

APPENDIX P

MITIGATION APPENDIX

APPENDIX P.1

MITIGATION CORRESPONDENCE



Metropolitan Transportation Authority

State of New York

May 29, 2007

Robert Dobruskin, Director
Environmental Review and Assessment Division
Department of City Planning
22 Reade Street
New York, NY 10007-1216

Dear Mr. Dobruskin:

The MTA and NYCT have reviewed the analysis presented in the PDEIS for the Columbia University Manhattanville project and are in general agreement with the findings and the proposed mitigation measures.

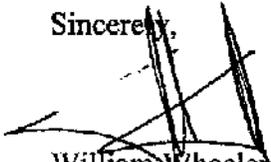
The PDEIS analysis identified significant adverse impacts at the following locations:

- 125th Street/Broadway station – E101 and E102 escalators located on the west side of Broadway south of West 125th Street exceeding practical guideline capacity under the 2030 full build-out; and
- Bx15 bus route – eastbound loads during the PM peak period exceeding practical guideline capacity under the 2030 full build-out.

The proposed mitigation for the station escalator impacts would involve replacing the existing 24-inch tread E101 and E102 escalators with 40-inch tread escalators. The enclosures around the escalators will also need to be replaced. The applicant will coordinate with MTA/NYCT regarding implementation, allowing enough time for design and specification approvals by MTA/NYCT and for the actual construction in order to address the increased demand that will result from build out of the development by 2030. MTA understands that the applicant will bear the costs of implementing this mitigation, and that the mitigation will occur at commencement of phase two of the development.

As for the Bx15 bus route, the proposed mitigation for the bus line-haul impact would involve the addition of three buses during the PM peak period. MTA/NYCT will evaluate this need and make the necessary adjustments where warranted, subject to operational and financial constraints.

Sincerely,



William Wheeler
Director of Planning
(212-878-7258)

The agencies of the MTA, Peter S. Kalikow, Chairman

MTA New York City Transit
MTA Long Island Rail Road

MTA Long Island Bus
MTA Metro-North Railroad

MTA Bridges and Tunnels
MTA Capital Construction

MTA Bus Company

COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

COLUMBIA UNIVERSITY FACILITIES

TO: David Karnovsky
FROM: Columbia University
RE: Manhattanville Neighborhood Preservation Fund
DATE: November 12, 2007

Attached please find a memorandum from Forsyth Street Advisors that describes the goals and activities of the Manhattanville Neighborhood Preservation Fund, the entity that is being funded by Columbia University to provide financing for the preservation and development of affordable housing in Community Board 9. Columbia University is committed to contribute to this fund as part of its undertaking to mitigate partially indirect residential displacement impacts identified in the DEIS.

Memorandum

To: Joseph Ienuso
From: Charles S. Laven
Esther Sandrof
CC: Richard G. Leland
Philip Pitruzzello
Phil Silverman
Ed Wallace
Date: November 12, 2007
Re: Preliminary Description of the Manhattanville Neighborhood Preservation Fund

Columbia University has committed \$20 million toward the establishment of the Manhattanville Neighborhood Preservation Fund (the "Fund"), an independent not-for-profit loan fund whose purpose will be to provide financing to encourage and facilitate the preservation and development of affordable housing in Community Board 9. The Fund is intended to provide a range of flexible and affordable financing products to community-based and private developers to fill financing gaps and leverage other sources of public and private debt, equity, and subsidy for the development and preservation of affordable housing.

Using a reasonably conservative portfolio mix and default scenario, it is expected that approximately 1,110 affordable units would be created or preserved. To help ensure that this projection would be met and that financing opportunities would be oriented toward mitigation of the indirect residential displacement impact identified in the Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development Draft Environmental Impact Statement ("DEIS"), the Fund would be organized with the following purposes:

1. To maximize the number of affordable housing units preserved and/or created by the Fund within CB9; and
2. To operate in manner consistent with City housing policies.

Fund Activities

A preliminary list of possible financing products includes:

- **Below-Market Acquisition Loans.** These 1% acquisition loans are expected to be used in conjunction with the New York City Affordable Housing Acquisition Fund to write down the cost of loans originated by the Acquisition Fund and/or to permit acquisition of sites with costs that exceed the limitations of the Acquisition Fund. These loans are expected to have an average term of 3 years with a loan amount averaging \$50,000 per unit.
- **Land Write-Down Grants.** These grants are expected to be used in conjunction with any available New York City, State or Federal subsidy programs to write down the cost of land acquisition. These grants are expected to average \$50,000 per unit.

- **Capital Improvement Loans.** According to HPD, there are over 3,000 units in limited-equity cooperatives in Community Board 9. Many of these cooperatives are at-risk of failure due to significant building code violations and/or a need for substantial capital repairs. The Fund could provide low-interest capital loans to these cooperatives to stabilize and repair these at-risk properties. For the purposes of this analysis, we have assumed 1% loans with an average size of \$20,000 per unit and an average term of 10 years.
- **Working Capital for Pre-Development.** The Fund could provide a source of inexpensive short-term capital to not-for-profit affordable housing developers to undertake financial feasibility, architectural, engineering, environmental and planning studies and other carrying costs while construction and permanent financing sources are being assembled. We have estimated a need for an average of \$10,000 per unit with an average loan term of 3 years.
- **Flexible Gap Financing for Preservation Transactions.** Even with low-income housing tax credits, tax-exempt financing and various HPD and HDC subsidy programs, preservation transactions often have financing gaps. The Fund could provide flexible below-market financing to close such gaps and to help preserve at-risk affordable housing projects. We have estimated an average loan size of \$60,000 per unit with an average loan term of 15 years.
- **Homebuyer Assistance Loans.** These would be low-interest subordinate loans for the purchase of coops and condominiums by low- and moderate-income homebuyers. The purpose of these loans would be to expand homeownership opportunities to a broader band of households and to help defray closing costs. These 1% loans are expected to average \$25,000 per unit with an average loan term of 15 years.

The Fund will address the needs of low-income households.

The Fund is designed to work in conjunction with and leverage subsidies available through existing City-sponsored housing assistance programs. Each City program has income requirements that mandate the maximum income levels of families that may be assisted by each program. In some cases these requirements are tied to the Federal funding source for the program. According to a Fiscal Year 2006 Affordability Study prepared by HPD, 75% of HPD and HDC individual programs served low-income families earning 80% or less than the area median income, a larger share than is required by the program guidelines. An additional 12% of units assisted were affordable to moderate-income households earning between 80% and 120% of AMI.

The Fund will be targeted to meet the needs of households living within the impact area.

The Fund will create a supplemental financial resource to stimulate and render feasible affordable housing development and preservation within Manhattan Community Board 9. Its principal goal will be to assist in the presentation and development of low-income assistance housing in Community Board 9. There is a significant stock of at-risk housing in Manhattan Community Board 9 including privately-held rental stock, expiring-use tax credit, Mitchell-Lama, Section 236 and Section 202 housing, and limited-equity cooperatives that are at-risk for conversion to market rate and thus may contribute to increased rent pressures in the area.

The Fund is anticipated to assist over 1,000 affordable units over 20 years.

Forsyth Street Advisors has developed a financial model that projects how many affordable housing units can be created or preserved under various loan and default scenarios. The model includes a revenue and expense analysis for the Fund with operating revenue coming from interest earnings on unexpended Fund proceeds and loans outstanding, as well as a schedule of loan/grant origination, retirement and default activity.

Using conservative assumptions of an origination program comprised primarily of grants and high-risk, long-term loans with a higher default rate, initial projections indicate that the Fund could assist about 732 affordable units over 20 years. Using origination assumptions weighted more heavily toward short-term, low-risk loans with a lower default rate, the Fund is projected to assist nearly 2,000 affordable units over 20 years. Thus, assuming a reasonable portfolio mix and default scenario, it is expected that approximately 1,110 affordable units will be created or preserved with assistance from the Fund. (See Exhibit 1 below.)

Exhibit 1: Sensitivity Analysis of Affordable Units Assisted

Portfolio Mix

		More Grants, Fewer Revolving Loans	Fewer Grants, More Revolving Loans	
Average Default Rates	High	732 units	1,091 units	1,879 units
	Medium	738 units	1,110 units	1,933 units
	Low	743 units	1,125 units	1,972 units

Fund Organization

The Fund will be managed by an independent, not-for-profit entity with no affiliation with Columbia University.

Forsyth Street Advisors has assembled a technical appendix that includes a variety of supportive data and background material quantifying the stock of at-risk affordable housing in Community Board 9 and the supply of buildable sites, and that provides background information about the publicly-sponsored housing programs the Fund is expected to leverage.

Appendices

- Appendix A: Excerpts from Financial Model
- Appendix B: HPD Fiscal Year 2006 Affordability Study
- Appendix C: Manhattan CB 9 HDFC List

Manhattanville Neighborhood Preservation Fund

Key Assumptions / Impacts

Key Assumptions

Columbia Investment	\$20,000,000
Investment Period	20 Years

Loan/Grant Activity Assumptions

Financial Product Types	Amount / Unit	Average Loan		Distribution by	
		Term	Interest Rate	Financial Product	Default Rate
Below-Market Acquisition Loans	\$ 50,000	3	1%	10%	7%
Working Capital for Pre-Development	\$ 10,000	3	1%	10%	15%
Capital Improvement Loans for Limited Equity Coops	\$ 20,000	10	1%	15%	25%
Homebuyer Assistance Loans	\$ 25,000	15	1%	25%	7%
Flexible Gap Financing for Preservation Projects	\$ 60,000	15	1%	20%	7%
Land Write-Down Grants	\$ 50,000	N/A	N/A	20%	N/A
				100%	

Units Assisted Over Investment Period

Financial Product Types	Cumulative	
	Investment	Units Assisted
Below-Market Acquisition Loans	\$ 2,292,036	40
Working Capital for Pre-Development	\$ 2,525,648	215
Capital Improvement Loans for Limited Equity Coops	\$ 2,517,129	118
Homebuyer Assistance Loans	\$ 3,386,402	131
Flexible Gap Financing for Preservation Projects	\$ 2,709,122	44
Land Write-Down Grants	\$ 9,491,726	183
Total	\$ 22,922,062	732

Manhattanville Neighborhood Preservation Fund Sensitivity Analysis of Units Assisted

Portfolio Mix

		More Grants, Fewer Revolving Loans		Fewer Grants, More Revolving Loans
Average Default Rates	High	732 units	1,091 units	1,879 units
	Medium	738 units	1,110 units	1,933 units
	Low	743 units	1,125 units	1,972 units

Manhattanville Neighborhood Preservation Fund Sensitivity Analysis of Units Assisted

Assumptions Used in Sensitivity Analysis

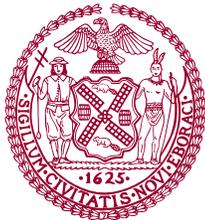
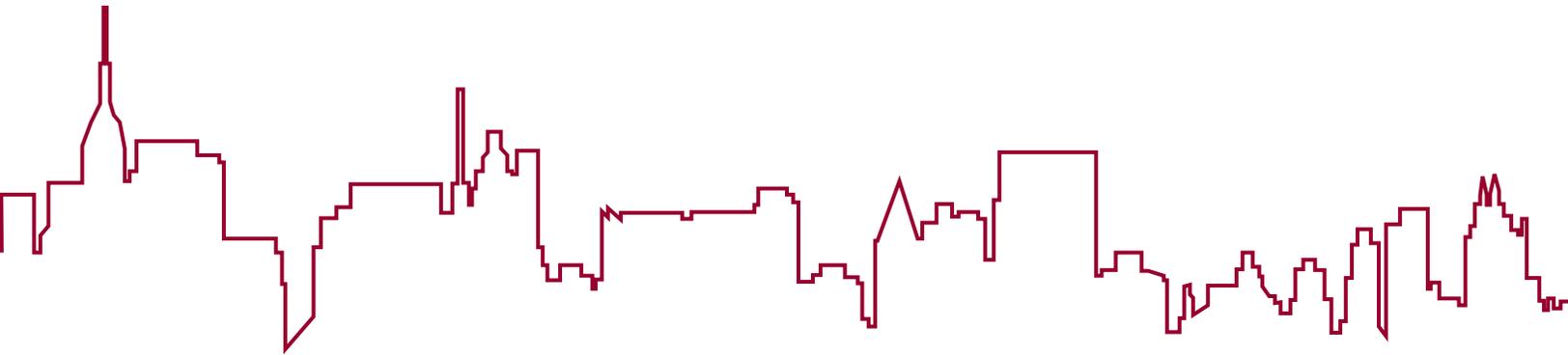
Portfolio Mix	More Grants, Fewer Revolving Loans		Fewer Grants, More Revolving Loans
Below-Market Acquisition Loans (Avg. 3 year term)	10%	15%	20%
Working Capital for Pre-Development (Avg. 3 year term)	10%	20%	35%
Capital Improvement Loans for Limited Equity Coops (Avg. 10 year term)	15%	20%	20%
Homebuyer Assistance Loans (Avg. 15 year term)	25%	20%	15%
Flexible Gap Financing for Preservation Projects (Avg. 15 year term)	20%	10%	5%
Land Write-Down Grants (Permanent)	20%	15%	5%
	100%	100%	100%

Default Rate	High	Medium	Low
Below-Market Acquisition Loans (Avg. 3 year term)	7%	5%	3%
Working Capital for Pre-Development (Avg. 3 year term)	15%	10%	7%
Capital Improvement Loans for Limited Equity Coops (Avg. 10 year term)	25%	20%	15%
Homebuyer Assistance Loans (Avg. 15 year term)	7%	5%	3%
Flexible Gap Financing for Preservation Projects (Avg. 15 year term)	7%	5%	3%
Land Write-Down Grants (Permanent)	N/A	N/A	N/A

Fiscal Year 2006 Affordability Study

Examination of Incomes Served by Mayor
Bloomberg's New Housing Marketplace Plan

Rebecca Koepnick
Raisa Bahchieva
Alexander Schwarz
James Crowder



City of New York
Department of Housing Preservation and Development

Michael R. Bloomberg, Mayor

*Daniel L. Doctoroff, Deputy Mayor for Economic
Redevelopment and Rebuilding*

Shaun Donovan, Commissioner

New York City Department of Housing Preservation and Development
Strategic Planning Group
FY2006 AFFORDABILITY STUDY: SYNOPSIS OF RESULTS

Background

As the health of the city has improved and the population has grown over the last 20 years, New York City has moved from a crisis of housing abandonment, to a challenge of housing affordability. In response, on February 23, 2006, Mayor Michael R. Bloomberg and HPD Commissioner Shaun Donovan announced details of the expansion of the Mayor's New Housing Marketplace Plan, which has grown from a \$3 billion plan to build and preserve 65,000 affordable units by 2008, to a \$7.5 billion plan to build and preserve 165,000 units by 2013. This plan is the largest municipal affordable housing plan in the nation's history and will provide affordable homes for 500,000 New Yorkers. This new 10-year plan will address the enormous pressures on the City's current tight housing market and -- through securing affordable housing for the City's working and middle-classes -- ensure that New York City remains economically competitive. Providing affordable housing to those income groups who need it most is the centerpiece of the New Housing Marketplace Plan. However, until 2004, HPD and HDC did not systematically compile and analyze data on the incomes of the families they served through their affordable housing programs. In 2004, HPD began collecting income data on households who had moved into HPD and HDC units during FY2004 (July 2003 until June 2004).

