Chapter 4: Socioeconomic Conditions

A. INTRODUCTION

The Proposed Actions would facilitate the redevelopment of a 35-acre area in the Manhattanville section of West Harlem and establish a new Special Manhattanville Mixed-Use Zoning District, approximately 17-acres of which would be developed by Columbia as an Academic Mixed-Use Area. The establishment of this Special Mixed-Use Zoning District would result in a change in permitted uses from predominantly light manufacturing to academic, commercial, and other uses, creating more than 7,000 new permanent jobs and an average of approximately 1,215 full-time equivalent construction-related jobs each year through 2030.

This chapter describes the potential impacts of the Proposed Actions with respect to the conditions under the socioeconomic reasonable worst-case development scenario. One of the main issues concerning socioeconomic conditions is the involuntary displacement of residents, businesses, and institutions (and the corresponding employment). The 35-acre Project Area contains approximately 160 residential units, and 102 businesses and institutions which generate approximately 2,766 jobs. By 2030, the Proposed Actions would directly displace 135 of the Project Area's 160 residential units and could directly displace 85 businesses and institutions and approximately 880 jobs (including 75 businesses and institutions and 802 jobs that would be displaced from the Academic Mixed-Use Area). In addition, because the Proposed Actions would result in substantial new development that is markedly different from existing development patterns in the Project Area, indirect (or secondary) displacement could occur outside of the Project Area.

In accordance with the guidelines presented in the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, this chapter evaluates five specific factors that could create significant adverse socioeconomic impacts in an area: (1) direct displacement of a residential population; (2) direct displacement of existing businesses and institutions; (3) indirect displacement of a residential population; (4) indirect displacement of businesses and institutions; and (5) adverse effects on specific industries not necessarily tied to a project site or area. Although not required by the *CEQR Technical Manual*, the chapter also presents estimates of the fiscal and economic benefits and costs of new development in the subdistricts that comprise the 35-acre Project Area.

The chapter is organized as follows:

- Section A presents an introduction and summary of principal conclusions;
- Section B provides an overview of the methodology utilized in assessing potential socioeconomic impacts;
- Section C presents the preliminary assessments of residential, business, and institutional displacement (both direct and indirect), and the preliminary assessment of potential adverse effects on specific industries;

- Section D presents detailed assessments of direct business and institutional displacement, indirect residential displacement, and indirect business and institutional displacement; and
- Section E describes the estimated fiscal and economic benefits and costs of the construction and operations of development that are likely to result from the Proposed Actions.

PRINCIPAL CONCLUSIONS

By 2015, under the socioeconomic reasonable worst-case development scenario,[1] the Proposed Actions would not result in any significant adverse impacts as measured by the five socioeconomic areas of concern prescribed in the *CEQR Technical Manual* (numbered above). By 2030, there is the potential for a significant adverse impact with respect to one of the five areas of socioeconomic concern—indirect residential displacement—but that impact would be limited to the primary study area.[2] Development resulting from the Proposed Actions would generate substantial economic benefits for New York City and New York State.

The following summarizes the principal conclusions drawn from the analysis.

DIRECT RESIDENTIAL DISPLACEMENT

The Proposed Actions would not result in significant adverse impacts due to direct residential displacement. Although by 2030 all residents from the 135 housing units located in the Academic Mixed-Use Area would be displaced (it is estimated that 298 residents currently occupy those housing units), this displaced population represents less than 1 percent of the populations in the primary and secondary study areas, and the directly displaced population exhibits characteristics in terms of housing and demographic profiles that are not unique to the study areas. Therefore, the number and types of people displaced would not be enough to alter neighborhood character.

Columbia has acquired control of three sites outside of the Project Area (but within the study areas) to provide relocation sites for new, permanent, and affordable replacement housing buildings for tenants directly displaced from existing residential buildings in Subdistrict A of the Project Area. If the owners listed here were to agree, the three sites would accommodate tenants of: the two residential buildings owned by the New York City Department of Housing Preservation and Development (HPD) as part of its Tenant Interim Lease (TIL) Program; the two residential buildings that are owned and operated by the Charles Innis Housing Development Fund Corporation, a subsidiary of the Harlem Congregations for Community Improvement, Inc. (HCCI); the two residential buildings owned and operated by the West Harlem Group Assistance (WHGA) Renaissance Apartments, Limited Partnership, a subsidiary of WHGA. In addition, the two units on the property of the Iglesia el Encuentro con Dios would also be replaced on one of the

[1] The socioeconomic reasonable worst-case development scenario was designed to maximize potential indirect residential and business displacement pressures under the Proposed Actions. The scenario maximizes the amount of potential University general academic and academic research space, and minimizes on-site housing for graduate students, faculty, and other employees, and private commercial ground-floor space. Direct displacement is unaffected by variations in the types of uses considered for a worst-case scenario.

[2] The study areas—defined as the areas most likely to be affected by the Proposed Actions—encompass approximately the same areas as the roughly ¼- and ½-mile primary and secondary land use study areas, which include three distinct neighborhoods: Manhattanville, including the Project Area; Morningside Heights to the south of the Project Area; and Hamilton Heights to the north of the Project Area. See Figure 4-1.

three relocation housing sites. Occupants of the units in the Iglesia de Dios Pentecostal would be relocated in new residential units in the planned church building at its own relocation site. This move would occur with or without the Proposed Actions.

Housing on the replacement sites would be constructed by third party developers in accordance with HPD standards and would be of the same or better quality than those units occupied by tenants in these six buildings. The new housing would provide tenants equal rental rates and homeownership opportunities compared with the terms within the Project Area. Tenants would relocate from these buildings, or from interim housing, when their new housing is ready for occupancy, which could occur prior to the 2015 analysis year.

Dwelling units within the existing privately owned apartment building at Broadway and West 133rd Street are subject to federal and City regulatory agreements which extend until 2015 and 2029, respectively. Before that site would be available to Columbia to commence construction of the Academic Mixed-Use Development Plan, the Empire State Development Corporation (ESDC) would require that the occupants of these units be relocated to equal or better housing units, at affordable rents. Therefore, by 2030, it is anticipated that all residents in the Academic Mixed-Use Area would be relocated to new housing within the study areas.

DIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

The Proposed Actions would not result in significant adverse impacts due to direct business and institutional displacement. By 2030, the Proposed Actions could directly displace 85 businesses and institutions (approximately 880 employees) that provide a variety of products and services and represent 12 economic sectors, the largest of which is the other services sector (accounting for 160 employees).[1] The potentially displaced businesses and institutions were determined not to be of substantial economic value to the City or region as defined under CEQR, and would be able to relocate in the study areas or elsewhere in the City. The potentially displaced businesses and institutions do not contribute substantially to a defining element of neighborhood character in the primary and secondary study areas. The economic sectors with the highest employment in the study areas (those which define the character of the area in an economic sense) are not, in large part, based in the Project Area, and, therefore, the loss of displaced businesses and institutions due to the Proposed Actions would not substantially alter neighborhood character in the study areas.

INDIRECT RESIDENTIAL DISPLACEMENT

With respect to the potential for indirect residential displacement, the *CEQR Technical Manual* requires that the impact of a residential population added to an area be analyzed. Consistent with the socioeconomic reasonable worst-case development scenario, which is designed to model the worst case in the range of possible conditions, the analysis undertaken includes in its consideration the potential demand generated by Columbia employees and students not provided University housing, and the potential new residential population drawn to the area by project-generated amenities.

The number of residents living on campus in the Project Area would not be substantial and would not, in itself, significantly alter the size and character of the existing population in the study areas.

[1] The 85 businesses and institutions and approximately 880 employees that could be directly displaced by the Proposed Actions include six businesses and 89 employees that would be displaced in the future without the Proposed Actions, according to the development assumptions associated with the Tuck-It-Away and Hudson North American rezoning applications.

However, under the socioeconomic reasonable worst-case development scenario, it is projected that by 2030, the Proposed Actions could introduce as many as 3,362 new University-affiliated residents (comprising University graduate students, faculty, other employees, and their families) within 1,131 units who may seek non-University housing in the primary and secondary study areas (with 2,717 new University-affiliated residents within 839 units in the primary study area only). The University-affiliated population generated by the Proposed Actions within and outside of the Project Area could represent up to 8.2 percent of the primary study area population, and 4.5 percent of the secondary study area population (based on 2030 population projections). In addition, it is expected that the new development in the Project Area would affect both the immediate neighborhood and the study area by increasing the area's livability and overall residential appeal. By 2030, this increase in appeal could add pressure to increase market rents in the primary study area compared with conditions in the future without the Proposed Actions.

Residential demand generated by the Proposed Actions would be partially absorbed by individuals' purchases of owner-occupied housing in the study area, and by turnover within the rent-regulated housing stock in the study area. The remaining demand could place upward rent pressure on the 1,318 units in the primary study area that would be vulnerable to rent increases, which in turn could lead to the indirect displacement of residents of these at-risk units. In total, the 1,318 at-risk units are projected to house 3,293 people by 2030. It is impossible to quantify with specificity the number of at-risk residents who would be indirectly displaced as a result of the Proposed Actions. While it is expected that demand generated by the University-affiliated population would be less than 1,318 units within the primary study area, there is the potential for the indirect residential displacement impact within the primary study area to be significant and adverse. Mitigation for this significant adverse impact is discussed in Chapter 23, "Mitigation."

The potential for significant indirect residential displacement impacts would be limited to the primary study area for the following reasons: there would be much less University-generated housing demand in this area (University-generated housing demand of only 26 percent of the 1,131-unit demand, or 292 units, is projected to occur outside the primary study area); and the potential scale of the general upgrading influence of the new university area is in large part a function of the area's visibility from, and connectivity to, surrounding neighborhoods. In this respect, the Proposed Actions' influences would be somewhat limited by the Project Area's relatively isolated location, surrounded by transportation viaducts and taller institutional and residential redevelopment, such as Riverside Park Community/3333 Broadway, Manhattanville Houses, and General Grant Houses; and the distance of the secondary study area from the Project Area. Overall, in the portions of the secondary study area outside of the primary study area, other market forces are likely to play a larger role in shaping development trends in the future with and without the Proposed Actions.

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

The Proposed Actions would not result in significant adverse impacts due to indirect business and institutional displacement. While the Proposed Actions could result in the indirect displacement of some existing retail establishments in the immediate vicinity of the Project Area due to rent increases, their dislocation would not constitute a significant adverse impact under CEQR. The stores that would be vulnerable to indirect displacement would not meet the *CEQR Technical Manual* criteria for significant displacement impact—i.e., collectively, they are not of substantial economic value to the City; they can be relocated elsewhere in the City; they are not subject to regulations or publicly adopted plans to preserve, enhance, or protect them; and they are not a defining element of neighborhood character. In addition, storefronts that are vacated due to indirect displacement would be unlikely to remain vacant; they would turn over to other retail uses that could afford to pay higher

rents. Given the high residential density and the strong residential market in the study area, there would still be the local demand for neighborhood retail and services necessary to maintain the strong retail presence along West 125th Street and the avenues within the study areas. The limited indirect retail displacement that could result from increased rents would not lead to major changes within nearby commercial strips, nor would it result in adverse changes to neighborhood character.

The Proposed Actions could lead to limited increased demand for space within the M1-1 area to the southeast of the Project Area (bounded by West 130th Street to the north, West 125th Street to the south, Morningside and Convent Avenues to the east, and Amsterdam Avenue to the west), which in turn could lead to indirect displacement of some existing industrial businesses. The potentially vulnerable businesses in the manufacturing zoned area would not meet the *CEQR Technical Manual's* criteria for significant displacement impact—i.e., collectively, they are not of substantial economic value to the City; they can be relocated elsewhere in the City; they are not subject to regulations or publicly adopted plans to preserve, enhance, or protect them; and they are not a defining element of neighborhood character. In addition, there is already a trend within the study areas' manufacturing zones toward conversion of manufacturing uses to other uses (in the case of the two planned conversions, primarily office space with some warehousing/distribution). Therefore, while the Proposed Actions could lead to indirect business displacement in the above-identified manufacturing-zoned area, this would not be considered a significant adverse impact.

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

The Proposed Actions would not result in significant adverse impacts on any specific industry. Businesses subject to direct displacement vary in type and size, and are not concentrated in any specific industry sector. In addition, none of the businesses subject to displacement are essential to the survival of an industry sector within, or outside of, the study area.

ECONOMIC AND FISCAL BENEFITS[1] AND COSTS

The construction and operation of development resulting from the Proposed Actions would generate substantial employment, economic output, and fiscal benefits for New York City and State. Construction of the development with the Proposed Actions would be a significant investment in New York City. Under the Illustrative Plan, the estimated $5.81 billion in direct construction-related expenditures (all figures in 2007 dollars) would generate an estimated 26,732 person-years[2] of direct construction employment (or the equivalent of 1,215 full-time construction jobs per year for 22 years, of which 1,200 would be generated by construction activity in Columbia's Academic Mixed-Use Area), and an estimated 12,691 person-years of indirect and induced employment within New York City (i.e., employment resulting from construction expenditures in business establishments providing goods and services to the contractors, and additional employment from those expenditures). The total direct and generated jobs in New York City from construction would be 39,423 person-years (or the equivalent of 1,792 full-time jobs per year for 22 years). The total economic activity—including indirect expenditures—that would result from construction is estimated at $10.69 billion in New York

[1] The economic and fiscal benefits and costs portion of this principal conclusions section presents estimates for development anticipated within the entire Project Area (including all subdistricts). Section E of this chapter presents separate economic and fiscal benefits estimates for Subdistrict A, as well as for Subdistricts B and the Other Areas.

[2] A person-year is the equivalent of one person working full-time for one year

State, of which $9.36 billion would occur in New York City. Construction activity would generate an estimated $134.45 million in tax revenues for New York City, $274.04 million for New York State (separate from the New York City amount), and $9.00 million for the Metropolitan Transportation Authority (MTA).

Upon completion, the Illustrative Plan would generate 7,086 permanent jobs directly on site (6,399 jobs within the Academic Mixed-Use Area and 687 in Subdistrict B[1] and the Other Areas). In addition to this direct employment, there would be new jobs created in business establishments providing goods and services to the occupants of the buildings, resulting in indirect and generated employment of an additional 3,960 permanent jobs within New York City, bringing the total direct and generated jobs from the annual operation of the development to 11,046 jobs within New York City. The Illustrative Plan would generate an estimated $1.17 billion annually in direct benefits for New York City, measured as economic output or demand. The total economic activity, including indirect and induced expenditures (those generated by the direct expenditures), that would result from operations is estimated at $2.00 billion annually in New York State, of which $1.74 billion annually would occur in New York City. The annual operation of the completed development would generate non-property-related tax revenues estimated at $30.10 million annually for New York City, $63.72 million annually for New York State (separate from the New York City amount), and $1.49 million annually for MTA.

By 2030, revenues from the Academic Mixed-Use Area would depend on property taxes from ground-floor non-academic uses (property acquired by Columbia University and used for University purposes would be exempted from paying tax). Property tax in the remainder of the Project Area (Subareas B, C, and Other Areas) in any year would depend on the taxable assessed value and the applicable tax rates. Assuming the existing tax rates, the properties in the entire Project Area are projected to pay property taxes of about $7.18 million annually, an increase of about $4.31 million over the amount paid in 2004/2005.

If businesses directly displaced by the Proposed Actions were unable to relocate within New York City, the economic and fiscal benefits that are currently generated by those businesses (i.e., direct and indirect jobs, tax revenues, and economic output) would be lost to the City's economy. The analysis of direct business and institutional displacement in this chapter did not identify any specific businesses, institutions, or business sectors that would be unable to relocate within the study areas, Manhattan, or New York City more generally. And while it is reasonable to assume that some directly displaced businesses may choose not to relocate in the City, it would be speculative to identify any specific business or business sector for purposes of estimating lost economic and fiscal benefits. Therefore, this Final Environmental Impact Statement (FEIS) does not quantify any lost economic or fiscal benefits from the displacement of businesses from the Project Area as a result of the Proposed Actions.

The Proposed Actions would not cause the City to incur costs in physical improvements to the Project Area (e.g., streetbed or sidewalk construction) or for mitigation measures. Such costs would be borne by the University.

[1] CPC is contemplating certain modifications to Subdistrict B. The proposed modifications would rezone Subdistrict B to a modified M1-2 light manufacturing district to support light manufacturing and retail uses. It is anticipated that this modification would not result in any projected development sites in Subdistrict B. The proposed modifications are more fully described in Chapter 29, "Modifications to the Proposed Actions." Chapter 29 also analyzes the potential environmental impacts that could result from the proposed modifications.

B. METHODOLOGY

CEQR OVERVIEW

Under CEQR, the socioeconomic character of an area is defined in terms of its population, housing, and economic activities. The assessment of socioeconomic conditions usually distinguishes between the socioeconomic conditions of area residents and area businesses. However, actions affect either or both of these segments in the same ways: They may directly displace residents or businesses, or they may alter one or more of the underlying forces that shape socioeconomic conditions in an area and thus indirectly displace residents or businesses.

Direct displacement is defined as the involuntary displacement of residents, businesses, or institutions from the actual site of (or sites directly affected by) a proposed action. Examples include proposed redevelopment of a currently occupied site for new uses or structures, or a proposed easement or right-of-way that would take a portion of a parcel and thus render it unfit for its current use. Since the occupants of a particular site are usually known, the disclosure of direct displacement focuses on specific businesses and employment, and an identifiable number of residents and workers

Indirect or secondary displacement is defined as the involuntary displacement of residents, businesses, or employees in an area adjacent or close to a project site that results from changes in socioeconomic conditions created by a proposed action. Examples include rising rents in an area that result from a new concentration of higher-income housing introduced by a proposed action, which ultimately force out lower-income residents; a similar turnover of industrial to higher-rent commercial tenancies induced by the introduction of a successful office project in an area; or the flight from a neighborhood that can occur if a proposed action creates conditions that break down the community (such as a highway dividing the area).

Even where actions do not directly or indirectly displace businesses, they may affect the operation of a major industry or commercial operation in the City. In these cases, CEQR review may assess the economic impacts of the action on the industry in question.

DETERMINING WHETHER A SOCIOECONOMIC ASSESSMENT IS APPROPRIATE

Under CEQR, socioeconomic assessments should be conducted if an action may be reasonably expected to create substantial socioeconomic changes within the area affected by the action that would not be expected to occur absent the action. According to Section 200 of the *CEQR Technical Manual*, there are five circumstances that would typically require a socioeconomic assessment:

1) The action would directly displace residential populations so that the socioeconomic profile of the neighborhood would be substantially altered.
2) The action would directly displace substantial numbers of businesses or employees; or if it would directly displace a business or institution that is unusually important as follows:
   - it has a critical social or economic role in the community and unusual difficulty in relocating successfully;
   - it is of a type or in a location that makes it the subject of other regulations or publicly adopted plans aimed at its preservation;
   - it serves a population uniquely dependent on its services in its present location; or
   - it is particularly important to neighborhood character.

   If any of these possibilities cannot be ruled out, an assessment should be undertaken.

3) The action would result in substantial new development that is markedly different from existing uses, development, or activities within the neighborhood. Such an action could lead to indirect displacement. Typically, projects that are small to moderate in size would not have significant socioeconomic effects unless they are likely to generate socioeconomic conditions that are very different from existing conditions in the area. Residential development of 200 units or less or commercial development of 200,000 square feet (sf) or less would typically not result in significant socioeconomic impacts.
4) Notwithstanding the above, the action may affect conditions in the real estate market not only on the site anticipated to be developed, but in a larger area. When this possibility cannot be ruled out, an assessment may need to be undertaken to address indirect displacement. These actions can include those that would raise or lower property values in the surrounding area.
5) The action may adversely affect economic conditions in a specific industry.

If an action would exceed any of these initial thresholds, an assessment of socioeconomic conditions is generally appropriate. The geographic area and socioeconomic conditions to be assessed and the methods and level of detail by which they are studied depend on the nature of the proposed action. Considering the five circumstances listed above can help identify those issues of socioeconomic assessment that apply to a particular action.

With the Proposed Actions, none of the five circumstances listed above can be ruled out without a preliminary assessment. Therefore, this chapter addresses each of the following five areas of CEQR concern:

1) Direct (or primary) residential displacement;
2) Direct (or primary) business displacement;
3) Indirect (or secondary) residential displacement;
4) Indirect (or secondary) business displacement; and
5) Effects on specific industries.

ASSESSMENT METHODS

ANALYSIS FORMAT

This chapter follows the preliminary and detailed assessment methodologies established in the 2001 *CEQR Technical Manual*. In conformance with *CEQR Technical Manual* guidelines, the analyses of the five areas of concern outlined above begin with a preliminary assessment. The approach of the preliminary analyses is to learn enough about the effects of the Proposed Actions either to rule out the possibility of significant adverse impacts, or to determine that more detailed analysis will be required to resolve that question.

The detailed assessments are framed in the context of existing conditions and evaluations of the future without the Proposed Actions and the future with the Proposed Actions in 2015 and 2030. Existing conditions, including the identification of properties owned or under contract to Columbia University, are as of November 2007.[1] In conjunction with the land use task, specific

[1] Since the issuance of the DEIS, several Project Area businesses—including U-Haul, Admiral Electric Corp., storage for Architectural Antiques, and Pathways to Housing—have vacated the Project Area sites on which they operated. For purposes of the FEIS analysis, they are identified as existing businesses that would be directly displaced by the Proposed Actions.

development projects that would occur in the area in the future without the Proposed Actions are identified, and the possible changes in socioeconomic conditions that would result, such as potential increases in population, changes in the income characteristics of the study area, new residential developments, possible changes in rents or sales prices of residential units, new commercial or industrial uses, or changes in employment or retail sales.

Those conditions are then compared with the future with the Proposed Actions to determine the potential for significant adverse impacts. For purposes of providing a conservative analysis of the Proposed Actions, a reasonable worst-case development scenario for the Academic Mixed-Use Area (Subdistrict A) was developed specifically for the socioeconomic conditions assessments. The socioeconomic reasonable worst-case development scenario maximizes the amount of potential University general academic and academic research space, and minimizes on-site housing for graduate students, faculty, and other employees, and private commercial ground-floor space (see Table 4-1; also see Table B.1-10 in Appendix B.1, which compares the Illustrative Plan with the socioeconomic reasonable worst-case development scenario). Even though it may not occur, this socioeconomic reasonable worst-case development scenario would generate the greatest potential off-site demand for housing and commercial space, which in turn would maximize potential indirect residential and business displacement pressures. Direct displacement is unaffected by variations in the types of uses considered for a worst-case scenario.

Table 4-1
Socioeconomic Conditions Reasonable Worst-Case Development Scenario

Proposed Manhattanville Mixed-Use Zoning Subdistrict	2015 (GSF)	2030 (GSF)
Subdistrict A		
Community Facility Uses		
Academic research	361,939	2,295,016
General or other academic	705,000	2,000,000
Housing for graduate students, faculty, and other employees	0	350,000
Recreation	0	0
Commercial Uses		
Active ground-floor uses	36,500	130,000
Support Uses (Below Grade)		
Academic research support	58,563	296,201
Below-grade program	69,830	69,830
Central energy plant	50,870	70,199
Mechanical, freight, egress, switchgear, and loading	94,638	366,166
Storage	31,294	189,225
Parking (including ramp)	0	848,605
Swimming and diving center	0	145,431
Subtotal	**1,408,634**	**6,760,673**
Subdistrict B		
Commercial Uses		
Retail	124,196	124,196
Office	54,808	54,808
Subtotal	**179,004**	**179,004**
Other Areas		
Residential (99 units)	88,819	88,819
Community facility	61,698	61,698
Subtotal	**150,517**	**150,517**
TOTAL	**1,738,155**	**7,090,194**

Note: There are no projected development sites in Subdistrict C.
Sources: Columbia University for Subdistrict A and AKRF, Inc. for Subdistrict B and the Other Areas.

The preliminary and detailed assessments of the five areas of socioeconomic concern are followed by a description of the economic and fiscal benefits and costs that would be generated by the Proposed Actions by 2015 and 2030. The economic benefits analysis—performed using the IMPLAN (IMpact analysis for PLANning) input-output modeling system—estimates the number of direct and indirect jobs, tax revenues, and economic output generated by the construction and operations of the development expected to result from the Proposed Actions. For this analysis, IMPLAN models the output of development for the Illustrative Plan in the Academic Mixed-Use Area, and the projected development in Subdistricts B, C, and the Other Areas. The chapter first presents the economic and fiscal benefits generated by development in the Academic Mixed-Use Area, followed by the cumulative benefits of the Proposed Actions (which includes the Academic Mixed-Use Area and Subdistricts B, C, and the Other Areas).

The analysis includes a description of the net real estate tax revenues estimated to be generated by the Proposed Actions, deducting current real estate tax revenues generated by existing properties in the Project Area. Existing property taxes in each subarea were analyzed based on data by block and lot provided by Comps Inc, a leading real estate sales and assessed value consulting firm in the New York metropolitan area, supplemented by data from the New York City Department of Finance's Real Property Assessment Database (RPAD). Illustrative future property taxes on the ground-floor retail space in the Academic Mixed-Use Area were based on the capitalization of the likely rent received by the University and by taxes paid on similar space, and the existing tax rate (property acquired by Columbia University and used for University purposes would be exempted from paying tax). Illustrative taxes in Subdistrict B and the remainder of the project area in 2015 were based on the existing taxes, and the conservative assumption that for the new development, all of the value of the improvements would be fully exempted from taxes in 2015 based on one of the City's applicable real estate tax abatement programs. Illustrative taxes for the new development in 2030 were estimated based on the projected applicable construction costs, an assessed value to market value rate of 45 percent, and the existing tax rates.

If businesses directly displaced by the Proposed Actions are unable to relocate within New York City, the economic and fiscal benefits that are generated by those businesses (i.e., direct and indirect jobs, tax revenues, and economic output) would be lost to the City's economy. The analysis of direct business and institutional displacement in this chapter did not identify any specific businesses, institutions, or business sectors that would be unable to relocate within the study areas, Manhattan, or New York City more generally. And while it is reasonable to assume that some directly displaced businesses may choose not to relocate in the City, it would be speculative to identify any specific business or business sector for purposes of estimating lost economic and fiscal benefits. Therefore, this DEIS does not quantify any lost economic or fiscal benefits from the displacement of businesses from the Project Area as a result of the Proposed Actions.

The Proposed Actions would not cause the City to incur costs in physical improvements to the Project Area (e.g., streetbed or sidewalk construction) or for mitigation measures. Such costs would be borne by the University.

STUDY AREA DEFINITION

A study area is defined as the area most likely to be affected by a proposed action. Following the guidelines of the *CEQR Technical Manual*, the socioeconomic study areas approximate the ¼- and ½-mile land use primary and secondary study areas, which are described in detail in Chapter 3, "Land Use, Zoning, and Public Policy," and shown in Figure 3-1. Adjustments were made to the ¼- and ½-mile radii delineations to better reflect physical barriers in the area, neighborhood

boundaries, and Census tract boundaries. The following Census tracts were included in the primary study area: 211, 213.01, 217.01, 219, 223.01, and 223.02. The secondary study area includes (in addition to the Census tracts within the primary study area) the following Census tracts: 201.01, 203, 205, 207.01, 209.01, 209.02, 213.02, 221.01, 225, 227.01, and 229. Collectively, the tracts within the study areas include three distinct neighborhoods: Manhattanville, including the 35-acre Project Area; Morningside Heights, to the south of the Project Area; and Hamilton Heights, to the north (see Figure 4-1).

The areas generally east of St. Nicholas Park and Morningside Park were not included in the secondary study area. While they are within ½ mile of the Project Area, they are effectively separated from the Manhattanville neighborhood (and the potential impact area) by a number of physical barriers, most notably the previously mentioned parks, a substantial change in grade, and the City College of New York. These conditions pose significant physical boundaries between neighborhoods which would contain potential socioeconomic changes within the secondary study area, essentially eliminating the potential for impacts—specifically, indirect displacement pressures—in the neighborhoods east of St. Nicholas Park.

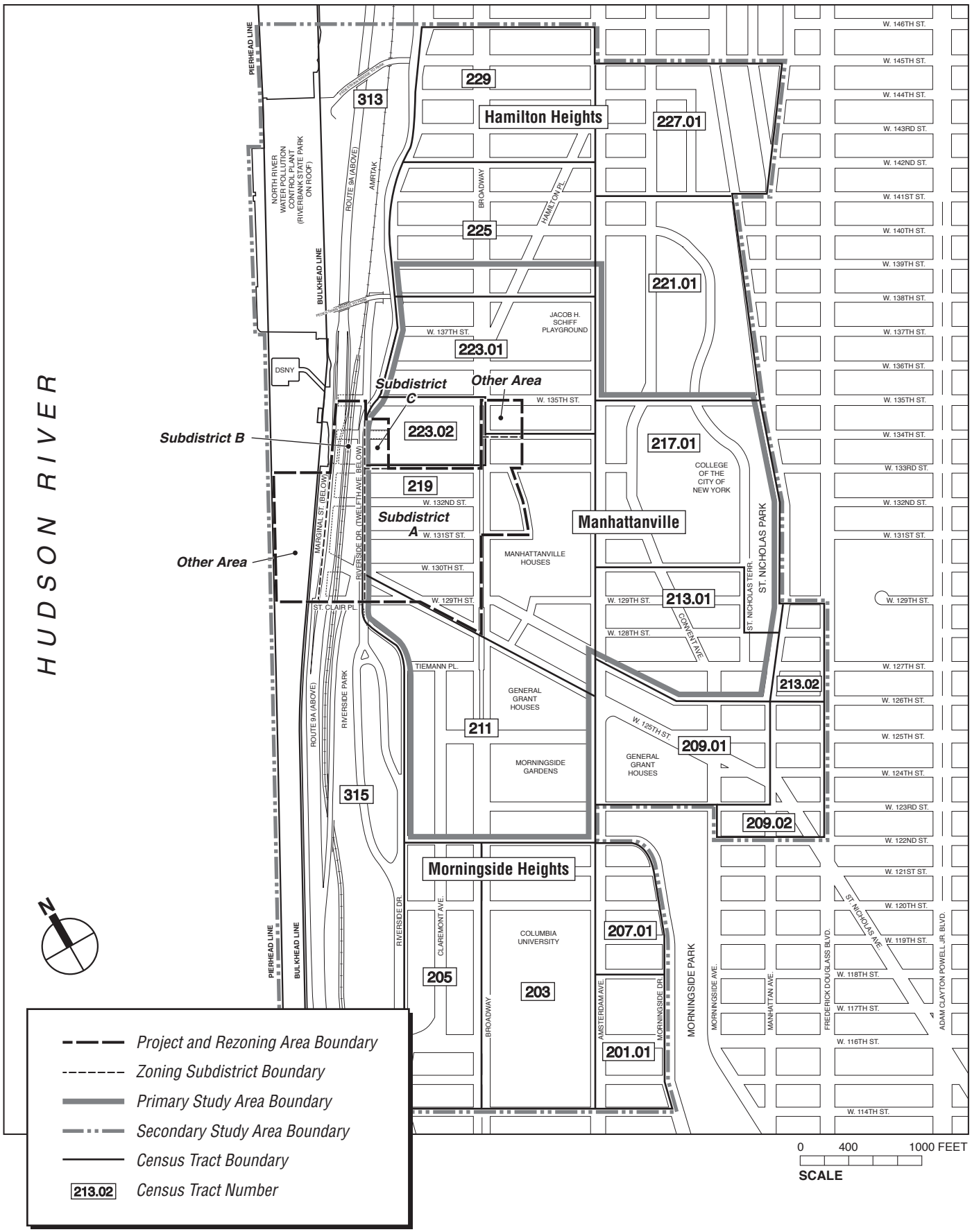
As shown in Figure 4-1, the southern boundary of the secondary study area extends beyond the ½-mile boundary to West 114th Street and includes Columbia University's Morningside Heights campus in Census tract 203, Barnard College in Census tract 205, and housing for both schools scattered throughout Tracts 205, 207.01, and 201.01. In this case, the study area boundary was extended because there are no physical barriers between the Project Area and Morningside Heights that would serve to limit the potential for indirect residential or business displacement in Morningside Heights, and the existing popularity of Morningside Heights as a place to live for Columbia affiliates would likely influence residential location decisions for faculty and students associated with the new university area.

For direct residential and business displacement and the effects on specific industries, the area of potential impacts is limited to the Project Area; therefore, the assessments compare and contrast the profile of the potentially displaced residents and businesses within the Project Area with those of the adjoining neighborhoods within the larger study areas, and with Manhattan and New York City. Given that the potential indirect effects of the Proposed Actions would extend beyond the Project Area into adjacent neighborhoods of the study areas, the indirect assessments focus on the characteristics of the study areas, and compare its socioeconomic profile with those of Manhattan and New York City. The analyses consider the potential for significant adverse impacts in both the primary and secondary study areas.

DATA SOURCES

Direct and Indirect Residential Displacement Analyses

The residential displacement assessment begins with an analysis of existing demographic characteristics and trends, based on data from the 1980, 1990, and 2000 U.S. Census. Population and income profiles were developed for the residents that could be displaced in the Project Area, and for the primary and secondary study areas. The analysis includes, as appropriate, such parameters as the total number of residents, race and ethnicity, age, total households, average household size, median income, and poverty status. Housing profiles also were developed for the Project Area, study areas, and specific locations within the study areas that include data such as total housing units, occupancy, tenure, number of rooms, contract rent, and age of housing stock, using U.S. Census information, real estate market data, and HPD data. AKRF, Inc., also conducted a real estate survey by obtaining rent information from major print news media in



MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 4-1
Socioeconomic Study Area

New York City (e.g., *The New York Times*), online resources (Craigslist, the Corcoran Group), and brokers and real estate developers familiar with the area (including an extensive rental rate survey provided by Jerry Minsky of the Corcoran Group). Information on single-room occupancy (SRO) units was obtained through the New York City Department of City Planning (DCP) 2005 MISLAND multiple dwelling report in conjunction with AKRF field surveys and field interviews with property managers and residents. The study also includes data from reports previously prepared for Columbia University by Appleseed, Inc., a New York City-based consulting firm.

The specific residential properties where direct displacement could occur were identified through field visits and interviews conducted between June 2004 and November 2007, as well as published data, including RPAD and LotInfo 2003.

Direct and Indirect Business and Institutional Displacement and Effects on Specific Industries

The assessments of direct and indirect business and institutional displacement consider business and employment trends in the Project Area, the larger study areas, Manhattan, and New York City. The data for the Project Area—which were used to estimate the total number and types of jobs that could be directly displaced by the Proposed Actions—were based on phone surveys, written surveys, employment counts from Dun & Bradstreet Selectory database, field investigations conducted by Appleseed, Inc. and AKRF, Inc, and by tenant information provided by Columbia University. Collectively, the business and employment data identify the employers and industries that characterize the study areas. The analysis of employment and employment trends for the study areas is based on field surveys, 1990 and 2000 Census data, New York State Department of Labor (ES-202) data, business and employment data from Claritas, Inc., a leading for-profit provider of demographic, economic, and business information, and data from RPAD.

Following the employment analysis is a discussion of real estate trends in the Project Area and study areas. A variety of data sources were consulted. Property values were examined based on data from RPAD. In addition, interviews with real estate professionals were conducted, and several planning studies and publications were consulted, including, but not limited to, the New York City Economic Development Corporation (EDC) 2002 West Harlem Master Plan and the Community Board 9 (CB9) Draft 197-a Plan.

C. PRELIMINARY ASSESSMENT

Under *CEQR Technical Manual* guidelines, the first step in a socioeconomic impact analysis is a preliminary assessment. This section examines each of the five areas of potential socioeconomic impact in relation to the Proposed Actions. The Proposed Actions are framed in the context of the socioeconomic reasonable worst-case development scenario, as described above. The goal of a preliminary assessment is to learn enough about the potential effects of the Proposed Actions either to rule out the possibility of significant impact, or to establish that a more detailed analysis will be required to determine whether the Proposed Actions would lead to significant adverse impacts.

For two of the five issue areas—direct residential displacement and adverse effects on specific industries—the preliminary assessment rules out the possibility that the Proposed Actions would have a significant adverse impact as defined in the *CEQR Technical Manual*. For the three remaining areas—direct business and institutional displacement, indirect residential displacement, and indirect business displacement—the preliminary assessment indicates that a more detailed analysis is necessary to adequately assess whether the Proposed Actions would have significant adverse impacts. The detailed analyses follow this preliminary assessment.

DIRECT RESIDENTIAL DISPLACEMENT

A direct residential displacement analysis examines the type and extent of displacement generated by a proposed action in order to determine its potential significance. Direct residential displacement is not in and of itself an impact under CEQR. According to the *CEQR Technical Manual*, impacts of direct residential displacement are considered to be significant if changes are large enough to alter the character of the neighborhood or perhaps lead to indirect displacement of remaining residents.

With the Proposed Actions, the potential for direct residential displacement is limited to the Project Area, which is the 35-acre area roughly bounded by West 133rd Street to the north, West 125th Street to the south, Broadway to the east, and the Hudson River to the west. The Project Area also includes several lots northeast and northwest of the area outlined above. Within the Project Area, residential displacement would occur only in the Academic Mixed-Use Area (Subdistrict A); there is no housing in Subdistricts B and C, and the 25 residential units in Subdistrict Other Area east of Broadway would not be displaced by the Proposed Actions. Approximately 95 of the 135 housing units in the Academic Mixed-Use Area are located in the six buildings on the easternmost portion of the block bounded by West 133rd Street, West 132nd Street, Broadway, and Twelfth Avenue. Of the remaining units, 30 are located in a building at 602 West 132nd Street, two residential units are part of the Iglesia de Dios Pentecostal property at 622 West 131st Street, and eight residential units are part of the Iglesia el Encuentro Con Dios property at 601 West 130th Street (see Figure 4-2).

Since the issuance of the DEIS, Columbia has acquired control of three sites outside of the Project Area (but within the study areas) to provide relocation sites for new, permanent, and affordable replacement housing for tenants currently living in buildings in the Academic Mixed-Use Area. The tenants would voluntarily relocate from Project Area units when their new replacement housing is constructed, which could occur prior to the 2015 analysis year. By 2030, it is anticipated that all residents in the Project Area would be directly displaced from the Project Area and relocated to new housing within the study areas.

Since the direct residential displacement would not occur for several years, it is possible that the future composition of the residential population in the Project Area may differ. However, for purposes of analysis, it would be highly speculative to use different baseline data. In addition, CEQR's preliminary assessments are based on existing conditions, making consideration of potential future changes inappropriate for a preliminary assessment.

Based on *CEQR Technical Manual* guidelines, the preliminary assessment compares the profile of the directly displaced residents with that of the surrounding primary and secondary study area populations. Under CEQR, the analysis of a residential "profile" does not include race or ethnicity, but rather considers factors such as total numbers of residents, income, and poverty status. However, in response to comments made at the scoping meeting for the DEIS, the following describes the estimated racial and ethnic composition of Project Area's residents and compares it with that of the primary and secondary study areas.

In Census 2000, the percentage of Project Area residents that identified themselves as African-Americans (31.1 percent) was only slightly higher than the percentages within the study areas. The percentage of whites in the Project Area was below the percentages of the primary and secondary study areas, but was consistent in terms of their low representation compared with Manhattan and New York City as a whole. The 2000 Census does not record any Asians living within the Project Area, while their representation in the study areas was between 4.1 and 5.4 percent of those populations. In terms of ethnicity, the share of Hispanics in the Project Area

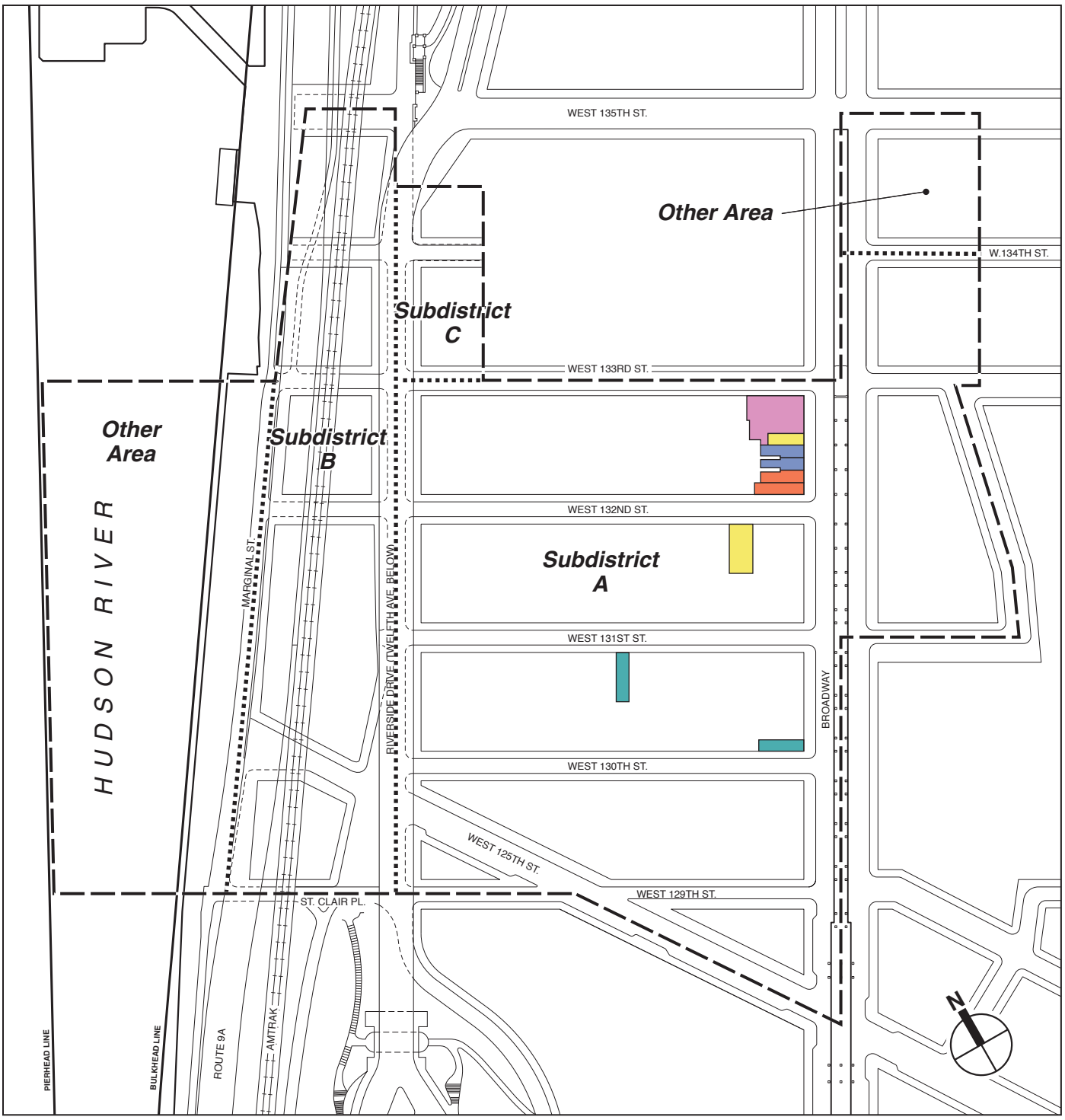


Figure 4-2

Existing Residential Buildings in Subdistrict A

(60.7 percent) is approximately 15 percent higher than in the primary study area and 31 percent higher than in the secondary study area.

The population in the Project Area that would be directly displaced does not represent a substantial portion of any racial and ethnic group within the primary or secondary study areas. African-Americans are well-represented in the study areas; compared with Manhattan as a whole, the share of African-Americans is 92 percent higher in the primary study area and 88 percent higher in the secondary study area (see Table 4-2). The total number of African-Americans who would be displaced by the Proposed Actions is only 1.2 percent of the total African-American population in the primary study area, and 0.5 percent of that population in the broader secondary study area. Hispanics are similarly well represented in the study areas; compared with Manhattan as a whole, the share of Hispanics is 92 percent higher in the primary study area and 70 percent higher in the secondary study area (see Table 4-2). The total number of Hispanics that would be displaced by the Proposed Actions is 1.0 percent of the total Hispanic population in the primary study area, and 0.5 percent of the Hispanic population in the broader secondary study area.

