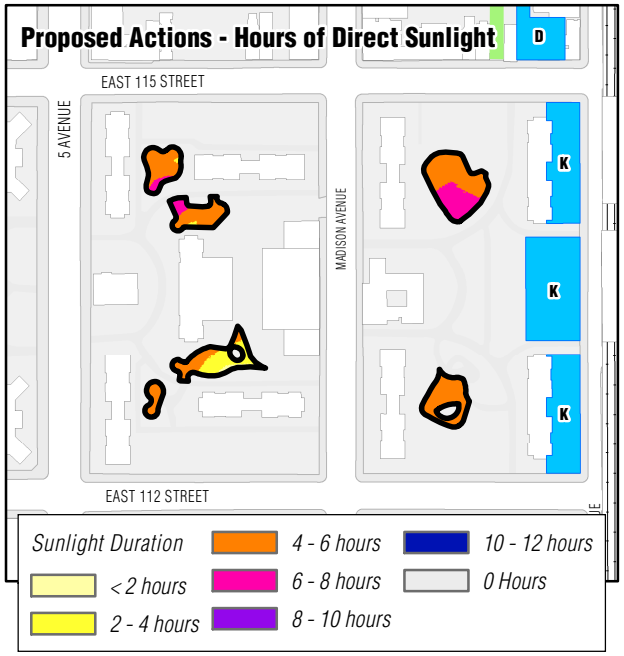
EAST HARLEM REZONING

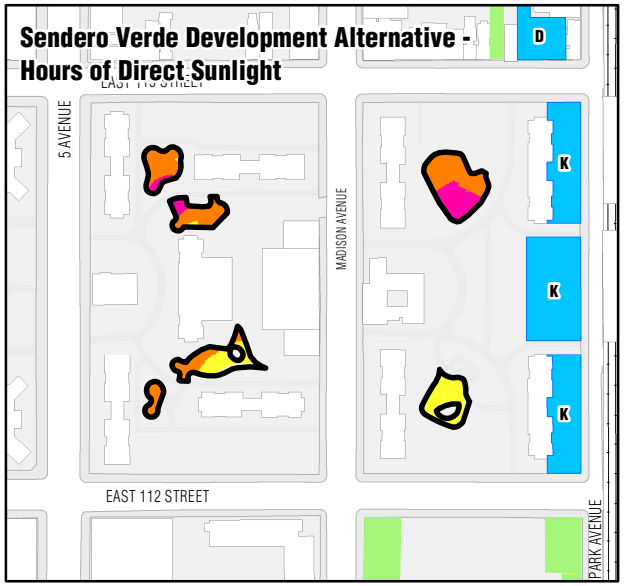
Figure 22-10

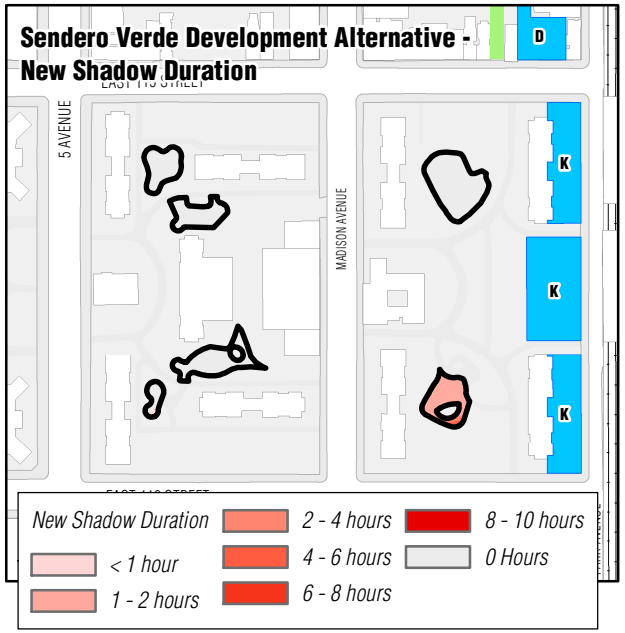






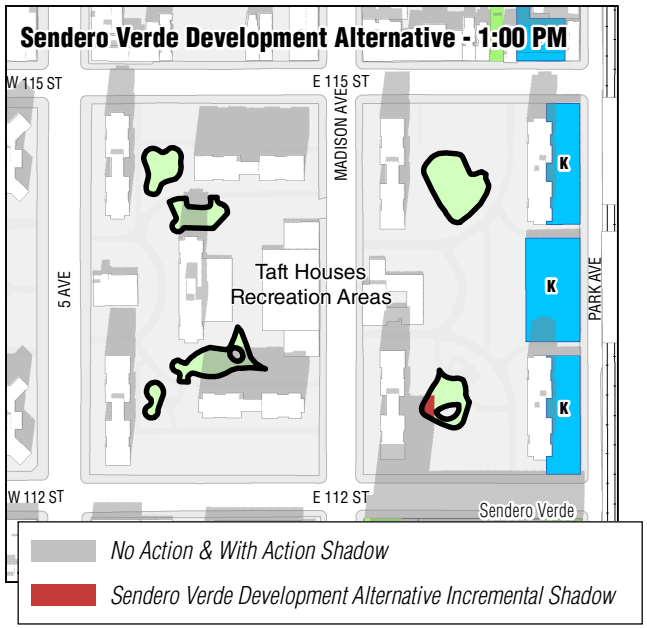


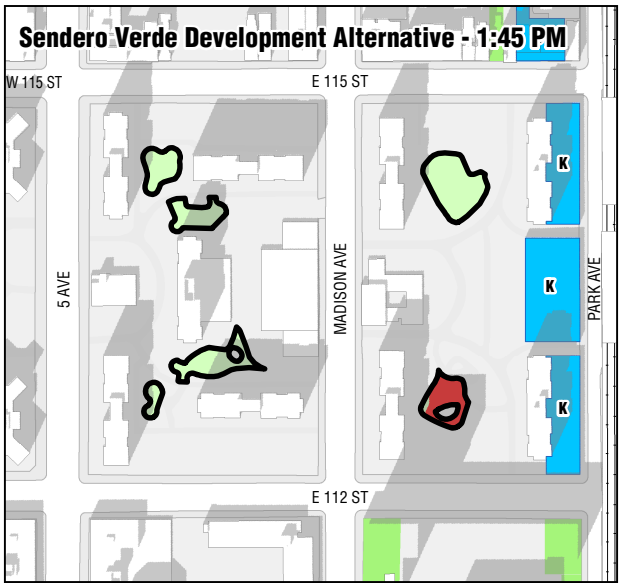


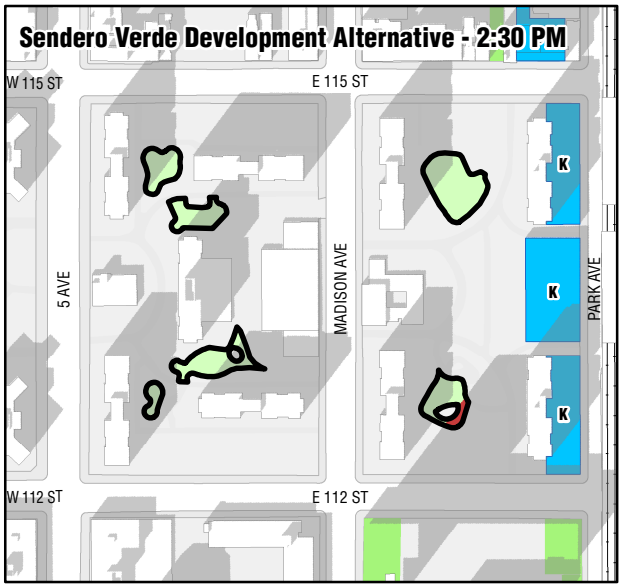


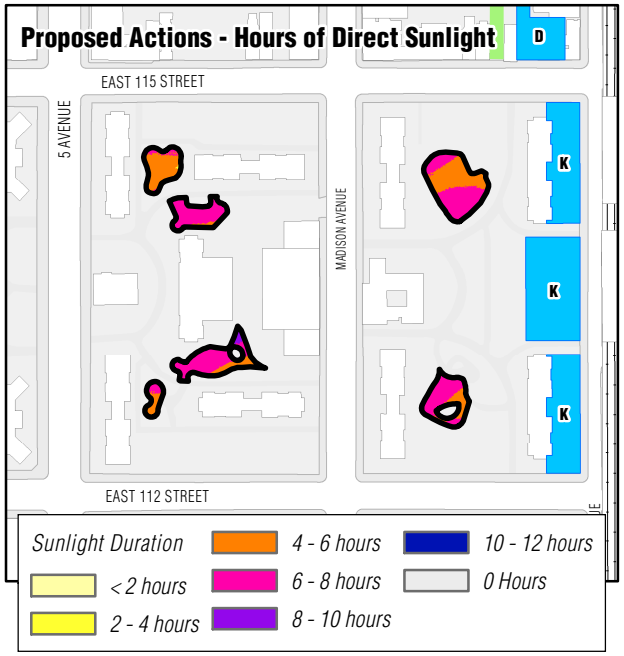
Sendero Verde Development Alternative
Detailed Analysis - March 21

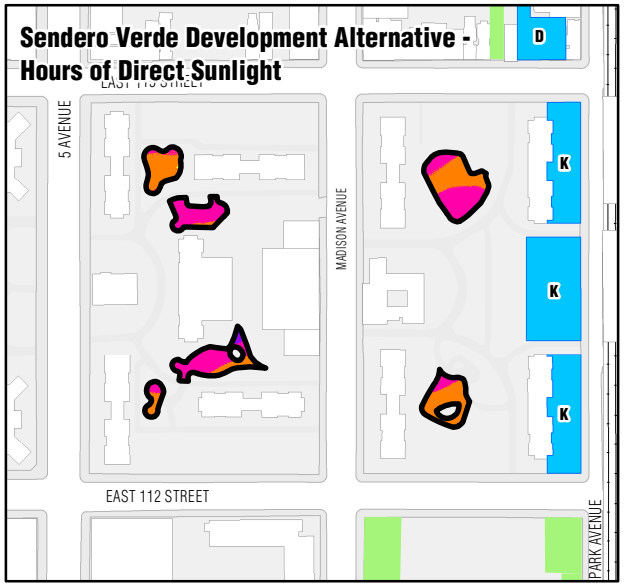
Figure 22-11

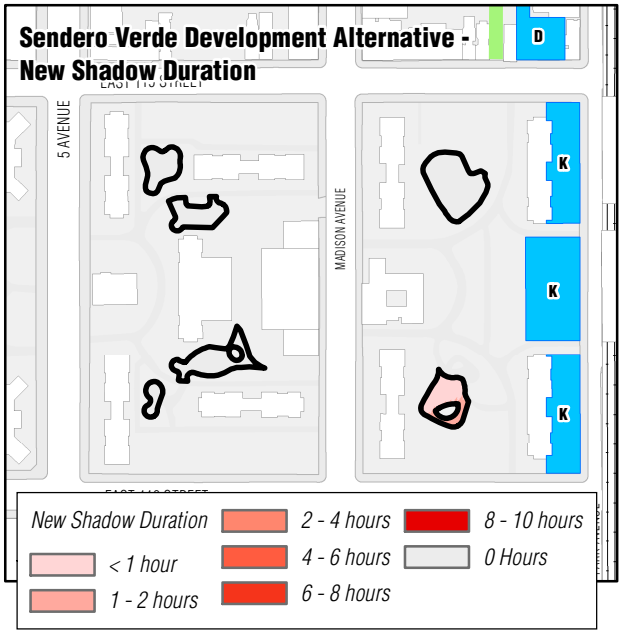






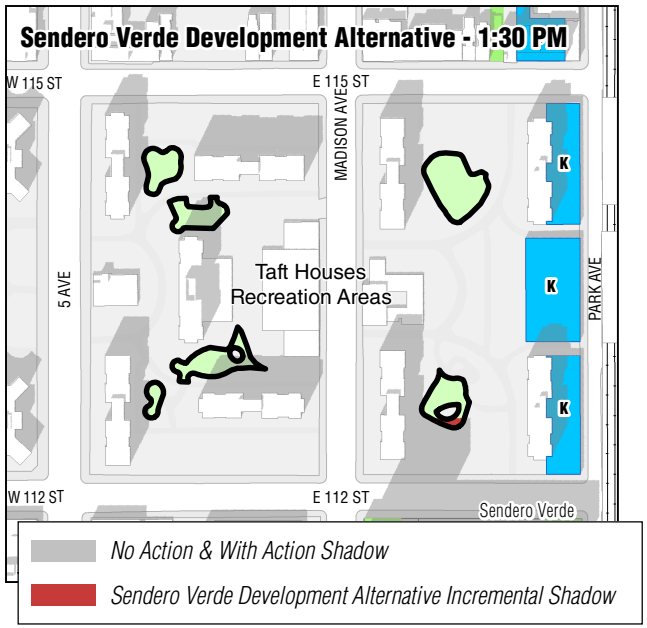


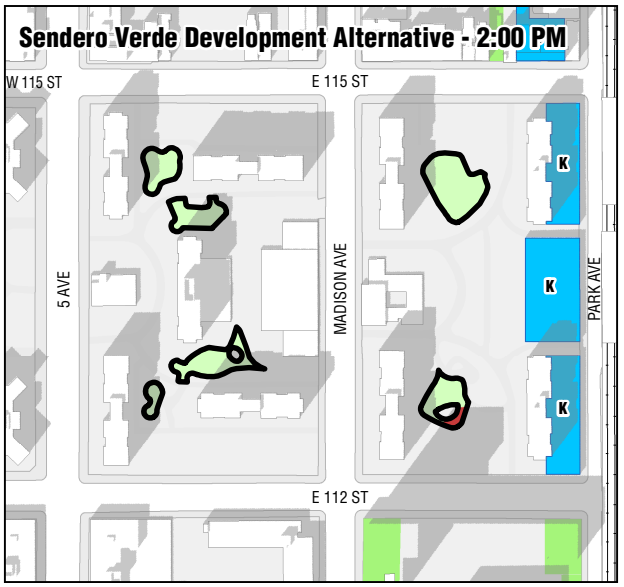


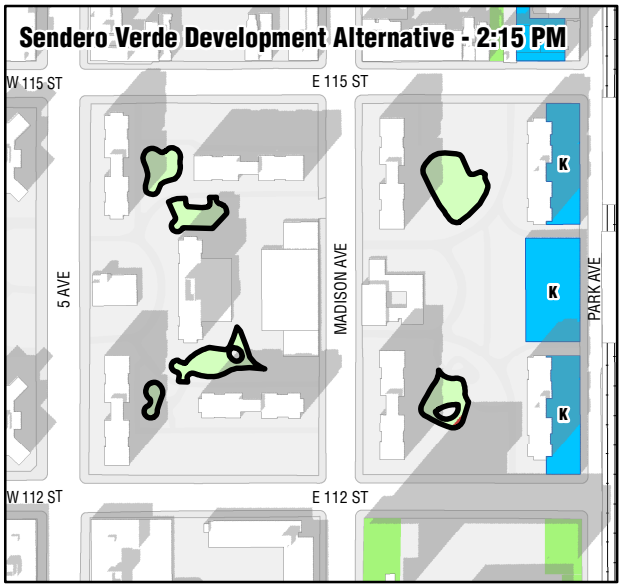


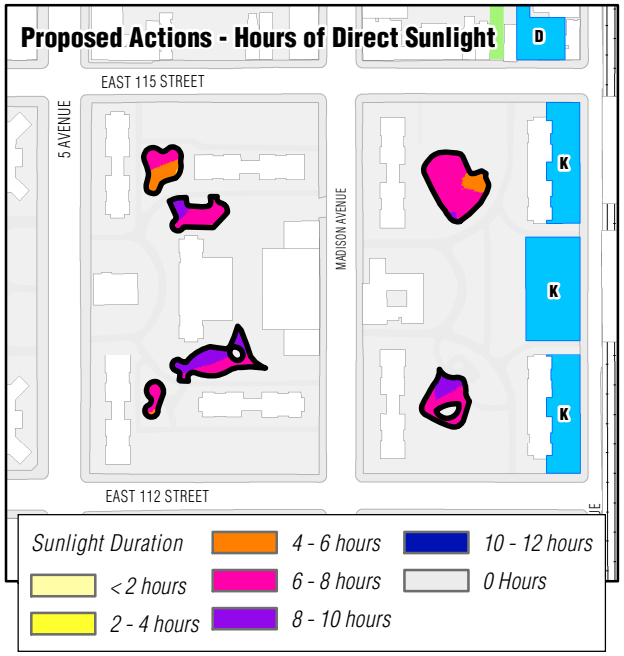
Sendero Verde Development Alternative
Detailed Analysis - May 6

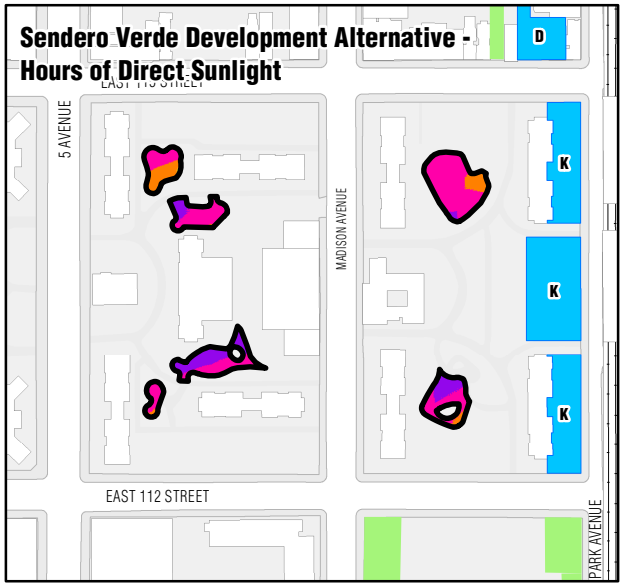
Figure 22-12

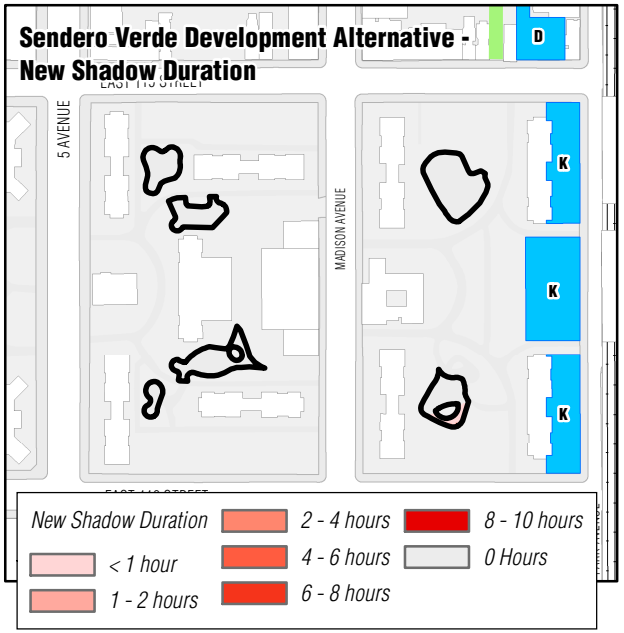






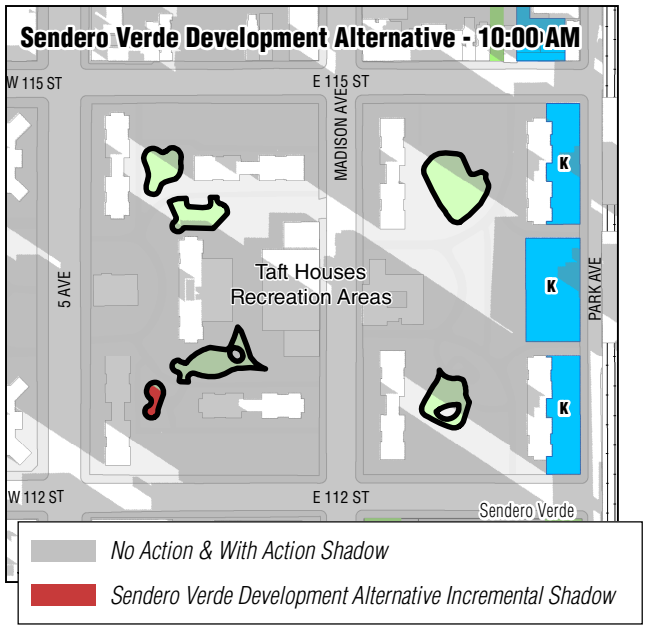


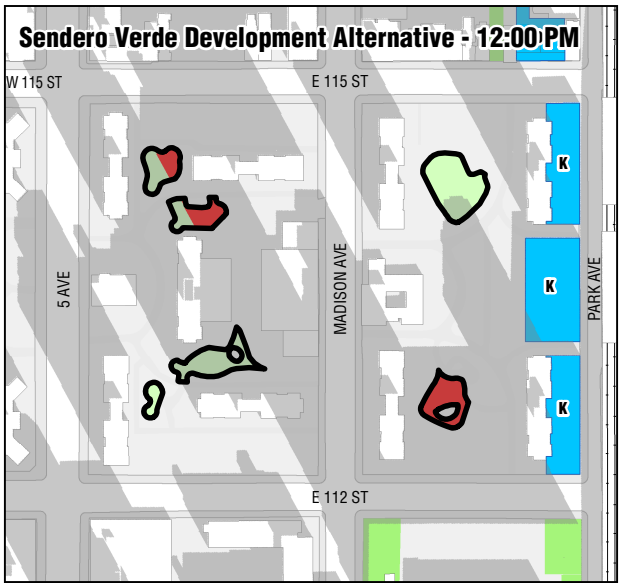


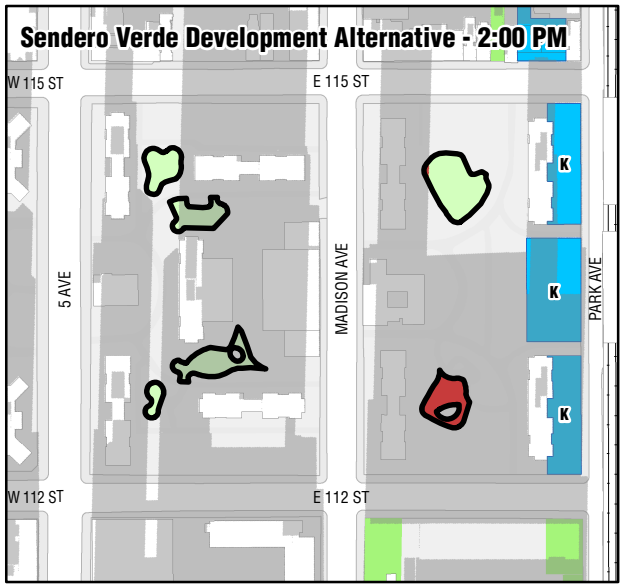


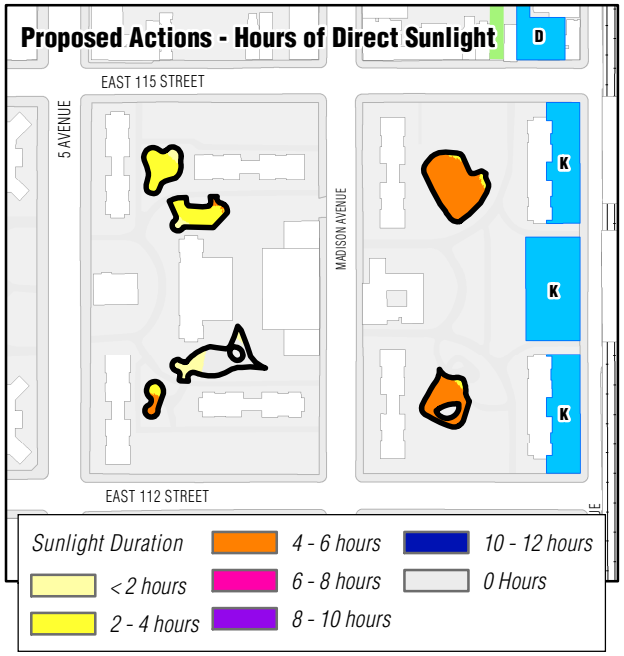
Sendero Verde Development Alternative
Detailed Analysis - June 21

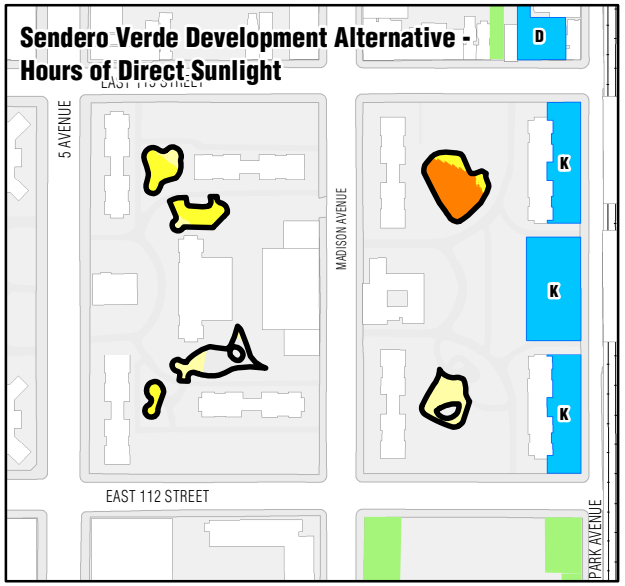
Figure 22-13

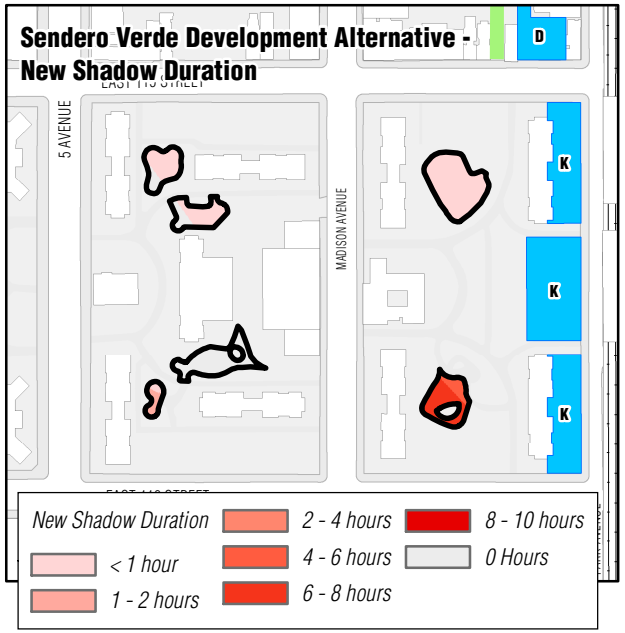












Sendero Verde Development Alternative
Detailed Analysis - December 21

Figure 22-14

Table 22-12
Sendero Verde Development Alternative Incremental Shadow Durations

Analysis day and timeframe window	March 21 7:36 AM—4:29 PM		May 6 6:27 AM—5:18 PM		June 21 5:57 AM—6:01 PM		December 21 8:51 AM—2:53 PM	
	Proposed Actions	Sendero Verde Development Alternative	Proposed Actions	Sendero Verde Development Alternative	Proposed Actions	Sendero Verde Development Alternative	Proposed Actions	Sendero Verde Development Alternative
Central Park	—	—	—	6:27 AM—7:25 AM	—	5:57 AM—7:05 AM	—	—
	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 58 min	Total: 0 hr 0 min	Total: 1 hr 8 min	Total: 0 hr 0 min	Total: 0 hr 0 min
Duke Ellington Circle	—	—	—	6:27 AM—7:45 AM	—	5:57 AM—8:00 AM	—	—
	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 1 hr 18 min	Total: 0 hr 0 min	Total: 2 hr 3 min	Total: 0 hr 0 min	Total: 0 hr 0 min
Martin Luther King Houses Recreation Areas	—		—	—	—	—	—	8:51 AM—10:40 AM
	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 1 hr 49 min
Martin Luther King Playground	—	—	—	—	—	—	—	8:51 AM—9:20 AM
	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 0 min	Total: 0 hr 29 min
Johnson Houses Recreation Areas	7:36 AM—9:15 AM	7:36 AM—9:15 AM	6:27 AM—6:40 AM	6:27 AM—6:40 AM	5:57 AM—6:10 AM	5:57 AM—6:10 AM	8:51 AM—9:50 AM	8:51 AM—9:50 AM
				9:40 AM—10:50 AM		9:10 AM—10:20 AM	10:10 AM—11:40 AM	10:10 AM—11:40 AM
	3:55 PM—4:29 PM	3:55 PM—4:29 PM		3:15 PM—5:18 PM		3:25 PM—5:45 PM	12:05 PM—1:15 PM	12:05 PM—1:15 PM
	Total: 2 hr 13 min	Total: 2 hr 13 min	Total: 0 hr 13 min	Total: 3 hr 26 min	Total: 0 hr 13 min	Total: 3 hr 48 min	Total: 3 hr 39 min	Total: 3 hr 39 min
Taft Houses Recreation Areas	—	10:35 AM—10:40 AM	—	12:50 PM—2:45 PM	5:57 AM—6:45 AM	5:57 AM—6:45 AM	—	8:51 AM—2:53 PM
		1:15 PM—4:00 PM				1:15 PM—2:25 PM		
	Total: 0 hr 0 min	Total: 2 hr 50 min	Total: 0 hr 0 min	Total: 1 hr 55 min	Total: 0 hr 48 min	Total: 1 hr 58 min	Total: 0 hr 0 min	Total: 6 hr 2 min

Notes:
Table indicates entry and exit times and total duration of incremental shadow for each sunlight-sensitive resource.
Daylight saving time is not used—times are Eastern Standard Time, per *CEQR Technical Manual* guidelines. However, as Eastern Daylight Time is in effect for the March/September, May/August and June analysis periods, add one hour to the given times to determine the actual clock time.

CENTRAL PARK

With the Sendero Verde Development Alternative, the northeast corner of Central Park would receive new shadow in the morning of the May 6 and June 21 analysis days. On neither day would the shadow duration be long enough to significantly impact the park. All areas affected by new shadow would continue to receive direct sunlight throughout the late morning and afternoon. The experience of park users would not be significantly altered and all affected areas would continue to receive enough direct sunlight to support a variety of plant life (see **Figures 22-6 to 22-7**).

DUKE ELLINGTON CIRCLE

Duke Ellington Circle is a publically accessible plaza located at the intersection of Fifth Avenue and Central Park North. It features stepped seating and several dozen trees. With the Sendero Verde Development Alternative, Duke Ellington Circle would receive approximately one hour of new shadow in the morning of the May 6 and June 21 analysis days. On neither day would the shadow duration be long enough to significantly impact the open space. All areas of the resource

would continue to receive direct sunlight throughout the late morning and afternoon. The experience of park users would not be significantly altered and the open space would continue to receive enough direct sunlight to support a variety of plant life (see **Figures 22-6 to 22-7)**.

JOHNSON HOUSES RECREATION AREA

The shadows analysis found that the Proposed Actions would cast new shadow on recreation areas with Johnson Houses for relatively short duration within the growing season, and longer durations within the winter. With the Sendero Verde Development Alternative, several of the recreation areas within Johnson Houses would be cast in additional new shadow on the March 21, May 6, and June 21 analysis days. New recreation area shadow on the March 21 analysis day would be brief, lasting for around 10 minutes in the late afternoon. On May 6 and June 21, the duration of new shadow cast from the Sendero Verde Development Alternative would be longer, and would fall on a playground and a garden in the southwest portion of the Taft Houses property for approximately one hour.

Taken together, Johnson Houses contains a number of recreation areas that could be used by NYCHA residents; therefore, the addition of Sendero Verde to the With Action Condition would not cause a significant shadows impact on the Johnson Recreation Areas. The relatively short durations of new shadow would not significantly alter NYCHA residents' use of the recreations areas. NYCHA residents would continue to have access to other recreation areas within Johnson Houses that are not affected by incremental shadow from Site 70. The Sendero Verde Development Alternative would also not significantly alter the resource's ability to support plant life. The areas affected by new shadow from this alternative would continue to receive enough direct sunlight in the growing season to support a variety of plant life (see **Figures 22-8 to 22-9**).

MARTIN LUTHER KING HOUSES RECREATION AREAS

With the Sendero Verde Development Alternative, up to 30 minutes of new shadow would be cast on several basketball courts and a seating area within the Martin Luther King Houses Recreation Areas on the morning of the December 21 analysis day. The short duration of new shadow would not significantly alter NYCHA residents' utilization of the recreation areas. Furthermore, all new shadow would occur outside the growing season, when the resource's vegetation could be impacted by reduced exposure to direct sunlight (see **Figure 22-10**).