Although each HPD and HDC program has income requirements (which are tied, in some cases, to the Federal funding source for the program) that mandate the maximum income levels of families who may be assisted by that program, until the FY2004 Affordability Study, it remained unclear whether the actual incomes of families served were close to the limit or significantly below it. The FY2004 Affordability Study found that HPD and HDC programs serve a considerably higher percentage of low-income households than is required by the mandates (See Chart E, page 5).

Comprehensive, uniform data collection at HPD has historically been constrained by limited cross-divisional consistency in the gathering and storage of data. Income data collection has been largely decentralized by division, group and programs, while staff focuses on ensuring that participating families meet stated eligibility requirements. In addition, data for many programs are collected by the relevant building management, which often limits access to information.

Since the FY2004 Affordability Study, HPD has taken a number of steps to regularize the collection of income data. As a result of these efforts, the results of the 2006 Affordability Study include data on a greater number of HPD and HDC completions than the prior study. Early in FY2008, HPD will have a process in place to collect income information on a quarterly basis. Going forward, we will continue to collect affordability data and complete an affordability study on a yearly basis, with the goal of better understanding who our programs are reaching.

Data Sources and Methodology

The results of the Fiscal Year 2006 Affordability Study rely on data from four sources:

- Administrative Records from HPD program areas
- Administrative Records from the Housing Development Corporation (HDC)
- Mail Surveys
- Administrative Records from HPD's Marketing division

Table 1 outlines the sources of records for the HPD and HDC programs included in the study. The records originate when families move into the HPD or HDC units, when they apply to HPD lotteries, or when they sign new leases or go through income verification for rehabilitated apartments. Where possible, we relied on administrative records and only mailed surveys for programs where no administrative records existed. From the sources identified above, HPD was able to collect income and household size information on a sample of 3,871 households who moved into, applied for, or signed leases for HPD and HDC apartments in FY2006. Of this sample, HPD received survey data on 110 households and administrative records on 3,761.¹

¹ The number of households in the sample collected in FY2006 increased from FY2004 when 2,683 households were included in the sample. Further, HPD was able to collect administrative records on 11 additional programs in FY2006, reducing the study's dependence on program guidelines and surveys.

Table 1: FY2006 Affordability Study Data Sources	
<p>1. ADMINISTRATIVE RECORDS</p> <p>421a Negotiable Certificate Program Arverne Cornerstone Homeless Housing Assistance Program HIP Home Works HTF Inclusionary Housing LAMP Mitchell-Lama Mixed-Income Rental Program Neighborhood Homes NEP New Foundations New HOP New Neighbors NHS NRP NYCHA Partnership/New Homes PLP SCHAP Section 202/811 Small Buildings Supportive Housing Loan Program Vacant Building 2000</p>	<p>2. SURVEY DATA²</p> <p>7A TIL/TIL2 8A</p> <p>3. NOT INCLUDED (No FY2006 Completions)</p> <p>ANCHOR Assisted Living City Council Mixed Income City Home Habitat for Humanity Misc Negotiated Sale Misc Senior Housing Nehemiah New Partners OMH OMRDD PHHF Standalone 9% Tax Credits</p> <p>4. NOT INCLUDED (FY2006 Completions, no data available)</p> <p>DAMP Special Projects HUD Multi-Family Storeworks</p>

Note: There were a total of 13,190 completions in FY2006.

For each program, we used the sample households who moved into HPD or HDC units in FY2006 obtained from the FY2006 study to estimate income distributions across HPD and HDC programs. We then applied these distributions to almost all³ of the housing completions in FY2006 (which totaled 13,190), in order to estimate which income groups are served through the housing programs that were active under the New Marketplace Housing Plan. These extrapolations are then compared to similar extrapolations done based on the FY2004 data. (Both the study findings and extrapolation results can be found in the Appendix to this study)

Below, we discuss the five major findings from the study.

² The FY2006 Affordability Study relies less on survey data than the FY2004 Affordability Study. Whereas in the FY2006 Affordability Study we used survey data for three programs, for the FY2004 Affordability Study we used survey data for 10 programs: 7a, 8a, Inclusionary Housing, TIL, Cornerstone, Edgemere, Homeworks, Melrose Commons, Neighborhood Homes and Partnership. Further, HPD was able to collect administrative records on 5 additional programs in FY2006 that it had used program guidelines for in FY2004: Arverne, HHAP, HIP, NHS, and Section 202. Income and household size data comes from surveys.

³ HPD did not have administrative records for or conduct surveys for 3 programs that had completions in FY2006: DAMP Special Projects, HUD Multi-Family and Storeworks. Combined, these programs accounted for 1% or 130 of the total 13,190 completions in FY2006.

Finding #1: In FY2006, three-fourths of the units HPD and HDC completed served low-income households, a larger share of low income households than is required by the program guidelines.

After extrapolating the results of the FY2006 Affordability Study to the actual housing completions in FY2006, the distribution of units across the three income groups (displayed in Chart A below) demonstrates that three-fourths of the households that moved into HPD and HDC units had incomes below 80% of the Area Median Income (AMI). Consistent with the results of the FY2004 Affordability Study, the percent of units serving low-income households far exceeds the requirements of the program guidelines (Chart B), which suggest that only 47% of units should serve low-income households. While the majority of units serve low-income households, overall HDC and HPD units served a mix of incomes with a quarter of units serving moderate and middle income families.

Chart A: FY2006 Affordability Study Results, FY2006 Completions

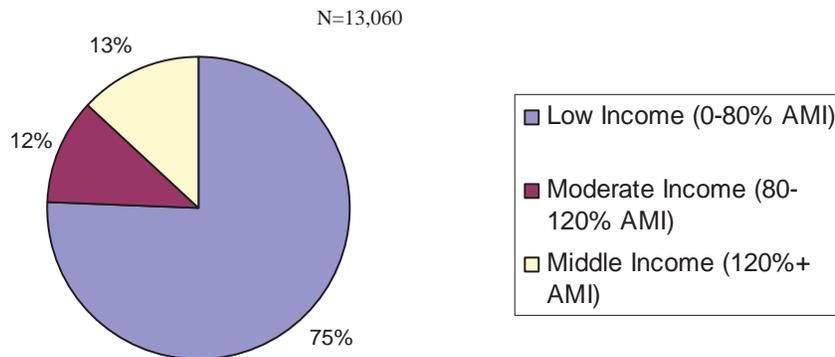
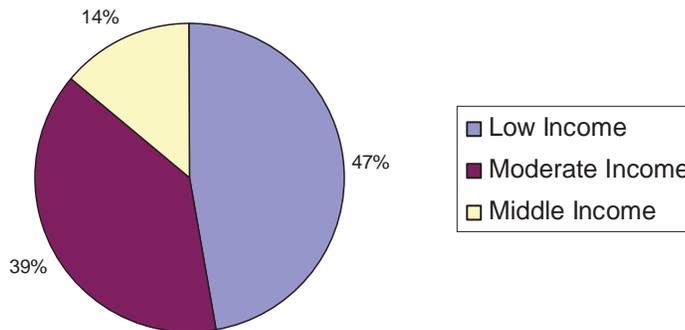
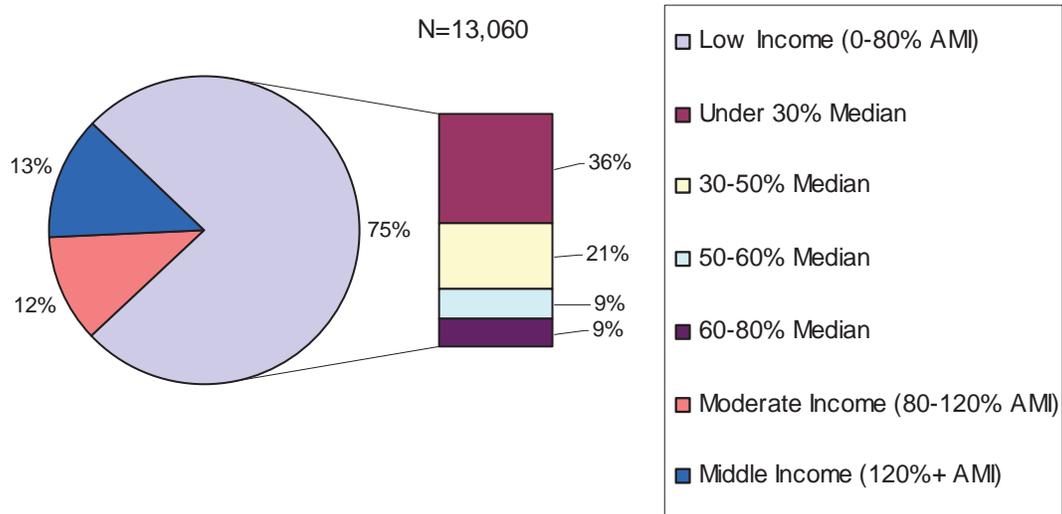


Chart B: Income Groups Served by FY2006 Completions according to Program Guidelines



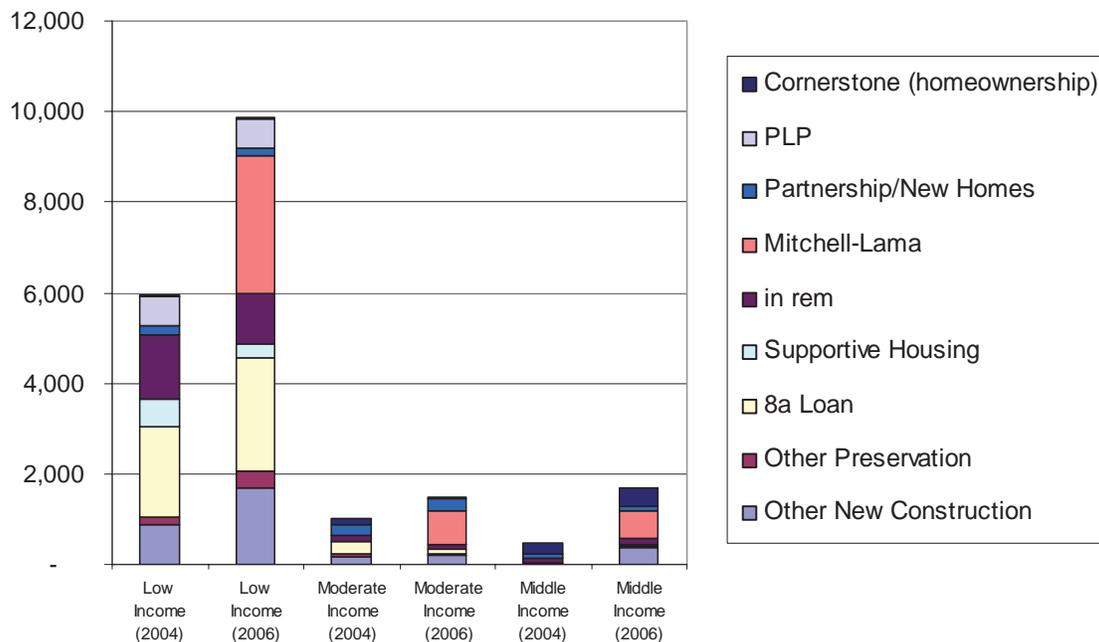
Of the low-income households that moved into HPD and HDC units in FY2006, almost half were extremely low income households, with incomes less than 30% of the Area Median Income (AMI).

Chart C: FY2006 Affordability Study, FY2006 Completions by Income Category



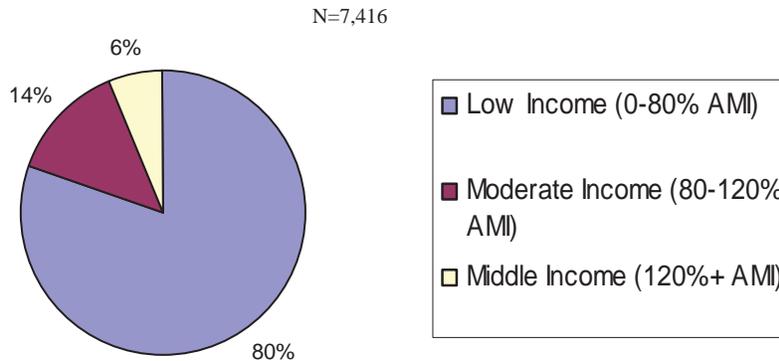
Next, we compare the results of the FY2006 and FY2004 affordability studies. Overall, the results are very similar with HPD and HDC serving a mix of incomes in both years. However, one critical difference is the overall increase in the number of completions (from 7,991 to 13,190) and mix of programs in FY2006 when compared to FY2004 (see Chart D below). We will explore the ramifications of this change later in this document.

Chart D: 2004 and 2006 Completions Extrapolations, By Program Categories



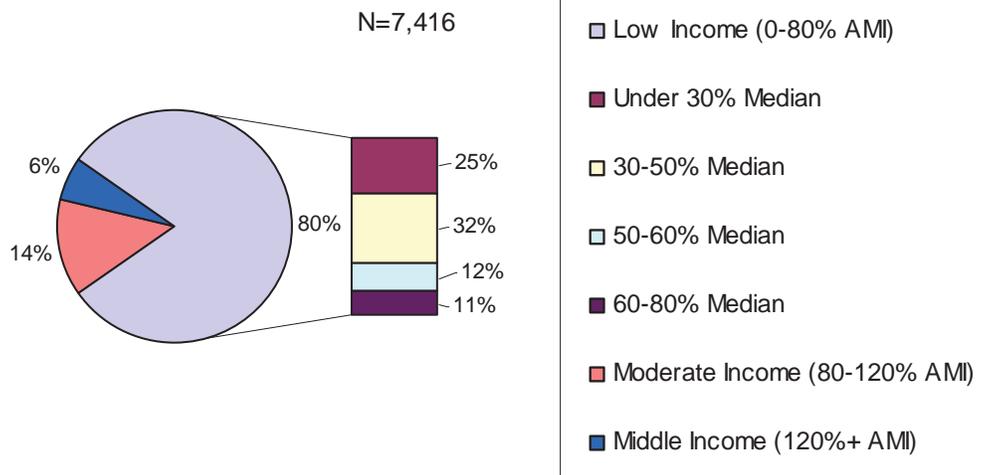
Turning to changes in the overall mix of incomes served in FY2004 and FY2006, there is a slight decrease in low (5 percentage points) and moderate-income (2 percentage points) units and a corresponding increase in middle-income units (7 percentage points).⁴

Chart E: FY2004 Affordability Study Results, FY2004 Completions



At the same time, there was some change in the affordability distribution within the low-income category. For example, the percent of households with incomes below 30% of AMI increased by 10 percentage points between the FY2004 and FY2006 Affordability Studies, while the percent of households between 30 and 50% of AMI decreased by 10 percentage points.