Table 4-2
Race and Ethnicity in 1990 and 2000

	Project Area (%)	Primary Study Area (%)	Secondary Study Area (%)	Manhattan (%)	New York City (%)
2000					
African-American	31.1	29.4	28.8	15.3	24.5
White	4.1	11.4	17.0	45.8	35.0
Asian	0.0	4.1	5.4	9.3	9.7
Other	4.1	2.5	2.6	2.4	3.8
Hispanic or Latino	60.7	52.3	46.3	27.2	27.0
1990					
African-American	16.9	37.1	35.4	17.6	25.2
White	2.2	10.7	18.6	48.9	43.2
Asian or Pacific Islander	0.0	3.0	4.3	7.1	6.7
Other	2.2	0.8	0.7	0.5	0.5
Hispanic or Latino	78.7	48.5	40.9	26.0	24.4

Notes:
The racial and ethnic categories provided are further defined as: White (White alone, not Hispanic or Latino); African-American (Black or African-American alone, not Hispanic or Latino); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino; Some other race alone, not Hispanic or Latino; Two or more races, not Hispanic or Latino); Hispanic (Hispanic or Latino; Persons of Hispanic origin may be of any race).
In 1990, Asian and Pacific Islanders were grouped together, and therefore cannot be disaggregated. In the 2000 data "Pacific Islanders," "American Indian and Alaska Native alone," "Some other race alone" and "Two or more races" were combined into "Other." For 1990 data, the "Other" category combines the categories of "American Indian, Eskimo, or Aleut" and "Other race." The option to classify oneself as two or more races was not available in the 1990 Census.
Source: U.S. Department of Commerce, Bureau of Census, 2000 Census

The following preliminary assessment evaluates the CEQR threshold indicators numbered in italics below to determine the potential for significant adverse impacts from direct residential displacement:

1. Is the profile of the displaced residents markedly different from that of the study areas?

There are approximately 135 residential units in the Project Area.[1] According to the Census, about 5 percent of the Project Area's housing units were vacant in 2000. Applying the average

[1] 2007 estimate based on field surveys and data from NYC Department of Finance and NYC Department of Housing and Development. The number of units recorded by the 2000 Census differs from the actual

household size of 2.33 (as reported by the 2000 Census for the Project Area) to the 128 occupied units, it is estimated that there are approximately 298 residents living in the Project Area. All of the residents currently living in the Project Area would be directly displaced from the Project Area by 2030.[1]

Although an estimated 63 Project Area residents are currently participating in HPD's Tenant Interim Lease (TIL) Program[2], all occupied residential units in the Project Area were renter-occupied in 2000. Rental units in the Project Area exhibited a similar mix of rental rates as those in the larger study areas. As shown in Table 4-3, in 2000 approximately 22 percent of housing units in the Project Area rented for $300 or less, compared with 28 percent in the primary study area and 22 percent in the secondary study area. These were substantially higher percentages than in Manhattan and New York City as a whole (13 and 14 percent, respectively). In the Project Area, 63 percent of renters paid between $300 and $1,000 in rent for their apartments, compared with 66 percent in the primary study area and 68 percent in the secondary study area.

Table 4-3
2000 Contract Rents of Renter-Occupied Housing Units in Project and Study Areas

	Project Area		Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Value	%	Value	%	Value	%	Value	%	Value	%
Total	112		11,457		24,291		589,889		2,108,538	
Total with cash rent	112	100	11,263	98	23,880	98	579,890	98	2,066,896	98
Cash rent; less then $300	25	22	3,119	28	5,155	22	79,197	14	266,115	13
Cash rent; $300 to $650	42	38	5,145	46	11,171	47	174,086	30	779,537	38
Cash rent; $650 to $1,000	28	25	2,216	20	5,220	22	122,292	21	694,356	34
Cash rent; $1,000 to 1,500	0	0	554	5	1,676	7	95,911	16	200,060	10
Cash rent; over $1,500	17	15	229	2	658	3	108,404	19	126,828	6
Median contract rent	$574		$492		$543		$740		$646	

Notes: The data on contract rent (also referred to as "rent asked" for vacant units) is a sample based on occupied housing units that were rented for cash rent and vacant housing units that were for rent at the time of enumeration. Housing units that are renter occupied without payment of cash rent are shown separately as "No cash rent" in census data products.
Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

A more noticeable difference is in the highest rent category; 15 percent of residents in the Project Area paid more than $1,500 for their apartments in 2000, compared with only 2 percent in the primary study area and 3 percent in the secondary study area (as indicated in the 2000 Census; see Table 4-3). The magnitude of this difference could be related to the relatively small sample size in the Project Area.

---

count in 2007. The 2000 Census lists only 116 units for the entire Project Area. The 19-unit difference is partially attributable to reconfigurations of apartment buildings in the Project Area, including the redevelopment of the Charles Innis Houses at 3281 Broadway, which opened in November 2005.

[1] Field observations reveal the possibility of some illegal residential tenancy in the Project Area within commercial and institutional space, and it is therefore possible that some illegal residents could be displaced prior to the 2015 analysis year. While the illegal residential tenancy is not quantified in this CEQR assessment, their numbers are not substantial enough to alter the analysis and conclusions reported in this DEIS.

[2] The DEIS reported that all of the estimated 84 residents within HPD's units were participating in HPD's TIL program. That estimate has been updated to reflect the fact that 11 of the 38 HPD units are not currently participating in the TIL program.

As shown in Table 4-4, the distributions of household incomes in the Project Area and study areas are generally similar such that the displacement of Project Area residents would not generate a major shift in income distribution within the primary or secondary study areas. Median income numbers for the Project Area and the study areas are very similar, with the Project Area's 2000 median household income ($27,292) falling between those of the primary and secondary study areas ($26,565 and $28,557, respectively). Approximately 45.0 percent of households in the Project Area earn less than $20,000, compared with 43.2 percent in the primary study area and 41.3 percent in the secondary study area (see Table 4-4). All areas also show a similar share of households in the highest earnings category ($125,000 and above). In the Project Area, about 5.5 percent of households earn more than $125,000, compared with 4.0 percent in the primary study area and 5.3 percent in the secondary study area. About half of the households in the Project Area and those of the study areas fall in the moderate- to middle-income categories, earning a household income of between $20,000 and $125,000 annually (49.6 percent in the Project Area, compared with 52.8 percent and 53.4 percent in the primary and secondary study areas, respectively).

Table 4-4
2000 Household Income in Project and Study Areas

	Project Area		Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
Households reporting income	109	100	12,762	100.0	26,801	100.0	739,167	100.0	3,022,477	100.0
Less than $20,000	49	45.0	5,516	43.2	11,081	41.3	187,564	25.4	876,094	29.0
$20,000 to 125,000	54	49.5	6,734	52.8	14,301	53.4	420,664	56.9	1,886,725	62.4
Over $125,000	6	5.5	512	4.0	1,419	5.3	130,939	17.7	259,658	8.6
Median household income	$27,292		$26,565		$28,557		$47,030		$38,293	

Note: Median Income for study areas is an average weighted median income based on number of reporting households in Census tracts.
Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

The median household incomes in the Project Area and study areas are all significantly lower than those of Manhattan and New York City (see Table 4-4). While the median household income for the Project and study areas is below $30,000, the median income for Manhattan is $47,030, and $38,293 for New York City.

Comparing the population below the poverty level in the Project Area with the study areas supports the findings of the income comparison. All areas had a similar share of residents below the poverty level in 2000. For the Project Area, the percentage was 31.4 percent compared with 34.1 percent in the primary study area, and 33.2 percent in the secondary study area (see Table 4-5). The share of the population below the poverty line decreased substantially in the Project Area between 1990 and 2000 (from 43.0 percent to 31.4 percent). In contrast, the percentage in the study areas remained fairly stable (decreasing less substantially in the primary study area and increasing slightly in the broader secondary study area).

The 2007 residential inventory in the Project Area consists of 135 housing units (see Table 4-6). Of these 135 units, 38 are currently owned by HPD, while 97 units are owned by private parties. The 38 HPD-owned units are part of the TIL Program, which provides assistance and training to organized tenant associations in occupied City-owned buildings of three or more dwelling units to develop economically self-sufficient, low-income, tenant-owned cooperatives. Currently, 27 of the 38 households in the HPD units are participating in the TIL program; the remaining 11 units are being used as swing space for temporarily-relocated households.

Table 4-5
Population Below the Poverty Level in Project and Study Areas (1990 & 2000)

	Project Area		Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
Total (2000)[1]	310		34,003		70,476		1,491,423		7,854,530	
Income below poverty level	97	31.4	11,601	34.1	23,386	33.2	298,231	20.0	1,668,938	21.25
Total (1990)[1]	183		31,977		69,490		1,450,698		7,181,155	
Income below poverty level	79	43.0	11,583	36.2	22,631	32.6	297,617	20.5	1,384,994	19.3

Notes: 1. Total population for whom poverty status is determined.

Following the Office of Management and Budget's (OMB's) Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to detect who is poor. If the total income for a family or unrelated individual falls below the relevant poverty threshold, then the family or unrelated individual is classified as being "below the poverty level."

Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

Table 4-6
Existing Residential Buildings in the Academic Mixed-Use Area

Block	Lot	Owner	Program	# of units
1998	38	HPD	TIL	30
1999	33	HPD	TIL	8
1999	31	West Harlem Group Assistance Renaissance Apartments	NRP	8[1]
1999	32	West Harlem Group Assistance Renaissance Apartments	NRP	8[1]
1999	36	Grady Inc.[2]	HPD Participation Loan	50
1999	29	HCCI or subsidiary	Permanent Homeless Housing	11
1999	30	HCCI or subsidiary	Permanent Homeless Housing	10
1997	29	Iglesia el Encuentro Con Dios	None	2
1997	48	Iglesia de Dios Pentecostal	None	8
			Total	**135**

Sources: NYC Department of Finance and NYC Department of Housing and Development

Note: 1. The residential buildings on Block 1999, Lots 31 and 32 are currently undergoing renovation; upon completion of renovation both buildings will contain 8 units. The DEIS had reported the pre-renovation condition, in which both buildings had contained 11 units.

2. Columbia is under contract to purchase this property.

In June 2006, HPD sold 22 units on block 1999, lots 31 and 32, to the West Harlem Group Assistance Renaissance Apartments, a limited partnership. The partnership has temporarily relocated existing tenants from the units while the property undergoes renovation. Upon completion of the renovations, the buildings will contain a total of 16 units, and those units will be part of New York State's Division of Housing and Community Renewal Neighborhood Preservation program, which provides administrative grants that allow nonprofit, community-based housing organizations to perform housing and community renewal activities in designated areas within the State.

Twenty-one units are part of the Charles Innis Houses, which opened in 2005 and provide housing for low-income and formerly homeless families. The housing complex is operated through a subsidiary of the Harlem Congregations for Community Improvement, Inc. (HCCI). This HCCI project is on previously HPD-owned land but funded by the State through the New York State Office of Temporary and Disability Assistance's Homeless Housing and Assistance Program

(HHAP). Typically, HHAP doesn't target a specific income group, but it is reasonable to assume that all tenants have low incomes (below 60 percent of AMI).

Fifty of the 97 privately owned units are part of HPD's Participation Loan Program, which provides low-interest loans to private owners for the moderate- to gut-rehabilitation of multiple dwellings with more than 20 units.

After completion of the above programs, 48 units in the Project Area will be rent-protected, another 27 units will be owner-occupied, and 60 units will be market-rate apartments. The share of residential units that would be displaced by the Proposed Actions would be less than 1 percent of the total number of residential units in the primary study area, and less than 0.5 percent of the units in the secondary study area. The 27 owner-occupied units that would be displaced represent approximately 2.1 percent of the owner-occupied housing stock in the primary study area, and 1.1 percent of the owner-occupied stock in the secondary study area (based on 2000 Census data). Due to the small number of displaced units relative to the overall number of units in the study areas, the direct residential displacement is not expected to generate a significant adverse impact. Examining the potential effects of the displacement of rent-protected units leads to a similar conclusion. The primary study area currently contains approximately 10,660 rent-protected housing units; the 48 protected units in the Project Area—0.5 percent of the total number of rent-protected units in the primary study area—is not an amount substantial enough to alter the residential market in the study area.

2. Does the displaced population represent a substantial or significant portion of the population within the study areas?

While the Proposed Actions would directly displace all of the estimated 298 residents living in the Project Area, these displaced residents do not represent a significant portion of the population in the primary or secondary study areas. The 298 residents in the Project Area who would be directly displaced by the Proposed Actions represent less than 1 percent of the 2000 primary study area population of 35,488, and less than 0.4 percent of the secondary study area population of 78,803. The direct displacement of the Project Area population would not reach the 5 percent threshold, and would not cause a significant adverse impact.

3. Would the Proposed Actions result in a loss of a population group within the neighborhood?

As described above, the profile of the displaced residents is not markedly different from that of the study areas, and the displaced population does not represent a substantial portion of the population within the study areas. In addition, as described below under "Relocation Assistance," it is expected that all existing tenants would be relocated to comparable units to be built within the study areas. Therefore, the Proposed Actions would not result in a loss of any particular population group within the neighborhood.

This preliminary assessment finds that the Proposed Actions would not result in significant adverse impacts due to direct residential displacement, and no further analysis of this issue is required.

RELOCATION ASSISTANCE

Columbia has acquired control of three sites outside of the Project Area to provide relocation sites for new, permanent, and affordable replacement housing for tenants directly displaced from buildings in the Academic Mixed-Use Area. The sites, and the development contemplated for the sites, are shown in Table 4-7 and Figure B.2-1.

Table 4-7
Residential Replacement Sites

Map Site No.	Address of Replacement Housing Site	Block/ Lot	Site Recipient	Number of Units	Type
1	Portion of 3581 Broadway (West 148th Street and Broadway)	2094/29	TIL Program Tenants (HPD)	42	New construction
2	555 West 125th Street (West 125th Street and Old Broadway)	1982/1	West Harlem Group Assistance	22	New construction
3	322 St. Nicholas Avenue (West 125th Street and St. Nicholas Avenue)	1953/20,123,45, 46,47	Harlem Congregations for Community Improvement (HCCI)	42	New construction

Source: Columbia University.

The site at 3581 Broadway (near West 148th Street) would provide affordable replacement units for tenants of the TIL program housing located at 602 West 132nd Street and 3289 Broadway. These two existing buildings within the Project Area have 38 units. The replacement site would provide approximately 42 units, resulting in a net gain in affordable housing units compared to the number of TIL units that would be displaced from the Project Area.

The site at 555 West 125th Street would provide approximately 22 affordable and supporting housing units for tenants of the West Harlem Group Assistance residential buildings at 3285 and 3287 Broadway. Similar to the opportunity at 3581 Broadway, the approximately 22 new replacement units would represent a net gain compared to the 16 units located at 3285 and 3287 Broadway within the Project Area.

The site at 322 St. Nicholas Avenue would provide housing for tenants currently located in HCCI's residential buildings at 3281 and 3283 Broadway. These buildings currently contain 21 units. The replacement site would provide approximately 42 units, resulting in a net gain in housing units compared to the number of HCCI units that would be displaced from the Project Area.

Ten residential units developed on the above-described replacement sites would be provided to tenants of the residential units currently located in the Iglesia de Dios Pentecostal (located at 622 West 131 Street) and the Iglesia el Encuentro Con Dios (located at 691 West 130th Street).

Housing on the replacement sites would be constructed by third party developers, and would be of the same or better quality than those occupied by tenants in properties located within the Project Area. Tenants would relocate from the six existing buildings when their new housing is ready for occupancy, which could occur prior to the 2015 analysis year.

Housing units in the existing privately owned apartment building at Broadway and 133rd Street are subject to Federal and City regulatory agreements which expire in 2015 and 2029, respectively. Before that site would be available to Columbia to commence construction of the Academic Mixed-Use Development Plan, the Empire State Development Corporation (ESDC) would require that the occupants of these units be relocated to equal or better housing at affordable rents. Therefore, by 2030, it is anticipated that all residents in the Academic Mixed-Use Area would be relocated to new housing within the study areas.

In addition to funding the development of replacement affordable housing, it is expected that Columbia would provide displaced tenants with a relocation assistance package. At a minimum, the relocation assistance package would include the following:

- Moving services and expenses would be provided. This would include payment for the cost of the physical move, including the cost of transporting personal property to the replacement housing location, labor and material, insurance, and storage as necessary. Columbia or its relocation consultant would bid out all moves and select the lowest reasonable and responsible bid. The occupant either could use the selected mover or could conduct a "self-move" and receive the amount of money that Columbia would otherwise have paid to the selected mover. No moving costs would be paid until the premises were vacated. Moving costs would be uncapped as to the amount.
- A relocation assistance payment would be made to each vacating occupant. A one-time payment of $5,000 per household would be made available to each vacating residential occupant or family to assist in meeting additional expenses encountered in establishing new living quarters, such as telephone and other utility hook-up charges, new return address labels, etc. This stipend would also be intended to compensate occupants for the inconvenience of having to move, and to encourage them to vacate their units as quickly as possible.

DIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

Direct displacement is the involuntary displacement of businesses or institutions (e.g., community groups, charities, and other nonprofit organizations) from the site of a proposed action (in this case, the Project Area). According to the *CEQR Technical Manual*, a significant direct displacement impact may exist if the businesses or institutions in question have substantial economic value to the City or region; are the subject of regulations or publicly adopted plans to preserve, enhance or otherwise protect them; or substantially contribute to a defining element of the neighborhood character.

The Proposed Actions could result in three types of direct business and institutional displacement: (1) displacement in the Academic Mixed-Use Area resulting from University development (on University-owned property); (2) displacement in the Academic Mixed-Use Area through direct public acquisition of property by the State of New York[1]; or (3) displacement in Subdistrict B and the Other Areas through private acquisition and development initiatives.[2] The businesses that are assumed to be displaced within Subdistrict B and the Other

[1] In addition to the rezoning, implementation of the Academic Mixed-Use Development plan contemplates the adoption of a GPP for the Academic Mixed-Use Area by ESDC and ESDC's subsequent decision to exercise its eminent domain authority to acquire lands beneath West 130th, West 131st, and West 132nd Streets in connection with construction below streets and development above-grade on Columbia-owned or controlled sites and possibly other sites in private ownership. Implementation of the Academic Mixed-Use Development Plan also contemplates ESDC's exercise of authority to acquire publicly owned sites above grade pursuant to Section 14 of the UDC Act. To the extent that acquisition of non-Columbia owned above-ground parcels is necessary and such authority is exercised by ESDC, any such acquisition by ESDC would be in stages based on Columbia's reasonably anticipated needs for such property as the Academic Mixed-Use Area is developed.

[2] Direct business and institutional displacement is defined by the *CEQR Technical Manual* as the involuntary displacement of businesses or institutions from the site of a proposed action. Columbia University has been purchasing property to facilitate the assemblage of the project site for development.

Areas are located on "projected development sites" as described in Chapter 2, "Procedural and Analytical Framework."

The estimates of displacement are based on current business conditions in the Project Area,[1] and do not account for any changes in business activities that would occur irrespective of the Proposed Actions by 2030. Therefore, the actual displacement in 2015 and 2030 could be different, depending on the number and types of businesses that voluntarily move into or out of the Project Area before those analysis years. The detailed analysis of direct business and institutional displacement considers potential changes in land uses within the Project Area by 2015 and 2030.

The preliminary assessment of direct business and institutional displacement examines the CEQR threshold indicators (numbered in italics below) to determine the potential for significant adverse impacts.

1. Do the businesses and institutions in question have a substantial economic value to the City or region, and can only be relocated with great difficulty or not at all?

As set forth in the *CEQR Technical Manual*, the consideration of a business or institution's economic value is based on: (1) its products and services; (2) its location needs, particularly whether those needs can be satisfied at other locations; and (3) the potential effects, on businesses or consumers, of losing the displaced business as a product or service. By 2030, the Proposed Actions could directly displace approximately 80 businesses and 4 institutional uses (including 71 businesses and 4 institutional uses that would be displaced from the Academic Mixed-Use Area). The potentially displaced businesses provide a range of services, such as moving and storage, auto repair, parking, architecture, and construction services, and products such as food, clothing, auto parts, and wholesale meat. There are three types of businesses with a strong presence in the neighborhood: wholesale trade, auto repair, and warehousing businesses. Institutional uses include two churches, public administration offices, and a job center. Given the businesses' and institutions' potential for economic value, as defined above, and the large numbers of businesses and institutional uses that could be displaced overall, a detailed analysis is required to determine if the Proposed Actions would result in significant adverse impacts with respect to this criterion (see Section D, "Detailed Analysis").

2. Is a category of business or institution the subject of other regulations or publicly adopted plans to preserve, enhance, or otherwise protect it?

The potentially displaced businesses and institutions are not the subject of current public policy seeking to preserve and protect the business or institutional category. Although the Proposed

---

Owners who operated businesses on their properties and decided to sell their properties to the University are not defined as directly displaced by the Proposed Project under CEQR because they voluntarily sold their properties. Similarly, commercial tenants who have vacated their space pursuant to an agreement with the University and who have acquired a new space in which to relocate their business are not defined as directly displaced. The businesses and institutions that have vacated space now owned by Columbia University are discussed in Appendix C, "Recent Trends." Businesses and institutions that are new to the Project Area (i.e., since 2000) and that have signed short-term leases with Columbia University also are not considered directly displaced because they entered a voluntary lease agreement with the University, knowing that they could eventually be displaced.

[1] Since the issuance of the DEIS, several Project Area businesses—including U-Haul, Admiral Electric Corp., storage for Architectural Antiques, and Pathways to Housing—have vacated the Project Area sites on which they operated. For purposes of the FEIS analysis they are identified as existing businesses that would be directly displaced by the Proposed Actions.

Project would result in a loss of area available for manufacturing uses in the City, this loss would not be considered significant. The *New York City Industrial Policy: Protecting and Growing New York City's Industrial Job Base* (January 2005) outlines the City's comprehensive policy as it relates to the industrial sector. This policy identifies 14 Industrial Business Zones (IBZs) throughout the city where manufacturing uses are to be protected and encouraged; the Project Area is not located in any such area. In addition, none of the specific categories of businesses or institutional uses that could be displaced are identified in this policy.

3. Do the businesses or institutions define or contribute substantially to a defining element of neighborhood character, or would a substantial number of businesses or employees be displaced that collectively define the character of the neighborhood?

According to the *CEQR Technical Manual*, neighborhood character is defined by certain features, such as land use, urban design, visual resources, historic resources, socioeconomic conditions, traffic, or noise, which, depending on the neighborhood in question, create its distinct "personality." Despite some variety of land uses and business types, the predominant character of the Project Area is that of a district in which wholesale trade, auto repair, and warehousing and storage companies are prevalent. While there is no single business or institution that defines neighborhood character, the replacement of these existing businesses and the industrial buildings they occupy with the commercial, residential, and academic uses proposed by Columbia may, as defined above, represent a substantial change in neighborhood character. A detailed analysis is required to determine if the Proposed Actions would result in significant adverse impacts with respect to this criterion.

Overall, this preliminary assessment could not rule out the possibility of significant impacts, and therefore, a detailed analysis of direct business and institutional displacement is presented in Section D, "Detailed Analysis."

INDIRECT RESIDENTIAL DISPLACEMENT

In most cases, indirect residential displacement is caused by increased property values generated by an action, which then results in higher rents in an area, making it difficult for some existing residents to continue to afford their homes. Based on *CEQR Technical Manual* guidelines, the preliminary assessment of indirect residential displacement evaluates the criteria numbered in italics below to determine whether the Proposed Actions could result in significant adverse impacts within the primary or secondary study areas.

Overall, this preliminary assessment could not rule out the possibility of significant impacts, and therefore, a detailed analysis of indirect residential displacement is presented in Section D, "Detailed Analysis."

1. Would the Proposed Actions add a substantial new population with different socioeconomic characteristics compared with the size and character of the existing population?

There are two ways in which the Proposed Actions could add a substantial new population: (1) if the Proposed Actions add a substantial number of new housing units to the Project Area; and (2) if the Proposed Actions generate a substantial amount of new employees or other population seeking housing in the study areas. Under the socioeconomic reasonable worst-case development scenario, by 2030 the Proposed Actions would introduce approximately 661 housing units to the Project Area. Approximately 562 of those units would be University housing for graduate students, faculty, and other employees within the Academic Mixed-Use Area, and 99 units would be new market-rate units in the Other Area east of Broadway (on the westernmost portion

of the block bounded by West 135th Street, Broadway, West 134th Street, and Amsterdam Avenue). In total, the 661 new units would add an estimated 1,033 residents to the study areas (of which 262 would be private residents and 771 would be University students and employees). This projected new population represents approximately 2.9 percent of the year 2000 population of 35,488 residents in the primary study area, and 1.3 percent of the 78,803 residents in the secondary study area. These additions would not, in themselves, be considered a substantial new population.

In addition to the population introduced within the Project Area, the Proposed Actions also would generate a new population of University employees and graduate students not housed within the Project Area, some of whom may reside within the primary and secondary study areas.

According to the *CEQR Technical Manual*, if a proposed action could increase a study area population by greater than 5 percent, there is the potential to affect socioeconomic trends significantly. A detailed analysis is required to determine whether the Proposed Actions could potentially introduce a population to the study areas above this threshold, and whether the new population could generate significant adverse socioeconomic impacts due to indirect residential displacement (see section D, "Detailed Analysis").

2. Would the Proposed Actions directly displace uses or properties that had a blighting effect on property values in the study area?

The Project Area contains certain undesirable conditions, such as deteriorated building stock and unsanitary environments. While there are only a few vacant parcels and vacant buildings in the Project Area, many of the parcels are in poor condition (including cracked sidewalks, damaged curb cuts, poor lighting, and litter), and several buildings are dilapidated (including broken windows, peeling paint, and damage to their façades). Instances of poor site and building conditions are scattered throughout the Project Area, but there is a particularly high concentration within the two blocks bounded by West 129th Street and West 125th Street to the south, Broadway to the east, West 131st Street to the north, and Twelfth Avenue to the west.

The Proposed Actions' displacement of uses and properties, in isolation, is not expected to significantly affect residential rents in the surrounding study area. Much of the Project Area is physically isolated from the surrounding area by a combination of natural topography, heavy infrastructure, and large buildings. The southern boundary of the Project Area is West 125th Street, a major 100-foot-wide traffic artery that divides Manhattanville from Morningside Heights. Topographically, West 125th Street is also the lowest point of the valley, with Manhattanville rising to the north and Morningside Heights to the south. Further separating the Project Area from the broader area in this location are the steel columns supporting the elevated structure of Riverside Drive. To the east, the elevated tracks of the No. 1 train, bridging over the steep valley, create a physical barrier that separates the Project Area from the Manhattanville Houses. In addition to the elevated train tracks, the Manhattanville Houses form a buffer which limits the visual connection between the Project Area and the neighborhoods east of Amsterdam Avenue. To the north, the large, horseshoe-shaped Riverside Park Community apartment complex creates another man-made barrier between Manhattanville and the adjacent neighborhood of Hamilton Heights.

The lower real estate values and rents in the study area (relative to Manhattan and New York City as a whole) are not driven by existing conditions in the Project Area, but instead by the physical conditions of the existing housing stock, the large amount of rent-protected units, and

the low income characteristics of the Study Area. An old housing stock combined with limited amenities is likely to make the neighborhood less desirable and depress rents, as brokers have indicated in interviews. In addition, low household income in the Study Area decreases the demand for higher priced housing.

Overall, the natural and man-made barriers surrounding the Project Area create physical and visual disconnects between the Project Area and surrounding residential neighborhoods that limit the influence of the Project Area's conditions on market rate residential rents. The displacement of existing uses and properties in the Project Area would not, in itself, lead to substantial increases in market rate rents in the surrounding area. The question of whether new uses introduced with the Proposed Actions could lead to increases in residential rents is addressed under criterion 5, below.

3. Would the Proposed Actions directly displace enough of one or more components of the population to alter the socioeconomic composition of the area?

As discussed in the preliminary assessment of direct residential displacement, the Proposed Actions would not directly displace a significant component of the population mix from the primary or secondary study areas such that the overall socioeconomic character of the areas would be altered.

4. Would the Proposed Actions introduce a substantial amount of a more costly type of housing compared with existing housing and housing expected to be built in the study areas by the time the action is implemented?

The Proposed Actions would not introduce a substantial amount of a more costly type of housing compared with existing housing and housing expected to be built in the study areas. Of the 661 units introduced to the study areas, 562 would be housing for graduate students, faculty, and other employees within the Academic Mixed-Use Area, and this housing would not be a more costly type because it would not be available on the open market. Since they would not be part of the available market, those units would not affect residential housing rental rates in the study areas.

In addition to the housing to be built by the University, 99 market-rate units are assumed to be developed by a non-Columbia developer in the Other Areas by 2015. The 99 new market-rate units would represent less than 0.8 percent of the total housing stock in the primary study area (13,376 units in 2000), and less than 0.4 percent of the housing stock in the broader secondary study area (28,714 units in 2000). The new units would not be a substantial addition to the housing market in the study areas.

5. Would the Proposed Actions introduce a critical mass of non-residential uses such that the surrounding area becomes more attractive as a residential neighborhood complex?

The purpose and intent of the Proposed Actions is to create a vibrant mixed-use area with predominantly institutional uses, but also a substantial amount of retail and other active ground-floor uses and privately owned, publicly accessible open space. According to the socioeconomic reasonable worst-case development scenario, the Proposed Actions would add over 6 million sf of institutional space, almost 440,000 sf of residential space (350,000 sf in the Academic Mixed-Use Area and about 90,000 sf in the Other Areas), 130,000 sf of retail space, about 62,000 sf of community facility space, and 55,000 sf of office space (see Table 4-1). In addition to the institutional, residential, retail, community facility, and office space, the Proposed Actions would contribute at least 2.16 acres (93,965 sf) of privately owned, publicly accessible open space.

The Proposed Actions would therefore introduce a critical mass of non-residential uses that would increase the area's attractiveness as a residential neighborhood. Whether this change would result in significant adverse impacts due to indirect residential displacement is addressed in Section D, "Detailed Analysis."

6. Would the Proposed Actions introduce a land use that could have a similar effect if it is large or prominent enough, or combines with other like uses to create a critical mass large enough to offset positive trends in the study areas, to impede efforts to attract investments to the area, or to create a climate for disinvestment?

The Proposed Actions would not impose any type of change that would diminish investment in the study areas. The Proposed Actions would introduce new uses and populations to the Project Area that would generate substantial direct and induced economic activity within the study areas.

Overall, the potential for the Proposed Actions to result in significant adverse impacts due to indirect residential displacement could not be ruled out through this preliminary assessment. Following *CEQR Technical Manual* guidelines, a detailed analysis of indirect residential displacement is provided in Section D, "Detailed Analysis."

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

Like the analysis of indirect residential displacement, the preliminary assessment for indirect business and institutional displacement focuses on whether the Proposed Actions could increase property values and rents within the primary or secondary study areas, making it difficult for some categories of businesses to remain in the area. The preliminary assessment follows the methodology of the *CEQR Technical Manual* in analyzing the criteria numbered in italics below.

Overall, this preliminary assessment could not rule out the possibility of significant impacts, and therefore, a detailed analysis of indirect business and institutional displacement is presented in Section D, "Detailed Analysis."

1. Would the Proposed Actions introduce enough of a new economic activity to alter existing economic patterns?

The Proposed Actions would substantially increase the level and variety of economic activity within the Project Area. The existing low-density manufacturing and industrial uses, with some pockets of retail and institutional services, would be replaced with higher-density academic and academic research uses, and commercial and residential development. The economic patterns in the Project Area would be expected to change as a result of the Proposed Actions.

While the proposed uses would transform the Project Area, those uses would not be new economic activities within the primary or secondary study areas. The proposed Academic Mixed-Use Area in Manhattanville would share many similar uses with those at the City College of New York, which has a number of science facilities (including research laboratories), and those at Columbia University's existing Morningside Heights campus (e.g., academic buildings and residential space). In addition, as shown in Table 2-1, there are a number of Columbia University and City College academic facilities—including facilities that would conduct scientific research—planned for the study areas in the future without the Proposed Actions.

Similarly, the anticipated residential, retail, and commercial development in Subdistrict B and the Other Areas would not represent a new economic activity in the study areas. With the Proposed Actions, uses in those subdistricts would more closely reflect existing business patterns along West 125th Street east of Broadway compared with the uses currently in those

subdistricts. Therefore, the Proposed Actions would not alter existing economic patterns by introducing a new economic activity to the study areas.

2. Would the Proposed Actions add to the concentration of a particular sector of the local economy enough to alter or accelerate an ongoing trend to alter existing patterns?

Both the primary and secondary study areas are defined in large part by their residential and institutional uses, with ground-floor neighborhood retail along the avenues and destination retail along West 125th Street. The socioeconomic reasonable worst-case development scenario presumes the addition of 562 University housing units and 99 market-rate residential units to the Project Area, which is not a sufficient amount to alter the well-established residential patterns in the study areas.

Under the socioeconomic reasonable worst-case development scenario, the Proposed Actions would add 130,000 sf of retail uses (for purposes of analysis, evenly distributed between retail and restaurants). Based on RPAD estimates, in 2003 the primary study area contained approximately 837,000 sf of ground-floor retail space, and the secondary study area contained 1.63 million sf (including the retail space in the primary study area). The retail introduced by the Proposed Actions would therefore represent an estimated 13 percent of the primary study area's total ground-floor retail inventory, and 7.4 percent of the secondary study area's inventory. The new retail uses, combined with the demand for retail generated by the residential, worker, and student populations introduced by the Proposed Actions, could alter or accelerate retail trends within the immediate vicinity of the Project Area. A detailed analysis is required to determine the potential significance of these effects (see "Indirect Business and Institutional Displacement" in Section D, "Detailed Analysis").

The introduction of a substantial amount of academic research space has the potential to alter existing economic patterns in the study areas. Under the socioeconomic reasonable worst-case development scenario, 2.3 million sf of academic research space would be developed in the Project Area by 2030. This amount of academic research space could generate the critical mass needed to attract non-University R&D-related activities. For example, nonprofit and for-profit organizations would gain a variety of advantages from close proximity to a major academic research center. University academic research also would generate agreements for commercial use of technologies and new business start-ups. Some of the commercial businesses attracted by the University academic research may seek off-site locations near the Project Area.

The only suitable location in the study areas to accommodate substantial R&D-related support or manufacturing functions would be the M1-1 area to the southeast of the Project Area. It is possible that increased demand for this space could lead to increases in rents, which in turn could lead to the indirect displacement of some existing businesses. Therefore, a detailed analysis is required to determine whether these potential effects could be significant and adverse (see "Indirect Business and Institutional Displacement" in Section D, "Detailed Analysis").

3. Would the Proposed Actions displace uses or properties that have had a "blighting" effect on commercial property values in the area, leading to rises in commercial rents?

The Project Area contains certain conditions, such as deteriorated building stock and unsanitary environments, that may currently be depressing property values in the surrounding neighborhoods. While there are only a few vacant parcels and vacant buildings in the Project Area, many of the parcels are in poor condition (including cracked sidewalks, damaged curb cuts, poor lighting, and litter), and several buildings are dilapidated (including broken windows, peeling paint, and damage to their façades). Instances of poor site and building conditions are

scattered throughout the Project Area, but there is a particularly high concentration within the two blocks bounded by West 129th Street and West 125th Street to the south, Broadway to the east, West 131st Street to the north, and Twelfth Avenue to the west.

The Proposed Actions' displacement of uses and properties, in isolation, is not expected to significantly affect commercial rents in the surrounding study area. Virtually all of the Study Area's surrounding commercial properties are located well outside those areas where Project Area building and lot conditions might be influencing property values. To the west, the Amtrak and Henry Hudson Parkway viaducts and the Hudson River effectively halt the westward influence of the Project Area. To the north, the large Riverside Park Community apartment complex has a similar effect, blocking visibility of the Project Area from areas farther north. So while the Proposed Actions would displace uses and properties that could be depressing property values, their influence is limited to commercial establishments on properties within the Project Area itself, to establishments east of the Project Area along Broadway, and to establishments south of the Project Area along the blockfront of West 125th Street. Commercial properties beyond these areas are far more heavily influenced by conditions outside of the Project Area.

For those commercial properties that are in close proximity to the Project Area, there are other factors affecting property values such that the displacement of the Project Area's uses would not lead to indirect displacement due to increases in rents. The commercial establishments on the east side of Broadway (between West 125th and West 126th Streets) are located immediately adjacent to the elevated rail viaduct that runs along Broadway. The noise and shadows generated by this transportation use—which would continue to exist with or without the Proposed Actions—are likely to have a substantially greater effect on property values compared with any adverse effects due to proximity to the Project Area. In addition, the commercial businesses east of Broadway are located across from the Mi Floridita Restaurant and the former KFC/Taco Bell site—two locations that appear to be in good physical condition and have been renovated to accommodate an expansion of Mi Floridita. Therefore, with the Proposed Actions, the direct displacement of uses or properties would not substantially affect property values east of Broadway, and indirect displacement in this area due to the displacement of Project Area uses is not expected. Similarly, the commercial uses east of Broadway and south of 125th Street would not be expected to see changes in property values due to the displacement of uses in the Project Area. That portion of Broadway will be far more heavily influenced by the City's plans to make streetscape improvements along 125th Street. Although the design has not been finalized, it is anticipated that the streetscape improvements may include widened sidewalks, bicycle lanes, new street lighting and furniture, plantings, and way-findings.

The southern blockfront of West 125th Street between Twelfth Avenue and Broadway currently houses one plumbing and heating service establishment and a McDonald's. The majority of the blockfront contains two University buildings—560 Riverside Drive and Prentis Hall—both of which are expected to be renovated by 2015 irrespective of the Proposed Actions. These renovations would result in the displacement of the one existing business on that blockfront; therefore the Proposed Actions would not adversely affect the rents of any commercial tenants.

In conclusion, while the Proposed Actions would displace uses that may depress property values, this influence is largely limited to establishments on properties within the Project Area that would be redeveloped with the Proposed Actions. Virtually all of the primary study area's surrounding commercial properties are located well outside those areas where building and lot conditions might affect property values. For those properties that are in close proximity to the Project Area, there are other factors affecting property values such that displacement of Project

Area uses and properties would not lead to indirect displacement due to increases in property values and rents.

4. Would the Proposed Actions directly displace uses of any type that directly support businesses in the study areas or bring people to the area that form a customer base for local businesses?

The Proposed Actions would not displace uses that directly support the remaining local businesses or that draw a substantial customer base to the area. As described in Section D, "Detailed Analysis," many of the businesses subject to displacement are construction, wholesale, automotive repair, and moving and storage firms. These types of firms do not typically draw large volumes of customers to their locations, thereby creating a customer base for surrounding businesses. Although retail, office, and neighborhood services businesses would also be displaced, their customer base(s) are not such that their displacement would negatively affect other local businesses. By 2030, approximately 902 employees would be displaced by the Proposed Actions; however, the uses contemplated for the Project Area with the Proposed Actions would create an even larger customer base of students, employees, and visitors for existing area businesses.

5. Would the Proposed Actions directly or indirectly displace residents, workers,[1] or visitors who form the customer base of existing businesses in the study areas?

As described above in "Direct Residential Displacement," the estimated 298 residents in the Project Area who would be directly displaced by the Proposed Actions represent less than 1.0 percent of the year 2000 primary study area population, and less than 0.4 percent of the secondary study area population. As described in the detailed analysis of indirect residential displacement, the Proposed Actions also would result in the indirect displacement of residents in the primary and secondary study areas. Some of these indirectly displaced residents may not be able to find affordable housing in the study areas in the future with the Proposed Actions, and therefore, much if not all of their consumer expenditures would occur outside the study areas, near their new place of residence.

In terms of employment, the 880 displaced employees represent approximately 12.7 percent of the jobs in the primary study area and approximately 3.3 percent of the jobs in the secondary study area. Similar to the displaced residential population, the displacement of these workers could represent a substantial loss of customer base for existing businesses in the study areas, particularly for those businesses in the primary study area immediately surrounding the Project Area (as they are likely to be most frequented by workers immediately before, during, and after work hours).

In the future with the Proposed Actions, the loss of the existing residential customer base would be offset by the introduction of a new, larger residential population within the Project Area itself, and within the surrounding study areas. Similarly, the Proposed Actions would substantially increase the number of daytime workers and visitors relative to existing numbers in the Project Area. Under the Illustrative Plan for the Academic Mixed-Use Area,[2] and with the projected employment in Subdistricts B, C, and the Other Areas, new employment predicted with the

[1] This criterion addresses the value of the worker population as consumers of retail goods (e.g., food and drink, convenience and shoppers goods) rather than the value of the business services provided by directly displaced businesses, which is addressed in the analysis of direct business displacement.

[2] While the analyses of indirect displacement are based on the socioeconomic reasonable worst-case development scenario, the Illustrative Plan generates less net new employment, and therefore it is more conservative to consider that program when describing net new employment.

Proposed Actions would bring approximately 7,087 new jobs to the Project Area, or roughly 6,185 net jobs, when compared with existing conditions.

In addition to the direct employment generated by the Proposed Actions, there would also be a new student population visiting both the uses in the Academic Mixed-Use Area and the retail stores in the surrounding area. Overall, the new residents, employment, and student visitation generated by the Proposed Actions would result in a substantial net increase in potential customers for the remaining businesses in the study areas in the future with the Proposed Actions, despite the direct and indirect displacement of residents and employees.

6. Would the Proposed Actions introduce a land use that could have a similar indirect effect, through the lowering of property values if it is large enough or prominent enough, or combines with other like uses to create a critical mass large enough to offset positive trends in the study area, to impede efforts to attract investment to the area, or to create a climate for disinvestment?

The Proposed Actions would not introduce a land use that could have a similar indirect effect, through the lowering of property values by being large enough or prominent enough, or combining with other like uses to create a critical mass large enough to offset positive trends in the study area, to impede efforts to attract investment to the area, or to create a climate for disinvestment. The Proposed Actions would significantly increase the area's spending power, thereby benefiting many existing commercial establishments.

Overall, the potential for the Proposed Actions to result in significant adverse impacts due to indirect business and institutional displacement could not be ruled out through this preliminary assessment. Following *CEQR Technical Manual* guidelines, a detailed analysis of indirect business and institutional displacement is provided in Section D, "Detailed Analysis."

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

As set forth under *CEQR Technical Manual* guidelines, the preliminary assessment of the Proposed Actions' potential to affect the operation and viability of specific industries (not necessarily tied to the study areas) is not based on set criteria or the identification of specific economic variables. The *CEQR Technical Manual* indicates that a more detailed examination is appropriate if the following considerations cannot be answered with a clear "no."

1. Would the Proposed Actions significantly affect business conditions in any industry or any category of businesses within or outside the study areas?

As described in the preliminary and detailed analyses of direct business and institutional displacement, the businesses subject to direct displacement vary in type and size, and are not concentrated in any one industry sector (see Table 4-8). Over 12 economic sectors are represented by the firms that would be displaced from the Project Area, and almost all sectors provide a variety of products and services. For example, businesses in the wholesale trade sector distribute an assortment of products such as water treatment chemicals, meats and poultry, and electrical supplies. Businesses in the construction sector provide general contracting services and specialized window installation. The 9 retail businesses provide products such as auto parts, clothes, and groceries. Other sectors' businesses include uses such as restaurants, beauty salons, artist studios, and an architecture firm. Two economic sectors—transportation and warehousing, and other services—have a notable presence of a particular subsector. The other services sector includes a concentration of 19 auto repair businesses, while the transportation and warehousing sector comprises six moving and storage facilities. However, the displacement of these sectors'

businesses represents an extremely small portion of the total auto repair and moving and storage industries in the City such that a significant adverse impact would not occur. In conclusion, because the goods and services provided by businesses subject to displacement are diverse, and none of these businesses individually or collectively provide inputs that are crucial to the survival of some particular class of business, the Proposed Actions would not significantly affect any specific industry within or outside of the study areas.

2. Would the Proposed Actions indirectly substantially reduce employment or have an impact on the economic viability in the industry or category of businesses?

The detailed indirect businesses and institutional displacement discussion below in Section D, "Detailed Analysis," describes the types of businesses that could potentially be indirectly displaced by the Proposed Actions. This analysis finds that the Proposed Actions could lead to the indirect displacement of some businesses and associated employment currently located in the manufacturing-zoned district to the southeast of the Project Area. Similar to the industrial uses in the Project Area, the uses in that M1-1 zone are varied, and their displacement would not impact the economic viability of any one industry sector.

The detailed analysis of indirect business displacement also finds that some existing retail establishments in the primary study area could be indirectly displaced, but any indirectly displaced retail uses are expected to be replaced by other retail businesses. Overall, the Proposed Actions would not substantially reduce employment or have an impact on the economic viability in any industry or category of business, and no further analysis of this issue is required.

D. DETAILED ANALYSIS

The preliminary assessment presented in Section C, above, could not rule out the possibility that the Proposed Actions could cause significant impacts through: (1) direct business and institutional displacement; (2) indirect residential displacement; and (3) indirect business and institutional displacement. Therefore, a detailed analysis for those areas of concern is presented below. In accordance with *CEQR Technical Manual* guidelines, the detailed analysis for each area of concern is divided into three sections: existing conditions; the future without the Proposed Actions; and the future with the Proposed Actions, which includes a determination of whether the Proposed Actions would cause significant adverse impacts.

DIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

Based on guidelines in Section 331.2 of the *CEQR Technical Manual*, a detailed analysis of direct business displacement is necessary because the preliminary assessment could not rule out the possibility that the displaced businesses (1) contribute substantially to a defining element of neighborhood character, and/or (2) have substantial economic value to the city or the regional area and could only be relocated with great difficulty or not at all. The detailed assessment of direct business and institutional displacement focuses on the specific conditions that describe the businesses and institutions to be displaced, and the characteristics of the study areas as they relate to the displaced business and institutions. Existing conditions in the Project Area are analyzed with respect to historic trends, current business and employment characteristics,[1] economic value and

[1] Since the issuance of the DEIS, several Project Area businesses—including U-Haul, Admiral Electric Corp., storage for Architectural Antiques, and Pathways to Housing—have vacated the Project Area

relocation options, and the Project Area's overall contribution to the study areas' neighborhood character. The existing conditions analysis is followed by a description of the areas in the future without the Proposed Actions, and a comparison of that future baseline with the future with the Proposed Actions in order to determine whether the direct displacement would constitute a significant adverse impact. As described in Chapter 2, the analysis considers two Build years for the Proposed Actions, 2015 and 2030. Therefore, both the existing and future conditions without and with the Proposed Actions are presented in this context of these two Build years.

EXISTING CONDITIONS

This section describes the business characteristics of the Project Area and its context within the primary and secondary study areas. It begins with a discussion of historic economic trends in the City and in the Project Area, followed by descriptions of the displaced businesses and institutions, their contribution to neighborhood character, their economic value, and their relocation options.

Historic Trends

Over the past three decades, the economy of New York City has remained strong, despite significant downturns triggered by the global oil crisis of the mid-1970s, the stock market crash of October 1987, and the precipitous slide of the technology sector that began in early 2000, followed by the September 11, 2001 terrorist attacks. Total employment in New York City over the past 30 years has remained relatively stable, with two peaks in 1989 and 1999. However, in both of these years, employment did not exceed the City's all-time high, which occurred in 1969.[1]

While total employment in the City has been steady, the mix has changed significantly since 1969. The manufacturing sector, which was the leading employer in the City during the first half of the 20th century, has given way to more service-oriented industries, such as financial and business services, tourism, and entertainment. The most recent economic boom in the late 1990s was driven largely by the financial services sector along with other key industries, such as advertising, motion pictures, publishing, media, tourism, and business and computer services. The boom was also heavily influenced by high-tech and dot-com industries, which are represented by the telecommunications, business, and computer services sectors. Meanwhile, manufacturing employment continues to decline, following a decades-long trend in which manufacturing, particularly in the apparel industry, has moved to other parts of the U.S. and overseas in search of lower operating costs, including labor, utilities, and rent. Between 1969 and 1999, New York City lost more than two-thirds of its manufacturing jobs.[2] This trend has continued in the last five years as well: In 2000, average annual employment in the

---

sites on which they operated. For purposes of the FEIS analysis, they are identified as existing businesses that would be directly displaced by the Proposed Actions.

[1] Bram, Jason. "New York City's Economy before and after September 11." *Current Issues in Economics and Finance: Second District Highlights.* Federal Reserve Bank of New York. February 2003.

Bram, Jason et al. "Has September 11 Affected New York City's Growth Potential?" *Federal Reserve Bank of New York Economic Policy Review.* November 2002.

[2] Bram, Jason and Michael Anderson. "Declining Manufacturing Employment in the New York-New Jersey Region: 1969-99." *Current Issues in Economics and Finance: Second District Highlights*. Federal Reserve Bank of New York. January 2001.

manufacturing sector was 176,800; by 2005, manufacturing employment had dropped by 35 percent to 114,300 jobs.[1]

Manhattanville closely mirrors the City's historic trend toward losses in the manufacturing sector. According to a 1984 planning study conducted for the Harlem Urban Development Corporation (HUDC), in 1965 an area of Manhattanville roughly corresponding to the Project Area contained 111 firms doing business in the area, employing a total of 5,395 people.[2] By 1984, HUDC's survey of the area found 91 firms employing 1,916 people. Highlights of the decline include a reduction in the number of manufacturing businesses from 19 to 3, a decline in meat wholesalers from 18 to 11, and a decline in the number of active warehouses from 9 to 3.

Despite the sharp decline in total employment, in 1984 there were still several substantial businesses in the Project Area. One manufacturing firm was reported to have 600 employees in the area, and two smaller manufacturing firms were reported to have 94 workers between them. The meat wholesalers collectively had 135 employees. Additionally, historic Sanborn maps show that the area had many automotive related businesses in operation around that time.

There are approximately 2,766 jobs in the Project Area, an increase of over 800 jobs since the HUDC report for 1984, but far below the numbers reported for 1965. Employment growth in the Project Area is largely attributable to two business locations that opened in the 1990s and which represent the only large development seen in the Project Area in over a decade: Fairway Market, on Twelfth Avenue (450 employees); and the MTA Manhattanville Bus Depot (669 employees). Traditional "industrial" jobs (e.g., construction, manufacturing, wholesale trade, and transportation and warehousing sectors) continue to decline, with about half of current jobs in the Project Area found in those sectors. And though the area's low-rise, simple structures reflect the area's industrial roots, a more diverse mixture of uses has emerged in the Project Area, including warehouse, retail, and office uses.

Table 4-8 details the percentage of employment in the various sectors found within the Project Area. The figures are categorized by the Department of Labor's North American Industrial Classification System (NAICS), a standard method for classifying businesses in economic analyses. The area is not dominated by any one sector. The largest sector is found in transportation and warehousing, accounting for nearly 29 percent of area employees (the majority of whom are located at the MTA Manhattanville Bus Depot). The retail sector also accounts for over 20 percent of area employment, and the public administration sector comprises nearly 13 percent of all jobs in the Project Area. Though this represents a change in the Project Area over time, employment in these sectors is found predominantly along the perimeter of the Project Area.

This transition to a more diverse mix of uses can be seen in the variety of businesses now found within the Project Area. On Twelfth Avenue, for example, the Project Area's second largest employer, Fairway Market (450 retail employees), opened in 1995. Across the street, a recently renovated brick building at West 131st Street and Twelfth Avenue now houses a restaurant, a fitness consultant, two television production firms, an architecture firm, and an information technology (IT) company; and just north of the Project Area, other restaurants are contemplated. The MTA Manhattanville Bus Depot on West 133rd Street opened in 1991.

---

[1] New York State Department of Labor. "Nonfarm Employment by Industry (NAICS)." Available at: http://www.labor.state.ny.us/workforceindustrydata/apps.asp?reg=nyc&app=emp [Accessed on July 11, 2006]

[2] Harlem Urban Development Corporation, *Background Study of the Manhattanville West Pier Area*, October 1984.

Table 4-8
Total Employment by Sector in the Project Area

NAICS Economic Sector	Number of Businesses/ Institutions	Number of Jobs	Jobs as a Percentage of Total
Utilities	0	0	0.0%
Construction	7	256	9.3%
Manufacturing	3	206	7.4%
Wholesale Trade	8	90	3.3%
Retail Trade	11	596	21.5%
Transportation and Warehousing	10	785	28.4%
Information	8	68	2.5%
Real Estate and Rental Leasing	1	8	0.3%
Professional, Scientific, and Technical Services	3	51	1.8%
Health Care and Social Assistance	3	35	1.3%
Arts, Entertainment, and Recreation	7	27	1.0%
Accommodation and Food Services	5	106	3.8%
Other Services	34	175	6.3%
Public Administration	3	363	13.1%
Total Project Area	**102**	**2,766**	**100.0%**

Notes: Total is 102 businesses, not 103, because Skyline windows has employees in two sectors, manufacturing and construction, and is counted as a business in each sectors.
Since the issuance of the DEIS, several Project Area businesses—including U-Haul, Admiral Electric Corp., storage for Architectural Antiques, and Pathways to Housing—have vacated the Project Area sites on which they operated. For purposes of the FEIS analysis, they are identified as existing businesses that would be directly displaced by the Proposed Actions.
Sources: Claritas, Inc., Appleseed Inc., D & B Selectory data, Columbia University, and AKRF, Inc. through field surveys and interviews with property and business owners.

The former Warren Nash Service Station building, a seven-story loft building located at 3280 Broadway, contains a mixture of uses, including public and private sector tenants performing office-type functions, and a doll manufacturer that employs approximately 100 workers. The building also accommodates the administrative staff of Reality House, a substance abuse and HIV treatment center formerly located at 637 West 125th Street in the Project Area, as it seeks a new location for its services.[1] Furthermore, as detailed in the 2015 future without the Proposed Actions, Columbia University and a number of private applicants currently have plans to renovate existing structures into facilities with retail, office and/or residential uses.

While the redevelopment initiatives described above have occurred or are planned to occur within the Project Area, the most notable (and sizable) redevelopment has occurred outside the Project Area's boundaries, including the 35-story Riverside Park Community apartments at 3333 Broadway to the north; the New York City Housing Authority's 20-story Manhattanville Houses and 21-story General Grant Houses to east and south, respectively; and the 26-story building at 560 Riverside Drive to the south. The prominent 125th Street retail corridor ends abruptly at Broadway, where the Project Area begins. In addition, institutional redevelopment continues to the east (City College) and the south (Columbia University).

[1] Reality House provided employment, educational, housing, and legal services to the local population in Harlem, Washington Heights, and the South Bronx, and is funded by the New York State Office of Alcoholism and Substance Abuse Services (OASAS). Reality House is currently in receivership and closed its operations at 637 West 125th Street in the middle of 2006, prior to Columbia entering into a contract to purchase the property. OASAS is working with Reality House to re-establish and relocate its programs to other facilities in Northern Manhattan. During this period of transition, Columbia is providing temporary office space in 3280 Broadway, a University-owned building. Because Reality House closed its operations independent of the Proposed Actions, it is not a directly displaced institutional use.

Profiles of Directly Displaced Businesses and Institutions

This section describes in detail the businesses and institutions within the Project Area that would be displaced by the Proposed Actions, including their employment, economic sector, and customer base. As with the presentation of total Project Area employment in Table 4-8, the economic sectors used to classify potentially displaced businesses are based on NAICS.

There are 363 employees currently working at four public agencies within the Project Area, including MTA, HPD, New York City Human Resources Administration (HRA), and the New York City Police Department (NYPD). MTA operates a maintenance facility at 640 West 131st Street. HPD's Office of Property Management and NYPD occupy office space in a seven-story building located at 3280 Broadway on the southeast corner of Broadway and West 133rd Street. Located east of Broadway outside of the Academic Mixed-Use Area at 530 West 135th Street is HRA's Hamilton Job Center, a community job center and welfare office. All of these uses are located on projected development sites either in the Academic Mixed-Use Area or in the Other Areas (in the case of the Hamilton Job Center, whose site would not be redeveloped by Columbia). Government agencies are not the subject of direct displacement analysis under CEQR, since it is assumed that government agencies will continue in operation with or without the Proposed Actions. The City is likely to retain the employees who would be displaced, as well as the services provided to the City by those employees. Additionally, the NYPD, HPD, and MTA facilities in the Project Area serve a City-wide customer base, and the services they provide to Manhattanville residents are not contingent on their proximity to local residents. It is assumed that the City would find suitable sites (although not necessarily in the study areas) for displaced public facilities.

The services provided by HRA's Hamilton Job Center, however, are location-dependent. Job Centers provide on-site access to job search and placement services, child care information, vocational, educational and training services, and referrals for Medicaid, food stamps, and other emergency assistance benefits. Given the high unemployment rate in the study areas compared with Manhattan and New York City as a whole, and the Hamilton Job Center's close proximity to several public housing complexes which contain a high percentage of unemployed and underemployed residents, the Hamilton Job Center has substantial economic value to the region, and that value is created in large part by its location in Manhattanville. It is assumed that if displaced, the City would continue to provide the services at a different site in the study areas. Real estate data suggests that the Hamilton Job Center would be able to relocate in comparably-sized commercial space within the secondary study area.

As shown in Table 4-9, the Proposed Actions could directly displace a cumulative total of 86 businesses and institutions and 880 jobs associated with those businesses and institutions within the Project Area.[1] Displacement by subdistrict is provided in Table 4-10. Since the direct business

[1] Direct business and institutional displacement is defined by the *CEQR Technical Manual* as the involuntary displacement of businesses or institutions from the site of a proposed action. Columbia University has been purchasing property to facilitate the assemblage of the project site for development. Owners who operated businesses on their properties and decided to sell their properties to the University are not defined as directly displaced by the Proposed Actions under CEQR because they voluntarily sold their properties. Similarly, commercial tenants who have vacated their space pursuant to an agreement with the University and who have acquired a new space in which to relocate their business are not defined as directly displaced. The businesses and institutions that have vacated space now owned by Columbia University are discussed in Appendix C, "Recent Trends." Businesses and institutions that are new to the Project Area (i.e., since 2000) and that have signed short-term leases with Columbia University also are not considered directly displaced because they entered a voluntary lease agreement

displacement would occur over a 20-year period, it is possible that the future composition of the businesses in the Project Area would change over time. However, for purposes of analysis, it would be highly speculative to use different baseline data, and, therefore, the analysis assumes that all businesses currently in operation would be directly displaced. A listing of all businesses and institutions considered to be displaced for this analysis is provided in Appendix B.1, Table B.1-1. As shown in Table 4-9, jobs in other services would be the largest employment type to be displaced in the Project Area, accounting for 18 percent of all displaced jobs. Employers include 19 auto repair businesses, five public parking lots, three beauty salons, an upholstery repair company, a dry cleaning plant, two small churches, and a community center. The auto repair businesses account for 107 of the 158 employees in this sector and are a notable presence in the Project Area. Consisting of 19 small businesses, most with 10 employees or less, these auto repair businesses collectively offer a variety of services, such as paint and body work, general engine maintenance, and tire repair. The majority of repair businesses are clustered at 3251 Broadway and 547–553 West 133rd Street, with the remaining seven repair businesses scattered throughout the Project Area. The six public parking lots are located throughout the Project Area and primarily provide monthly parking to individuals who live or work in the area.[1] The three beauty salons are on the periphery of the Project Area, with two on West 135th Street east of Broadway and one near the intersection of West 125th and West 129th Streets. The two small churches—Iglesia el Encuentro con Dios (Meeting With God Pentecostal Church, Inc.) and Iglesia de Dios Pentecostal (Pentecostal Church of God, International Movement)—occupy converted residential and industrial buildings at 601 West 130th Street and 622 West 131st Street, respectively. Finally, the Eritrean Community Center, located along West 125th Street west of Broadway, serves as a social gathering place for Eritrean people. While the beauty salons and churches serve nearby residents, the Eritrean Community Center serves the Eritrean population from throughout the tri-state area.

Table 4-9
Displaced Businesses and Institutions and Employment in the Project Area

NAICS Economic Sector	Number of Businesses/ Institutions	Number of Jobs Displaced	Displaced Jobs as a Percentage of Total Displaced Jobs
Utilities	0	0	0.0%
Construction	5	150	17.0%
Manufacturing	1	6	0.7%
Wholesale Trade	6	71	8.1%
Retail Trade	9	136	15.5%
Transportation and Warehousing	7	104	11.8%
Information	8	62	7.0%
Real Estate and Rental Leasing	1	8	0.9%
Professional, Scientific, and Technical Services	2	41	4.7%
Health Care and Social Assistance	1	11	1.3%
Arts, Entertainment, and Recreation	7	27	3.1%
Accommodation and Food Services	5	106	12.0%
Other Services	32	158	18.0%
Public Administration	0	0	0.0%
TOTAL PROJECT AREA	**85**	**880**	**100.0%**

Sources: Claritas, Inc., Appleseed Inc., D & B Selectory data, Columbia University, Business Owners, and AKRF, Inc.

with the University, knowing that they would eventually be displaced. The 85 businesses and institutions and approximately 800 employees that could be directly displaced by the Proposed Actions include six businesses and 89 employees that would be displaced in the future without the Proposed Actions, according to the development assumptions associated with the Tuck-It-Away and Hudson North American rezoning applications.

[1] Off-street parking survey conducted by Sam Schwartz, PLLC, on June 29 to July 1, 2005

Table 4-10
Displaced Businesses and Institutions and Employment by Subdistrict

NAICS Economic Sector	Number of Businesses/ Institutions	Number of Jobs Displaced	Displaced Jobs as a Percentage of Total Displaced Jobs
Subdistrict A (Academic Mixed-Use Area)			
Utilities	0	0	0.0%
Construction	3	125	14.2%
Manufacturing	1	6	0.7%
Wholesale Trade	5	70	8.0%
Retail Trade	8	114	13.0%
Transportation and Warehousing	6	99	11.3%
Information	9	62	7.0%
Real Estate and Rental Leasing	1	8	0.9%
Professional, Scientific, and Technical Services	2	41	4.7%
Health Care and Social Assistance	1	11	1.3%
Arts, Entertainment, and Recreation	7	27	3.1%
Accommodation and Food Services	4	94	10.7%
Other Services	28	145	16.5%
Public Administration	0	0	0.0%
Subtotal	**75**	**802**	**91.1%**
Subdistrict B and the Other Areas			
Utilities	0	0	0.0%
Construction	2	25	2.8%
Manufacturing	0	0	0.0%
Wholesale Trade	1	1	0.1%
Retail Trade	1	22	2.5%
Transportation and Warehousing	1	5	0.6%
Information	0	0	0.0%
Real Estate and Rental Leasing	0	0	0.0%
Professional, Scientific, and Technical Services	0	0	0.0%
Health Care and Social Assistance	0	0	0.0%
Arts, Entertainment, and Recreation	0	0	0.0%
Accommodation and Food Services	1	12	1.4%
Other Services	4	13	1.5%
Public Administration	0	0	0.0%
Subtotal	**10**	**78**	**8.9%**
TOTAL PROJECT AREA	**85**	**880**	**100.0%**

Notes: There are no businesses directly displaced from Subdistrict C
Sources: Claritas, Inc., Appleseed Inc., D & B Selectory data, Columbia University, Business Owners, and AKRF, Inc.

Five construction businesses would be displaced, with a combined total of 150 workers, or 17 percent of displaced employment. Four firms provide contracting and construction management (Mamais Contracting Corporation, Admiral Electric Corp., Deborah Bradley Construction & Management Services, and Pizzo Brothers), while one firm sells and installs construction-related materials (Westside Stone and Marble). These firms provide services to businesses and individuals throughout Manhattan and New York City, including Columbia.

Nine retail businesses would be displaced, accounting for 136 employees, or 16 percent of displaced employment. Businesses in the sector include an auto parts store, four gas stations, El Mundo department store, a clothing store, a pharmacy, and a C-Town grocery store. These businesses all operate retail storefronts along Broadway, with two exceptions: the clothing store is located just off Broadway at 526 West 134th Street, and one of the gas stations is located on 125th Street. These retail businesses all offer neighborhood-oriented services and products to the local population, with the exception of the gas stations, which serve the needs of a broader customer base.

Businesses that would be displaced in the accommodation and food services sector account for 106 jobs (12 percent of the total displaced employment) and include three restaurants (Dinosaur Bar-B-Que, Mi Floridita, and the Hudson River Café); Josh's Catering; and a nightclub (the Cotton Club). Dinosaur Bar-B-Cue and the Cotton Club both attract residents and tourists from outside the local area, while Mi Floridita tends to serve more local resident and worker populations.

The transportation and warehousing sector accounts for 12 percent of total potential displaced employment (104 jobs). The sector is comprised solely of moving and/or storage companies, contributing to a notable presence in the Project Area. Businesses include Tuck-It-Away, Despatch Moving and Storage, and Hudson North American. Tuck-It-Away, which maintains four buildings in the area (655 West 125th Street, 608 West 131st Street, and 3261 and 3338 Broadway), is a self-storage company serving local residents and businesses. Despatch and Hudson North American, located at 3247 and 3229 Broadway, respectively, provide moving and storage services to individual and business clients, including the home furnishings and fine arts industries. Eight percent of potentially displaced employment (71 jobs) would occur at six wholesale trade businesses, including Ashland Chemical, Pearlgreen Corporation, a kitchen supply company, a small Tommy Hilfiger storage facility, and two meat distributors (Alpine Beef and Ace Packing). The meat wholesalers are located along Twelfth Avenue, while the remaining wholesalers are scattered throughout the site. With approximately 38 jobs, Pearlgreen Corporation, which provides building maintenance and contractor supplies, is the largest employer in this sector. Ashland Chemical, which provides water treatment chemicals and has 17 employees, services customers throughout the tri-state area and operates other locations in New York City.

The Project Area's potentially displaced information sector comprises nine businesses, totaling 62 employees, or 7 percent of the Project Area's displaced employment. Three businesses, Cingular, AT&T, and T-Mobile, have cell towers on the roofs of 3280 Broadway and 601 West 133rd Street, and rent equipment rooms within the building. At 646 West 131st Street, there are one IT company (Moxnet) and two television production companies (Life TV and Triple Threat TV). In addition, Verizon operates two dispatch facilities at 641-655 West 131st Street and 640 West 132nd Street.

Of the two businesses that would be displaced in the professional, scientific, and technical services sector, the majority of employment is provided by Peter Gluck and Partners Architects at 646 West 131st Street, which employs a staff of 40 people and provides architectural services for clients throughout the U.S. The satellite office of a scientific research and development firm, Optical Imaging, has one employee at 3280 Broadway.

The arts, entertainment, and recreation sector includes two employees at a small gym and the approximately 25 artists working in the area, representing 3 percent of displaced employment. The various artists in the Project Area include painters, sculptors, musicians, and ceramicists, and are located in three buildings: three artists affiliated with the University maintain studios at 3280 Broadway; two are located at 638 West 131st Street and approximately 20 artists maintain a presence at 623 West 129th Street. The artists at 638 West 131st Street share studio space on two floors of the building.

Only one institution, Pathways to Housing, would be displaced in the health care and social services sector, accounting for 1 percent (11 employees) of potentially displaced employment. Recently located at 3280 Broadway, Pathways to Housing is a nonprofit organization that facilitates housing for homeless people with mental illness.

The real estate and rental leasing sector accounts for less than 1 percent of potentially displaced employment, and comprises one firm, U-Haul, formerly located on the corner of 132nd Street and Broadway, with eight employees.

Less than 1 percent of potentially displaced employment could occur in the manufacturing sector, all at Daphne Studio, which has 6 employees.

Finally, Con Edison has a cooling station located between West 131st and West 132nd Streets and Broadway and Twelfth Avenue that may be relocated to allow construction of the new buildings in Subdistrict A; however no local employment would be displaced.

Contribution to Neighborhood Character

According to the *CEQR Technical Manual*, neighborhood character is defined by certain features, such as land use, urban design, visual resources, historic resources, socioeconomic conditions, traffic, or noise, which, depending on the neighborhood in question, create its distinct "personality." In this section, socioeconomic character is analyzed according to: (1) the types of employment (determined by NAICS economic sector) that would be displaced by the Proposed Actions relative to the types of employment that are prevalent in the primary and secondary study areas, and (2) the number of jobs provided to local residents, defined as residents of the primary and secondary study areas for the purposes of this analysis. Consideration of the fundamental change to neighborhood character within the Project Area itself (separate from the study areas) is discussed in detail in Chapter 10, "Neighborhood Character."

Employment Types

As shown in Table 4-11, according to the 2000 Census the primary study area contains a wide distribution of employment types, totaling 6,910 jobs, with a particular concentration in the education, health, and social services sector. This sector accounts for 43.9 percent of total area employment (3,035 employees), reflecting the portion of the City College of New York (CCNY) campus that lies within the primary study area boundary. The second largest employment sector is transportation, warehousing, and utilities, at 12.9 percent of total employment (890 workers), followed by public administration, which accounts for 8.5 percent of area employment and 590 workers.

Table 4-11
Primary Study Area Employment by Industry

Industry	Employment	Percent of Study Area Employment
Agriculture, forestry, fishing and hunting, and mining	0	0.0
Construction	195	2.8
Manufacturing	214	3.1
Wholesale trade	114	1.6
Retail trade	404	5.8
Transportation, warehousing, and utilities	890	12.9
Information	140	2.0
Finance, insurance, real estate, and rental and leasing	410	5.9
Professional, scientific, management, administrative, and waste management services	220	3.2
Educational, health, and social services	3,035	43.9
Arts, entertainment, recreation, accommodation, and food services	335	4.8
Other services (except public administration)	363	5.2
Public Administration	590	8.5
Armed Forces	0	0.0
Total	**6,910**	**100**

Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

In 2000 there were approximately 27,029 people employed in the secondary study area and, as shown in Table 4-12, the percentages of employees in various economic sectors are very similar to that of the primary study area. Over half (54 percent) of total employment is in the education, health, and social services sector, indicating the strong employment presence of CCNY and Columbia University, whose campuses both lie within the secondary study area. Similar to the primary study area, the transportation, warehousing, and utilities sector is a distant second in terms of employment, accounting for 10 percent of total employment, or approximately 2,675 jobs. With 2,203 jobs, the other services sector accounts for the third largest number of employees, representing 7.9 percent of total area employment. Other services includes various repair and maintenance services (e.g., automotive, machinery, and electronics), and other types of neighborhood services typical in residential areas, such as beauty salons, laundries, funeral homes, and religious and civic organizations.

Table 4-12
Secondary Study Area Employment by Industry

Industry	Employment	Percent of Study Area Employment
Agriculture, forestry, fishing and hunting, and mining	10	0.0
Construction	695	2.5
Manufacturing	294	1.1
Wholesale trade	154	0.5
Retail trade	1,184	4.5
Transportation, warehousing, and utilities	2,675	10.1
Information	625	2.2
Finance, insurance, real estate, and rental and leasing	849	3.0
Professional, scientific, management, administrative, and waste management services	1,230	4.4
Educational, health and social services	15,120	54.0
Arts, entertainment, recreation, accommodation, and food services	1,350	5.5
Other services (except public administration)	2,203	7.9
Public administration	1,040	4.0
Armed Forces	0	0.0
Total	**27,029**	**100**

Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

2000 Census data indicate that the economic sectors with the highest employment in the primary and secondary study areas (i.e., those which contribute most significantly to defining the area in an economic sense) are education, health and social services; and to a lesser extent transportation, warehousing, and utilities. These sectors are not, in large part, those that could be displaced in the Project Area (see Table 4-13). Less than 1 percent of jobs in the primary study area's educational, health, and social services sector are based in the Project Area. The Project Area's transportation, warehousing, and utilities sector accounts for under 12 percent of primary study area employment and 4 percent of secondary study area employment for the same sector. Overall, the businesses and institutions that could be displaced are not a defining element of the character of the study areas.

Table 4-13
Directly Displaced Employment as a Percentage of Primary and Secondary Study Area Employment

Industry	Displaced Employment[2]	Displaced Employment as a Percent of Total Industry Sector Employment in Primary Study Area[2]	Displaced Employment as a Percent of Total Industry Sector Employment in Secondary Study Area[2]
Construction	150	76.9%	21.6%
Manufacturing	6	2.8%	2.0%
Wholesale Trade	71	62.3%	46.1%
Retail Trade	136	33.7%	11.5%
Transportation and warehousing and utilities	104	11.7%	3.9%
Information	62	44.2%	9.9%
Finance, insurance, real estate, and rental and leasing	8	2.0%	0.9%
Professional, scientific, management, administrative, and waste management services	41	18.6%	3.3%
Educational, health and social services	11	0.4%	0.1%
Arts, entertainment, recreation, accommodation and food services[1]	133	39.7%	9.9%
Other services (except public administration)	158	43.5%	7.2%
Public Administration	0[3]	n/a[3]	n/a[3]
Total	**880**	**12.7%**	**3.3%**

Notes:
1. Employment in Project Area NAICS sectors, arts, entertainment, and recreation and accommodation and food services, have been combined to more closely reflect 2000 Census economic categories
2. Project Area displaced figures represent 2006 employment estimates based on field surveys and interviews with businesses, and D&B Selectory data, while primary and secondary employment levels are from Census 2000 data.
3. Jobs in Public Administration are not the subject of direct displacement analyses under CEQR. The 367 Public Administration jobs in the Project Area comprise approximately 62 percent of the public administration jobs in the primary study area and approximately 35 percent of the public administration jobs in the secondary study area.

Sources: Claritas, Inc., Appleseed Inc., D&B Selectory, and AKRF, Inc., U.S. Department of Commerce, Bureau of Census, 2000 Census.

Economic Value of Displaced Businesses and Institutions

As set forth in the *CEQR Technical Manual*, the consideration of a business or institution's economic value is based on: (1) its products and services; (2) its location needs, particularly whether those needs can be satisfied at other locations; and (3) the potential effects, on businesses or consumers, of losing the displaced business or institution as a product or service. This criterion focuses on the potential effects on displaced businesses and institutions, their consumers, and the remaining area businesses. In this section, the economic value of potentially displaced businesses is discussed first, followed by a separate discussion of potentially displaced institutions. As mentioned in the previous section, two economic sectors—transportation and warehousing, and other services—have a significant presence of a particular sub-sector. The other services sector includes a concentration of auto repair businesses, while the transportation and warehousing sector is comprised entirely of moving and storage companies. These sectors will therefore be discussed individually before a discussion of the businesses in the remaining sectors.

Construction Businesses

There are five construction sector businesses in the Project Area, collectively employing 150 people. These businesses specialize in both general contracting and construction management

(Mamais, Deborah Bradley Construction & Management, Admiral Electric, Pizzo Brothers), and installation of specialty materials such as countertops and flooring (Westside Stone and Marble).

Neither the products, services, nor location of the potentially displaced businesses, nor the possible effects on businesses or consumers of losing these displaced businesses, classify them, either individually or collectively, as having substantial economic value to the City or the region. The products and services provided by these businesses are not unique to the Project Area; there are numerous other contracting and construction-related businesses located in Northern Manhattan and other areas of the City. In addition, the products and services provided by these businesses—and the viability of the businesses—are not contingent on their location in the Project Area. The business locations in the Project Area are primarily for administrative office use and material storage, with a majority of work activity occurring off-site at client locations in the study areas, throughout the City, and beyond. The potentially displaced businesses could maintain their existing client base and continue to provide similar products and services if they were to relocate within the study areas or even within the City more broadly. Additionally, because the construction sector is not a defining sector of the area—it represents less than 3 percent of total employment in both the primary and secondary study areas—the potential displacement of this employment would not alter a defining element of the area's character.

Auto Repair Businesses

There are 19 auto repair businesses in the Project Area, collectively employing approximately 107 employees. As shown in Figure 4-3, there are approximately 189 auto repair businesses in nearby areas of Manhattan, including the Upper West Side, the Upper East Side, Harlem, Washington Heights, and Inwood. An additional 305 businesses are in the southernmost tip of the South Bronx, indicating that the potentially displaced businesses' auto repair services are not unique to the local area or the City as a whole, and that these services would easily be obtained elsewhere by local residents and businesses.[1] Automobile owners currently accustomed to servicing their cars in the Project Area would have access to a total of 494 auto repair businesses within a short driving distance from the displaced businesses. Additionally, the auto repair businesses' location in the Project Area is not imperative to their viability, as the demand for auto repair services are not unique to Manhattanville. Real estate data shows that commercial and manufacturing zoned space is available nearby in the Bronx or elsewhere in New York City. In conclusion, neither the products, services, nor location of the potentially displaced businesses, nor the possible effects on businesses or consumers of losing these displaced businesses, classify them, either individually or collectively, as having substantial economic value to the City or region.

Storage and Moving Businesses

There are three moving and storage companies in the project area, accounting for approximately 103 jobs in the Project Area. Tuck-It-Away offers storage (with moving services to and from the storage facility), while Despatch Moving and Storage and Hudson North American provide local and long-distance moving services, in addition to storage facilities. While both moving and storage services are often offered by a single company, the economic nature of each service has some fundamental differences and are, therefore, discussed separately below.

[1] Numbers include auto repair businesses listed in the Verizon business white pages. Businesses which appear to primarily offer towing services or gas were not included.

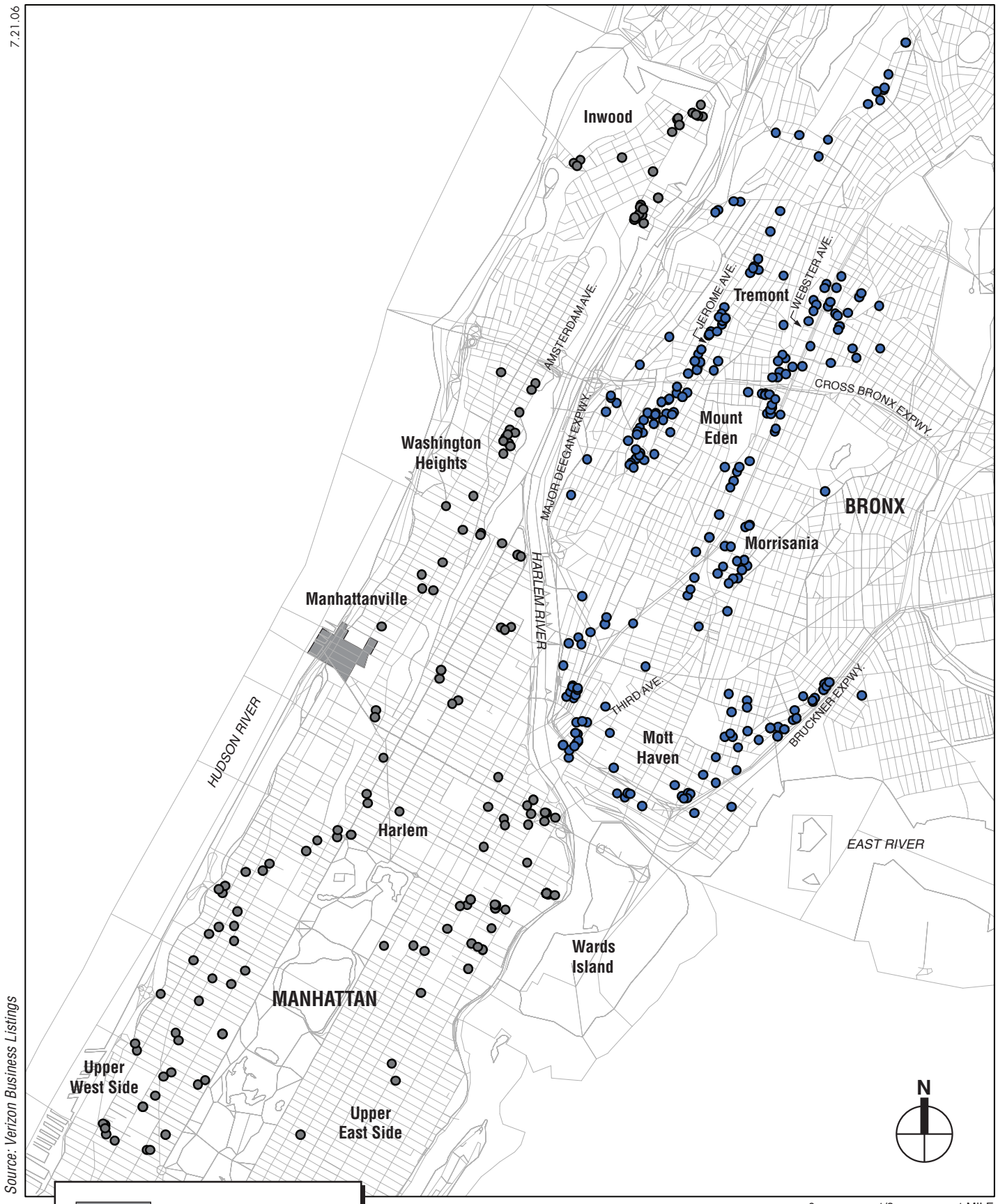


Figure 4-3

Auto Repair Businesses in Northern Manhattan and South Bronx

There are approximately 62 moving companies based in Manhattan north of 59th Street and 95 moving companies based in the South Bronx, indicating that the potentially displaced businesses' moving services are not unique to the local area, Manhattan, or New York City, and that these services would easily be obtained elsewhere by local residents and businesses. In addition, numerous other moving businesses serve customers in the primary and secondary study areas, though their central offices are located outside of the local vicinity. Additionally, it is typically not necessary for the location of their moving trucks to be in extremely close proximity to their customers. In addition, it is common for many administrative, scheduling, and customer service arrangements to be handled over the phone, such that it would not require that the customer be located in the same local neighborhood as the moving business. Therefore, neither the products, services, nor location of the potentially displaced businesses, nor the possible effects on businesses or consumers of losing these displaced businesses, classify them, either individually or collectively, as having substantial economic value to the City or region.

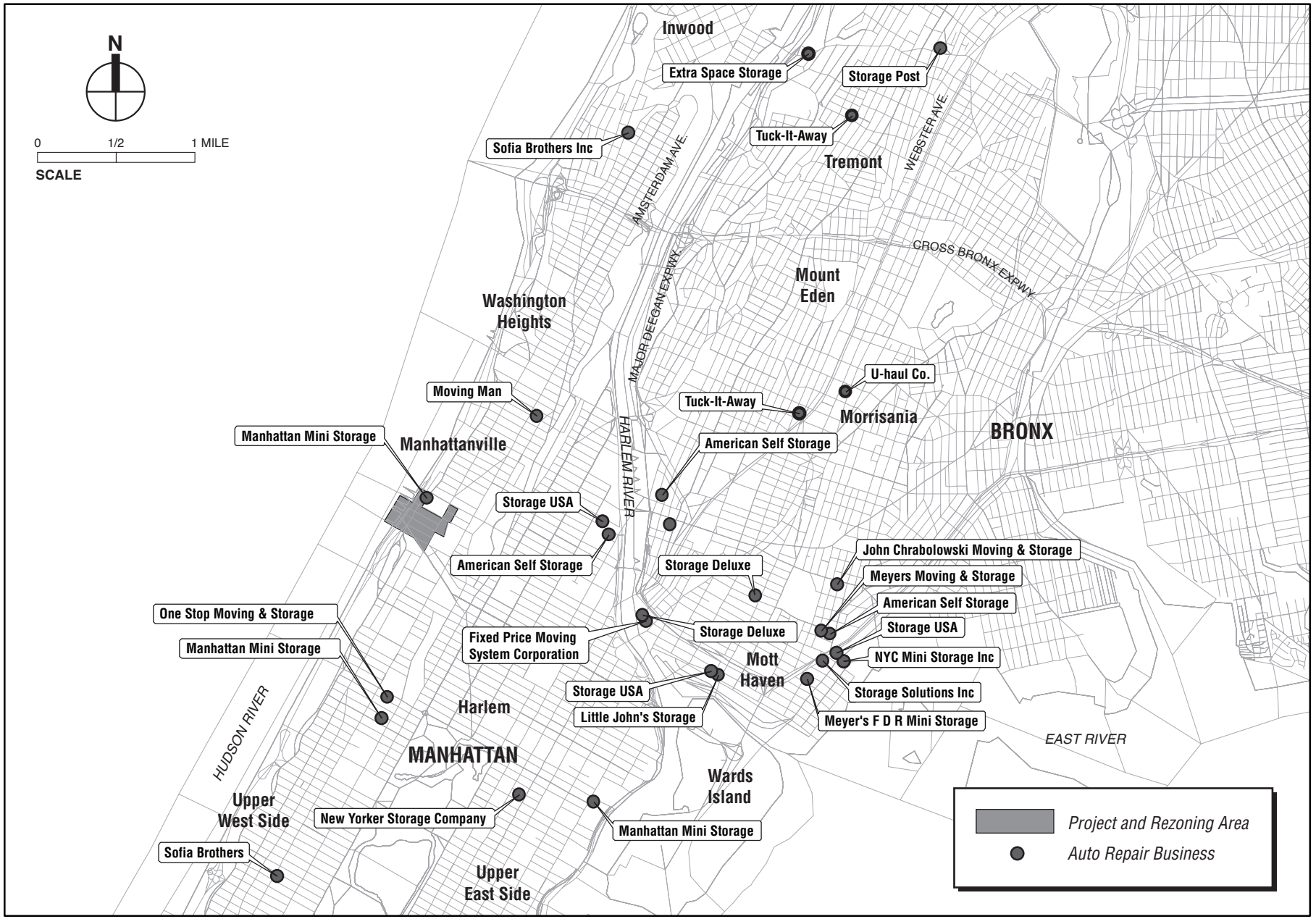
Storage facilities, on the other hand, are often more location-dependent than moving services, because it is common for customers to be required to visit the location themselves and are, therefore, more sensitive to the distance between their home or business and the storage facility. The farther away a storage facility is from a business or residence, the greater the time and transportation costs. As shown in Figure 4-4, there are approximately 10 storage facilities in Northern Manhattan and 18 in the South Bronx, for a total of 28 storage businesses in fairly close proximity to the Project Area. This data indicates that storage services are not unique to the local area, Manhattan, or the City, and customers would be able to find comparable services within a short distance from the potentially displaced businesses' current location; however, the customer's transportation costs may increase in some cases. Other businesses in the primary and secondary study areas do not depend on the availability of highly local warehousing of their products in these storage facilities. Instead, these storage companies tend to serve businesses located throughout Manhattan and New York City. Therefore, neither the products, services, nor location of the potentially displaced businesses, nor the possible effects on businesses or consumers of losing these displaced businesses, classify them, either individually or collectively, as having substantial economic value to the City or region.

Remaining Businesses

The remaining sectors' business activities vary within each of the Project Area's economic sectors. For example, the wholesale trade sector distributes an assortment of products such as water treatment chemicals, and meats and poultry. The nine retail businesses provide products such as auto parts, clothes, and groceries. Other businesses include restaurants, beauty salons, artists, and an architecture firm. These businesses provide products and services that are available elsewhere in Manhattan and New York City and, in many cases, within the primary and secondary study areas. Therefore, these businesses' products and services do not classify them as having substantial economic value. Additionally, the products and services offered by potentially displaced businesses in these sectors are not uniquely demanded by the Manhattanville residential or businesses community, and it is therefore possible for these businesses to continue their operations elsewhere in the City.

The types of businesses in the Project Area that local customers might rely upon for goods and services (e.g., gas stations, beauty salons, restaurants) are present elsewhere in the primary and secondary study areas. The other businesses subject to displacement are neither businesses that local consumers would rely upon, nor businesses that might need close proximity to specific partners or a particular customer base. Therefore, the products and services offered by these

7.21.06



Source: Verizon Business Listings

Figure 4-4

Storage Businesses in Northern Manhattan and South Bronx

businesses in the Project Area and the potential effects of their displacement on local businesses and consumers would not classify them as having a substantial economic value to the City or region.

The five off-street parking facilities that would be directly displaced do not substantially contribute to the economic viability of the surrounding area. Approximately 15 percent of the off-street parking spaces (102 spaces) are currently used by local residents or businesses, including those residing or working in the Project Area. The remaining approximately 577 spaces are used by the University, commuters, and others. The loss of these spaces would not significantly affect the consumer base of any businesses outside the Project Area; the area is well-served by public transit, and neighborhood retail and service establishments generally are not dependent upon auto-generated customer trips.

In sum, neither the products, services, nor location of these remaining potentially displaced businesses, nor the possible effects on businesses or consumers of losing these displaced businesses, classify them, either individually or collectively, as having substantial economic value to the City or region.

Institutions

There is one health and social services organization, two churches, and one community center in the Project Area that could be displaced by the Proposed Actions. These institutions account for 2 percent of displaced jobs in the Project Area (approximately 20 employees). Institutional uses, by their nature, are often more sensitive to displacement due to the services they provide to the local community.

Pathways to Housing, a nonprofit organization that facilitates housing for homeless people with mental illness, operates several offices throughout New York City and until June 2007 utilized an office at 3280 Broadway (used as an administrative office, not a walk-in center). The employees from the 3280 Broadway location have temporarily relocated to an existing Pathways to Housing office at 55 West 125th Street until lease terms for a new space are finalized. The two churches within the Project Area—Iglesia el Encuentro con Dios and Iglesia de Dios Pentecostal—occupy converted industrial and residential buildings 601 West 130th Street and 622 West 131 Street, respectively. The nature of churches is such that they are location-dependent because they serve a local congregation who would be adversely affected if the churches were not able to relocate to a nearby location.

The Eritrean Community Center occupies a one-story commercial building, with space for various types of social gatherings and includes a stage, a pool table, and several tables. This center attracts people of Eritrean ethnicity from the greater New York City metropolitan area, not only the local Manhattanville population; relocating to another part of Manhattan or New York City could be a viable option for the community center. Additionally, a comparably sized commercial location suitable for this type of use is readily available in Manhattan or throughout New York City.

Relocation Options

Businesses that would be displaced by the Proposed Actions are located in retail, commercial, office, or industrial space. Current real estate data, property listings, and interviews with real estate brokers at Massey Knakal, Tamerlain, Greiner Maltz, and Kalmon Dolgin suggest that these businesses would have opportunities to relocate to suitable locations in New York City; in

some cases their occupancy costs would likely increase, as rents for several tenants in the Project Area are depressed relative to many other retail, office, and industrial areas in the City.

Retail businesses would likely be able to relocate within the secondary study area, as commercial brokers indicate that retail space is readily available. Rents are approximately $25-30/sf on Broadway between West 135th and West 145th Streets, and $20-25/sf on Amsterdam Avenue between West 130th and West 145th Streets. Directly north of the secondary study area, rents on Broadway range between $25-40/sf (rents are the most expensive near West 168th Street and less expensive north and south of this commercial center). Retail rents on Amsterdam Avenue follow similar trends as on Broadway, but tend to be about $5-10 less per sf. Retail space in the Bronx is typically $25-35/sf for neighborhood retail and $40-100/sf for space in high-traffic areas like Fordham Road or The Hub. In addition to these nearby retail relocation options, ample retail space is available throughout New York City.