MARTIN LUTHER KING PLAYGROUND

With the Sendero Verde Development Alternative, Martin Luther King Playground would be cast in approximately 15 minutes of new shadow in the early morning of the December 21 analysis day. The short duration of new shadow would not result in a significant shadows impact on the open space. The experience of park users would not be significantly altered and all new shadow would occur outside the growing season, when the growth of the park's vegetation would not be affected (see **Figure 22-10)**.

TAFT HOUSES RECREATION AREAS

The shadows analysis found that the Proposed Actions would cast new shadow on a playground within the Taft Houses Recreation Areas for approximately 45 minutes on the June 21 analysis day. With the Sendero Verde Development Alternative, the playground, located between Taft Houses Buildings 6 and 7 along East 115th Street, would be cast in approximately 30 minutes of additional shadow on December 21. And in the morning of the same analysis day, several of the recreation areas within Taft Houses located west of Madison Avenue would also receive new shadow.

In addition, with the Sendero Verde Development Alternative, a playground and seating area, located between Taft Houses buildings 8 and 9 and directly north of Site 70, would be cast in new shadow on all analysis days. The affected recreation area would be cast in shadow originating from the Sendero Verde Development for less than one hour on June 21, for one or two hours on March 21 and May 6, and for over four hours on December 21. On the March 21 and May 21 analysis days, all areas of the playground and seating area would continue to receive enough direct sunlight to support a variety of plant life. On the March 21 analysis day, for some portions of the playground and seating area, shadow cast by the Sendero Verde Development Alternative would limit the duration of direct sunlight to under four hours.

Taken together, Taft Houses contains a number of recreation areas that could be used by NYCHA residents; therefore, the addition of Site 70 to the With Action Condition would not cause a significant shadows impact on the Taft Houses Recreation Areas. As described above, although a playground and seating area directly to the north of Site 70 would be cast in several hours of new shadow on some analysis days, NYCHA residents would continue to have access to other recreation areas within Taft Houses that are not affected by incremental shadow from Site 70. Furthermore, the recreation areas are accessible to only NYCHA residents of Taft Houses. Those not living in Taft Houses do not have access to the recreations areas and any new shadow would not alter their utilization of those resources. The Sendero Verde Development Alternative would also not significantly alter the resource's ability to support plant life. The great majority of areas affected by new shadow from this alternative would continue to receive enough direct sunlight in the growing season to support a variety of plant life (see **Figures 22-11 to 22-14**).

HISTORIC AND CULTURAL RESOURCES

The Sendero Verde Development Alternative would result in the same significant adverse impacts with respect to historic and cultural resources that would occur as a result of the Proposed Actions.

ARCHAEOLOGICAL RESOURCES

Under the Sendero Verde Development Alternative, development would occur on Block 1617, which is primarily vacant. In a letter dated November 11, 2016, the Landmarks Preservation Commission (LPC) determined that the Block 1617 did not have any archaeological significance. Therefore, no additional archaeological resources would be impacted under the Sendero Verde Development Alternative.

ARCHITECTURAL RESOURCES

As under the Proposed Actions, construction under the Sendero Verde Development would occur within 90 feet of the Park Avenue Viaduct, a State and National Register (S/NR) eligible resource. Therefore, as under Proposed Actions, construction could potentially result in construction-related impacts. The viaduct would be afforded limited protection under DOB regulations applicable to all buildings located adjacent to construction sites (as set forth in C26-112.4), and the construction on the Sendero Verde Development would not have a significant adverse direct impact on the known architectural resource. To preclude impacts to the viaduct as a result of construction at the Sendero Verde Development Site, the LDA between HPD and the project sponsor would require LPC review and approval of a Construction Protection Plan (CPP). The CPP would be developed in accordance with the requirements stipulated in the New York City Department of Buildings TPPN #10/88 and LPC guidelines described in "Protection Programs for Landmarked Buildings." If any future State or Federal sources of funding are sought in connection with construction of Sendero

Verde, the CPP would also be subject to review and approval by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP).There are no other potential resources within 400 feet of the Sendero Verde Development Site.

With respect to indirect (contextual) impacts, it is not anticipated that the Sendero Verde Development would have adverse visual or contextual impacts on the known architectural resource. Taller buildings would be constructed along the length of the Park Avenue Viaduct under the Proposed Actions, and the development of the Sendero Verde Development would not further eliminate or screen publicly accessible views of the resource, introduce an incompatible visual, audible, or atmospheric element to a resource's setting.

URBAN DESIGN AND VISUAL RESOURCES

The Sendero Verde Development Alternative, like the Proposed Actions, would not result in significant adverse impacts. Under the Sendero Verde Development Alternative, the buildings that would be developed would be of a similar height and bulk to those that would be constructed under the Proposed Actions. In addition, the Sendero Verde Development Alternative would not result in development that would obstruct views to any significant visual resources.

With the Sendero Verde Development Alternative, the block bounded by East 111th Street, East 112th Street, Park, and Madison Avenues, which is currently occupied by community gardens, vacant land and one four-story brick mixed-use building, would be developed with three new primarily residential buildings with community facility and commercial space. The buildings that would rise approximately 42 stories (approximately 441 feet) along Madison Avenue, approximately 16 stories (approximately 183 feet) along East 112th Street and Park Avenue, and approximately 10 stories (approximately 114 feet) along East 111th Street (see **Figure 22-15**). The Sendero Verde Development would integrate the four GreenThumb community gardens currently located on the site. The tallest of the new buildings would be located along the wider Madison Avenue and would be similar in height to the 32-story building located at 1982 Lexington Avenue, the 28-story building located on Fifth Avenue between East 119th and East 120th Streets, and the 21-story building located at 8 West 118th Street.

The development on the Site would provide active ground-floors that would increase foot traffic and develop an under-utilized lot on the west side of Park Avenue, similar to the Proposed Actions that would be focused on the east side of Park Avenue. The Sendero Verde Development would provide a consistent streetwall along the perimeter of the Development Site. Currently completely vacant, the introduction of retail uses along Madison Avenue and community facility uses along East 112th Street and Park Avenue will enliven the pedestrian experience in this location of East Harlem, and serve to knit together disconnected blocks surrounding the Development Site. The design offers a contextual juxtaposition to the tower in the park developments located directly to the north, and a contextual counterpart to mid-rise development in the surrounding area. The contextual street walls and height of the proposed buildings provides a balanced composition and various heights of the three buildings, provides visual variety, and orients bulk toward the wider streets surrounding the Development Site—Madison Avenue, Park Avenue, and East 112th Street.

By incorporating the community gardens into the Sendero Verde Development, green space would also be maintained on the site. Community gardens would be located on the corner of Park Avenue and East 111th Street, on the corner of Madison Avenue and East 111th Street, and on East 111th Street extending in a terraced fashion towards the elevated courtyard described

Existing Condition

4/20/2017



Proposed Sendero Verde Development Alternative



View from East 112th Street Facing Southwest
Sendero Verde Development Alternative

above. A dedicated community room and a bathroom, which would be available to members of all four gardens, would be located within Building A. An additional bathroom would be located adjacent to the community gardens on Park Avenue. The Sendero Verde Development would preserve the maximum amount of open space that currently exists within the Development Site. The open courtyard created at the center of the Sendero Verde Development provides a distribution of landscaped open spaces that would benefit the occupants of the affordable dwelling units located in the upper portions of the buildings, as well as the community facility users located at the base of the buildings.

A public pathway would pass through the gardens located along East 111th Street and connect to the interior courtyard. An easement would be established through the gardens to facilitate the pathway and the path would be part of the Large Scale General Development Restrictive Declaration. The pathway would need to be maintained by the future owner of the Sendero Verde Development and remain accessible to the public during hours to be determined through negotiations between the City and the development team. Like the Proposed Actions, the Sendero Verde Development Alternative would not have an adverse impact on the urban design and visual resources.

NATURAL RESOURCES

Like the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts to natural resources.

The Development Site consists of an underutilized landscaped area that contains community gardens and vegetated vacant land. Under CEQR, this type of community is classified as a terrestrial cultural community, which may include a variety of gardens, landscaped areas, and small parks found throughout the City, as well as larger, landscaped parks, such as Central Park and Prospect Park. Vegetation in terrestrial cultural communities is usually present as a result of landscaping activity. Although the existing vegetation would be removed from the Site to allow construction of the Sendero Verde Development, several of the community gardens would be reincorporated into the new development. New trees and vegetation would be planted in landscaped areas and gardens.

With the Sendero Verde Development Alternative, the approximately 1.82-acre Site would contain approximately 1.13 acres of rooftop area, 0.08 acres of paved area, and 0.61 acres of landscaped area (primarily community gardens). This would result in an increase in impervious rooftop area and semi-impervious paved area, which in its current condition primarily contains pervious softscape area. With the Alternative, approximately 0.61 acres (or 26,572 sf) of the Site would be landscaped and remain as pervious cover, providing habitat to similar species that may currently occupy the Site. As discussed above, the Sendero Verde Development would be a highly sustainable, passive house development. To achieve passive certification, the project would employ a number of sustainability features, including a stormwater detention tank to provide recycled water to the on-site community gardens, bio swales and street trees on the sidewalks surrounding the site, photovoltaic arrays on each of the bulkheads, and green roofs with featuring solar pergolas with photovoltaic arrays.

The easternmost portion of the Site is located within the 500-year floodplain. New York City is affected by local flooding (e.g., flooding of inland portions of the city from short-term, high-intensity rain evens in areas with poor drainage), fluvial flooding (rivers and streams overflowing their banks), and coastal flooding (e.g., long and short wave surges that affect the City's shorelines along the Atlantic Ocean and tidally influenced rivers and straights such as the

Hudson River, Harlem River, and East River). Because the floodplain within New York City is controlled by astronomic tide and meteorological forces (e.g., nor'easters and hurricanes) and not by fluvial flooding, the projected development sites would not have the potential to adversely affect the floodplain or result in increased coastal flooding within or adjacent to the study area. Development anticipated under the Sendero Verde Development Alternative is expected to comply with applicable New York City Building Codes and Federal Emergency Management Agency (FEMA) requirements regarding non-residential and residential structures within the 100-year and 500-year floodplains and would incorporate sea level rise resilience measures into the design of building structures in order to minimize losses due to flooding.

For these reasons, the Sendero Verde Development Alternative, like the Proposed Actions, would not result in significant adverse impacts to natural resources.

ECOLOGICAL COMMUNITIES

Projected Development Site 70 is located within the urban landscape of East Harlem, Manhattan. As such, the ecological communities consist of manicured lawns, paved city streets, and exteriors of urban buildings that would fall under the "Terrestrial Cultural" communities defined by Edinger et al. (2014), including paved road/paths,[1] urban structure exteriors,[2] urban vacant lots,[3] and mowed lawns with trees.[4] Vegetation would be sparse except for species growing in cracks in the pavement, plants and vines growing on the exteriors of buildings, mowed grass on a baseball field, and street trees growing in tree pits within the sidewalks. The community gardens located within the Site fall under the flower/herb garden community[5] and vegetation would consist of horticultural species planted within garden beds.

HAZARDOUS MATERIALS

Like the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts associated with hazardous materials. With the Sendero Verde Development Alternative, the same E-designations would be mapped on projected and potential

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[1] Edinger et al. (2014) define this community as "a road or pathway that is paved with asphalt, concrete, brick, stone, etc. There may be sparse vegetation rooted in cracks in the paved surface."

[2] Edinger et al. (2014)define this community as "the exterior surfaces of metal, wood, or concrete structures (such as commercial buildings, apartment buildings, houses, bridges) or any structural surface composed of inorganic materials (glass, plastics, etc.) in an urban or densely populated suburban area. These sites may be sparsely vegetated with lichens, mosses, and terrestrial algae; occasionally vascular plants may grow in cracks. Nooks and crannies may provide nesting habitats for birds and insects, and roosting sites for bats."

[3] Edinger et al. (2014) define this community as "an open site in a developed urban area that has been cleared either for construction or following the demolition of a building. Vegetation may be sparse, with large areas of exposed soil, and often with rubble or other debris."

[4] Edinger et al. (2014) define this community as "residential, recreational, or commercial land in which the groundcover is dominated by clipped grasses and forbs, and is shaded by at least 30 percent of trees. Ornamental and/or native shrubs may be present, usually with less than 50 percent cover. The groundcover is maintained by mowing and broadleaf herbicide application."

[5] Edinger et al. (2014) define this community as "residential, commercial, or horticultural land cultivated for the production of ornamental herbs and shrubs. This community includes gardens cultivated for the production of culinary herbs."

development sites throughout the Project Area. Comparable provisions to preclude hazardous materials impacts would be required through the Land Disposition Agreements (LDA) or similar binding mechanisms for those assemblages comprised of City-owned property, including Site 70. A review of historic maps and regulatory databases indicate historic uses including on-site dry cleaners and spills. Therefore, subsurface investigation of the Site is required prior to development activities. Because the Sendero Verde Site would be disposed to the project sponsor, the project sponsor would be required to generate an updated Phase I Environmental Site Assessment of the property, and provisions requiring subsurface investigations (prior to the disposition) and implementation of any remedial measures (post-disposition) would be required through the LDA between HPD and the project sponsor. The implementation of testing and remediation in accordance with review and approval by either DEP or the Mayor's Office of Environmental Remediation (OER) would preclude the potential for significant adverse impacts. HPD and the project sponsor would coordinate regarding which regulatory agency (OER or DEP) would oversee such activities.

WATER AND SEWER INFRASTRUCTURE

Like the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts associated with water and sewer infrastructure. As discussed in Chapter 11, "Water and Sewer Infrastructure," the Project Area is within a combined sewer area that is served by the Wards Island Wastewater Treatment Plant (WWTP). Site 70 (also known as the Development Site) is located in subcatchment area WI-R24. As the Sendero Verde Development would result in increased demand for water on Site 70, as well as increased sanitary wastewater and stormwater generation, this section presents the development's projected water demand and wastewater generation rates, and assesses the Sendero Verde Development Alternative's effects on the City's water supply and wastewater conveyance and treatment system.

WATER SUPPLY

As shown in **Table 22-13**, the Sendero Verde Development Alternative is expected to generate a water demand of approximately 321,404 gallons per day (gpd), or approximately 0.32 million gallons per day (mgd).[6] As compared with the Proposed Actions, in which new developments on the 68 Projected Development Sites are expected to generate an incremental water demand of approximately 1.5 mgd, the Sendero Verde Development Alternative would result in an increase in water demand of approximately 20 percent, to a total of 1.8 mgd. However, as with the Proposed Actions, total water consumption in this alternative would represent an incremental increase on the City's water supply system (approximately 0.18 percent of the City's average daily water supply of approximately one billion gpd), and would not result in a significant adverse impact on the water supply system.

[6] Projected Development Site 70, which would be redeveloped with the Sendero Verde Development Alternative, currently contains vacant land and community gardens, and features minimal water demand and sanitary wastewater generation in Existing Conditions.

Table 22-13
With Action Condition Water Consumption—Sendero Verde Development Alternative

Land Use	Water Consumption and Wastewater Generation Rates[1]	Area/Units	Domestic Water/Wastewater Generation (gpd)	Air Conditioning (gpd)
Residential	Domestic: 100 gpd/person[2] A/C: 0.17 gpd/sf	621,024 sf (663 DU)	159,800	105,574
Retail	Domestic: 0.24 gpd/sf A/C: 0.17 gpd/sf	15,065 sf	3,616	2,561
Commercial/Office	Domestic: 0.10 gpd/sf A/C: 0.17 gpd/sf	24,803 sf	2,480	4,217
Community Facility[3]	Domestic: 0.10 gpd/sf A/C: 0.17 gpd/sf	159,840 sf	15,984	27,173
Total Water Demand				**321,404**
Total Wastewater Generation				**181,880**

Notes: Totals may not sum due to rounding.
1. Consumption rates from *CEQR Technical Manual* Table 13-2, "Water Usage and Sewage Generation Rates for Use in Impact Assessment," unless otherwise noted.
2. Assumes 2.41 residents per DU (2010 Census average household size for Manhattan Community District [CD] 11)
3. Assumes same rate as commercial/office, based on *East New York Rezoning Proposal FEIS.*

WASTEWATER TREATMENT

As shown on **Table 22-13**, the Sendero Verde Development Alternative is expected to generate a total of approximately 181,880 gpd of sanitary sewage within subcatchment area WI-R24 of the Wards Island WWTP's service area. As compared with the Proposed Actions, in which the Projected Development Sites would result in an incremental sanitary sewage generation of approximately 0.9 mgd, the Sendero Verde Development Alternative would result in an increase in sanitary sewage of approximately 20 percent, to a total of approximately 1.1 mgd. This incremental increase in sanitary sewage generation would represent approximately 0.55 percent of the Wards Island WWTP's average flow of 200 mgd, and in this alternative the Wards Island WWTP would continue to have reserve capacity. Therefore, as with the Proposed Actions, this alterative would not result in significant adverse impacts to the City's wastewater treatment services.

STORMWATER AND DRAINAGE MANAGEMENT

With the Sendero Verde Development Alternative, Projected Development Site 70 (1.82 acres total) would contain approximately 1.13 acres of rooftop area, 0.08 acres of paved area, and 0.61 acres of landscaped area (primarily community gardens). This would result in an increase in impervious rooftop area and semi-impervious paved area on the site, which in its current condition primarily contains pervious softscape area (vacant land and community gardens).

In order to assess the Sendero Verde Development Alternative's potential effects on stormwater and drainage management, the weighted runoff coefficients for the projected development sites in subcatchment area WI-R24 were calculated incorporating Site 70. **Tables 22-14 and 22-15** show the weighted runoff coefficients in subcatchment area WI-R24 under Existing and With Action Conditions under this alternative.

Table 22-14
Sendero Verde Development Alternative—Existing Surface Coverage

Subcatchment Area	Surface Type	Roof	Pavement and Walkways	Other	Grass and Soft Scape	Total
WI-R24*	Area (percent)	33%	24%	0%	43%	100%
	Surface Area (acres)	1.87	1.34	0.00	2.47	5.69
	Runoff Coefficient**	1.00	0.85	0.85	0.20	**0.62**

Notes: Totals may not sum due to rounding.
***** Includes Site 70: 1.82 acres total (0.02 acres of roof and 1.80 acres of soft scape)
** Weighted Runoff Coefficient calculations based on the Flow Volume Calculation Matrix provided in the *CEQR Technical Manual*.

Table 22-15
Sendero Verde Development Alternative—With Action Surface Coverage

Subcatchment Area	Surface Type	Roof	Pavement and Walkways	Other	Grass and Soft Scape	Total
WI-R24*	Area (percent)	85%	4%	0%	11%	100%
	Surface Area (acres)	4.85	0.23	0.00	0.61	5.69
	Runoff Coefficient*	1.00	0.85	0.85	0.20	**0.91**

Notes: Totals may not sum due to rounding.
*****Includes Site 70: 1.82 acres total (1.13 acres of roof, 0.08 acres of paved area, and 0.61 acres of landscaped community gardens)
** Weighted Runoff Coefficient calculations based on the Flow Volume Calculation Matrix provided in the *CEQR Technical Manual*.

Using the sanitary and stormwater flow calculations for the Sendero Verde Development Alternative, the Flow Volume Calculation Matrix was completed for Existing Conditions and the With Action Condition for subcatchment area WI-R24 to help determine the change in wastewater flow volumes to the combined sewer system. The summary table of the Flow Volume Calculation Matrix is included in **Table 22-16**.

Table 22-16
Flow Volume Matrix: Sendero Verde Development Alternative
Existing and With Action Volume Comparison

Subcatch-ment Area	Total Area (Acres)	Rainfall Volume (in.)	Rainfall Duration (hr.)	Weighted Runoff Coefficient	Runoff Volume to Direct Drainage (MG)	Runoff Volume to CSS (MG)*	Sanitary Volume to CSS (MG)	Total Volume to CSS (MG)	Weighted Runoff Coefficient	Runoff Volume to River (MG)	Runoff Volume to CSS (MG)*	Sanitary Volume to CSS (MG)	Total Volume to CSS (MG)	Increased Total Volume to CSS (MG)*
				Existing					With Action					
WI-R24	5.69	0.00	3.80	0.62	0.00	0.00	0.00	**0.00**	0.91	0.00	0.00	0.09	**0.09**	0.09
		0.40	3.80		0.00	0.04	0.00	**0.04**		0.00	0.06	0.09	**0.15**	0.11
		1.20	11.30		0.00	0.11	0.01	**0.13**		0.00	0.17	0.27	**0.44**	0.31
		2.50	19.50		0.00	0.24	0.02	**0.26**		0.00	0.35	0.47	**0.82**	0.56

Notes: * Assumes no on-site detention or BMPs for purposes of calculations.
CSS = Combined Sewer System; MG = Million Gallons.
Totals may not sum due to rounding.

As with the Proposed Actions, the Sendero Verde Development Alternative would result in increased wastewater flows to the combined sewer system within subcatchment area WI-R24 in all rainfall volume scenarios, which is attributable to the increase in sanitary flow resulting from denser development and the increase in fully impervious rooftop area. However, as noted in Chapter 11, "Water and Sewer Infrastructure," the table does not account for the DEP-regulated flow rate; as with all new developments connecting to the City's sewer system, the Sendero

Verde Development Alternative (as well as all other Projected Developments in subcatchment area R24) would be required to provide substantial stormwater detention in accordance with DEP regulations. With the incorporation of required Best Management Practices (BMPs) to limit stormwater from the site to the sewer system from exceeding the mandate flow rate (which may include green roofs and blue roofs, subsurface detention, and permeable pavement), development under the Sendero Verde Development Alternative would help to avoid an exacerbation of existing combined sewer overflow (CSO) discharge. As with the Proposed Actions, under this alternative it is expected that an Amended Drainage Plan (ADP) would be prepared for the Project Area which accounts for the area's projected population density and surface coverage characteristics.

Based on the analysis and the required BMP measures that would be implemented on each projected development site (including the Sendero Verde Development Site) by its respective developer in accordance with City site connection requirement, it is concluded that, as with the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts to local water supply or wastewater and stormwater conveyance and treatment infrastructure.

SOLID WASTE AND SANITATION SERVICES

Significant adverse impacts would not occur under either the Sendero Verde Development Alternative or the Proposed Actions. Neither the Proposed Actions nor the Sendero Verde Development Alternative would adversely affect solid waste and sanitation services or place a significant burden on the City's solid waste management system. While solid waste generated by the projected development sites would increase under both the Proposed Action and the Sendero Verde Development Alternative, the Sendero Verde Development Alternative would generate approximately 24.49 more tons of waste per week than the Proposed Actions. This translates into approximately 8.5 more tons per week for private carriers (less than 1 additional truck trips per week), and 15.9 more tons per week for DSNY (approximately 1.3 more truck trips per week); as such the Sendero Verde Development Alternative would not result in an increase in solid waste generation that would overburden available waste management capacity. The Proposed Actions would not conflict with, or require any amendment to, the City's solid waste management objectives as stated in the SWMP.

ENERGY

Significant adverse impacts would not occur under either the Sendero Verde Development Alternative or the Proposed Actions. Like the Proposed Actions, the Sendero Verde Development Alternative would not result in a significant adverse impact on energy systems. Under the Sendero Verde Development Alternative, the RWCDS would result in increased demand of approximately 643,495,098 British Thermal Units (BTUs) of energy per year as compared with future conditions without the Proposed Actions. Compared with the Proposed Actions, the Sendero Verde Development Alternative would result in an increase of 127,379,077 BTUs of energy per year over the Proposed Actions. This increase in annual demand represents less than an approximately 0.03 percent of the projected service demand for New York City in the 2027 analysis year. The Sendero Verde Development Alternative would generate an incremental increase in energy demand that would be negligible when compared with the overall demand within Consolidated Edison's (Con Edison's) New York City and Westchester County service area. Therefore, no significant adverse energy impacts would occur.

Any new development resulting from the Proposed Actions would be required to comply with the NYCECC, which governs performance requirements of heating, ventilation, and air condition systems, as well as the exterior building envelope of new buildings. In compliance with this code, new development must meet standards for energy conservation, which include requirements related to energy efficiency and combined thermal transmittance.

TRANSPORTATION

With the inclusion of Projected Development Site 70 under the Sendero Verde Development Alternative, there would be additional vehicle, transit, and pedestrian trips and increased demand for on-street and off-street public parking compared with the Proposed Actions. Based on the trip generation assumptions detailed in Chapter 14, "Transportation," the Sendero Verde Development Alternative would generate approximately 1,472, 870, 1,720, and 1,150 additional incremental person trips in the weekday AM, midday and PM, and Saturday peak hours, respectively (see **Table 22-17**). Depending on the peak hour, this represents an approximately 23 percent to 37 percent increase in project-generated person trips compared with the Proposed Actions. As under the Proposed Actions, it is anticipated that the Sendero Verde Development Alternative would result in significant adverse traffic, subway, bus and pedestrian impacts. Although parking shortfalls would occur under both scenarios, neither the Proposed Actions nor the Sendero Verde Development Alternative would result in significant adverse parking impacts.

Table 22-17
Comparison of Incremental Peak Hour Person Trips by Mode
Proposed Actions vs. Sendero Verde Development Alternative

Scenario	Auto	Taxi	Subway/ Railroad	Bus	Walk/ Other	Total
Weekday AM						
Proposed Actions	400	88	2,350	511	665	4,014
Sendero Verde Development Alternative	515	129	3,028	760	1,054	5,486
Net Difference	***115***	***41***	***678***	***249***	***389***	***1,472***
Weekday Midday						
Proposed Actions	238	150	1,296	325	1,559	3,568
Sendero Verde Development Alternative	299	200	1,534	391	2,014	4,438
Difference	***61***	***50***	***238***	***66***	***455***	***870***
Weekday PM						
Proposed Actions	481	108	2,716	617	1,460	5,382
Sendero Verde Development Alternative	607	153	3,443	880	2,019	7,102
Difference	***126***	***45***	***727***	***263***	***559***	***1,720***
Saturday						
Proposed Actions	404	123	2,101	575	1,835	5,038
Sendero Verde Development Alternative	478	164	2,492	672	2,382	6,188
Difference	***74***	***41***	***391***	***97***	***547***	***1,150***

TRAFFIC

As presented in **Table 22-18**, compared with the Proposed Actions, the Sendero Verde Development Alternative would generate approximately 181, 109, 189, and 98 additional incremental vehicle (auto, taxi and truck) trips during the weekday AM, midday and PM, and Saturday peak hours, respectively. Depending on the peak hour, this represents an increase of approximately 28 percent to 37 percent as compared with the incremental vehicle trips that

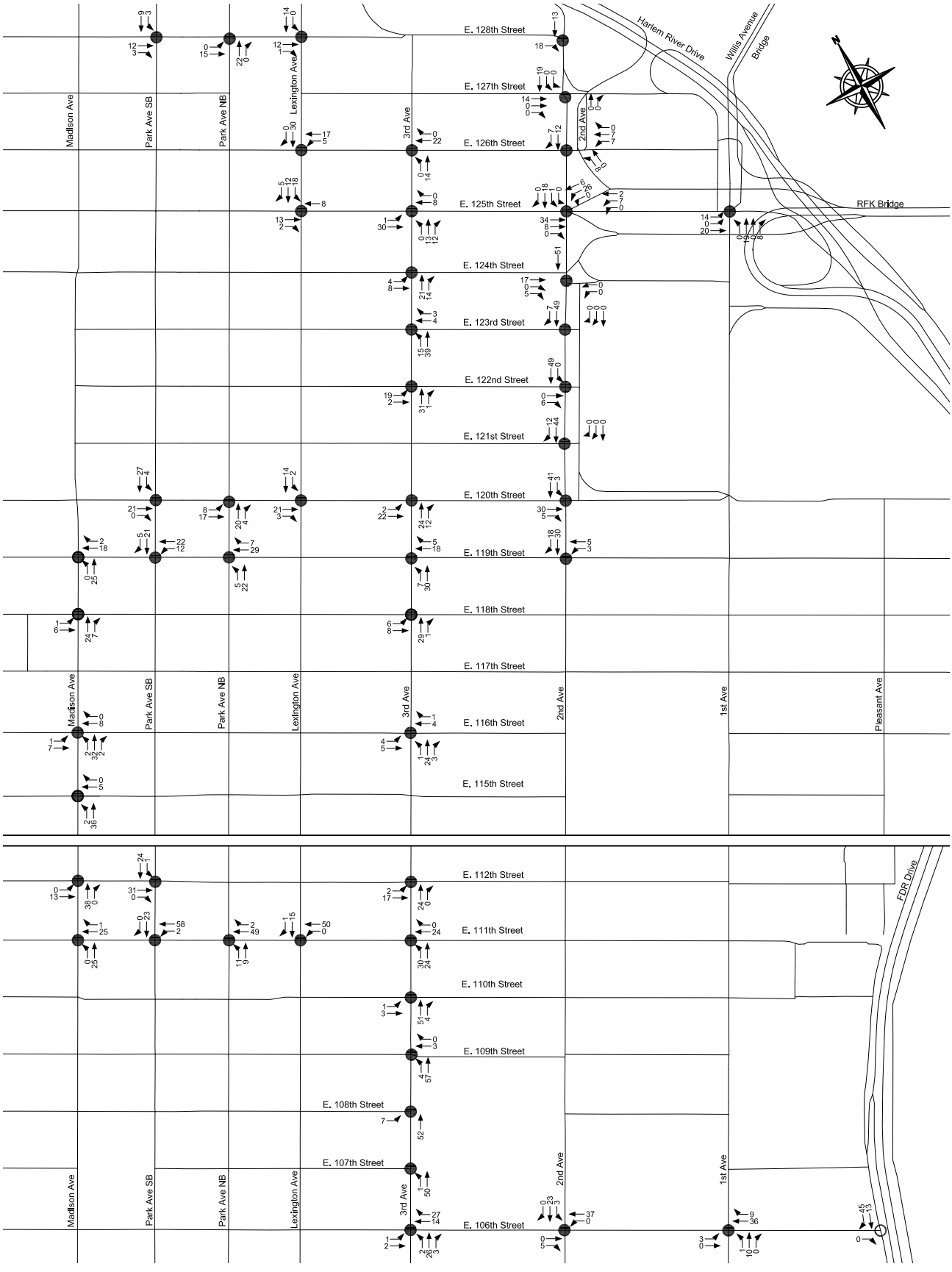
would be generated under the Proposed Actions. Study area intersections were therefore evaluated to determine the potential for additional traffic impacts to occur under the Sendero Verde Development Alternative, and if these additional impacts could be mitigated.

Figures 22-16 through 22-19 show the assignment of incremental vehicle trips (auto, taxi and truck) generated during the weekday AM, midday and PM and Saturday peak hours under the Sendero Verde Development Alternative, while **Figures 22-20 through 22-23** show the total traffic volumes in each peak hour under this alternative. The volumes shown in **Figures 22-20 through 22-23** are the combination of the net incremental traffic generated by the Sendero Verde Development Alternative and the No Action volumes.