Chart F: FY2004 Affordability Study, FY2004 Completions by Income Category



⁴ The 2006 Affordability Study used the 2006 AMI for different family sizes:

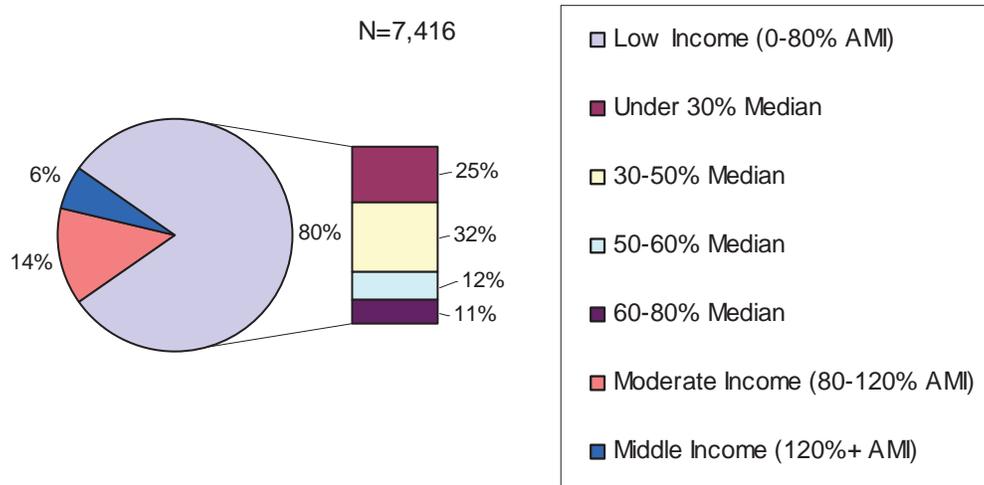
- \$49,600 for a family of one person;
- \$56,700 for a family of two people;
- \$63,800 for a family of three people;
- \$70,900 for a family of four people;
- \$76,600 for a family of five people;
- \$82,200 for a family of six people.

Please note that between the 2004 and 2006 Affordability Studies, the U.S. Department of Housing and Urban Development increased the Area Median Income in the New York Metropolitan Statistical Area from 62,800 for a family of four to \$70,900 for a family of four.

Finding #2: The vast majority of households who moved into HPD and HDC rental units in FY2006 were low-income.

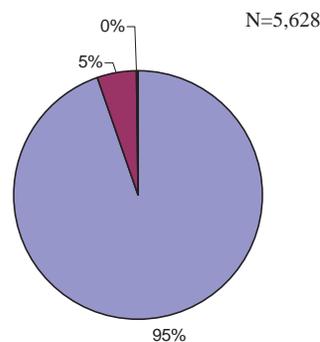
In the rental sector, in FY2006, 93% of newly-occupied units served households in the lower-income categories, while 4% served moderate income families and the remaining 3% served middle income families.

Chart F: FY2004 Affordability Study, FY2004 Completions by Income Category



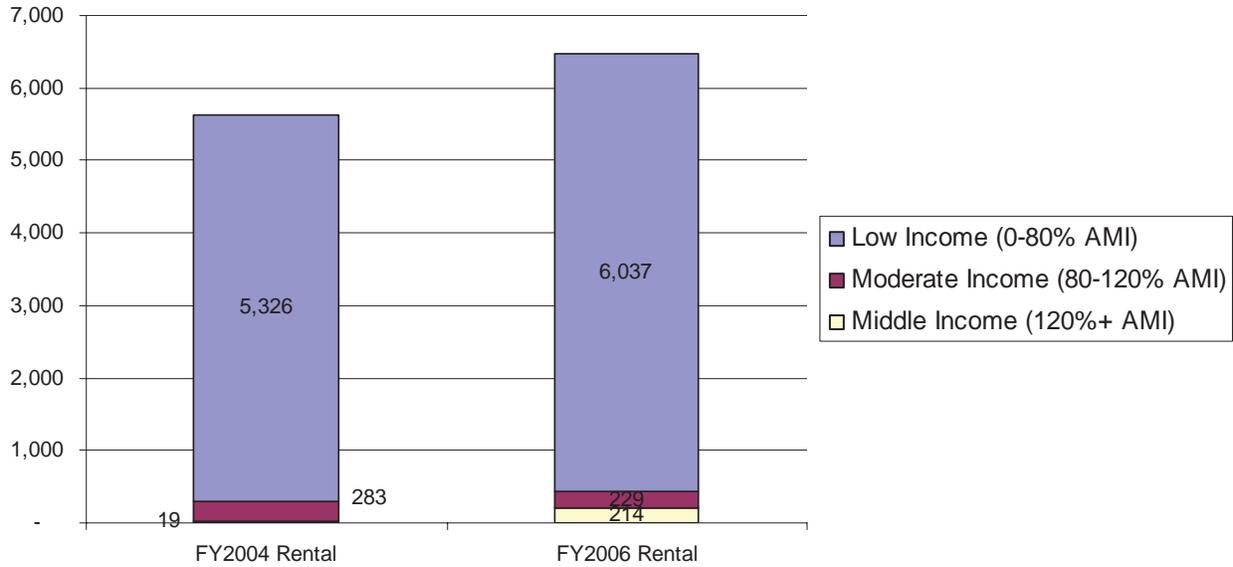
Since FY2004, a higher proportion of units are in the moderate-income and middle-income categories (5% in FY2004 and 7% in FY2006). Between the two studies, the percentage of rental units serving low-income households declined (2 percentage points), the percentage serving moderate-income households declined (1 percentage point), and the number of units serving middle-income households increased (3 percentage points).

Chart H: FY 2004 Rental Unit Completions, by Income Category



In terms of the total units completed, Chart I illustrates that the number of middle-income households served by rental units increased from 19 to 214 between the FY2004 and FY2006 Affordability Studies. At the same time, the number of rental units completed for low-income households increased from 5,326 to 6,037.

Chart I: FY2004 and FY2006 Affordability Study Results, Rental Completions



Finding #3: The households moving into HPD and HDC homeownership units represent a mix of low, moderate, and middle incomes; at the same time, the number and percentage of homeownership units serving low-income families increased substantially from the FY2004 Affordability Study.

In the homeownership sector, in FY2006, 58% of units are in the lower-income categories, while 42% of units served moderate-income and middle-income households.

Chart J: FY 2006 Homeownership Unit Completions, by Income Category

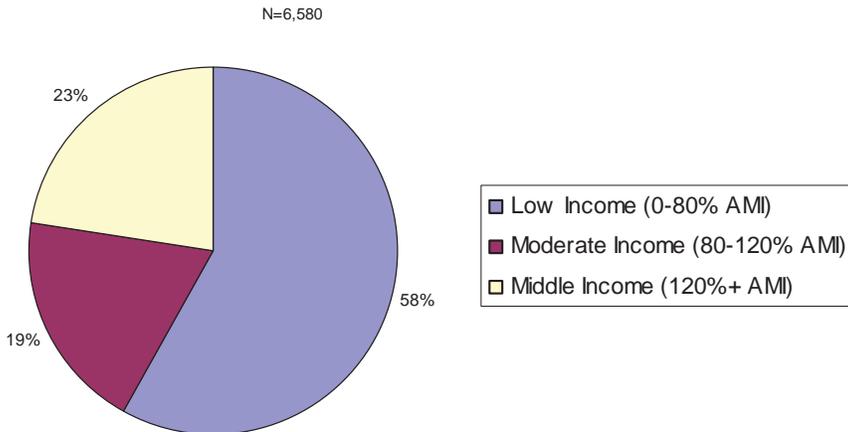
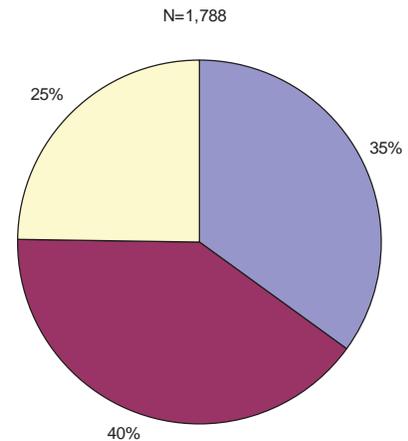


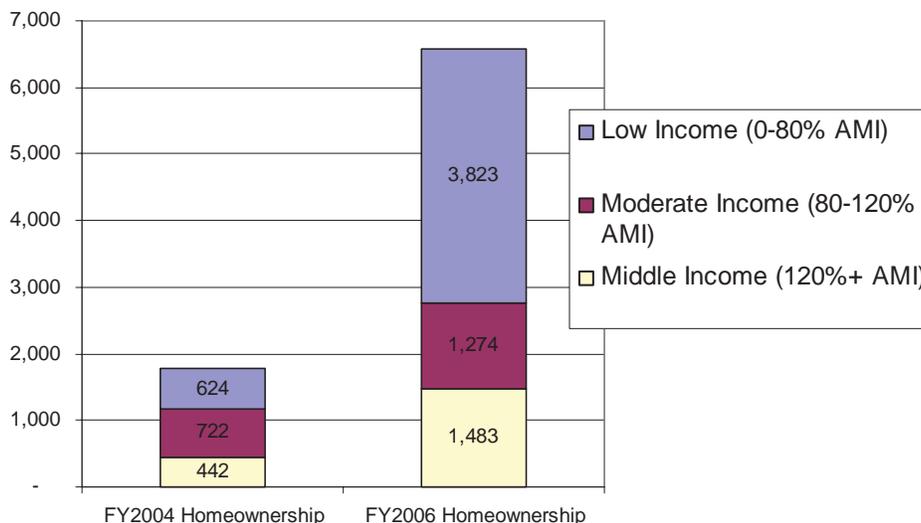
Chart K: FY 2004 Homeownership Unit Completions, by Income Category



Between the two studies, the percentage of homeownership units serving low-income households increased (23 percentage points), the percentage serving moderate-income households decreased (21 percentage points), and the number of units serving middle-income households decreased (2 percentage points). This is largely driven by the 4,444 Mitchell-Lama homeownership units refinanced in FY2006. This is a departure from the FY2004 Affordability Study where no Mitchell-Lama units were included in the study as the Mitchell-Lama Refinancing and Repair Loan programs only began in FY2004.

In terms of the total units completed, Chart L illustrates that the number of households in all three income categories served by homeownership units increased dramatically (from 1,788 to 6,580) between the FY2004 and FY2006 Affordability Studies.

Chart L: FY2004 and FY2006 Affordability Study Results, Homeownership Completions



Finding #4: The incomes of the households who moved into HPD and HDC units varied little within programs between FY2004 and FY2006, but where they did vary, programs served more low-income households in FY2006 than in FY2004.

Overall, at the individual program level, the income groups served by the program did not vary appreciably between the FY2004 and FY2006 Affordability Studies. In five of the six programs where the income distribution changed by more than 10 percentage points (HIP, MIRP, New Foundations, Cornerstone, and NHS) a greater proportion of low-income households were served in FY2006. In the sixth program (NewHOP), there was a decline (17 percentage points) in the number of low-income households that were served.

Table 2. Changes in Income Categories Served within HPD and HDC program, FY2004 and FY2006

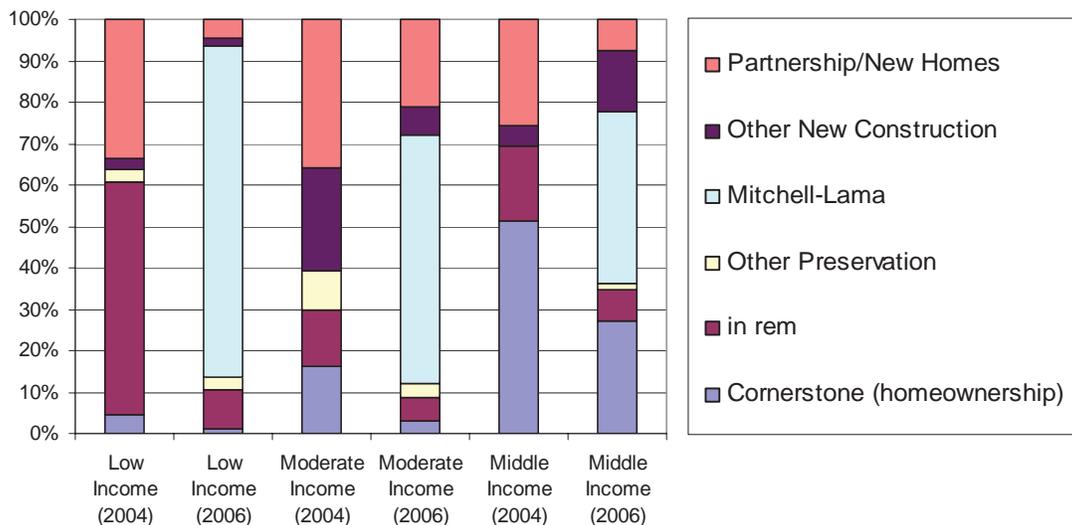
Program	FY04 Low Income	FY06 Low Income	<i>Change</i>	FY04 Moderate Income	FY06 Moderate Income	<i>Change</i>	FY04 Middle Income	FY06 Middle Income	<i>Change</i>
421a	100%	100%	0%	0%	0%	0%	0%	0%	0%
7A	97%	100%	3%	3%	0%	-3%	1%	0%	-1%
8A	88%	95%	6%	12%	3%	-8%	0%	2%	2%
Arverne		0%			8%			92%	
Cornerstone									
Homeownership	7%	8%	1%	31%	8%	-23%	61%	84%	23%
Cornerstone rental	7%	20%	12%	31%	30%	-1%	61%	50%	-11%
HHAP	100%	99%	-1%	0%	0%	0%	0%	1%	1%
HIP	20%	56%	36%	80%	28%	-52%	0%	15%	15%
Homeworks	27%	21%	-6%	36%	30%	-7%	36%	49%	13%
HTF	100%	100%	0%	0%	0%	0%	0%	0%	0%
Inclusionary	100%	100%	0%	0%	0%	0%	0%	0%	0%
LAMP	100%	100%	0%	0%	0%	0%	0%	0%	0%
MIRP	54%	100%	46%	35%	0%	-35%	12%	0%	-12%
Mitchell Lama		69%			17%			14%	
NEP	97%	96%	-1%	2%	4%	3%	2%	0%	-2%
New Foundations	17%	42%	26%	58%	36%	-22%	25%	21%	-4%
New HOP	33%	16%	-17%	42%	35%	-7%	25%	49%	24%
Neighborhood									
Homes	29%	35%	6%	42%	29%	-13%	29%	35%	6%
NHS	20%	50%	30%	80%	33%	-47%	0%	17%	17%
NRP	97%	98%	1%	2%	0%	-2%	2%	2%	0%
NYCHA/UNIMAC		100%			0%			0%	
Partnership/New									
Homes	36%	31%	-5%	45%	49%	4%	20%	21%	1%
PLP	100%	100%	0%	0%	0%	0%	0%	0%	0%
SCHAP		94%			6%			0%	
Section 202	100%	100%	0%	0%	0%	0%	0%	0%	0%
Small Buildings		89%			11%			0%	
Supportive Housing									
Loan Program	100%	100%	0%	0%	0%	0%	0%	0%	0%
TIL	97%	100%	3%	1%	0%	-1%	1%	0%	-1%
VB 2000		0%			36%			64%	
New Neighbors		0%			100%			0%	

Finding #5: While affordability levels are comparable between the FY2004 and FY2006 Affordability Studies, the programs which produced significant numbers of low, moderate, and middle-income units vary between the two studies.