Several potentially displaced businesses occupy office space in the Project Area and pay between $15 and 25/sf to lease their space. As of the third quarter of 2006, the commercial office vacancy rate in Manhattan was 6.4 percent, with 32.3 million sf of office space available (the vacancy rate in Harlem/Northern Manhattan was 13.2 percent, with approximately 565,000 square feet of vacant space).[1] Quoted rental rates for vacant office space in Manhattan ranged between $34 and $79/sf for Class A space, between $30 and $61/sf for Class B space, and between $26 and $50/sf for Class C space.[2] In the Bronx, as of the third quarter of 2006, approximately 432,000 sf of Class B office space was available with a quoted rate of $24/sf; and 102,000 sf of Class C office space was available with a quoted rate of $20/sf.[3] In Brooklyn, as of the third quarter of 2006, approximately 526,000 sf of Class A office space was available with a quoted rate of $35/sf; over 1 million sf of Class B office space was available with quoted rates between $22 and $31/sf; and approximately 319,000 sf of Class C office space was available with quoted rates between $21 and $26/sf.[4] In Queens, as of the third quarter of 2006, approximately 221,000 sf of Class A office space was available with quoted rates between $23 and $35/sf; approximately 675,000 sf of Class B office space was available with quoted rates ranging between $18 and $25/sf; and approximately 346,000 sf of Class C office space was available with quoted rates ranging between $18 and $23/sf.[5] Although quoted rental rates in Manhattan are currently above the range of rents paid by office-based businesses in the Project Area, they would be able to relocate either in Manhattan or other boroughs, where comparably-priced office space is available.

According to the Society of Industrial and Office Realtors (SIOR), there were approximately 13.6 million sf of vacant industrial space in the boroughs of Manhattan, Brooklyn, Queens, and the Bronx in 2004. 4.5 million sf the City's available industrial space was located in Manhattan, however, at prices of $175 to $1,400 per sf, industrial tenants cannot afford the occupancy costs, and the space will more likely be leased by commercial tenants or redeveloped for residential use. For example, the majority of properties in the manufacturing-zoned district outside of the Project

---

[1] CoStar Group, "The CoStar Office Report; New York City Office Market, Third Quarter 2006."

[2] *Ibid*. Quoted rental rates for vacant office space in Harlem/Northern Manhattan were $29.91/sf for Class B space (347,000 vacant sf) and $33.08/sf for Class C space (218,000 vacant sf).

[3] CoStar Group, "The CoStar Office Report: Westchester/Southern Connecticut Office Market, Third Quarter 2006."

[4] CoStar Group, "The CoStar Office Report: Long Island Office Market, Third Quarter 2006."

[5] *Ibid*.

Area in the study area (bounded by West 130th Street to the north, West 125th Street to the south, Morningside and Convent Avenues to the east, and Amsterdam Avenue to the west) is owned by the development company Janus Vii, who has their own redevelopment plans, making relocation by displaced industrial businesses unlikely to occur in this area.

SIOR reports that in 2004, Queens and Brooklyn had 8.5 million sf of industrial space available with a vacancy rate of 4.06 percent. Interviews with real estate brokers indicate that, for those looking to purchase industrial property, the real estate market is tight in Queens and Brooklyn; however, if a buyer wanted to purchase a property, they would be able to. Current sales prices are typically about $180 to 225/sf in Queens and Brooklyn, while industrial rents tend to range from $11-15/sf. Brokers indicated that there is ample industrial space for lease in Queens and Brooklyn.

Real estate listings from August 2006 indicated that industrial space in the Bronx was approximately $100-250/sf; however, local real estate brokers state that finding industrial space for purchase is very difficult. In 2004, SIOR reported the Bronx to have a shortage of industrial space, with only 600,000 sf available in 2004 and a vacancy rate of 2.9 percent. However, real estate brokers state that there is ample space to lease in the Bronx and properties are available across a variety of sizes. Industrial rents in the Bronx are typically $8–15/sf.

Potentially displaced businesses currently pay approximately $2-$15/sf for industrial space. Existing auto-related uses in the Project Area that currently lease space would likely be able to relocate in the Bronx, as rents under $10/sf are available. Storage businesses that prefer to own their properties and require larger space may opt to move to Queens or Brooklyn, where more properties are available for purchase.

Current real estate data suggests that the potentially displaced storage companies would most likely be able to relocate in other commercial or manufacturing zones throughout the City, most likely in the Bronx, Queens, or Brooklyn. Because of the nature of tractor trailer moving trucks, which are difficult to maneuver on small streets, it is imperative for companies to be located along routes that allow for easy access in and out of the storage facility. To attract comparable numbers of residential customers, any new location should be accessible to public transportation. While it would be difficult for the existing businesses to capture as many Columbia University or City College students as they currently do, this customer base is not imperative to their viability as storage businesses.

The Cotton Club, which—although not in its original location—continues to be a tourist attraction for Harlem and likely would be dependent upon its relocation in Harlem to maintain its tourism draw. Local real estate brokers indicate that suitable relocation space for an entertainment establishment like the Cotton Club often becomes available on, or close to, West 125th Street. Given that the Cotton Club has shown that it can succeed in an alternative location, it is reasonable to assume that the establishment could be successful at a new location in Harlem, assuming its owner is willing to lease space.

Pearlgreen Corporation and Skyline Windows have indicated to Columbia their plans to move from the Project Area as soon as suitable alternative locations are available. Skyline Windows has identified an alternate location in the South Bronx that is currently being renovated for their use, and plans to relocate as soon as the renovation is complete. They are therefore not considered displaced under the parameters of CEQR analysis. Pearlgreen Corporation has been conditionally designated by the New York City Economic Development Corporation for the proposed sale, development, and use of a site in Bathgate Industrial Park in the Bronx. If the

Bronx site is not acquired, Columbia would give Pearlgreen Corporation time to identify and relocate to an alternate site.

FUTURE WITHOUT THE PROPOSED ACTIONS—2015

This section describes the business and economic conditions that are expected in the future without the Proposed Actions, presenting development and economic changes that are projected to occur in the Project Area by 2015. Future development projects within the Project Area that have been announced, are in an approval process, or are being constructed, and proposals for rezoning and public policy initiatives likely to be built by 2015 without the Proposed Actions, are included in Table B.1-8 in Appendix B.1. In the 2015 future without the Proposed Actions, there is one new commercial development that is expected to occur with or without approval of the Proposed Actions. Additionally, there are two academic developments and five rezoning applications for sites within the Project Area that, if approved, would only be developed if the Proposed Actions do not move forward.

The one new development expected in the future without the Proposed Actions, whether or not the proposed university area is approved, is the Studebaker Building at 615 West 131st Street. By 2008, Columbia plans to renovate the Studebaker Building for administrative office use and estimates an additional 882 employees would be added to the Project Area.

There are two new academic developments expected to occur within the Project Area by 2015 if the Proposed Actions are not approved. First, Columbia University will collaborate with the City of New York on the creation of a new public secondary school that will address education in science, math, and engineering, and that is potentially expected to accommodate 650 students (grades 6–12) and 35 faculty and administrators. It is anticipated that the school building would be located in the Project Area on the east side of Broadway between West 131st and 132nd Streets. Columbia University may develop administrative space above the public secondary school. Just north of this site, Columbia would also occupy the existing former Warren Nash Service Station building on the east side of Broadway between West 132nd and West 133rd Streets for additional University administrative space, adding approximately 644 new employees to the Project Area.

Several rezoning applications have been submitted by Tuck-It-Away Associates, L.P., for parcels it owns in the Project Area.[1] These sites are proposed to be rezoned from the existing M1-2 to C6-2. For each site, a development scenario has been identified by the applicant in which the existing Tuck-It-Away storage and C-Town supermarket buildings would be demolished and new mixed-use residential, retail, and community facility space would be developed. All sites except the 3320 Broadway site are within the proposed Subdistrict A. The residential reasonable worst-case development scenario for the 3300 Broadway site would involve displacement of the existing business (El Mundo department store, with 83 employees)[2], demolition of the existing building, and construction of a new residential development.

[1] A rezoning application has also been submitted for two other sites in the Project Area—3247 and 3229 Broadway, between West 129th and West 131st Streets—by Despatch and Hudson North American. These sites are also proposed to be rezoned from the existing M1-2 to C6-2. The EAS for this application was recently withdrawn. It is likely that another EAS will be submitted in the future, and that the FEIS will be updated to reflect it.

[2] Given the status of the Tuck-It-Away Associates, L.P. rezoning application, it is conservatively assumed that the El Mundo Department Store would not be displaced in the future without the Proposed Actions.

A rezoning application has also been submitted for one other site in the Project Area—3229 Broadway, between West 129th and West 130th Streets—by Hudson North American. This site is also proposed to be rezoned from the existing M1-2 to C6-2. The EAS for this application identified a development scenario in which the existing storage use would be displaced and the building would be converted to residential and retail uses.

For remaining properties in the Project Area, it is likely that existing vacant or industrial buildings would experience some redevelopment into commercial office or retail uses, similar to what occurred at 646 West 131st Street, which was converted to office space with Dinosaur Bar-B-Que restaurant on the ground level. New levels of employees and students created by the proposed developments (1,526 employees at the former Warren Nash Service Station building and the Studebaker Building, 650 students and 35 faculty and administrators at the secondary school, and 12 restaurant workers at the Hudson River Café) would likely contribute to more of this type of redevelopment. In addition, if the Tuck-It-Away Associates rezoning applications are approved, then a possible 360 new residential units and 467 employees would be added to the Project Area. Collectively, these new developments would likely increase the demand for neighborhood retail and service uses within the Project Area, such as restaurants, dry cleaners, and grocery stores, and could possibly lead to displacement of some existing tenants. Finally, new academic building developments planned by CCNY and Columbia University within the secondary study area may increase the demand for research or office space in the study areas by private companies that benefit from close proximity to University activities.

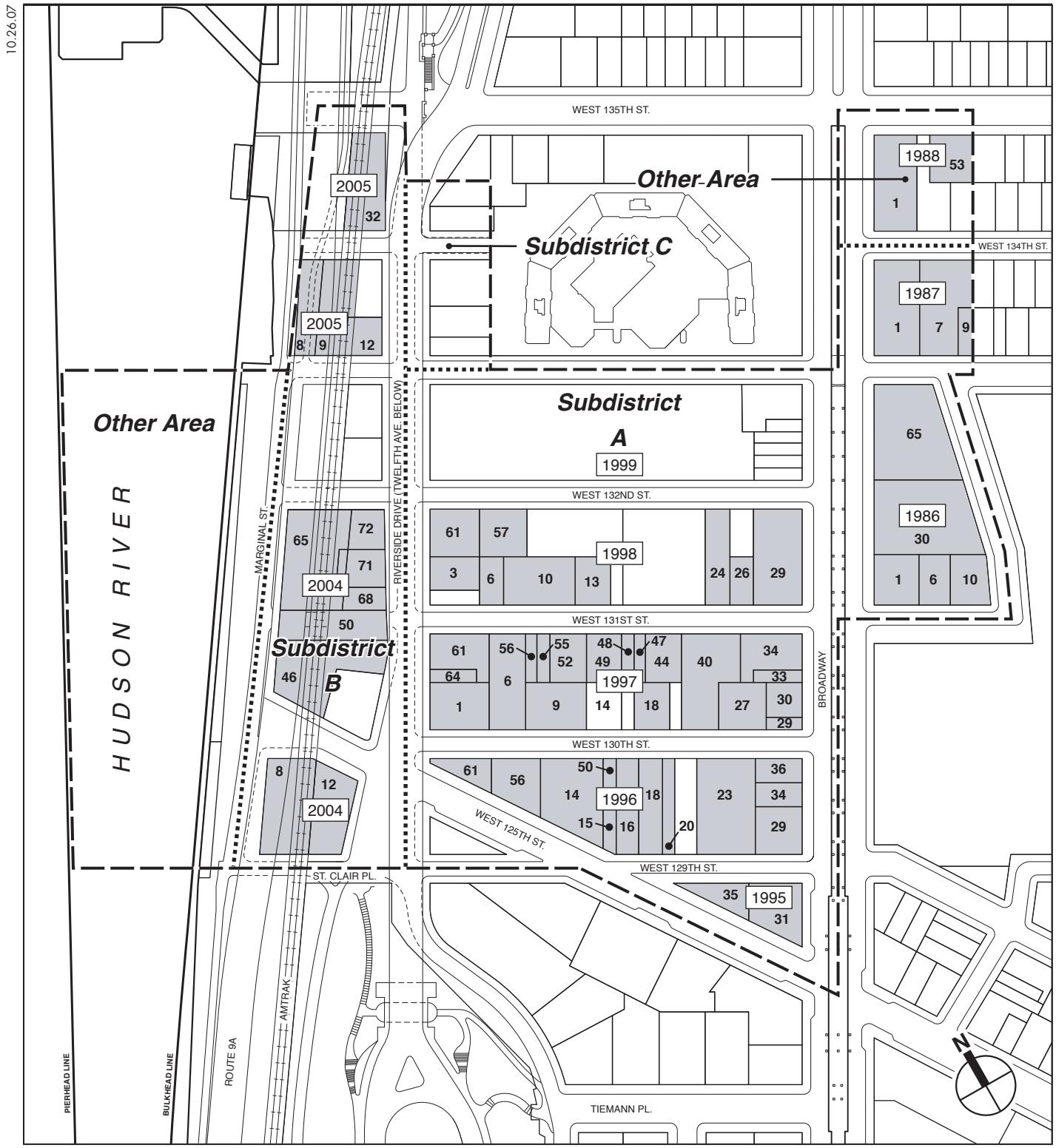
FUTURE WITH THE PROPOSED ACTIONS—2015

As shown in Figure 4-5 and Table 4-14, by 2015 the Proposed Actions could directly displace 70 businesses and institutions in the Academic Mixed-Use Area, and 10 businesses and institutions located in Subdistrict B and the Other Areas.[1] The business and institutional displacement that could occur by 2015 represents a majority of the total displacement, or 86 percent, predicted to occur due to the Proposed Actions. In total, by 2015 the Proposed Actions could directly displace as many as 80 existing businesses and institutions and the approximately 761 jobs associated with them. Of this number, 158 displaced jobs (approximately 21 percent of total displaced employment by 2015) could occur in the other services sector. More than half of this sector's 32 businesses are auto-related firms, including 18 repair and maintenance businesses; they also include four public parking lots, a dry cleaning plant, and three beauty salons.

Displacement that could occur in the construction sector represents approximately 20 percent of total displaced employment by 2015. The largest employers in the sector include Mamais Contracting Corporation (60 employees), Pizzo Brothers (53 employees), and Admiral Electric Corp (16 employees).

Seven transportation and warehousing businesses with a combined 104 employees would be displaced, representing 13 percent of jobs displaced by 2015. Businesses in the sector include four Tuck-It-Away Storage locations, Despatch Moving and Storage Company, and a storage facility for Architectural Antiques.

[1] These displacement figures include five moving and storage businesses and 67 employees within the Academic Mixed-Use Area, and one retail store (a supermarket) and 22 employees within the Other Areas that would be displaced in the future without the Proposed Actions.



NOTE: See Appendix Table B-1

Figure 4-5

2015: Direct Displacement of Businesses and Institutions by Proposed Actions

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Table 4-14
Direct Business and Institutional Displacement (2015)

Economic Sectors	Number of Businesses/ Institutions	Number of Jobs	Jobs as a Percentage of Total Displaced Jobs
Academic Mixed-Use Area			
Utilities	0	0	0.0%
Construction	3	125	16.4%
Manufacturing	1	6	0.0%
Wholesale Trade	5	70	9.2%
Retail Trade	6	27	3.5%
Transportation and Warehousing	6	99	13.0%
Information	8	62	8.1%
Real Estate and Rental Leasing	1	8	0.0%
Professional, Scientific, and Technical Services	2	41	5.4%
Health Care and Social Assistance	1	11	1.4%
Arts, Entertainment, and Recreation	7	27	3.5%
Accommodation and Food Services	2	62	8.1%
Other Services	28	145	19.1%
Public Administration	0	0	0.0%
Subtotal	**70**	**683**	**89.8%**
Subdistrict B and Other Areas			
Utilities	0	0	0.0%
Construction	2	25	3.3%
Manufacturing	0	0	0.0%
Wholesale Trade	1	1	0.1%
Retail Trade	1	22	2.9%
Transportation and Warehousing	1	5	0.7%
Information	0	0	0.0%
Real Estate and Rental Leasing	0	0	0.0%
Professional, Scientific, and Technical Services	0	0	0.0%
Health Care and Social Assistance	0	0	0.0%
Arts, Entertainment, and Recreation	0	0	0.0%
Accommodation and Food Services	1	12	1.6%
Other Services	4	13	1.7%
Public Administration	0	0	0.0%
Subtotal	**10**	**78**	**10.2%**
TOTAL PROJECT AREA	**80**	**761**	**100%**

Sources: Claritas, Inc., Appleseed Inc., D & B Selectory data, Business Owners, and AKRF, Inc.

The wholesale sector would see six businesses displaced, with an estimated 71 jobs displaced by 2015. This includes food wholesalers (Ace Packing, Alpine Beef), a chemical wholesaler (Ashland Chemical), and a building maintenance and supply wholesaler (Pearlgreen Corporation).

An estimated 74 jobs, or 10 percent, of displaced employment by 2015 would be in the accommodation and food services sector, with a majority of employees working at Dinosaur

Bar-B-Que, which employs approximately 35 people. The remaining displaced jobs in this sector are supplied by Mi Floridita Restaurant and Bakery and the Hudson River Café.

The eight information sector businesses that could be displaced by 2015 (62 jobs) are located at 646 131st Street (two TV companies and one IT company), 3280 Broadway (two wireless phone companies and a video duplication firm), 641-655 West 131st Street (a Verizon dispatch facility), and at 640 West 132nd Street (another Verizon dispatch facility). Two professional, scientific, and technical services businesses could be displaced, including an architecture firm with 40 employees.

Other businesses projected to be displaced in the 2015 future with the Proposed Actions include seven retail businesses (49 jobs), a U-Haul facility (8 jobs), and a small clothing manufacturer (6 jobs). Potential displacement in the arts, entertainment, and recreation sector includes the approximately 25 artists located at either 623 West 129th Street or 3280 Broadway, and a fitness consultant.

The displacement of these 76 businesses by 2015 would not have a substantial negative effect on consumers or other businesses in the study area. The types of businesses in the Project Area that local customers might rely upon for goods and services (e.g., gas stations, beauty salons, restaurants) are present elsewhere in the primary and secondary study areas. The other businesses subject to displacement are neither businesses that local consumers would rely upon, nor businesses that might need close proximity to specific partners or a particular customer base. Therefore, the products and services offered by these businesses in the Project Area and the potential effects of their displacement on local businesses and consumers would not classify them as having a substantial economic value to the City or regional area, and no significant adverse impact is expected to occur.

Four institutional uses with a total of 20 jobs could be displaced by 2015: Pathways to Housing, the Eritrean Community Center, Iglesia de Dios Pentecostal, and Iglesia el Encuentro con Dios. The nature of churches is that they are location-dependent, because they serve a local congregation who would be adversely affected if the churches were not able to relocate to a nearby location. The University has found and facilitated the purchase of relocation sites for both churches: Iglesia de Dios Pentecostal will relocate to 1664 Amsterdam Avenue, between West 142nd and West 143rd Streets within the secondary study area. Iglesia el Encuentro con Dios will relocate to 3581 Broadway, at West 147th Street immediately north of the secondary study area boundary. The churches are expected to move as soon as the new properties are available for relocation. Pathways to Housing, a nonprofit organization that facilitates housing for homeless people with mental illness, operates several offices throughout New York City and until recently utilized an office at 3280 Broadway that services clients in the Harlem area. Pathways to Housing has relocated Project Area employees to an office location at 55 West 125th Street while they finalize lease terms on new space; therefore, their displacement would not constitute a significant adverse impact. The Eritrean Community Center provides a small space for social gatherings of the Eritrean population throughout New York City and the region. Relocation to another part of Manhattan or New York City would not adversely affect its customer base, because its customer base is located throughout the tri-state area.

In the 2015 future with the Proposed Actions, the direct displacement of the 80 businesses and institutions in the Project Area would not contribute substantially to a change in neighborhood character, as determined by employment type and local job numbers. 2000 Census data indicates that the economic sectors with the highest employment in the primary and secondary study areas (those which define the study area in an economic sense) are not, in large part, based in the Project Area. Less than one percent of jobs (11 employees) within the primary study area's educational, health, and social services sector would be displaced by 2015. The potential displacement of businesses by 2015 in the transportation, warehousing, and utilities sector would account for just

12 percent of primary study area employment and 4 percent of secondary study area employment for the same sector. Though potential displacement in the construction sector (150 jobs) would account for 77 percent of sector jobs in the primary study area, and 22 percent in the secondary study area, as described earlier, construction is not a large employment sector in the study areas. Therefore, the displacement of Project Area businesses in these three sectors would not constitute a substantial shift in the overall economic character of the primary and secondary study area such that a significant adverse impact in neighborhood character would occur.

In conclusion, the direct displacement of as many as 80 existing businesses and institutions and the approximately 761 jobs associated with these businesses and institutions by 2015 is not found to create a significant adverse impact.

FUTURE WITHOUT THE PROPOSED ACTIONS—2030

No additional changes in business types or employment are anticipated in the Project Area in the future without the Proposed Actions between the 2015 and 2030 analysis years. Some changes in tenancy of existing buildings could be expected, with potential increases in such uses as community facilities and moving and storage uses. These uses would occupy buildings currently in industrial or transportation use. Moreover, additional conversions from industrial to commercial use may occur in the Project Area as the citywide demand for manufacturing space continues to decline.

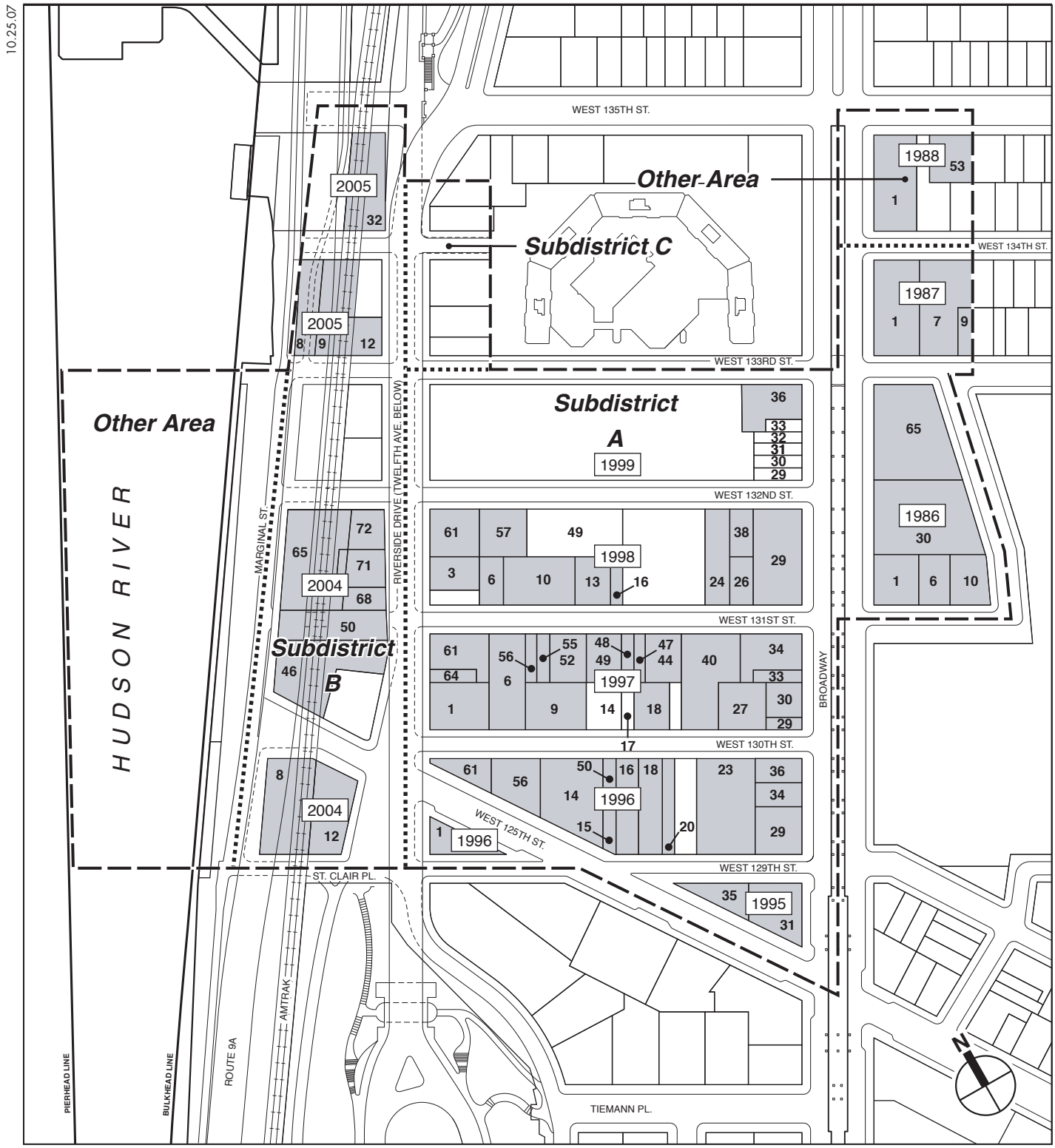
FUTURE WITH THE PROPOSED ACTIONS—2030

By 2030, it is assumed that the remaining existing businesses, institutions, and their associated employment would be directly displaced from the Academic Mixed-Use Area; business displacement due to the Proposed Actions in Subdistrict B and the Other Areas would have already occurred by 2015; and no additional direct displacement is expected to occur between 2015 and 2030 in those subdistricts. By 2030, the Proposed Actions would directly displace a cumulative total of 85 businesses and institutions, and 880 jobs associated with those businesses and institutions (see Table 4-15 and Figure 4-6).[1] With 158 jobs, the other services sector would account for the largest amount of displaced employment by 2030 (18 percent of total displacement), followed by construction (17 percent), retail trade (16 percent), and accommodation and food services (12 percent). An estimated 438 jobs, or 50 percent of the directly displaced employment, would be within industrial-based sectors that include construction, moving and storage companies, manufacturing firms, wholesale trade businesses, and auto repair.

The potential displacement due to the Proposed Actions that would occur between 2015 and 2030 includes five businesses in the retail trade, accommodation and food service, and information sectors accounting for 119 jobs or 14 percent of all displaced employment.

Two retail trade firms, El Mundo Department Store and Hamilton Pharmacy, would be displaced between 2015 and 2030. El Mundo Department Store, at 3300 Broadway, has approximately 83 employees, and Hamilton Pharmacy has 4.

[1] These displacement figures include five moving and storage businesses and 67 employees within the Academic Mixed-Use Area, and one retail store (a supermarket) and 22 employees within the Other Areas that would be displaced in the future without the Proposed Actions.



NOTE: See Appendix Table B-1

Figure 4-6

2030: Direct Displacement of Businesses and Institutions by Proposed Actions

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Table 4-15
Direct Business and Institutional Displacement (2030)

NAICS Economic Sector	Number of Businesses/ Institutions	Number of Jobs	Jobs as a Percentage of Total
Subdistrict A (Academic Mixed-Use Area)			
Utilities	0	0	0.0%
Construction	3	125	14.2%
Manufacturing	1	6	0.7%
Wholesale Trade	5	70	8.0%
Retail Trade	8	114	13.0%
Transportation and Warehousing	6	99	11.3%
Information	9	62	7.0%
Real Estate and Rental Leasing	1	8	0.9%
Professional, Scientific, and Technical Services	2	41	4.7%
Health Care and Social Assistance	1	11	1.3%
Arts, Entertainment, and Recreation	7	27	3.1%
Accommodation and Food Services	4	94	10.7%
Other Services	28	145	16.5%
Public Administration	0	0	0.0%
Subtotal	**75**	**802**	**91.1%**
Subdistrict B and Other			
Utilities	0	0	0.0%
Construction	2	25	2.8%
Manufacturing	0	0	0.0%
Wholesale Trade	1	1	0.1%
Retail Trade	1	22	2.5%
Transportation and Warehousing	1	5	0.6%
Information	0	0	0.0%
Real Estate and Rental Leasing	0	0	0.0%
Professional, Scientific, and Technical Services	0	0	0.0%
Health Care and Social Assistance	0	0	0.0%
Arts, Entertainment, and Recreation	0	0	0.0%
Accommodation and Food Services	1	12	1.4%
Other Services	4	13	1.5%
Public Administration	0	0	0.0%
Subtotal	**10**	**78**	**8.6%**
TOTAL PROJECT AREA	**85**	**880**	**100.0%**

Note: There are no businesses directly displaced from Subdistrict C.
Sources: Claritas, Inc., Appleseed Inc., D & B Selectory data, Columbia University, Business Owners, and AKRF, Inc.

One business in the information sector, T-Mobile, which operates a cell tower on the roof of 601 West 133rd Street and rents an equipment room in the building, will also be displaced. However, no employment is tied to this location.

Two additional businesses in the accommodation and food services sector would be displaced by 2030: Josh's Catering, with 12 employees, and the Cotton Club, which employs approximately 20 workers.

In the 2030 future with the Proposed Actions, the direct displacement of businesses and institutions in the Project Area would not contribute substantially to a change in neighborhood character, as determined by employment type and local job numbers. 2000 Census data indicates that the economic sectors with the highest employment in the primary and secondary study areas (those which define the study area in an economic sense) are not, in large part, based in the Project Area. By 2030, only 0.4

percent of jobs in the primary study area's educational, health, and social services sector would be displaced by the Proposed Actions. The displacement of businesses in the transportation, warehousing, and utilities sector would account for 12 percent of primary study area employment and 4 percent of secondary study area employment. Overall, the displacement of Project Area businesses in these sectors would not constitute a substantial shift in the overall economic character of the primary and secondary study areas such that a significant adverse impact on neighborhood character would occur.

Census journey-to-work data and community input suggests a sizable portion of employees working in the Project Area live within the primary and secondary study areas.[1] However, the availability of local jobs in the future with the Proposed Actions is expected to be maintained by project-generated employment opportunities, many of which would require comparable education levels as the jobs that would be displaced. At the University's existing Morningside Heights campus, approximately 2,554 non-faculty, non-research employees (30 percent) live in Northern Manhattan, and 653 (8 percent) live within CB9, which roughly approximates the secondary study area. The Proposed Actions in total are projected to generate 1,732 non-faculty, non-research employees by 2015 (of which 803 would be University-affiliated jobs) and 4,499 non-faculty, non-research employees by 2030 (of which 3,162 would be Columbia-affiliated jobs). While this analysis can make no definitive statements related to the place of residence of prospective employees, it is reasonable to assume that, with the Proposed Actions, a comparable percentage of this type of employment would be recruited from within the local population.[2] So although the Proposed Actions would likely displace many local jobs, they would be replaced with a larger and broader range of employment opportunities—including entry level positions, skilled trades (e.g., carpenters, plumbers, electricians), administrative support, and professional service positions in finance, customer service, and general administration. An estimated 31 percent of non-faculty, non-research University positions would require a high school degree or equivalent, with the remainder requiring a bachelor's degree or equivalent. At the Morningside Heights campus, salaries for non-faculty, non-research University positions that do not require bachelor's degrees currently range from $29,307 to $37,298 annually.[3]

The displacement of the 85 Project Area businesses by 2030 would not have a substantial negative effect on consumers or other businesses in the study area. The types of businesses in the Project Area that local customers might rely upon for goods and services (e.g., gas stations, beauty salons, restaurants) are present elsewhere in the primary and secondary study areas. The other businesses subject to displacement are neither businesses that local consumers would rely upon, nor businesses that might need close proximity to specific partners or a particular customer base.

---

[1] Neither Census journey-to-work data nor interviews with business representatives could provide a more definitive estimate of the percentage of Project Area employees who live within the primary and secondary study areas. Census journey-to-work data does not precisely correlate to the boundaries of the Project Area; estimates based on the data range from roughly 37 percent to 55 percent of employees (who work in the Project Area and live in the study areas). Responses from interviews of businesses in the Project Area did not provide a sample size necessary to make a more definitive estimate; responses from businesses indicated that anywhere between a quarter and "most" of their employees lived within Manhattanville, Morningside Heights, Hamilton Heights, and West Harlem more generally. Of the businesses that responded to interviewers' questions related to residence of employees, the auto-related businesses generally provided "local employee" estimates that were on the higher end of the range cited.

[2] University jobs planned for local residents (beyond what could be expected based on the University's current experience) will be detailed as part of a negotiated agreement between the Draft and Final EIS.

[3] http://www.hr.columbia.edu/hr/jobs/salary/current_salaries/index.html

Determining Impact Significance

According to Section 331.2 of the *CEQR Technical Manual*, the identification of impacts for direct business and institutional displacement depends on whether the businesses or institutions are a defining element of neighborhood character, whether they are important to the City economy, and whether they can be relocated within the study areas or elsewhere in the City. This analysis finds that the businesses and institutions that would be displaced by the Proposed Actions are not, individually or collectively, a defining element of neighborhood character; do not have important or substantial value to the City; and can relocate within the study areas or elsewhere in the City. Therefore, the Proposed Actions would not result in significant adverse impacts due to direct business and institutional displacement.

If the Proposed Actions were approved and certain properties were to be acquired by ESDC according to the requirements of the New York State Eminent Domain Procedure Law, businesses or institutions considered by ESDC to be directly displaced would be provided with commercial relocation assistance. ESDC would locate and show available space to the displaced business or institution and provide information about private brokers located throughout the City. In addition, payment would be made for the costs of the physical move, including the cost of transporting personal property to the replacement site, labor and material, insurance and storage as necessary. Payment would also be made for other reasonable costs commonly associated with relocation, including the cost of re-lettering or replacing signs, replacing stationery, and reinstalling telephone lines or other existing communications. These re-establishment costs would be capped at $20,000 per business. All costs related to the commercial relocation program would be borne by Columbia University.

INDIRECT RESIDENTIAL DISPLACEMENT

According to Section 332.1 of the *CEQR Technical Manual*, the approach to a detailed assessment of indirect residential displacement is similar to that of the preliminary assessment, but requires more in-depth analysis of Census information and can include field surveys and interviews. The analysis is based on evaluating a variety of socioeconomic data related to the study area populations and housing characteristics, and includes such data points as demographic characteristics, racial composition, housing values, and rents. The objective of the analysis is to characterize existing conditions of residents and housing in order to identify populations that may be vulnerable to displacement ("populations at risk"), to assess current and future socioeconomic trends in the area that may affect these populations, and to examine the effects of the Proposed Actions on prevailing socioeconomic trends and, thus, their impact on the identified populations at risk.

EXISTING CONDITIONS

This section describes the population and housing characteristics of the study areas (which include the Project Area) as it relates to potential indirect residential displacement. It outlines trend data mainly since 1990 and, where available and applicable, since 1980. It compares study area characteristics with the characteristics of Manhattan and with New York City as a whole.

Population Profile

According to the Census, in 2000 the primary study area contained 35,488 residents, while the secondary study area (which includes the primary study area) contained 78,803 residents. The last two decades recorded by the Census show substantial population shifts in the study areas. As shown in Table 4-16, between 1980 and 1990 the primary study area population declined by 4.3

percent, from 33,460 residents in 1980 to 32,024 residents in 1990. This decline was in contrast to the population trends for Manhattan and New York City, which increased their populations during the same period by 4.1 percent and 3.5 percent, respectively.

Table 4-16
Population Trends

Census Tract	1980 Residents	1990 Residents	2000 Residents	% change 1980–1990	% change 1990–2000
201.01	1,333	1,358	2,215	1.9	63.1
203	2,980	2,748	3,583	-7.8	30.4
205	4,645	6,556	5,113	41.1	-22.0
207.01	3,172	3,046	2,548	-4.0	-16.3
209.01	3,850	3,325	3,448	-13.6	3.7
209.02	1,531	960	1,006	-37.3	4.8
211	*11,609*	*9,472*	*10,716*	*-18.4*	*13.1*
213.01	*3,379*	*3,730*	*4,543*	*10.4*	*21.8*
213.02	649	301	256	-53.6	-15.0
217.01	*656*	*1,256*	*1,399*	*91.5*	*11.4*
219	*6,472*	*5,187*	*6,423*	*-19.9*	*23.8*
221.01	610	480	474	-21.3	-1.3
223.01	*11,344*	*8,800*	*8,410*	*9.1*	*-4.4*
223.02		*3,579*	*3,997*		*11.7*
225	10,248	11,055	11,108	7.9	0.5
227.01	4,452	4,198	4,721	-5.7	12.5
229	7,224	8,423	8,843	16.6	5.0
Primary Study Area	***33,460***	***32,024***	***35,488***	***-4.3***	***10.8***
Secondary Study Area	**74,154**	**74,474**	**78,803**	**0.4**	**5.8**
Manhattan	**1,428,285**	**1,487,536**	**1,537,195**	**4.1**	**3.3**
New York City	**7,071,639**	**7,322,564**	**8,008,278**	**3.5**	**9.4**

Notes: Census tracts denoted in italics above are part of the primary study area. All tracts are part of the secondary study area.
Source: U.S. Department of Commerce, Bureau of Census, 1980, 1990, and 2000 Census.

Population decreases in the primary study area during the 1980s were limited to two Census tract areas: Census tract 211, bounded by West 125th Street to the north, West 123rd Street to the south, Amsterdam Avenue to the east, and Riverside Drive to the west; and Census tract 219, which includes the Project Area and the area west of Amsterdam Avenue (see Figure 4-1). The remaining areas increased in residential population between 1980 and 1990, most notably in the area immediately north of the Project Area (Census tracts 223.01 and 223.02, bounded by West 138th Street to the north, West 133rd Street/West 134th Streets to the south, Amsterdam Avenue to the east, and Riverside Drive to the west), which grew in population by over 1,000 residents.

The secondary study area experienced relatively slow population growth between 1980 and 1990 (0.4 percent) compared with Manhattan (4.1 percent) and New York City as a whole (3.5 percent). Ten of the secondary study area's 16 Census tracts lost population between 1980 and 1990. The two Census tract areas that lost the most residents were Census tracts 219 and 211, which are also in the primary study area and are described above. Beyond the primary study area boundary, there were significant declines in residential population in Census tracts 209.01 and 209.2, which together are bounded by West 126th Street to the north, Morningside Park/West 122nd Street to the south, Frederick Douglass Boulevard to the east, and Amsterdam Avenue to the west. The area west of Broadway between West 134th and West 138th Streets (Census tract 213.02) experienced the largest percentage decline in its population (-53.6 percent). The only two areas which gained a substantial population were Census tracts 205 (41.1 percent increase) and 217.01 (91.5 percent increase), which helped to maintain a positive overall population growth for the decade. Census tract 205 is located in the lower west corner of the secondary

study area and contains Barnard College, while Census tract 217.01 (in the primary and secondary study areas) is east of Broadway between West 135th and West 130th Streets and includes City College's South Campus. Both areas are home to a large student population, and their growth rates are likely attributable to increases in the student populations at these schools.

Between 1990 and 2000, the residential population in the primary study area increased by 10.8 percent, outpacing the population growth for Manhattan (3.3 percent) and New York City (9.4 percent). The secondary study area's population increased by 5.8 percent between 1990 and 2000, also growing at a faster rate than Manhattan. Table 4-16 illustrates the wide variety of growth rates within the study areas between 1990 and 2000, ranging from a decline of 22 percent in Census tract 205 (in Morningside Heights, bounded by West 123rd Street to the north, West 114th Street to the south, Broadway to the east, and Riverside Drive to the west), to an increase of 63.1 percent in Census tract 201.01 (in Morningside Heights, bounded by West 118th Street to the north, West 114th Street to the south, Morningside Drive to the east, and Amsterdam Avenue to the west). Seven of the eight Census tracts with a growth rate of 10 percent or more were south of West 135th Street. Overall, only six Census tracts had a positive growth rate in both decades, while the remaining tracts displayed inconsistent growth patterns between the two decades. Some of the areas that experienced population declines during the 1980s, followed by population increases in the 1990s, included Census tract 203 (in Morningside Heights, bounded by West 123rd Street to the north, West 114th Street to the south, Amsterdam Avenue to the east, and Broadway to the west), Census tract 219 (in Manhattanville, bounded by West 135th and 134th Streets to the north, West 125th Street to the south, Amsterdam Avenue to the east, and Riverside Drive to the west); and Census tract 227.01 (in Hamilton Heights, bounded by West 145th Street to the north, West 141st Street to the south, Manhattan Avenue to the east, and Amsterdam Avenue to the west).

The study area populations do not resemble the overall racial and ethnic composition of Manhattan or New York City. As shown in Table 4-17, African-Americans accounted for only 15 percent of Manhattan's population in 2000, but represented 29 percent of the populations in both the primary and study areas. Hispanics and Latinos also have a stronger representation in the study areas compared with Manhattan and New York City. In the 2000 Census, almost 53 percent of the population in the primary study area and 46 percent of the population in the secondary study area identified themselves as Hispanic or Latino, compared with 27 percent in Manhattan and New York City. In the 2000 Census, nearly half (46 percent) of Manhattan residents identified themselves as white, while only 11 percent of the primary study area residents and 17 percent of the secondary study area residents were white.

The primary and secondary study areas experienced changes in the racial composition of their populations between 1990 and 2000. As shown in Table 4-17, the percentage of the primary study area population that is African-American decreased from 37 percent in 1990 to 29 percent in 2000, a difference of 8 percentage points. Conversely, residents of Hispanic or Latino origin increased in the study areas, and at a higher rate than in Manhattan and New York City as a whole. The percentage of the population classified as Hispanic or Latino increased by 4.3 percentage points in the primary study area (from 48.5 percent to 52.8 percent of the total population) and by 5.4 percentage points in the secondary study area (from 40.9 percent to 46.3 percent). The number of whites living in the primary study area remained around 11 percent between 1990 and 2000. Similarly, the white population in the secondary study area decreased only 2 percentage points between 1990 and 2000, from 19 percent to 17 percent. The share of Asian residents in the study areas remained fairly steady between 1990 and 2000.

Table 4-17
Race and Ethnicity in 1990 and 2000

	Primary Study Area (Percent)	Secondary Study Area (Percent)	Manhattan (Percent)	New York City (Percent)
2000				
African-American	29.4	28.8	15.3	24.5
White	11.4	17.0	45.8	35.0
Asian	4.1	5.4	9.3	9.7
Other	2.5	2.6	2.4	3.8
Hispanic or Latino	52.3	46.3	27.2	27.0
1990				
African-American	37.1	35.4	17.6	25.2
White	10.7	18.6	48.9	43.2
Asian or Pacific Islander	3.0	4.3	7.1	6.7
Other	0.8	0.7	0.5	0.5
Hispanic or Latino	48.5	40.9	26.0	24.4

Notes:
The racial and ethnic categories provided are further defined as: White (White alone, not Hispanic or Latino); African-American (Black or African-American alone, not Hispanic or Latino); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino; Some other race alone, not Hispanic or Latino; Two or more races, not Hispanic or Latino); Hispanic (Hispanic or Latino; Persons of Hispanic origin may be of any race).

In 1990, Asian and Pacific Islanders were grouped together, and therefore cannot be disaggregated. In the 2000 data "Pacific Islanders," "American Indian and Alaska Native alone," "Some other race alone" and "Two or more races" were combined into "Other." For 1990 data, the "Other" category combines the categories of "American Indian, Eskimo, or Aleut" and "Other race." The option to classify oneself as two or more races was not available in the 1990 Census.

Source: U.S. Department of Commerce, Bureau of Census, 2000 Census

The "other" category experienced a slight increase between 1990 and 2000, which is in part related to the restructuring of Census race categories between 1990 and 2000. In 2000 the Census Bureau restructured race categories and introduced a new category entitled "two or more races." Individuals of a mixed-race status who previously had to make a choice between either one of the major race populations or "other" may have used this new option in the 2000 Census. Since this analysis combines "two or more races" and "other race" in an overall "Other" category, individuals making use of the new option are represented in the overall "other" category.

The study areas show similar characteristics to Manhattan and New York City when it comes to the proportion of foreign-born residents and their year of entry. The study areas have only a slightly lower percentage of foreign-born residents than Manhattan, with approximately 27 percent of the population in the study areas coming from outside of the United States, as compared with 29 percent for Manhattan. In New York City as a whole, about 36 percent of residents were born in another country. Most of the study areas' foreign-born population (77 percent) arrived in the United States before 1995, while 27 percent arrived after 1995. However, there are major differences within the study areas. For example, in the three Census tracts surrounding Columbia University, the share of the foreign-born population is less than 20 percent, while the percentage of the foreign-born population exceeds 50 percent in the two predominantly Hispanic Census tracts north of West 138th Street.