Table 22-18
Comparison of Incremental Peak Hour Vehicle Trips by Mode Proposed Actions vs. Sendero Verde Development Alternative

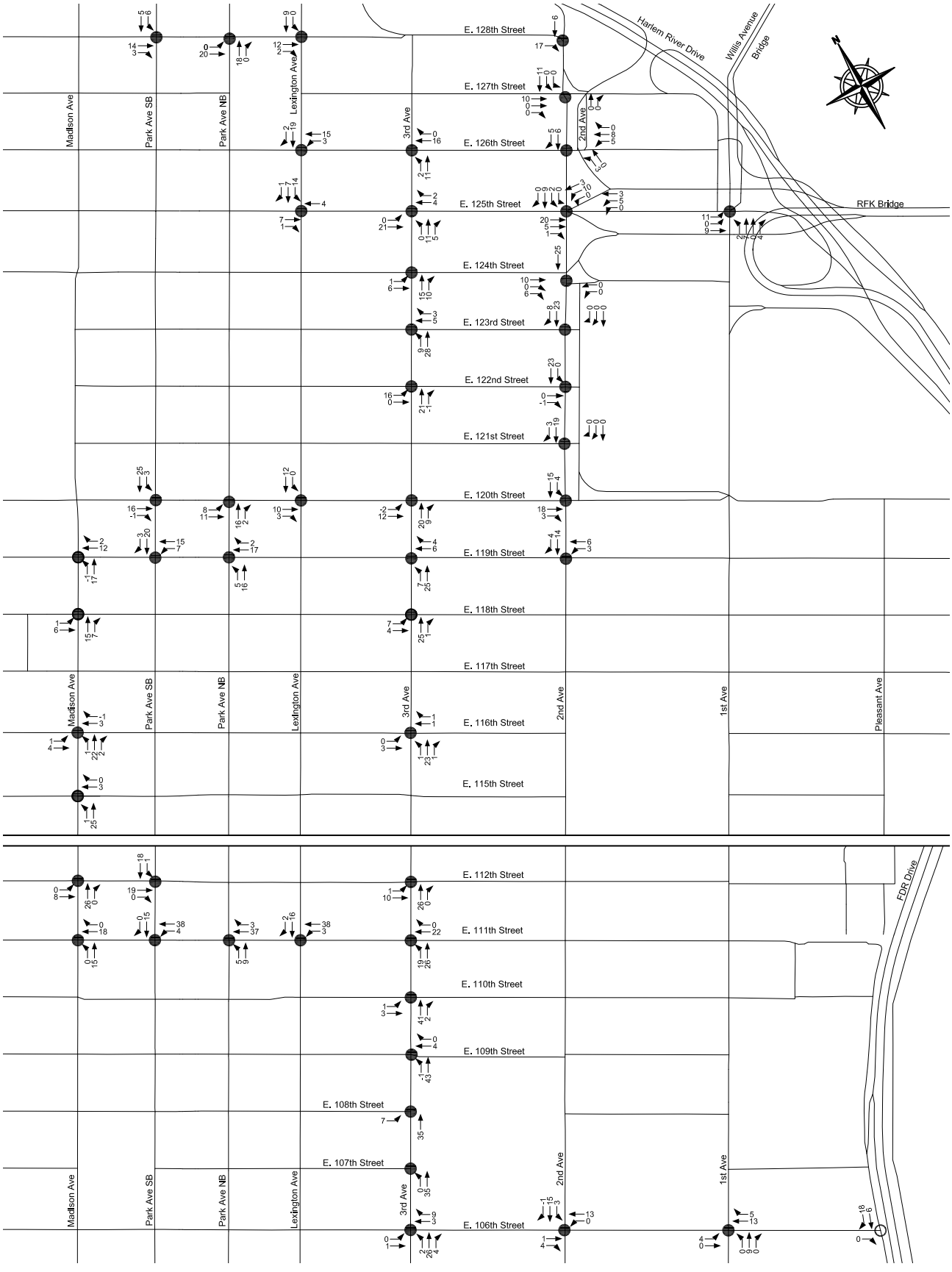
Scenario	Auto	Taxi	Truck	Total
Weekday AM				
Proposed Actions	340	136	8	484
Sendero Verde Development Alternative	457	198	10	665
Net Difference	***117***	***62***	***2***	***181***
Weekday Midday				
Proposed Actions	146	204	20	370
Sendero Verde Development Alternative	185	272	22	479
Net Difference	***39***	***68***	***2***	***109***
Weekday PM				
Proposed Actions	384	156	0	540
Sendero Verde Development Alternative	507	222	0	729
Net Difference	123	66	0	189
Saturday				
Proposed Actions	206	132	10	348
Sendero Verde Development Alternative	252	184	10	446
Net Difference	***46***	***52***	***0***	***98***

The volume-to-capacity ratios, delays and levels of service for those individual lane groups experiencing congestion in one or more peak hours under the Sendero Verde Development Alternative are shown in **Tables 22-19 through 22-22**. **Table 22-23** presents a comparison of the numbers of lane groups and intersections that would have significant adverse impacts in each peak hour under the Proposed Actions and the Sendero Verde Development Alternative. Overall, as shown in **Table 22-23**, the Sendero Verde Development Alternative would result in significant adverse traffic impacts at a total of 33 study area intersections during one or more analyzed peak hours, seven more than under the Proposed Actions. Under the Sendero Verde Development Alternative, 37 lane groups at 25 intersections would be impacted (compared with 31 lane groups at 19 intersections under the Proposed Actions) in the weekday AM peak hour, 19 lane groups at 15 intersections (compared with 15 lane groups at 12 intersections under the Proposed Actions) in the midday, 41 lane groups at 30 intersections (compared with 32 lane groups at 22 intersections under the Proposed Actions) in the PM, and 24 lane groups at 19 intersections (compared with 19 lane groups at 16 intersections under the Proposed Actions) in the Saturday peak hour.



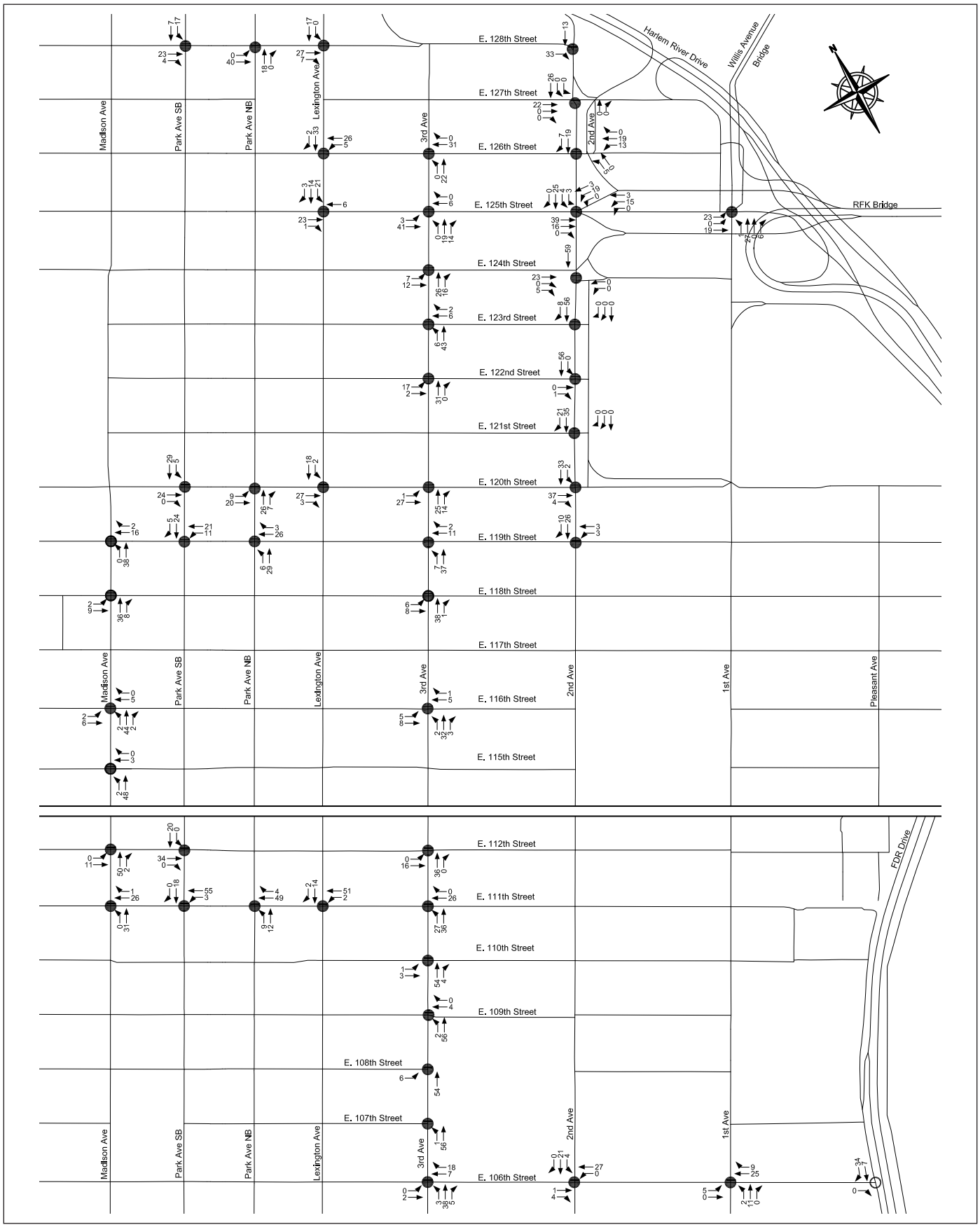
Source: *PHA*

AM Peak Hour Project Increment
Traffic Volumes—Sendero Verde Development Alternative



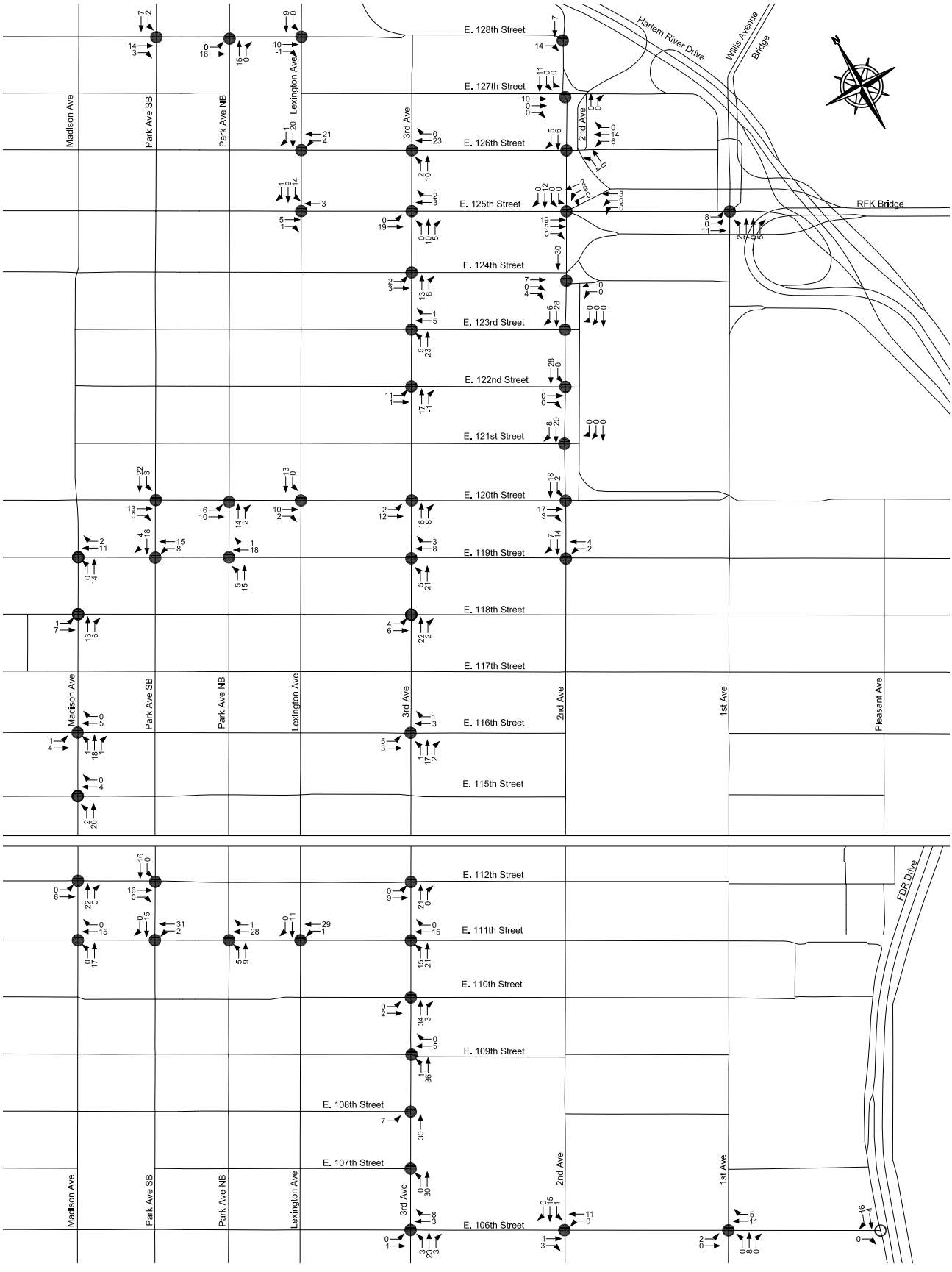
Source: *PHA*

MD Peak Hour Project Increment
Traffic Volumes—Sendero Verde Development Alternative



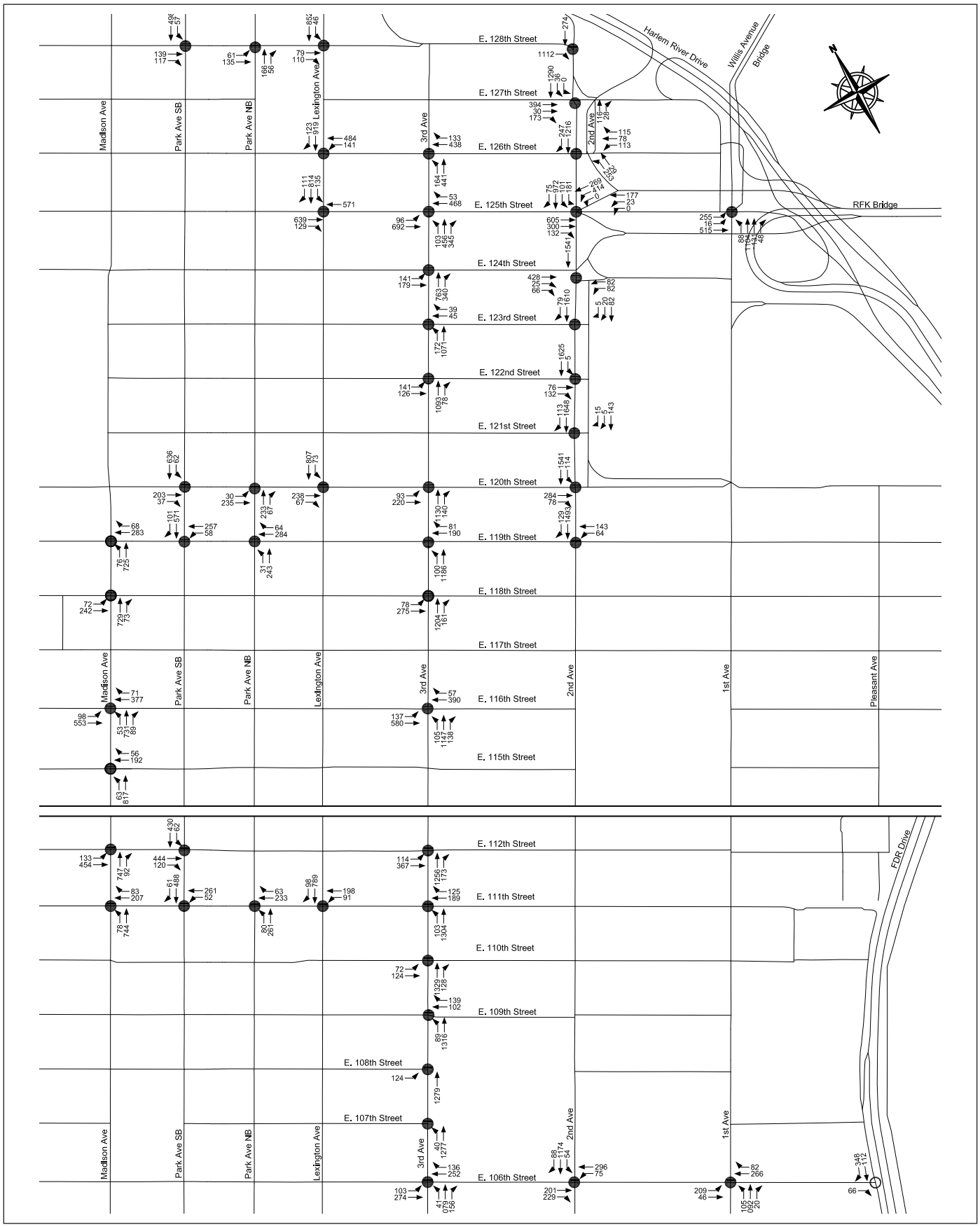
Source: *PHA*

PM Peak Hour Project Increment
Traffic Volumes—Sendero Verde Development Alternative



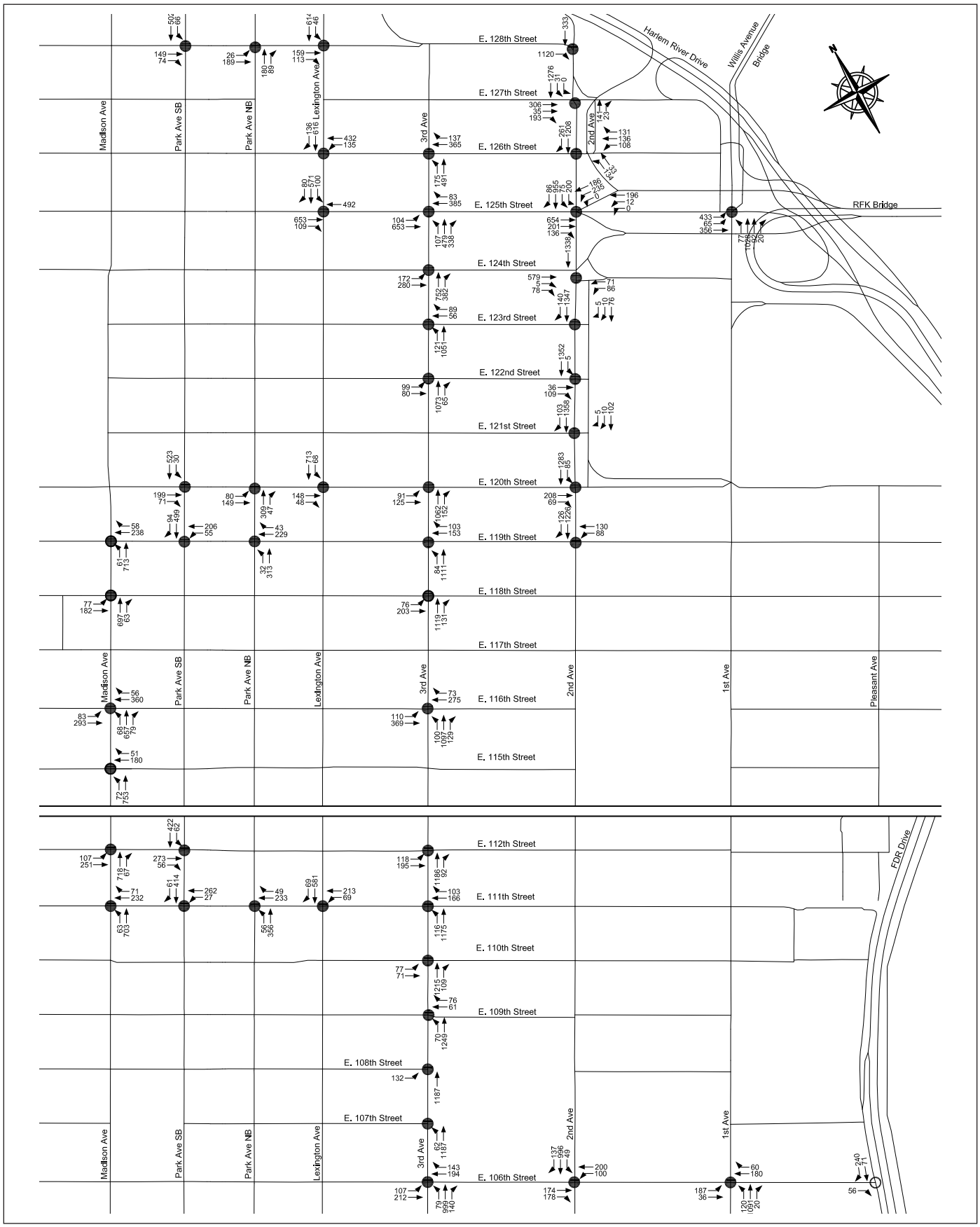
Source: *PHA*

Saturday Peak Hour Project Increment
Traffic Volumes—Sendero Verde Development Alternative



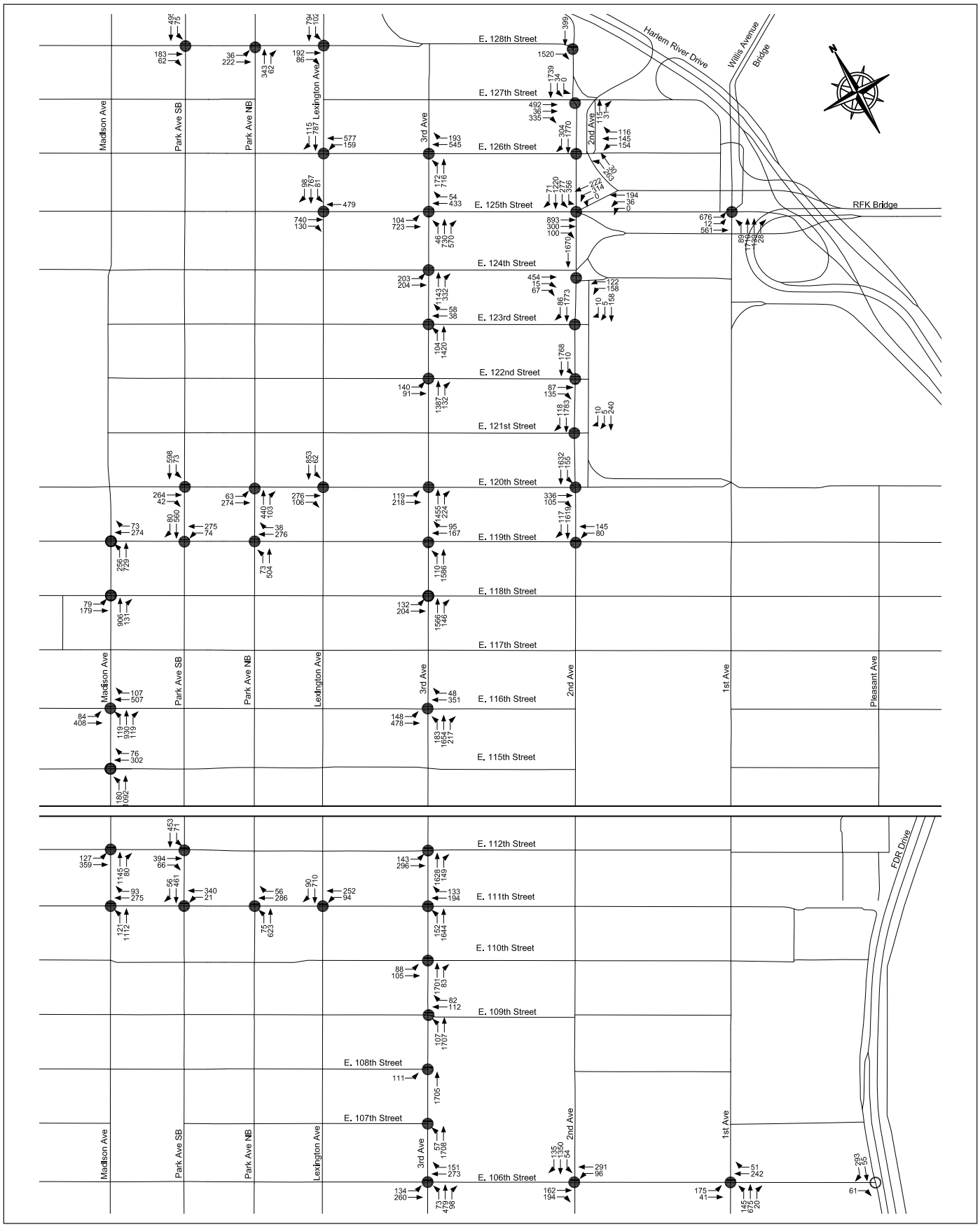
Source: *PHA*

With-Action AM Peak Hour
Traffic Volumes—Sendero Verde Development Alternative



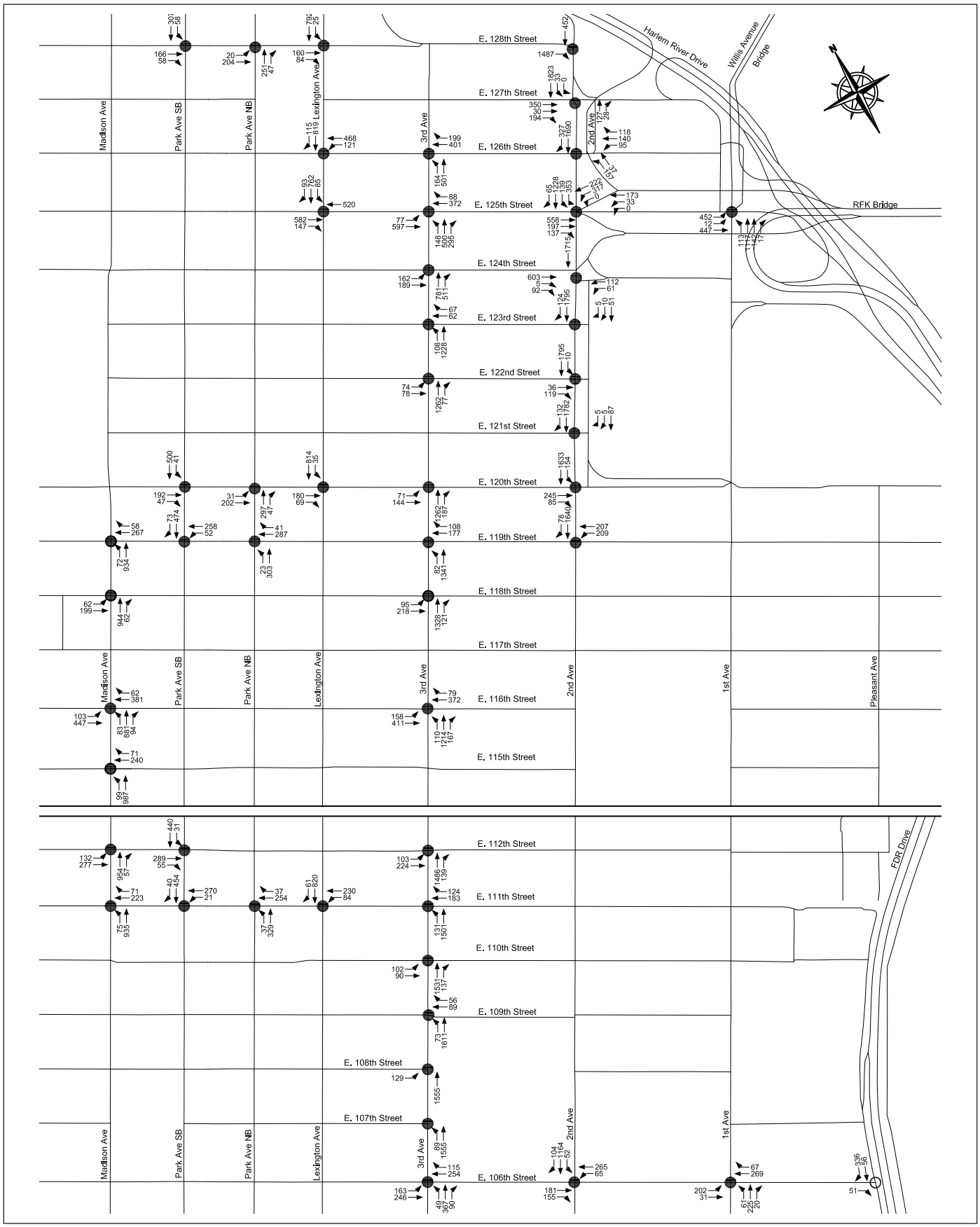
Source: *PHA*

With-Action Midday Peak Hour
Traffic Volumes—Sendero Verde Development Alternative



Source: *PHA*

With-Action PM Peak Hour
Traffic Volumes—Sendero Verde Development Alternative



Source: *PHA*

With-Action Saturday Peak Hour
Traffic Volumes—Sendero Verde Development Alternative

Table 22-19
Congested Lane Groups at Analyzed Intersections Under the Sendero Verde Development Alternative—Weekday AM Peak Hour

Intersection	Approach	No-Action Weekday AM Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Weekday AM Lane Group	V/C Ratio	Delay (sec/veh)	LOS
East 106th Street (EB/WB) & First Avenue (NB)	EB	L	1.02	112.0	F	**L**	**1.22**	**183.2**	**F**
		LT	1.02	105.4	F	**LT**	**1.19**	**164.8**	**F**
	WB	TR	0.90	54.1	D	**TR**	**1.04**	**84.8**	**F**
East 125th Street (EB/WB) & First Avenue/Willis Avenue Bridge (SB)	EB	LT	0.86	34.9	C	LT	0.90	38.6	D
East 106th Street (EB/WB) & Second Avenue (SB)	EB	TR	1.18	133.8	F	**TR**	**1.20**	**140.4**	**F**
	WB	L	0.81	72.2	E	L	0.82	73.8	E
East 120th Street (EB) & Second Avenue (SB)	EB	TR	0.92	58.1	E	**TR**	**1.02**	**79.3**	**E**
East 121st Street (WB) & Second Avenue (SB)	SB	T	0.93	29.1	C	T	0.96	32.7	C
East 122nd Street (EB) & Second Avenue (SB)	SB	T	0.87	23.4	C	T	0.90	25.2	C
East 123rd Street (WB) & Second Avenue (SB)	SB	TR	0.93	29.1	C	TR	0.97	34.0	C
East 124th Street (EB) & Second Avenue (SB)	SB	T	0.87	23.7	C	T	0.90	25.8	C
East 125th St (EB/WB)/RFK Bridge (WB) & Second Avenue (SB)	EB	T	1.36	203.1	F	**T**	**1.43**	**232.3**	**F**
		R	0.78	56.2	E	R	0.79	57.8	E
	WB (E 125 St)	LT	0.66	39.6	D	**LT**	**0.74**	**45.3**	**D**
	WB (Ramp)	L	1.09	108.2	F	**L**	**1.16**	**133.1**	**F**
	WB (Ramp)	LT	1.20	146.7	F	**LT**	**1.24**	**162.1**	**F**
	SB	T	0.96	48.9	D	T	0.98	52.5	D
East 126th Street (WB) & Second Avenue (SB)/RFK Bridge Exit (NB)	WB	L	1.00	117.5	F	**L**	**1.08**	**139.1**	**F**
	NB	L	1.03	96.8	F	**L**	**1.07**	**106.8**	**F**
East 127th Street (EB) & Second Avenue (SB)	EB	L	1.21	147.4	F	**L**	**1.26**	**168.2**	**F**
East 128th Street (EB) & Second Avenue (SB)	EB	T	1.01	53.0	D	T	1.02	57.6	E
East 111th Street (WB) & Third Avenue (NB)	WB	TR	0.88	52.0	D	**TR**	**0.95**	**64.4**	**E**
East 112th Street (EB) & Third Avenue (NB)	EB	LT	1.08	90.9	F	**LT**	**1.13**	**111.1**	**F**
East 116th Street (EB/WB) & Third Avenue (NB)	EB	LT	1.10	92.2	F	**LT**	**1.12**	**100.4**	**F**
East 122nd Street (EB) & Third Avenue (NB)	EB	LT	0.79	42.1	D	**LT**	**0.87**	**51.3**	**D**
East 125th Street (EB/WB) & Third Avenue (NB)	EB	L	1.16	162.5	F	**L**	**1.19**	**174.7**	**F**
		T	1.30	173.6	F	**T**	**1.36**	**198.4**	**F**
	WB	TR	1.23	146.8	F	**TR**	**1.25**	**155.1**	**F**
East 126th Street (WB) & Third Avenue (NB)	WB	T	0.91	47.7	D	**T**	**0.95**	**55.8**	**E**
East 111th Street (WB) & Lexington Avenue (SB)	WB	LT	0.75	38.1	D	**LT**	**0.90**	**54.2**	**D**
East 125th Street (EB/WB) & Lexington Avenue (SB)	EB	T	1.35	200.9	F	**T**	**1.38**	**213.4**	**F**
	WB	T	1.46	248.0	F	**T**	**1.48**	**257.4**	**F**
	SB	LT	1.00	53.4	D	**LT**	**1.05**	**66.6**	**E**
East 111th Street (WB) & Park Avenue (NB)	WB	TR	1.09	116.0	F	**TR**	**1.34**	**213.9**	**F**
East 119th Street (WB) & Park Avenue (NB)	WB	TR	1.16	136.0	F	**TR**	**1.36**	**215.0**	**F**
East 120th Street (EB) & Park Avenue (NB)	EB	LT	0.80	49.8	D	**LT**	**0.90**	**61.4**	**E**
East 111th Street (WB) & Park Avenue (SB)	WB	LT	0.83	52.5	D	**LT**	**1.03**	**91.2**	**F**
	SB	TR	0.88	33.0	C	TR	0.95	43.4	D
East 112th Street (EB) & Park Avenue (SB)	EB	TR	1.07	92.2	F	**TR**	**1.15**	**123.3**	**F**
East 119th Street (WB) & Park Avenue (SB)	WB	LT	0.95	70.9	E	**LT**	**1.10**	**112.3**	**F**
	SB	TR	1.02	58.5	E	**TR**	**1.07**	**76.2**	**E**
East 120th Street (EB) & Park Avenue (SB)	EB	TR	0.99	86.8	F	**TR**	**1.08**	**113.5**	**F**
	SB	LT	0.98	49.5	D	**LT**	**1.03**	**61.5**	**E**
East 128th Street (EB) & Park Avenue (SB)	EB	TR	1.20	156.5	F	**TR**	**1.26**	**178.5**	**F**
East 111th Street (WB) & Madison Avenue (NB)	WB	TR	0.75	37.5	D	**TR**	**0.85**	**46.3**	**D**
East 116th Street (EB/WB) & Madison Avenue (NB)	EB	LT	1.10	98.3	F	**LT**	**1.12**	**105.9**	**F**
East 119th Street (WB) & Madison Avenue (NB)	WB	TR	0.99	71.0	E	**TR**	**1.05**	**89.3**	**F**

Shading denotes significant adverse impact.