The high percentage of low-income households in FY2006 is driven by three programs that had a large number of units in FY2006: 8A and PLP programs combined are over 50% of all completed low-income rental units, and Mitchell-Lama units are 80% of all homeownership units. As mentioned earlier, no Mitchell-Lama units were included in the study in FY2004 as the Mitchell-Lama Refinancing and Repair Loan programs only began in FY2004. The inclusion of the Mitchell-Lama units also contributed to the change in the distribution of moderate (60% of the total units) and middle-income (42% of the total units) homeownership units in the FY2006 Affordability Study. This suggests that the mix of programs completing units in each year has a significant impact on the affordability levels served by HPD and HDC programs.

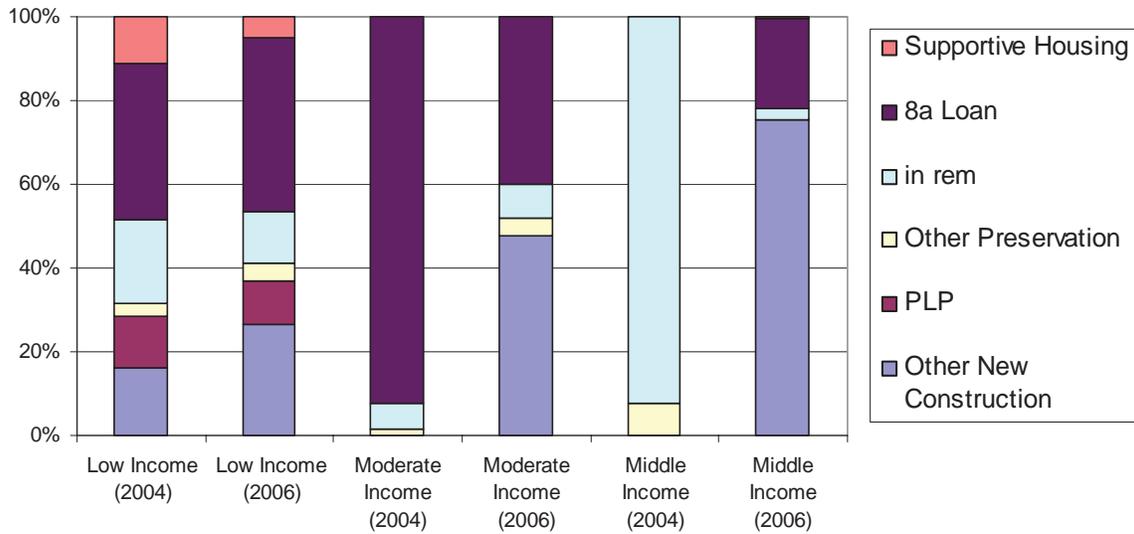
The program distributions are presented in Chart M for homeownership programs and then in Chart N for rental programs. Chart M demonstrate that Mitchell-Lama units had a major impact on the homeownership units created and preserved for low, moderate-, and middle-income families. Cornerstone⁵ and Partnership also drove the number of units available to middle- and moderate- income families, respectively. On the rental side, Chart N clearly demonstrates the prominent role that 8A units (mentioned above), as well as PLP and Cornerstone units, play in fueling affordable rental opportunities for low-, moderate-, and middle-income households.

Chart M: 2004 and 2006 Extrapolations, Homeownership Program Distributions within Income Categories



⁵ HDC New HOP units may also be counted under the LAMP or Cornerstone programs. Also, some of the New HOP units are not counted towards the Mayor's Plan. Elimination of the segment of New HOP units not counted towards the Mayor's Plan is likely to reduce the proportion of renters in the middle and above-middle-income categories in FY2006.

Chart N: 2004 and 2006 Extrapolations, Rental Program Distributions within Income Categories



Examining the relative impact on the affordability of HPD and HDC units of changes in the mix of programs versus changes in the incomes reached by individual programs demonstrates that between FY2004 and FY2006, changes in the mix of programs had a greater impact. In Table 3 below, we first look at the difference in affordability levels when we apply the program-specific income distributions suggested by the FY2004 Study Results and then the FY2006 Study Results to the housing completions in FY2004. Explained another way, we are holding constant the mix of housing completions but allowing incomes distributions for programs to vary. By doing this, we can test the impact which changes in affordability within the individual program have on the overall income mix. The comparison shows that the change is small, with a +3 percentage point change in low-income, -5 percentage point change in moderate-income, and +2 percentage point change in middle-income.

In the second half of the table, we hold the income distributions for the various programs constant, but allow the number of units completed to change. This allows us to gauge the impact of changes in the mix of programs on the income ranges reached by HPD and HDC programs. Here, the change for low-income is -8 percentage points, for moderate +3 percentage points, and for middle +5 percentage points. In other words, HPD and HDC programs reached more low-income families on a program-by-program basis in FY2006 than in FY2004.

These trends need to be monitored further over subsequent studies. However, based on the limited changes between the FY2004 and FY2006 Affordability Studies, it does initially indicate that any change in the affordability levels served by HPD and HDC programs were driven by the mix of units completed in a particular year, not in changes in affordability levels within individual programs. Given the nature of housing development, this finding makes sense. A program will not produce the same number of units every year, but the income levels it targets will rarely change dramatically in a short period of time.

Table 3

Impact of shift in affordability levels within programs on incomes served (Change in sample applied)			
	FY04 Sample Applied to FY04 Completions	FY06 Sample Applied to FY04 Completions	Change as a result of shift within programs
Low-income	80%	84%	3%
Moderate-income	14%	8%	-5%
Middle-income	6%	8%	2%
Impact of change in program mix/production on incomes served (Change in completions used)			
	FY06 Sample Applied to FY04 Completions	FY06 Sample Applied to FY06 Completions	Change as a result of change in program mix/production
Low-income	84%	75%	-8%
Moderate-income	8%	12%	3%
Middle-income	8%	13%	5%

In Tables 4 and 5 (below), we repeat this analysis but look at homeownership and rental units separately. For rental units, similar to the analysis for all units, changes are small. The rental analysis suggests that the decline in low-income households served by HPD and HDC rental units between the two Affordability Studies is largely the result of changes in the mix of rental units produced, as opposed to changes in the income categories the rental programs target. On the homeownership side, unlike in the analysis of all units, it appears that both change in the income categories targeted by individual programs and a change in the mix of programs impacted overall affordability, with the latter having a larger impact. Further, these findings reflect many of the programmatic decisions HPD and HDC have made over the last several years. First, HDC created the Mitchell-Lama Repair and Refinancing Loan Programs. The large number of Mitchell-Lamas preserved through these programs had a sizeable impact on the change in program mix between the FY2004 and FY2006 studies. Second, with the decline in the number of city-owned buildings, which once provided a steady stream of affordable units for HPD to rehabilitate and preserve, HPD has looked to increase the number of new affordable units it constructs. In FY2004, 1,854 completed units relied on the in rem stock. By FY2006, this number had declined by over 500 units even though the total number of completions increased by over 5,000. Because of this shift away from the in rem stock and towards new construction and to homeownership, many of these units are affordable to moderate-income families. Hence the increase in the percent of units that moderate-income families moved into in FY2006. At the same time, HPD has made changes specifically to a number of new construction programs, such as New Foundations, to increase the number of newly constructed homeownership units available to low-income families.

Table 4			
Impact of shift in affordability levels within rental programs on incomes served (Change in sample applied)			
	FY04 Sample Applied to FY04 Completions	FY06 Sample Applied to FY04 Completions	Change as a result of shift within programs
Low-income	95%	97%	3%
Moderate-income	5%	2%	-3%
Middle-income	0%	1%	0%
Impact of change in rental program mix/production on incomes served (Change in completions used)			
	FY06 Sample Applied to FY04 Completions	FY06 Sample Applied to FY06 Completions	Change as a result of change in program mix/production
Low-income	97%	93%	-4%
Moderate-income	2%	4%	2%
Middle-income	1%	3%	2%

Table 5			
Impact of shift in affordability levels within homeownership programs on incomes served (Change in sample applied)			
	FY04 Sample Applied to FY04 Completions	FY06 Sample Applied to FY04 Completions	Change as a result of shift within programs
Low-income	35%	39%	4%
Moderate-income	40%	27%	-14%
Middle-income	25%	35%	10%
Impact of change in homeownership program mix/production on incomes served (Change in completions used)			
	FY06 Sample Applied to FY04 Completions	FY06 Sample Applied to FY06 Completions	Change as a result of change in program mix/production
Low-income	39%	58%	19%
Moderate-income	27%	19%	-7%
Middle-income	35%	23%	-12%

Conclusions

As was true in FY2004, households who moved into HPD and HDC units in FY2006 were overwhelmingly low-income. In fact, upon comparing the program guidelines with the results of the FY2006 Affordability Study, HPD and HDC are serving a far higher percentage (75%) of low-income households than was required by programs guidelines (47%). Further, the percentage of low-, moderate-, and middle-income households who moved into HPD and HDC units met the affordability goals of the New Housing Marketplace Plan.

Between the FY2004 and FY2006 Affordability Studies, there was some change in the incomes of households who moved into units, with the percentage of middle-income households increasing slightly. While there was some variation between the two studies, this was due not to changes in the affordability levels reached by the individuals programs (which actually indicates a focus on lower income units), but rather by the mix of programs with completions in the two years. Where changes in the affordability levels reached by individual programs did change, the programs actually reached more low-income households in FY2006. Many of the changes were a result of changes in HPD policy in its new construction programs to increase the number of units available for low-income households. For example, on the homeownership side, between the two studies, the percentage of homeownership units serving low-income households increased (23 percentage points).

We will continue to collect affordability data on a regular basis to track trends over time, and use this information to make policy decisions about the income targeting in our programs.

**2006 AFFORDABILITY STUDY: APPENDIX
(August 2007)**

Data Sources

Program	Number of Sample Records (FY2004)	Number of Sample Records (FY2006)	Survey Data	Administrative Data	Income Limits Data
421a	267	74		✓	
80/20/421a	71			✓	
7A	117	24	✓		
8A	60	58	✓		
Arverne		52		✓ (2006)	
Cornerstone Homeownership	108	321		✓	
Cornerstone rental		106		✓	
Edgemere	37		✓		
HDC Coop	513			✓	
HDC Mixed Income	147			✓	
HHAP	104	98		✓ (2006)	✓ (2004)
HIP	103	39		✓ (2006)	✓ (2004)
Homeworks	33	61	✓ (2004)	✓ (2006)	
HTF	26	42		✓	
Inclusionary	14	24	✓ (2004)	✓ (2006)	
LAMP	98	225		✓	
Melrose Commons	37		✓ (2004)		
MIRP		111		✓ (2006)	
Mitchell-Lama		1263		✓ (2006)	
Nehemiah	134				✓
NEP	123	97		✓	
New Foundations	24	66		✓	
New HOP	36	303		✓	
Neighborhood Homes	24	31	✓ (2004)	✓ (2006)	
NHS	Combined with HIP	46		✓ (2006)	✓ (2004)
NRP	Combined with NRP	56		✓	
NYCHA		111		✓ (2006)	
Partnership/New Homes	92	436	✓ (2004)	✓ (2006)	
PLP	166	10		✓	
SCHAP		35		✓ (2006)	
Section 202	189	74		✓ (2006)	✓ (2004)
Small Buildings		18		✓ (2006)	
Storeworks	63				✓ (2004)
Supportive Housing Loan Program	20	44		✓	
TIL	77	28	✓		
VB 2000		14		✓	
New Neighbors		4		✓	
Total Sample Units	2,683	3,871			

Extrapolations

The table below presents the extrapolations of the FY2006 Affordability Study Findings to the HPD and HDC FY2006 completions.

Income Levels of Families in Subsidized Housing: Extrapolation of 2006 Housing Completions Using 2006 Study

RENTAL PROGRAMS	N completed in FY'2006	Under 30% Median	30-50% Median	50-60% Median	60-80% Median	80-100% Median	100-120% Median	120-150% Median	150-200% Median	Over 200% Median
421A	409	35.1%	52.7%	12.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7A	167	75.0%	20.8%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8A	2,660	77.6%	6.9%	3.4%	6.9%	3.4%	0.0%	0.0%	1.7%	0.0%
Cornerstone rental	123	5.7%	13.2%	0.0%	0.9%	15.1%	15.1%	23.6%	25.5%	0.9%
HDC LAMP	466	45.8%	25.8%	28.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
HDC New HOP (Middle-income)	205	0.0%	0.7%	1.3%	14.2%	20.8%	14.2%	21.8%	22.4%	4.6%
HHAP	96	93.9%	4.1%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%
HTF	283	2.4%	88.1%	9.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Inclusionary Housing	45	0.0%	45.8%	54.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mixed Income Rental	172	7.2%	92.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NEP	455	9.3%	75.3%	7.2%	4.1%	3.1%	1.0%	0.0%	0.0%	0.0%
NRP	308	53.6%	19.6%	17.9%	7.1%	0.0%	0.0%	1.8%	0.0%	0.0%
NYCHA	180	2.7%	32.4%	64.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PLP	620	30.0%	50.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Section 202	155	91.9%	8.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Small Buildings	88	16.7%	50.0%	11.1%	11.1%	11.1%	0.0%	0.0%	0.0%	0.0%
Supportive Housing Loan	48	84.1%	13.6%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TIL	311	67.9%	14.3%	3.6%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%
DAMP Special Projects	8	52.0%	35.0%	8.9%	0.8%	1.6%	0.0%	0.8%	0.8%	0.0%
HUD Multifamily	104	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TOTAL RENTAL	6,903	50.3%	28.8%	10.0%	4.5%	2.6%	0.8%	1.2%	1.8%	0.2%
OWNER PROGRAMS										
SCHAP	51	25.7%	31.4%	14.3%	22.9%	5.7%	0.0%	0.0%	0.0%	0.0%
HDC Mitchell-Lama	4,444	27.0%	18.4%	9.6%	13.9%	10.1%	7.1%	6.4%	5.5%	2.1%
Partnership	549	0.0%	1.1%	3.2%	26.1%	29.8%	19.0%	14.7%	2.3%	3.7%
HIP	37	5.1%	17.9%	10.3%	23.1%	12.8%	15.4%	15.4%	0.0%	0.0%
Cornerstone homeownership	482	0.0%	0.0%	8.0%	0.0%	0.0%	8.0%	28.0%	32.0%	24.0%
New Foundations	189	0.0%	6.1%	4.5%	31.8%	22.7%	13.6%	13.6%	7.6%	0.0%
Homeworks	101	0.0%	0.0%	1.6%	19.7%	21.3%	8.2%	14.8%	11.5%	23.0%
NHS	82	6.5%	26.1%	4.3%	13.0%	21.7%	10.9%	15.2%	2.2%	0.0%
Arverne	190	0.0%	0.0%	0.0%	0.0%	1.9%	5.8%	34.6%	26.9%	30.8%
New Neighbors	4					100.0%				
Neighborhood Homes	104	3.2%	3.2%	3.2%	25.8%	22.6%	6.5%	22.6%	12.9%	0.0%
VB 2000	36	0.0%	0.0%	0.0%	0.0%	7.1%	28.6%	21.4%	21.4%	21.4%
StoreWorks	18					50.0%	50.0%			
TOTAL OWNER	6,287	19.5%	14.0%	8.1%	14.3%	11.9%	8.7%	10.4%	8.1%	5.0%
GRAND TOTAL	13,190	35.6%	21.8%	9.1%	9.1%	7.0%	4.5%	5.6%	4.8%	2.5%

Study Findings

The Table below presents the study findings. The Table contains the distribution of family incomes across different income ranges relative to the Area Median Income. For each family size, the distribution across income categories is constructed based on the respective median. These distributions are then combined for each program, which produces the results displayed in the Table. The sample sizes are given in the column called "Number of records".