The age distribution in the study areas is similar to New York City (see Table 4-18). The primary study area has a slightly higher percentage of its population under 18 years (26 percent) compared with New York City (24 percent), while the secondary study area has slightly less (22 percent). However, comparing the under 18 years category in the study areas with Manhattan indicates that the

study areas—the primary study area in particular—are home to more families with children, or larger families than in Manhattan overall. In contrast, the percentage of the population of working age (18 to 65 years) is larger in Manhattan (71 percent) than in the primary and secondary study areas (64 and 68 percent, respectively).

Table 4-18
1990 and 2000 Age Distribution

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	%	Number	%	Number	%	Number	%
2000								
Total residents	35,488	100	78,803	100	1,537,195	100	8,008,278	100
Under 18 years old	9,154	26	17,516	22	257,916	17	1,940,269	24
18 to 64 years old	22,652	64	53,743	68	1,092,503	71	5,130,152	64
65+ years old	3,682	10	7,544	10	186,776	12	937,857	12
Median age	31.8		30.8		35.7		34.2	
1990								
Total residents	32,024	100	74,474	100	1,487,536	100	7,322,564	100
Under 18 years old	8,321	26	16,965	23	246,608	17	1,683,621	23
18 to 64 years old	20,005	62	49,667	67	1,042,740	70	4,686,212	64
65+ years old	3,698	12	7,842	10	198,188	13	952,731	13
Median age	NA		NA		NA		NA	

Note: 1980 data was categorized differently and is not suitable for comparison.
Sources: U.S. Department of Commerce, Bureau of Census, 1990, and 2000 Census.

Households and Income

In 2000, the primary study area contained 12,710 households, while the secondary study area contained a total of 26,815 households (see Table 4-19). The average household size for the primary and secondary study areas was 2.65 and 2.61 persons per household, respectively, which was substantially higher than for Manhattan (2.00), and slightly higher than the average across New York City (2.59). Household sizes within the study areas have remained consistently above the average for Manhattan as a whole between 1980 and 2000. However, the secondary study area's average household size has noticeably increased since 1980, while the household size with the primary study area and Manhattan as a whole remained relatively stable over that 20-year period.

Table 4-19
Average Household Size: 2000, 1990, and 1980

	Primary Study Area	Secondary Study Area	Manhattan	New York City
Total Households (2000)	12,710	26,815	738,644	3,021,588
Average household size	*2.65*	*2.61*	*2.00*	*2.59*
Total Households (1990)	11,728	26,648	716,422	2,819,401
Average household size	*2.69*	*2.57*	*1.99*	*2.54*
Total Households (1980)	12,399	27,679	706,015	2,792,614
Average household size	*2.64*	*2.48*	*1.96*	*2.49*

Sources: U.S. Department of Commerce, Bureau of Census, 1980, 1990, and 2000 Census.

There is a wide disparity of household incomes within the primary and secondary study areas. For example, while households in Census tract 201.01—west of Columbia's Morningside Heights campus—had a median income of $73,750 in 1999, households in Census tract 209.02—where parts of the General Grant Houses are located—had a median household income of only $11,622. The following discussion focuses on comparing aggregate study area incomes to those of Manhattan and New York City. A detailed examination of income disparities within the study areas is provided under "Identifying Population Currently at Risk of Displacement," below.

Household income distributions in the study areas differ substantially from those of Manhattan and New York City. As shown in Table 4-20, the primary study area's median household income was $26,565 in 1999, which was over 40 percent lower than Manhattan's median ($47,030), and over 30 percent lower than that of New York City ($38,293). The secondary study area had a slightly higher median income than the primary study area in 1999, but it was still well below the medians for Manhattan and New York City.

Table 4-20
Household Incomes in 1999

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Households reporting income	12,762	100	26,801	100	739,167	100	3,022,477	100
less than $20,000	5,516	43.2	11,081	41.3	187,564	25.4	876,094	29.0
$20,000 to 125,000	6,734	52.8	14,301	53.4	420,664	56.9	1,886,725	62.4
Over $125,000	512	4.0	1,419	5.3	130,939	17.7	259,658	8.6
Median income	$26,565		$28,557		$47,030		$38,293	

Note: Median Income calculations for the primary and secondary study areas are an average weighted median income based on census tracts.
Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

The study areas have a higher proportion of households in the lowest income categories compared with Manhattan and New York City. In 1999, 43.2 percent of the primary study area households and 41.3 percent of secondary study area households earned less than $20,000, compared with 25.4 percent in Manhattan and 29.0 percent in New York City. At the same time, the share of high income households was substantially larger in Manhattan (17.7 percent) than in the primary and secondary study areas (4.0 and 5.3 percent, respectively).

One indication of improvement for the study areas is the decrease in the share of households in the lowest income category between 1989 and 1999. Comparing the 1999 household income distribution with that of 1989 (see Table 4-21), there was a 20 percent decrease in the percentage of primary study area households with median incomes of less than $20,000. This percentage decrease mirrored the changes in Manhattan and New York City as a whole over the same time period.

Table 4-21
Household Incomes in 1989

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	Percent		Percent	Number	Percent	Number	Percent
Households reporting income	11,752	100	26,735	100	716,811	100	2,816,274	100
less than $20,000	6,339	53.9	13,538	50.6	235,080	32.8	993,288	35.3
$20,000 to 125,000	5,305	45.1	12,780	47.8	417,421	58.2	1,718,918	61.0
Over $125,000	108	0.9	417	1.6	64,310	9.0	104,068	3.7
Median income	$18,655		$20,349		$32,262		$29,823	

Note: Median Income for study areas is a weighted average based on reporting households in census tracts.
Source: U.S. Department of Commerce, Bureau of Census, 1990 Census.

In 2000, approximately one-third of the population in the primary and secondary study areas lived below the poverty level (see Table 4-22). This was substantially higher than the percentages for Manhattan (20.0 percent) and New York City (21.2 percent). In addition, the percentage of the population below the poverty level in the primary and secondary study areas

has increased between 1980 and 2000 (although there was a decline in the primary study area between 1990 and 2000), a trend that runs counter to the Manhattan-wide percentage below the poverty level, which declined over the same 20-year period.

Table 4-22
Population Below the Poverty Level in 2000, 1990, and 1980

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total (2000)[1]	34,003		70,476		1,537,195		8,008,278	
Income below poverty level	11,601	34.1	23,386	33.2	307,384	20.0	1,701,607	21.2
Total (1990)[1]	31,977		69,490		1,487,536		7,322,564	
Income below poverty level	11,583	36.2	22,631	32.6	305,174	20.5	1,412,267	19.3
Total (1980)[1]	32,813		69,192		1,428,285		7,071,639	
Income below poverty level	10,860	33.1	21,166	30.6	305,575	21.4	1,391,981	19.7

Note: [1] Population for whom poverty status is determined.
Sources: U.S. Department of Commerce, Bureau of Census, 1980, 1990, and 2000 Census.

Poverty rates within the study areas show similar extremes as seen in the overall income distribution. For example, about 50 percent of the population in Census tract 209.02 (bounded by West 126th Street to the north, West 122nd Street to the south, Frederick Douglass Boulevard to the east, and Morningside and Manhattan Avenues to the west) live below the poverty level, a figure that is heavily weighted by the General Grant Houses. This is in sharp contrast to Census tract 205 (bounded by West 123rd Street to the north, West 114th Street to the south, Broadway to the east, and Riverside Drive to the west), in which only 8 percent of the residents live below the poverty level.

Housing Profile

The type, quality, and age of housing structures vary across the study areas. Many residential buildings north of West 135th Street are five or six stories tall, on large lots with interior or side courtyards. South of West 125th Street within the study areas, residential buildings are similar in structure, and many are owned by Columbia University. There are three large housing complexes within the study areas, two of which provide public housing. One of them, Manhattanville Houses, is located east of Broadway between West 129th and West 133rd Streets, and has 1,272 residential units. The other public housing complex, the General Grant Houses, is located south of West 125th Street between Morningside Avenue and Broadway, and has 2,483 units. The third large housing complex is the Riverside Park Community apartments, immediately north of the Project Area between West 133rd and West 134th Streets. In 2005, this 1,190-unit rental apartment complex opted out of the Mitchell-Lama program, which was designed to accommodate the housing needs of moderate income families. A detailed discussion of this opt-out is provided in Appendix C, "Recent Trends Analysis."

The housing stock in the study areas is, on average, older than the housing in Manhattan and New York City as a whole. As shown in Table 4-23, almost 49 percent of all housing units in the secondary study area (which includes the primary study area housing stock) were built before 1940, compared with 43 percent in Manhattan and 36 percent in New York City. Were it not for the high number of units in public housing complexes, the disparity would be greater. The study areas contain a low percentage of housing units built between 1980 and 2000—5.1 percent compared with 10.2 percent in Manhattan and 8.9 percent in New York City.

Table 4-23
2000 Housing Units by Year Built

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total housing units	13,376	100	28,714	100	738,644	100	3,021,588	100
Built 1980 to 2000	683	5.1	1,464	5.1	75,442	10.2	269,966	8.9
Built 1960 to 1980	3,244	24.3	5,110	17.8	170,356,000	23.1	719,201,000	23.8
Built 1940 to 1960	4,471	33.4	8,086	28.2	172,180	23.3	944,084	31.2
Built 1939 or earlier	4,978	37.2	14,054	48.9	320,666	43.4	1,088,337	36.0

Sources: U.S. Department of Commerce, Bureau of Census, 1980, 1990, and 2000 Census.

According to the 2000 Census, there were approximately 13,376 housing units in the primary study area and 28,714 housing units in the secondary study area (see Table 4-24). Approximately 9.6 percent of the primary study area's units were owner-occupied in 2000, while 8.6 percent of the secondary study area units were owner-occupied. The primary and secondary study area both had a much lower proportion of owner-occupied units compared with Manhattan (18.6 percent owner-occupied) and New York City (28.5 percent).

There is a trend toward increased homeownership in the study areas and in New York City as a whole. As shown in Table 4-24, the percentage of study area units that are owner-occupied increased between 1980 and 2000. In terms of absolute numbers, according to the Census, the number of homeowners in the primary study area grew by about 58 percent between 1980 and 1990, and by 35 percent between 1990 and 2000. The number of homeowners in the secondary study area grew by almost 53 percent between 1980 and 1990, and by 32 percent between 1990 and 2000. Over the same two decades, Manhattan experienced a 134 percent increase in the number of homeowners during the 1980s, and a 16 percent increase in the 1990s. In New York City, the number of homeowners increased by about 24 percent in the 1980s and by 13 percent in the 1990s.

Table 4-24
Tenure and Vacancy in 2000, 1990, and 1980

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2000								
Total housing units	13,336	100	28,734	100	798,144	100	3,200,912	100
Vacant units	626	4.7	1,919	6.7	59,500	7.5	179,324	5.6
Owner occupied	1,279	9.6	2,484	8.6	148,732	18.6	912,296	28.5
Renter occupied	11,431	85.7	24,331	84.7	589,912	73.9	2,109,292	65.9
1990								
Total housing units	12,430	100	28,616	100	785,127	100	2,992,169	100
Vacant units	702	6.0	1,968	7.4	68,705	8.8	172,768	5.8
Owner occupied	948	8.1	1,878	7.0	128,037	16.3	807,378	27.0
Renter occupied	10,780	91.9	24,770	93.0	588,385	74.9	2,012,023	67.2
1980								
Total housing units	13,448	100	30,331	100	753,756	100	2,940,837	100
Vacant units	1,049	7.8	2,652	8.7	49,254	6.5	152,307	5.2
Owner occupied	599	4.5	1,229	4.1	54,785	7.3	652,105	22.2
Renter occupied	11,800	87.7	26,450	87.2	649,717	86.2	2,136,425	72.6

Sources: U.S. Department of Commerce, Bureau of Census, 1980, 1990, and 2000 Census.

Despite the increases in total number of homeowners, the percentage of homeowners versus renters remains fairly low in the study areas compared with Manhattan and New York City. In 2000, only 9.6 percent of all primary study area residents and 8.6 percent of all secondary study

area residents owned their homes, while 18.6 percent of Manhattan residents and 31.9 percent of New York City residents owned their homes.

The demand for housing in all of New York City increased from 1990 to 2000, due in part to immigration and natural population growth. In all areas compared, vacancy rates decreased between 1990 and 2000. Vacancy rates for the primary study areas decreased from 6.0 percent in 1990 to 4.7 percent in 2000, which was lower than the vacancy rates for all of Manhattan (see Table 4-24). Over the last two decades the drop was even more substantial; between 1980 and 2000 the vacancy rate in the primary study area decreased by 66 percent (from 7.8 percent vacancy to 4.7 percent), while the vacancy rate for New York City remained fairly stable. Manhattan's vacancy rate increased from 6.5 percent in 1980 to 8.8 percent in 1990, which was likely caused by increased construction activities (more than 30,000 units were added between 1980 and 1990). Overall, it appears that the units in the study areas have become increasingly desirable for residents since 1980.

In the study areas, residences categorized by the Census Bureau as "mobile homes and other non-solid housing units" almost vanished, decreasing from 759 to 16 units. This substantial decrease is related to a Census reclassification after the Census Bureau concluded that this category was greatly overstated in 1990. All other categories, with the exception of "units in structures with more than 50 units," increased in size (see Table 4-25). Units in structures with 20 to 49 units saw the largest increase, while structures with 50 or more units lost several hundred units, leading to the conclusion that some of the smaller units were converted to larger ones. Close to 95 percent of primary study area residents and almost 90 percent secondary study area residents live in buildings with 10 or more units, which is a very similar distribution compared with Manhattan as a whole.

Table 4-25
Units per Residential Structure in 1990 and 2000

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2000								
Total housing units	13,376	100	28,714	100	798,144	100	3,200,912	100
1 to 4 units in structure	235	1.8	1,207	4.2	28,178	3.5	1,251,823	39.1
5 to 9 units in structure	327	2.4	1,387	4.8	50,481	6.3	2,227,58	7.0
10 or more units in structure	12,814	95.8	26,104	90.9	718,911	90.1	1,723,071	53.8
Mobile home, other	0	0	16	0.1	574	0.1	3,260	0.1
1990								
Total housing units	12,430	100	28,616	100	785,127	100	2,992,169	100
1 to 4 units in structure	92	0.7	699	2.4	21,979	2.8	1,080,780	36.1
5 to 9 units in structure	225	1.8	1,218	4.3	47,100	6.0	201,410	6.7
10 or more units in structure	11,785	94.8	25,973	90.8	703,927	89.7	1,658,844	55.4
Mobile home, other	328	2.6	726	2.6	12,121	1.5	51,135	1.7

Note: Data for 1980 was classified differently.
Sources: U.S. Department of Commerce, Bureau of Census, 1990, and 2000 Census.

The study areas' median housing values are significantly lower than those of Manhattan as a whole (see Table 4-26). In 2000, the primary study area's median housing value was about 65 percent lower than the median housing value for Manhattan, and 43 percent lower than New York City as a whole (see Table 4-26). The secondary study area's median housing value was significantly higher than that of the primary study area, but still well below the Manhattan median. The study areas also have substantially more housing units in the lowest value segment compared with Manhattan and

New York City. Ten percent of the owner-occupied housing units in the primary study area and 14 percent of the owner-occupied units in the secondary study area have market values below $50,000, while only 4 percent fall into this category for all of Manhattan. Only 10 percent of the primary study area's owner-occupied units have a market value of $200,000 or more, compared with 72 percent of the housing units in Manhattan and 58 percent of the units in New York City.

Table 4-26
2000 Housing Values of Owner-Occupied Housing Units

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	1,298	100	2,470	100	148,695	100	912,133	100
Below $50,000	126	10	346	14	6,672	4	51,681	6
$50,000 to $100,000	483	37	588	24	7,233	5	68,439	8
$100,000 to $200,000	566	44	753	30	26,527	18	270,053	30
$200,000 to $500,000	37	3	466	19	52,767	35	434,422	48
Over $500,000	86	7	317	13	55,496	37	87,538	10
Median housing value	$126,675		$205,976		$361,100		$221,200	

Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

The distribution of contract rents in the study areas reflects the high share of rent-regulated units (as discussed in detail in the section below). As shown in Table 4-27, the year 2000 median contract rent in the primary study area ($492) was almost 34 percent lower than in Manhattan ($740), and 24 percent lower than in all of New York City ($646). The primary study area also has a substantially higher share of units in the lowest rent category: 28 percent of renters in the primary study area pay less than $300 per month, compared with 14 percent in Manhattan and 13 percent in New York City. The study areas also have a smaller percentage of units in the highest rent category (over $1,500); only 2 percent of primary study area units rent for more than $1,500, compared with 19 percent in Manhattan.

Table 4-27
2000 Contract Rents of Renter-Occupied Housing Units

	Primary Study Area		Secondary Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	11,457		24,291		589,889		2,108,538	
Total with cash rent	11,263	100	23,880	100	579,890	100	2,066,896	100
Less then $300	3,119	28	5,155	22	79,197	14	266,115	13
$300 to $650	5,145	46	11,171	47	174,086	30	779,537	38
$650 to $1000	2,216	20	5,220	22	122,292	21	694,356	34
$1000 to $1,500	554	5	1,676	7	95,911	17	200,060	10
Over $1,500	229	2	658	3	108,404	19	126,828	6
Median contract rent	$492		$543		$740		$646	

Notes: The data on contract rent (also referred to as "rent asked" for vacant units) was asked on a sample basis at occupied housing units that were rented for cash rent and vacant housing units that were for rent at the time of enumeration. Housing units that are renter occupied without payment of cash rent are shown separately as "No cash rent" in census data products.
Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

To better characterize the current rental market, AKRF interviewed a number of brokers familiar with the area and analyzed real estate postings in major local news media. In addition, Jerry Minsky, senior vice president at Corcoran Realty, contacted property managers, real estate

brokers, and appraisers in the study areas and throughout Northern Manhattan to obtain rental rates for studios, one-, two-, and three-bedroom units. For each of these unit sizes, samples of at least 10 units in the study areas were gathered for the years 2000, 2003, and 2005. Each sample included a variety of housing types (low-rise, high-rise, townhouse, and mixed use). The findings of this analysis are presented in Appendix C.

The interviews and research described above revealed that market rate rents for studios in the study areas in 2005 generally ranged from $950 to $1,050 per month; one-bedroom units ranged from $1,350 to $1,500 per month; two-bedroom units ranged from $1,700 to $1,950 per month; and three-bedroom units ranged from $2,600 to $3,750 per month. Within the Manhattanville portion of the study areas (roughly correlating to the primary study area boundary), a sampling of 2005 market-rate rents averaged $975 per month for studios; $1,338 per month for one-bedroom units; $1,950 per month for two-bedroom units; and $3,100 per month for three-bedroom units. Within the Hamilton Heights portion of the secondary study area, a sampling of 2005 market rate rents averaged $1,000 per month for studios; $1,400 per month for one-bedroom units; $1,900 per month for two-bedroom units; and $3,200 per month for three-bedroom units. There are no market-rate rental units within the Morningside Heights portion of the secondary study area (south of West 122nd Street).

Real estate brokers were interviewed to gain insight into rental market trends for Manhattanville, Hamilton Heights, and Morningside Heights. Among these three neighborhoods, Morningside Heights appears to be the most expensive rental market. According to brokers interviewed, rents for studios and one-bedroom apartments in Morningside Heights are, on average, 35 to 40 percent higher than in Manhattanville. Hamilton Heights, starting on West 140th Street, is the second most expensive rental market in the study areas, with rents for studios and one-bedroom apartments averaging 25 to 32 percent more than in the Manhattanville area.[1]

Rent Burden

Rent burden is defined as the percentage of a household's combined income that is allocated to rent. Table 4-28 shows the shares of households in the study areas, Manhattan, and New York City that in 2000 spent up to 30 percent, between 30 and 50 percent, or more than 50 percent of household income on rent. Rent that does not exceed 30 percent of a household's combined income is considered to be affordable by local and federal agencies such as the U. S. Department of Housing and Urban Development (HUD).

Table 4-28
Rent as a Percentage of Income

	Gross Rent as a Percentage of Household Income in 1999			Median Rent as a Percentage of Median Area HH Income
	Up to 30%	30% to 50%	More than 50%	
Primary Study Area	55.4%	18.6%	19.0%	25.5%
Secondary Study Area	53.3%	17.4%	21.9%	26.6%
Manhattan	57.6%	18.5%	19.0%	24.8%
New York City	53.5%	18.4%	22.3%	26.6%

Source: Census 2000

[1] Broker estimates of differences in rents among neighborhoods (Manhattanville, Morningside Heights, and Hamilton Heights) were based in part on rents in portions of neighborhoods that fall outside the study area boundary, and therefore do not necessarily correlate to rent ranges within the study area, as provided by Jerry Minsky, senior vice president at Corcoran Realty.

Table 4-28 shows that about 55 percent of households in the primary study area and 53 percent of households in the secondary study area spend 30 percent or less of their combined income on rent, while almost 58 percent of households in Manhattan pay 30 percent or less on their rental apartments. The portion of households in the primary study area that spend between 30 and 50 percent, and more than 50 percent, of their income on rent is the same percentage recorded for Manhattan (19 percent). The share of households in the secondary study area that spend more than 50 percent of their income on rent (21.9 percent) is almost 2 percentage points higher than in the primary study area and Manhattan, but slightly below New York City as a whole (22.3 percent).

Comparing the median rent as a percentage of the median area income for all four geographies reveals a similar picture. As shown in Table 4-28, the relation between median rent and median household income in the primary study area (the median rent is 25.5 percent of median income) is only slightly higher than in Manhattan (24.8 percent), while the share of median rent to median household income in the secondary study area (26.6 percent) is higher than in the primary study area and Manhattan, but equal to the share for all of New York City. Overall, the variances between the four geographies are very small, and households in the study areas, as a whole, spend similar shares of their income on rental housing compared with other parts of Manhattan and New York City.

The similarities in rent burden between the study areas and Manhattan, despite the wide discrepancies in median income, is due to the relatively high proportion of rent-regulated units in the study areas (described below). Within the study area population occupying market-rate rental units, the median rent as a percentage of median income is expected to be larger. Based on the ranges of market-rate rents in the study areas, it is therefore likely that a substantial portion of the market rate units in the study area are occupied by low- to moderate-income households.

Single-Room Occupancy Hotels (SROs)

According to the *CEQR Technical Manual*, vulnerable populations are typically low-income residents that include occupants of lower-rent housing unprotected by rent regulation or SRO units. SRO units are of particular concern because they have traditionally been, and are still, a source of housing for low- and moderate-income study area residents, particularly elderly and minority residents. Also, in neighborhoods attracting substantial amounts of new investment, buildings with SRO units have been vulnerable to upgrading with a subsequent displacement of their tenants.

An inventory of potential SRO units in the study area was developed based on DCP's 2005 MISLAND Multiple Dwelling Report (see Table B.1-9 in Appendix B.1). Following *CEQR Technical Manual* methodology, AKRF conducted a field survey that included a visit to every building on the MISLAND list that indicated the presence of SRO units to determine whether the buildings still house SRO units. A number of building characteristics, including the following, were used to confirm the presence of SROs:

- Information from on-site building management staff or residents;
- Signage;
- Evidence of a lack of centralized facility management, such as:
  - Exterior cable wires connected through windows;
  - Multiple doorbells/mailboxes without tenant names;
  - Inconsistency in air-conditioning unit/fan installation methods and brands;
  - Inconsistency in window dressings; and
  - Minimal property upkeep.

Buildings under significant renovation also were eliminated from the inventory of potential SROs. Under any circumstance in which the presence of SROs could not be ruled out, the building was included in the inventory.

Table 4-29 displays a list of the buildings confirmed by field surveys to provide SRO rooms. Based on the MISLAND report and field surveys, there are an estimated 843 SRO rooms in 60 buildings within the study areas. This updated inventory shows a significant reduction from the 11,718 units in 271 buildings documented in the MISLAND database (which contains "last inspection date" dating back as far as 1986, in some cases). Buildings in the Morningside Heights neighborhood immediately surrounding Columbia University that are predominantly student dormitories or other facilities affiliated with the University were excluded from the inventory of potential SROs. In addition, a number of local social service organizations, such as a 138-unit shelter located at 1641-1659 Amsterdam Avenue, were excluded. While each of these buildings contains SRO units, they are classified as institutional uses and not relevant to an indirect residential displacement analysis. As a result, the sample of potential SROs in the study areas included 2,862 units in 241 buildings.

Table 4-29
Single Room Occupancy Units in the Study Areas

Census Tract	Address	Building Type	SRO Rooms
209.02	356 West 123rd Street	Pre-1929 Converted Transient	8
209.02	358 West 123rd Street	Pre-1929 Converted Transient	7
209.02	360 West 123rd Street	Pre-1929 Converted Transient	11
211	528 West 123rd Street	Pre-1901 SRO	48
213.02	311 West 126th Street	Pre-1929 Converted Transient	15
221.01	454 West 141st Street	Post-1929 Conversion	5
221.01	462 West 141st Street	Pre-1929 Conversion	2
223.01	614 West 138th Street	Pre-1929 Converted Transient	10
225	48 Hamilton Place	Pre-1929 Converted Transient	9
225	52 Hamilton Place	Pre-1929 Converted Transient	10
225	50 Hamilton Place	Pre-1929 Converted Transient	10
225	537 West 141st Street	Pre-1929 Converted Transient	4
225	519 West 141st Street	Pre-1929 Converted Transient	7
225	530 West 142nd Street	Pre-1929 Conversion	11
225	538 West 142nd Street	Post-1929 Conversion	8
225	554 West 142nd Street	Pre-1929 Converted Transient	14
225	522 West 142nd Street	Pre-1929 Converted Transient	6
227.01	413 West 144th Street	Pre-1929 Converted Transient	12
227.01	52 Hamilton Terrace	Pre-1929 Converted Transient	7
227.01	44 Hamilton Terrace	Pre-1929 Converted Transient	7
227.01	402 West 145th Street	Pre-1929 Converted Transient	7
227.01	400 West 145th Street	Pre-1929 Converted Transient	8
227.01	42 Hamilton Terrace	Pre-1929 Converted Transient	5
227.01	421 West 141st Street	Pre-1929 Conversion	1
227.01	133 Edgecombe Avenue	Pre-1901	90
227.01	342 West 145th Street	Pre-1929 Converted Transient	10
227.01	207 Edgecombe Avenue	Pre-1929 Converted Transient	10
227.01	203 Edgecombe Avenue	Pre-1929 Converted Transient	10
227.01	197 Edgecombe Avenue	Pre-1929 Converted Transient	12
227.01	188 Edgecombe Avenue	Pre-1929 Converted Transient	10

Table 4-29 (cont'd)
Single Room Occupancy Units in the Study Areas

Census Tract	Address	Building Type	SRO Rooms
227.01	192 Edgecombe Avenue	Pre-1929 Converted Transient	10
227.01	194 Edgecombe Avenue	Pre-1929 Converted Transient	10
227.01	196 Edgecombe Avenue	Pre-1929 Converted Transient	10
227.01	336 West 145th Street	Pre-1929 Converted Transient	10
227.01	463 West 141st Street	Pre-1929 Converted Transient	12
227.01	453 West 141st Street	Post-1929 Conversion	3
227.01	458 West 142nd Street	Pre-1929 Converted Transient	8
227.01	462 West 142nd Street	Pre-1929 Converted Transient	9
227.01	464 West 142nd Street	Pre-1929 Converted Transient	5
227.01	475 West 142nd Street	Pre-1929 Converted Transient	5
227.01	471 West 142nd Street	Pre-1929 Conversion	7
227.01	460 West 142nd Street	Pre-1929 Converted Transient	10
227.01	468 West 144th Street	Pre-1929 Converted Transient	4
227.01	453 West 144th Street	Pre-1929 Converted Transient	6
227.01	348 Convent Avenue	Post-1929 Conversion	6
227.01	456 West 145th Street	Pre-1929 Converted Transient	7
227.01	468 West 145th Street	Pre-1929 Converted Transient	12
227.01	466 West 145th Street	Pre-1929 Converted Transient	9
229	529 West 142nd Street	Pre-1929 Converted Transient	9
229	511 West 142nd Street	Pre-1929 Converted Transient	8
229	507 West 142nd Street	Pre-1901 SRO	70
229	531 West 143rd Street	Pre-1929 Converted Transient	7
229	515 West 144th Street	Pre-1929 Converted Transient	9
229	520-522 West 145th Street	Pre-1901	80
229	529 West 144th Street	Pre-1901 SRO	25
229	503 West 144th Street	Pre-1929 Converted Transient	6
229	601 West 142nd Street	Post-1901 SRO	90
229	637 West 142nd Street	Pre-1929 Converted Transient	7
229	631 West 142nd Street	Pre-1929 Converted Transient	7
229	617 West 142 Street	Pre-1929 Converted Transient	8
		TOTAL CONFIRMED SRO UNITS	**843**

Sources: New York City Department of City Planning's 2006 MISLAND database, and verified through AKRF, Inc. field surveys conducted September 2006.

The reduction in SRO units over time (in comparing MISLAND's 2,862 units of non-institutional SROs with the 843 confirmed through field surveys, and field observations) indicate an existing trend toward conversion of units from SRO to condos and apartments. For example, the block of Manhattan Avenue between West 122nd and West 123rd Streets that MISLAND identified as containing 76 SRO units is currently under renovation, and the presence of real estate brokerage signage indicates the ongoing conversion of those units to market-rate housing. At 330 West 145th Street, between Bradhurst and Edgecombe Avenues, approximately 64 SRO units have been replaced with a mixed-use development containing full-service residential uses and ground-floor retail. In addition to residential uses, a number of SROs have been converted to hotels, such as the Hotel Caribe at 515 West 145th Street, which continues to offer SROs, but

only on a short-term basis. The remaining SROs are located predominantly in the portion of the study area bounded by West 141st Street, Riverside Drive, West 148th Street, and Bradhurst Avenue. However, even in this area, the number of SRO units is lower than indicated by the MISLAND database. The greatest concentration of SRO units is along Edgecombe Avenue between West 141st and West 145th Streets, where 162 units remain. In addition, this neighborhood is marked by a number of residential and substance abuse treatment facilities operated by Phase Piggy Back Inc., including the NIA and Striver Houses.

SRO units are subject to legal and community support structures that require heavy penalties for illegal evictions. Although these protections have not always proven to be a firm barrier against displacement, it is reasonable to assume that with effective enforcement of the laws regulating tenancy of SRO dwellings and against illegal harassment actions on the part of landlords, effective protection against displacement would be afforded to these residents even under elevated market pressures. New York City's anti-harassment policies for protecting SRO tenants from displacement pressures require that the owners of SRO units who are seeking to convert them to another use request Certification of No Harassment from HPD. The application process permits HPD to conduct an investigation of any potential tenant harassment in the 36-month period before the filing of the application. The inquiry may include a Request for Comment on Application for Certification of No Harassment from tenants with respect to threats, physical force, deprivation of essential services, or other forms of harassment.[1]

Housing Status

As indicated above, a key objective of the detailed indirect residential displacement analysis is to characterize existing conditions of residents and housing in order to identify populations that may be at risk of displacement. At-risk populations are defined under CEQR as people living in privately held units that are unprotected by rent regulations, whose incomes or poverty status indicates that they could not pay substantial rent increases (*2001 CEQR Technical Manual* page 3B-11). This portion of the Existing Conditions section describes the status (rent-regulated or non-regulated) of the housing stock in the study areas. The findings are then used in concert with income data to identify the number and location of potentially at-risk households in the study areas.

Rent-Regulated Housing Units. There are two main types of rent regulation programs in New York City: rent control and rent stabilization. Rent control limits the rent an owner may charge for an apartment and restricts the right of an owner to evict tenants. In New York City, the rent control program applies to apartments in residential buildings containing three or more units and constructed before February 1947. For an apartment to fall under rent control, the tenant must have been living in that apartment continuously since before July 1, 1971. When a rent controlled apartment becomes vacant, it either becomes rent stabilized or, if it is in a building with fewer than six units, is removed from regulation. Rent stabilization limits the annual rate at which rents can increase. In New York City, rent stabilization generally applies to apartments in buildings containing six or more units built between February 1, 1947 and January 1, 1974. An apartment is no longer subject to rent stabilization if: a) it is an occupied apartment with a legal rent of $2,000 or more, and the household income of the occupants has exceeded $175,000 in each of the two preceding calendar years; or b) it is a vacant apartment that could be offered at a legal regulated rent of $2,000 or more.[2]

---

[1] New York City Administrative Code and Charter: §27-198, §27-2093.

[2] Rent regulations obtained from the New York State Division of Housing and Community Renewal, Office of Rent Administration, and the New York City Rent Guidelines Board.

Other types of housing that are rent-regulated include Section 8 housing,[1] public housing, Mitchell-Lama developments, and other HPD-owned housing. There are two public housing complexes located in the study areas: Manhattanville Houses (1,272 units), located east of the Project Area within the primary study area; and General Grant Houses (1,940 units), located southeast of the Project Area within both the primary and secondary study areas. In 2000, public housing represented approximately 24 percent of all housing units in the primary study area and 11 percent of all housing units in the secondary study area.

Comprehensive counts of rent-regulated housing are available only for geographic areas that are larger than the study areas. Therefore, in accordance with *CEQR Technical Manual* guidelines, the number of unregulated units was estimated based on Census data and data obtained from RPAD. Table 4-30 shows the methodology and unit count for the estimated number of unregulated units in the study areas.

As shown in Table 4-30, approximately 212 of the 11,457 renter-occupied dwelling units in the primary study area are in buildings of five units or less. There are an additional 1,473 rental units in buildings with more than five units that are not likely to fall under rent protection.[2] In total, approximately 1,685 units, or approximately 14.7 percent of the total renter-occupied housing units in the primary study area, are not likely to be covered by rent protection. The remaining approximately 85.3 percent of the rental units are in structures containing six or more housing units and built prior to 1974, and as such are potentially afforded protection under either rent control or rent stabilization.

Within the secondary study area (which includes primary study area units), approximately 823 of the 24,291 renter-occupied dwelling units are in buildings of five units or less. There are an additional 1,473 rental units in buildings with more than five units that are not likely to fall under rent protection.[3] In total, approximately 2,296 units, or approximately 9.5 percent of the total renter-occupied housing units in the secondary study area, are not likely to be covered by rent protection. The remaining approximately 90.5 percent of the rental units are in structures containing six or more housing units and built prior to 1974, and as such are potentially afforded protection under either rent control or rent stabilization. The actual percentage of rent-protected units is likely to be lower, given that some of the units are no longer subject to rent stabilization based on the provisions of the programs described above. Nevertheless, an even more conservative estimate would be high compared with other areas; according to New York City's Rent Guidelines Board, about 84 percent of Manhattan's and 68 percent of New York City's renter-occupied dwelling units were regulated in 2002.[4]

---

[1] Under Section 8, voucher recipients contribute 30 percent of their adjusted gross income to rent, with the administering agency paying the remaining amount directly to landlords, up to federally approved rates. According to a New York City Housing Authority press release (January 29, 2007), over 83,000 Section 8 vouchers are currently administered by NYCHA, and an additional 22,000 will be made available to eligible recipients over the next two years. Though vouchers are not tied to residential units in specific areas, it is anticipated that vouchers could be applied to some housing within the study area.

[2] This figure was derived by applying the 2000 Census renter-occupancy rate for each Census tract to the total unit count.

[3] This figure was derived by applying the 2000 Census renter-occupancy rate for each Census tract to the total unit count.

[4] New York Housing and Vacancy Survey, 2002.

Table 4-30
Unregulated Rental Housing Units in Primary and Secondary Study Areas

Row #			Primary Study Area	Secondary Study Area	Notes
1	Units in Buildings with 1-5 Units	Number of occupied rental units in buildings with 1-4 units	207	693	From the 2000 Census, updated using RPAD
2		Number of units in buildings with 5 units	5	130	Derived from RPAD
3		Total number of rental units in 1-5 unit buildings	212	823	(Row 1) + (Row 2) Conservatively assumes that all of the units in 5-unit buildings are renter-occupied, rather than owner-occupied
4	Additional Unprotected Units: Units in Buildings Built After January 1, 1974	Total units (renter- and owner-occupied) built between 1974 and 2003	1,488	1,488	Derived from RPAD
5		Total units (renter- and owner-occupied) built between 1974 and 2003 and in buildings with 5 units or less	0	0	Derived from RPAD
6		Total units (renter- and owner-occupied) in buildings with more than 5 units, built after January 1, 1974	1,488	1,488	(Row 4) - (Row 5) This number was derived by taking the total number of units built between 1974 and 2003 and subtracting out those in buildings with 5 or fewer units (to avoid double counting).
7		Number of rental units in buildings with more than 5 units, built after January 1, 1974	1,473	1,473	(Row 6) * (renter occupancy rate) This row filters out owner-occupied units by applying the renter-occupancy rate for each Census tract (from the 2000 Census) to Row 6.
8	Total Unregulated Rental Units	Total number of renter occupied units that are unprotected	1,685	2,296	(Row 3) + (Row 7)
9		Percent of renter occupied units that are unprotected	14.7%	9.5%	(Row 8) / (Renter-occupied units in Census tract)

Notes: The estimated number of unregulated units does not include public housing units, but may include other units in large buildings built after January 1, 1974 that are rent-regulated, such as Section 8 housing and other HPD-owned housing.

Sources: AKRF, Inc., 2000 Census, New York City Department of Finance Real Property Assessment Data (RPAD), 2003.

Identifying Population Currently at Risk of Displacement

In order to determine whether a population at risk of indirect residential displacement exists in the study areas, the *CEQR Technical Manual* recommends analyzing Census data on income and renters in structures containing fewer than six units combined with data on other factors, including the presence of subsidized housing and land use. For the purpose of this analysis, populations at risk were identified in the following manner:

1. Census 2000 tract-level data were used to determine the average household income of renters in small (one- to four-unit) buildings. As described above, these buildings are not generally subject to rent regulation laws. Average incomes were used in place of median incomes,

because Census data on median household income by size of building is not publicly available. [1]

2. For each Census tract, the average household income for renters in small buildings was compared with the average household income for renters in large buildings to determine where income disparities exist. This information was used to gain a better understanding of the income distribution across housing types and Census tracts.
3. For each Census tract, the average household income for renters in small buildings was compared with the average household income for all renters in Manhattan ($65,848). If the average for small buildings was lower than the borough-wide average for all renters, the Census tract was identified as having a potentially at-risk population.
4. For each Census tract identified as having a potentially at-risk population, the number of households in unregulated units was estimated using the methodology shown in Table 4-30.

In general, if average incomes in unregulated (small) buildings are low compared with average incomes in regulated (large) buildings and in renter-occupied buildings in Manhattan, as a whole, then the study areas might contain a significant population at risk.

As shown in Table 4-31, for all of the Census tracts within the primary and secondary study areas, the average income for renters in unregulated units is lower than the average income for Manhattan renters. As described above, tracts in which this income disparity exists—in this case, the primary and secondary study areas in their entirety—may contain households that could be vulnerable to indirect displacement pressures.

Table 4-32 shows the distribution of unregulated units across the Census tracts identified above as containing potentially at-risk populations. Assuming that the average household size for these households is the same as the average household size for the study areas, the unregulated units contain approximately 5,993 persons, of which 4,465 live within the primary study area. The potentially at-risk primary study area residents represent an estimated 12.6 percent of the 2000 primary study area population, while the potentially at-risk secondary study area residents represent 7.6 percent of the 2000 secondary study area population.

Almost 52 percent, or approximately 1,192 of the 2,296 unregulated units in the study areas, are located in Census tract 223.02, which contains the Riverside Park Community. In 2005, this 1,190-unit rental apartment complex (located at 3333 Broadway, between West 133rd and West 135th Streets and Broadway and Riverside Drive) opted out of the Mitchell-Lama program, which was designed to accommodate the housing needs of moderate-income families. Because the complex was built after 1973 and is no longer in the Mitchell-Lama program, the units are no longer subject to the Mitchell-Lama program's rental regulations, allowing the owner to rent at market-level rates. A more detailed discussion of this opt-out is provided in Appendix C, "Recent Trends Analysis."

---

[1] Census data on renter income are collected for pre-defined categories of buildings. These categories include buildings with 1-4 units and buildings with 5-9 units, making it impossible to develop an accurate average income for renters in buildings with 1-5 units. The average income for unprotected units is therefore based on the incomes for only those renters living in 1-4 unit buildings. This data constraint does not affect the overall analysis. Units in 5-unit buildings represent only 1 percent of all unprotected units in the overall study area. Incomes for these units are likely to be similar to incomes in buildings with 1-4 units, and because they represent a small proportion of the unprotected units, they would not substantially affect the average income.

Table 4-31
Average Household Income for Renters in Small Buildings, Buildings with 5 or More Units, and all Renter-Occupied Buildings in Manhattan, 2000

Census Tract	Average Household Income in Small Buildings[1]	Average Household Income in Large Buildings	Difference Between Small and Large Buildings	Difference Between Small Buildings and Manhattan Average[2]
Primary Study Area				
211	$43,150	$44,461	($1,311)	($22,698)
213.01	$28,713	$31,126	($2,413)	($37,135)
217.01	$8,817	$32,161	($23,344)	($57,031)
219	$42,671	$25,703	$16,968	($23,177)
223.01	$43,002	$34,860	$8,142	($22,846)
223.02	$17,564	$28,597	($11,033)	($48,284)
Secondary Study Area				
201.01	-	$65,209	-	-
203	$51,000	$50,594	$406	($14,848)
205	-	$91,259	-	-
207.01	$1,000	$52,340	($51,340)	($64,848)
209.01	$41,318	$23,422	$17,896	($23,530)
209.02	$33,912	$24,552	$9,360	($31,936)
211	$43,150	$44,461	($1,311)	($22,698)
213.01	$28,713	$31,126	($2,413)	($37,135)
213.02	-	$12,590	-	-
217.01	$8,817	$32,161	($23,344)	($57,031)
219	$42,671	$25,703	$16,968	($23,177)
221.01	-	$20,473	-	-
223.01	$43,002	$34,860	$8,142	($22,846)
223.02	$17,564	$28,597	($11,033)	($48,284)
225	$42,161	$34,538	$7,623	($23,687)
227.01	$26,305	$25,204	$1,101	($39,543)
229	$13,124	$31,963	($18,839)	($52,724)

Notes:

1 The average household income for small renter-occupied buildings is based on renter-occupied units in buildings with one to four units.

2 This number represents the difference between the average household income for renters in small buildings and the average household income for all Manhattan renters ($65,848).

Source: U.S. Census Bureau, 2000 Census.

Table 4-32
Unregulated Rental Housing Units by Census Tract

Census Tract	Estimated Number of Unregulated Units	Total Renter-Occupied Units	Unregulated Units as a Percent of Total Renter-Occupied Units in Census Tract[1]
Primary Study Area			
211	30	3,442	0.9%
213.01	53	1,555	3.4
217.01	135	579	23.3
219	213	2,225	9.6
223.01	63	2,170	2.9
223.02	1,192	1,486	80.2
Area Total	**1,685**	**11,457**	**14.7**
Secondary Study Area			
201.01	0	309	0.0
203	0	512	0.0
205	0	1,211	0.0
207.01	0	1,332	0.0
209.01	34	1,320	2.6
209.02	22	420	5.2
211	30	3,442	0.9
213.01	53	1,555	3.4
213.02	10	81	12.3
217.01	135	579	23.3
219	213	2,225	9.6
221.01	20	192	10.4
223.01	63	2,170	2.9
223.02	1,192	1,486	80.2
225	133	3,025	4.4
227.01	297	1,719	17.3
229	95	2,713	3.5
Area Total	**2,296**	**24,291**	**9.5**

Note:
1 The number of unregulated rental units in each Census tract is an estimate based on the methodology outlined above. The number of unregulated units in large buildings built after 1974 is derived by applying the renter-occupancy rate to the total number of units in large buildings (both renter- and owner-occupied buildings), which may result in a higher number of unprotected units than actually exists.

Sources: AKRF, Inc.; 2000 Census, New York City Department of Finance Real Property Assessment Data (RPAD), 2003.

The Riverside Park Community was originally developed with federal Section 236 mortgage interest subsidies.[1] Because the Riverside Park Community is a Section 236 building, tenants

[1] Under Section 236 of the National Housing Act, developments receive a monthly Interest Reduction Payment subsidy to reduce the effective mortgage rate paid by the project to 1 percent. Rents in Section 236 developments are based on income and family composition and cannot exceed 30 percent of a family's monthly adjusted income or basic (minimum) rent. Source: *Affordable No More: An Update;*

who do not exceed specified income thresholds are eligible to receive federal Section 8 Enhanced Vouchers, which shield recipients from unaffordable rent increases. Section 8 Enhanced Vouchers pay the difference between the new market-level rent and a household's subsidized rent. Therefore, the current residents using federal Section 8 Enhanced Vouchers are not vulnerable to indirect residential displacement, because the enhanced vouchers provide full protection from future increases in market rents.