Table 22-20
Congested Lane Groups at Analyzed Intersections Under the Sendero Verde Development Alternative—Weekday Midday Peak Hour

Intersection	Approach	No-Action Weekday MD Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Weekday MD Lane Group	V/C Ratio	Delay (sec/veh)	LOS
East 106th Street (EB/WB) & First Avenue (NB)	EB	L	0.69	43.9	D	**L**	**0.75**	**50.6**	**D**
		LT	0.68	42.0	D	**LT**	**0.74**	**48.4**	**D**
	NB	L	0.73	55.4	E	L	0.73	55.4	E
East 125th Street (EB/WB) & First Avenue/Willis Avenue Bridge (SB)	EB	LT	1.05	72.4	E	**LT**	**1.08**	**80.3**	**F**
East 106th Street (EB/WB) & Second Avenue (SB)	EB	TR	1.13	116.6	F	**TR**	**1.16**	**126.6**	**F**
	WB	L	0.91	84.5	F	**L**	**0.93**	**88.1**	**F**
East 125th St (EB/WB)/RFK Bridge (WB) & Second Avenue (SB)	EB	T	1.10	92.8	F	**T**	**1.13**	**105.5**	**F**
	WB (Ramp)	L	0.78	52.2	D	L	0.82	55.7	E
	WB (Ramp)	LT	0.84	58.3	E	LT	0.86	60.4	E
	SB	T	0.91	42.6	D	T	0.92	43.6	D
East 126th Street (WB) & Second Avenue (SB)/RFK Bridge Exit (NB)	WB	L	0.75	55.8	E	**L**	**0.80**	**61.6**	**E**
East 128th Street (EB) & Second Avenue (SB)	EB	T	1.06	69.1	E	**T**	**1.08**	**74.6**	**E**
East 125th Street (EB/WB) & Third Avenue (NB)	EB	L	0.88	71.1	E	L	0.89	73.9	E
		T	1.25	153.5	F	**T**	**1.29**	**171.3**	**F**
	WB	TR	1.15	116.5	F	**TR**	**1.17**	**123.6**	**F**
East 125th Street (EB/WB) & Lexington Avenue (SB)	EB	T	1.48	256.1	F	**T**	**1.50**	**263.3**	**F**
	WB	T	1.20	137.5	F	**T**	**1.21**	**141.1**	**F**
East 126th Street (WB) & Lexington Avenue (SB)	WB	LT	1.35	199.3	F	**LT**	**1.40**	**219.1**	**F**
East 111th Street (WB) & Park Avenue (NB)	WB	TR	0.88	62.1	E	**TR**	**1.08**	**111.5**	**F**
East 119th Street (WB) & Park Avenue (NB)	WB	TR	0.82	46.2	D	**TR**	**0.91**	**58.3**	**E**
East 111th Street (WB) & Park Avenue (SB)	WB	LT	0.74	44.5	D	**LT**	**0.88**	**58.3**	**E**
East 119th Street (WB) & Park Avenue (SB)	WB	LT	0.85	55.1	E	**LT**	**0.97**	**76.6**	**E**
	SB	TR	0.88	32.3	C	TR	0.94	40.1	D
East 120th Street (EB) & Park Avenue (SB)	SB	LT	0.85	35.0	D	LT	0.90	40.4	D
East 128th Street (EB) & Park Avenue (SB)	EB	TR	1.03	102.5	F	**TR**	**1.12**	**127.8**	**F**
	SB	LT	0.89	32.8	C	LT	0.90	35.1	D
East 119th Street (WB) & Madison Avenue (NB)	WB	TR	0.81	43.0	D	**TR**	**0.86**	**48.3**	**D**

Shading denotes significant adverse impact.

Table 22-21
Congested Lane Groups at Analyzed Intersections Under the Sendero Verde Development Alternative—Weekday PM Peak Hour

Intersection	Approach	No-Action Weekday PM Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Weekday PM Lane Group	V/C Ratio	Delay (sec/veh)	LOS
East 106th Street (EB/WB) & First Avenue (NB)	EB	L	0.63	39.6	D	**L**	**0.72**	**49.4**	**D**
		LT	0.63	37.8	D	**LT**	**0.72**	**45.9**	**D**
	NB	L	0.86	69.6	E	L	0.87	71.1	E
		T	0.96	32.3	C	T	0.95	31.5	C
East 125th Street (EB/WB) & First Avenue/Willis Avenue Bridge (SB)	EB	LT	1.31	174.1	F	**LT**	**1.36**	**194.1**	**F**
	NB	T	1.01	46.6	D	T	1.03	50.8	D
East 106th Street (EB/WB) & Second Avenue (SB)	EB	TR	1.16	130.6	F	**TR**	**1.19**	**138.8**	**F**
	WB	L	0.91	85.1	F	**L**	**0.92**	**88.8**	**F**
East 120th Street (EB) & Second Avenue (SB)	EB	TR	1.18	132.1	F	**TR**	**1.29**	**178.1**	**F**
East 125th St (EB/WB)/RFK Bridge (WB) & Second Avenue (SB)	EB	T	1.42	226.6	F	**T**	**1.49**	**257.1**	**F**
	WB (E 125 St)	LT	0.77	43.8	D	**LT**	**0.93**	**66.6**	**E**
	WB (Ramp)	L	0.95	76.8	E	**L**	**1.01**	**91.2**	**F**
	WB (Ramp)	LT	0.98	81.8	F	**LT**	**1.02**	**89.6**	**F**
	SB	L	1.04	78.1	E	L	1.04	76.7	E
		T	1.06	74.9	E	**T**	**1.08**	**82.7**	**F**
East 126th Street (WB) & Second Avenue (SB)/RFK Bridge Exit (NB)	WB	L	1.35	235.7	F	**L**	**1.50**	**295.8**	**F**
	NB	L	0.98	82.6	F	**L**	**0.99**	**86.7**	**F**
	SB	TR	0.99	44.1	D	TR	1.01	47.5	D
East 127th Street (EB) & Second Avenue (SB)	EB	L	1.01	70.2	E	**L**	**1.06**	**85.5**	**F**
	SB	LT	0.92	29.9	C	LT	0.94	31.4	C
East 128th Street (EB) & Second Avenue (SB)	EB	T	1.16	105.5	F	**T**	**1.18**	**116.1**	**F**
East 111th Street (WB) & Third Avenue (NB)	WB	TR	0.91	54.6	D	**TR**	**0.99**	**72.7**	**E**
East 112th Street (EB) & Third Avenue (NB)	EB	LT	0.97	62.8	E	**LT**	**1.01**	**73.0**	**E**
East 116th Street (EB/WB) & Third Avenue (NB)	EB	LT	0.95	51.4	D	**LT**	**0.98**	**56.9**	**E**
East 118th Street (EB) & Third Avenue (NB)	EB	LT	0.83	42.7	D	**LT**	**0.88**	**48.0**	**D**
East 125th Street (EB/WB) & Third Avenue (NB)	EB	L	0.91	79.5	E	**L**	**0.96**	**91.9**	**F**
		T	1.57	294.0	F	**T**	**1.67**	**336.5**	**F**
	WB	TR	1.22	142.6	F	**TR**	**1.23**	**149.0**	**F**
East 126th Street (WB) & Third Avenue (NB)	WB	T	1.04	75.0	E	**T**	**1.10**	**95.5**	**F**
		R	0.88	56.2	E	R	0.89	58.1	E
East 111th Street (WB) & Lexington Avenue (SB)	WB	LT	0.77	37.9	D	**LT**	**0.91**	**53.3**	**D**
East 120th Street (EB) & Lexington Avenue (SB)	EB	TR	0.91	54.2	D	**TR**	**0.99**	**69.6**	**E**
East 125th Street (EB/WB) & Lexington Avenue (SB)	EB	T	1.73	364.5	F	**T**	**1.78**	**389.1**	**F**
	WB	T	1.21	143.1	F	**T**	**1.23**	**149.3**	**F**
East 126th Street (WB) & Lexington Avenue (SB)	WB	LT	1.54	281.7	F	**LT**	**1.61**	**311.9**	**F**
East 111th Street (WB) & Park Avenue (NB)	WB	TR	1.09	113.4	F	**TR**	**1.36**	**217.8**	**F**
	NB	LT	1.06	70.8	E	**LT**	**1.10**	**83.4**	**F**
East 119th Street (WB) & Park Avenue (NB)	WB	TR	1.09	113.0	F	**TR**	**1.24**	**170.1**	**F**
East 120th Street (EB) & Park Avenue (NB)	EB	LT	1.05	96.9	F	**LT**	**1.17**	**137.8**	**F**
East 128th Street (EB) & Park Avenue (NB)	EB	LT	0.76	46.0	D	**LT**	**0.89**	**60.4**	**E**
East 111th Street (WB) & Park Avenue (SB)	WB	LT	0.84	51.9	D	**LT**	**1.02**	**85.1**	**F**
East 112th Street (EB) & Park Avenue (SB)	EB	TR	0.77	41.3	D	**TR**	**0.85**	**46.9**	**D**
East 119th Street (WB) & Park Avenue (SB)	WB	LT	1.01	85.6	F	**LT**	**1.17**	**138.8**	**F**
East 120th Street (EB) & Park Avenue (SB)	EB	TR	1.16	135.8	F	**TR**	**1.26**	**176.0**	**F**
	SB	LT	0.86	29.0	C	LT	0.90	33.8	C
East 128th Street (EB) & Park Avenue (SB)	EB	TR	0.96	78.5	E	**TR**	**1.08**	**110.0**	**F**
East 111th Street (WB) & Madison Avenue (NB)	WB	TR	0.90	51.3	D	**TR**	**1.00**	**72.2**	**E**
East 116th Street (EB/WB) & Madison Avenue (NB)	EB	LT	1.13	114.0	F	**LT**	**1.16**	**124.8**	**F**
	WB	TR	0.91	47.0	D	TR	0.92	47.9	D
East 119th Street (WB) & Madison Avenue (NB)	WB	TR	0.95	61.6	E	**TR**	**1.01**	**76.3**	**E**

Shading denotes significant adverse impact.

Table 22-22
Congested Lane Groups at Analyzed Intersections Under the Sendero Verde Development Alternative—Saturday Peak Hour

Intersection	Approach	No-Action Saturday Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Saturday Lane Group	V/C Ratio	Delay (sec/veh)	LOS
East 106th Street (EB/WB) & First Avenue (NB)	EB	L	1.02	107.5	F	**L**	**1.10**	**133.4**	**F**
		LT	1.03	118.4	F	**LT**	**1.10**	**141.7**	**F**
	WB	TR	0.87	47.2	D	**TR**	**0.92**	**54.4**	**D**
East 125th Street (EB/WB) & First Avenue/Willis Avenue Bridge (SB)	EB	LT	0.95	45.0	D	LT	0.97	48.9	D
East 106th Street (EB/WB) & Second Avenue (SB)	EB	TR	1.12	112.3	F	**TR**	**1.14**	**120.6**	**F**
East 119th (WB) Street & Second Avenue (SB)	WB	LT	1.14	117.0	F	**LT**	**1.15**	**122.1**	**F**
East 120th Street (EB) & Second Avenue (SB)	EB	TR	0.82	43.2	D	**TR**	**0.87**	**48.6**	**D**
East 123rd Street (WB) & Second Avenue (SB)	SB	TR	0.91	25.7	C	TR	0.93	27.4	C
East 124th Street (EB) & Second Avenue (SB)	EB	T	1.07	87.0	F	T	1.07	88.1	F
East 125th St (EB/WB)/RFK Bridge (WB) & Second Avenue (SB)	EB	T	1.12	107.1	F	**T**	**1.16**	**121.0**	**F**
		R	0.90	75.3	E	R	0.90	76.3	E
	WB (Ramp)	L	0.89	60.8	E	**L**	**0.91**	**64.8**	**E**
	WB (Ramp)	LT	0.90	61.5	E	LT	0.91	63.2	E
	SB	T	0.95	42.3	D	T	0.96	43.7	D
East 126th Street (WB) & Second Avenue (SB)/RFK Bridge Exit (NB)	WB	L	0.77	62.3	E	**L**	**0.83**	**72.3**	**E**
	SB	TR	0.94	35.7	D	TR	0.94	36.4	D
East 128th Street (EB) & Second Avenue (SB)	EB	T	1.17	111.5	F	**T**	**1.19**	**116.2**	**F**
East 116th Street (EB/WB) & Third Avenue (NB)	EB	LT	0.89	41.8	D	LT	0.91	44.6	D
East 124th Street (EB) & Third Avenue (NB)	EB	LT	0.95	61.7	E	**LT**	**0.97**	**65.9**	**E**
East 125th Street (EB/WB) & Third Avenue (NB)	EB	L	0.81	67.8	E	L	0.82	69.2	E
		T	1.04	76.5	E	**T**	**1.08**	**87.4**	**F**
	WB	TR	1.32	188.2	F	**TR**	**1.34**	**196.6**	**F**
East 126th Street (WB) & Third Avenue (NB)	WB	T	0.90	46.5	D	**T**	**0.95**	**55.8**	**E**
		R	1.06	101.3	F	**R**	**1.07**	**107.4**	**F**
East 125th Street (EB/WB) & Lexington Avenue (SB)	EB	T	1.20	137.4	F	**T**	**1.21**	**142.0**	**F**
		R	0.84	57.7	E	R	0.85	59.9	E
	WB	T	1.16	121.4	F	T	1.16	123.8	F
	SB	LT	0.86	30.7	C	LT	0.90	33.8	C
East 126th Street (WB) & Lexington Avenue (SB)	WB	LT	1.58	298.6	F	**LT**	**1.64**	**329.1**	**F**
East 111th Street (WB) & Park Avenue (NB)	WB	TR	1.03	93.1	F	**TR**	**1.20**	**151.8**	**F**
East 119th Street (WB) & Park Avenue (NB)	WB	TR	1.09	112.8	F	**TR**	**1.20**	**152.8**	**F**
East 111th Street (WB) & Park Avenue (SB)	WB	LT	0.77	45.9	D	**LT**	**0.89**	**57.9**	**E**
East 119th Street (WB) & Park Avenue (SB)	WB	LT	0.85	53.6	D	**LT**	**0.95**	**70.4**	**E**
East 120th Street (EB) & Park Avenue (SB)	EB	TR	0.99	85.0	F	**TR**	**1.05**	**102.5**	**F**
East 128th Street (EB) & Park Avenue (SB)	EB	TR	0.81	54.5	D	**TR**	**0.88**	**63.3**	**E**
East 116th Street (EB/WB) & Madison Avenue (NB)	EB	LT	1.12	107.2	F	**LT**	**1.13**	**113.1**	**F**

Shading denotes significant adverse impact.

Table 22-23
Comparison of the Numbers of Lane Groups/Intersections with Significant Adverse Impacts—
Proposed Actions vs. Sendero Verde Development Alternative

Peak Hour	Development Scenario	Lane Groups/ Intersections with Significant Impacts
AM	Proposed Actions	31/19
	Sendero Verde Development Alternative	37/25
Midday	Proposed Actions	15/12
	Sendero Verde Development Alternative	19/15
PM	Proposed Actions	32/22
	Sendero Verde Development Alternative	41/30
Saturday	Proposed Actions	19/16
	Sendero Verde Development Alternative	24/19

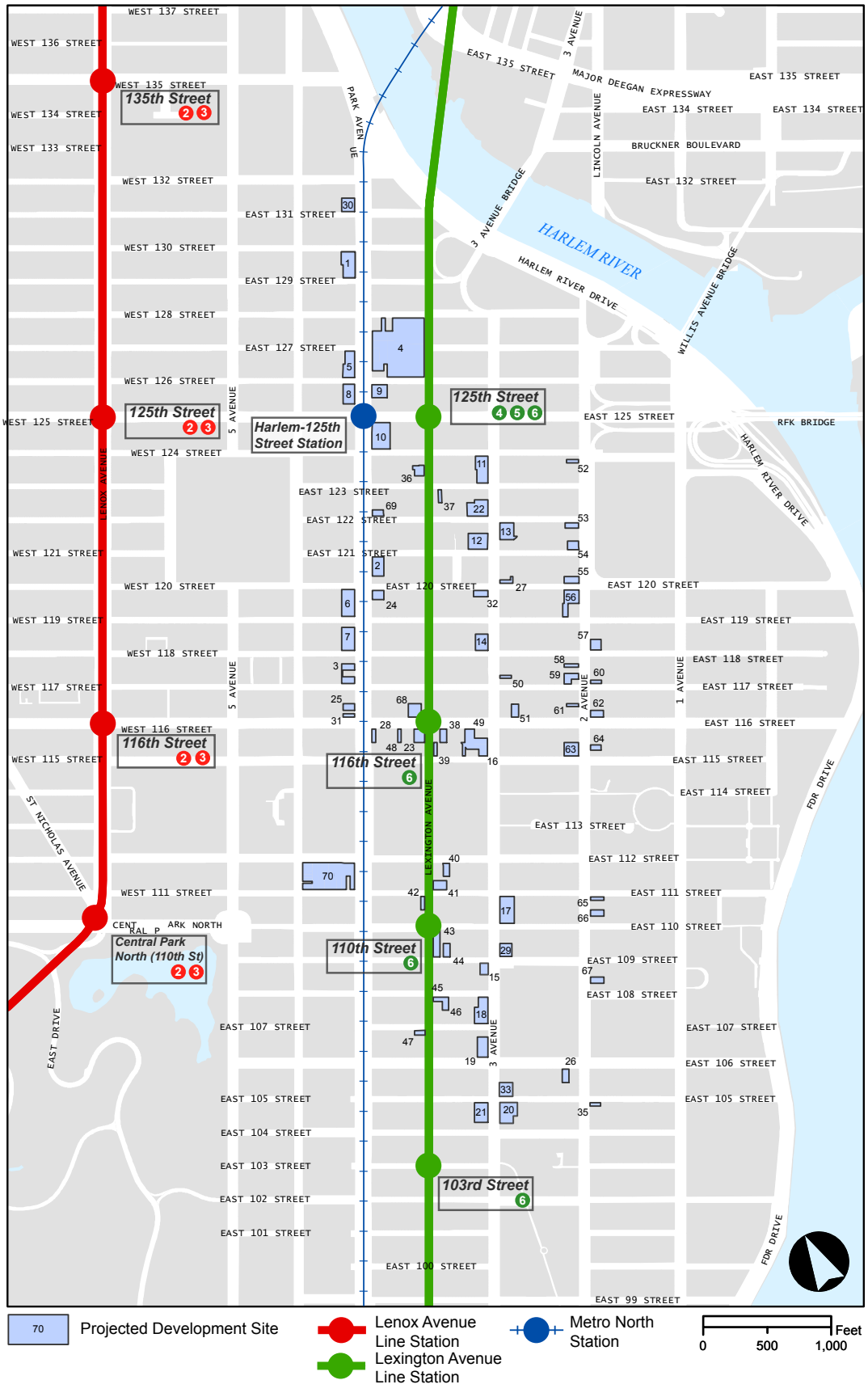
TRANSIT

Subway

As presented in **Table 22-17**, compared with the Proposed Actions, the Sendero Verde Development Alternative would generate approximately 678 and 727 additional incremental subway trips during the analyzed weekday AM and PM peak hours, respectively. This represents increases of approximately 29 percent and 27 percent during these periods, respectively, compared with the incremental subway trips that would be generated under the Proposed Actions. Subway conditions were therefore evaluated to determine the potential for additional subway station and line haul impacts to occur under the Sendero Verde Development Alternative, and if these additional impacts could be mitigated.

Subway Stations

Given the location of Site 70 on the west side of Park Avenue between East 111th and East 112th Streets (see **Figure 22-24**), it is anticipated that subway trips generated by this site would utilize the 110th Street station on the Lexington Avenue Line and the Central Park North-110th Street station on the Lenox Avenue Line. **Table 22-24** presents a comparison of the number of subway trips that would be generated by the Proposed Actions and the Sendero Verde Development Alternative at each of these two stations. As shown in **Table 22-24**, compared with the Proposed Actions, the Sendero Verde Development Alternative would generate approximately 596 more trips (in + out combined) in the AM peak hour and 640 more trips in the PM peak hour at the 110th Street station. At the Central Park North-110th Street station, which would not experience any new incremental demand under the Proposed Actions, this alternative would generate approximately 82 new peak hour trips in the AM and 87 in the PM. As the number of incremental trips at the Central Park North-110th Street station would be less than the 200-trip *CEQR Technical Manual* analysis threshold, significant impacts at this station are not anticipated and it is not analyzed for the Sendero Verde Development Alternative.



Source: PHA

Project Area Subway Stations

EAST HARLEM REZONING

Figure 22-24

Table 22-24
Comparison of Incremental Peak HourSubway Trips by StationProposed Actions vs. Sendero Verde Development Alternative

Scenario	Total Subway Trips (In/Out)	110th Street (6) Station (In/Out)	Central Park North-110th Street (2, 3) Station (In/Out)
Weekday AM			
Proposed Actions	717/1633	93/214	0/0
Sendero Verde Development Alternative	1,098/1,930	428/475	46/36
Net Difference	***381/297***	***335/261***	***46/36***
Weekday PM			
Proposed Actions	1,569/1,147	190/135	0/0
Sendero Verde Development Alternative	1,839/1,604	428/537	32/55
Net Difference	270/457	238/402	32/55
Note: Trips shown are in/out of project.			

Tables 22-25 and 22-26 compare stair and fare array conditions at the Lexington Avenue Line 110th Street station under the Proposed Actions and the Sendero Verde Development Alternative. As shown in **Table 22-25**, while there would be no significant adverse stair impacts at this station in either peak hour under the Proposed Actions, under the Sendero Verde Development Alternative, street stair S3/P3 at the northwest corner of Lexington Avenue and East 110th Street would be considered significantly impacted in the AM peak hour, with LOS E conditions and a v/c ratio of 1.55. As shown in **Table 22-26**, there would be no significant fare array impacts at the 110th Street station under either the Proposed Actions or the Sendero Verde Development Alternative.

Table 22-25
Comparison of Stair Conditions at the 110th Street (6) Subway Station Proposed Actions vs. Sendero Verde Development Alternative

Scenario	Stair	Total Width (ft.)	Effective Width (ft.)	Project Increment In/Down	Project Increment Out/Up	Peak Hour Volumes In/Down	Peak Hour Volumes Out/Up	Surging Factor In/Down	Surging Factor Out/Up	Friction Factor	V/C Ratio	LOS	WIT (in.)
Weekday AM													
Proposed Actions	S1/P1 (SW Corner)	4.33	3.33	117	14	985	698	1.00	0.75	0.9	1.33	D	3.38
	S2/P2 (SE Corner)	4.42	3.42	18	26	391	362	1.00	0.75	0.9	0.59	B	-
	S3/P3 (NW Corner)	4.42	3.42	68	13	927	761	1.00	0.75	0.9	1.32	D	2.04
	S4/P4 (NE Corner)	4.42	3.42	11	40	160	282	1.00	0.75	0.9	0.36	A	-
Sendero Verde Alternative	S1/P1 (SW Corner)	4.33	3.33	117	14	985	698	1.00	0.75	0.9	1.33	D	3.38
	S2/P2 (SE Corner)	4.42	3.42	18	26	391	362	1.00	0.75	0.9	0.59	B	-
	S3/P3 (NW Corner)	4.42	3.42	284	108	1,143	856	1.00	0.75	0.9	1.55	E	10.06 *
	S4/P4 (NE Corner)	4.42	3.42	56	280	205	522	1.00	0.75	0.9	0.61	B	-
Weekday PM													
Proposed Actions	S1/P1 (SW Corner)	4.33	3.33	34	24	354	231	1.00	0.75	0.9	0.46	B	-
	S2/P2 (SE Corner)	4.42	3.42	11	102	474	827	1.00	0.75	0.9	1.07	D	2.69
	S3/P3 (NW Corner)	4.42	3.42	54	10	293	174	1.00	0.75	0.9	0.36	A	-
	S4/P4 (NE Corner)	4.42	3.42	17	54	207	670	1.00	0.75	0.9	0.74	C	-
Sendero Verde Alternative	S1/P1 (SW Corner)	4.33	3.33	49	24	369	231	1.00	0.75	0.9	0.47	B	-
	S2/P2 (SE Corner)	4.42	3.42	16	102	479	827	1.00	0.75	0.9	1.07	D	2.87
	S3/P3 (NW Corner)	4.42	3.42	341	51	580	215	1.00	0.75	0.9	0.59	B	-
	S4/P4 (NE Corner)	4.42	3.42	131	251	321	867	1.00	0.75	0.9	1.00	C	-

Notes:
Methodology based on *CEQR Technical Manual* guidelines.
* Denotes a significant adverse impact.

Table 22-26
Comparison of Fare Array Conditions at the 110th Street (6) Subway Station
Proposed Actions vs. Sendero Verde Development Alternative

Peak Hour	Fare Array	Control Elements			Project Increment		Peak Hour Volumes		Surging Factor		Friction Factor	V/C Ratio	LOS
		Turnstiles	HEET	HXT	System Entries	System Exits	System Entries	System Exits	System Entries	System Exits			
Weekday AM													
Proposed Actions	R253 (NB)	3	0	0	29	66	552	644	1.0	0.75	0.9	0.31	A
	R254 (SB)	3	0	0	185	27	1,912	1,459	1.0	0.75	0.9	0.88	C
Sendero Verde Alternative	R253 (NB)	3	0	0	74	306	597	884	1.0	0.75	0.9	0.38	A
	R254 (SB)	3	0	0	401	122	2,128	1,554	1.0	0.75	0.9	0.96	C
Weekday PM													
Proposed Actions	R253 (NB)	3	0	0	28	156	682	1,496	1.0	0.75	0.9	0.55	B
	R254 (SB)	3	0	0	88	34	647	405	1.0	0.75	0.9	0.28	A
Sendero Verde Alternative	R253 (NB)	3	0	0	147	353	801	1,693	1.0	0.75	0.9	0.63	B
	R254 (SB)	3	0	0	390	75	949	446	1.0	0.75	0.9	0.37	A

Notes:
Methodology based on *CEQR Technical Manual* guidelines.

Table 22-27 compares the significant subway stair impacts under the Sendero Verde Development Alternative with the impacts under the Proposed Actions. As shown in **Table 22-27**, under this alternative a total of seven subway stairs at four analyzed stations would be impacted in one or both peak hours compared with six stairs at three stations under the Proposed Actions.

Table 22-27
Comparison of Subway Station
Stair Impacts Proposed Actions vs.
Sendero Verde Development Alternative

Scenario	103rd Street Station (6)	110th Street Station (6)	116th Street Station (6)	125th Street Station (4,5,6)
AM				
Proposed Actions	S4/M4	---	S3/P3	S2/M2 S3/M3 P2 P3
Sendero Verde Development Alternative	S4/M4	S3/P3	S3/P3	S2/M2 S3/M3 P2 P3
PM				
Proposed Actions	S4/M4	---	---	S3/M3 P2 P3
Sendero Verde Development Alternative	S4/M4	---	---	S3/M3 P2 P3

Note: S4/M4—impacted stair.

Under both the Proposed Actions and the Sendero Verde Development Alternative, it is anticipated that both No Action and With Action demand at most pedestrian elements at the four

analyzed Lexington Avenue Line stations would be reduced with completion of Second Avenue Subway Phase II, and that AM and PM peak hour conditions would generally be better than those reflected in the impact analyses. This would include the 110th Street station (which would be impacted only under the Sendero Verde Development Alternative), where demand is expected to decrease by up to 45 percent based on data from the 2004 *Second Avenue Subway FEIS*. As was the case for the Proposed Actions, it is anticipated that some, if not all, of the significant peak hour stair impacts at Lexington Avenue Line subway stations under the Sendero Verde Development Alternative would not occur with implementation of Phase II of the Second Avenue Subway.

Subway Line Haul

Under the Proposed Actions, no analyzed subway line would experience an average of five or more additional passengers per car in any peak hour, and there would therefore not be any significant adverse subway line haul impacts based on *CEQR Technical Manual* impact criteria. As shown in **Table 22-17**, the Sendero Verde Development Alternative would generate 678 additional subway trips in the AM peak hour and 727 in the PM compared with the Proposed Actions. However, as shown in **Table 22-28**, this alternative is also not expected to generate an average of five or more additional peak hour trips on any subway line, and it would therefore also not result in any significant adverse subway line haul impacts.

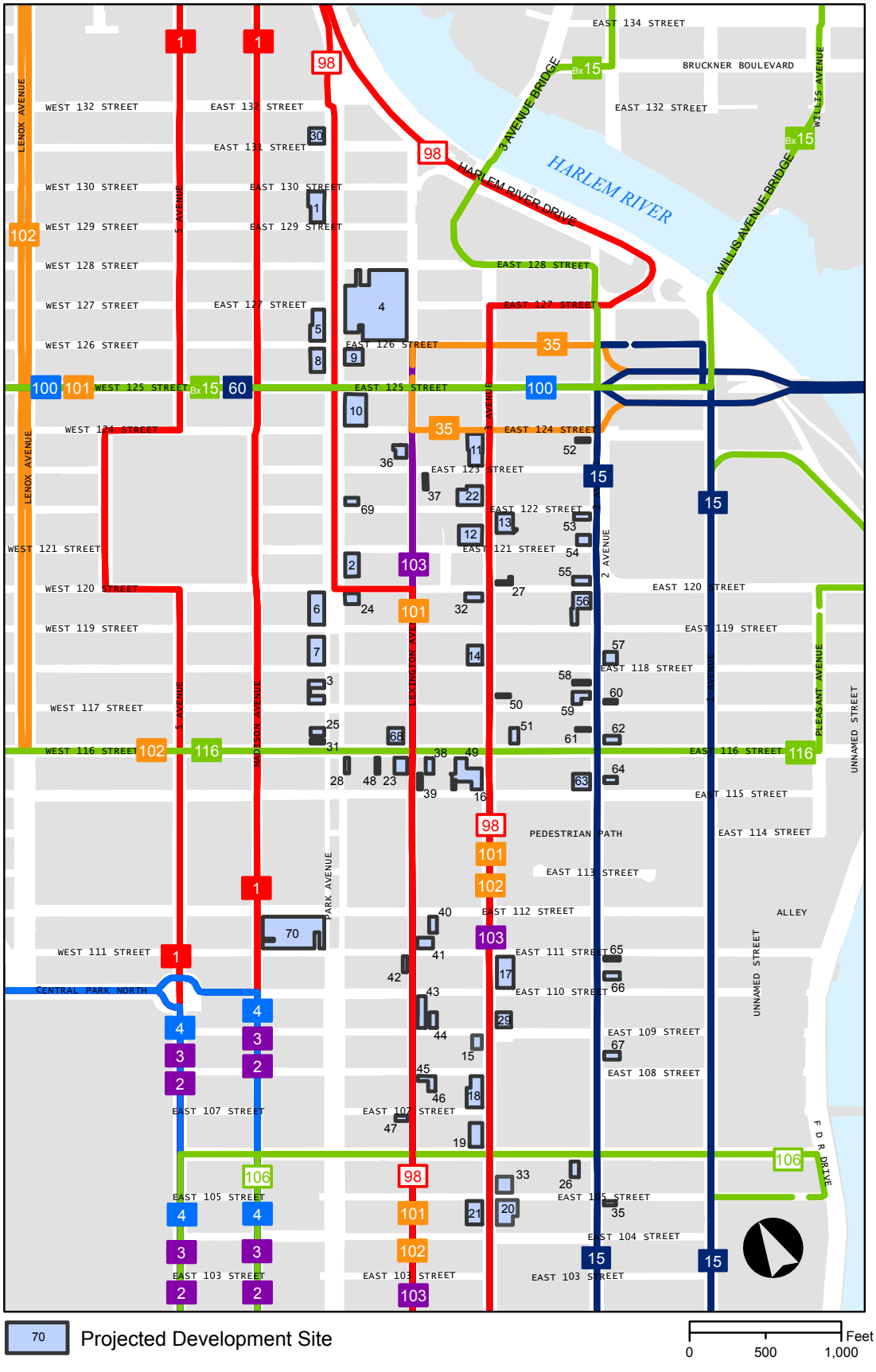
Under both the Proposed Actions and the Sendero Verde Development Alternative, completion of Phase II of the Second Avenue Subway is expected to result in improved line haul conditions on the Lexington Avenue Line 4, 5, and 6 services compared with the conditions reflected in the impact analyses.