Income Levels of Families in Subsidized Housing: FY2006 Study Findings ⁶

Program	Number of Records	Under 30% Median	30-50% Median	50-60% Median	60-80% Median	80-100% Median	100-120% Median	120-150% Median	150-200% Median	Over 200% Median
421a	74	35.1%	52.7%	12.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7A ⁷	24	75.0%	20.8%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8A ⁸	58	77.6%	6.9%	3.4%	6.9%	3.4%	0.0%	0.0%	1.7%	0.0%
Arverne	52	0.0%	0.0%	0.0%	0.0%	1.9%	5.8%	34.6%	26.9%	30.8%
Cornerstone Homeownership	321	0.0%	0.0%	8.0%	0.0%	0.0%	8.0%	28.0%	32.0%	24.0%
Cornerstone rental	106	5.7%	13.2%	0.0%	0.9%	15.1%	15.1%	23.6%	25.5%	0.9%
HHAP	98	93.9%	4.1%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%
HIP	39	5.1%	17.9%	10.3%	23.1%	12.8%	15.4%	15.4%	0.0%	0.0%
Homeworks	61	0.0%	0.0%	1.6%	19.7%	21.3%	8.2%	14.8%	11.5%	23.0%
HTF	42	2.4%	88.1%	9.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Inclusionary	24	0.0%	45.8%	54.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
LAMP	225	45.8%	25.8%	28.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MIRP	111	7.2%	92.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mitchell-Lama	1263	27.0%	18.4%	9.6%	13.9%	10.1%	7.1%	6.4%	5.5%	2.1%
NEP	97	9.3%	75.3%	7.2%	4.1%	3.1%	1.0%	0.0%	0.0%	0.0%
New Foundations	66	0.0%	6.1%	4.5%	31.8%	22.7%	13.6%	13.6%	7.6%	0.0%
New HOP	303	0.0%	0.7%	1.3%	14.2%	20.8%	14.2%	21.8%	22.4%	4.6%
Neighborhood Homes	31	3.2%	3.2%	3.2%	25.8%	22.6%	6.5%	22.6%	12.9%	0.0%
NHS ⁹	46	6.5%	26.1%	4.3%	13.0%	21.7%	10.9%	15.2%	2.2%	0.0%
NRP	56	53.6%	19.6%	17.9%	7.1%	0.0%	0.0%	1.8%	0.0%	0.0%
NYCHA/UNIMAC	111	2.7%	32.4%	64.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Partnership/New Homes	436	0.0%	1.1%	3.2%	26.1%	29.8%	19.0%	14.7%	2.3%	3.7%
PLP	10	30.0%	50.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SCHAP ¹⁰	35	25.7%	31.4%	14.3%	22.9%	5.7%	0.0%	0.0%	0.0%	0.0%
Section 202	74	91.9%	8.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Small Buildings	18	16.7%	50.0%	11.1%	11.1%	11.1%	0.0%	0.0%	0.0%	0.0%
Supportive Housing Loan Program	44	84.1%	13.6%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TIL ¹¹	28	67.9%	14.3%	3.6%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%
VB 2000	14	0.0%	0.0%	0.0%	0.0%	7.1%	28.6%	21.4%	21.4%	21.4%
New Neighbors	4					100.0%				
Total Sample Units	3,871	827	688	365	407	400	293	387	312	167
Percentage Breakdown		22%	18%	9%	11%	10%	8%	10%	8%	4%

⁶ The 2006 Affordability Study used the 2006 AMI for different family sizes:

- \$49,600 for a family of one person;
- \$56,700 for a family of two people;
- \$63,800 for a family of three people;
- \$70,900 for a family of four people;
- \$76,600 for a family of five people;
- \$82,200 for a family of six people.

Please note that between the 2004 and 2006 Affordability Studies, the U.S. Department of Housing and Urban Development increased the Area Median Income in the New York Metropolitan Statistical Area from 62,800 for a family of four to \$70,900 for a family of four.

⁷ Income and household size data comes from surveys. The response rate for 7A was 27%.

⁸ Income and household size data comes from surveys. The response rate for 8A was 25%.

⁹ The typical dwelling type is two- or three-family dwellings. There is therefore a rental component to these units, for which income information could not be captured. NHS has 46 owners representing 84 units.

¹⁰ The typical dwelling type is two- or three-family dwellings. There is therefore a rental component to these units, for which income information could not be captured. SCHAP has 35 owners representing 63 units.

¹¹ Income and household size data comes from surveys. The response rates for TIL was 26% for TIL.

**LISC HDFC Project
Community District 9**

Appendix E: Manhattan CB 9 HDFC List																						
PRGM	Bldg ID	BORO	BLOCK	LOT	PHN	STREETNAME	SALES DATE	Disposition	Units	RE Balance pre-2001	RE Interest pre-2001	Current RE Balance	Current ERP Balance	DEP Balance as of 6/07	Current DOF Balance	TPT status	Total HPD Violations	A Viol.	B Viol.	C Viol.	Asset Mgmt Survey Date	Asset Mgmt Survey Rating
TIL	805841	1	1883	26	503	W 11 ST	6/8/95	COOP	30								100	27	60	13	1/24/06	GOOD
TIL	5503	1	1883	30	1046	AMSTERDAM AVE	6/8/95	COOP	30								1	1			1/24/06	GOOD
TIL	25523	1	1952	4	145-47	MORNINGSIDE AVE	6/23/92	COOP	24			\$69,455			\$69,556		82	40	39	3	3/24/06	GOOD
TIL	39836	1	1953	60	374	W 127 ST	12/18/97	COOP	10								254	80	167	7	1/25/06	GOOD
TIL	28347	1	1954	16	10	ST NICHOLAS TERR	6/5/97	COOP	11			\$12,502			\$12,502		17	7	8	2	1/13/06	GOOD
TIL	5527	1	1963	34	431	W 121 ST	10/8/82	COOP	25								16	1	12	3	3/14/06	GOOD
SIP	39843	1	1967	67	409	W 127 ST	3/7/95	RENTAL	21								32	9	18	5	8/4/04	GOOD
SIP	39842	1	1967	69	403	W 127 ST	3/7/95	RENTAL	20								21		16	4	8/4/04	GOOD
TIL	40081	1	1968	27	36	CONVENT AVE	6/19/97	COOP	25								13	5	7	1	1/5/06	GOOD
TIL	40075	1	1968	52	416	W 129 ST	5/25/99	COOP	29												3/3/06	GOOD
TIL	9946	1	1968	56	33	CONVENT AVE	2/12/97	COOP	24			\$525			\$525		332	91	183	58	1/30/06	GOOD
TIL	9921	1	1968	58	29	CONVENT AVE	2/12/97	COOP	24			\$7,019			\$7,019		12	3	9		6/13/03	GOOD
TIL	9982	1	1969	25	41	CONVENT AVE	4/7/95	COOP	79								120	78	16	26	3/13/06	GOOD
TIL	5557	1	1970	1	499	W 130 ST	2/27/98	COOP	17								2			2	3/15/06	GOOD
TIL	5575	1	1970	61	498	W 133 ST	6/10/91	COOP	9								17	4	6	7	3/29/06	GOOD
TIL	5568	1	1970	68	1463	AMSTERDAM AVE	1/31/97	COOP	12	\$54,802	\$40,274	\$158,255		\$66,808	\$158,402		2		1	1	3/29/05	FAIR
TIL	40614	1	1987	13	541-43	W 133 ST	6/29/98	COOP	36								11	2	8	1	2/9/06	GOOD
TIL	40613	1	1987	15	537	W 133 ST	6/29/05	COOP	37								49	8		41	2/9/06	GOOD
SIP	5578	1	1987	33	1488	AMSTERDAM AVE	5/31/91	RENTAL	18								30		27	3	6/11/07	FAIR
SIP	5579	1	1987	34	1492	AMSTERDAM AVE	5/31/91	RENTAL	18								34	16	13	5	6/11/07	FAIR
SIP	5580	1	1987	36	1496	AMSTERDAM AVE	5/31/91	RENTAL	22								157	31	88	37	6/11/07	FAIR
TIL	40688	1	1987	48	518	W 134 ST	6/25/98	COOP	24								191	64	106	21	3/20/06	GOOD
TIL	40690	1	1987	50	520	W 134 ST	8/25/94	COOP	24			\$27,488			\$27,547		108	16	72	20	3/20/06	GOOD
TIL	7968	1	1993	21	3115	BROADWAY	12/9/83	COOP	35								13			13	2/23/06	GOOD
TIL	7983	1	1993	94	40	TIEMANN PL	3/15/82	COOP	21								59	6	42	11	2/23/06	GOOD
TIL	9616	1	1993	96	200	CLAREMONT AVE	7/27/87	COOP	41				\$569		\$569		30	7	10	13	4/6/06	GOOD
TIL	9602	1	1994	43	175	CLAREMONT AVE	3/1/82	COOP	36						\$134						4/6/06	GOOD
TIL	40944	1	2002	39	610	W 136 ST	4/6/05	COOP	20								3			3	12/15/05	GOOD
TIL	40945	1	2002	40	611	W 136 ST	6/12/90	COOP	20								166	48	96	22	2/27/06	GOOD
TIL	40943	1	2002	41	607-09	W 136 ST	12/27/90	COOP	20								43	17	23	3	2/27/06	GOOD
TIL	40942	1	2002	42	601	W 136 ST	5/7/93	COOP	38								37	9	22	6	2/6/06	GOOD
TIL	41094	1	2002	57	616	W 137 ST	4/8/97	COOP	25			\$2,904			\$2,904		18	6	12		2/22/06	GOOD
TIL	40946	1	2002	89	614	W 136 ST	6/6/91	COOP	20								78	31	45	2	2/22/06	GOOD
TIL	28168	1	2051	43	676	ST NICHOLAS AVE	4/16/81	COOP	35				\$73		\$73		72	23	38	11	1/9/06	GOOD
TIL	28169	1	2051	45	678	ST NICHOLAS AVE	4/16/81	COOP	35				\$120		\$120		46	8	29	9	1/9/06	GOOD
TIL	21271	1	2053	85	323-25	EDGECOMBE AVE	6/25/97	COOP	20								22	5	15	2	3/1/06	GOOD
TIL	21272	1	2053	86	327-29	EDGECOMBE AVE	6/25/97	COOP	25						\$20		8	1	7		3/1/06	GOOD

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PRGM	Bldg ID	BORO	BLOCK	LOT	PHN	STREETNAME	SALES DATE	Disposition	Units	RE Balance pre-2001	RE Interest pre-2001	Current RE Balance	Current ERP Balance	DEP Balance as of 6/07	Current DOF Balance	TPT status	Total HPD Violations	A Viol.	B Viol.	C Viol.	Asset Mgmt Survey Date	Asset Mgmt Survey Rating
TIL	21283	1	2054	16	369	EDGECOMBE AVE	4/22/91	COOP	20	\$140,955	\$128,817	\$228,639		\$135,895	\$393,910		124	14	98	12	3/6/06	GOOD
TIL	21284	1	2054	18	371	EDGECOMBE AVE	6/28/94	COOP	20			\$27,732			\$27,732		337	106	189	42	3/6/06	GOOD
TIL	21293	1	2054	62	409	EDGECOMBE AVE	5/23/95	COOP	123						\$62		290	126	116	48	4/5/06	GOOD
CMP	9911	1	2057	46	270	CONVENT AVE	4/4/83	COOP	60						\$20		94	27	64	3	5/25/04	GOOD
TIL	5609	1	2058	1	1649	AMSTERDAM AVE	11/23/92	RENTAL	157			\$6,932			\$8,806		5	1	4		2/5/01	GOOD
CMP	5617	1	2058	29	477	W 142 ST	12/20/82	COOP	8	\$225,221	\$183,363	\$321,206	\$7,259		\$508,475	Active - Round 6	115	29	68	18	3/18/04	FAIR
TIL	9928	1	2058	40	302	CONVENT AVE	10/22/81	COOP	42								23	3	14	6	3/21/06	GOOD
TIL	28178	1	2060	33	713	ST NICHOLAS AVE	4/24/91	COOP	8								48	26	14	8	1/13/03	NO/ACC
TIL	42043	1	2060	41	414	W 146 ST	9/13/94	COOP	6												3/30/06	GOOD
CMP	42049	1	2060	44	420	W 146 ST	6/27/95	COOP	14							Withdrawn - Round 5	29	6	23		3/30/04	GOOD
CMP	42052	1	2060	46	424	W 146 ST	6/27/95	COOP	14	\$17,604	\$14,509	\$28,290			\$28,290		31	11	20		3/30/04	GOOD
TIL	42066	1	2060	58	470	W 146 ST	5/10/94	COOP	25								69	2	66	1	3/30/06	GOOD
TIL	28180	1	2060	133	715	ST NICHOLAS AVE	3/28/91	COOP	9												2/24/06	NO/ACC
TIL	28191	1	2061	32	729	ST NICHOLAS AVE	9/10/91	COOP	14								93	15	53	25	2/26/02	N/A
TIL	9980	1	2062	14	400	CONVENT AVE	11/13/81	COOP	39								148	56	72	20	3/14/06	GOOD
TIL	42134	1	2062	26	419	W 147 ST	5/24/89	COOP	4												3/8/06	GOOD
TIL	28212	1	2062	36	400	W 148 ST	1/16/92	COOP	12								1		1		4/20/06	GOOD
SIP	42263	1	2062	61	1775	AMSTERDAM AVE	3/7/95	RENTAL	11					\$30,697		Withdrawn - Round 4	42	13	22	7	7/19/04	GOOD
SIP	5654	1	2062	62	1773	AMSTERDAM AVE	3/7/95	RENTAL	11							Withdrawn - Round 4					7/19/04	GOOD
TIL	28203	1	2062	131	741	ST NICHOLAS AVE	3/31/93	COOP	6			\$895			\$946		1		1		6/4/03	GOOD
TIL2	42253	1	2063	21	421	W 148 ST	6/21/02	RENTAL	5			\$8			\$8		1	1				
TIL	5681	1	2064	60	1813	AMSTERDAM AVE	6/3/05	COOP	16						\$160							
TIL	28241	1	2065	39	811	ST NICHOLAS AVE	6/26/03	COOP	10			\$4,698			\$4,698		1			1	1/30/06	GOOD
TIL	28243	1	2065	42	400	W 151 ST	6/30/98	COOP	10								34	18	10	6	2/21/02	GOOD
TIL	10015	1	2065	48	470	CONVENT AVE	6/30/05	COOP	26													
TIL	28248	1	2066	36	400	W 152 ST	6/28/01	COOP	10								1		1		7/21/03	N/A
TIL	10021	1	2066	46	492	CONVENT AVE	6/9/92	COOP	20								230	95	115	20	3/8/06	GOOD
TIL	42529	1	2066	51	450	W 152 ST	9/30/82	COOP	20	\$107,095	\$83,271	\$134,478	\$12,573	\$52,063	\$242,259	Severed - Round 4	157	37	108	12	4/24/06	FAIR
TIL	42531	1	2066	54	454	W 152 ST	9/30/82	COOP	20	\$449,850	\$387,397	\$468,306	\$9,654		\$680,178	Severed - Round 4	166	26	95	45	4/24/06	FAIR
TIL	42536	1	2066	57	464	W 152 ST	11/5/81	COOP	20								12	5	7		4/4/06	GOOD
TIL	28249	1	2067	29	401	W 152 ST	12/13/84	COOP	17								22	11	4	7	4/12/06	GOOD
TIL	28258	1	2067	43	849	ST NICHOLAS AVE	6/26/03	COOP	35												1/30/06	GOOD
TIL	5701	1	2067	61	470	W 153 ST	3/14/02	COOP	3			\$89			\$89						12/6/05	GOOD
TIL	41232	1	2070	17	525	W 138 ST	4/10/92	COOP	20				\$91		\$91		38	7	20	11	4/10/06	GOOD
CMP	41229	1	2070	23	515	W 138 ST	6/26/95	COOP	15			\$63,944		\$28,241	\$64,989		42	17	18	7	4/1/04	GOOD
CMP	41228	1	2070	24	511	W 138 ST	6/26/95	COOP	15			\$61,843		\$24,362	\$62,082		47	2	43	2	4/1/04	GOOD
TIL	805955	1	2070	29	501	W 138 ST	6/28/91	COOP	21			\$9,537			\$9,673		215	56	119	40	3/28/06	GOOD
TIL	5595	1	2070	29	1580	AMSTERDAM AVE	6/28/91	COOP	21			\$9,537			\$9,673		230	50	128	52	3/28/06	GOOD