Based on information obtained from HPD, upon conversion of the Riverside Park Community from the Mitchell-Lama program to market-rate housing, 1,119 Riverside Park Community households applied for federal Section 8 Enhanced Vouchers; 1,073 of those households were admitted to the program, and 1,062 households used the enhanced vouchers toward their rent. As of September 2006, there were 996 households in the Riverside Park Community that were using federal Section 8 Enhanced Vouchers. Residents in the remaining 194 units who do not receive federal Section 8 Enhanced Vouchers (or future residents of currently vacant units)[1] are assumed to be paying market rent rates for their units. As of September 2006, rental rates for apartments at Riverside Park Community were as follows: studios were $971 per month; one-bedroom units ranged from $1,372 to $1,393 per month; two-bedroom units were $1,635 to $1,656 per month; three-bedroom units were $2,110 to $2,131 per month; and four-bedroom units were $2,427 to $2,448 per month. Because these rents are still affordable to moderate-income tenants, current tenants in the 194 units not using federal Section 8 Enhanced Vouchers are assumed to be currently vulnerable to indirect residential displacement. Of the remaining 1,106 unregulated units in the study areas not located at Riverside Park Community, approximately 46.5 percent, or 514 unregulated units, are located in just three of the 17 study area Census tracts—Census tracts 229, 227.01, and 225—located in the northernmost part of the secondary study area (Hamilton Heights). As detailed in Appendix C, a sampling of market-rate rents in the Hamilton Heights portion of the secondary study area found that between 2000 and 2005, the median rent for studio apartments increased by 11 percent (in 2005 dollars); the median rent for one-bedroom units decreased by 8 percent; the median rent for two-bedroom units decreased by 3 percent; and the median rent for three-bedroom units increased by 6 percent. Overall, the data indicates that there is no clear trend toward increased rents in the Hamilton Heights portion of the secondary study area. Therefore, it is assumed that market-rate units in Hamilton Heights are still affordable to low- and moderate-income households, and are thus considered currently vulnerable to indirect displacement pressures. The sampling of 2005 market-rate rents within the neighborhood support this assumption: rents averaged $1,000 per month for studios; $1,400 per month for one-bedroom units; $1,900 per month for two-bedroom units; and $3,200 per month for three-bedroom units.

Other unregulated units are scattered throughout the study areas, with a relatively low concentration of unregulated units south of West 125th Street. Given that there has not been a clear trend toward increases in rents within the study areas between 2000 and 2005 (as detailed in Appendix C), and that current market rents remain affordable to low- and moderate-income families, it is assumed for purposes of analysis that all non-regulated units in the study area that are not receiving federal Section 8 Enhanced Vouchers contain a population currently at risk of indirect residential displacement. Subtracting the 996 Riverside Park Community households that

---

New York City's Mitchell-Lama and Limited Dividend Housing Crisis is Accelerating, prepared by the Office of the New York City Comptroller, Office of Policy Management, May 25, 2006.

[1] The federal Section 8 Enhanced Vouchers are tied to both the families in units within Riverside Park Community, and the unit itself. Therefore, once a unit is vacated, a family moving into that unit is not eligible for the enhanced voucher.

receive federal Section 8 Enhanced Vouchers from the unregulated housing totals in Table 4-32 results in a total of 689 at-risk units in the primary study area and 1,300 at-risk units in the secondary study area (which includes the at-risk primary study area units). Assuming that the average household size for these at-risk households is the same as the average household size for the study areas as a whole, there are currently an estimated 3,393 study area residents at risk of indirect residential displacement, of whom 1,826 live within the primary study area. The at-risk primary study area residents represent an estimated 5.1 percent of the 2000 primary study area population, while the at-risk secondary study area residents represent 4.4 percent of the 2000 secondary study area population.

FUTURE WITHOUT THE PROPOSED ACTIONS—2015

Since potential impacts of the Proposed Actions are assessed in relation to the future without the Proposed Actions, it is necessary to project existing socioeconomic conditions to the Build year for the Proposed Actions. This section identifies the trends affecting rents and displacement that may be in effect in the future without the Proposed Actions by 2015. It describes other proposed actions and development projects, approved or under construction; estimates population changes; and, based on recent and current trends in the area, assesses future trends and conditions.

Future development projects that have been announced, are in an approval process, or are being constructed, and proposals for rezoning and public policy initiatives likely to be built by 2015 without the Proposed Actions, are presented in Table 2-1 and shown in Figure 2-1 (see Chapter 2). In the 2015 future without the Proposed Actions, new residential development is expected to occur in both the Project Area and within the broader study areas. By 2015, six mixed-use developments that would include market-rate housing are likely to be constructed at six separate locations within the Project Area, near Broadway between West 125th and West 135th Streets (see Table 4-33). Together, they would result in 481 units of new housing. Applying to this amount the primary study area's 2000 average household size of 2.65 persons per household, these projects are projected to add 1,275 residents to the primary study area (assuming full tenancy). In addition to residential development, the six project would include a total of 74,500 square feet of retail uses and 86,500 square feet of community facility uses.

In addition to these projects, one proposed mixed-use residential/commercial development project providing 200 subsidized housing units is likely to be constructed within the secondary study area: the West 127th Street/Cornerstone project (see Table 4-33). This mixed-use project, which is part of HPD's Cornerstone Initiative, will create 200 condominium units for low-income households. Applying this amount to the secondary study area's average household size of 2.61, this project is projected to add 522 residents to the secondary study area (assuming full tenancy).

In addition to the known development projects, a portion of the 125th Street Corridor Rezoning area would extend into the secondary study area. Of the 26 total projected development sites identified in the DEIS for this rezoning (see Chapter 2), five sites would overlap with the secondary study area—there are no projected development sites within the primary study area. Two sites would be located on the south side of West 125th Street between Morningside and Manhattan Avenues, and three sites would be located between Manhattan Avenue and Frederick Douglass Boulevard—two on the north side and one on the south side of 125th Street. Each projected development site would contain residential development with ground-floor retail. These five projected development sites would total an estimated 260 residential units, plus 71,632 sf of retail, 103,958 sf of commercial office, and 11,890 sf of community facility uses. The 260 units are projected to add 678 residents to the secondary study area (assuming full tenancy).

Table 4-33
Expected Residential Development: 2015 Future Without the Proposed Actions

Project Name	Location	Total Units	Affordable Units	Market Rate Units
655 West 125th Street*	West 125th Street between Broadway and Twelfth Avenue	80	0	80
614 West 131st Street*	Broadway between West 131st and West 134th Streets	42	0	42
3261 Broadway*	Broadway between West 131st and West 134th Streets	113	0	113
3300 Broadway*	Broadway between West 133rd and West 134th Streets	125	0	125
3229 Broadway*	Broadway between West 129th and West 130th Streets	18	0	18
3320 Broadway*	Broadway between West 134th and West 135th Streets	103	0	103
West 127th Street/Cornerstone	West 127th Street and Frederick Douglass Boulevard	200	200	0
125th Street Corridor and Related Actions	West 125th Street between Morningside Avenue and Frederick Douglass Boulevard	260	52	208
	Total	**941**	**252**	**689**

Note: * These projects are part of a rezoning application that would not be advanced in the future with the Proposed Actions, as the sites are located within the Project Area.

Sources: New York City Department of City Planning, *New York Construction*, March 2004; New York City Department of Housing Preservation and Development.

In total, 941 units will be developed in the study areas in the 2015 future without the Proposed Actions, of which 252 will be subsidized units and 689 will be market-rate units. The estimated 2000 primary study area population (35,488 residents) would be expanded to an estimated 36,763 residents, while the estimated 2000 secondary study area population (78,803 residents) would be expanded to 81,278 residents. Given the mix of affordable and market-rate housing planned, it is expected that the new population added by these projects would reflect the demographic mix of the existing population in the study areas.

The forecasted slow population growth in the study areas is largely attributable to the expected continuing trend of slow growth of the housing stock in West Harlem. According to DCP, out of over 93,000 certificates of occupancy issued in New York City between 1993 and 2002, only 195—or 0.21 percent—were issued for residential units located in the study areas. This is due in part to relatively low demand for new housing in the area, and to the lack of suitable sites to build new housing. One important indicator of the limited amount of suitable development space is the level of construction activity that has occurred in the recent past. As shown in Table 4-23 above, the study areas had a relatively small proportion of residential units built between 1980 and 2000; only 5.1 percent of all study area units were built between 1980 and 2000, compared with 10.2 percent in Manhattan and 8.9 percent in all of New York City. According to 2006 RPAD data, between 2000 and 2005, only 82 residential units were constructed in the study areas.

There is one new development expected to occur by 2015 with or without approval of the Proposed Actions, and two academic developments for sites within the Project Area that would only be developed if the Proposed Actions do not move forward. The new development expected in the future without the Proposed Actions whether or not the proposed university area is approved is the Columbia University Studebaker Building at 615 West 131st Street. By 2008,

Columbia plans to renovate the Studebaker Building for administrative office use and estimates an additional 882 employees would be added to the Project Area.

There are two other new developments expected to occur within the Project Area by 2015 if the Proposed Actions are not approved. First, Columbia University will collaborate with the City of New York on the creation of a new public secondary school that will address education in science, math, and engineering, and that is potentially expected to accommodate 650 students (grades 6–12) and 35 faculty and administrators. It is anticipated that the school building would be located in the Project Area on the east side of Broadway between West 131st and 132nd Streets. Columbia University may develop administrative space above the public secondary school. Just north of this site, Columbia would also occupy the former Warren Nash Service Station building on the east side of Broadway between West 132nd and West 133rd Streets for additional University administrative space, adding approximately 644 new employees to the Project Area.

In addition to these private residential and commercial projects, there are public policy initiatives that will occur in the study area in the future without the Proposed Actions, such as the creation of the West Harlem Waterfront park by 2008 that would include new piers, recreational open space, a gateway plaza, a 40,000-square-foot multi-purpose building, and approximately 2.26 acres of landscaped areas. Increased access to the waterfront, more open space, and expanded water-related commercial uses will strengthen the overall appeal of the area for residents and visitors.

The residential, commercial, and institutional projects, combined with the further realization of the West Harlem Waterfront park, will improve the overall residential appeal of the study areas in the future without the Proposed Actions. The increased residential appeal could initiate a trend toward increases in market-rate rents in the study areas, which in turn could lead to the indirect displacement of some portion of the residents currently at risk in the study areas. However, it would be speculative to estimate the number of at-risk residents who could be displaced in the future without the Proposed Actions, and therefore, the analysis conservatively does not quantify any displacement of currently at-risk study area residents in the future without the Proposed Actions.

As described above in "Existing Conditions," the rents and prices for apartments, condominiums, and co-ops in the study areas are generally lower than in the surrounding neighborhoods of Hamilton Heights and Morningside Heights. The fact that most of the buildings are older and walk-ups contributes to the current low price level. Realtors cite the age of the current housing stock as a reason for the low price level, and claim that newer buildings would likely rent for higher rents. However, local realtors also cite a trend in the study areas toward increasing rents. According to realtors, rents for two-bedroom apartments in the study areas are slowly increasing, with the more expensive rents closer to Columbia University's Morningside Heights campus. However, specific rental data collected for the study areas between 2000 and 2005 did not show evidence of a strong trend toward increased rents in the study areas. As described in Appendix C, within the study areas, rental rates have remained stable since 2000, with the exception of rents for three-bedroom units, which increased by 7 percent over the five-year period.

The "Existing Conditions" section, above, identified 1,300 dwelling units—housing an estimated 3,393 residents—currently at risk of indirect residential displacement (of those units, 689 were located in the primary study area, housing an estimated 1,826 residents). Two factors could influence the total number of at-risk residents in the 2015 future without the Proposed Actions: 1) the likely increased residential appeal of the study areas could result in increases in market-rate rents, displacing vulnerable residents and replacing them with higher-income tenants who would be able to afford future rent increases, thereby leading to a reduction in the number of at-risk residents in the study areas; and 2) a reduction in the number of households eligible for

federal Section 8 Enhanced Vouchers in the Riverside Park Community (due to households with Enhanced Section 8 Vouchers voluntarily vacating their apartments or losing eligibility).

As mentioned above, for purposes of providing a more conservative analysis of the potential impacts of the Proposed Actions, the effects of increased residential appeal of the study areas in the future without the Proposed Actions is not quantified in this analysis. However, if fewer Riverside Park Community residents were protected from rent increases through federal Section 8 Enhanced Vouchers, that factor would lead to an increase in the at-risk population, and therefore, this influence is quantified in the analysis. The analysis assumes an "attrition rate" for federal Section 8 Enhanced Vouchers within the Riverside Park Community equal to the monthly attrition rate calculated from the time that the complex opted out of the Mitchell-Lama program (when 1,062 enhanced vouchers were used) to September 2006 (when 996 enhanced vouchers were used). Carrying the resulting -.357 percent monthly attrition rate forward, by January 2015 there will be an estimated 697 federal Section 8 Enhanced Vouchers in use; 299 fewer households will be receiving enhanced vouchers, and, therefore, the population in those units is assumed to be vulnerable to indirect displacement.

In the future without the Proposed Actions, some portion of the rent-regulated housing stock in the study areas would become deregulated by 2015, but this would not influence the total number of at-risk residents in the study areas. There are two different ways in which a rent-stabilized apartment can be deregulated. Occupied apartments can be deregulated if the apartment has a legal regulated rent of $2,000 or more per month, and the apartment is occupied by persons whose total annual household income exceeds $175,000 in each of the two preceding calendar years. In addition, a rent-stabilized apartment that becomes vacant and could be offered at a legal regulated rent of $2,000 or more per month is no longer subject to rent regulation.

In 2002, of the 328,574 rent-stabilized units in Manhattan, 177 units (approximately 0.05 percent of the total rent-stabilized housing stock) were deregulated through the high rent/high income criterion cited above, and 7,048 units (2.1 percent of the rent-stabilized housing stock) were deregulated through the high rent/vacancy criterion.[1] The annual rates of deregulation under both criteria would be expected to be far less for the study areas, because incomes and rents for the study areas are well below median incomes and rents for Manhattan as a whole. Nevertheless, there would be some amount of deregulation within the study areas in the future without the Proposed Actions.

Study area tenants occupying apartments that become deregulated would not be considered a population at risk of displacement because their household incomes would exceed $175,000, and therefore could afford increases in rent. Tenants occupying vacated apartments that become deregulated because they rent for more than $2,000 per month also would not be considered at risk, because the household income necessary to afford such a rent would be above the average household income for all renters in Manhattan ($65,848).

In the 2015 future without the Proposed Actions, there would therefore be an estimated 988 at-risk units in the primary study area and 1,599 at-risk units in the secondary study area (which includes the at-risk primary study area units). Assuming that the average household size for these at-risk households is the same as the Census 2000 average household sizes for the study areas as a whole, by 2015 there would be an estimated 4,173 study area residents at risk of indirect residential displacement, of whom 2,618 would live within the primary study area. The at-risk primary study area residents would represent approximately 7.2 percent of the projected 2015

[1] New York City Rent Guidelines Board, "Housing NYC: Rents, Markets and Trends 2004."

primary study area population, while the at-risk secondary study area residents would represent 5.2 percent of the projected 2015 secondary study area population.

FUTURE WITH THE PROPOSED ACTIONS—2015

By 2015, several key components of the University's development program would be complete, and redevelopment would have occurred in Subdistrict B and the Other Areas, creating new attractive uses. These new uses are assumed to include 99 market-rate apartment units built by a non-Columbia developer in the Other Area east of Broadway, and more than one million sf of general academic and academic research facilities space would be developed in the Academic Mixed-Use Area. In addition, the Proposed Actions would create 22,355 sf of publicly accessible open space between the academic structures and over 36,000 sf of ground level retail space or other active ground-floor uses along West 125th Street and Broadway.

This section considers whether the Proposed Actions could introduce a trend or accelerate a trend of changing socioeconomic conditions, which in turn could impact the population at risk (as identified above). Based on the preliminary assessment of indirect residential displacement that was conducted in Section C, two *CEQR Technical Manual* criteria are analyzed in greater detail in order to determine the potential for significant adverse impacts due to indirect residential displacement.[1] These criteria are listed in italics below.

Would the Proposed Actions add a substantial new population with different socioeconomic characteristics compared with the size and character of the existing population?

In the future with the Proposed Actions, no University-related residential development would occur in the Academic Mixed-Use Area by 2015.[2] However, it is anticipated that some residential redevelopment would occur in the Other Area east of Broadway. Under the socioeconomic reasonable worst-case development scenario, 99 market-rate units would be built (but not by Columbia). Using the primary study area's average household size of 2.65 persons per unit, the 99 apartment units would add an estimated 262 residents to the primary study area. Since the 99 units would be some of the very few new units built in the area, it is expected that rents charged for these apartments would be on the upper end of rental market rates, and would therefore generate a new population that, on average, is more affluent than the existing population in the study area. However, the population introduced by these units in isolation would not have a significant effect

[1] The preliminary assessment of indirect residential displacement (found in Section C) evaluated six criteria that help determine whether an action could introduce or accelerate a trend that could lead to changes in socioeconomic conditions. The preliminary assessment screened out the following four criteria: 1) Would the Proposed Actions directly displace uses or properties that had a blighting effect on property values in the study area? 2) Would the Proposed Actions directly displace enough of one or more components of the population to alter the socioeconomic composition of the area? 3) Would the Proposed Actions introduce a substantial amount of more costly type of housing compared with existing housing and housing expected to be built in the study area by the time the action is implemented? 4) Would the Proposed Actions introduce a land use that could have a similar effect if it is large enough or prominent enough, or combines with other like uses to create a critical mass large enough to offset positive trends in the study areas, to impede efforts to attract investments to the area, or to create a climate for disinvestment?

[2] For purposes of providing a more conservative analysis of potential off-site housing demand, the socioeconomic reasonable worst-case development scenario assumes no University housing would be developed in the Project Area by 2015. Under the Illustrative Plan, which is what Columbia currently intends to develop with the Proposed Actions, 255 residential units for University faculty, other employees, and students would be developed within the Academic Mixed-Use Area by 2015.

on the socioeconomic composition of the primary study area because the population would represent less than one percent of the primary study area population.

The Proposed Actions also would generate a housing demand from new University employees and graduate students. The socioeconomic reasonable worst-case development scenario estimates that 1,734 new University faculty, administrators, post-doctoral students, and researchers would be generated by the Proposed Actions by 2015.[1] In addition to these new employee populations, by 2015 the Proposed Actions would generate 2,780 new graduate students associated with the new university area.[2] It is expected that some portion of these 1,734 new employees and 2,780 new graduate students would be individuals who already reside in the study areas. Many of these "locals" would continue to reside in their existing housing, and would therefore not contribute to a new demand for housing within the study areas. However, to provide a more conservative assessment of the potential effects on housing demand, it is assumed that all 1,734 employees and all 2,780 students may seek housing within the study areas, regardless of their place of residence prior to recruitment.

A major factor influencing potential demand is the propensity for those University employees and students who would not be provided University housing to locate within the study areas. To establish a benchmark to model the potential for University-generated housing demand as a result of the Proposed Actions, an extensive analysis was conducted to determine the number of current faculty, administrators, post-doctoral, and other graduate students who live in non-University properties within ¼ mile and ½ mile of the Morningside Heights and Columbia University Medical Center (CUMC) campuses (see Appendix B.1). Because the EIS does not assume that the University would provide housing to graduate students, faculty, and other employees within the study areas (apart from the units provided in the Project Area by 2030), it is also necessary to account for the possibility that University populations currently provided University housing may have a higher propensity to locate within ¼ mile or ½ mile of their campus compared with those who are not provided University housing. Applying a highly conservative assumption, further analysis was performed to model demand assuming that half of all current employees in University housing would choose to remain within ¼ or ½ mile of their respective campuses even if University housing were not provided to them. The results of this more conservative analysis were then applied to the population of employees and students expected to be generated by the Proposed Actions under the socioeconomic reasonable worst-case development scenario, and the resulting projections are presented in Table 4-34.

As summarized in Table 4-34, using this conservative analytical assumption to identify the greatest potential impact, the project-generated University population would create a projected demand for as many as 438 housing units within the primary study area and 512 units within the secondary study area (which includes the 438-unit demand within the primary study area).

[1] The 1,734 employee estimate was derived by applying employment densities at existing University facilities to comparable program elements of the Proposed Project. For more information on this analysis, see Appendix B.1.

[2] The project-generated graduate student populations were derived from projected enrollment at University programs anticipated to locate at the new university area, and account for natural growth in the undergraduate student population based on projections of historic trends. For more information on this analysis, see Appendix B.1.

Table 4-34
Project-Generated University Employees and Students Seeking Housing in Study Areas—2015

Population	University-Generated Populations	Primary Study Area Housing Unit Demand	Secondary Study Area Housing Unit Demand
Academic and administrative employees	1,733	214	280
Graduate students	2,780	224	232
Total	**4,513**	**438**	**512**

Notes: 1 Per a Columbia University study of housing patterns in University properties, students are projected to live two students per housing unit.
Source: Columbia University.

As described above in "Future Without the Proposed Actions—2015," by 2015 there will be an estimated 988 market-rate units in the primary study area and 1,599 market-rate units in the secondary study area that will house tenants potentially vulnerable to indirect displacement due to increased rents. The University-generated housing demand could result in increased market-rate rents in the study areas, which could in turn lead to the indirect displacement of some of these at risk-tenants. However, the University-generated housing demand would not be met exclusively by tenancy in market-rate units from which residents were indirectly displaced. It is expected that some portion of the 99 market-rate units developed in the Other Areas would be rented by University graduate students, faculty, and other employees. In addition, University-generated demand would be met by individuals' purchases of owner-occupied housing in the study areas, and by turnover within the rent-regulated housing stock in the study areas. The 2000 Census reports that an estimated 13.6 percent of the rental units within the primary study area and 14.6 percent of rental units within the secondary study area were occupied by tenants within the latest 15-month period reported by the Census (January 1999 to March 2000). These rates are slightly below that for Manhattan (17.8 percent of rental tenants moved into their apartments between January 1999 and March 2000), and for New York City as a whole (17.3 percent). Based on the percentage of new tenants in the primary and secondary study areas during that 15-month period, an estimated 1,245 rental units in the primary study area and 2,842 rental units in the secondary study area "turn over" to new rental tenants annually.[1]

The University-generated housing demand met by individuals' purchases of owner-occupied housing and turnover within the rent-regulated housing stock would not be indirectly displacing existing tenants, because tenants who vacated owner-occupied or rent-regulated apartments would be afforded protection from market forces that increase rents. However, because the University-generated demand could be substantial, the following section examines whether the new population generated by the Proposed Actions would be large enough to alter socioeconomic trends significantly, which in turn could lead to further indirect residential displacement of the at-risk population in the study areas.

[1] Decennial Census data does not distinguish between rent-regulated and unregulated units, and therefore, the estimated turnover of rental apartments includes both rent-regulated and market-rate units. According to the U.S. Bureau of Census' 2002 Housing and Vacancy Survey, approximately 31 percent of rent-stabilized and rent-controlled units in New York City were occupied within the three years prior to the survey (1999–2002); in contrast, approximately 50 percent of unregulated rental units were occupied within the previous three years. It is therefore reasonable to assume that regulated units in the study areas have a lower rate of turnover compared with market-rate (unregulated) units.

Population Analysis

According to the *CEQR Technical Manual,* indirect displacement of a residential population most often occurs when an action increases property values and thus rents throughout a study area, making it difficult for some existing residents to continue to afford to live in the community. The manual states that:

> *If the proposed action may introduce a trend or accelerate a trend of changing socioeconomic conditions, and if the study area contains population at risk, then it can be concluded that the action would have an indirect displacement impact. Understanding the action's potential to introduce or accelerate a socioeconomic trend is a function of the size of the development resulting from the action compared with the study area and the type of action (does it introduce a new use or activity that can change socioeconomic conditions in the study area?). Generally, if the proposed action would increase the population in the study area by less than 5 percent, it would not be large enough to alter socioeconomic trends significantly.*

The new University employee and graduate students seeking housing in the study areas would not represent the total new population introduced to the study areas by the Proposed Actions, because many of these employees and graduate students would have spouses, significant others, and/or children. Table 4-35 shows the projected total University-affiliated population introduced to the study areas by the Proposed Actions, based on the family composition of existing University populations associated with the Morningside Heights and CUMC campuses.

Table 4-35
Project-Generated University Population (Including Families) Seeking Housing in Study Areas—2015

University Affiliation	Population Introduced Within Study Areas[1]	
	Primary Study Area	Secondary Study Area
Academic and administrative employees	521	671
Graduate students	449	463
Total	**970**	**1,134**

Note: 1. Estimates do not include the estimated 262 residents that would be introduced to the study areas by the 99 market-rate residential units developed in the Other Areas.
Source: Columbia University.

By 2015, under the socioeconomic reasonable worst-case development scenario, the Proposed Actions could add up to 970 University-affiliated residents within the primary study area and up to 1,134 University-affiliated residents within the secondary study area (see Table 4-35). As described above in "Future without the Proposed Actions—2015," by 2015 the primary study area will contain a projected 36,763 residents, while the secondary study area (which includes the primary study area) will contain a projected 81,278 residents. Section 332.1 of the *CEQR Technical Manual* states that generally, if a proposed action would increase the study area population by less than 5 percent, it would not be large enough to affect socioeconomic trends significantly. The project-generated University populations would represent 2.6 percent of the 2015 primary study area population and 1.4 percent of the secondary study area population, both well below the 5 percent guideline cited in the *CEQR Technical Manual*. Even when, for the purpose of a conservative analysis, the estimated 262 residents generated by the Proposed Actions' 99 market-rate units in the Other Areas are assumed to be non-University-affiliated residents and are added to the project-generated University population in the primary study area, the resulting population of 1,232 residents (970 from demand generated by University uses plus

262 from the Other Areas) would constitute a change of 3.4 percent, still well below the 5 percent guideline. The additional non-University population that could be drawn to the study area due to the increased residential attractiveness of the area is expected to be minimal by 2015, since the improvements to the Project Area would be limited to the two southernmost blocks, and there would not be the critical mass of amenities necessarily to attract substantial numbers of new residents by 2015.

Would the Proposed Actions introduce a critical mass of non-residential uses, such that the surrounding area becomes more attractive as a residential neighborhood complex?

Overall, the Proposed Actions would replace current uses in the Project Area with academic, academic research, office, retail, and open space uses, which are likely to be more complementary to residents when compared with the current mix of uses in the Project Area. It is anticipated that the new development associated with the Proposed Actions would improve the physical conditions of the Project Area and enhance the retail and office uses in the study areas. The Proposed Actions also would strengthen the academic and institutional character of the study area, where City College and Columbia University already have a major presence.

While the Proposed Actions are expected to have a positive impact on both the immediate neighborhood and the larger study areas, by 2015 the project's positive influences on the area's livability and overall residential appeal would be minimized by the relatively limited area of project improvements, and by ongoing construction activity. The demand generated by increased residential appeal—not only from new University employees and students who may be considering whether to live in the study areas, but also from the general population—would not be substantial, although some indirect displacement of at-risk residents could result.

Determining Impact Significance

While the Proposed Actions could result in the indirect displacement of some at-risk study area residents, by 2015 this impact would not be considered significant. The potential for indirect displacement pressures with the Proposed Actions would be limited to two influencing factors: 1) the incremental demand for housing from the University-affiliated populations; and 2) the incremental demand generated by the general population due to increased residential attractiveness of the study areas. Considering both of these influences, the project-generated population introduced to the primary and secondary study areas by 2015 would not be a substantial addition to the study area populations such that the study areas' socioeconomic conditions would markedly change. Based on the socioeconomic reasonable worst-case development scenario, the Proposed Actions could generate as many as 1,396 new University-affiliated residents to the study areas by 2015 (of which 1,232 would reside within the primary study area); this new population would be 1,079 fewer persons than the 2,475 residents projected to be added to the study areas in the 2015 future without the Proposed Actions. The University-affiliated population introduced by the Proposed Actions would represent approximately 3.4 of the 2015 primary study area population and 1.7 percent of the secondary study area population. And as described above, the additional non-University population that could be drawn to the study area due to the increased residential attractiveness of the area is expected to be minimal by 2015.

As described above in "Future Without the Proposed Actions—2015," by 2015 there will be an estimated 988 market-rate units in the primary study area and 1,599 market-rate units in the secondary study area that will house tenants potentially vulnerable to indirect displacement due to increased rents. In terms of the incremental demand generated by the University-affiliated

populations, the socioeconomic reasonable worst-case development scenario conservatively projects that University employees and students could seek residence in as many as 512 non-University housing units within the study areas by 2015. This project-generated demand would be partially absorbed within the 99 market-rate units developed in the Other Areas, by individuals' purchases of owner-occupied housing in the study areas, and by turnover within the rent-regulated housing stock in the study areas. These factors would combine to limit the number of market-rate units that ultimately would be sought by University employees and students.

It is anticipated that any incremental demand for market-rate housing generated by the Proposed Actions by 2015 would be focused almost exclusively within the primary study area; currently a large majority of the housing demand generated by University employees and students within ½ mile of the Morningside Heights and CUMC campuses occurs within ¼ mile of those campuses. The University-generated employees and students are projected to seek only 74 units in the secondary study area outside of the primary study area. From within the inventory of vulnerable units in the primary study area, it is expected that employees and students would generally seek available apartments closest to the new university area (which could include a portion of the projected 493 vulnerable units in the Riverside Park Community, and a portion of the approximately 243 vulnerable units in the area south of Manhattanville Houses). Some University employees and students also could seek to locate closer to the City College campus (there are an estimated 188 vulnerable units east of Amsterdam Avenue between West 135th Street and West 126th Street).

In terms of the incremental demand for housing generated by the general population due to increased residential attractiveness of the study area, any incremental demand over conditions expected to occur in the future without the Proposed Actions would likely be focused on the areas closest to the Project Area, because the distance and isolated nature of the Project Area (surrounded by transportation viaducts and taller residential and institutional redevelopment) would diminish the Proposed Actions' ability to have a marked influence on general residential appeal in Hamilton Heights and Morningside Heights. In the portions of the secondary study area outside of the primary study area, other market forces would play a larger role in shaping development trends. Even within the primary study area, the incremental demand is not expected to be substantial because the improvements to the Project Area would be limited to the two southernmost blocks, and there would not be the critical mass of amenities necessarily to attract substantial numbers of new residents by 2015. In addition, ongoing construction activities in the remainder of the Project Area could serve to dampen the overall residential appeal of the immediate area.

FUTURE WITHOUT THE PROPOSED ACTIONS—2030

This section describes the housing and population conditions that are expected in the future without the Proposed Actions, presenting the limited development and population changes that are projected to occur in the study areas by 2030.

As described in Chapter 3, the study areas are expected to show very limited change in the future without the Proposed Actions by 2030. All of the anticipated development projects in the study areas are likely to be completed by 2015 (see Table 4-33, above). No residential development projects are currently planned between 2015 and 2030.

Population projections by the New York Metropolitan Transportation Council (NYMTC) indicate that although Manhattan's population as a whole is expected to grow, population growth in the study areas will remain low through 2030. The low growth indicators are supported by

local conditions, such as the absence of suitable development sites and a low residential vacancy rate, as described above in "Future Without the Proposed Actions—2015." Rents are expected to increase, although in the 2015 future without the Proposed Actions, rents in Manhattanville may continue to lag behind rents for the surrounding neighborhoods of Morningside Heights and Hamilton Heights, and rents for the study areas as a whole are anticipated be below those of other areas of Northern Manhattan. In addition, due to the limited amount of market-rate units in the study areas, the overall rent level is expected to stay below the levels of the neighboring areas. For purposes of providing a conservative analysis, it is assumed that the 2030 population in the primary and secondary study areas will be the same as projected for 2015; the primary study area will contain an estimated 36,736 residents, while the secondary study area will contain 81,278 residents.

Improvements initiated by public policy initiatives such as the West Harlem Master Plan are expected to continue, and by 2030 would further improve access to the waterfront and the Project Area, which would help to enhance commercial and recreational activities in the study areas. The increased residential appeal would continue a trend established in the 2015 future without the Proposed Actions toward increases in market-rate rents in the study areas, which in turn could lead to the indirect displacement of some portion of the residents currently at risk in the study areas. However, it would be speculative to estimate the number of at-risk residents who could be displaced in the future without the Proposed Actions, and the analysis conservatively does not quantify any displacement of currently at-risk study area residents in the future without the Proposed Actions.

As described above in "Future Without the Proposed Actions—2015," if over time fewer Riverside Park Community residents were protected from rent increases through federal Section 8 Enhanced Vouchers, that factor would lead to an increase in the at-risk population, and therefore, that possibility is accounted for in the analysis. The analysis conservatively assumes an "attrition rate" for federal Section 8 Enhanced Vouchers within the Riverside Park Community equal to the monthly attrition rate calculated from the time that the complex opted out of the Mitchell-Lama program (when 1,062 enhanced vouchers were used) to September 2006 (when 996 enhanced vouchers were used). Carrying the resulting -.357 percent monthly attrition rate forward, by January 2030 there will be an estimated 367 federal Section 8 Enhanced Vouchers in use; 629 fewer households will be receiving enhanced vouchers compared with the 1,062 households as of September 2006. The population in the building's 823 units that will not be receiving enhanced vouchers is assumed to be vulnerable to indirect displacement by 2030.

Some portion of the rent-regulated housing stock in the study areas would become deregulated by 2030. (The means by which rent-stabilized units can become deregulated is detailed above, in "Future without the Proposed Actions—2015.") Study area tenants occupying apartments that become deregulated would not be considered a population at risk of displacement because their household incomes would exceed $175,000, and therefore could afford increases in rent. Tenants occupying previously vacated apartments that have become deregulated because they rent for more than $2,000 per month also would not be considered at risk, because the household income necessary to afford such a rent would be above the average household income for all renters in Manhattan ($65,848).

In the 2030 future without the Proposed Actions, there will be an estimated 1,318 at-risk units in the primary study area and 1,929 at-risk units in the secondary study area (which includes the at-risk primary study area units). Assuming that the average household size for these at-risk households is the same as the Census 2000 average household sizes for the study areas as a whole, by 2030 there will be an estimated 5,035 study area residents at risk of indirect residential

displacement, 3,493 of whom will live within the primary study area. The at-risk primary study area residents will represent approximately 9.5 percent of the projected 2030 primary study area population, while the at-risk secondary study area residents will represent 6.2 percent of the projected 2030 secondary study area population.

FUTURE WITH THE PROPOSED ACTIONS—2030

By 2030, the Academic Mixed-Use Area would be completely transformed to include academic buildings, academic research facilities, housing for graduate students, faculty and other employees, and recreational facilities. Additional commercial space for retail and other active ground-floor uses would be available. As a result, the Project Area would be transformed into a more active mixed-use neighborhood.

Continuing activities as described above in "Future with the Proposed Actions—2015," the 2030 future with the Proposed Actions would continue to create lively and attractive streets, improve the pedestrian experience in the Project Area, and enhance access to the waterfront. The amount of publicly accessible open space would increase from 22,355 sf to 93,965 sf) and complete the transformation of the Project Area. With the 2015 future with the Proposed Actions, about one-third of the development sites would be completed. By 2030, the remaining sites would be developed. Additional active ground-floor uses would be located along West 125th Street, Twelfth Avenue, and Broadway, creating compatible uses along these commercial corridors.

Similar to the analysis of the 2015 future with the Proposed Actions, two screening criteria are analyzed in greater detail in order to determine the potential for significant adverse impacts due to indirect residential displacement. These criteria are listed in italics below.

Would the Proposed Actions add a substantial new population with different socioeconomic characteristics compared with the size and character of the existing population?

Under the socioeconomic reasonable worst-case development scenario, the Proposed Actions would introduce approximately 562 residential units in the Academic Mixed-Use Area by 2030.[1] These units would house University faculty, administrators, researchers, and post-doctoral and other graduate students. The population introduced by these units in isolation would not have a significant effect on socioeconomic conditions in the primary study area because the population would represent a small percentage of the primary study area population.

In addition to this on-site housing, by 2030 the Proposed Actions would likely generate additional housing demand from new University employees and graduate students within the broader study areas. The socioeconomic reasonable worst-case development scenario estimates that 6,425 new University faculty, administrators, post-doctoral students, and researchers would be generated by the Proposed Actions by 2030.[2] In addition to this new employee population, by 2030 the Proposed Actions would generate 4,322 graduate students associated with the new university

[1] For purposes of providing a more conservative analysis of potential off-site housing demand, the socioeconomic reasonable worst-case development scenario assumes no University housing would be developed in the Project Area by 2015. Under the Illustrative Plan, which is what Columbia currently intends to develop with the Proposed Actions, 255 residential units for University faculty, other employees, and students would be developed within the Academic Mixed-Use Area by 2015.

[2] The 6,425 employee estimate was derived by applying employment densities at existing University facilities to comparable program elements of the Proposed Project. For more information on this analysis, please see Appendix B.1.

area.[1] It is expected that some portion of these 6,425 new employees and 4,322 new graduate students would be individuals who already reside in the study areas. Many of these "locals" would continue to reside in their existing housing, and would therefore not contribute to a new demand for housing within the study areas. However, to provide a more conservative assessment of the potential effects on housing demand, it is assumed that all 6,425 employees and all 4,322 students would demand new housing, regardless of their place of residence prior to recruitment.

As described above in "Future with the Proposed Actions—2015," a major factor influencing potential demand is the propensity for those University employees and students who would not be provided University housing to locate within the study areas. To establish a benchmark to model the potential for University-generated housing demand as a result of the Proposed Actions, an extensive analysis was conducted to determine the number of current faculty, administrators, post-doctoral, and other graduate students who live in non-University properties within ¼ mile and ½ mile of the Morningside Heights and CUMC campuses (see Appendix B.1). Because the EIS does not assume that the University would provide housing to graduate students, faculty, and other employees within the study areas (apart from the units provided in the Project Area), it is also necessary to account for the possibility that University populations currently provided University housing may have a higher propensity to locate within ¼ mile or ½ mile of their campus compared with those who are not provided University housing. Applying a highly conservative assumption, further analysis was performed to model demand assuming that half of all current employees in University housing would choose to remain within ¼ or ½ mile of their respective campuses even if University housing were not provided to them. The results of this more conservative analysis were then applied to the population of employees and students expected to be generated by the Proposed Actions under the socioeconomic reasonable worst-case development scenario, and the projections are presented in Table 4-36.

Table 4-36
Project-Generated University Employees and Students Seeking Housing in Study Areas—2030

Population	Project-Generated University Population	Number Housed in Academic Mixed-Use Area	Primary Study Area Housing Unit Demand[1]	Secondary Study Area Housing Unit Demand[1]
Academic and administrative employees	6,425	168	627	860
Graduate students	4,322	394	212	271
TOTAL	**10,747**	**562**	**839**	**1,131**

Notes: 1. University populations seeking housing within the primary and secondary study areas do not include those housed within the Academic Mixed-Use Area. Per a Columbia University study of housing patterns in University properties, students are projected to live two students per housing unit.
Source: Columbia University.

As summarized in Table 4-36, under this more conservative analytical assumption, there would be an estimated demand for 839 housing units within the primary study area and 1,131 units within the secondary study area (which includes the 839-unit demand within the primary study area).

[1] The project-generated graduate student populations were derived from projected enrollment at University programs anticipated to locate at the new university area. For more information on this analysis, see Appendix B.1.

From within the inventory of units vulnerable to rent increases in the primary study area, it is expected that employees and students would generally seek available apartments closest to the new university area (e.g., by 2030 there would be a projected 823 vulnerable units housing 2,058 residents in the Riverside Park Community—specifically, units which would become vulnerable only if occupants currently holding Section 8 Enhanced Vouchers vacated their apartments and were replaced with market-rate tenants not eligible for such vouchers—and 243 vulnerable units housing an estimated 608 residents in the area south of West 125th Street). Some University employees and students could also seek to locate closer to the City College campus (there are an estimated 188 vulnerable units housing 470 residents east of Amsterdam Avenue between West 135th Street and West 126th Street).

The University-generated housing demand would not be met exclusively by tenancy in market-rate units from which residents were indirectly displaced. The project-generated University demand would be met in part by individuals' purchases of owner-occupied housing in the study areas, and by turnover within the rent-regulated housing stock in the study areas. These actions would not be indirectly displacing existing tenants in owner-occupied or rent-regulated apartments; those tenants are afforded protection from market forces, and leave their units voluntarily.

It is impossible to project with specificity the number of at-risk tenants who would be indirectly displaced as a result of the Proposed Actions. As described above, this analysis assumes a reasonable worst-case scenario that limits the supply of on-site residences for the University-affiliated population, and advances a highly conservative assumption with respect to the amount of off-site demand generated by the University-affiliated population. Given these conservative assumptions, and the fact that some amount of the demand generated by the Proposed Actions would be met through individuals' purchases of owner-occupied housing in the study area and by natural (non-action-related) turnover in the rental market, it is expected that the demand generated by the University-affiliated population alone would result in indirect displacement of an amount far less than the 1,318 total at-risk units in the study area. The other contributing factor to indirect displacement—the general increase in the area's attractiveness as a residential neighborhood—is even more difficult to quantify, particularly because such influences cannot be separated from other market forces. Given these limitations, the analysis quantifies an upper-bound of units and residents that are potentially vulnerable to indirect displacement, and determines whether that level of vulnerability constitutes a significant adverse impact.

As described above in "Future Without the Proposed Actions—2030," by 2030 there will be an estimated 1,318 market-rate units in the primary study area and 1,929 market-rate units in the secondary study area that will house tenants potentially vulnerable to indirect displacement due to increased rents. The project-generated University housing demand could result in increases in market-rate rents, which in turn could result in the indirect displacement of at-risk tenants.

The following section examines whether the new population generated by the Proposed Actions would be large enough to alter socioeconomic trends significantly, which in turn could lead to indirect residential displacement of the at-risk population in the study areas.

Population Analysis

Table 4-37 shows the projected total University-affiliated population that could be introduced to the study areas by the Proposed Actions, based on the family composition of existing University populations associated with the Morningside Heights and CUMC campuses.

By 2030, under the socioeconomic reasonable worst-case development scenario, the Proposed Actions could add up to 2,717 University-affiliated residents within the primary study area (including those in the Project Area) and up to 3,362 University-affiliated residents within the secondary study

area (see Table 4-37). By 2030 the primary study area is projected to contain 36,763 residents, while the secondary study area (which includes the primary study area) is projected to contain 81,278 residents. Section 332.1 of the *CEQR Technical Manual* states that generally, if a proposed action would increase the study area population by less than 5 percent, it would not be large enough to affect socioeconomic trends significantly. The project-generated University populations would represent 7.4 percent of the 2030 primary study area population and 4.1 percent of the secondary study area population. When, for the purpose of a conservative analysis, the estimated 262 residents generated by the Proposed Actions' 99 market-rate units in the Other Areas are assumed to be non-University-affiliated residents and are added to the University-generated population in the primary study area, the resulting population of 2,979 (2,717 residents from demand generated by the University plus 262 from the Other Areas) would represent 8.1 percent of the 2030 population in the primary study area. The overall project-generated population could be even higher because of the additional non-University-affiliated residents who may be drawn to the area, due to its increased residential attractiveness (detailed below).

Table 4-37
Project-Generated University Population (Including Families) Seeking Housing in Study Areas—2030

University Affiliation	Population Introduced Within Study Areas[1]	
	Primary Study Area	Secondary Study Area
Academic and administrative employees	1,899	2,425
Graduate students	818	937
Total	**2,717**	**3,362**

Note: 1. These projections include the estimated populations within the 562 University housing units that would be developed in the Academic Mixed-Use Area, but does not include the 262 residents that would be introduced to the study areas by the 99 market-rate residential units developed in the Other Areas.
Source: Columbia University.

The Proposed Actions would therefore introduce a substantial new population, and that population is expected to have different socioeconomic characteristics compared with the character of the existing study area populations.

Would the Proposed Actions introduce a critical mass of non-residential uses, such that the surrounding area becomes more attractive as a residential neighborhood complex?

Overall, the amount of space developed in the Project Area would increase from 1.7 million sf by 2015 to 7.1 million sf by 2030. Under the socioeconomic reasonable worst-case development scenario, the largest amount of space (4.3 million sf) would be assigned to academic and academic research activities, and 130,000 sf would be developed as ground-floor retail activities. University scientific and academic research activities would constitute a critical mass and could attract some private companies seeking to benefit from the talent and knowledge concentrated at the new Columbia facilities. At the same time, expanded open space and waterfront access, and improved retail activities are expected to increase the general attractiveness of the Project Area.

It is expected that the Proposed Actions would have a positive impact on both the immediate neighborhood and the larger study areas as a whole, increasing the areas' livability and overall residential appeal. This increase in appeal would be a continuation of trends anticipated in the future without the Proposed Actions, and could result in additional increased demand, not only from new University employees and students who may be considering whether to live in the study areas, but also from the general population. Similar to conditions anticipated in the future without

the Proposed Actions, the incremental demand generated by the Proposed Actions due to the increased residential appeal could result in the indirect displacement of some at-risk residents.

Determining Impact Significance

By 2030, the Proposed Actions could result in significant adverse impacts due to indirect residential displacement in the primary study area. According to the *CEQR Technical Manual*, generally, if a proposed action would trigger or accelerate a socioeconomic change that would affect a population at risk, or if it would accelerate such a trend enough to affect neighborhood character, the impact could be considered significant and adverse, and mitigation should be considered. As described above, by 2030, the University-affiliated population could represent as much as 8.2 percent of the primary study area population, which would represent a substantial addition to the study area population such that the Proposed Actions could significantly affect socioeconomic trends in the primary study area. In addition, it is expected that the new development in the Project Area would affect both the immediate neighborhood and the study area more broadly, increasing the area's livability and overall residential appeal. By 2030, this increase in appeal could add pressure to increase rents in the primary study area compared with conditions in the future without the Proposed Actions.