Bus

As presented in **Table 22-17**, compared with the Proposed Actions, the Sendero Verde Development Alternative would generate approximately 249 and 263 more incremental bus trips during the analyzed weekday AM and PM peak hours, respectively. This represents increases of approximately 49 percent and 43 percent during these periods, respectively, compared with the incremental bus trips that would be generated under the Proposed Actions.

As was the case for the Proposed Actions, under the Sendero Verde Development Alternative only the M15 SBS and M101 LTD bus routes are expected to experience 50 or more new peak hour trips in one direction. Given the location of Site 70 to the west of Park Avenue (see **Figure 22-25**), this alternative is not expected to generate any more trips on the M15 SBS route than would the Proposed Actions. However, as shown in **Table 22-29**, compared with the Proposed Actions this alternative would generate 16 more trips on both northbound and southbound M101 LTD buses in the AM peak hour, and 26 more northbound and two more southbound trips in the PM peak hour. As shown in **Table 22-30**, these additional trips would result in a significant adverse impact to northbound M101 LTD buses in the PM peak hour that would not occur under the Proposed Actions.

Table 22-31 compares the total number of significant bus impacts under the Sendero Verde Development Alternative with the total number under the Proposed Actions. As shown in **Table 22-31**, under this alternative, southbound M15 SBS buses would be impacted in the AM peak hour as would northbound M101 LTD buses in the PM. By contrast, only the AM peak hour impact to southbound M15 SBS buses would occur under the Proposed Actions. The addition of one southbound M15 SBS bus in the AM peak hour and one northbound M101 LTD bus in the PM would fully mitigate both significant bus impacts under the Sendero Verde Development Alternative.



Source: PHA

Project Area Bus Routes

EAST HARLEM REZONING

Figure 22-25

Table 22-28
Comparison of Subway Line Haul Conditions
Proposed Actions vs. Sendero Verde Development Alternative

Peak Hour	Route	Direction	Maximum Load Point (leaving station)	Average Trains per Hour	Average Cars per Hour	Guideline Passengers per Car[2]	Proposed Actions[1]				Sendero Verde Development Alternative[1]			
							Average Passengers per Hour	Average Passengers per Car	V/C Ratio[3]	Average Additional Passengers per Car	Average Passengers per Hour	Average Passengers per Car	V/C Ratio[3]	Average Additional Passengers per Car
AM	2/3	SB	72nd Street	22.9	229	110	29,372	128	1.17	0.39	29,408	128	1.17	0.55
	4/5	SB	86th Street	25.1	251	110	29,899	119	1.08	2.84	30,023	120	1.09	3.33
	6	SB	59th Street	21.5	215	110	20,264	101	0.86	2.44	20,356	95	0.86	2.87
PM	2/3	NB	59th Street	21.0	210	110	24,715	118	1.07	0.44	24,747	118	1.07	0.60
	4/5	NB	59th Street	22.2	222	110	23,705	107	0.97	2.97	23,815	107	0.98	3.46
	6	NB	59th Street	20.4	204	110	19,470	95	0.87	2.53	19,557	96	0.87	2.96

Notes:
[1] The analyses conservatively reflect conditions without expansion of Second Avenue Subway service to the Project Area.
[2] Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service.
[3] Volume to guideline capacity ratio.

Table 22-29
Comparison of Incremental Peak Hour Bus Trips by Route
Proposed Actions vs. Sendero Verde Development Alternative

Scenario	Total Bus Trips	M101 LTD (NB)	M101 LTD (SB)
Weekday AM			
Proposed Actions	511	31	14
Sendero Verde Development Alternative	760	47	35
Net Difference	***249***	***16***	***16***
Weekday PM			
Proposed Actions	617	61	30
Sendero Verde Development Alternative	880	87	32
Net Difference	***263***	***26***	***2***

Table 22-30
Comparison of Peak Hour Conditions on M101 LTD Bus Service
Proposed Actions vs. Sendero Verde Development Alternative

Scenario	Direction	Peak Load Point	Peak Hour Buses [1]	No Action Available Capacity [2,3]	Project Increment	With Action Available Capacity [2]
AM						
Proposed Actions	NB	Lexington Av/E.125th St	7	69	31	38
	SB	Amsterdam Av/W.125th St	8	161	19	142
Sendero Verde Development Alternative	NB	Lexington Av/E.125th St	7	69	47	22
	SB	Amsterdam Av/W.125th St	8	161	35	126
PM						
Proposed Actions	NB	Lexington Av/E.125th St	10	67	61	6
	SB	Amsterdam Av/W.125th St	9	228	30	198
Sendero Verde Development Alternative	NB	Lexington Av/E.125th St	10	67	87	**(20)***
	SB	Amsterdam Av/W.125th St	9	228	32	196

Notes:
[1] Assumes service levels adjusted to address capacity shortfalls in the No Action Condition.
[2] Available capacity based on MTA loading guidelines of 85 passengers per articulated bus.
[3] Analysis reflects conditions without expansion of Second Avenue Subway service to the Project Area.
* Denotes a significant adverse impact.

Table 22-31
Comparison of Significant Adverse Bus Impacts
Proposed Actions vs. Sendero Verge Development Alternative

Scenario	Route	Direction	Impacted Time Period
Proposed Actions	M15 SBS	SB	AM
Sendero Verde Development Alternative	M15 SBS	SB	AM
	M101 LTD	NB	PM

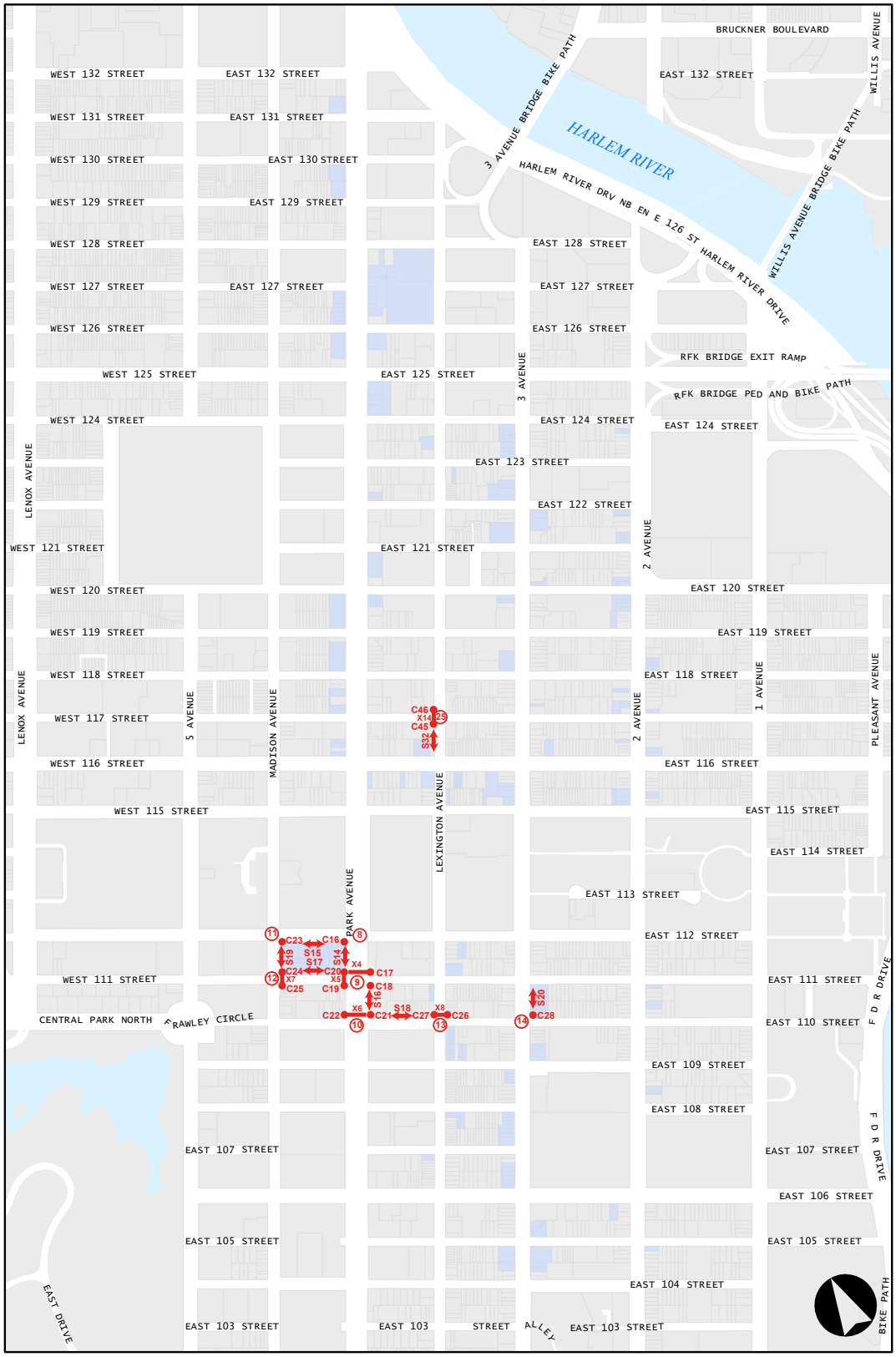
Under both the Proposed Actions and the Sendero Verde Development Alternative, completion of Phase II of the Second Avenue Subway is expected to result in improved line haul conditions on both the M15 SBS and M101 LTD routes (which parallel the Second Avenue Line) compared with the conditions reflected in the impact analyses. Therefore, the over-capacity conditions on the southbound M15 SBS service in the AM peak hour and on the northbound M101 LTD service in the PM under the Sendero Verde Development Alternative would likely not occur in 2027 with completion Phase II of the Second Avenue Subway.

PEDESTRIANS

As presented in **Table 22-17**, compared with the Proposed Actions, the Sendero Verde Development Alternative would generate a greater number of pedestrian trips (walk-only trips plus pedestrians en route to/from subway stations and bus stops) in all peak hours. As shown in **Table 22-32**, the Sendero Verde Development Alternative is expected to generate 1,316, 759, 1,549, and 1,035 more incremental pedestrian trips in the weekday AM, midday and PM, and Saturday peak hours, respectively, than the Proposed Actions. Compared with the Proposed Actions, pedestrian demand under this alternative would be from 23 percent to 37 percent greater in each peak hour. As shown in **Figure 22-26**, a total of 29 analyzed pedestrian elements (eight sidewalks, six crosswalks, and 15 corner areas) expected to be used by additional demand generated under the Sendero Verde Development Alternative (i.e., demand en route to and from Projected Development Site 70) were therefore evaluated to determine the potential for additional significant pedestrian impacts to occur under this alternative. (Incremental demand and levels of service at all other analyzed pedestrian elements would remain unchanged from conditions under the Proposed Actions.) As shown in **Tables 22-33 through 22-35**, with the additional demand generated by the Sendero Verde Development Alternative, all of these pedestrian elements would continue to operate at an acceptable LOS C or better in all analyzed peak hours, and there would be no new significant adverse pedestrian impacts under this alternative.

As discussed in Chapter 14, "Transportation," the Proposed Actions would result in a significant adverse impact to the south sidewalk on East 126th Street between Park and Lexington Avenues in all peak hours. As incremental pedestrian demand on this sidewalk under the Sendero Verde Development Alternative would remain unchanged compared with the Proposed Actions, this sidewalk impact would also occur under this alternative. Removal of a tree pit at the most constrained point on this sidewalk would fully mitigate the impact under the Proposed Actions, and would also mitigate any potential impact to this sidewalk under the Sendero Verde Development Alternative.

Given the location of Site 70 to the west of Park Avenue and its proximity to both the 110th Street Lexington Avenue Line station and the Central Park North-110th Street Lenox Avenue Line station (see **Figure 22-24**), little if any subway demand generated by this site is expected utilize new stations planned as part of Second Avenue Subway Phase II. Therefore, under the Sendero Verde Development Alternative, pedestrian conditions at the 20 sidewalks, crosswalks, and corner areas analyzed for the scenario with completion of Second Avenue Subway Phase II in 2027 would be comparable to those under the Proposed Actions. The Proposed Actions' significant adverse AM peak hour impacts to the north and south crosswalks on Park Avenue at East 125th Street with completion of Second Avenue Subway Phase II would also occur under this alternative. Widening the segment of the north crosswalk west of the Park Avenue median by 1.5 feet (to a total of 19.5 feet) and the segment of the south crosswalk east of the median by 0.5 feet (to a total of 18.5 feet) would fully mitigate these impacts under both the Proposed Actions and the Sendero Verde Development Alternative.



Source: PHA

Pedestrian Analysis Locations

EAST HARLEM REZONING

Figure 22-26

Table 22-32
Comparison of Incremental Peak Hour Pedestrian Trips Proposed Actions vs. Sendero Verde Development Alternative

Scenario	Total
Weekday AM	
Proposed Actions	3,526
Sendero Verde Development Alternative	4,842
Net Difference	***1,316***
Weekday Midday	
Proposed Actions	3,180
Sendero Verde Development Alternative	3,939
Net Difference	***759***
Weekday PM	
Proposed Actions	4,793
Sendero Verde Development Alternative	6,342
Net Difference	***1,549***
Saturday	
Proposed Actions	4,511
Sendero Verde Development Alternative	5,546
Net Difference	***1,035***

Note:
Includes walk-only trips and trips en route to/from area transit services.

Table 22-33
With Action Sidewalk Conditions—Sendero Verde Development Alternative

No.	Location		Effective Width (ft.)	Project Increment				Peak Hour Volumes				Average Pedestrian Space (ft^2/ped)				Platoon-Adjusted Level			
				AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
Proposed Actions																			
S14	Park Ave betw. 111th & 112nd Streets	West	2.5	4	10	9	10	98	89	83	94	355.4	364.7	324.3	256.8	B	B	B	B
S15	112th Street betw. Madison & Park Aves	South	6.7	0	-2	0	2	96	119	97	77	939.6	552.8	951.8	1088.8	A	A	A	A
S16	Park Ave betw. 110th & 111th Streets	East	7.0	1	-6	-1	0	181	116	110	92	483.8	841.1	786.2	952.1	B	A	A	A
S17	111th St betw. Madison & Park Ave	North	6.8	3	-1	1	2	185	136	149	75	442.4	578.1	592.7	861.6	B	A	A	A
S18	110th St betw. Park & Lexington Ave	North	6.3	6	7	9	14	1,179	706	764	796	69.5	121.1	114.5	121.2	C	B	B	B
S19	Madison Ave betw. 111th & 112nd Streets	East	3.5	4	12	10	10	282	255	241	176	168.8	188.9	190.6	258.1	B	B	B	B
S20	3rd Ave betw. 110th & 111th Streets	East	5.9	169	218	240	269	813	814	930	941	84.4	94.7	89.8	87.8	C	B	C	C
S32	Lexington Ave betw. 116th & 117th Streets	West	5.1	438	206	253	311	1,453	876	953	1,190	43.8	77.7	77.3	57.5	C	C	C	C
Sendero Verde Alternative																			
S14	Park Ave betw. 111th & 112nd Streets	West	2.5	482	253	557	355	576	332	631	439	59.6	97.3	41.4	54.0	C	B	C	C
S15	112th Street betw. Madison & Park Aves	South	6.7	330	187	387	261	426	308	484	336	211.5	213.4	190.5	249.3	B	B	B	B
S16	Park Ave betw. 110th & 111th Streets	East	7.0	276	101	298	167	456	223	409	259	191.8	437.4	211.2	338.0	B	B	B	B
S17	111th St betw. Madison & Park Aves	North	6.8	352	196	410	272	534	333	558	345	152.9	235.9	157.9	187.0	B	B	B	B
S18	110th St betw. Park & Lexington Aves	North	6.3	493	183	534	299	1,666	882	1,289	1,081	48.6	96.7	67.3	88.9	C	B	C	C
S19	Madison Ave betw. 111th & 112nd Streets	East	3.5	387	216	450	292	665	459	681	458	70.9	104.6	66.8	98.7	C	B	C	B
S20	3rd Ave betw. 110th & 111th Streets	East	5.9	175	222	267	274	819	818	957	946	83.8	94.3	87.3	87.3	C	B	C	C
S32	Lexington Ave betw. 116th & 117th Streets	West	5.1	449	219	270	328	1,464	889	970	1,207	43.5	76.5	75.9	56.6	C	C	C	C

Table 22-34
With Action Crosswalk Conditions—Sendero Verde Development Alternative

Intersection	Crosswalk		Peak Hour Volumes				Average Pedestrian Space (ft^2/ped)				Level of Service			
			AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
Proposed Actions														
Park Avenue & East 111th Street	X4	North	200	90	154	71	80.4	172.8	106.1	254.3	A	A	A	A
	X5	West	104	70	73	45	454.9	579.8	550.9	883.9	A	A	A	A
Park Avenue & East 110th Street	X6	North	454	362	438	392	40.6	57.0	44.1	49.0	B	B	B	B
Madison Avenue & East 111th Street	X7	East	153	143	163	94	244.4	228.8	235.1	396.8	A	A	A	A
Lexington Avenue & East 110th Street	X8	North	948	697	737	727	36.2	53.0	47.5	51.4	C	B	B	B
Lexington Avenue & East 117th Street	X14	West	981	591	714	722	59.7	97.7	85.6	71.4	B	A	A	A
Sendero Verde Alternative														
Park Avenue & East 111th Street	X4	North	511	238	535	288	31.7	65.0	31.8	60.8	C	A	C	A
	X5	West	376	208	384	244	121.7	191.5	94.4	157.6	A	A	A	A
Park Avenue & East 110th Street	X6	North	682	448	686	531	26.6	45.7	27.8	35.8	C	B	C	C
Madison Avenue & East 111th Street	X7	East	485	285	535	297	71.4	112.6	67.8	121.9	A	A	A	A
Lexington Avenue & East 110th Street	X8	North	1,173	791	987	876	28.6	46.2	34.5	42.0	C	B	C	B
Lexington Avenue & East 117th Street	X14	West	993	605	730	738	58.9	95.2	83.6	69.7	B	A	A	A

Table 22-35
With Action Corner Conditions—Sendero Verde Development Alternative

Intersection	Corner		Average Pedestrian Space (ft^2/ped) AM	MD	PM	SAT	Level of Service AM	MD	PM	SAT
Proposed Actions										
Park Avenue & East 112th Street	C16	SW	496.3	637.1	602.3	720.8	A	A	A	A
Park Avenue & East 111th Street	C17	NE	276.5	469.1	418.3	804.9	A	A	A	A
	C18	SE	312.3	460.1	430.9	455.8	A	A	A	A
	C19	SW	358.3	545.0	470.0	601.6	A	A	A	A
	C20	NW	184.1	337.4	244.5	486.3	A	A	A	A
Park Avenue & East 110th Street	C21	NE	181.3	287.3	221.0	252.6	A	A	A	A
	C22	NW	117.8	173.9	138.1	160.2	A	A	A	A
Madison Avenue & East 112th Street	C23	SE	458.2	451.7	361.3	571.6	A	A	A	A
Madison Avenue & East 111th Street	C24	NE	239.7	299.4	270.1	457.3	A	A	A	A
	C25	SE	257.7	312.8	265.5	351.2	A	A	A	A
Lexington Avenue & East 110th Street	C26	NE	57.7	69.7	58.4	71.4	B	A	B	A
	C27	SE	85.0	137.4	122.9	146.6	A	A	A	A
3rd Avenue & East 110th Street	C28	SW	33.1	50.3	42.2	44.6	C	B	B	B
Lexington Avenue & East 117th Street	C45	SW	65.9	106.9	92.7	81.2	A	A	A	A
	C46	NW	139.5	204.0	183.5	143.5	A	A	A	A
Sendero Verde Alternative										
Park Avenue & East 112th Street	C16	SW	197.8	334.9	182.2	256.1	A	A	A	A
Park Avenue & East 111th Street	C17	NE	127.5	241.3	136.8	257.0	A	A	A	A
	C18	SE	153.8	275.3	162.4	225.6	A	A	A	A
	C19	SW	152.5	268.1	140.4	213.4	A	A	A	A
	C20	NW	57.1	114.9	50.3	99.0	B	A	B	A
Park Avenue & East 110th Street	C21	NE	102.7	195.1	109.9	149.2	A	A	A	A
	C22	NW	80.2	137.8	86.2	115.6	A	A	A	A
Madison Avenue & East 112th Street	C23	SE	334.5	349.0	256.2	397.3	A	A	A	A
Madison Avenue & East 111th Street	C24	NE	126.3	197.8	128.2	228.9	A	A	A	A
	C25	SE	137.7	212.5	138.8	209.3	A	A	A	A
Lexington Avenue & East 110th Street	C26	NE	45.5	62.9	45.9	60.4	B	A	B	A
	C27	SE	74.4	125.4	98.6	127.3	A	A	A	A
3rd Avenue & East 110th Street	C28	SW	32.3	49.2	40.2	43.4	C	B	B	B
Lexington Avenue & East 117th Street	C45	SW	65.5	105.5	91.5	80.1	A	A	A	A
	C46	NW	138.1	200.5	180.6	141.3	A	A	A	A

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

A review of DOT crash data for the three-year reporting period between January 1, 2012, and December 31, 2014, identified eight intersections in the traffic and pedestrian study areas as high crash accident locations. Subsequent years have seen the implementation of measures to enhance pedestrian/bicycle safety throughout the study area, including signal timing modifications, installation of high visibility crosswalks and countdown clocks, and the installation of new on-street bicycle lanes and medians with pedestrian refuge areas. Under both the Proposed Actions

and the Sendero Verde Development Alternative, additional improvements to increase pedestrian/bicyclist safety at high crash locations could include improved street lighting and modifying additional traffic signal timings to reflect slower walking speeds. As a charter high school would potentially be developed under this alternative, it would likely include further measures to enhance safety at intersections in proximity to the proposed school site (Site 70), such as the installation of additional school crossing pavement markings and signage.

PARKING

Compared with the Proposed Actions, the inclusion of Site 70 under the Sendero Verde Development Alternative would result in additional demand for off-street and on-street parking in Sub-Area A as well as within the overall parking study area. As shown in **Table 22-36**, overall, development associated with the Sendero Verde Development Alternative would generate a peak net parking demand of approximately 824 spaces in the weekday midday (1-2 PM) period and 762 spaces in the overnight period. This compares with 695 spaces in the midday and 635 spaces in the overnight period under the Proposed Actions. Demand would peak at 833 spaces between 4 and 5 PM, compared with 703 spaces between 3 and 4 PM under the Proposed Actions. Under the Sendero Verde Development Alternative, it is assumed that up to 341 accessory parking spaces would be provided on projected development sites, the same as under the Proposed Actions.

After accounting for new parking demand and the number of accessory spaces provided on a site-by-site basis (see Table E-5 in Appendix E), it is estimated that compared with the No Action Condition, incremental parking demand from new development associated with the Sendero Verde Development Alternative would total approximately 577 spaces at off-street public parking facilities and on-street in the weekday midday period and 537 spaces during the overnight period. This compares with approximately 448 spaces at off-street public parking facilities and on-street in the weekday midday period and 410 spaces during the overnight period under the Proposed Actions.

Table 22-36
Sendero Verde Development Alternative Net Incremental Weekday Hourly Parking Demand by Land Use

	Local Retail (a)	Office (a)	Residential (a,c)	Hotel (b,d)	Light Industrial (b)	Restaurant (e)	Auto Repair (b)	Destination Retail (a)	Supermarket (b,f)	Laboratory Space (g)	Medical Office Visitors (h)	Medical Office Staff (h)	School Staff (i)	Community Center (j)	Total Demand
12-1 AM	0	0	795	-33	0	0	0	0	0	0	0	0	0	0	762
1-2	0	0	795	-33	0	0	0	0	0	0	0	0	0	0	762
2-3	0	0	795	-33	0	0	0	0	0	0	0	0	0	0	762
3-4	0	0	795	-33	0	0	0	0	0	0	0	0	0	0	762
4-5	0	0	795	-33	0	0	0	0	0	0	0	0	0	0	762
5-6	0	0	770	-33	0	0	0	0	0	0	0	2	0	0	739
6-7	0	2	724	-32	0	0	0	0	0	0	0	5	0	0	699
7-8	0	19	677	-31	1	0	-1	1	4	1	17	12	2	1	703
8-9	0	86	518	-29	4	0	-6	5	4	10	46	60	15	2	715
9-10	0	129	498	-26	8	1	-17	13	4	16	84	70	16	1	797
10-11	6	124	472	-23	7	7	-18	22	4	17	119	72	16	1	826
11-12	0	109	457	-21	8	13	-14	26	8	16	128	72	16	0	818
12-1 PM	0	109	460	-29	8	13	-14	30	5	16	128	72	16	1	815
1-2	-2	110	461	-27	7	14	-7	32	3	16	128	72	16	1	824
2-3	-4	116	470	-26	6	7	-9	31	4	18	122	70	16	2	823
3-4	-2	118	501	-28	5	6	-9	28	4	17	106	68	16	3	833
4-5	6	90	561	-27	4	4	-3	26	4	12	83	57	14	2	833
5-6	3	35	652	-31	0	7	-3	23	3	3	73	9	1	1	776
6-7	1	15	704	-31	0	13	-1	23	2	0	45	0	0	1	772
7-8	-1	1	751	-31	0	10	0	21	1	0	17	0	0	1	770
8-9	0	0	783	-33	0	4	0	15	0	0	5	0	0	0	774
9-10	0	0	782	-33	0	1	0	5	0	0	0	0	0	0	755
10-11	0	0	789	-33	0	0	0	1	0	0	0	0	0	0	757
11-12	0	0	791	-33	0	0	0	0	0	0	0	0	0	0	758

Notes:

(a) Parking accumulation pattern based on data from the 2012 *West Harlem Rezoning FEIS* .

(b) Parking accumulation pattern based on data from the 2016 *East New York Rezoning FEIS* .

(c) Assumes 0.19 spaces/D.U. derived from average 2011-2015 ACS Tenure by Vehicles Available data for project area census tracts.

(d) 0.4 spaces/room based on data from the 2008 *East 125th Street Development FEIS.*

(e) Parking accumulation pattern based on data from the 2015 *Vanderbilt Corridor and One Vanderbilt FEIS* .

(f) Parking accumulation pattern based on data from the 2009 *Food Retail Expansion to Support Health (FRESH) Food Store Program.A73*

(g) Parking accumulation pattern for light industrial use assumed for laboratory space.

(h) Parking accumulation pattern based on data from 2014 *New York Methodist Hospital Center for Community Health EAS.*

(i) Parking accumulation pattern based on data from the 2011 *Brownsville Ascend Charter School Assessment.*

(j) Parking accumulation pattern based on data from the 2007 *Jamaica Plan Rezoning FGEIS.*

Off-Street Parking

As shown in **Table 22-37**, compared with the No Action RWCDS, development under the Sendero Verde Development Alternative would result in a demand for 577 more off-street public parking spaces within the overall parking study area in the weekday midday period and 537 more spaces during the overnight period. This compares with 448 and 410 more spaces during these same periods, respectively, under the Proposed Actions. Demand for off-street public parking in the study area would total approximately 4,082 spaces in the weekday midday and 2,740 spaces during the overnight period, compared with 3,953 and 2,613 spaces during these periods, respectively, under the Proposed Actions.

As shown in **Table 22-37**, after accounting for No Action capacity displaced from projected development sites, off-street public parking in the overall study area would be operating at approximately 142 percent of capacity with a deficit of 1,211 spaces in the weekday midday, and at 106 percent of capacity with a deficit of 167 spaces during the overnight period under the Sendero Verde Development Alternative. This compares with 138 percent of capacity with a deficit of 1,082 spaces in the weekday midday, and 102 percent of capacity with a deficit of 40 spaces during the overnight period under the Proposed Actions. The greatest off-street public parking deficit would occur in Sub-Area C where there would be a shortfall of 858 spaces in the midday and 833 spaces in the overnight period under both the Proposed Actions and the Sendero Verde Development Alternative. Sub-Area B would experience shortfalls of 342 spaces in the midday and 136 spaces in the overnight period under both scenarios. Under the Sendero Verde Development Alternative, Sub-Area A would have a deficit of 11 spaces and a surplus of 802 spaces during the weekday midday and overnight periods, respectively, compared with surpluses of 118 spaces and 929 spaces during these same periods, respectively, under the Proposed Actions.

As discussed in Chapter 14, "Transportation," in this area of Manhattan the inability of a proposed action or the surrounding area to accommodate future parking demands would be considered a parking shortfall, but would generally not be considered significant under *CEQR Technical Manual* guidelines due to the magnitude of available alternative modes of transportation. The shortfalls in off-street public parking spaces in the overall study area and the three sub-areas during the weekday midday and/or overnight periods under both the Sendero Verde Development Alternative and the Proposed Actions would therefore not be considered significant adverse parking impacts. The ability of the on-street parking supply to accommodate this excess demand is assessed below.

On-Street Parking

As shown in **Table 22-38**, compared with the No Action RWCDS, development associated with the Sendero Verde Development Alternative and the displacement of 110 parking spaces in two existing public parking facilities on projected development sites would result in a net increase in study area on-street parking demand of approximately 685 spaces in the weekday midday period and 167 spaces in the overnight period compared with increases of 556 spaces and 40 spaces during these same periods, respectively, under the Proposed Actions. On-street parking demand within the overall study area would therefore total approximately 10,098 spaces in the midday and 9,235 spaces overnight under this alternative, compared with 9,969 spaces and 9,108 spaces under the Proposed Actions. Utilization under this alternative would increase to 103 percent in the midday period (versus 102 percent under the Proposed Actions), and to 86 percent of capacity in the overnight period (versus 85 percent under the Proposed Actions). There would be a deficit of approximately 303 on-street parking spaces within the overall study area in the

midday (versus 174 under the Proposed Actions), while approximately 1,452 on-street spaces would remain available during the overnight period (versus 1,579 spaces available under the Proposed Actions).

Under the Sendero Verde Development Alternative, on-street parking within parking sub-areas A, B, and C would be operating at approximately 91 percent, 98 percent, and 134 percent of capacity, respectively, in the weekday midday, and at 85 percent, 89 percent, and 118 percent of capacity, respectively, in the overnight period. These utilization levels would be essentially unchanged from the Proposed Actions. A total of 344 and 633 on-street parking spaces would remain available in Sub-Area A in the midday and overnight periods, respectively, versus 355 and 633 under the Proposed Actions. Like the Proposed Actions, under this alternative Sub-Area B would have surpluses of 70 spaces in the midday and 438 spaces in the overnight period, and Sub-Area C would experience on-street parking deficits of 717 spaces in the midday and 421 spaces overnight.

In summary, under the Sendero Verde Development Alternative there would be a deficit of approximately 303 spaces of on-street and off-street public parking capacity within ¼-mile of projected development sites in the weekday midday period, while approximately 1,452 on-street spaces would remain available during the overnight period. By comparison, under the Proposed Actions the midday deficit would total approximately 174 spaces and the overnight surplus would total 1,579 spaces. While some drivers destined for the Project Area would potentially have to travel a greater distance to find available parking in the midday, the shortfalls under both this alternative and the Proposed Actions would not be considered significant adverse impacts based on *CEQR Technical Manual* criteria due to the magnitude of available alternative modes of transportation. Therefore, like the Proposed Actions, the Sendero Verde Development Alternative is not expected to result in significant adverse parking impacts during the weekday midday peak period for commercial and retail parking demand, nor during the overnight peak period for residential demand.