**LISC HDFC Project
Community District 9**

PRGM	Bldg ID	BORO	BLOCK	LOT	PHN	STREETNAME	SALES DATE	Disposition	Units	RE Balance pre-2001	RE Interest pre-2001	Current RE Balance	Current ERP Balance	DEP Balance as of 6/07	Current DOF Balance	TPT status	Total HPD Violations	A Viol.	B Viol.	C Viol.	Asset Mgmt Survey Date	Asset Mgmt Survey Rating
TIL	41383	1	2070	37	504-06	W 139 ST	4/22/92	COOP	30								34	2	28	4	3/23/06	GOOD
TIL	41385	1	2070	39	508	W 139 ST	8/17/82	COOP	41								82	20	47	15	3/23/06	GOOD
TIL	5599	1	2071	30	1608-10	AMSTERDAM AVE	5/28/96	COOP	18								51	4	35	12	4/10/06	GOOD
CMP	41481	1	2072	10	557	W 140 ST	6/24/91	COOP	14								166	57	101	8	4/5/04	GOOD
CMP	22532	1	2072	21	79	HAMILTON PL	1/30/89	COOP	24	\$363,729	\$303,091	\$514,081	\$16,418		\$604,839		145	33	89	23	4/8/04	GOOD
TIL	22533	1	2072	22	83	HAMILTON PL	7/31/81	COOP	24			\$44,117	\$42,034		\$90,413		95	32	60	3	4/12/06	GOOD
CMP	41469	1	2072	24	509	W 140 ST	6/25/91	COOP	15			\$10,843			\$10,843		56	17	34	5	4/5/04	GOOD
SIP	5607	1	2072	36	1638	AMSTERDAM AVE	3/7/95	RENTAL	9								7	1	3	3	7/20/04	GOOD
CMP	41571	1	2072	55	552-54	W 141 ST	10/16/87	COOP	24	\$391,091	\$329,731	\$566,536	\$822	\$19,913	\$568,001		179	45	122	12	4/13/04	GOOD
TIL	22535	1	2073	20	90-96	HAMILTON PL	11/22/85	COOP	34								43	14	26	3	4/11/06	GOOD
SIP	22537	1	2073	25	93-97	HAMILTON PL	3/7/95	RENTAL	23								11	3	3	5	7/20/04	GOOD
CMP	22536	1	2073	28	503-05	W 141 ST	6/15/90	COOP	28								23	15	7	1	4/6/04	GOOD
CMP	5610	1	2073	32	1646	AMSTERDAM AVE	6/4/92	COOP	8							Withdrawn - Round 6	58		37	21	4/8/04	GOOD
TIL	22538	1	2073	42	98-102	HAMILTON PL	11/22/85	COOP	20								74	13	52	9	4/11/06	GOOD
CMP	41636	1	2074	21	509	W 142 ST	10/29/91	COOP	12								19	4	15		4/7/04	GOOD
TIL	41754	1	2075	8	527	W 143 ST	2/18/83	COOP	25								67	24	37	6	2/6/06	GOOD
TIL	41750	1	2075	11	521	W 143 ST	2/18/83	COOP	25								93	26	53	14	2/6/06	GOOD
TIL	41746	1	2075	17	515	W 143 ST	1/23/98	COOP	24								367	125	196	46	2/27/06	GOOD
TIL	41739	1	2075	23	505	W 143 ST	6/17/82	COOP	31	\$18,590	\$19,924	\$189,596	\$740		\$192,210	Withdrawn - Round 4	60	7	47	4	7/14/03	GOOD
CMP	41736	1	2075	26	501	W 143 ST	6/26/90	COOP	38					\$539,908	\$228		187	43	130	14	3/23/04	GOOD
TIL	41865	1	2076	18	537	W 144 ST	7/29/05	COOP	6												3/14/06	GOOD
TIL	41858	1	2076	21	517-19	W 144 ST	6/9/99	COOP	40			\$90,390			\$90,750		11			11	3/7/06	GOOD
TIL	5627	1	2076	36	500	W 145 ST	12/10/81	COOP	8	\$8,768	\$6,011	\$11,419		\$4,251	\$11,419	Severed - Round 4	27	10	12	5	3/6/06	GOOD
TIL	41981	1	2076	39	506	W 145 ST	11/4/85	COOP	24								89	29	55	5	3/24/06	FAIR
CMP	41995	1	2077	10	533	W 145 ST	11/28/90	COOP	15					\$8,726			179	51	110	18	4/7/04	FAIR
TIL	41986	1	2077	22	513	W 145 ST	3/12/96	RENTAL	8								73	35	34	4	2/28/06	FAIR
TIL2	42072	1	2077	41	518	W 146 ST	6/21/02	RENTAL	24								167	51	111	5		
TIL	42076	1	2077	50	540	W 146 ST	4/23/82	COOP	35								149	26	108	15	3/17/06	GOOD
TIL	42183	1	2078	59	544	W 147 ST	5/20/92	COOP	15								82	31	44	7	2/24/06	GOOD
TIL	42185	1	2079	7	547	W 147 ST	9/30/92	COOP	30								64	20	38	6	3/15/06	GOOD
TIL2	42264	1	2079	37	502	W 148 ST	6/21/02	RENTAL	20								97	17	64	16	8/17/05	N/A
TIL2	42270	1	2079	42	514-16	W 148 ST	6/21/02	RENTAL	20								616	162	367	87		
TIL2	42273	1	2079	44	518-20	W 148 ST	6/21/02	RENTAL	20								456	115	258	83		
TIL	42304	1	2079	57	558-60	W 148 ST	4/29/04	COOP	20								15	7	7	1	3/13/06	GOOD
TIL2	42289	1	2079	149	538	W 148 ST	6/21/02	RENTAL	8								96	39	46	11		
TIL2	42302	1	2080	9	555	W 148 ST	6/21/02	RENTAL	8								61	17	33	11		
TIL2	42280	1	2080	18	529	W 148 ST	6/21/02	RENTAL	8								21	6	13	2		
TIL2	42266	1	2080	25	505	W 148 ST	6/21/02	RENTAL	14			\$40			\$40		26	6	10	10		

**LISC HDFC Project
Community District 9**

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TIL2	5669	1	2080	35	500	W 149 ST	6/21/02	RENTAL	13								148	44	75	29		
TIL2	42354	1	2080	39	512	W 149 ST	6/21/02	RENTAL	8			\$38			\$38		28	14	12	2		
TIL	42398	1	2080	56	562	W 149 ST	12/10/81	COOP	11								28	1	10	17	2/7/06	GOOD
TIL2	42275	1	2080	120	521	W 148 ST	6/21/02	RENTAL	7								10	1	4	5		
TIL	42479	1	2082	5	563	W 150 ST	9/21/92	COOP	30								2		1	1	2/21/06	GOOD
TIL	42476	1	2082	7	557	W 150 ST	9/21/92	COOP	30								113	45	68		2/21/06	GOOD
TIL	42500	1	2082	42	510	W 151 ST	2/26/99	COOP	14								21	7	9	5	2/7/06	GOOD
TIL	42509	1	2082	49	522	W 151 ST	6/30/00	COOP	19			\$64,243		\$20,729	\$64,243		11	7	4		2/22/06	GOOD
TIL	42511	1	2082	50	524	W 151 ST	12/16/96	COOP	20			\$33,935		\$45,771	\$33,935		47	19	19	9	2/22/06	GOOD
TIL	42514	1	2083	16	527	W 151 ST	6/28/01	COOP	24			\$12,632		\$53,893	\$12,692		6	3	2	1	3/7/06	GOOD
TIL	42512	1	2083	17	525	W 151 ST	6/14/00	COOP	25			\$3,195			\$3,195		17	8	6	3	2/8/06	GOOD
TIL	42510	1	2083	19	523	W 151 ST	6/28/96	COOP	24			\$5,575			\$5,575	Withdrawn - Round 4					4/1/03	GOOD
TIL	42508	1	2083	21	521	W 151 ST	8/18/93	COOP	15			\$49,544			\$136,662	Active - Round 8	189	19	132	38	7/17/03	GOOD
TIL	42506	1	2083	22	519	W 151 ST	2/26/99	COOP	15												7/15/03	GOOD
TIL	42556	1	2083	45	522	W 152 ST	6/20/97	COOP	24								57	3	8	46	7/21/03	GOOD
TIL	42558	1	2083	47	524	W 152 ST	6/2/98	COOP	24								7		3	4	2/8/06	GOOD
TIL	42567	1	2083	55	534-36	W 152 ST	3/6/92	COOP	29								47	15	20	12	3/3/06	GOOD
TIL	42562	1	2084	16	529	W 152 ST	2/20/92	COOP	20			\$4,121	\$3,685		\$7,826	Withdrawn - Round 4	86	16	41	24	3/17/06	POOR
TIL	42557	1	2084	18	523-25	W 152 ST	6/18/91	COOP	20								18	1		17	3/10/06	FAIR
TIL	42640	1	2084	50	530	W 153 ST	6/28/96	COOP	14								15	3	12		2/24/06	GOOD
TIL	42641	1	2084	52	534	W 153 ST	12/5/95	COOP	15			\$28,183			\$28,183	Withdrawn - Round 8	13	4	6	3	2/28/06	GOOD
TIL	8119	1	2084	61	550	W 153 ST	11/7/91	COOP	19			\$8,286			\$85,078	Active - Round 8	100	29	62	9	3/15/06	FAIR
TIL	8117	1	2084	64	3692	BROADWAY	6/25/82	COOP	24			\$48,811			\$48,957		59	18	38	3	3/13/06	GOOD
TIL	8023	1	2087	31	3405	BROADWAY	4/1/86	COOP	16								13	5	6	2	5/17/05	FAIR
TIL	41485	1	2087	101	602-04	W 140 ST	5/24/04	COOP	16													
TIL	8047	1	2089	31	3485	BROADWAY	6/21/91	COOP	22								151	28	107	16	4/20/06	GOOD
TIL	27325	1	2089	49	655	RIVERSIDE DR	6/20/91	COOP	10								71	27	40	4	5/3/06	GOOD
TIL	41765	1	2090	19	619	W 143 ST	3/20/90	COOP	20	\$119,612	\$93,993	\$150,322			\$150,383		11	3	6	2	5/3/06	GOOD
TIL2	8084	1	2095	31	3603	BROADWAY	6/23/04	RENTAL	24			\$52,722	\$91	\$65,056	\$52,898		27	1	20	6		
TIL2	8086	1	2095	32	3605	BROADWAY	6/23/04	RENTAL	24			\$58,976	\$91	\$73,858	\$59,067		154	25	111	18		
TIL	8108	1	2099	36	3681	BROADWAY	12/14/93	COOP	50			\$7,054			\$7,202		295	61	177	57	4/18/06	GOOD
Total									3283													
Average									22.8													

APPENDIX P.2

**UNIVERSITY HOUSING MITIGATION:
ENVIRONMENTAL ANALYSIS**

A. INTRODUCTION

As described in Chapter 23, “Mitigation,” to partially mitigate the Proposed Actions’ significant adverse impact on socioeconomic conditions (indirect residential displacement), the University has committed to develop a University housing building outside of the Project Area. Columbia would develop this University housing building on a site located on Broadway and West 172nd Street. The site would accommodate approximately 159 apartments, housing approximately 200 graduate students and post-doctorate researchers.

This analysis assesses the potential environmental impacts in each of the City Environmental Quality Review (CEQR) impact categories that could result from the construction and operation of the University housing building.