Residential demand generated by the Proposed Actions would be partially absorbed by individuals' purchases of owner-occupied housing in the study area, and by turnover within the rent-regulated housing stock in the study area. The remaining demand could place upward rent pressure on the 1,318 units in the primary study area that are vulnerable to rent increases, which in turn could lead to the indirect displacement of residents of these at-risk units. In total, the 1,318 at-risk units would house an estimated 3,293 people by 2030. While it is impossible to project with specificity the number of at-risk residents who would be indirectly displaced as a result of the Proposed Actions, there is the potential for the indirect residential displacement impact within the primary study area to be significant and adverse. Mitigation for this significant adverse impact is discussed in Chapter 23.

The potential for significant indirect residential displacement impacts would be limited to the primary study area for the following reasons: there would be much less University-generated housing demand beyond this area (University-generated housing demand of only 26 percent of the 1,131-unit demand, or 292 units, is projected to occur outside the primary study area); and the potential scale of the general upgrading influence of the new university area is in large part a function of the area's visibility from, and connectivity to, surrounding neighborhoods. In this respect, the Proposed Actions' influences would be somewhat limited by the Project Area's relatively isolated location, surrounded by transportation viaducts and taller institutional and residential redevelopment, such as Riverside Park Community/3333 Broadway, Manhattanville Houses, and General Grant Houses; and the distance of the secondary study area from the Project Area. In addition, there are no market-rate rental units vulnerable to indirect displacement within the Morningside Heights portion of the secondary study area (south of West 122nd Street). Overall, in the portions of the secondary study area outside of the primary study area, other market forces are likely to play a larger role in shaping development trends in the future with and without the Proposed Actions.

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

As described in Section 332.2 of the *CEQR Technical Manual*, indirect displacement may result from an action that would increase property values and thus increase rents for potentially vulnerable categories of business. Such displacement can be of concern when it would result in

changes to land use, population patterns, or community character. This detailed assessment of indirect business and institutional displacement is based on a characterization of the study areas in terms of conditions and trends in employment, physical and economic conditions, existing conditions and trends in real estate values and rents, zoning and other regulatory controls, land use and transportation services, and underlying trends in the City's economy. These factors are considered in order to develop an understanding of which sectors of the study areas' economic base may be most vulnerable to indirect displacement, and evaluate whether any displacement resulting from the Proposed Actions could be considered a significant adverse impact.

EXISTING CONDITIONS

This section describes the existing business and employment characteristics of the primary and secondary study areas, and identifies the sectors within the study areas that would be most vulnerable to indirect displacement pressures.

Project Area

Historic trends and existing business conditions in the Project Area are described in the detailed analysis of direct business and institutional displacement, above, and in Appendix C.

Primary Study Area

While many of the Project Area's businesses are industrial, the surrounding primary study area is dominated by residential buildings and ground-floor retail located primarily along the avenues, and a major institutional use in City College, whose 36-acre campus occupies three large superblocks along Convent Avenue from West 131st Street to West 141st Street. The difference in economic patterns between the Project Area and the remaining primary study area is due to the underlying zoning in the study area. As described in detail in Chapter 3, the Project Area is zoned for manufacturing uses, while the majority of the surrounding study area is zoned residential with commercial overlays.

The result of the study area's underlying zoning is a strong retail presence along Broadway north of West 135th Street, and along Amsterdam Avenue north of West 129th Street and south of LaSalle Street. As described below in the discussion of retail composition, a majority of the retail uses in the primary study area are neighborhood retail stores, serving a local customer base (as opposed to destination retail establishments, such as those along West 125th Street in the secondary study area).

The only concentration of industrial uses outside of the Project Area is in a small manufacturing district located southeast of the Project Area. This M1-1 zoned district is bounded by West 130th Street to the north, West 125th Street to the south, Morningside and Convent Avenues to the east, and Amsterdam Avenue to the west. These five blocks (a majority of which are located in the primary study area) contain a range of light industrial uses, including storage facilities, parking garages, automotive services, and a poultry distributor. The area also contains a small portion of residential, commercial, and institutional uses. The Metropolitan Opera House owns warehouse space on West 129th Street and Convent Avenue. The New York City Department of Transportation (NYCDOT) operates a bus maintenance garage at 1381 Amsterdam Avenue, between West 128th and West 129th Streets. Similar to the Project Area, several parcels and buildings in this manufacturing district are in poor condition. In addition, several lots in this area are vacant or contain vacant structures.

Primary Study Area Employment

In 2000, there were approximately 6,910 employees working in the primary study area, a substantial portion of whom (3,035 workers, or approximately 44 percent of the total) were employed in the educational, heath, and social services sectors (see Table 4-38). A majority of

these workers are employed by City College. Other employment sectors with a substantial share of study area employment include transportation, warehousing, and utilities, with 890 workers, or about 13 percent of the total employment; and public administration, with 590 employees (8.5 percent of total). Of the remaining industry sectors, retail trade, finance, insurance, and real estate, and arts, entertainment, recreation, accommodation and food services collectively employ 1,149 persons, or almost 17 percent of all workers in the study area.

Table 4-38
Primary Study Area Employment by Industry

Industry	Employment	Percent of Study Area Employment
Agriculture, forestry, fishing and hunting, and mining	0	0.0
Construction	195	2.8
Manufacturing	214	3.1
Wholesale trade	114	1.6
Retail trade	404	5.8
Transportation, warehousing, and utilities	890	12.9
Information	140	2.0
Finance, insurance, real estate, and rental and leasing	410	5.9
Professional, scientific, management, administrative, and waste management services	220	3.2
Educational, health, and social services	3,035	43.9
Arts, entertainment, recreation, accommodation, and food services	335	4.8
Other services (except public administration)	363	5.2
Public administration	590	8.5
Armed Forces	0	0.0
Total	**6,910**	**100**

Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

Based on Census journey-to-work data, in 2000, an estimated 12.6 percent of the residents of the study area were employed within the study area. Applying this percentage to the 2000 study area population, it is estimated that 4,471 primary study area residents also worked in the primary study area, representing approximately 65 percent of the primary study area's workforce.

Primary Study Area Retail Composition

To better characterize the retail businesses along some of the major thoroughfares in the study areas, AKRF conducted door-to-door retail surveys in July 2004 and May 2006 along Broadway and Amsterdam Avenue from West 114th Street to West 146th Street, and along West 125th Street from Frederick Douglass Boulevard to Broadway. These retail surveys indicate the total number of stores and their primary function in the local neighborhoods, and also identify storefronts that appeared vacant at the time of the survey. The following section reports on those portions of these commercial corridors that fall within the primary study area boundaries.

The segment of Broadway between West 123rd and 138th Streets primarily serves the local retail needs of Manhattanville residents. This commercial strip is characterized by smaller stores and busy pedestrian and vehicular traffic. Many of the businesses provide neighborhood services and provide discount merchandise. There is a strong Latino influence on the retail in this area. Storefronts become more upscale south of Tiemann Place, partly due to the influence of higher-income residents in the Morningside Heights neighborhood and students associated with Columbia University and affiliated institutions, such as Barnard College, Teachers College, the

Jewish Theological Seminary, and the Union Theological Seminary. Between West 129th and 132nd Streets, there is a concentration of auto-related and warehouse/storage facilities. El Mundo department store is a discount store that occupies ground- and second-floor space on the east side of Broadway between West 132nd and West 133rd Streets. El Mundo carries a variety of products, including records, CDs, cell phones, groceries, housewares, and children's apparel.

As shown in Table B.1-2 of Appendix B.1, the retail survey along Broadway (between West 123rd and West 138th Streets) found that of the 103 total storefronts, 17 stores (16.5 percent) sell shoppers' goods, which are defined as goods for which customers travel greater distances to compare price, quality, and variety. This broad category includes general merchandise (i.e., department stores), apparel and accessories stores, furniture and home furnishings, and miscellaneous shoppers' goods, including jewelry, stationery, and religious articles. Twenty-seven of the stores along Broadway (26.2 percent of the total) sell convenience goods, which tend to be purchased by a more local clientele; these include food stores and miscellaneous convenience stores, such as drugstores and florists. There are 21 eating and drinking establishments (20.4 percent of the total storefronts) along Broadway, and 21 neighborhood services stores (20.4 percent of the total), including dry cleaners, hair- and nail-care salons, and travel agencies. There were 11 vacant storefronts (10.7 percent of the total) at the time of the survey (July 2004).

Amsterdam Avenue between West 123rd and West 138th Streets contains several pockets of retail activity interspersed with residential and institutional uses, and open space. The retail uses in this area cater primarily to City College students, and are concentrated mainly along the east side of Amsterdam Avenue between West 131st and West 133rd Streets, and the west side of Amsterdam Avenue between West 133rd and West 136th Streets. The majority of the retail uses in this area are eating and drinking establishments, with several beauty salons and laundromats/dry cleaners interspersed throughout the area. Farther south along Amsterdam Avenue are a couple of smaller pockets of retail, which cater mainly to the residents living along both sides of Amsterdam Avenue between West 123rd Street and Martin Luther King Boulevard. In addition to several restaurants and fast food places in this area, there are also some gift stores selling Mexican and West African products. On the west side of Amsterdam Avenue between West 123rd and LaSalle Street are a supermarket, bank, pharmacy, and medical office building. These businesses cater primarily to the residents living in the apartment buildings surrounding this block, and Columbia University students. The majority of stores are local businesses that cater to the Columbia University student population, although national chains are also represented (e.g., the Met Foodmarket, Citibank, and Duane Reade). Most stores are small to medium size, and generally well kept. Overall, business activity appears to be healthier in the southern portion of the study area, with more vacant storefronts located in the vicinity of City College. The retail environment along the portion of Amsterdam Avenue between West 123rd and West 138th Streets is similar to that along Broadway.

As shown in Table B.1-3 of Appendix B.1, the retail survey along Amsterdam Avenue between West 123rd and West 138th Streets found that of the 68 total storefronts, six stores (8.8 percent) sell shoppers' goods, 15 sell convenience goods (22.1 percent of the total), 12 are eating and drinking establishments (17.6 percent of the total storefronts), and 26 are neighborhood services stores (38.2 percent of the total). There were seven vacant storefronts (10.3 percent of the total) at the time of the survey (May 2006).

The primary study area also contains 14 retail storefronts along the westernmost portion of West 125th Street between Amsterdam and Broadway. As shown in Table B.1-4 of Appendix B.1, the retail

composition includes two shopping goods stores (14.3 percent), five convenience goods stores (35.7 percent), two eating and drinking establishments (14.3 percent), and five neighborhood services stores (35.7 percent). There were no vacant storefronts on this block at the time of the survey (May 2006).

Secondary Study Area

The secondary study area contains a similar mix of uses as the primary study area in that it is dominated by residential buildings and ground-floor retail located primarily along the avenues. The ground-floor retail stores along Broadway and Amsterdam Avenues in the secondary study area are interrupted by two prominent institutional uses: City College, along Convent Avenue from West 131st Street to West 141st Street; and Columbia's Morningside Heights main campus, bounded by West 120th Street to the north, West 114th Street to the south, Amsterdam Avenue to the east, and Broadway to the west. Both of these campuses attract thousands of students, employees, and visitors to the study area daily, who collectively comprise a sizable percentage of the study area's local retail customer base.

The secondary study area contains the only commercial zones within the study area, mapped along West 125th Street; the blocks east of Morningside Avenue between West 124th and West 127th Streets are zoned C4-4, C4-4D, and C4-5. These C4 districts are indicative of a regional shopping district and reflect 125th Street's major role as a destination retail area for all of Harlem and surrounding areas.

Secondary Study Area Employment

In 2000, there were approximately 27,029 employees working in the secondary study area, a majority of which (15,120 workers, or approximately 56 percent of the total) were employed in the educational, heath, and social services sectors (see Table 4-39). A majority of these workers are employed by Columbia University and City College. Other employment sectors with a substantial share of study area employment include transportation, warehousing, and utilities, with 2,675 workers, or about 10 percent of the total employment. Over half of the workers in these industries are employed in Census tract 227.01 in the northeastern corner of the secondary study area. Of the remaining industry sectors, retail trade, arts, entertainment, recreation, accommodation, and food services collectively employ 2,534 persons, or over 9 percent of all workers in the study area.

Table 4-39
Secondary Study Area Employment by Industry

Industry	Employment	Percent of Study Area Employment
Agriculture, forestry, fishing and hunting, and mining	10	0.0
Construction	695	2.6
Manufacturing	294	1.1
Wholesale trade	154	0.6
Retail trade	1,184	4.4
Transportation, warehousing and utilities	2,675	9.9
Information	625	2.3
Finance, insurance, real estate, and rental and leasing	849	3.1
Professional, scientific, management, administrative, and waste management services	1,230	4.6
Educational, health, and social services	15,120	55.9
Arts, entertainment, recreation, accommodation, and food services	1,350	5.0
Other services (except public administration)	2,203	8.2
Public administration	1,040	3.8
Armed Forces	0	0.0
Total	**27,029**	**100**

Source: U.S. Department of Commerce, Bureau of Census, 2000 Census.

Based on Census journey-to-work data, in 2000, an estimated 19.6 percent of the residents of the secondary study area were employed within the study area. Applying this percentage to the 2000 study area population, it is estimated that 15,445 secondary study area residents also worked in the secondary study area, representing approximately 57 percent of the study area's workforce.

Secondary Study Area Retail Composition

There is a strong retail presence along Broadway north of West 135th Street, along Amsterdam Avenue north of West 129th Street and south of LaSalle Street, and along West 125th Street from Broadway to Frederick Douglass Boulevard (the eastern boundary of the study area). The establishments are primarily neighborhood retail stores, serving a local customer base, but there are also some destination retail establishments that draw customers from beyond the boundaries of the study area.

Focusing on the portions of the secondary study area that do not include the primary study area, Broadway between West 138th and West 146th Streets is occupied primarily by residential buildings with ground-floor retail. Most stores are small to medium size, and are predominantly locally-owned businesses providing mainly shopping goods. Between West 114th and West 123rd Streets, Broadway runs through the Columbia University campus. There is a small area of retail on the northeast corner of Broadway and West 121st Street, which is located adjacent to a dormitory.

As shown in Table B.1-5 of Appendix B.1, the retail survey along Broadway found that of the 239 storefronts, 59 stores (24.7 percent) sell shoppers' goods, which are defined as goods for which customers travel greater distances to compare price, quality, and variety. This broad category includes general merchandise (i.e., department stores), apparel and accessories stores, furniture and home furnishings, and miscellaneous shoppers' goods, including jewelry, stationery, and religious articles. Fifty-five of the stores along Broadway (23 percent of the total) sell convenience goods, which tend to be purchased by a more local clientele; these include food stores and miscellaneous convenience stores, such as drugstores and florists. There are 39 eating and drinking establishments (16.3 percent of the total storefronts) along Broadway, and 54 neighborhood services stores (22.6 percent of the total), including dry cleaners, hair- and nail-care salons, and travel agencies. There were 23 vacant storefronts (9.6 percent of the total) at the time of the survey (July 2004).

Again focusing on the portions of the secondary study area that do not include the primary study area, along Amsterdam Avenue between West 138th and West 146th Streets, the retail uses are predominantly eating and drinking establishments, with neighborhood services such as insurance and financial services, travel agencies, and computer repair shops interspersed throughout this area. Many of the eating and drinking establishments are fast-food places, grocery stores, and bodegas, many catering to the lower-income community in this area. There is a relatively high percentage of vacant storefronts in this northern portion of the secondary study area.

As shown in Table B.1-6 of Appendix B.1, the retail survey along Amsterdam Avenue between West 114th and West 146th Streets found that of the 179 total storefronts, only 14 stores (7.8 percent) sell shoppers' goods. Thirty-eight of the stores (21.2 percent of the total) sell convenience goods, 42 are eating and drinking establishments (23.5 percent of the total storefronts), and 61 are neighborhood services stores (34.1 percent of the total). There were 20 vacant storefronts (11.2 percent of the total) at the time of the survey (May 2006).

The highest concentration of destination retail in the study area is found in the commercial zoned districts on West 125th Street. The retail survey along West 125th Street between Frederick Douglass Boulevard and Broadway identified 96 total storefronts, of which 22 stores (23 percent of the total) sold primarily shopping goods (see Table B.1-7 in Appendix B.1). Approximately

12.5 percent of the stores sell convenience goods (compared with 22.3 percent along Broadway), 14.6 percent are eating and drinking establishments, and 33 percent provide neighborhood services. There were 13 vacant storefronts (13.5 percent of the total) at the time of the survey (July 2004).

A notable destination within these commercial districts is Harlem USA, a 276,000-square-foot retail and entertainment complex on Frederick Douglass Boulevard between West 124th and West 125th Streets. The complex includes a nine-screen Magic Johnson movie theater, chain retail stores, and a branch of the JP Morgan Chase Bank, and acts as the western anchor and catalyst for additional commercial development along the 125th Street retail corridor.

Categories of Businesses in the Study Area Most Vulnerable to Indirect Displacement

Businesses most vulnerable to indirect displacement due to increased rent are typically those businesses whose uses are less compatible with the economic trend that is creating upward rent pressures in the study area; i.e., those businesses that tend not to directly benefit (in terms of increased business activity) from the market forces generating the increases in rent. For example, if a neighborhood is becoming a more desirable place to live, uses that are less compatible with residential conditions (such as manufacturing) would be less able to afford increases in rent due to increases in property values compared with a neighborhood service use, such as a bank, which could see increased business activity from the increased residential presence.

In addition, certain commercial uses within sectors that are generally compatible with economic trends may be vulnerable if their product is directed toward a demographic market that is dwindling in the area. For example, although neighborhood services and convenience goods stores generally benefit from increases in residential population, if a store targets a particular demographic group whose numbers are decreasing within the study area even as total population is increasing, then that store may be vulnerable to displacement due to increases in rent.

The industrial-based businesses in the study areas—located primarily in the Project Area and in the one manufacturing-zoned district outside (to the southeast) of the Project Area—are currently the most vulnerable to displacement if their property values and rents were to rise. Industrial businesses such as manufacturers and distributors have a borough- and City-wide customer base, and therefore, demand for these sectors' services is a function of City-wide economic trends. If the demand for borough- or City-based industrial services drops, as has been the historic trend, these local industrial businesses would be less able to afford increases in rents, which are driven largely by local real estate trends. Thus, the businesses that would be most vulnerable to displacement would be those least likely to benefit from the increased population and consumer spending generated by the Proposed Actions; i.e., the industrial businesses whose customers are not primarily located in the study areas' neighborhoods.

In contrast, retail as a business category is less susceptible to displacement in the study areas because retail rents are more directly tied to local economic conditions. The rents for retail space in the study areas are driven largely by potential sales, and those sales are a product of the demand generated by the local customer base. Therefore, if retail rents were to increase due in part to an increased demand for retail services in the local area, those increased sales would help cover the increased rents. However, as described above, retail businesses that cater to a particular ethnic group whose numbers are not increasing in concert with prevailing demographic changes could be susceptible to indirect displacement because they would be less likely to capture additional sales from the growing population.

The potential uses for manufacturing-zoned properties in the study areas are less restricted by underlying zoning relative to the retail properties along the avenues, making the industrial businesses as a whole more susceptible to displacement for conversion to a different type of use. For example, if there were increased demand for office space in the study area, some businesses in warehouse buildings could be displaced because the alternative office use would command a higher rent. As discussed below in "Future Without the Proposed Actions—2015," this trend is already evident within the study area; for example, the Mink Building, located on the east side of Amsterdam Avenue between West 126th and West 128th Streets, recently underwent a conversion from manufacturing space to office space.

Finally, most of the industrial uses within the study area are located within a New York Empowerment Zone (NYEZ), which further encourages reuse of the underutilized industrial properties. NYEZ is an economic development initiative that uses public funds and tax incentives to encourage private investments in these areas. The goal of this initiative is to expand the range and scope of economic activity, enhance capital opportunity of local businesses and institutions, and improve the quality of life for residents, workers, and visitors.

FUTURE WITHOUT THE PROPOSED ACTIONS—2015

This section describes whether any factors will emerge that could potentially affect the underlying economic base of the study areas by 2015. For Manhattan more generally, employment and real estate trends are expected to continue through 2015. Further economic restructuring would continue to change the profile of Manhattan's employment base, leaving fewer jobs in the industrial sectors but more jobs in such sectors as business, legal, and professional services. Most of the employment growth projected for Manhattan would be directed outside of the study areas to other parts of Manhattan, where the zoning is more flexible.

Project Area

There are a number of land use changes anticipated in the Project Area in the future without the Proposed Actions by the 2015 analysis year. As described in detail in Chapter 3, in the future without the Proposed Actions, Columbia University will collaborate with the City of New York on the creation of a new public secondary school that would be located on the east side of Broadway between West 131st and 132nd Streets. Columbia University is expected to develop administrative space above the public secondary school. Just north of this site, Columbia would also occupy the former Warren Nash Service Station building at 3280 Broadway, between West 132nd and 133rd Streets, for additional University administrative space.

Several rezoning applications have been submitted by Tuck-It-Away Associates, L.P., for parcels owned by the applicant in the Project Area. These sites are proposed to be rezoned from the existing M1-2 to C6-2. For each site, a development scenario has been identified by the applicant in which the existing Tuck-It-Away storage and C-Town supermarket buildings would be demolished, and new mixed-use residential, retail, and community facility space would be developed. Collectively, the development scenario would introduce 86,500 square feet of community facility space and 74,500 square feet of retail space.

A rezoning application has also been submitted for one other site in the Project Area—3229 Broadway, between West 129th and West 130th Streets—by Hudson North American. This site is also proposed to be rezoned from the existing M1-2 to C6-2. The EAS for this application identified a development scenario in which the existing storage use would be displaced and the building would be converted to residential and retail uses.

Some changes in tenancy of existing buildings could be expected, with potential increases in such uses as community facilities and moving and storage uses. These uses would occupy buildings currently in industrial or transportation use.

When completed in 2008, the West Harlem Waterfront park will include new piers, open space, a gateway plaza, a small multi-purpose building, approximately 2.26 acres of landscaped areas, and a new pedestrian/bicycle way. EDC's West Harlem Master Plan also calls for the relocation of a Fairway Market parking lot to an upland location to provide for additional waterfront use. These proposed improvements will strengthen the appeal of the waterfront area, drawing more residents and visitors to the Project Area.

Overall, the Project Area would be expected to follow borough-wide trends toward decreases in manufacturing, wholesaling, and other industrial employment. However, for the purposes of providing a more conservative assessment of potential direct business displacement, this analysis assumes that all existing jobs would be maintained in the Project Area in the future without the Proposed Actions.

Study Areas

There are several known commercial and institutional development projects planned for the study areas in the 2015 future without the Proposed Actions (see Table B.1-8 in Appendix B.1). Several of the projects involve Columbia-owned property: Columbia proposes to develop an approximately 250,000-gross-square-foot academic building at the southwest corner of Broadway and West 125th Street; improvements are planned for Prentis Hall; and a low-rise portion of 560 Riverside Drive along West 125th Street will be renovated to provide a building entrance in this location. These planned projects would reinforce the University's academic presence in the primary study area.

There are a number of City College projects proposed on its 36-acre campus in the future without the Proposed Actions; these include conversion of existing space into a new School of Architecture, and two new science research buildings.

One project already completed but not yet occupied is the renovation of the Mink Building, located in the manufacturing district on the east side of Amsterdam Avenue between West 126th and West 128th Streets. The building was recently renovated to accommodate approximately 120,000 sf of office space. Another renovation in the same manufacturing district is planned for the former Taystee Factory, at West 126th Street between Morningside and Amsterdam Avenues (with a small frontage on West 125th Street). The renovation, to be undertaken by Citarella, is expected to incorporate 80,000 sf of commercial space, including corporate offices, a warehouse/storage area, a food preparation and processing center, and some retail uses along West 125th Street. These two projects reflect the broader trend in Manhattan toward renovation of low-density manufacturing space for primarily commercial office use.

Additional commercial office, community facility, and retail space would be added to the study areas as part of the planned mixed-use development on Frederick Douglass Boulevard and West 127th Street, and as part of the 125th Street Corridor Rezoning (five sites between Morningside Avenue and Frederick Douglass Boulevard), described in the detailed analysis of indirect residential displacement, above. Collectively, the projects would include approximately 228,000 sf of commercial space, including at least 124,000 sf of office space, 12,000 sf of community facility space, and 92,000 sf of retail space.

As shown in Table B.1-8 of Appendix B.1, the planned projects in the study areas would add an estimated 4,997 new jobs by 2015, increasing employment by approximately 18.5 percent above

the 2000 base of 27,029 employees. Overall, these projects would not have a substantial influence on the existing economic patterns in the study areas, and employment patterns are projected to remain the same through 2015. As evidenced by the large number of projects planned by Columbia University and City College, institutional-based sectors would be expected to comprise an even larger proportion of the study areas' employment base, while manufacturing uses would continue to decline. Zoning in the study areas limits the potential to alter existing economic patterns without further discretionary actions. Therefore, the existing patterns are expected to persist in the future without the Proposed Actions.

FUTURE WITH THE PROPOSED ACTIONS—2015

The analysis of potential indirect business and institutional displacement in the future with the Proposed Actions builds upon the level of development anticipated under the "No Build" condition described in the preceding section. Changes that could result from the Proposed Actions by 2015 are added to these future projected baseline conditions in order to evaluate the potential for significant impacts resulting from indirect business and institutional displacement.

Based on the criteria set forth in the preliminary assessment, this detailed analysis focuses on the following means by which development with the Proposed Actions could lead to indirect business displacement.

Would the Proposed Actions add to the concentration of a particular sector of the local economy enough to alter or accelerate an ongoing trend to alter existing patterns?

As described in the preliminary assessment of indirect business displacement, the uses introduced by the Proposed Actions would not be new economic activities in the primary or secondary study areas. The academic, residential, commercial office, and retail uses developed with the Proposed Actions would not be new uses in the study areas, nor would they be of an amount that would alter existing economic patterns.

The approximately 161,500 sf of retail and other active ground-floor uses would be a substantial new addition to the Project Area, but it would complement, rather than disrupt, the already-prominent retail presence in the study areas. The student, employee, and visitor populations generated by the Proposed Actions would become new customers at many of the existing retail businesses in the neighborhood. The businesses in the study areas most likely to benefit from this increased customer base would include establishments providing convenience goods such as food stores, drugstores, and photocopying services; eating and drinking establishments; and neighborhood services such as banks and dry cleaners. There are an abundance of these types of businesses along the avenues of the study areas; for example, along Broadway from West 114th Street to West 145th Street, there are 359 storefronts, of which 80 provide convenience goods, 95 provide neighborhood services, and 52 are eating and drinking establishments.

Existing retail establishments within the immediate vicinity of the Project Area could experience rent increases, as property values increase due to the increased pedestrian traffic. Property and business owners may seek to capitalize on the increased pedestrian traffic generated by workers, residents, and students. The extent of rent increases would depend upon the incremental levels of pedestrian activity generated by the Proposed Actions, and the location of existing storefronts relative to the areas of increased pedestrian activity; while no particular category of retail store would be immune to potential rent increases, those stores whose sales did not grow proportionately to rent increases would be most vulnerable to displacement. As discussed above, businesses most likely to experience this disconnect between rents and sales would be those that

rely on particular demographic groups whose numbers are decreasing in the study areas. For example, discount apparel and convenience stores along Broadway and West 125th Street, which appeal primarily to a low- and moderate-income customer base, may be less likely to capture spending dollars from new, more affluent residents and workers in the area.

Although some retail stores may be indirectly displaced, their dislocation would not constitute a significant adverse impact under CEQR. The stores that would be vulnerable to indirect displacement are not of substantial economic value to the City or region, and their displacement would not significantly affect neighborhood character. Storefronts that are vacated due to indirect displacement would not remain vacant; they would turn over to other retail uses that could better capitalize on the market. Given the high residential density and the strong residential market in the study area, there would still be the local demand for neighborhood retail and services necessary to maintain the strong retail presence along West 125th Street and the avenues within the study areas. Therefore, the limited indirect retail displacement that could result from increased rents would not lead to major changes within nearby commercial strips, would not result in adverse changes to neighborhood character, and would not result in significant adverse socioeconomic impacts.

The approximately 362,000 sf of academic research space developed in the Academic Mixed-Use Area by 2015 would represent a substantial addition to the scientific research activity in the study areas. The new science facilities envisioned by the University would include state-of-the-art laboratories, and their location in Manhattanville—close to the University's Morningside Heights main campus and City College—is likely to promote interdisciplinary collaborations that have been the source of many scientific advances and research contributions. The types of scientific research activities envisioned by the University may attract private investment, either to support the academic research, or to take advantage of synergies of potential joint ventures. As described in the preliminary assessment, nonprofit and for-profit research organizations could gain a variety of advantages from close proximity to a major academic research center. University research also could generate agreements for commercial use of technologies and new business start-ups. National studies show that areas are more likely to generate induced growth in research and development functions when university-related activities are present.

The GPP will prohibit the leasing of space to commercial enterprises for the conduct of scientific research within the Academic Mixed-Use Area. Research-oriented businesses attracted by the University's academic research activities may therefore seek suitable space in close proximity within the surrounding neighborhoods. The most suitable properties for these science and research support activities would be in a manufacturing zoned district that allows for laboratories, light manufacturing, warehouses, and commercial office uses. Outside of the remaining industrial properties in the Project Area not slated for redevelopment, the only suitable location in the study areas where such development could occur as-of-right would be in the M1-1 zoned district southeast of the Project Area, bounded by West 130th Street to the north, West 125th Street to the south, Morningside and Convent Avenues to the east, and Amsterdam Avenue to the west. As described above in "Existing Conditions" and "Future without the Proposed Actions—2015," these five blocks currently contain a range of light industrial uses, including storage facilities, parking garages, and automotive services. Two buildings in the area, the Mink Building and the former Taystee Factory, have undergone, or will be undergoing, renovations to accommodate a mix of commercial, office, and warehouse uses.

Any demand for space within this manufacturing zone for private research businesses would be limited as of 2015, and could potentially be accommodated by existing vacant or underutilized

properties. However, as described above in "Future without the Proposed Actions—2015," industrial businesses in the study area are vulnerable to indirect displacement if their rents were to increase due to increases in property value. Therefore, while the demand would be limited, by 2015, the Proposed Actions could indirectly displace some businesses in this manufacturing zoned district.

The potentially vulnerable businesses in the manufacturing zoned area would not meet the criteria for significant displacement impact; i.e., collectively, they are not of substantial economic value to the City; they can largely be relocated elsewhere in the City; they are not subject to regulations or publicly adopted plans to preserve, enhance, or protect them; and they are not a defining element of neighborhood character, as described above under "Direct Business and Institutional Displacement." In addition, as described above in "Future without the Proposed Actions—2015," there already is a trend toward conversion of the area's traditional/historic manufacturing uses to other uses (in the case of the two planned conversions, primarily office space with some warehousing/distribution). Therefore, while the Proposed Actions could lead to indirect business displacement in the above-identified manufacturing zoned district, this impact would not be considered significant or adverse.

FUTURE WITHOUT THE PROPOSED ACTIONS—2030

Project Area

No major changes in land use are anticipated in the Project Area in the future without the Proposed Actions by the 2030 analysis year. Absent (unknown) redevelopment associated with the completed West Harlem Waterfront park, land uses in the future without the Proposed Actions would remain essentially the same. Some changes in tenancy of existing buildings could be expected, with potential increases in such uses as community facilities and moving and storage uses. These uses would occupy buildings currently in industrial or transportation use.

Study Areas

The study areas are expected to show very limited change in the 2030 future without the Proposed Actions. The projects identified as likely to be completed by 2015 (see Table B.1-8 in Appendix B.1) represent the majority of known projects at this time. The only known project in the study area with an anticipated completion date between 2015 and 2030 is a new academic building for Columbia University at the southwest corner of West 125th Street and Broadway. This new development will consist of an approximately 250,000-square-foot academic building fronting West 125th Street and will require the demolition of two existing structures. It may also contain a McDonald's restaurant to replace the existing restaurant currently at this location.

FUTURE WITH THE PROPOSED ACTIONS—2030

As shown in Table 4-1, by 2030 the Proposed Actions would result in a total of approximately 7.1 million sf of development, a majority of which (approximately 6.8 million sf) would occur in the Academic Mixed-Use Area. The development in Subdistrict B and the Other Areas is projected to remain as described in the 2015 Build condition (i.e., an additional 125,000 sf of retail space, and residential, commercial office, and community facility space).

Based on the criteria set forth in the preliminary assessment, this detailed analysis focuses on the following means by which development with the Proposed Actions could lead to indirect business displacement.

Would the Proposed Actions add to the concentration of a particular sector of the local economy enough to alter or accelerate an ongoing trend to alter existing patterns?

Under the socioeconomic reasonable worst-case development scenario, 2.3 million sf of academic research space would be developed in the Project Area by 2030. As there would be no private research space provided within the Academic Mixed-Use Area, private research-oriented businesses attracted by the University's research activities may seek suitable space within the surrounding neighborhoods. As described above in "Future with the Proposed Actions—2015," the only suitable properties for these science and research support activities would be the few remaining industrial properties that are not redeveloped in the Project Area, and in the M1-1 zoned district southeast of the Project Area, bounded by West 130th Street to the north, West 125th Street to the south, Morningside and Convent Avenues to the east, and Amsterdam Avenue to the west. The demand for property in this area from private research businesses could lead to increases in rent, which could result in some indirect displacement of industrial businesses in this area. However, the potentially vulnerable businesses in this manufacturing zoned area would not meet the criteria for significant adverse displacement impact; i.e., collectively, they are not of substantial economic value to the City; they can largely be relocated elsewhere in the City; they are not subject to regulations or publicly adopted plans to preserve, enhance, or protect them; and they are not a defining element of neighborhood character. In addition, as described above in "Future Without the Proposed Actions—2015," there is already a trend toward conversion of the area's manufacturing buildings to support more diverse uses (in the case of the two planned conversions, primarily office space with some warehousing/distribution). Therefore, while the Proposed Actions could lead to some indirect business displacement within the above-identified manufacturing zoned district, this impact would not be considered significant or adverse.

The remaining commercial uses outside of the manufacturing-zoned districts would not be vulnerable to indirect displacement generated by demand for private research space. Uses on non-industrial properties are constrained by existing zoning, which generally permits retail uses, rather than scientific research support uses. If the City or a private developer were interested in rezoning a portion of the study areas to permit additional research support uses, that proposed rezoning would be a separate action subject to CEQR environmental review, and that review would include an analysis of the potential for direct and indirect business displacement in the proposed rezoning area.

Despite the limited potential scale of private research development in the study areas under existing zoning, such activities could become an important source of economic growth for the area. The private research businesses would generate employment opportunities for local residents, and the business and employee spending would benefit existing retail and service businesses in the study areas. EDC has identified biomedical research and development as one of the key growth sectors to promote within the City, and is working to identify appropriate locations in the City to foster growth in this sector. The Proposed Actions and resulting development would create an environment better suited to attract future investment and employment opportunities within the study areas.

It is expected that by 2030, some retail establishments within the immediate vicinity of the Project Area would already have experienced rent increases, as described above in "Future with the Proposed Actions—2015." However, with an even greater daytime population in the Project Area by 2030, the purchasing power of that population could result in increases in retail rents in a broader area, although these pressures would still likely be contained within the primary study area. While there could be some additional indirect displacement of existing retail stores, their dislocation would not constitute a significant adverse impact under CEQR. The stores that would be vulnerable to indirect displacement are not of substantial economic value to the City or region, and their displacement

would not significantly affect neighborhood character. In addition, storefronts that are vacated due to indirect displacement would not remain vacant; they would turn over to other retail uses that could better capitalize on the market. Given the high residential density and the strong residential market in the study areas, there would still be the local demand for neighborhood retail and services necessary to maintain the strong retail presence along West 125th Street and the avenues within the study areas. Therefore, the indirect retail displacement that could result from increased rents would not lead to major changes within nearby commercial strips, would not result in adverse changes to neighborhood character, and would not result in significant adverse socioeconomic impacts.

E. ECONOMIC AND FISCAL BENEFITS AND COSTS ANALYSIS

INTRODUCTION

This section estimates the economic and fiscal benefits and costs that would be generated by the construction and operation of facilities introduced to West Harlem as a result of the Proposed Actions. The analysis considers benefits to both New York City and the wider New York State economy. It also distinguishes between the benefits from development planned for the Academic Mixed-Use Area (which would primarily be attributable to investments by Columbia University) and those associated with development projected to occur in the remainder of the Project Area (in Subdistrict B and the Other Area east of Broadway). The analysis is presented in two phases, the first outlining the economic and fiscal benefits that would occur by 2015, and the second describing those that would occur at full project build-out, assumed to occur by 2030. All estimates presented in this section are based on the Illustrative Plan for the Academic Mixed-Use Area (described in detail in Table 1-6) and the projected development sites in Subdistrict B and the Other Area east of Broadway (described in detail in Table 2-3).

BACKGROUND ON HIGHER EDUCATION IN NEW YORK STATE

Currently, there are 271 colleges and universities throughout New York State—64 in the State University system (SUNY), 19 in the City University system (CUNY), 146 independent colleges and universities, and 42 proprietary schools. College and university enrollments in the State are at their highest levels, with SUNY enrollment now exceeding 1.1 million students, and enrollment in four-year undergraduate degree programs and above in the State's independent colleges and universities the largest in the nation.

The 146 colleges and universities in the independent sector make significant contributions to the State's economy. A 2006 report prepared by the Center for Government Research (CGR) for the Commission on Independent Colleges and Universities[1] notes that direct spending by New York's independent colleges and universities in 2005 was estimated at $17.6 billion, with a total economic impact in excess of $41 billion. Independent colleges and universities within New York City account for approximately $9.1 billion of the direct spending and $21.2 billion of the total economic impact. At a time when job sectors are declining and the State has lost 31 percent of its manufacturing jobs from 1990 to 2005, independent colleges and universities continue to grow and currently account for 139,000 jobs in 2005, with half of the jobs in New York City. Columbia University's $2.4 billion in direct spending in 2005 accounts for approximately 13.5 percent of the

[1] CGR, July 2006 "*Solutions for New York: The Economic Significance of Independent Colleges and Universities in the New York State Economy*"

direct spending and 10 percent of the total employment for this sector within the State, and 26 percent of the direct spending and 20 percent of the sector's employment within New York City.

METHODOLOGY

OVERVIEW OF THE IMPLAN ECONOMIC MODEL

The principal economic model used to estimate the effect on the City's economy of constructing and operating the projected development was IMPLAN, which was originally developed by the United States Department of Agriculture Forest Service in 1979 and was subsequently privatized by the Minnesota IMPLAN Group (MIG). The model uses the most recent economic data from sources such as the U.S. Bureau of Economic Analysis, the U.S. Bureau of Labor Statistics, and the U.S. Census Bureau to predict effects on the local economy from direct changes in spending. The model contains data for New York City on more than 500 economic sectors, showing how each sector affects every other sector as a result of a change in the quantity of its product or service. A similar IMPLAN model for New York State was used to trace the effects on the State economy. The models have been adjusted to reflect the most recent changes in the New York metropolitan area price levels. Using these models and the specific characteristics of the projected development, the total effect has been projected for New York City and State.

MEASURES OF ECONOMIC IMPACT

Using IMPLAN terminology, economic impacts are broken into three components: direct, indirect, and induced.

Direct effects represent the initial benefits to the economy of new investment; e.g., a construction project, changes in employment, changes in employee compensation.

Indirect effects represent the benefits generated by industries purchasing from other industries as a result of the direct investment; e.g., indirect employment resulting from construction expenditures would include jobs in industries that provide goods and services to the contractors. A direct investment triggers changes in other industries as businesses alter their production to meet the needs of the industry in which the direct impact has occurred. These businesses in turn purchase goods and services from other businesses, causing a ripple effect through the economy. The ripple effect continues until leakages from the region (caused, for example, by imported goods) stop the cycle. The sum of these iterative inter-industry purchases is called the indirect effect.

Induced effects represent the impacts caused by increased income in a region. Direct and indirect effects generate more worker income by increasing employment and/or salaries in certain industries. Households spend some of this additional income on local goods and services, such as food and drink, recreation, and medical services. Benefits generated by these household expenditures are quantified as induced effects.

ANALYSIS FRAMEWORK AND MODEL INPUTS

Economic benefits were estimated based on construction and employment estimates from Columbia University for the Academic Mixed-Use Area, and typical amounts per square foot for the projected development in remaining areas (Subdistrict B and the Other Area east of Broadway). Impacts are presented for both the construction and operation elements of the projected development, and for the two main phases of the project: Phase 1, to be completed in 2015, and Phase 2 (Full Build), to be completed in 2030.

Construction

For both the Academic Mixed-Use Area and the remaining areas, estimated construction costs were provided for each of the facilities planned or anticipated as a result of the Proposed Actions. These direct costs, which serve as the basis for calculating indirect and induced economic effects, were organized into IMPLAN industry sectors (which are based on the U.S. Census Bureau's North American Industry Classification System, or NAICS) and modeled accordingly. Table 4-40 shows the direct inputs to IMPLAN and the distribution of construction costs across industry sectors.

Table 4-40
Construction Costs Used as Bases for Economic and Fiscal Benefits Modeling
(Millions of 2007 Dollars)

IMPLAN Sector	Description of Industry Sector	Phase 1 (2015) Costs	Full Build (2030) Costs	Total Project
Academic Mixed-Use Area:				
34	New University multifamily housing structure construction	$131.05	$232.74	363.79
38	Commercial and institutional building construction	$735.14	$2,461.43	$3,196.57
39	Highway, street, bridge, and tunnel construction	$5.89	$71.45	$77.34
40	Water, sewer, and pipeline construction	$170.51	$6.05	$176.56
41	Other new construction	$311.09	$1,610.91	$1,922.00
Subtotal Academic Mixed-Use Area		**$1,353.69**	**$4,382.58**	**$5,736.27**
Subdistrict B and the Other Area east of Broadway:				
34	New multifamily housing structure construction	$20.59	$0	$20.59
38	Commercial and institutional building construction	$56.03	$0	$56.03
	Amount subject to sales tax	$38.92	$0	$38.92
	Amount exempt from sales tax	$16.79	$0	$16.79
Subtotal Subdistrict B and the Other Area east of Broadway		**$76.62**	**$0**	**$76.62**
Grand Total		**$1,430.31**	**$4,382.58**	**$5,812.89**

Note: All figures independently rounded.
Sources: Construction costs for the Academic Mixed-Use Area provided by Columbia University, August 2006, updated April 2007; for Subdistrict B and the Other Area east of Broadway, based on typical amounts per square foot.

As mentioned above, economic benefits were estimated using two separate models, one for New York City and one for New York State. The State model was modified so that the employee compensation and output characteristics of the affected construction industries would match the characteristics of those industries at the City level. This ensures that the direct impacts are consistent, and that the indirect and induced impacts reflect the differences in industry and employment characteristics at the City and State levels.

Annual Operation

Estimates of the annual economic benefits of projected development were based on net new employment and payroll estimates provided by Columbia University, coupled with standard ratios of jobs per square foot by type for the projected development outside of the Academic Mixed-Use Area. This information was then entered by sector.[1] The analysis of annual economic

[1] The IMPLAN sectors that were used to input the data were for Columbia University, Sector 462, colleges, universities, and junior colleges; and Sector 446, scientific research and development; and for the other development, Sector 411, miscellaneous store retailers; Sector 481, food services and drinking places; as a representative sector for the office development, Sector 450, other miscellaneous

benefits does not include the economic effect of spending by new students and visitors who would be introduced to the Academic Mixed-Use Area with the Proposed Actions. If student and visitor spending were considered, the economic benefits would be greater.

As with the construction analysis, economic benefits associated with operations were estimated using two models, one for New York City and one for New York State. In both models, the characteristics of the directly affected industry sectors were modified to reflect information provided by Columbia University and gathered through labor market research. For example, the earnings per worker figures for workers in IMPLAN sectors 462 (colleges, universities, and junior colleges) and 446 (scientific research and development) were increased to reflect Columbia University salaries, which are considerably higher than City- or State-wide averages for those industry sectors.

ECONOMIC AND FISCAL BENEFITS FROM PHASE 1 DEVELOPMENT (2015)

CONSTRUCTION PERIOD

Academic Mixed-Use Area Development

The construction within the Academic Mixed-Use Area would be undertaken through investment by Columbia University. Based on preliminary estimates, construction investments scheduled to occur by 2015 (Phase 1) would amount to approximately $1.35 billion.[1] This figure includes site preparation and hard costs (actual construction), and design, legal, and other soft costs. It reflects the cost of physical improvements to the sites and therefore excludes other values (such as the value of the land) not directly a part of the expenditures for construction. The total cost, including the value of the land, would be substantially more.