Table 22-37
Sendero Verde Development Alternative Off-Street Public Parking Capacity, Demand and Utilization within ¼-Mile of Projected Development Sites

	Sub-Area A		Sub-Area B		Sub-Area C		Total Study Area	
	Midday	Overnight[3]	Midday	Overnight[3]	Midday	Overnight[3]	Midday	Overnight[3]
Capacity								
No Action Capacity	2,062	1,764	662	662	255	255	2,979	2,681
Capacity Displaced by With Action Development[1]	0	0	(108)	(108)	0	0	(108)	(108)
Total With Action Capacity	2,062	1,764	554	554	255	255	2,871	2,573
Demand								
No Action Demand	1,819	711	722	450	964	1,042	3,505	2,203
Incremental Demand from With Action Developments[2]	254	251	174	240	149	46	577	537
Total With Action Demand	2,073	962	896	690	1,113	1,088	4,082	2,740
Utilization								
With Action Utilization	101%	55%	162%	125%	436%	427%	142%	106%
With Action Off-Street Parking Surplus/(Deficit)	(11)	802	(342)	(136)	(858)	(833)	(1,211)	(167)

Notes:
[1] Reflects displacement of existing public parking facilities on projected developments sites 6 and 7 (facilities 15 and 14 in Table 14-52) under the Sendero Verde Development Alternative (the same as under the Proposed Actions).
[2] Includes demand not otherwise accommodated in on-site accessory parking. The numbers reflect the net incremental change compared with the No Action RWCDS.
[3] Existing public parking facilities Nos. 1, 7, and 9 in Table 14-52 are closed overnight.

Table 22-38
Sendero Verde Development Alternative On-Street Parking Capacity, Demand and Utilization within ¼-Mile of Projected Development Sites

	Sub-Area A		Sub-Area B		Sub-Area C		Overall Study Area	
	Weekday Midday	Overnight	Weekday Midday	Overnight	Weekday Midday	Overnight	Weekday Midday	Overnight
Capacity								
No Action Capacity	3,801	4,257	3,863	4,060	2,131	2,370	9,795	10,687
Net Change in With Action On-Street Parking Supply[1]	0	0	0	0	0	0	0	0
Total With Action Capacity	3,801	4,257	3,863	4,060	2,131	2,370	9,795	10,687
Demand								
No Action Demand	3,446	3,624	3,511	3,486	2,699	2,745	9,413	9,068
Incremental Demand from Sendero Verde Development Alternative[2]	11	0 [3]	282	136	149	46	685	167
Total With Action Demand	3,457	3,624	3,793	3,622	2,848	2,791	10,098	9,235
Utilization								
With Action Utilization	91%	85%	98%	89%	134%	118%	103%	86%
With Action On-Street Parking Surplus/(Deficit)	344	633	70	438	(717)	(421)	(303)	1,452

Notes:
[1] No changes to on-street parking supply are anticipated under the Sendero Verde Development Alternative.
[2] Includes demand from With Action developments on projected development sites not otherwise accommodated by on-site accessory parking or in off-street public parking facilities, and demand displaced from existing public parking facilities on projected development sites.
[3] There would be an off-street public parking capacity surplus of 802 spaces overnight in Sub-Area A. This off-street parking surplus is rounded to zero when determining on-street parking demand.

AIR QUALITY

MOBILE SOURCES

The Sendero Verde Development Alternative assumes that the Proposed Actions would be implemented with one additional projected development site: Projected Development Site 70. Similar to the Proposed Actions, the Sendero Verde Development Alternative would be not expected to significantly alter traffic conditions. The maximum hourly incremental traffic from the Proposed Actions would not exceed the *CEQR Technical Manual* carbon monoxide screening threshold of 170 peak hour trips at nearby intersections in the study area, nor would it exceed the particulate matter emissions screening threshold discussed in Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*. Therefore, there is no potential for mobile source impacts from the Sendero Verde Development Alternative.

STATIONARY SOURCES

Heating and Hot Water Systems

A screening analysis was performed to assess air quality impacts associated with emissions from heat and hot water systems for the Sendero Verde Development Alternative. The methodology described in Chapter 15, "Air Quality," was used for the analysis, and it considered impacts on sensitive uses (i.e., project-on-project, existing residences and proposed developments including the development anticipated under the RWCDS associated with the Proposed Actions). It was assumed that No. 2 fuel oil or natural gas would be used in the Development Sites' heat and hot water systems, and that the exhaust stack(s) would be located three feet above roof height (the default assumption in the *CEQR Technical Manual*).

The Sendero Verde Development was analyzed assuming that each proposed building would have a separate heat and hot water system. For Building A, based on the CEQR methodology, burning No. 2 fuel oil or natural gas would not result in potential significant adverse air quality impacts because the proposed building would be below the maximum development size shown in Figures 17-5 and 17-7 of the Air Quality Appendix of the *CEQR Technical Manual*, respectively. However, for Buildings B and C, the Sendero Verde Development failed the screening analysis using No. 2 fuel oil or natural gas as the fuel source. Therefore, a refined analysis was required for these developments.

For Building A, the air quality analysis determined that a minimum stack height would be required, while for Buildings B and C, the air quality analysis determined that a natural gas restriction, a stack set back and/or height, and a requirement to utilize low NO_x burners (less than 30 ppm NO_x) would be required. The restrictions are as follows:

Building A

- Any new development on the above-referenced property must ensure that the heating and hot water equipment exhaust(s) are located at least 444 feet above grade, to avoid any potential significant air quality impacts.

Building B

- Any new development on the above-referenced property must ensure that fossil fuel-fired heating and hot water equipment utilize only natural gas, and that heating and hot water equipment exhaust stack(s) are located at least 187 feet above grade, and be no more than 115 feet away from the lot line facing Park Avenue, and must be fitted with low NOx

burners with a maximum emission concentration of 30 ppm, to avoid any potential significant air quality impacts.

Building C

- Any new development on the above-referenced property must ensure that fossil fuel-fired heating and hot water equipment utilize only natural gas, and that heating and hot water equipment exhaust stack(s) are located at least 123 feet above grade, and be no more than 26 feet away from the lot line facing East 111th Street, and must be fitted with low NOx burners with a maximum emission concentration of 30 ppm, to avoid any potential significant air quality impacts.

Prior to the disposition and allocation of construction financing by HPD for Sendero Verde, the project sponsor's architect/engineer of record would be required to demonstrate to HPD that the above requirements will be met. Construction in accordance with these requirements would also be required through provisions in the LDA between HPD and the project sponsor, to ensure the above restrictions are satisfied, with oversight provided through HPD. With these requirements in place as part of the Sendero Verde Development, there would be no significant adverse air quality impacts from heat and hot water systems under the Sendero Verde Development Alternative.

Industrial Sources

One DEP-permitted dry cleaning facility was identified within 400 feet of the Development Site. The dry cleaner uses best available technology for controlling dry cleaning emissions and meets all DEP regulations. Based on this information, it was determined that these operations would not lead to any significant adverse air quality impacts on the Sendero Verde Development Alternative.

Additional Sources

The Sendero Verde Development is not within 1,000 feet of any of the large sources identified as under the analysis presented for the Proposed Actions (see Chapter 15, "Air Quality"). Therefore, no significant adverse air quality impacts on the Sendero Verde Development from existing sources are predicted.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Like the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts associate with greenhouse gas emissions and climate change. Following the methodology described in Chapter 16, "Greenhouse Gas Emissions and Climate Change" and per the *CEQR Technical Manual* guidance, projected GHG emissions are presented in this section for Site 70 as it would be developed under the Sendero Verde Development Alternative, and for the Sendero Verde Development Alternative overall, followed by a qualitative discussion of potential measures for reducing GHG emissions and consistency of the Sendero Verde Development Alternative with the City's policy for GHG emissions reduction.

The building floor area, emission intensity, and resulting GHG emissions from the potential uses in Site 70 under the Sendero Verde Development Alternative are presented in detail in **Table 22-39**.

Table 22-39
Annual Building Operational Emissions
Site 70 Under the Sendero Verde Development Alternative

Source Use	Building Area (gsf)	GHG Intensity [1] [2] (kg CO_2e / gsf / year)	Annual GHG Emissions (metric tons CO_2e)
Residential	621,520	6.59	4,096
Commercial	12,673	9.43	142
Community Center	41,245	9.43	484
Community Facility (Assumed Medical Offices)	24,666	9.43	234
High School	84,693	5.25	563
Total			**5,519**

Sources:
1. *CEQR Technical Manual*
2. NYC. *LL84 2014 Benchmarking Data Disclosure Data.* www.nyc.gov/html/gbee/html/plan/ll84_scores.shtml. October, 2016
Notes: Totals may not sum due to rounding.
Per *CEQR Technical Manual* guidance, electricity emissions are representative of existing conditions in 2012 and not the future target year (2027). Future emissions are expected to be lower.
Representative emission intensity for existing buildings are higher than new and future construction, and do not include the specific energy efficiency measures.

The projected annual vehicle miles traveled associated with uses at Site 70 under the Sendero Verde Development Alternative, forming the basis for the GHG emissions calculations from mobile sources, are summarized in **Table 22-40**. The mobile-source-related GHG emissions from the potential uses in Site 70 under the Sendero Verde Development Alternative are presented in detail in **Table 22-41**.

Table 22-40
Vehicle Miles Traveled per Year
Site 70 Under the Sendero Verde Development Alternative

Use Type	Passenger	Taxi	Truck
Residential	1,184,016	24,793	446,942
Commercial Retail	159,435	43,057	180,712
Community Center	126,642	110,178	22,409
Community Facility (Assumed Medical Offices)	332,744	125,477	98,398
High School	280,183	16,775	249,660
Total	**2,083,021**	**320,280**	**998,122**

Table 22-41
Annual Mobile Source Emissions
Site 70 Under the Sendero Verde Development Alternative
(metric tons CO_2e, 2027)

Use	Passenger Vehicle	Taxi	Truck	Total
Residential	647	12	936	1,595
Commercial Retail	87	21	378	487
Community Center	69	54	47	170
Community Facility (Assumed Medical Offices)	182	62	206	450
High School	153	8	523	684
Total	**1,139**	**157**	**2,090**	**3,386**

In addition to the direct emissions included in the analysis, an additional approximately 25 percent would be emitted upstream, associated with fuel extraction, production, and delivery.

A summary of GHG emissions by source type for Site 70 under the Sendero Verde Development Alternative and for the Sendero Verde Development Alternative overall, including the emissions presented in Chapter 16, "Greenhouse Gas Emissions and Climate Change" for all other sites, are presented in **Tables 22-42 and 22-43**, respectively. Note that if new buildings were to be constructed elsewhere to accommodate the same number of units and space for other uses, the emissions from the use of electricity, energy for heating and hot water, and vehicle use could equal or exceed those estimated for the Sendero Verde Development Alternative, depending on their location, access to transit, building type, and energy efficiency measures. Construction emissions were not modeled explicitly, but are estimated to be equivalent to approximately 5 to 10 years of operational emissions, including both direct energy and emissions embedded in materials (extraction, production, and transport). The Proposed Actions are not expected to fundamentally change the City's solid waste management system, and therefore emissions associated with solid waste are not presented.

Table 22-42
Summary of Annual GHG Emissions, 2027
Site 70 Under the Sendero Verde Development Alternative
(metric tons CO2e)

Use	Building Operations	Mobile	Total
Residential	4,096	1,595	5,691
Commercial Retail	142	487	629
Community Center	484	170	655
Community Facility (Assumed Medical Offices)	234	450	683
High School	563	684	1,247
Total	**5,519**	**3,386**	**8,905**

Table 22-43
Summary of Annual GHG Emissions, 2027
Sendero Verde Development Alternative Total
(metric tons CO_2e)

Use	Building Operations	Mobile	Total
Residential	39,457	15,935	55,393
Commercial Retail	4,928	11,740	16,669
Office (Includes Laboratory Offices)	2,536	2,896	5,432
Community Center	389	137	526
Community Facility (Assumed Medical Offices)	484	170	655
Industrial (Excludes Laboratory Offices)	1,294	2,487	3,781
Parking	101	0	101
High School	563	684	1,247
Total	**51,822**	**36,312**	**88,134**

Consistency with the Citywide GHG Reduction Goals

This section discusses the consistency of the Sendero Verde Development Alternative with the citywide GHG reduction goals as defined in the *CEQR Technical Manual*. Since development under the Sendero Verde Development Alternative at sites other than Site 70 would not result in development under ongoing control of the City, specific decisions regarding building design, which would affect energy use and GHG emissions, cannot be affected by the City within the

scope of the Sendero Verde Development Alternative and would be made by developers under the building code requirements in effect at the time. The City is addressing citywide building energy efficiency and other GHG-related design questions through its ongoing long-term GHG policy development and implementation process. However, some of the sites may require specific energy efficiency measures beyond the code requirements if developers apply for funding though HPD or the New York City Housing Development Corporation (HDC).

Site 70 would be developed under the affordable housing requirements and design guidelines of HPD. Therefore, the Sendero Verde Development Alternative would meet sustainable design requirements which would, among other benefits, result in lower GHG emissions.

Build Efficient Buildings

Promotion of the GHG reduction goal through improved efficiency of site-specific building systems and similar measures cannot be achieved within the scope of the Sendero Verde Development Alternative for sites other than Site 70 unless they are developed through a City affordable housing subsidy program. In general, pursuing denser infill development—which is an objective of the rezoning—results in overall increased energy efficiency.

Under the Sendero Verde Development Alternative, Site 70 would be developed under the affordable housing requirements of HPD. The City would require certification under the EGC program per the HPD EGC Overlay. The EGC program certification for new buildings would require the implementation of a design aimed at reducing energy consumption and greenhouse GHG emissions as compared with buildings designed to meet but not exceed the building code requirements; the program is currently designed to achieve a minimum of 15 percent reduction in energy expenditure relative to the requirements of the building code in effect at the time.

Through its request for proposals for the disposition and development, the City would also encourage proposals that incorporate higher building energy-efficiency than the minimum requirements of the EGC and attain optional EGC points for Additional Reductions in Energy Use (criterion 5.2a) or Advanced Certification: Nearing Net Zero (criterion 5.2b), or equivalent reductions if not using EGC. The EGC criteria also include mandatory and optional measures that would indirectly reduce GHG emissions, including water conservation and materials selection.

Use of Clean Power

While details are not known at this time, it is likely, given the market and current common practice, that buildings developed under the Proposed Actions would produce heat and hot water using natural gas fired systems. Some sites would be required to use natural gas due to (E) Designations related to air quality (see Chapter 14, "Air Quality"). Natural gas has lower carbon content per unit of energy than other fuels, and thus reduces GHG emissions. In addition, as one of the optional considerations under the EGC certification or equivalent, the incorporation of electric-generating renewable energy may be considered. However, none of these options can be considered in detail until specific designs are considered.

Transit-Oriented Development and Sustainable Transportation

The Project Area would be heavily supported by many transit options, including the existing Nos. 4/5/6 subway line on Lexington Avenue and the future Second Avenue Subway, local and express (Limited or SBS) buses on the avenues and main crosstown streets throughout the Project Area, and the Metro-North Railroad station at 125th Street and Park Avenue connecting the area with other regions to the north of the City. The southernmost portion of the Project Area

also includes a few CitiBike stations, and protected bicycle paths exist on First and Second Avenues.

Reduce Construction Operation Emissions

Promotion of the GHG reduction goal through construction specifications cannot be achieved within the scope of the Sendero Verde Development Alternative since sites would be developed as a result of the alternative but would not otherwise be controlled by the City.

Use Building Materials with Low Carbon Intensity

Promotion of the GHG reduction goal through design specifications cannot be achieved within the scope of the Sendero Verde Development Alternative since most sites would be developed as a result of the alternative but would not otherwise be controlled by the City. However, Site 70 and some of the other sites, applying for HUD funding through HPD, may require additional measures. In such cases, the sites would be developed under the HPD affordable housing requirements, including certification under the EGC program per the HPD EGC Overlay, including some requirements and additional options within the points-based system for the use of materials with low carbon intensity.

RESILIENCE TO CLIMATE CHANGE

The resilience challenges associated with sea level rise and the future increase in potential severe storm levels, and the City's response to those challenges, would be the same as those described for the Proposed Actions. For potential and projected development sites, the approach and potential effects would be the same as described for the Proposed Actions. However, since Site 70 would be developed under Land Disposition Agreement between the City and the developer(s), the City would require a commitment to design the developments so as to be resilient to future potential flood elevations as they are projected to increase due to sea level rise.

According to the New York City Panel on Climate Change's (NPCC) projections (described in detail in Chapter 16, "Greenhouse Gas Emissions and Climate Change"), the potential 100-year flood elevation with sea-level rise could increase by 75 inches to approximately 18 feet NAVD88 by the end of the century under the NPCC "High" scenario. A small area of open space on Site 70 may be within 1-Percent Probability Flood Hazard Area by the 2020s, and the eastern side of the site (Park Avenue) would potentially be in the floodplain starting by the 2050s. The floodplain would expand out to the west side of the site (by Madison Avenue) by 2100 or later. The current grade at Site 70 is between 12 and 17 feet NAVD88 (varies by location).

As the design of the Sendero Verde Development evolves, the development team may consider additional design measures to protect critical infrastructure and to provide adaptive design measures that would allow for the implementation of additional measures in the future to enhance resilience and protect against coastal flooding. Regarding the impact of the Proposed Actions on resilience in the area and on other environmental effects as they may be affected by climate change, the Proposed Actions would not result in any development in the water or on the waterfront, and therefore other considerations identified in WRP Policy 6.2 such as providing protection to avoid coastal erosion, protecting other properties, and other design considerations for waterfront areas, are not relevant for the Proposed Actions. The Proposed Actions would also not adversely affect other resources (including ecological systems, public access, visual quality, water-dependent uses, infrastructure, and adjacent properties) due to climate change.

NOISE

Similar to the Proposed Actions, the Sendero Verde Development Alternative would not result in any significant adverse impacts due to noise. Window-wall attenuation required to satisfy the *CEQR Technical Manual* and *HUD Noise Guidebook* were determined for Projected Development Site 70.

Receptor site 8 was selected to represent the north, east, and south façades and receptor site 9 was selected to represent the west façade. The results of the building attenuation analysis are shown in **Table 22-44**. In order to maintain an acceptable indoor noise environmental under closed-window conditions, an alternate means of ventilation would also be required for these affected façades. Prior to the property disposition and allocation of construction financing by HPD for Sendero Verde, the project sponsor's architect of record would be required to demonstrate to HPD that these requirements will be met. If the project sponsor wishes to pursue a more detailed acoustical study to further refine the window-wall attenuation requirements for the Sendero Verde Development buildings at a later date, such effort would be coordinated with and subject to approval by HPD. Construction in accordance with the necessary window-wall attenuation requirements would be required through the LDA between HPD and the project sponsor. With these requirements in place as part of the Sendero Verde Development, there would be no significant adverse impacts related to noise.

Table 22-44
Required Attenuation at Project Development Site 70 (in dBA)

Façade	Distance from Park Avenue (feet)	Governing Receptor	With Action L_{10}	Minimum CEQR Required Attenuation[3]	With Action L_{dn}	Minimum HUD Required Attenuation[4]
East	--	8	81.9	38	78.9	34
North, South	0 to 100	8	81.9	38	78.9	34
	100 to 200	8	78.9	35	75.9[1]	31
	200 to 300	9	76.3	33	73.3[2]	29
	300 to 400	9	73.3	31	70.3[2]	26
West	--	9	70.3	28	67.3	23

Notes:
[1] Based on a 3 dBA reduction of receptor site 8 L_{dn} for every 100 feet until the center of the block
[2] Based on a 3 dBA increment of receptor site 9 L_{dn} for every 100 feet until the center of the block
[3] CEQR attenuation values are shown for residential or community facility uses; retail and office uses would be 5 dBA less.
[4] HUD attenuation values are only applicable for residential and community facility uses.

PUBLIC HEALTH

Neither the Proposed Actions nor the Sendero Verde Development Alternative would result in significant adverse public health impacts. Under the Sendero Verde Development Alternative, no unmitigated significant adverse impacts would occur in the areas of hazardous materials, air quality, and noise. Measures to address stationary source emissions and exposure to noise and hazardous materials would be incorporated into the design and operation of the Sendero Verde Development. Measures would be required through provisions in the LDA between HPD and the project sponsor.

NEIGHBORHOOD CHARACTER

Similar to the Proposed Actions, the Sendero Verde Development Alternative would not result in significant adverse impacts associated with the neighborhood character. The Sendero Verde Development Alternative would continue to build off of the positive aspects of the Proposed Actions. Under this alternative a substantial amount of much needed affordable housing would be introduced to the Project Area and would be particularly focused along key corridors: Park, Third, and Second Avenues. The Sendero Verde Development Alternative would bring additional affordable units as far as Madison Avenue. In addition, the Proposed Actions would strengthen existing businesses and would help attract additional services that would greatly benefit the neighborhood, bringing in new businesses such as grocery stores, pharmacies, and other services. The neighborhood would continue to be well served by transit modes, including both east and west side trains.

Under the Sendero Verde Development Alternative, four existing community gardens would be relocated along East 111th Street. The community gardens incorporated into the Sendero Verde Development would represent an improvement as compared with existing conditions and conditions on the Sendero Verde Site under the Proposed Actions.

The proposed southerly orientation would maximize sunlight and minimize shadows that would be cast on the gardens by the Sendero Verde Development. The new gardens would be located on the corner of Park Avenue and East 111th Street, on the corner of Madison Avenue and East 111th Street, and on East 111th Street extending in a terraced fashion towards an elevated courtyard. Within the center of the Sendero Verde Development, the courtyards formed by the proposed buildings would provide passive, landscaped recreation space. Public entrances to the courtyards would be provided along Park Avenue, through a staircase and elevator, as well as along East 111th Street, through an ADA-accessible path. The courtyard would also be accessible through rear entrances in the adjoining community facility spaces. A dedicated community room and a bathroom, which would be available to members of all four gardens, would be located within Building A. An additional bathroom would be located adjacent to the gardens on Park Avenue. In addition, a public pathway would pass through the gardens located along East 111th Street connecting to the interior courtyard.

An easement would be established through these gardens to facilitate this pathway and the path would be part of the Large Scale General Development Restrictive Declaration. This pathway would need to be maintained by the future owner of the Sendero Verde Development and remain accessible to the public during hours to be determined through negotiations between the City and the development team. Upon reacquisition by the City, the community garden space would ultimately be placed under the jurisdiction of NYC Parks, which would enter into a license agreement with the community gardens. For the reasons discussed above, no significant adverse impacts would result from the Sendero Verde Development Alternative.

CONSTRUCTION

Like the Proposed Actions, construction under the Sendero Verde Development Alternative would result in temporary significant adverse noise impacts and potentially transportation impacts. Development under the Sendero Verde Development Alternative would occur on all 68 development sites and the Sendero Verde Site over an approximately 10-year construction period, the same overall construction duration as the Proposed Actions. Actual construction methods and materials may vary, depending on how the construction contractors choose to implement their work to be most cost effective, within the requirements set forth in bid, contract,

and construction documents. For analysis purposes, a reasonable worst-case conceptual construction phasing and schedule for the development anticipated to occur under the EHNP was established by DCP to illustrate how development could occur over approximately the next 10 years. **Figure 22-27** presents the conceptual construction sequencing for use in the construction analysis under the Sendero Verde Development Alternative. In the conceptual construction schedule, it is conservatively assumed that construction of all projected development sites would be completed by the end of the 2027 analysis year over a 10-year period. Construction of most of the projected development sites (49 sites) would be considered short term (i.e., lasting up to 24 months) in accordance with the *CEQR Technical Manual*. Out of the projected sites (19 sites) with a construction period greater than 24 months, only two sites (Projected Development Sites 10 and 70) are estimated to have a construction period lasting over three years (39 months total for Projected Development Site 10 and 45 months total for Projected Development Site 70's three proposed buildings).

TRANSPORTATION

The Sendero Verde Development Alternative would result in the construction of predominantly mixed-use developments on 69 projected development sites in the Project Area over a 10-year period, compared to 68 under the Proposed Actions. With the exception of the one additional projected development site (Site 70), development is expected to follow the same reasonable worst case construction schedule as that assumed for the Proposed Actions. As shown in **Table 22-45**, construction travel demand under this alternative is expected to peak in the first quarter of 2021 when the daily numbers of construction workers and trucks would total 889 and 113, respectively. By contrast, construction travel demand under the Proposed Actions is expected to peak in the second quarter of 2021. Under both scenarios, the first quarter of 2025 is assumed as a reasonable worst-case analysis period for assessing potential cumulative transportation impacts from operational trips from completed portions of the project and construction trips associated with construction activities. Both the first quarter of 2021 and the first quarter of 2025 are therefore analyzed for potential transportation impacts during construction under the Sendero Verde Development Alternative.

Table 22-45
Average Incremental Number of Daily Construction Workers and Trucks by Year and Quarter

Year	2018				2019				2020			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	28	86	173	337	519	771	766	824	877	803	666	631
Trucks	9	13	32	54	75	101	100	99	111	95	71	63
Year	2021				2022				2023			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	889	836	716	654	600	481	428	451	592	444	443	302
Trucks	113	97	86	79	78	58	43	48	82	62	53	26
Year	2024				2025				2026			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	338	345	397	387	501	469	541	456	438	335	291	362
Trucks	38	37	38	40	68	53	63	52	52	32	29	44
Year	2027											
Quarter	1st	2nd	3rd	4th	Average				Peak			
Workers	406	261	251	19	478				889			
Trucks	57	29	29	5	58				113			

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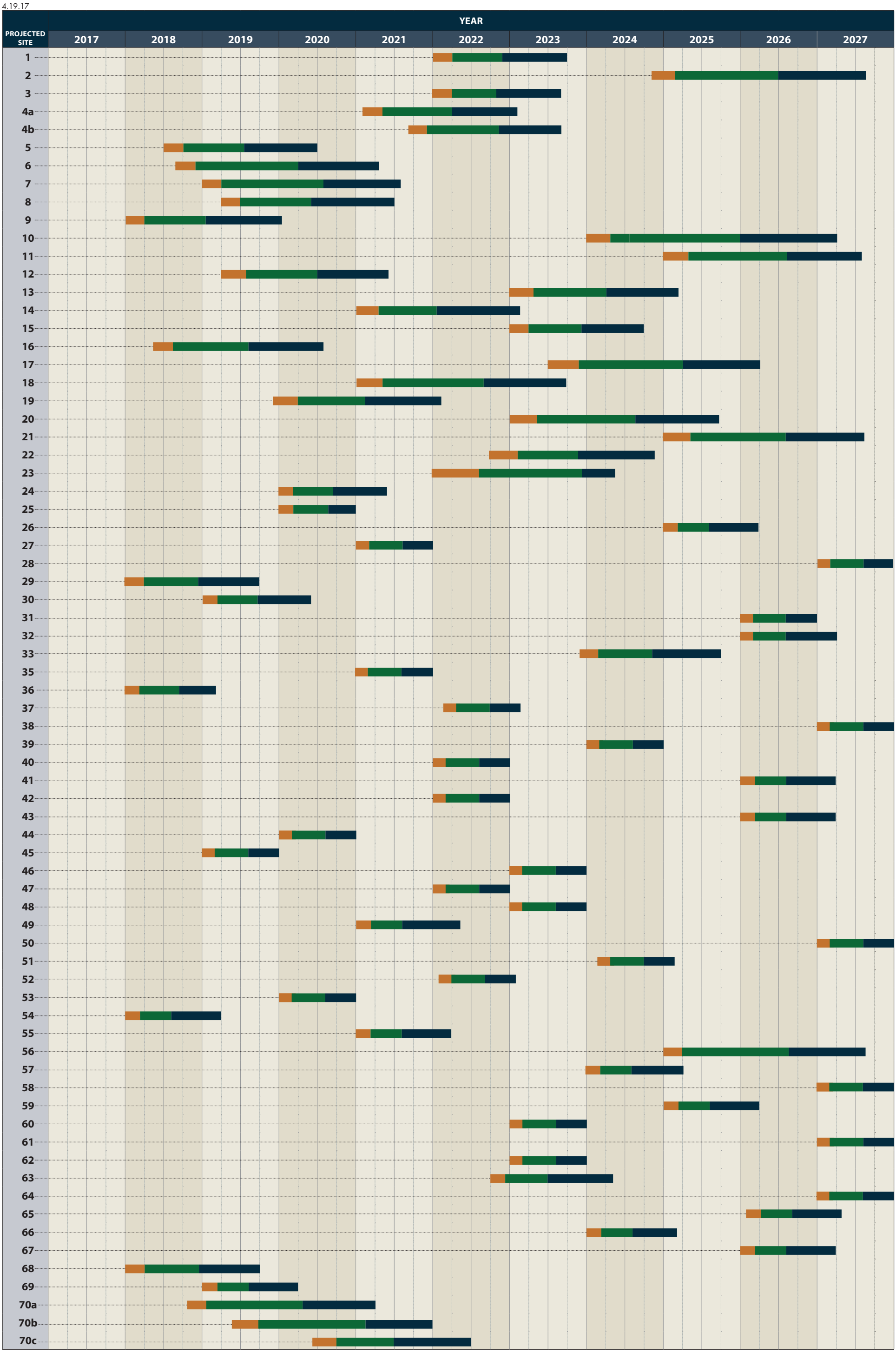


Source: Department of City Planning, January 2017.

Sendero Verde Development Alternative
Conceptual Construction Schedule
Figure 22-27

Traffic

Peak Construction Traffic—2021 (Q1)

Table 22-46 presents a comparison of the peak incremental construction traffic (in passenger car equivalents or PCEs) that would be generated under the Sendero Verde Development Alternative and under the Proposed Actions. As shown in **Table 22-46**, compared to the Proposed Actions, the Sendero Verde Development Alternative would generate approximately 43 and 17 additional construction vehicle trips during the 6-7 AM and 3-4 PM construction peak hours, respectively, and 13 and 3 additional trips during the 7:30-8:30 AM and 4:30-5:30 PM operational peak hours.

Table 22-46
Comparison of Peak Incremental Construction Vehicle Trips Under the Sendero Verde Development Alternative and Proposed Actions

	Net Incremental Vehicle Trips in Passenger Car Equivalents (PCEs)		
Peak Hour	Proposed Actions 2021(Q2)	Sendero Verde Development Alternative 2021(Q1)	Net Difference
6-7 AM	125	168	43
7:30-8:30 AM[1]	38	51	13
3-4 PM	51	68	17
4:30-5:30 PM[2]	8	11	3

Notes:
[1] Construction trips for this period based on the average for the 7-8 AM and 8-9 AM periods.
[2] Construction trips for this period based on the average for the 4-5 PM and 5-6 PM periods.

Table 22-47 presents a comparison of 2021 peak incremental construction vehicle trips under the Sendero Verde Development Alternative with the numbers of incremental operational trips that would be generated with full build-out of this alternative in 2027. As shown in **Table 22-47**, during the 7:30-8:30 AM and 4:30-5:30 PM peak hours for operational traffic and the 3-4 PM construction peak hour, the number of 2021 construction vehicle trips would be substantially less than the number of 2027 operational vehicle trips—i.e., 624, 718 and 276 fewer trips, during each of these periods, respectively. Therefore, like the Proposed Actions, under the Sendero Verde Development Alternative there would be fewer intersections with potential significant adverse traffic impacts during the 7:30-8:30 PM and 4:30-5:30 PM peak hours for operational traffic in the peak construction analysis year compared with the 2027 operational analysis year, and no new intersections are expected to experience significant adverse traffic impacts in these peak hours. There would also be less likelihood of significant adverse impacts during the 3-4 PM construction peak hour.

Table 22-47
Comparison of 2021 Peak Incremental Construction Vehicle Trips with 2027 Operational Vehicle Trips
Sendero Verde Development Alternative

Peak Hour	Net Incremental Vehicle Trips in Passenger Car Equivalents (PCEs)		
	2027 Sendero Verde Alternative Operational Trips	2021 Sendero Verde Alternative Construction Trips	Net Difference
6-7 AM	57	168	111
7:30-8:30 AM[1]	675	51	(624)
3-4 PM	344	68	(276)
4:30-5:30 PM[2]	729	11	(718)

Notes:
[1] Construction trips for this period based on the average for the 7-8 AM and 8-9 AM periods.
[2] Construction trips for this period based on the average for the 4-5 PM and 5-6 PM periods.