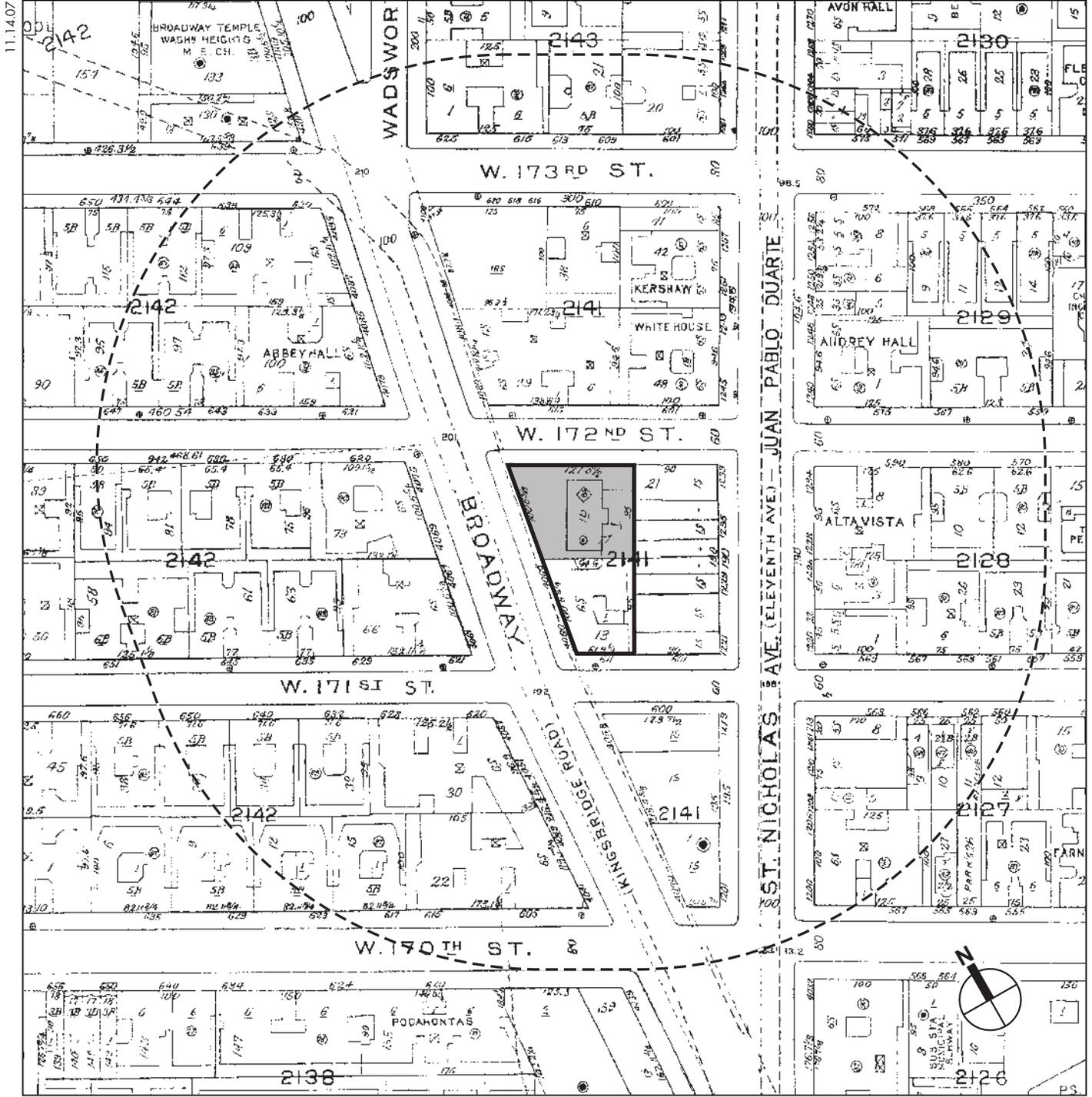
B. DESCRIPTION OF SITE

The University housing site is located at 4070 Broadway (Block 2141, Lot 17) on the southeast corner of Broadway and West 172nd Street in Manhattan (see Figure P.2-1) in the Washington Heights neighborhood of Community District 12. The site is currently occupied by a public parking lot and a related one-story commercial building (see Figure P.2-2). The zoning lot for the project site also includes an adjacent lot, Lot 13, which is occupied by a six-story residential building with ground-floor retail space. The unused development rights from this lot would be incorporated into the proposed University housing building.

The existing building on Lot 17 would be demolished and the University housing site would be developed as-of-right under the Zoning Resolution as a 12-story University housing building. As noted in Chapter 23, “Mitigation,” Columbia has committed to provide 159 apartment-style dormitory units at this site for graduate and post-doctorate researchers. Based on the typical unit mix for such dormitory units, the new building would house an estimated 200 graduate students and post-doctorate researchers. The University housing site’s zoning is R8 residential with a C1-4 commercial overlay, although a 10-foot-wide strip at the eastern edge of the site falls within an R7-2 zoning district with a C2-4 overlay (additional discussion of zoning, including zoning maps, is provided in Section C, “Analyses”).

Special regulations applicable to lots that fall into two different zoning districts (“split lots”) are provided in Article VII, Chapter 7 of the Zoning Resolution. In general, for split zoning lots, the use and bulk regulations applicable to the district in which more than 50 percent of the lot area is located (i.e., the R8 district) may apply to the entire zoning lot, provided that the greatest distance from the mapped district boundary (i.e., the R8 district boundary) to any lot line of such zoning lot in the district in which less than 50 percent of its area is located (i.e., the eastern lot

¹ This appendix is new to the FEIS.



-  Project Site
-  Zoning Lot Boundary
-  Study Area Boundary (400-Foot Perimeter)

Figure P.2-1
University Housing Site: Sanborn Map



View east to project site from West 172nd Street and Broadway

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line, which falls into the R7-2 district) does not exceed 25 feet. This rule applies to the University housing site; because the distance from the eastern boundary of the site (which falls in the R7-2 district) is not more than 25 feet from the R8 district boundary, the use and bulk regulations of the R8 district may be applied to the entire zoning lot.

The site's R8 zoning allows residential development at a maximum floor area ratio (FAR) of 6.02; residential space can be up to 7.2 FAR (applicable for sites on wide streets, like Broadway) if developed following Quality Housing regulations. The Quality Housing provision of the New York City Zoning Resolution is intended to encourage development consistent with the character of established neighborhoods. It allows larger buildings, but with lower heights and higher lot coverage. Certain amenities (e.g., street trees, landscaping, and recreation space) must also be provided in Quality Housing buildings. Community facilities can be built to an FAR of 6.5 in R8 zoning districts. The commercial overlay allows commercial development on the site at an FAR of up to 2.0. Community facilities are allowed in R8 zoning districts up to a maximum FAR of 6.5. It is expected that the proposed University housing building would be constructed pursuant to Quality Housing regulations and be built to an FAR of 7.2.

A design has not been finalized for this site. As noted above, the project site's zoning lot includes an adjacent parcel to the south. Lot 17 contains a total of 10,566 square feet (sf) of lot area, and Lot 13 includes 7,433 sf, for a total lot area of 18,000 sf. Assuming full build out of residential use according to Quality Housing (maximum FAR of 7.2) and assuming use of 12,000 zoning square feet (zsf) of the available air rights (which total 17,150 zsf) from Lot 13, the new building on Lot 17 would be a total of 85,175 zsf in size (or 90,276 gsf). The building would be occupied by 159 dormitory units in apartment-type layouts, which would average 568 gsf in size, a typical average size for such units for Columbia. The ground floor (10,566 gsf) would be occupied by retail use along Broadway and retail or community facility use along West 172nd Street. According to the Quality Housing zoning regulations, the building must have a base of 60 to 85 feet high, after which it must set back. The maximum height of the building under Quality Housing regulations is 120 feet, or approximately 12 stories. Given the size of the allowable footprint and the maximum floor area permitted, the new building would likely be 120 feet and approximately 12 stories tall.

Accessory parking is required for residential developments in R8 districts outside the Manhattan core on zoning lots larger than 10,000 sf. For a zoning lot larger than 15,000 sf, like the zoning lot on which the University housing site is located, accessory parking must be provided for 40 percent of the dwelling units. Therefore, the new building would provide 64 accessory parking spaces for the residential portion of the building in a below-grade parking garage.

As discussed later in this appendix, Columbia will enter into a Restrictive Declaration that ensures that any development of the project site would proceed under the oversight of the New York City Department of Environmental Protection (DEP) with respect to the testing and remediation of hazardous materials. The Restrictive Declaration will also ensure that the new building to be built on the University housing site will provide double-glazed windows and alternative means of ventilation (e.g., air conditioning) so that 35 dBA of window-wall noise attenuation is achieved on all facades of the building. These measures would ensure that the proposed University housing building would not result in significant adverse hazardous materials or noise impacts.

C. ANALYSES

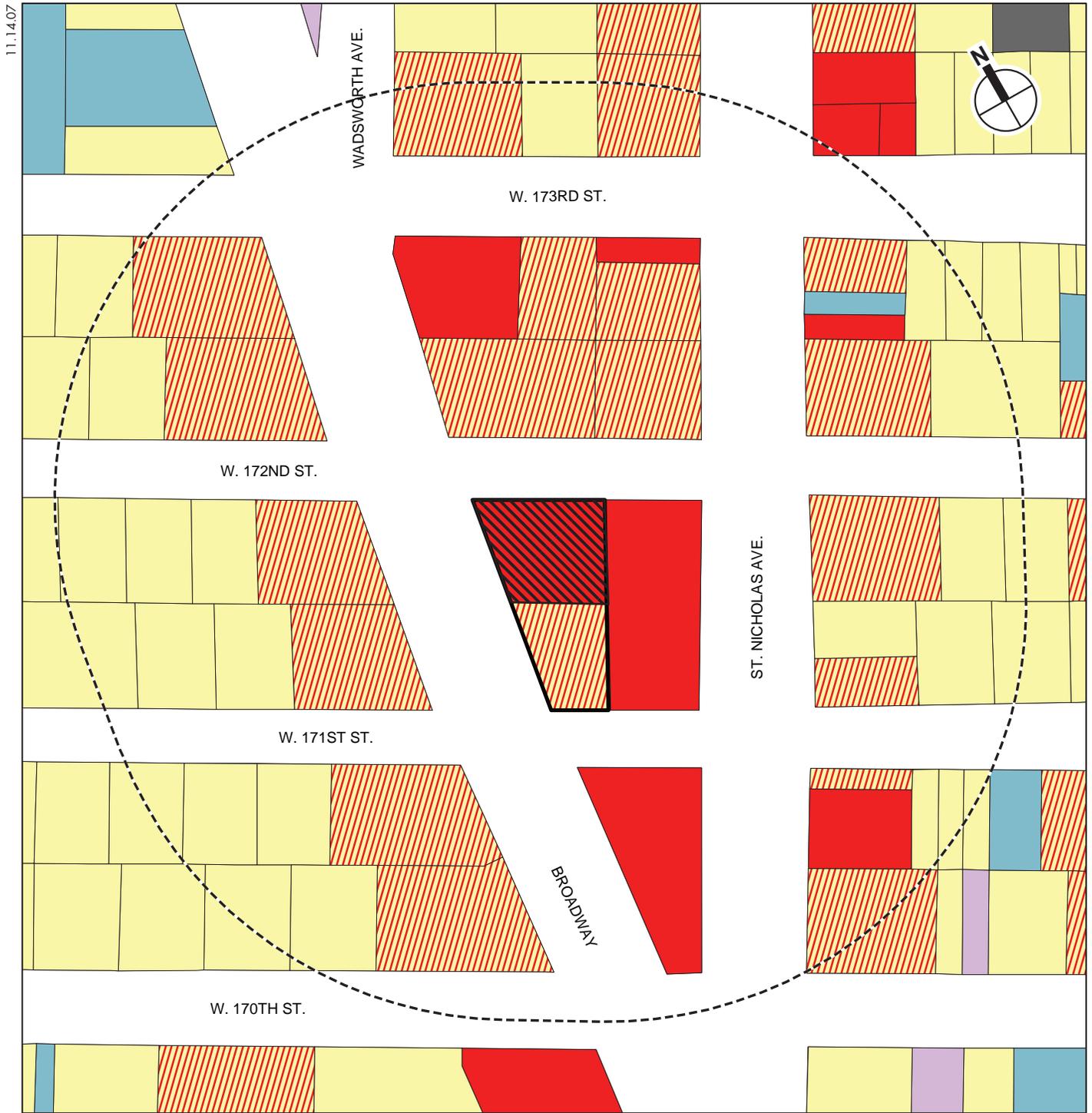
LAND USE, ZONING, AND PUBLIC POLICY

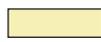
The following describes the existing conditions within 400 feet of the site with regard to land use, zoning, and public policy and addresses any potential impacts to land use, zoning, and public policy that would be associated with the University housing building.

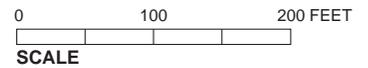
The site is currently occupied by a public parking lot and a related one-story commercial building. The 400-foot study area generally extends from West 170th to West 173rd Street, and from midblock west of Broadway (between Broadway and Fort Washington Avenue) and midblock east of St. Nicholas Avenue (between St. Nicholas Avenue and Audubon Avenue). Land uses in this area are predominantly residential. Most of the residential buildings are five to six stories tall, although a 12-story building is located in the northwestern portion of the study area, at West 173rd Street. With few exceptions, the residential buildings along Broadway and St. Nicholas Avenue in the study area have ground-floor retail uses. The blocks between Broadway and St. Nicholas Avenue in the center of the study area are dominated by low-rise (generally one-story) commercial buildings; a few other one-story commercial buildings are also located on the opposite (east) side of St. Nicholas Avenue (see Figure P.2-3). Representative retail uses include banks, pharmacies, dry cleaners, clothing stores, electronic stores, delis, grocery stores, hardware stores, and restaurants. There are no open spaces within the 400-foot study area. The Prince of Peace Baptist Church, on the east side of St. Nicholas Avenue between West 172nd and West 173rd Streets, is the only institutional use within the study area.

As discussed earlier, the University housing site is currently located in an R8 residential zoning district with a C1-4 commercial overlay, although a 10-foot wide strip at the eastern edge of the site falls within an R7-2 zoning district with a C2-4 overlay (see Figure P.2-4). Typical buildings in R8 districts range from mid-rise, eight- to 10-story apartment buildings to much taller, narrower buildings set back from the street on large zoning lots. Commercial uses are not permitted. The maximum FAR for residential uses is 6.02, or 7.2 for buildings developed according to Quality Housing. Community facilities can be developed to a maximum FAR of 6.5. C1-4 commercial districts are mapped as overlays within residential districts, typically along streets that serve the surrounding neighborhood's local retail needs. Typical uses include grocery stores, dry cleaners, restaurants, and barber shops. When mapped as overlays in R8 residential districts, the maximum commercial FAR for C1-4 overlays is 2.0, although in a building with residential uses, commercial uses must be located below the second story.