Employment. The $1.35 billion in construction costs represents direct expenditures during the development period. As a result of the direct construction expenditures, based on the amount of employment corresponding to each dollar of construction expenditures by type of construction, the employment generated between 2007 and 2015 is estimated at 6,092 person-years of employment (a person-year is the equivalent of one person working full-time for one year).

As discussed above, when new direct jobs are introduced to an area, those jobs lead to the creation of additional indirect and induced jobs. Indirect employment resulting from construction expenditures would include jobs in industries that provide goods and services to the contractors, and induced employment would include jobs generated by new economic demand from households spending salaries earned through the direct and indirect jobs. Based on the IMPLAN model's economic multipliers for New York City industrial sectors, Phase 1 of development in the Academic Mixed-Use Area under the Illustrative Plan would generate an additional 1,219 person-years of indirect employment and 1,745 person-years of induced employment within New York City, bringing the total number of jobs from Phase 1 construction to 9,056 person-years (see Table 4-41). In the larger New York State economy, Phase 1 construction would generate approximately 4,257 person-years of indirect and induced employment, bringing the total direct and generated jobs resulting from construction between 2006 and 2015 to 10,349 person-years of employment.

professional and technical services; for the community facility, Sector 465, offices of physicians, dentists, and other health care services; and Sector 453, facilities support.

[1] All dollar amounts in this section are in 2007 dollars.

Table 4-41
Economic and Fiscal Benefits from Construction of the Phase 1 (2015) Academic Mixed-Use Area Development

	Portion in New York City	Total New York City and State
Employment (Person-years)*		
Direct (jobs in construction)	6,092	6,092
Indirect (jobs in support industries)	1,219	1,719
Induced (jobs from household spending)	1,745	2,538
Total	9,056	10,349
Employee Compensation (Millions of 2007 dollars)		
Direct (earnings in construction)	$705.03	$705.03
Indirect (earnings in support industries)	$137.36	$156.26
Induced (earnings from household spending)	$163.97	$237.50
Total	$1,006.35	$1,098.78
Total Economic Output or Demand (Millions of 2007 dollars)**		
Direct (output from construction)	$1,353.69	$1,353.69
Indirect (output from support industries)	$343.86	$412.76
Induced (output from household spending)	$475.93	$712.46
Total	$2,173.47	$2,478.91
Non-Property-Related Tax Revenues* (Constant 2007 dollars)**		
New York City taxes	$31,290,300	
MTA taxes	$2,094,600	
New York State taxes	$64,085,700	
Total	$97,470,600	

Notes:
***** A person-year is the equivalent of one person working full-time for a year.
** The economic output or total effect on the local economy derived from the direct construction spending.
*** Includes personal income taxes, corporate and business taxes, sales tax on indirect activity, and numerous other taxes on construction and secondary expenditures.
Sources: The characteristics and construction cost of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Employee Compensation. Direct construction worker earnings during Phase 1 of the Academic Mixed-Use Area construction is estimated at $705.03 million (see Table 4-41). Total direct, indirect, and induced employee compensation resulting in New York City from this construction is estimated at approximately $1.01 billion ($1,006.35 million). In the broader New York State economy, total employee compensation from construction is estimated at approximately $1.10 billion ($1,098.78 million).

Total Effect on the Local Economy. As indicated above, construction costs for Phase 1 of development in the Academic Mixed-Use Area are estimated at approximately $1.35 billion. Based on the IMPLAN models for New York City and State, the total economic activity resulting from Phase 1 construction is estimated at $2.48 billion ($2,478.91 million) in New York State, of which $2.17 billion ($2,173.47 million) would occur in New York City (see Table 4-41).

Fiscal Impacts. The construction activity would generate tax revenues for New York City, MTA, and New York State. By 2015, construction of the development within the Academic Mixed-Use Area is estimated to generate approximately $97.47 million in non-property-related tax revenues for New York City, MTA, and New York State. Of these tax revenues, the largest portion would come from personal income taxes, corporate and business taxes, sales tax on indirect and induced expenditures, and related taxes on direct, indirect, and induced economic activity. New York State would receive about $64.09 million of the tax revenues; MTA (which collects a 0.375 percent sales tax and tax surcharges on business and utilities taxes within the

City and the MTA 12-county region) would receive revenues of about $2.09 million; and New York City would receive tax revenues estimated at $31.29 million.

Subdistrict B and the Other Area east of Broadway[1]

Development projected to occur in Subdistrict B and the Other Area east of Broadway as a result of the Proposed Actions would be undertaken through the investment of private, non-University funds. Based on typical amounts per square foot by type of development, the investment for construction projected to occur in Subdistrict B and the Other Area east of Broadway by 2015 is estimated at $76.62 million. Table 4-42 summarizes the projected economic and fiscal benefits that would result from this development.

Employment. The $76.62 million in direct expenditures would generate approximately 349 person-years of direct employment by 2015. These direct jobs would lead to the generation of approximately 179 person-years of indirect and induced employment in New York City, and 259 person-years of indirect and induced employment in New York State. Overall, construction activity in Subdistrict B and the Other Area east of Broadway would generate a total of 528 person-years of employment in the City and 608 person-years of employment in the State.

Employee Compensation. Total earnings for construction workers involved in construction in Subdistrict B and the Other Area east of Broadway would be approximately $37.75 million. The resulting indirect and induced earnings in New York City would be approximately $17.14 million, bringing the total employee earnings to $54.89 million. An additional $5.35 million in indirect and induced employee earnings would be generated outside the City, but within New York State. Statewide, employee earnings due to construction in Subdistrict B and the Other Area east of Broadway would be $60.24 million (see Table 4-42).

Total Effect on the Local Economy. As indicated above, construction costs for the projected development in Subdistrict B and the Other Area east of Broadway are estimated at $76.62 million. Based on the IMPLAN models for New York City and State, the total economic activity resulting from construction is estimated at $140.42 million in New York State, of which 88 percent ($122.88 million) would occur in New York City (see Table 4-42).

Fiscal Impacts. By 2015, construction of the development within Subdistrict B and the Other Area east of Broadway is estimated to generate approximately $5.40 million in tax revenues for New York City, MTA, and New York State. New York State would receive about $3.54 million of the tax revenues, MTA would receive revenues of about $117,600, and New York City would receive tax revenues estimated at $1.74 million.

[1] As described earlier, CPC is contemplating certain modifications to Subdistrict B that would not result in any projected development sites in Subdistrict B. The proposed modifications are more fully described in Chapter 29, "Modifications to the Proposed Actions."

Table 4-42
Economic and Fiscal Benefits from Construction of the Development in Subdistrict B and the Other Area East of Broadway (2015)

	Portion in New York City	Total New York City and State
Employment (Person-Years)*		
Direct (jobs in construction)	349	349
Indirect (jobs in support industries)	78	111
Induced (jobs from household spending)	101	148
Total	528	608
Employee Compensation (Millions of 2007 Dollars)		
Direct (earnings in construction)	$37.75	$37.75
Indirect (earnings in support industries)	$8.18	$9.42
Induced (earnings from household spending)	$8.96	$13.07
Total	$54.89	$60.24
Total Economic Output or Demand (Millions of 2007 Dollars)**		
Direct (output from construction)	$76.62	$76.62
Indirect (output from support industries)	$20.25	$24.60
Induced (output from household spending)	$26.01	$39.20
Total	$122.88	$140.42
Tax Revenues, Exclusive of Real Estate* (Constant 2007 Dollars)**		
New York City taxes	$1,735,800	
MTA taxes	$117,600	
New York State taxes	$3,544,000	
Total	$5,397,400	

Notes:
* A person-year is the equivalent of one person working full-time a year.
** The economic output or total effect on the local economy derived from the direct construction spending.
*** Includes sales tax, personal income taxes, corporate and business taxes, and numerous other taxes on construction and secondary expenditures.
Sources: The characteristics and construction cost of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Total Phase 1 (2015) Development

Table 4-43 presents a summary of the economic and fiscal benefits from the construction of the total Phase 1 (2015) development in the Project Area resulting from the Proposed Actions.

Employment. The approximately $1.43 billion in direct expenditures during Phase 1 would generate an estimated 6,441 person-years of direct employment by 2015. These direct jobs would lead to the generation of approximately 3,143 person-years of indirect and induced employment in New York City, and 4,516 person-years of indirect and induced employment in New York State. Overall, Phase 1 construction activity in the Project Area would generate a total of 9,584 person-years of employment in the City and 10,957 person-years of employment in the State.

Employee Compensation. Total earnings for construction workers involved in Phase 1 construction would equal approximately $742.78 million. The resulting indirect and induced earnings in New York City would equal approximately $318.47 million, bringing the total employee earnings to $1.06 billion ($1,061.25 million). An additional $97.78 million in indirect and induced employee earnings would be generated outside the City, but within New York State. Statewide, employee earnings due to Phase 1 construction would equal $1.16 billion ($1,159.03 million, see Table 4-43).

Table 4-43
Summary of the Economic and Fiscal Benefits from Construction of the Total Phase 1 (2015) Development

	Portion in New York City	Total New York City and State
Employment (Person-Years)*		
Direct (jobs in construction)	6,441	6,441
Indirect (jobs in support industries)	1,297	1,830
Induced (jobs from household spending)	1,846	2,686
Total	9,584	10,957
Employee Compensation (Millions of 2007 Dollars)		
Direct (earnings in construction)	$742.78	$742.78
Indirect (earnings in support industries)	$145.54	$165.68
Induced (earnings from household spending)	$172.93	$250.57
Total	$1,061.25	$1,159.03
Total Economic Output or Demand (Millions of 2007 Dollars)**		
Direct (output from construction)	$1,430.31	$1,430.31
Indirect (output from support industries)	$364.11	$437.36
Induced (output from household spending)	$501.94	$751.67
Total	$2,296.36	$2,619.34
Tax Revenues, Exclusive of Real Estate* (Constant 2007 Dollars)**		
New York City taxes	$33,026,100	
MTA taxes	$2,212,200	
New York State taxes	$67,629,700	
Total	$102,868,000	

Notes:
***** A person-year is the equivalent of one person working full-time a year.
** The economic output or total effect on the local economy derived from the direct construction spending.
*** Includes personal income taxes, corporate and business taxes, sales tax, and numerous other taxes on construction and secondary expenditures.
Sources: The characteristics and construction cost of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Total Effect on the Local Economy. As indicated above, construction costs for the development during Phase 1 are estimated at about $1.43 billion. Based on the IMPLAN models for New York City and State, the total economic activity resulting from Phase 1 construction is estimated at about $2.62 billion in New York State, of which $2.30 billion would occur in New York City (see Table 4-43).

Fiscal Impacts. By 2015, construction of the development with the Proposed Actions is estimated to generate approximately $102.87 million in tax revenues for New York City, MTA, and New York State. New York State would receive about $67.63 million of the tax revenues, MTA would receive revenues of about $2.21 million, and New York City would receive tax revenues estimated at about $33.03 million.

OPERATING PERIOD: 2015

Academic Mixed-Use Area

Upon completion of Phase 1 Academic Mixed-Use Area construction, the development will have associated with it permanent employment, employee compensation, annual effects on the City and State economies, and annual fiscal benefits. Table 4-44 presents the projected net new permanent economic and fiscal benefits from the annual operation of the Phase 1 Academic Mixed-Use Area development under the Illustrative Plan. The analysis does not include the economic effect of spending by new students and visitors who would be introduced to the Academic Mixed-Use Area with the Proposed Actions.

Table 4-44
Economic and Fiscal Benefits from the Annual Operation of the Phase 1 (2015) Academic Mixed-Use Area Development

	Portion in New York City	Total New York City and State
Permanent Employment		
Direct (on-site)	1,716	1,716
Indirect (jobs in support industries)	406	611
Induced (jobs from household spending)	578	1,010
Total	2,700	3,337
Employee Compensation (Millions of 2007 Dollars)		
Direct (earnings in construction)	$157.99	$157.99
Indirect (earnings in support industries)	$21.76	$27.95
Induced (earnings from household spending)	$28.40	$43.07
Total	$208.15	$229.01
Total Economic Output or Demand* (Millions of 2007 Dollars)		
Direct (output from construction)	$295.92	$295.92
Indirect (output from support industries)	$59.53	$78.12
Induced (output from household spending)	$82.44	$129.19
Total	$437.89	$503.23
Non-Property-Related Taxes (Constant 2007 Dollars)**		
New York City taxes	$6,904,500	
MTA taxes	$314,200	
New York State taxes	$13,949,700	
Total	$21,168,400	

Notes:
* The economic output or total effect on the local economy derived from the direct spending during annual operation.
** Includes personal income taxes, sales tax, corporate and business taxes, and numerous other taxes on direct and secondary expenditures.
Source: The characteristics of the Academic Mixed-Use Area development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Employment. The net new direct employment generated in the Academic Mixed-Use Area by 2015 is estimated to be 1,716 permanent jobs.[1] Total employment resulting from the operation of the Phase 1 program would include jobs in business establishments providing goods and services to the occupants of the buildings (indirect jobs), and jobs resulting from new household spending (induced jobs). Based on the IMPLAN model's economic multipliers for New York City, the Phase 1 Academic Mixed-Use Area portion of the development would generate an additional 984 permanent jobs within New York City, bringing the total number of direct, indirect, and induced jobs from the annual operation of the development to 2,700 jobs within New York City (see Table 4-44).

In the larger New York State economy, the model estimates that operation of the Phase 1 Academic Mixed-Use Area development would generate 1,621 jobs of indirect and induced employment, bringing the total number of direct, indirect, and induced jobs in New York State to 3,337.

[1] This net new employment number excludes existing Columbia University jobs that would be moved from their current locations to one of the newly constructed buildings.

Employee Compensation. Projected direct employee compensation from the annual operation of the Phase 1 Academic Mixed-Use Area development is estimated at $157.99 million (in 2007 dollars, see Table 4-44). Total direct, indirect, and induced employee compensation resulting in New York City from the annual operation of the development is estimated at $208.15 million. In the broader New York State economy, total employee compensation from annual operation is estimated at $229.01 million.

Total Annual Effect on the Local Economy. The direct effect on the local economy from development completed within the Academic Mixed-Use Area by 2015, measured as economic output or demand, is estimated at approximately $295.92 million annually. Based on the IMPLAN models for New York City and State, the total annual economic activity that would result from operation of the Phase 1 portion of the Academic Mixed-Use Area development is estimated at $503.23 million in New York State. Of that, $437.89 million would occur in New York City (see Table 4-44).

Fiscal Impacts. The annual operation of the development completed within the Academic Mixed-Use Area by 2015 would generate non-property-related tax revenues for New York City, MTA, and New York State, and property-related tax revenues for New York City.

Non-Property-Related Tax Revenues. In total, the operation of the development completed by 2015 is estimated to generate nearly $21.17 million annually in non-property-related tax revenues for New York City, MTA, and New York State. Of these tax revenues, the largest portion would come from personal income taxes, sales tax, corporate and business taxes, and similar taxes on the direct and generated economic activity from the development. New York State would receive about $13.95 million annually of the tax revenues generated by the operation of the completed development, MTA would receive about $314,200, and New York City would receive about $6.90 million.

Property-Related Tax Revenues. The properties in Subdistrict A in fiscal year 2004/2005 paid real estate taxes of approximately $1.94 million, including about $0.78 million based on the value of the land, and about $1.16 million from the value of the improvements. Two factors would be affecting property taxes in Subdistrict A by 2015: First, property acquired by Columbia University and used for University purposes would be exempted from paying tax, reducing the tax rolls; second, as Columbia redevelops the land, the University would pay property taxes on the ground-floor non-academic uses.

Property-related tax revenues are difficult to project precisely and reflect several factors, including the real estate market for that kind of space and the applicable tax rates at the time. Based on preliminary analysis and the existing tax rates, it is estimated that the properties in Phase 1 would remove about $0.54 million annually from the property tax rolls. Based on preliminary analysis of the likely property taxes from the ground-floor retail space (determined by the capitalization of the likely rent received by the University and on taxes paid on similar space[1]), it is estimated that the property taxes would more than offset the loss from the decrease in the value of the area's taxable space. Overall, it is estimated that the revenues paid to the City would equal about $2.92 million in 2015, an increase of about $0.98 million from the area's 2004/2005 amount.

[1] Retail rents used for analysis ranged from $65 per square foot (psf) to $125 psf, depending on the location of the property. The average rent across all properties equaled $83 psf.

Subdistrict B and the Other Area east of Broadway[1]

The development completed by 2015 in Subdistrict B and the Other Area east of Broadway would also provide economic and fiscal benefits. Table 4-45 presents the projected permanent economic and fiscal benefits from the operation of the projected development in these areas.

Table 4-45
Projected Economic and Fiscal Benefits from the Annual Operation of the Development in Subdistrict B and the Other Area East of Broadway

	Portion in New York City	Total New York City and State
Permanent Employment		
Direct (on-site)	687	687
Indirect (jobs in support industries)	247	419
Induced (jobs from household spending)	187	349
Total	1,121	1,455
Employee Compensation (Millions of 2007 Dollars)		
Direct (on-site)	$40.71	$40.71
Indirect (earnings in support industries)	$15.47	$21.24
Induced (earnings from household spending)	$9.18	$14.87
Total	$65.36	$76.82
Total Economic Output or Demand* (Millions of 2007 Dollars)		
Direct (on-site)	$147.34	$147.34
Indirect (output from support industries)	$41.44	$58.79
Induced (output from household spending)	$26.65	$44.60
Total	$215.43	$250.73
Typical Non-Property Tax Revenues (Constant 2007 dollars)**		
New York City taxes	$5,065,600	
MTA taxes	$391,500	
New York State taxes	$7,416,500	
Total	$12,873,600	

Notes:
* The economic output or total effect on the local economy derived from the direct spending during annual operation.
** Includes personal income taxes, sales tax, corporate and business taxes, and numerous other taxes on direct and secondary expenditures.
Source: The characteristics of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Employment. Based on standard employee per square foot ratios for the expected types of development, the Phase 1 development projected for Subdistrict B and the Other Area east of Broadway is expected to generate 687 permanent jobs. As shown in Table 4-45, those direct jobs would generate approximately 768 indirect and induced jobs in New York State. Approximately 57 percent of that indirect and induced employment, or 434 jobs, would be located in New York City. In total, the permanent employment resulting from the operation of the development is estimated at 1,121 jobs in New York City and 1,455 jobs in New York State.

Employee Compensation. Employees working in buildings constructed in Subdistrict B and the Other Area east of Broadway would earn a total of approximately $40.71 million annually. As

[1] As described earlier, CPC is contemplating certain modifications to Subdistrict B that would not result in any projected development sites in Subdistrict B. The proposed modifications are more fully described in Chapter 29, "Modifications to the Proposed Actions."

shown in Table 4-45, an additional $36.11million in annual employee compensation would be generated through indirect and induced jobs in New York State. Of that amount, $24.65 would go to workers in New York City. Overall, total annual employee compensation from all jobs generated by the operation of new establishments in Subdistrict B and the Other Area east of Broadway would be $65.36 million in New York City and $76.82 million in New York State.

Total Effect on the Local Economy. The total annual direct economic effect of the businesses that would be located in Subdistrict B and the Other Area east of Broadway is estimated at $147.34 million. In addition, approximately $68.09 million in indirect and induced output would be generated annually within New York City, bringing the total annual economic output due to new facilities operation to $215.43 million. In the broader New York State economy, total annual direct, indirect, and induced output is estimated at $250.73 million.

Fiscal Impacts. The annual operation of the development would generate non-property-related tax revenues for New York City, MTA, and New York State, and property-related tax revenues for the City of New York.

Non-Property-Related Tax Revenues. By 2015, the completion of the development within Subdistrict B and the Other Area east of Broadway is estimated to generate approximately $12.87 million in non-property-related tax revenues for New York City, MTA, and New York State. New York State would receive about $7.42 million of these annual tax revenues, MTA would receive revenues of about $391,500, and New York City would receive tax revenues estimated at $5.07 million.

Property-Related Tax Revenues. The property in Subdistrict B and the Other Area east of Broadway in fiscal year 2004/2005 paid real estate taxes of approximately $0.92 million. Property taxes on the new development are conservatively assumed to receive benefits from one of the City's applicable real estate tax programs, such as (for commercial development) the City's Industrial and Commercial Incentive Program, and (for residential development) Section 421-a of the New York State Real Property Tax Law. As such, taxes would initially be based on the assessed value of the land, with the assessed value of improvements to the land phased in over time.

Property taxes have been estimated for the area based on the conservative assumptions that the value of the land in the new development remains at its existing level, and that by 2015 the value of the improvements on the sites would be fully exempted from taxes. Based on these assumptions and the existing tax rates, the value of the property tax in Subdistrict B and the Other Area east of Broadway would equal about $0.66 million annually, about $0.26 million less than its current rate.

Total Phase 1 (2015) Development

Table 4-46 presents a summary of the projected economic and fiscal benefits from the annual operation of the total Phase 1 (2015) development with the Proposed Actions.

Employment. The operation of the total Phase 1 development is projected to generate 2,403 permanent on-site jobs. As shown in Table 4-46, the total resulting employment in New York City is estimated at 3,821 permanent jobs. In the broader New York State economy, the total resulting direct, indirect, and induced employment is estimated at 4,792 permanent jobs.

Employee Compensation. Employees working in buildings constructed by 2015 would earn a total of approximately $198.70 million annually. As shown in Table 4-46, an additional $107.13 million in annual employee compensation would be generated through indirect and induced jobs

in New York State. Of that, $74.81 million would go to workers in New York City. Overall, total annual employee compensation from all jobs generated by the operation of new facilities in the Phase 1 development would be $273.51 million in New York City and $305.83 million in New York State.

Table 4-46
Summary of the Projected Economic and Fiscal Benefits from the Annual Operation of the Total Phase 1 (2015) Development

	Portion in New York City	Total New York City and State
Permanent Employment		
Direct (on-site)	2,403	2,403
Indirect (jobs in support industries)	653	1,030
Induced (jobs from household spending)	765	1,359
Total	3,821	4,792
Employee Compensation (Millions of 2007 Dollars)		
Direct (on-site)	$198.70	$198.70
Indirect (earnings in support industries)	$37.23	$49.19
Induced (earnings from household spending)	$37.58	$57.94
Total	$273.51	$305.83
Total Economic Output or Demand* (Millions of 2007 Dollars)		
Direct (on-site)	$443.26	$443.26
Indirect (output from support industries)	$100.97	$136.91
Induced (output from household spending)	$109.09	$173.79
Total	$653.32	$753.96
Non-Property-Related Taxes (Constant 2007 dollars)**		
New York City taxes	$11,970,100	
MTA taxes	$705,700	
New York State taxes	$21,366,200	
Total	$34,042,000	

Notes:
* The economic output or total effect on the local economy derived from the direct spending during annual operation.
** Includes personal income taxes, sales tax, corporate and business taxes, and numerous other taxes on direct and secondary expenditures.
Source: The characteristics of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Total Effect on the Local Economy. The total annual direct economic effect of the facilities that would be located in the Phase 1 development is estimated at $443.26 million. In addition, approximately $210.06 million in indirect and induced output would be generated annually within New York City, bringing the total annual economic output due to the operation of the Phase 1 development to $653.32 million. In the broader New York State economy, total annual direct, indirect, and induced output is estimated at $753.96 million.

Fiscal Impacts

Non-Property-Related Tax Revenues. By 2015, the new development within the Project Area is estimated to generate approximately $34.04 million annually in non-property-related tax revenues for New York City, MTA, and New York State. New York State would receive about $21.37 million of the annual tax revenues, MTA would receive revenues of about $705,700, and New York City would receive tax revenues estimated at $11.97 million (all figures are in 2007dollars).

Property-Related Tax Revenues. In total, the properties in Subdistricts A, B, and the Other Area east of Broadway in fiscal year 2004/2005 paid property-related taxes of approximately $2.86 million. In 2015, the property in those areas is projected to pay taxes equal to about $3.58 million annually, an increase of about $0.72 million over the 2004/2005 amount.

ECONOMIC AND FISCAL BENEFITS AND COSTS AT FULL BUILD OUT (2030)

CONSTRUCTION

Incremental Academic Mixed-Use Area Construction

Based on preliminary estimates, incremental construction costs for development in the Academic Mixed-Use Area during Full Build (from 2015 to 2030) is estimated at about $4.38 billion. This amount includes site preparation and hard costs (actual construction), and design, legal, and other soft costs. The total estimated amount of $4.38 billion reflects the cost of physical improvements to the sites, and therefore excludes other values (such as the value of the land) not directly a part of the expenditures for construction. The total cost, including the value of the land, would be substantially more. Table 4-47 presents the projected economic and fiscal benefits from construction of the incremental Phase 2 Academic Mixed-Use Area development.

Employment. The $4.38 billion represents direct expenditures across the 2015 to 2030 development period. As a result of the direct expenditures, the direct construction employment is estimated at 20,291 person-years of employment. Based on the IMPLAN model's economic multipliers, construction in the Academic Mixed-Use Area during this time frame would generate an additional 9,548 person-years of employment within New York City, bringing the total direct, indirect, and induced jobs from construction of the development to 29,839 person-years (see Table 4-47). In the larger New York State economy, construction of the incremental development would generate 13,669 person-years of indirect and induced employment, bringing total employment from construction of the incremental development to 33,960 person-years.

Employee Compensation. Construction workers' earnings from the construction of the incremental Academic Mixed-Use Area development are estimated at $2.40 billion. Total direct, indirect, and induced employee compensation resulting in New York City from the construction of the incremental development is estimated at $3.39 billion. In the broader New York State economy, total employee compensation from construction of the incremental development is estimated at $3.69 billion.

Total Effect on the Local Economy. As indicated above, the total construction cost of the incremental development (excluding the value of the land and similar costs) is estimated at approximately $4.38 billion. Based on the IMPLAN models for New York City and State, the total economic activity, including indirect and induced expenditures (those generated by the direct expenditures), that would result from construction of the incremental Academic Mixed-Use Area development is estimated at $8.07 billion in New York State. Of that amount, approximately $7.07 billion would occur in New York City (see Table 4-47).

Table 4-47
Economic and Fiscal Benefits from Construction of the Incremental (2015 to 2030) Academic Mixed-Use Area Development

	Portion in New York City	Total New York City And State
Employment (Person-Years)*		
Direct (jobs in construction)	20,291	20,291
Indirect (jobs in support industries)	3,794	5,329
Induced (jobs from household spending)	5,754	8,340
Total	29,839	33,960
Employee Compensation (Millions of 2007 Dollars)		
Direct (earnings in construction)	$2,401.78	$2,401.78
Indirect (earnings in support industries)	$432.37	$491.18
Induced (earnings from household spending)	$551.52	$797.68
Total	$3,385.67	$3,690.64
Total Economic Output or Demand (Millions of 2007 Dollars)**		
Direct (output from construction)	$4,382.58	$4,382.58
Indirect (output from support industries)	$1,079.39	$1,293.55
Induced (output from household spending)	$1,600.91	$2,393.00
Total	$7,062.88	$8,069.13
Non-Property-Related Taxes* (Constant 2007 Dollars)**		
New York City taxes	$101,427,400	
MTA taxes	$6,785,800	
New York State taxes	$206,413,900	
Total	$314,627,100	

Notes:
* A person-year is the equivalent of one person working full-time a year.
** The economic output or total effect on the local economy derived from the direct construction spending.
*** Includes personal income taxes, corporate and business taxes, sales tax on indirect activity, and numerous other taxes on construction and secondary expenditures.
Sources: The characteristics and construction cost of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Fiscal Impacts. The incremental construction activity in the Academic Mixed-Use Area is estimated to generate approximately $314.63 million in non-property-related tax revenues for New York City, MTA, and New York State. Of these tax revenues, the largest portion would come from personal income taxes, corporate and business taxes, sales tax on indirect and induced expenditures, and related taxes on direct, indirect, and induced economic activity. New York State would receive about $206.41 million of the tax revenues generated by construction in the Subdistrict A, MTA would receive revenues of about $6.79 million, and New York City would receive tax revenues estimated at $101.43 million.

Cumulative Academic Mixed-Use Area Construction

The cumulative (Phase 1 and Phase 2) construction cost for the Illustrative Plan in the Academic Mixed-Use Area is estimated to be $5.74 billion (in constant 2007 dollars). This amount includes site preparation and hard costs (actual construction), and design, legal, and related costs. The total estimated amount of $5.74 billion reflects the cost of physical improvements to the sites and therefore excludes other values (such as the value of the land) not directly a part of the expenditures for construction. The total cost, including the value of the land and similar expenditures not directly a part of construction, would be substantially more. Table 4-48

presents the projected economic and fiscal benefits from construction of the cumulative Academic Mixed-Use Area development.

Table 4-48
Economic and Fiscal Benefits from Construction of the Cumulative (Full Build) Academic Mixed-Use Area Development

	Portion in New York City	Total New York City And State
Employment (Person-Years)*		
Direct (jobs in construction)	26,383	26,383
Indirect (jobs in support industries)	5,013	7,048
Induced (jobs from household spending)	7,499	10,878
Total	38,895	44,309
Employee Compensation (Millions of 2007 Dollars)		
Direct (earnings in construction)	$3,106.81	$3,106.81
Indirect (earnings in support industries)	$569.73	$647.44
Induced (earnings from household spending)	$715.49	$1,035.18
Total	$4,392.03	$4,789.43
Total Economic Output or Demand (Millions of 2007 Dollars)**		
Direct (output from construction)	$5,736.27	$5,736.27
Indirect (output from support industries)	$1,423.25	$1,706.31
Induced (output from household spending)	$2,076.84	$3,105.46
Total	$9,236.36	$10,548.04
Tax Revenues, Exclusive of Real Estate* (Constant 2007 Dollars)**		
New York City taxes	$132,717,700	
MTA taxes	$8,880,400	
New York State taxes	$270,499,600	
Total	$412,097,700	

Notes:
* A person-year is the equivalent of one person working full-time a year.
** The economic output or total effect on the local economy derived from the direct construction spending.
*** Includes personal income taxes, corporate and business taxes, sales tax on indirect activity, and numerous other taxes on construction and secondary expenditures.
Sources: The characteristics and construction cost of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Employment Impacts. The $5.74 billion represents direct expenditures across the entire development period to 2030, the assumed build-out year. As a result of the direct expenditures, the direct construction employment is estimated at 26,383 person-years of employment. Based on the IMPLAN model's economic multipliers, construction in the Academic Mixed-Use Area would generate an additional 12,512 person-years of employment within New York City, bringing the total direct, indirect, and induced jobs from construction of the Illustrative Plan to 38,895 person-years (see Table 4-48). In the larger New York State economy, construction would generate 17,924 person-years of indirect and induced employment, bringing total employment from construction to 44,309 person-years.

Employee Compensation. Construction workers' earnings over the course of the development are estimated at $3.11 billion. Total direct, indirect, and induced employee compensation resulting in New York City from construction in the Academic Mixed-Use Area is estimated at $4.39 billion. In the broader New York State economy, total employee compensation from construction is estimated at $4.79 billion (see Table 4-48).

Total Effect on the Local Economy. As indicated above, the total construction cost of the cumulative Academic Mixed-Use Area development (excluding the value of the land and similar costs) is estimated at $5.74 billion. Based on the IMPLAN models for New York City and State, the total economic activity—including indirect and induced expenditures (those generated by the direct expenditures)—that would result from construction is estimated at $10.55 billion in New York State. Of that amount, $9.24 billion would occur in New York City.

Fiscal Impacts. In total, construction activity in the Academic Mixed-Use Area would generate an estimated $412.10 million in tax revenues for New York City, MTA, and New York State. Of these tax revenues, the largest portion would come from personal income taxes, corporate and business taxes, sales tax on indirect and induced expenditures, and related taxes on direct, indirect, and induced economic activity. New York State would receive about $270.50 million of the tax revenues, MTA would receive revenues of about $8.88 million, and New York City would receive tax revenues estimated at $132.72 million.

Subdistrict B and the Other Area east of Broadway

All development in Subdistrict B and the Other Area east of Broadway is expected to be completed during Phase 1 (by 2015). Therefore, there would be no incremental economic effects from construction in these areas during Phase 2 of the Proposed Actions.

Construction of the Entire Projected Development

Table 4-49 presents a summary of the economic and fiscal benefits from construction of the entire projected development, including Phase 1 and Phase 2, for all areas within the Project Area.

Employment. The construction activity would create an estimated 26,732 person-years of direct construction employment. These direct jobs would lead to the generation of approximately 12,691 person-years of indirect and induced employment in New York City, and 19,170 person-years of indirect and induced employment in New York State. Overall, the construction activity within the Project Area would generate a total of 39,423 person-years of employment in the City and 44,917 person-years of employment in the State.

Employee Compensation. Total earnings for construction workers involved in the construction activity would be approximately $3.14 billion. The resulting indirect and induced earnings in New York City would be approximately $1.30 billion, bringing the total employee earnings to about $4.45 billion. An additional $402.75 million in indirect and induced employee earnings would be generated outside the City, but within New York State. Statewide, employee earnings due to the total construction activity would be estimated at about $4.85 billion.

Total Effect on the Local Economy. In summary, construction costs for all development projected to result from the Proposed Actions are estimated at about $5.81 billion (all figures in constant 2007 dollars). Based on the IMPLAN models for New York City and State, the total economic activity resulting from the construction activity is estimated at $10.69 billion in New York State, of which about $9.36 billion would occur in New York City (see Table 4-49).

Table 4-49
Summary of the Economic and Fiscal Benefits from Construction of the Entire Projected Development

	Portion in New York City	Total New York City And State
Employment (Person-Years)*		
Direct (jobs in construction)	26,732	26,732
Indirect (jobs in support industries)	5,091	7,159
Induced (jobs from household spending)	7,600	11,026
Total	39,423	44,917
Employee Compensation (Millions of 2007 Dollars)		
Direct (earnings in construction)	$3,144.56	$3,144.56
Indirect (earnings in support industries)	$577.91	$656.86
Induced (earnings from household spending)	$724.45	$1,048.25
Total	$4,446.92	$4,849.67
Total Economic Output or Demand (Millions of 2007 Dollars)**		
Direct (output from construction)	$5,812.89	$5,812.89
Indirect (output from support industries)	$1,443.50	$1,730.91
Induced (output from household spending)	$2,102.85	$3,144.66
Total	$9,359.24	$10,688.46
Non-Property-Related Taxes* (Constant 2007 Dollars)**		
New York City taxes	$134,453,500	
MTA taxes	$8,998,000	
New York State taxes	$274,043,600	
Total	$417,495,100	

Notes:
***** A person-year is the equivalent of one person working full-time a year.
** The economic output or total effect on the local economy derived from the direct construction spending.
*** Includes personal income taxes, corporate and business taxes, sales tax, and numerous other taxes on construction and secondary expenditures.
Sources: The characteristics and construction cost of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Fiscal Impacts. In summary, all construction in the Project Area resulting from the Proposed Actions would generate an estimated $417.50 million in non-property-related tax revenues for New York City, MTA, and New York State. New York State would receive a total of about $274.04 million of the tax revenues, MTA would receive revenues of about $9.00 million, and New York City would receive tax revenues estimated at approximately $134.45 million.

OPERATING PERIOD

Academic Mixed-Use Area

Employment. Based on employment estimates provided by Columbia University, the direct employment in the completed buildings under the Illustrative Plan is estimated to be approximately 6,399 jobs.

Table 4-50 presents the projected net new employment and annual economic benefits from the operation of the completed development in the Academic Mixed-Use Area. Total employment resulting from the operation of the Illustrative Plan, in addition to the above direct employment, would include jobs in business establishments providing goods and services to the occupants of the buildings and resulting in indirect and generated employment. Based on the IMPLAN

Table 4-50
Projected Economic and Fiscal Benefits from the Annual Operation of the Completed Academic Mixed-Use Area Development

	Portion in New York City	Total New York City And State
Employment (Permanent Jobs)		
Direct (on-site)	6,399	6,399
Indirect (jobs in support industries)	1,400	2,025
Induced (jobs from household spending)	2,126	3,683
Total	9,925	12,107
Employee Compensation (Millions of 2007 Dollars)		
Direct (on-site)	$589.72	$589.72
Indirect (earnings in support industries)	$73.44	$90.87
Induced (earnings from household spending)	$104.49	$157.05
Total	$767.65	$837.64
Total Economic Output or Demand* (Millions of 2007 Dollars)		
Direct (on-site)	$1,023.16	$1,023.16
Indirect (output from support industries)	$201.91	$255.41
Induced (output from household spending)	$303.32	$471.13
Total	$1,528.39	$1,749.70
Non-Property-Related Taxes (Constant 2007 Dollars)**		
New York City taxes	$25,035,600	
MTA taxes	$1,099,800	
New York State taxes	$56,307,300	
Total	$82,442,700	

Notes:
* The economic output or total effect on the local economy derived from the direct spending during annual operation.
** Includes personal income taxes, sales tax, corporate and business taxes, and numerous other taxes on direct and secondary expenditures.
Source: The characteristics of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

model's economic multipliers for New York City industrial sectors, the completed development would generate an additional 3,526 permanent jobs within New York City, bringing the total direct and generated jobs from the annual operation of the completed development to 9,925 jobs within New York City (see Table 4-50). As indicated earlier, these figures do not include the economic effect of spending by new students and visitors who would be introduced to the Academic Mixed-Use Area with the Proposed Actions.

In the larger New York State economy, full development of the Illustrative Plan would generate an estimated 5,708 jobs of indirect and induced employment, bringing the total direct and generated jobs from the annual operation of the completed Academic Mixed-Use Area development to 12,107 jobs in New York State.

Employee Compensation. Direct net new employee compensation from the annual operation of the completed development in the Academic Mixed-Use Area is estimated at $589.72 million (see Table 4-50). Total direct and generated employee compensation resulting in New York City from the annual operation of the development is estimated at $767.65 million. In the broader New York State economy, total direct and generated employee compensation from the annual operation of the development is estimated at $837.64 million.

Total Annual Effect on the Local Economy. The Illustrative Plan's direct effect on the local economy, measured as economic output or demand, is projected at more than a billion dollars annually ($1,023.16 million). Based on the IMPLAN models for New York City and State, the total economic activity—including indirect and induced expenditures (those generated by the direct expenditures)—that would result from operation of the development within the Academic Mixed-Use Area is estimated at $1.75 billion annually in New York State. Of that amount, $1.53 billion annually would occur in New York City (see Table 4-50).

Fiscal Impacts. The annual operation of the completed development within the Academic Mixed-Use Area would generate non-property-related tax revenues for New York City, MTA, and New York State, and property-related tax revenues for New York City.

Non-Property-Related Tax Revenues. The annual operation of the completed Academic Mixed-Use Area development would generate non-property-related tax revenues for New York City, MTA, and New York State. These taxes revenues are projected to be significant. In total, the operation of the completed Academic Mixed-Use Area development is estimated to generate approximately $82.44 million annually (in 2007 dollars) in non-property-related tax revenues for New York City, MTA, and New York State. Of these revenues, the largest portion would come from personal income taxes, sales tax, business taxes, and numerous miscellaneous taxes on the direct, indirect, and induced economic activity. New York State would receive about $56.31 million annually in tax revenues, the MTA would receive about $1.10 million annually, and New York City, about $25.04 million annually.

Property-Related Tax Revenues. Two factors would affect property-related taxes in the Academic Mixed-Use Area: First, as Columbia University acquires property, the property would be exempted from paying tax, reducing the tax rolls; second, as Columbia redevelops the land, the University would pay property taxes on the ground-floor non-academic uses.

As noted for 2015, property-related tax revenues are difficult to project precisely. Based on preliminary analysis of the likely property taxes from the ground-floor retail space (determined by the capitalization of the likely rent received by the University and on property taxes paid on similar space), it is estimated that the property taxes would more than offset the loss from the decrease in the value of the area's taxable space. Overall, it is estimated that the revenues paid to the City would equal about $3.92 million, an increase of about $1.98 million from the area's 2004/2005 amount.

Subdistrict B and the Other Area east of Broadway

All projected development in Subdistrict B and the Other Area east of Broadway is expected to be completed during Phase 1 (by 2015). Therefore, the economic effects for Phase 2 (2030) would be the same as reported for Phase 1 (2015).

Total Projected Development

Table 4-51 presents a summary of the economic and fiscal benefits from the annual operation of the entire completed development with the Proposed Actions.

Employment. In summary, the entire completed development would generate an estimated 7,086 permanent on-site jobs. The total direct, indirect, and induced employment in New York City from the completed development is estimated to be 11,046 jobs. In the broader New York State economy, the total direct, indirect, and induced employment from the completed development is estimated at 13,562 jobs.

Employee Compensation. Employees working in buildings constructed in the Project Area would collectively earn approximately $630.43 million annually. As shown in Table 4-51, an additional $284.03 million in annual employee compensation would be generated through indirect and induced jobs in New York State. Of that amount, $202.58 million would go to workers in New York City. Overall, total annual employee compensation from all jobs generated by the operation of new facilities would be $833.01 million in New York City and $914.46 million in New York State.

Table 4-51
Summary of the Projected Economic and Fiscal Benefits From the Annual Operation of the Entire Completed Development

	Portion in New York City	Total New York City and State
Employment (Permanent Jobs)		
Direct (on-site)	7,086	7,086
Indirect (jobs in support industries)	1,647	2,444
Induced (jobs from household spending)	2,313	4,032
Total	11,046	13,562
Employee Compensation (Millions of 2007 Dollars)		
Direct (on-site)	$630.43	$630.43
Indirect (earnings in support industries)	$88.91	$112.11
Induced (earnings from household spending)	$113.67	$171.92
Total	$833.01	$914.46
Total Economic Output or Demand* (Millions of 2007 Dollars)		
Direct (on-site)	$1,170.50	$1,170.50
Indirect (output from support industries)	$243.35	$314.20
Induced (output from household spending)	$329.97	$515.73
Total	$1,743.82	$2,000.43
Non-Property-Related Taxes (Constant 2007 Dollars)**		
New York City taxes	$30,101,200	
MTA taxes	$1,491,300	
New York State taxes	$63,723,800	
Total	$95,316,300	

Notes:
* The economic output or total effect on the local economy derived from the direct spending during annual operation.
** Includes personal income taxes, sales tax, corporate and business taxes, and numerous other taxes on direct and secondary expenditures.
Source: The characteristics of the projected development; the IMPLAN economic modeling system; and the tax rates by applicable jurisdiction.

Total Effect on the Local Economy. The total direct economic effect from the operation of the entire completed development is estimated at approximately $1.17 billion annually. In addition, approximately $573.32 million in indirect and induced economic activity, measured as economic output or demand for local industries, would be generated annually within New York City, bringing the total annual economic activity due to the operation of the entire completed development to $1.73 $1.74 billion annually. In the broader New York State economy, total direct, indirect, and induced economic activity from the operation of the entire completed development is estimated at about $2.00 billion annually.

Fiscal Impacts

Non-Property-Related Tax Revenues. With the Proposed Actions, operation of all development projected for the Project Area would generate an estimated $95.32 million annually in non-property-related tax revenues for New York City, MTA, and New York State (all figures are in

constant 2007 dollars). New York State would receive about $63.72 million annually of these tax revenues, MTA would receive revenues of about $1.49 million annually, and New York City would receive tax revenues estimated at about $30.10 million annually.

Property-Related Tax Revenues. In 2030, revenues from the Academic Mixed-Use Area would depend on property taxes from ground-floor non-academic uses. Property tax in the remainder of the Project Area in any year would depend on the taxable assessed value and the applicable tax rates. For the new development in the remainder of the Project Area, abatements of taxes on the new improvements are assumed to have expired, with taxes phased in to full taxation. Conservatively assuming the existing tax rates, the properties in the entire Project Area are projected to pay property taxes of about $7.18 million annually, an increase of about $4.31 million over the amount paid in 2004/2005.

ECONOMIC AND FISCAL COSTS

If businesses directly displaced by the Proposed Actions were unable to relocate within New York City, the economic and fiscal benefits that are currently generated by those businesses (i.e., direct and indirect jobs, tax revenues, and economic output) would be lost to the City's economy. The analysis of direct business and institutional displacement in this chapter did not identify any specific businesses, institutions, or business sectors that would be unable to relocate within the study areas, Manhattan, or New York City more generally. And while it is reasonable to assume that some directly displaced businesses may choose not to relocate in the City, it would be speculative to identify any specific business or business sector for purposes of estimating lost economic and fiscal benefits. Therefore, this DEIS does not quantify any lost economic or fiscal benefits from the displacement of businesses from the Project Area as a result of the Proposed Actions.

The Proposed Actions also may cause the City to incur costs for physical improvements to the Project Area (e.g., streetbed or sidewalk construction) or publicly funded mitigation measures for the Proposed Actions. As of the publication of this DEIS, no allocation of costs associated with those measures, or any allocation of costs associated with other physical improvements between the University and the City have been identified, and it is assumed for the purposes of this analysis that all such costs would be paid by Columbia University. In the event that public funds are allocated toward improvement measures associated with the Proposed Actions, these will be identified, to the extent practicable, and reported as part of the FEIS. ✷