As shown in **Table 22-47,** peak construction activity in 2021 under this alternative would result in 111 more incremental vehicle trips than the fully built-out project during the 6-7 AM construction peak hour. However, overall traffic volumes on the study area street network are substantially lower (i.e., 26 percent lower) during the 6-7 AM construction peak hour than during the 7:30-8:30 AM operational peak hour, and therefore 2021 traffic conditions during the 6-7 AM construction peak hour are expected to be generally better than during the analyzed 7:30-8:30 AM operational peak hour with full build-out of this alternative in 2027. Consequently, under the Sendero Verde Development Alternative, as well as the Proposed Actions, there would be less likelihood of significant adverse traffic impacts during the 6-7 AM peak hour in the peak construction year than with full build-out of the project in 2027.

It should also be noted that in the first quarter of 2021, there would be net decreases of between 5 to 45 operational vehicle trips in each peak hour due to the displacement of No Action development due to construction. This would further reduce the likelihood of significant adverse traffic impacts in the 2021 (Q1) peak construction period.

Under the Sendero Verde Development Alternative, any significant adverse traffic impacts during peak construction activity in 2021 would be most likely to occur at intersections in the immediate proximity of the 14 projected development sites that would be under construction at that time. It is expected that the mitigation measures for 2027 operational traffic impacts at intersections in proximity to these development sites, which would be widely dispersed throughout the Project Area, would also be effective at mitigating any potential impacts from construction traffic during peak construction activity in 2021 under this alternative.

Cumulative Construction and Operational Traffic—2025 (Q1)

Table 22-48 presents a comparison of the combined incremental operational and construction vehicle trips (in PCEs) that would be generated in the first quarter of 2025 under the Sendero Verde Development Alternative and under the Proposed Actions. As shown in **Table 22-48**, compared to the Proposed Actions, the Sendero Verde Development Alternative would generate approximately 14 and 73 additional vehicle trips during the 6-7 AM and 3-4 PM construction peak hours, respectively, and 175 and 186 additional trips during the 7:30-8:30 AM and 4:30-5:30 PM operational peak hours, respectively.

Table 22-48
Comparison of 2025 Incremental Vehicle Trips
Sendero Verde Development Alternative
Versus the Proposed Actions

Peak Hour	2025 Construction + Operational Trips (in PCEs)		
	Proposed Actions	Sendero Verde Development Alternative	Net Difference
6-7 AM	109	123	14
7:30-8:30 AM[1]	188	363	175
3-4 PM	127	200	73
4:30-5:30 PM[2]	157	343	186

Notes:
[1] Construction trips for this period based on the average for the 7-8 AM and 8-9 AM periods.
[2] Construction trips for this period based on the average for the 4-5 PM and 5-6 PM periods.

Table 22-49 presents a comparison of combined incremental construction and operational vehicle trips in the first quarter of 2025 under the Sendero Verde Development Alternative with the incremental operational trips that would be generated with full build-out of this alternative in 2027. As shown in **Table 22-49**, during the 7:30-8:30 AM and 4:30-5:30 PM operational peak hours, and the 3-4 PM construction peak hour, the incremental number of 2025 construction and operational vehicle trips under this alternative would be less than the incremental number of 2027 operational vehicle trips—i.e., 312, 386, and 144 fewer trips, during each of these periods, respectively. During the 6-7 AM construction peak hour, 2025 cumulative vehicle trips would exceed 2027 operational trips by 66 trips. As noted above, however, overall traffic volumes on the study area street network are approximately 26 percent lower during the 6-7 AM construction peak hour than during the 7:30-8:30 AM operational peak hour. 2025 traffic conditions during the 6-7 AM peak hour under the Sendero Verde Development Alternative are therefore expected to be generally better than during the analyzed 7:30-8:30 AM operational peak hour with full build-out in 2027, and there would be less likelihood of significant adverse traffic impacts. It is expected that the mitigation measures identified for 2027 operational traffic impacts under the Sendero Verde Development Alternative and discussed above would also be effective at mitigating any potential impacts from construction auto and truck trips during the peak quarter for cumulative construction and operational traffic in 2025.

Table 22-49
Comparison of 2025 Incremental Vehicle Trips with 2027 Incremental Vehicle Trips Sendero Verde Development Alternative

Peak Hour	Net Incremental Vehicle Trips in Passenger Car Equivalents (PCEs)		
	2027 Sendero Verde Development Alternative Operational Trips	2025 Sendero Verde Development Alternative Construction + Operational Trips	Net Difference
6-7 AM	57	123	66
7:30-8:30 AM[1]	675	363	(312)
3-4 PM	344	200	(144)
4:30-5:30 PM[2]	729	343	(386)

Notes:
[1] Construction trips for this period based on the average for the 7-8 AM and 8-9 AM periods.
[2]Construction trips for this period based on the average for the 4-5 PM and 5-6 PM periods.

Street Lane and Sidewalk Closures

Under both the Proposed Actions and the Sendero Verde Development Alternative, temporary curb lane and sidewalk closures are anticipated adjacent to construction sites, similar to other construction projects in New York City, and these would be expected to have dedicated gates, driveways, and/or ramps for access by trucks making deliveries. Truck movements would be spread throughout the day and would generally occur between 6 AM and 5 PM, depending on the stage of construction. Flaggers are expected to be present during construction to manage the access and movement of trucks. Detailed MPT plans for each construction site would be submitted for approval to DOT's OCMC.

Transit

As previously discussed and shown in **Table 22-45**, under the Sendero Verde Development Alternative there would be a total of approximately 889 construction workers traveling to and from projected development sites daily in the 2021 peak quarter for construction travel demand. (This compares to 692 in the 2021 peak quarter under the Proposed Actions.) Based on the same mode choice and temporal factors utilized for analysis of the Proposed Actions, this peak construction worker travel demand is expected to include a total of approximately 482 transit trips in both the 6-7 AM and 3-4 PM construction peak hours (compared to 374 under the Proposed Actions). During these same peak hours, the displacement of No Action development by construction activity would result in net decreases of 23 and 224 transit trips, respectively, under this alternative. Given that construction worker transit trips would be distributed among up to eight subway stations and 21 bus routes in proximity to projected development sites throughout the rezoning area, it is unlikely that the combined number of incremental construction and operational trips under the Sendero Verde Development Alternative would exceed the 200-trip *CEQR Technical Manual* analysis threshold for a subway station or the 50-trip threshold for a bus analysis (per route, per direction) in either construction peak hour during the 2021 peak quarter for construction travel demand. In addition, the construction worker transit

trips would primarily occur outside of the AM and PM commuter peak periods when area transit facilities and services typically experience their greatest demand. As such, significant adverse transit impacts are not anticipated in the 2021 peak construction period under the Sendero Verde Development Alternative.

As shown in **Table 22-45**, during the 2025 analysis period for cumulative construction and operational travel demand, it is estimated that there would be an incremental increase of approximately 501 construction workers on-site daily under the Sendero Verde Development Alternative, the same as under the Proposed Actions. Incremental construction worker subway and bus trips under this alternative are expected to total approximately 271 in both the 6-7 AM and 3-4 PM construction peak hours in the first quarter of 2025. During these same peak hours, the net increase in operational subway trips from completed projected development sites would total approximately 133 and 639, respectively, under this alternative, while operational bus trips would total 29 and 142, respectively. By comparison, the net increase in operational subway trips with full build-out of the Sendero Verde Development Alternative in 2027 would be substantially greater in number, totaling approximately 3,028 and 3,443 trips during the weekday 7:30-8:30 AM and 5-6 PM commuter peak periods when overall demand on area subway facilities and services typically peaks. The net increase in operational bus trips in 2027 would also be substantially greater in number, totaling 760 and 880 trips during the weekday 8-9 AM and 5-6 PM commuter peak periods when overall demand on area bus services typically peaks. Therefore, under the Sendero Verde Development Alternative, 2025 transit conditions during the 6-7 AM and 3-4 PM construction peak hours are expected to be generally better than during the analyzed commuter peak hours with full build-out of this alternative in 2027. The significant adverse subway station and bus impacts under the Sendero Verde Development Alternative would therefore be less likely to occur in the cumulative analysis period than with full build-out of this alternative in 2027.

As discussed in Chapter 21, "Mitigation," it is anticipated that with the opening of new subway stations and improvements to pedestrian circulation elements at the existing 125th Street Lexington Avenue Line station planned for 2027 under Phase II of the Second Avenue Subway, some, if not all, of the Proposed Actions' significant adverse subway station impacts. As under the Proposed Actions, should any significant adverse subway station impacts would not occur. Irrespective of whether Second Avenue Subway Phase II advances, possible mitigation measures will be evaluated with NYCT between the Draft EIS and Final EIS.

Asunder the Proposed Actions, should any significant adverse subway station impacts occur in the 2025 cumulative analysis period under the Sendero Verde Development Alternative, they would potentially remain unmitigated pending the opening of Second Avenue Subway Phase II or the implementation of practicable mitigation measures.

Lastly, it is expected that the mitigation measures identified for the Sendero Verde Development Alternative's 2027 operational bus impacts would also be effective at mitigating any potential impacts from construction bus trips during the peak quarter for cumulative construction and operational travel demand in 2025.

Pedestrians

During the first quarter of 2021—the peak construction travel period for the Sendero Verde Development Alternative—net incremental construction worker travel demand on area sidewalks and crosswalks is expected to total approximately 589 trips in both the 6-7 AM and 3-4 PM construction peak hours. (This compares to 458 trips in each peak hour in the second quarter of 2021, which would be the peak construction travel period under the Proposed

Actions.) These pedestrian trips would be widely distributed among the 14 projected development sites that would be under construction in the first quarter of 2021 and would primarily occur outside of the weekday AM and PM commuter peak periods and weekday midday and Saturday peak periods when area pedestrian facilities typically experience their greatest demand. During these same construction peak hours, there would be net decreases of 37 and 636 pedestrian trips (transit and walk-only) due to the displacement of No Action development by construction activity. Therefore, under the Sendero Verde Development Alternative it is unlikely that any single sidewalk, corner, or crosswalk would experience 200 or more incremental peak-hour trips (the threshold below which significant adverse pedestrian impacts are considered unlikely to occur based on *CEQR Technical Manual* guidelines). Consequently, significant adverse pedestrian impacts in the 2021 peak quarter for construction worker travel demand are not anticipated under this alternative. At locations where temporary sidewalk closures are required during construction activities, adequate protection or temporary sidewalks and appropriate signage would be provided in accordance with DOT requirements.

As shown in **Table 22-45**, above, during the first quarter of 2025—the peak quarter for analysis of cumulative construction and operational travel demand—it is estimated that the Sendero Verde Development Alternative would add a net increment of approximately 501 construction workers on-site daily, the same number as the Proposed Actions. Also like the Proposed Actions, construction worker pedestrian trips (transit walk trips and walk-only trips, combined) are expected to total approximately 331 in both the 6-7 AM and 3-4 PM construction peak hours in the first quarter of 2025 under this alternative. When combined with operational pedestrian trips (transit + walk-only) from completed projected development sites, the Sendero Verde Development Alternative would result in a net total of approximately 542 and 1,102 pedestrian trips during these periods, respectively, in the first quarter of 2025. By comparison, incremental pedestrian trips with full build-out of this alternative in 2027 would be substantially greater in number, totaling 4,842, 3,939, 6,342, and 5,546 during the analyzed weekday 7:30-8:30 AM, 2-3 PM (midday), 5:15-6:15 PM and Saturday 3-4 PM operational peak hours, respectively. 2025 pedestrian conditions during the weekday 6-7 AM and 3-4 PM construction peak hours are therefore expected to be generally better than during the analyzed operational peak hours with full build-out of the Sendero Verde Development Alternative in 2027. Consequently, there would be less likelihood of significant adverse pedestrian impacts during the construction peak hours in the cumulative analysis year than with full build-out of this alternative in 2027. It is expected that the mitigation measures identified for 2027 operational pedestrian impacts under the Sendero Verde Development Alternative would also be effective at mitigating any potential impacts from construction pedestrian trips during the 2025 analysis period for cumulative construction and operational travel demand.

Parking

As shown in **Table 22-50**, under the Sendero Verde Development Alternative, the maximum daily parking demand from project site construction workers would total approximately 70 spaces in the 2021 peak construction period (compared to 54 spaces under the Proposed Actions), and 38 spaces in the 2025 cumulative construction and operational analysis period (the same as the Proposed Actions). These workers are expected to park on-street and in off-street public parking facilities in proximity to projected development sites throughout the Project Area. As discussed in Chapter 14, "Transportation," under existing conditions, approximately 1,095 and 1,795 on-street parking spaces are available within ¼-mile of projected development sites during the weekday midday and overnight periods, respectively. As discussed above, approximately 1,452 on-street parking spaces would continue to be available during the

overnight period with full build-out of the Sendero Verde Development Alternative in 2027; however, there would be a deficit of 303 on-street and off-street public parking spaces in the weekday midday period. Consequently, there is a potential for a midday parking shortfall to occur during both the 2021 peak construction period and 2025 cumulative analysis period as existing off-street public parking capacity is displaced by new development and demand from projected development sites comes on-line. While the 70 spaces of construction worker parking demand in the first quarter of 2021 and 38 spaces in the first quarter of 2025 under the Sendero Verde Development Alternative would potentially contribute to any such shortfall in the midday, it would not be considered a significant adverse parking impact under *CEQR Technical Manual* criteria given the availability of alternative modes of transportation in proximity to the Project Area. Therefore, neither the Proposed Actions nor the Sendero Verde Development Alternative would result in significant adverse parking impacts in the either the 2021 peak construction period or the 2025 cumulative construction and operational analysis period.

Table 22-50
2021 and 2025 Construction Worker Parking Accumulation
Sendero Verde Development Alternative

Hour	2021 (Q1)			2025 (Q1)		
	In	Out	Total Accumulation	In	Out	Total Accumulation
6-7 AM	56	0	56	31	0	31
7-8 AM	14	0	70	7	0	38
8-9 AM	0	0	70	0	0	38
9-10 AM	0	0	70	0	0	38
10-11 AM	0	0	70	0	0	38
11 AM-12 PM	0	0	70	0	0	38
12-1 PM	0	0	70	0	0	38
1-2 PM	0	0	70	0	0	38
2-3 PM	0	4	66	0	3	35
3-4 PM	0	56	10	0	31	4
4-5 PM	0	10	0	0	4	0
5-6 PM	0	0	0	0	0	0

AIR QUALITY

The construction air quality analysis conducted for the Proposed Actions included a detailed quantified modeling study of the most intensive construction periods determined through a review of the a site-wide emissions profile. The dispersion modeling analysis of construction-related air emissions for both on-site and on-road sources conducted for the Proposed Actions concluded that particulate matter ($PM_{2.5}$ and PM_{10}), annual-average nitrogen dioxide (NO_2), and carbon monoxide (CO) concentrations would be below their corresponding *de minimis* thresholds or National Air Quality Ambient Standards (NAAQS), respectively. The Sendero Verde Development Alternative would also include the development of Site 70 on the block bounded by East 111th and East 112th Streets and Park and Madison Avenues. The emission intensity levels during the peak construction periods at Site 70 are comparable to the peak periods analyzed under the Proposed Actions. Like the Proposed Actions, the Sendero Verde Development Alternative is assumed to incorporate measures during construction to reduce

pollutant emissions in accordance with all applicable laws, regulations, and building codes as well as New York City Local Law 77.[7] These include dust suppression measures, idling restriction, and the use of ultra-low sulfur diesel (ULSD) fuel and best available tailpipe reduction technologies. With these measures in place, like the Proposed Actions, construction under the Sendero Verde Development Alternative would not result in any significant adverse air quality impacts.

NOISE AND VIBRATION

The construction noise analysis performed for the Proposed Actions show predicted noise levels from construction activities exceeding the CEQR Technical Manual noise impact threshold criteria for two or more consecutive years at receptors throughout the rezoning area. Figure 20-4 in Chapter 20, "Construction," shows the locations predicted to experience noise level increases that exceed the noise impact threshold criteria for two or more consecutive years with the Proposed Actions. The same construction noise analysis was performed for the Sendero Verde Development Alternative to identify any additional receptors that may experience a significant adverse construction noise impact. A more detailed analysis will be completed between the DEIS and FEIS, including reviewing any potential construction noise impacts on the residential building located on Lot 21, which will be immediately adjacent to the construction site.

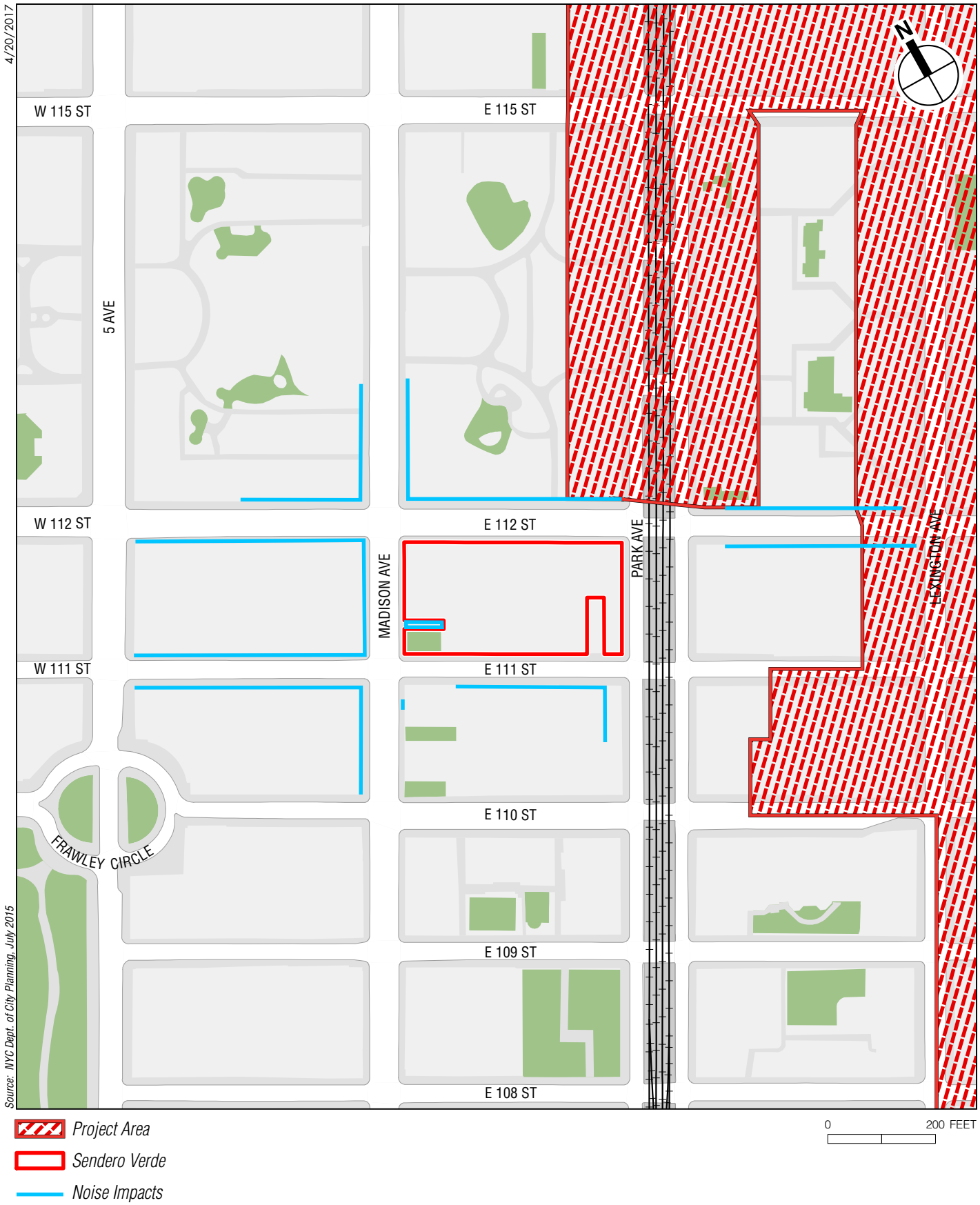
Based on the construction stage predicted to occur at Projected Development Site 70 according to the conceptual construction schedule during each of the selected analysis periods, each receptor expected to experience an exceedance of the CEQR Technical Manual noise impact threshold criteria due to the construction of Projected Development Site 70 was determined for each analysis period. One peak construction period per year was analyzed, from 2018 to 2022 (i.e., the construction period of Projected Development Site 70). Based on these determinations, receptors where noise level increases are predicted to exceed the noise impact threshold criteria for two or more consecutive years as a result of construction of Projected Development Site 70 were identified.

Figure 22-28 shows where additional receptors locations are predicted to experience noise level increases that exceed the noise impact threshold criteria for two or more consecutive years due to construction noise from Projected Development Site 70. In addition to the locations identified in **Figure 22-28**, the Sendero Verde Development Alternative would also have the potential to result in significant adverse construction noise impacts at all of the same locations identified for the Proposed Actions, as shown in Figure 20-4.

LAND USE AND NEIGHBORHOOD CHARACTER, SOCIOECONOMIC CONDITIONS, AND COMMUNITY FACILITIES

Like the Proposed Actions, construction under the Sendero Verde Development Alternative—as is the case with most large rezoning construction projects—would result in temporary disruptions in the surrounding area. However, while construction activities would be evident to the local community, like the Proposed Actions, the temporary nature of construction under the Sendero Verde Development Alternative would not result in any significant impacts on local land use patterns or the character of the nearby area. Construction activities under the Sendero

[7] Local Law 77, adopted December 22, 2003, applies to all city-owned non-road diesel vehicles and engines and any privately owned diesel vehicles and engines used on construction projects funded by the City.



Construction Noise Impacts
Sendero Verde Development Alternative

EAST HARLEM REZONING

Figure 22-28

Verde Development Alternative are not expected to occur in front of entrances to any existing or planned retail businesses or obstruct major thoroughfares used by customers or businesses. Therefore, like the Proposed Actions, nearby businesses would not be significantly affected by the construction activities under the Sendero Verde Development Alternative. Construction activities related to the Sendero Verde Development Alternative would not physically displace or alter any existing community facilities nor would activities materially affect emergency response times. Construction workers would not place any burden on public schools, libraries, child care centers, and health care in the rezoning area. Therefore, like the Proposed Actions, construction under the Sendero Verde Development Alternative would not significantly affect community facilities in the rezoning area.

OPEN SPACE

There are no publicly accessible open spaces on any of the projected development sites, with the exception of Projected Development Site 70, where it currently contains six GreenThumb Gardens which operate under a temporary license agreement with HPD. These gardens would be temporarily unavailable during construction. However, upon the completion of the Sendero Verde Development and reacquisition of the garden space by the City, the gardens would be placed under the jurisdiction of NYC Parks. Four gardens would be relocated within the project block while the other two gardens have been offered relocation sites or nearby existing NYC Parks gardens pursuant to the garden rules.

While construction under the Sendero Verde Development Alternative may cause temporary disruptions, particularly related to noise, it is expected that such disruptions in any given area would be temporary and would not be ongoing for the full duration of the construction period. Therefore, like the Proposed Actions, no significant construction impacts are anticipated on open space under the Sendero Verde Development Alternative.

HISTORIC AND CULTURAL RESOURCES

As discussed above, the Sendero Verde Development Alternative would result in the same significant adverse impacts that would occur under the Proposed Actions. Like the Proposed Actions, construction under the Sendero Verde Development would occur within 90 feet of the Park Avenue Viaduct, an S/NR-eligible resource. Therefore, construction under the Sendero Verde Development Alternative could potentially result in construction-related impacts. The viaduct would be afforded limited protection under DOB regulations applicable to all buildings located adjacent to construction sites (as set forth in C26-112.4). As discussed below, because the Sendero Verde Development would be developed by HPD, a CPP would be implemented prior to the start of construction activities to avoid inadvertent damage to the resource. The construction on the Sendero Verde Development Site would not have a significant adverse direct impact on the known architectural resource, as there are no potential resources within 400 feet of the Development Site.

HAZARDOUS MATERIALS

Like the Proposed Actions, construction under the Sendero Verde Development Alternative would not result in significant adverse impacts associated with hazardous materials. As discussed above with the Sendero Verde Development Alternative, the same (E) designations would be mapped on projected and potential development sites. Comparable provisions to preclude hazardous materials impacts would be required through LDA or similar binding mechanisms for assemblages comprised of City-owned property. Because the Sendero Verde Site would be disposed to the development team, provisions requiring testing and potential

remedial measures would be required through the LDA between HPD and the development team.

MITIGATION MEASURES REQUIRED FOR THE SENDERO VERDE DEVELOPMENT ALTERNATIVE

The Sendero Verde Development Alternative would result in the same significant adverse shadow and historic resource impacts as the Proposed Actions. Mitigation for these impacts is discussed in Chapter 21, "Mitigation." Like the Proposed Actions, the Sendero Verde Development Alternative would result in significant adverse impacts in the areas of transportation and construction, but the extent and severity of the impacts would be different than those of the Proposed Actions. In addition, the Sendero Verde Development would result in significant adverse impact related to indirect effects. The open space ratio for the combined user population (workers and residents) in the non-residential (¼-mile) study area would decrease by more than 5 percent (the open space ratio would decrease by 5.05 percent as compared to the No Action condition). These significant adverse impacts and possible mitigation measures are discussed below.

OPEN SPACE

Unlike the Proposed Actions, the Sendero Verde Development Alternative would result in a significant adverse impact related to indirect effects. Full or partial mitigation for the significant adverse impact could include provision of the new open space as provided on the Sendero Verde Site. The Sendero Verde Development would include new publicly accessible passive open space and community gardens. Within the center of the Sendero Verde Development, an elevated courtyard formed by Buildings A, B and C would provide passive, landscaped recreation space. Public entrances to the courtyard would be provided along Park Avenue, through a staircase and elevator, as well as along East 111th Street, through an ADA-accessible path. The courtyard would also be accessible through rear entrances in the adjoining community facility spaces. The community gardens would be located on the corner of Park Avenue and East 111th Street, on the corner of Madison Avenue and East 111th Street, and on East 111th Street extending in a terraced fashion towards the elevated courtyard described above. A dedicated community room and a bathroom, which would be available to members of all four gardens, would be located within Building A. An additional bathroom would be located adjacent to the community gardens on Park Avenue. Additionally, a public pathway would pass through the gardens located along East 111th Street and connect to the interior courtyard. Between DEIS and FEIS, DCP will explore additional mitigation measures with NYC Parks and HPD.

SHADOWS

Similar to the Proposed Actions, the Sendero Verde Development Alternative would result in new shadows that would significantly impact three sunlight-sensitive resources: El Catano Community Garden, Eugene McCabe Field, and Jackie Robinson Community Garden. The duration or extent of incremental shadow cast on these open spaces would be great enough to significantly impact the use of the open space or its ability to support vegetation. The Sendero Verde Development Alternative would not result in any additional significant shadows impacts.

Possible measures that could mitigate significant adverse shadow impacts on open spaces may include relocating sunlight-sensitive features within an open space to avoid sunlight loss; relocating or replacing vegetation; undertaking additional maintenance to reduce the likelihood of species loss; or providing replacement facilities on another nearby site. Other potential mitigation strategies include the redesign or reorientation of the open space site plan to provide

for replacement facilities, vegetation, or other features. The *CEQR Technical Manual* guidelines also discuss strategies to reduce or eliminate shadow impacts, including modifications to the height, shape, size, or orientation of a proposed development that creates the significant adverse shadow impact.

HISTORIC AND CULTURAL RESOURCES

The Sendero Verde Development Alternative would result in the same significant adverse construction-related impacts to four eligible architectural resources that would occur under the Proposed Actions and require the same mitigation measures, including the Park Avenue Viaduct. Designated New York City Landmarks (NYCL) or S/NR-Listed architectural resources located within 90 feet of a projected or potential new construction site are subject to the protections of DOB's TPPN #10/88. The resources listed above are not NYCLs or S/NR-Listed, therefore they would not be afforded any of the protections under TPPN #10/88. If the eligible resources are designated in the future prior to the initiation of construction, the protective measures of TPPN #10/88 would apply and significant adverse impacts from construction would be avoided. Should the resources remain undesignated, the additional protective measures of TPPN #10/88 would not apply and the potential for significant adverse construction-related impacts would be unavoidable.

In order to make TPPN #10/88 or comparable measures applicable to the eligible historic resources in the absence of site-specific discretionary approval, a mechanism would have to be developed to ensure implementation and compliance, since it is not known and cannot be assumed that owners of these properties would voluntarily implement the mitigation. The viability of these or other mitigation measures will be explored between the DEIS and FEIS. Should no feasible mitigation be identified, the significant adverse construction impact on the historic resources would be unavoidable.

The Park Avenue Viaduct is owned and maintained by the Metropolitan Transportation Authority (MTA). Those development sites within 90 feet of the Park Avenue Viaduct and currently owned in part by the City could be required to implement a Construction Protection Plan to protect from inadvertent construction-related damage. The Department of City Planning will explore possible mitigation measures specific to the Park Avenue Viaduct with the Landmarks Preservation Commission (LPC), MTA and HPD between DEIS and FEIS. Should no feasible mitigation be identified, the significant adverse construction impacts to the four S/NR-Eligible architectural resources would be unavoidable.

To preclude impacts to the viaduct as a result of construction at the Sendero Verde Development Site, the Land Disposition Agreement (LDA) between HPD and the project sponsor would require LPC review and approval of a CPP. The CPP would be developed in accordance with the requirements stipulated in the New York City DOB's TPPN #10/88 and LPC guidelines described in "Protection Programs for Landmarked Buildings." If any future State or Federal sources of funding are sought in connection with construction of Sendero Verde, the CPP would also be subject to review and approval by the New York State Office of Parks, Recreation & Historic Preservation (OPRHP).

TRANSPORTATION

For both the Proposed Actions and the Sendero Verde Development Alternative, the identified bus transit and pedestrian impacts could be fully mitigated, and some, if not all of the subway station impacts would not occur with implementation of Phase II of the Second Avenue Subway. Due to the existing congested conditions at many study area intersections, it is anticipated that a

number of the significant adverse traffic impacts under the Sendero Verde Development Alternative could not be fully mitigated through standard traffic improvement measures, as would be the case under the Proposed Actions.

Traffic

As shown in **Table 22-51**, the traffic mitigation plan for the Sendero Verde Development Alternative would include implementation of traffic engineering improvements such as signal timing changes and modifications to curbside parking regulations. The recommended measures would provide mitigation for many of the traffic impacts anticipated under this alternative. However, as shown in **Table 22-52 through 22-55**, unmitigated significant impacts would remain at a total of eight lane groups at three intersections in the weekday AM peak hour, one lane group at one intersection in the weekday midday, eight lane groups at three intersections in the weekday PM peak hour, and two lane groups at one intersection in the Saturday peak hour. This compares with seven lane groups at two intersections in the weekday AM peak hour, eight lane groups at three intersections in the weekday PM peak hour, and one lane group at one intersection in each of the weekday midday and Saturday peak hours under the Proposed Actions. In total, impacts to one or more approach movements would remain unmitigated in one or more peak hours at five intersections under the Sendero Verde Development Alternative compared with four intersections under the Proposed Actions.

Effects of Pedestrian Mitigation on Traffic Conditions

Proposed pedestrian mitigation measures under the Sendero Verde Development Alternative (discussed later in this chapter) would not affect traffic conditions at any analyzed intersection in any peak hour.

Transit

Subway

Under both the Proposed Actions and the Sendero Verde Development Alternative, one street stair at the 103rd Street station, one street stair at the 116th Street station and two street stairs and two platform stairs at the 125th Street station would be significantly adversely impacted by With Action demand in one or both peak hours. Under the Sendero Verde Development Alternative, one additional street stair at the 110th Street Lexington Avenue Line station would also be considered significantly impacted.

Given the substantial reductions in both No Action and With Action demand expected to occur at the Lexington Avenue Line 103rd Street, 110th Street, 116th Street, and 125th Street subway stations with implementation of Second Avenue Subway Phase II, and that Second Avenue Subway Phase II is expected to include improvements to pedestrian circulation elements at the 125th Street station, some, if not all of the subway stair impacts under this alternative would not occur with implementation of Second Avenue Subway Phase II. Regardless of whether Second Avenue Subway Phase II advances, possible mitigation measures will be evaluated with NYCT between the Draft EIS and Final EIS. In the absence of Phase II of the Second Avenue Subway or practicable mitigation measures, this alternative's significant impacts to one street stair at the 103rd Street station, one street stair at the 110th Street station, one street stair at the 116th Street station, and two street stairs and two platform stairs at the 125th Street station would remain unmitigated.

Bus

Under the Sendero Verde Development Alternative, southbound M15 SBS buses would be impacted in the AM peak hour, as would northbound M101 LTD buses in the PM. The addition

of one southbound M15 SBS bus in the AM peak hour and one northbound M101 LTD bus in the PM would fully mitigate both significant bus impacts under the Sendero Verde Development Alternative. The general policy of NYCT is to provide additional bus service where demand warrants, taking into account financial and operational constraints.

As discussed in Chapter 14, "Transportation," it is anticipated that completion of Phase II of the Second Avenue Subway would reduce demand on bus routes serving the project area. Therefore, the overcapacity condition on southbound M15 SBS buses in the AM peak hour and northbound M101 LTD buses in the PM would likely not occur in 2027, and the proposed mitigation would not be needed, with the extension of Second Avenue subway service to the Project Area.

Pedestrians

The Proposed Actions would result in a significant adverse impact to the south sidewalk on East 126th Street between Park and Lexington Avenues in all peak hours, and this impact would also occur under the Sendero Verde Development Alternative. Removal of a tree pit at the most constrained point on this sidewalk would fully mitigate the impact under the Proposed Actions, and would also mitigate any potential impact to this sidewalk under the Sendero Verde Development Alternative.

Under a scenario with completion of Second Avenue Subway Phase II in 2027, the Proposed Actions would result in additional significant adverse impacts to the north and south crosswalks on Park Avenue at East 125th Street in the AM peak hour, and these impacts would also occur under the Sendero Verde Development Alternative. Widening the segment of the north crosswalk west of the Park Avenue median by 1.5 feet (to a total of 19.5 feet) and the segment of the south crosswalk east of the median by 0.5 feet (to a total of 18.5 feet) would fully mitigate these impacts under both the Proposed Actions and this alternative.

Table 22-51
Proposed Traffic Mitigation Measures

Intersection	Signal Phase	No-Action Signal Timing (Seconds) (1) AM	MD	PM	SAT	Proposed Signal Timing (Seconds) (1) AM	MD	PM	SAT	Recommended Mitigation for Sendero Verde Alternative
East 106th Street &	EB/WB	36	36	36	36	39	37	37	37	-Transfer 3s of green time from NB to EB/WB in AM; and 1s in midday, PM and
First Avenue	NB	33	33	33	33	30	32	32	32	Saturday.
	NB-L/NB	21	21	21	21	21	21	21	21	
East 125th Street &	EB	40	40	42	40	40	41	42	40	- Transfer 1s of green time from NB to EB in midday.
First Avenue	NB	50	50	48	50	50	49	48	50	
East 106th Street &	EB/WB	36	36	36	36	37	37	37	37	-Transfer 1s of green time from SB to EB/WB in AM, midday, PM and Saturday.
Second Avenue	SB	34	34	34	34	33	33	33	33	
	SB-L/SB	20	20	20	20	20	20	20	20	
East 119th Street &	WB	36	36	36	36	36	36	36	37	- Transfer 1s of green time from SB to WB in Saturday.
Second Avenue	SB	54	54	54	54	54	54	54	53	
East 120th Street &	EB	36	36	36	36	38	36	39	37	- Transfer 2s of green time from SB to EB in AM; 3s in PM; and 1s in Saturday.
Second Avenue	SB	54	54	54	54	52	54	51	53	
East 125th Street &	WB (RFK Ramp)	28	24	24	25	28	24	24	25	- Unmitigated
Second Avenue	EB/WB	28	34	34	28	28	34	34	28	
	SB	34	32	32	37	34	32	32	37	
East 126th Street &	WB	26	30	26	28	27	31	26	29	-Transfer 1s of green time from NB/SB to WB in AM, midday and Saturday.
Second Avenue	NB/SB	40	38	41	39	38	37	41	38	-Transfer 1s of green time from NB/SB to NB-L/NB in AM.
	NB-L/NB	24	22	23	23	25	22	23	23	
East 127th Street &	EB	36	36	41	36	37	36	43	36	- Transfer 1s of green time from NB/SB to EB in AM; and 2s in PM.
Second Avenue	NB/SB	54	54	49	54	53	54	47	54	
East 128th Street &	EB	45	45	45	45	45	46	46	46	- Transfer 1s of green time from SB to EB in midday, PM and Saturday.
Second Avenue	SB	45	45	45	45	45	44	44	44	
East 111th Street &	WB	36	36	36	36	37	36	38	36	- Transfer 1s of green time from NB to WB in AM; and 2s in PM.
Third Avenue	NB	54	54	54	54	53	54	52	54	
East 112th Street &	EB	36	36	36	36	38	36	37	36	- Transfer 2s of green time from NB to WB in AM; and 1s in PM.
Third Avenue	NB	54	54	54	54	52	54	53	54	
East 116th Street &	EB/WB	41	41	41	41	42	41	42	41	- Transfer 1s of green time from NB to EB/WB in AM and PM.
Third Avenue	NB	49	49	49	49	48	49	48	49	
East 118th Street &	EB	36	36	36	36	36	36	37	36	- Transfer 1s of green time from NB to EB in PM.
Third Avenue	NB	54	54	54	54	54	54	53	54	
East 122nd Street &	EB	36	36	36	36	37	36	36	36	- Transfer 1s of green time from NB to EB in AM.
Third Avenue	NB	54	54	54	54	53	54	54	54	
East 124th Street &	EB	36	36	36	36	36	36	36	37	- Transfer 1s of green time from NB to EB in Saturday.
Third Avenue	NB	54	54	54	54	54	54	54	53	
East 125th Street &	EB/WB	43	43	42	41	45	44	44	43	- Transfer 2s of green time from NB to EB/WB in AM, PM and Saturday; and 1s in
Third Avenue	NB	47	47	48	49	45	46	46	47	midday.
East 126th Street &	WB	38	38	41	40	39	38	43	41	- Transfer 1s of green time from NB to WB in AM and Saturday; and 2s in PM.
Third Avenue	NB	52	52	49	50	51	52	47	49	
East 111th Street &	WB	36	36	36	36	38	36	38	36	- Transfer 2s of green time from SB to WB in AM and PM.
Lexington Avenue	SB	54	54	54	54	52	54	52	54	
East 120th Street &	EB	36	36	36	36	36	36	38	36	- Transfer 2s of green time from SB to EB in PM.
Lexington Avenue	SB	54	54	54	54	54	54	52	54	
East 125th Street &	EB/WB	37	37	37	37	37	38	38	38	- Transfer 1s of green time from SB to EB/WB in midday, PM and Saturday.
Lexington Avenue	Ped	7	7	7	7	7	7	7	7	
	SB	46	46	46	46	46	45	45	45	
East 126th Street &	WB	36	39	38	38	36	40	40	40	- Transfer 1s of green time from SB to WB in midday; and 2s in PM and Saturday.
Lexington Avenue	SB	54	51	52	52	54	50	50	50	
East 111th Street &	Ped	7	7	7	7	7	7	7	7	- Install "No Standing 7AM-10AM, 4PM-7PM Mon-Fri" regulation for 100' along north curb
Park Avenue NB	WB	29	29	29	29	29	33	28	32	of WB approach to provide two effective moving lanes (one through and one right-turn).
	NB	54	54	54	54	54	50	55	51	- Transfer 4s of green time from NB to WB in midday; and 3s in Saturday.
										- Transfer 1s of green time from WB to NB in PM.

Table 22-51 (cont'd)
Proposed Traffic Mitigation Measures

Intersection	Signal Phase	No-Action Signal Timing (Seconds) (1) AM	MD	PM	SAT	Proposed Signal Timing (Seconds) (1) AM	MD	PM	SAT	Recommended Mitigation for Sendero Verde Alternative
East 119th Street & Park Avenue NB	Ped	7	7	7	7	7	7	7	7	- Transfer 4s of green time from NB to WB in AM; 2s in midday and Saturday; and 3s in PM.
	WB	29	29	29	29	33	31	32	31	
	NB	54	54	54	54	50	52	51	52	
East 120th Street & Park Avenue NB	Ped	7	7	7	7	7	7	7	7	- Transfer 1s of green time from NB to EB in AM; and 2s in PM.
	EB	29	37	29	29	30	37	31	29	
	NB	54	46	54	54	53	46	52	54	
East 128th Street & Park Avenue NB	Ped	7	7	7	7	7	7	7	7	- Transfer 2s of green time from NB to EB in PM.
	EB	29	29	29	29	29	29	31	29	
	NB	54	54	54	54	54	54	52	54	
East 111th Street & Park Avenue SB	Ped	7	7	7	7	7	7	7	7	- Transfer 2s of green time from SB to WB in midday and Saturday; and 3s in PM.
	WB	29	29	29	29	29	31	32	31	
	SB	54	54	54	54	54	52	51	52	
East 112th Street & Park Avenue SB	Ped	7	7	7	7	7	7	7	7	- Transfer 2s of green time from SB to EB in AM; and 1s in midday.
	WB	29	29	29	29	31	29	30	29	
	SB	54	54	54	54	52	54	53	54	
East 119th Street & Park Avenue SB	Ped	7	7	7	7	7	7	7	7	- Install "No Standing 7AM-7PM Mon-Fri" regulation for 100' along west curb of SB approach to provide two effective moving lanes (one through and one right-turn). - Transfer 3s of green time from SB to WB in AM and PM; and 2s in midday and
	WB	29	29	29	29	32	31	32	31	
	SB	54	54	54	54	51	52	51	52	
East 120th Street & Park Avenue SB	Ped	7	7	7	7	7	7	7	7	- Install "No Standing 7AM-10AM Mon-Fri" regulation for 100' along south curb of EB approach to provide two effective moving lanes (one through and one right-turn). - Transfer 2s of green time from EB to SB in AM. - Transfer 2s of green time from SB to EB in PM; and 1s in Saturday.
	EB	29	29	29	29	27	29	31	30	
	SB	54	54	54	54	56	54	52	53	
East 128th Street & Park Avenue SB	Ped	7	7	7	7	7	7	7	7	- Transfer 1s of green time from SB to EB in AM and Saturday; and 2s in midday and PM.
	EB	29	29	29	29	30	31	31	30	
	SB	54	54	54	54	53	52	52	53	
East 111th Street & Madison Avenue	WB	36	36	36	36	37	36	38	36	- Transfer 1s of green time from NB to WB in AM; and 2s in PM.
	NB	54	54	54	54	53	54	52	54	
East 116th Street & Madison Avenue	Ped	7	7	7	7	7	7	7	7	- Transfer 1s of green time from NB to EB/WB in AM, PM and Saturday.
	EB/WB	33	33	33	33	34	33	34	34	
	NB	50	50	50	50	49	50	49	49	
East 119th Street & Madison Avenue	WB	36	36	36	36	38	37	38	36	- Transfer 2s of green time from NB to WB in AM and PM; and 1s in midday.
	NB	54	54	54	54	52	53	52	54	

Notes :
(1) Signal timings shown indicate green plus yellow (including all red) for each phase.

Table 22-52
Action-with-Mitigation Conditions at Impacted Lane Groups—
Sendero Verde Development Alternative
Weekday AM Peak Hour

Intersection	Approach	No-Action Weekday AM Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Weekday AM Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Mitigation Weekday AM Lane Group	V/C Ratio	Delay (sec/veh)	LOS
East 106th Street (EB/WB) & First Avenue (NB)	EB	L	1.02	112.0	F	L	1.22	183.2	F	L	0.98	96.7	F
		LT	1.02	105.4	F	LT	1.19	164.8	F	LT	0.94	80.1	F
	WB	TR	0.90	54.1	D	TR	1.04	84.8	F	TR	0.94	57.7	E
East 106th Street (EB/WB) & Second Avenue (SB)	EB	TR	1.18	133.8	F	TR	1.20	140.4	F	TR	1.16	124.8	F
East 120th Street (EB) & Second Avenue (SB)	EB	TR	0.92	58.1	E	TR	1.02	79.3	E	TR	0.95	61.1	E
East 125th St (EB/WB)/RFK Bridge (WB) &	EB	T	1.36	203.1	F	T	1.43	232.3	F	T	1.43	232.3	F
Second Avenue (SB)	WB (E 125 St)	LT	0.66	39.6	D	LT	0.74	45.3	D	LT	0.74	45.3	D
	WB (Ramp)	L	1.09	108.2	F	L	1.16	133.1	F	L	1.16	133.1	F
	WB (Ramp)	LT	1.20	146.7	F	LT	1.24	162.1	F	LT	1.24	162.1	F
East 126th Street (WB) &	WB	L	1.00	117.5	F	L	1.08	139.1	F	L	1.02	119.2	F
Second Avenue (SB)/RFK Bridge Exit (NB)	NB	L	1.03	96.8	F	L	1.07	106.8	F	L	1.01	89.2	F
East 127th Street (EB) & Second Avenue (SB)	EB	L	1.21	147.4	F	L	1.26	168.2	F	L	1.22	150.1	F
East 111th Street (WB) & Third Avenue (NB)	WB	TR	0.88	52.0	D	TR	0.95	64.4	E	TR	0.92	56.6	E
East 112th Street (EB) & Third Avenue (NB)	EB	LT	1.08	90.9	F	LT	1.13	111.1	F	LT	1.06	85.3	F
East 116th Street (EB/WB) & Third Avenue (NB)	EB	LT	1.10	92.2	F	LT	1.12	100.4	F	LT	1.09	87.5	F
East 122nd Street (EB) & Third Avenue (NB)	EB	LT	0.79	42.1	D	LT	0.87	51.3	D	LT	0.84	46.5	D
East 125th Street (EB/WB) & Third Avenue (NB)	EB	L	1.16	162.5	F	L	1.19	174.7	F	L	1.03	118.1	F
		T	1.30	173.6	F	T	1.36	198.4	F	T	1.29	167.7	F
	WB	TR	1.23	146.8	F	TR	1.25	155.1	F	TR	1.19	128.0	F
East 126th Street (WB) & Third Avenue (NB)	WB	T	0.91	47.7	D	T	0.95	55.8	E	T	0.93	49.7	D
East 111th Street (WB) & Lexington Avenue (SB)	WB	LT	0.75	38.1	D	LT	0.90	54.2	D	LT	0.84	44.2	D
East 125th Street (EB/WB) & Lexington Avenue (SB)	EB	T	1.35	200.9	F	T	1.38	213.4	F	T	1.38	213.4	F
	WB	T	1.46	248.0	F	T	1.48	257.4	F	T	1.48	257.4	F
	SB	LT	1.00	53.4	D	LT	1.05	66.6	E	LT	1.05	66.6	E
East 111th Street (WB) & Park Avenue (NB)	WB	TR	1.09	116.0	F	TR	1.34	213.9	F	TR	N/A	66.5	E
East 119th Street (WB) & Park Avenue (NB)	WB	TR	1.16	136.0	F	TR	1.36	215.0	F	TR	1.14	121.7	F
East 120th Street (EB) & Park Avenue (NB)	EB	LT	0.80	49.8	D	LT	0.90	61.4	E	LT	0.86	54.2	D
East 111th Street (WB) & Park Avenue (SB)	WB	LT	0.83	52.5	D	LT	1.03	91.2	F	LT	1.03	91.2	F
East 112th Street (EB) & Park Avenue (SB)	EB	TR	1.07	92.2	F	TR	1.15	123.3	F	TR	1.04	82.5	F
East 119th Street (WB) & Park Avenue (SB)	WB	LT	0.95	70.9	E	LT	1.10	112.3	F	LT	0.95	68.0	E
	SB	TR	1.02	58.5	E	TR	1.07	76.2	E	TR	N/A	26.1	C
East 120th Street (EB) & Park Avenue (SB)	EB	TR	0.99	86.8	F	TR	1.08	113.5	F	TR	N/A	66.7	E
	SB	LT	0.98	49.5	D	LT	1.03	61.5	E	LT	0.99	49.3	D
East 128th Street (EB) & Park Avenue (SB)	EB	TR	1.20	156.5	F	TR	1.26	178.5	F	TR	1.19	152.7	F
East 111th Street (WB) & Madison Avenue (NB)	WB	TR	0.75	37.5	D	TR	0.85	46.3	D	TR	0.82	42.2	D
East 116th Street (EB/WB) & Madison Avenue (NB)	EB	LT	1.10	98.3	F	LT	1.12	105.9	F	LT	1.08	88.3	F
East 119th Street (WB) & Madison Avenue (NB)	WB	TR	0.99	71.0	E	TR	1.05	89.3	F	TR	0.99	69.5	E

Shading denotes significant adverse impact that would remain unmitigated.

Table 22-53
Action-With-Mitigation Conditions at Impacted Lane Groups—
Sendero Verde Development Alternative
Weekday Midday Peak Hour

Intersection	Approach	No-Action Weekday MD Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Weekday MD Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Mitigation Weekday MD Lane Group	V/C Ratio	Delay (sec/veh)	LOS
East 106th Street (EB/WB) & First Avenue (NB)	EB	L	0.69	43.9	D	L	0.75	50.6	D	L	0.70	44.6	D
		LT	0.68	42.0	D	LT	0.74	48.4	D	LT	0.70	42.5	D
East 125th Street (EB/WB) & First Avenue/Willis Avenue Bridge (SB)	EB	LT	1.05	72.4	E	LT	1.08	80.3	F	LT	1.05	69.4	E
East 106th Street (EB/WB) & Second Avenue (SB)	EB	TR	1.13	116.6	F	TR	1.16	126.6	F	TR	1.11	110.6	F
	WB	L	0.91	84.5	F	L	0.93	88.1	F	L	0.86	71.9	E
East 125th St (EB/WB)/RFK Bridge (WB) & Second Avenue (SB)	EB	T	1.10	92.8	F	T	1.13	105.5	F	T	1.13	105.5	F
East 126th Street (WB) & Second Avenue (SB)/RFK Bridge Exit (NB)	WB	L	0.75	55.8	E	L	0.80	61.6	E	L	0.76	55.4	E
East 128th Street (EB) & Second Avenue (SB)	EB	T	1.06	69.1	E	T	1.08	74.6	E	T	1.05	64.8	E
East 125th Street (EB/WB) & Third Avenue (NB)	EB	T	1.25	153.5	F	T	1.29	171.3	F	T	1.26	156.4	F
	WB	TR	1.15	116.5	F	TR	1.17	123.6	F	TR	1.14	110.8	F
East 125th Street (EB/WB) & Lexington Avenue (SB)	EB	T	1.48	256.1	F	T	1.50	263.3	F	T	1.45	242.9	F
	WB	T	1.20	137.5	F	T	1.21	141.1	F	T	1.17	126.5	F
East 126th Street (WB) & Lexington Avenue (SB)	WB	LT	1.35	199.3	F	LT	1.40	219.1	F	LT	1.36	200.2	F
East 111th Street (WB) & Park Avenue (NB)	WB	TR	0.88	62.1	E	TR	1.08	111.5	F	TR	0.89	59.9	E
East 119th Street (WB) & Park Avenue (NB)	WB	TR	0.82	46.2	D	TR	0.91	58.3	E	TR	0.84	47.1	D
East 111th Street (WB) & Park Avenue (SB)	WB	LT	0.74	44.5	D	LT	0.88	58.3	E	LT	0.80	46.8	D
East 119th Street (WB) & Park Avenue (SB)	WB	LT	0.85	55.1	E	LT	0.97	76.6	E	LT	0.88	56.9	E
East 128th Street (EB) & Park Avenue (SB)	EB	TR	1.03	102.5	F	TR	1.12	127.8	F	TR	1.01	92.5	F
East 119th Street (WB) & Madison Avenue (NB)	WB	TR	0.81	43.0	D	TR	0.86	48.3	D	TR	0.83	44.2	D

Shading denotes significant adverse impact that would remain unmitigated.

Table 22-54
Action-with-Mitigation Conditions at Impacted Lane Groups—
Sendero Verde Development Alternative
Weekday PM Peak Hour

Intersection	Approach	No-Action Weekday PM Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Weekday PM Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Mitigation Weekday PM Lane Group	V/C Ratio	Delay (sec/veh)	LOS
East 106th Street (EB/WB) & First Avenue (NB)	EB	L	0.63	39.6	D	L	0.72	49.4	D	L	0.68	43.9	D
		LT	0.63	37.8	D	LT	0.72	45.9	D	LT	0.67	40.3	D
East 125th Street (EB/WB) & First Avenue/Willis Avenue Bridge (SB)	EB	LT	1.31	174.1	F	LT	1.36	194.1	F	LT	1.36	194.1	F
East 106th Street (EB/WB) & Second Avenue (SB)	EB	TR	1.16	130.6	F	TR	1.19	138.8	F	TR	1.14	121.4	F
	WB	L	0.91	85.1	F	L	0.92	88.8	F	L	0.86	72.1	E
East 120th Street (EB) & Second Avenue (SB)	EB	TR	1.18	132.1	F	TR	1.29	178.1	F	TR	1.17	127.1	F
East 125th St (EB/WB)/RFK Bridge (WB) & Second Avenue (SB)	EB	T	1.42	226.6	F	T	1.49	257.1	F	T	1.49	257.1	F
	WB (E 125 St)	LT	0.77	43.8	D	LT	0.93	66.6	E	LT	0.93	66.6	E
	WB (Ramp)	L	0.95	76.8	E	L	1.01	91.2	F	L	1.01	91.2	F
	WB (Ramp)	LT	0.98	81.8	F	LT	1.02	89.6	F	LT	1.02	89.6	F
		T	1.06	74.9	E	T	1.08	82.7	F	T	1.08	82.7	F
East 126th Street (WB) & Second Avenue (SB)/RFK Bridge Exit (NB)	WB	L	1.35	235.7	F	L	1.50	295.8	F	L	1.50	295.8	F
	NB	L	0.98	82.6	F	L	0.99	86.7	F	L	0.99	86.7	F
East 127th Street (EB) & Second Avenue (SB)	EB	L	1.01	70.2	E	L	1.06	85.5	F	L	1.00	67.1	E
East 128th Street (EB) & Second Avenue (SB)	EB	T	1.16	105.5	F	T	1.18	116.1	F	T	1.16	103.5	F
East 111th Street (WB) & Third Avenue (NB)	WB	TR	0.91	54.6	D	TR	0.99	72.7	E	TR	0.93	56.1	E
East 112th Street (EB) & Third Avenue (NB)	EB	LT	0.97	62.8	E	LT	1.01	73.0	E	LT	0.98	63.8	E
East 116th Street (EB/WB) & Third Avenue (NB)	EB	LT	0.95	51.4	D	LT	0.98	56.9	E	LT	0.95	49.8	D
East 118th Street (EB) & Third Avenue (NB)	EB	LT	0.83	42.7	D	LT	0.88	48.0	D	LT	0.85	43.6	D
East 125th Street (EB/WB) & Third Avenue (NB)	EB	L	0.91	79.5	E	L	0.96	91.9	F	L	0.84	63.0	E
		T	1.57	294.0	F	T	1.67	336.5	F	T	1.58	296.2	F
	WB	TR	1.22	142.6	F	TR	1.23	149.0	F	TR	1.17	121.2	F
East 126th Street (WB) & Third Avenue (NB)	WB	T	1.04	75.0	E	T	1.10	95.5	F	T	1.04	75.0	E
East 111th Street (WB) & Lexington Avenue (SB)	WB	LT	0.77	37.9	D	LT	0.91	53.3	D	LT	0.85	43.4	D
East 120th Street (EB) & Lexington Avenue (SB)	EB	TR	0.91	54.2	D	TR	0.99	69.6	E	TR	0.93	54.3	D
East 125th Street (EB/WB) & Lexington Avenue (SB)	EB	T	1.73	364.5	F	T	1.78	389.1	F	T	1.73	365.6	F
	WB	T	1.21	143.1	F	T	1.23	149.3	F	T	1.19	133.7	F
East 126th Street (WB) & Lexington Avenue (SB)	WB	LT	1.54	281.7	F	LT	1.61	311.9	F	LT	1.51	268.5	F
East 111th Street (WB) & Park Avenue (NB)	WB	TR	1.09	113.4	F	TR	1.36	217.8	F	TR	N/A	78.8	E
	NB	LT	1.06	70.8	E	LT	1.10	83.4	F	LT	1.07	74.7	E
East 119th Street (WB) & Park Avenue (NB)	WB	TR	1.09	113.0	F	TR	1.24	170.1	F	TR	1.08	106.1	F
East 120th Street (EB) & Park Avenue (NB)	EB	LT	1.05	96.9	F	LT	1.17	137.8	F	LT	1.07	98.3	F
East 128th Street (EB) & Park Avenue (NB)	EB	LT	0.76	46.0	D	LT	0.89	60.4	E	LT	0.81	47.8	D
East 111th Street (WB) & Park Avenue (SB)	WB	LT	0.84	51.9	D	LT	1.02	85.1	F	LT	0.89	54.2	D
East 112th Street (EB) & Park Avenue (SB)	EB	TR	0.77	41.3	D	TR	0.85	46.9	D	TR	0.81	42.7	D
East 119th Street (WB) & Park Avenue (SB)	WB	LT	1.01	85.6	F	LT	1.17	138.8	F	LT	1.02	82.2	F
East 120th Street (EB) & Park Avenue (SB)	EB	TR	1.16	135.8	F	TR	1.26	176.0	F	TR	1.15	130.1	F
East 128th Street (EB) & Park Avenue (SB)	EB	TR	0.96	78.5	E	TR	1.08	110.0	F	TR	0.98	79.6	E
East 111th Street (WB) & Madison Avenue (NB)	WB	TR	0.90	51.3	D	TR	1.00	72.2	E	TR	0.93	55.3	E
East 116th Street (EB/WB) & Madison Avenue (NB)	EB	LT	1.13	114.0	F	LT	1.16	124.8	F	LT	1.10	102.3	F
East 119th Street (WB) & Madison Avenue (NB)	WB	TR	0.95	61.6	E	TR	1.01	76.3	E	TR	0.95	59.1	E

Shading denotes significant adverse impact that would remain unmitigated.

Table 22-55
Action-with-Mitigation Conditions at Impacted Lane Groups—
Sendero Verde Development Alternative
Saturday Peak Hour

Intersection	Approach	No-Action Saturday Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Saturday Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Sendero Verde Alternative Mitigation Saturday Lane Group	V/C Ratio	Delay (sec/veh)	LOS
East 106th Street (EB/WB) & First Avenue (NB)	EB	L	1.02	107.5	F	L	1.10	133.4	F	L	1.01	104.7	F
		LT	1.03	118.4	F	LT	1.10	141.7	F	LT	1.02	112.4	F
	WB	TR	0.87	47.2	D	TR	0.92	54.4	D	TR	0.89	48.8	D
East 106th Street (EB/WB) & Second Avenue (SB)	EB	TR	1.12	112.3	F	TR	1.14	120.6	F	TR	1.10	104.6	F
East 119th (WB) Street & Second Avenue (SB)	WB	LT	1.14	117.0	F	LT	1.15	122.1	F	LT	1.12	107.4	F
East 120th Street (EB) & Second Avenue (SB)	EB	TR	0.82	43.2	D	TR	0.87	48.6	D	TR	0.84	44.3	D
East 125th St (EB/WB)/RFK Bridge (WB) & Second Avenue (SB)	EB	T	1.12	107.1	F	T	1.16	121.0	F	T	1.16	121.0	F
	WB (Ramp)	L	0.89	60.8	E	L	0.91	64.8	E	L	0.91	64.8	E
East 126th Street (WB) & Second Avenue (SB)/RFK Bridge Exit (NB)	WB	L	0.77	62.3	E	L	0.83	72.3	E	L	0.79	63.6	E
East 128th Street (EB) & Second Avenue (SB)	EB	T	1.17	111.5	F	T	1.19	116.2	F	T	1.16	103.4	F
East 124th Street (EB) & Third Avenue (NB)	EB	LT	0.95	61.7	E	LT	0.97	65.9	E	LT	0.94	57.7	E
East 125th Street (EB/WB) & Third Avenue (NB)	EB	T	1.04	76.5	E	T	1.08	87.4	F	T	1.01	64.4	E
	WB	TR	1.32	188.2	F	TR	1.34	196.6	F	TR	1.26	159.1	F
East 126th Street (WB) & Third Avenue (NB)	WB	T	0.90	46.5	D	T	0.95	55.8	E	T	0.93	49.9	D
		R	1.06	101.3	F	R	1.07	107.4	F	R	1.04	95.2	F
East 125th Street (EB/WB) & Lexington Avenue (SB)	EB	T	1.20	137.4	F	T	1.21	142.0	F	T	1.18	126.8	F
East 126th Street (WB) & Lexington Avenue (SB)	WB	LT	1.58	298.6	F	LT	1.64	329.1	F	LT	1.55	285.2	F
East 111th Street (WB) & Park Avenue (NB)	WB	TR	1.03	93.1	F	TR	1.20	151.8	F	TR	1.05	94.6	F
East 119th Street (WB) & Park Avenue (NB)	WB	TR	1.09	112.8	F	TR	1.20	152.8	F	TR	1.09	110.8	F
East 111th Street (WB) & Park Avenue (SB)	WB	LT	0.77	45.9	D	LT	0.89	57.9	E	LT	0.81	46.5	D
East 119th Street (WB) & Park Avenue (SB)	WB	LT	0.85	53.6	D	LT	0.95	70.4	E	LT	0.86	53.4	D
East 120th Street (EB) & Park Avenue (SB)	EB	TR	0.99	85.0	F	TR	1.05	102.5	F	TR	1.01	87.9	F
East 128th Street (EB) & Park Avenue (SB)	EB	TR	0.81	54.5	D	TR	0.88	63.3	E	TR	0.83	55.6	E
East 116th Street (EB/WB) & Madison Avenue (NB)	EB	LT	1.12	107.2	F	LT	1.13	113.1	F	LT	1.09	95.4	F

Shading denotes significant adverse impact that would remain unmitigated.

CONSTRUCTION NOISE

Based on the construction stage predicted to occur at Projected Development Site 70 according to the conceptual construction schedule during each of the selected analysis periods, each receptor expected to experience an exceedance of the CEQR Technical Manual noise impact threshold criteria due to the construction of Projected Development Site 70 was determined for each analysis period. One peak construction period per year was analyzed, from 2018 to 2022 (i.e., the construction period of Projected Development Site 70). Based on these determinations, receptors where noise level increases are predicted to exceed the noise impact threshold criteria for two or more consecutive years as a result of construction of Projected Development Site 70 were identified.

Figure 22-28 shows where additional receptors locations are predicted to experience noise level increases that exceed the noise impact threshold criteria for two or more consecutive years due to construction noise from Projected Development Site 70. In addition to the locations identified in **Figure 22-28**, the Sendero Verde Development Alternative would also have the potential to result in significant adverse construction noise impacts at all of the same locations identified for the Proposed Actions, as shown in Figure 20-4.

Like the Proposed Actions, Construction of the Sendero Verde Development would be required to follow the requirements of the NYC Noise Control Code for construction noise control measures. Specific noise control measures would be incorporated in noise mitigation plan(s), as

required under the NYC Noise Code. These measures could include a variety of source and path controls.

In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures would be implemented in accordance with the NYC Noise Code:

- Equipment that meets the sound level standards specified in Subchapter 5 of the NYC Noise Control Code would be utilized from the start of construction. See Chapter 20, "Construction," for the noise levels for typical construction equipment and the mandated noise levels for the equipment that would be used for construction under the Proposed Actions.
- As early in the construction period as logistics would allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as welders, water pumps, bench saws, and table saws (i.e., early electrification) to the extent feasible and practicable.

In terms of path controls (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors), the following measures for construction would be implemented to the extent feasible and practicable:

- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations.
- Noise barriers constructed from plywood or other materials would be erected to provide shielding.
- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents, where feasible) for certain dominant noise equipment would be employed to the extent feasible and practical based on the results of the construction noise calculations. The details to construct portable noise barriers, enclosures, tents, etc. are shown in DEP's "Rules for Citywide Construction Noise Mitigation."
- Where feasible and practicable, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes at the construction site based upon Title 24, Chapter 1, Subchapter 7, Section 24-163 of the NYC Administrative Code.
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.

Mitigation measures to address the identified construction noise impact will be explored between the DEIS and FEIS. Additional construction noise analysis may be conducted between DEIS and FEIS to assist in identifying appropriate mitigation measures. In the event no practical or feasible mitigation measures are selected, the significant adverse construction noise impacts would be unavoidable. ✷