The R8 residential district is mapped throughout the entire study area west of Broadway, as well as across the building lots on the east side of Broadway between West 171st and West 173rd Streets. East of the R8 district, the remainder of the study area is zoned R7-2. R7-2 residential districts are medium-density residential districts in which residential development is permitted to a maximum FAR of 3.44, or 4.0 with the provision of Quality Housing. Community facilities are permitted to a maximum FAR of 6.5. Commercial overlays are mapped along Broadway and St. Nicholas Avenue throughout the study area. In the R8 portion of the study area, the commercial overlay is C1-4; in the R7-2 portion of the study area, the commercial overlay is C2-4. C1-4 and C2-4 commercial districts are mapped as overlays within residential districts, typically along streets that serve the surrounding neighborhood's local retail needs. C2-4 districts permit a slightly wider range of uses than the C1-4 districts, including both neighborhood retail and local service businesses, such as funeral homes, home repair businesses (e.g., plumbers, electricians), and auto repair services. When mapped as overlays in R7-2 residential districts, the maximum commercial

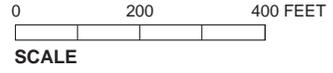


-  *Project Site*
-  *Zoning Lot Boundary*
-  *Study Area Boundary (400-Foot Perimeter)*
-  *Residential*
-  *Residential with Commercial Below*
-  *Commercial and Office Buildings*
-  *Transportation and Utility*
-  *Public Facilities and Institutions*
-  *Parking Facilities*
-  *Vacant Land*





-  Project Site
-  Zoning Lot Boundary
-  Study Area Boundary (400-Foot Perimeter)
-  Zoning District Boundary
-  C1-4 Overlay
-  C2-4 Overlay



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FAR for C2-4 overlays is 2.0. A small portion of a C8-3 district is also located in the study area north of West 173rd Street. C8-3 districts allow a wider range of commercial uses, including not only local retail and service businesses, but also hotels, retail and service establishments targeted to a wider area, offices, public service establishments, amusements, and automotive and other heavy commercial service establishments. The maximum FAR for commercial uses in this district is 2.0; community facilities are also allowed, to a maximum FAR of 6.5.

The new University housing building would replace the existing public parking lot and related one-story commercial building on the site with an approximately 12-story building. The new residential building would be compatible with the surrounding land uses, which are predominantly residential. The building would provide ground-floor retail space along Broadway, similar to most of the other buildings nearby. It would be larger than the other residential buildings nearby (although similar in height to the 12-story building at West 173rd Street). As a Quality Housing building, it would be contextual in terms of bulk and massing with other surrounding residential buildings. The building would provide a consistent streetwall, with a setback at 60 to 85 feet high, similar in height to the six-story building on the adjacent parcel and to the six-story buildings in the surrounding study area. The new building would not require a zoning change and would be consistent with the zoning and public policy for the site and study area. Therefore, the University housing building would not conflict with existing zoning or land uses, and would not result in any significant adverse impacts on zoning or land use. The site for the new University housing building is approximately 1¾ miles from the Project Area. The new building would also be approximately one mile from the nearest Relocation Site (discussed in Appendix B.2). Therefore, there would be no cumulative effect of the University housing with the changes expected in the Project Area as a result of the Proposed Actions.

SOCIOECONOMIC CONDITIONS

According to the *CEQR Technical Manual*, a socioeconomic assessment should be conducted if an action may reasonably be expected to create substantial socioeconomic changes within the area affected by the action that would not occur in the absence of the action. Actions that would trigger a CEQR analysis include the following:

- Direct displacement of a residential population so that the socioeconomic profile of the neighborhood would be substantially altered.
- The displacement of substantial numbers of businesses or employees; or the direct displacement of a business or institution that is unusually important: because of its critical social or economic role in the community and unusual difficulty in relocating successfully; because 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; because it serves a population uniquely dependent on its services in its present location; or because it is particularly important to neighborhood character.
- Introduction of substantial new development that is markedly different from existing uses, development, and activities within the neighborhood. Such an action could lead to indirect displacement. Residential development of 200 units or fewer or commercial development of 200,000 sf or less would typically not result in significant socioeconomic impacts.

The University housing building would contain approximately 159 graduate student apartments at 4070 Broadway. In total, the student housing building would not exceed the thresholds outlined above.

As noted in Chapter 4, “Socioeconomic Conditions,” the Proposed Actions could directly displace 85 businesses and institutions (approximately 880 employees) in the Project Area; as discussed in Appendix B.2, the creation of relocation housing would also displace three additional businesses from the relocation sites. The new University housing building would displace one business (public parking) from its site, but this business does not meet the thresholds described above. Overall, the new University housing and the other potentially displaced businesses and institutions are 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. Thus, the University housing building would not result in significant adverse impacts on socioeconomic character of the community surrounding the mitigation site, and would not change the project’s effects on socioeconomic conditions described in Chapter 4.

COMMUNITY FACILITIES

The University housing building would provide new student housing at 4070 Broadway. The *CEQR Technical Manual* specifies that actions that would add fewer than 100 residential units to an area generally do not need to consider community facilities and services unless the proposed action would have a direct effect on a community facility. While the University housing building would not physically alter or displace any community facilities, it would introduce a total of approximately 159 graduate student apartments. Therefore, a detailed community facilities analysis is described below.

The *CEQR Technical Manual* recommends conducting a detailed analysis of public schools if a proposed project would generate more than 50 elementary/middle school and/or more than 150 high school students. The new University housing building would have small apartments housing graduate students, and would therefore be less likely to house school-age children than typical apartments. Nonetheless, conservatively using the same student generation rates applied to non-University housing results in an estimated population of 23 public elementary school students, 7 public middle school students, and 4 public high school students.^{1,2} These students would attend public schools in Manhattan Community School District (CSD) 6, a different school district than the students generated by the Proposed Actions in the Project Area (discussed in Chapter 5, “Community Facilities”). As noted in Chapter 5, elementary schools in CSD 6 were operating at 101 percent of capacity in the 2005-2006 school year and intermediate schools were operating at a utilization rate of 88 percent. Projections by the Department of Education for these schools for the future analysis years show enrollment decreasing, for utilization rates of 72 percent for elementary schools and 57 percent for intermediate schools in the 2015 and 2030 analysis years. The small increase associated with the new University housing, together with the small number of public school students (six elementary students, two

¹ The pupil generation ratios are based on ratios established by the Department of Education and the New York City Department of City Planning (DCP). The ratios differ by income level (low, low-moderate, moderate-high, high). This analysis assumes that all of the proposed residential buildings’ units would be low income.

² As discussed in Chapter 5, the University housing units for graduate students, faculty, and other employees would be considered unassisted or market-rate housing for high-income levels. However, the units have been conservatively considered as moderate-high rather than high-income households for the purpose of estimating the number of public school students generated.

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intermediate school students, and three high school students) in the new housing on Relocation Site 1, which would also be within CSD 6, would not result in significant adverse impacts with respect to school capacity in the district. Therefore, the University housing building would not result in significant adverse impacts on public schools.

Potential library impacts may result from an increased user population. According to the *CEQR Technical Manual*, significant impacts on library services may result if a proposed project would increase by more than 5 percent the average number of residential units served by library branches in the borough in which it is located. For Manhattan, any project that adds 901 residential units passes this threshold. The University housing building would introduce approximately 159 units, which is below this threshold. The building would be located outside the study area considered for the Proposed Actions in Chapter 5 and outside the study area for the Relocation Sites; the new University housing would be served by a different library branch than other elements of the Proposed Actions. Therefore, no significant adverse impacts on public libraries would be expected as a result of the new University housing and additional analysis is not necessary.

Pursuant to *CEQR Technical Manual* guidelines, the health care assessment focuses on emergency and outpatient ambulatory services that could be affected by the introduction of a large low-income residential population that may rely heavily on nearby hospital emergency rooms and other public outpatient ambulatory services. Potential significant adverse impacts on health care facilities could occur if a proposed project would cause health care facilities within the study area to exceed capacity, or if a proposed project would result in a population increase of 5 percent or more who would seek services at these facilities. According to the *CEQR Technical Manual*, if a proposed project would generate more than 600 low- to moderate-income units, there may be increased demand on local public health-care facilities, which may warrant further analysis. Since the University housing building would not add low-income units, further detailed analysis is not necessary. The community facilities reasonable worst-case development scenario for the Proposed Actions, described in Chapter 5, would result in approximately 99 residential units in the Other Areas. Including the net increase of 30 affordable housing units to be created at replacement sites, and conservatively assuming that the 159 units of housing at the University housing site are also low-income, the threshold of 600 units still is not reached, and no additional analysis is required for the Proposed Actions.

According to the *CEQR Technical Manual*, if a proposed project would add more than 50 eligible children to the study area's day care facilities, a detailed analysis of the proposed project's impact on publicly funded day care facilities should be performed. This threshold is based on the number of low-income and low- to moderate-income units within a proposed project. The estimated number of new housing units that would yield 50 eligible children differs in each borough. In Manhattan, projects that would create 357 units of low-income housing or 417 units of low- to moderate- income housing surpass the threshold for a detailed analysis of day care centers. As mentioned earlier, the University housing building would not include any affordable housing. For the purposes of this analysis, University housing for graduate students, faculty, and other employees would be considered unassisted or market-rate housing. The community facilities reasonable worst-case development scenario for the Proposed Actions, described in Chapter 5, would result in approximately 99 residential units in the Other Areas. Including the net increase of 30 affordable housing units to be created at replacement sites, and conservatively assuming that the 159 units of housing at the University housing site are also low-income, the threshold of 357 units still is not reached, and no additional analysis is required for the Proposed Actions.

Finally, the *CEQR Technical Manual* recommends detailed analyses of police and fire service impacts only in cases of direct displacement. The University housing building would not directly displace either police or fire services; therefore, no further analysis is necessary.

Overall, the University housing building would not result in significant adverse impacts on community facilities and services, and no further analysis is necessary.

OPEN SPACE

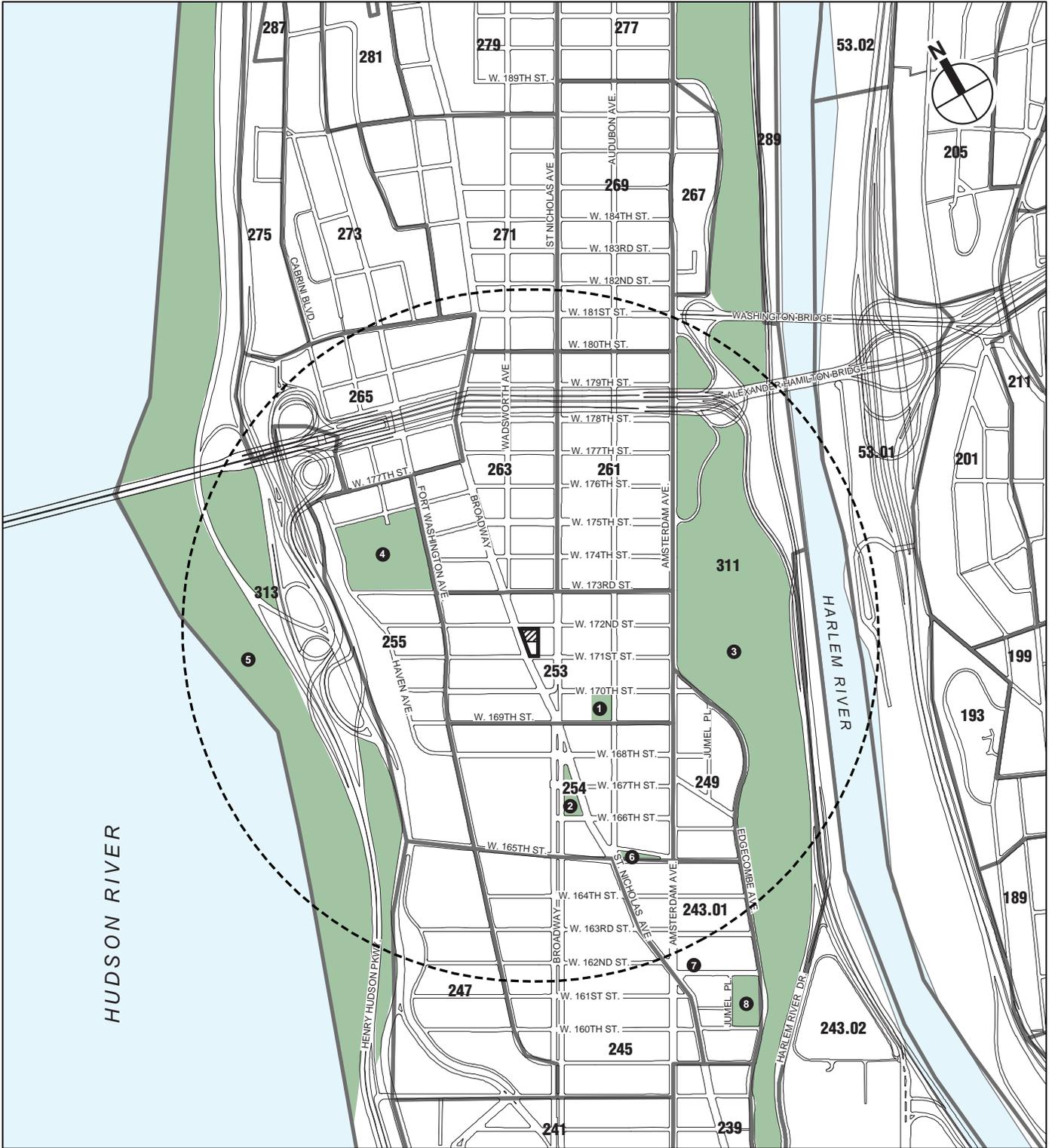
The *CEQR Technical Manual* recommends performing an open space assessment for projects that either physically displace an open space or generate enough new residents or workers to add to the demand on an area’s open spaces to the degree that might noticeably diminish the ability of an area’s open spaces to serve existing or future populations. The *CEQR Technical Manual’s* threshold for an analysis of open space is an expected population increase of 200 or more residents or 500 or more employees. The University housing buildings would not displace an open space. The new building would have an estimated population of approximately 200 graduate students and post-doctorate researchers and an estimated 35 new employees in the retail and community facility spaces (assuming 1 employee per 300 sf of space).

The estimated number of new residents at the University housing site would meet the CEQR threshold for analysis. Following the methodology presented in Chapter 3D of the *CEQR Technical Manual*, therefore, an initial quantitative assessment was conducted to consider the potential effects on the new population on the area’s open space resources. The study area for this assessment is the area defined by a reasonable walking distance from the project site to nearby open spaces. For residential projects, a ½-mile radius from the project site is typically used. Within this radius, all census tracts that have at least 50 percent of their area within the ½-mile radius are considered to be part of the study area. All open spaces located in those census tracts are then compiled. The adequacy of open space in the study area can be quantitatively assessed using a ratio of usable open space acreage to the study area population—referred to as the open space ratio.

For the new University housing site, the ½-mile study area includes seven Census Tracts. These are depicted on Figure P.2-5 and the population of those tracts is listed in Table P.2-1. The total residential population of all census tracts that fall at least half within the ½-mile radius is 58,983 and the total worker population in those tracts is 21,650, for a total population of 80,633.

**Table P.2-1
Population in ½-Mile Study Area**

Census Tract	Residents	Workers
243.01	4,296	625
249	1,150	375
251	2,995	11,440
253	12,753	880
255	6,884	4,970
261	13,080	1,350
263	9,811	1,030
Totals	58,983	21,650
Sources: Residents derived from 2000 U.S. Census; workers from 2000 Census Transportation Planning Package (CTTP).		



-  Project Site
-  Zoning Lot Boundary
-  Study Area Census Tract Boundary
- 254** Census Tract
-  1/2-Mile Perimeter
-  Open Space Resource (see Table P.2-2)

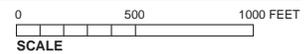


Figure P.2-5
**Open Spaces and Census Tracts
 in Half-Mile Study Area**

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As shown in Figure P.2-5 and listed in Table P.2-2, the ½-mile study area includes eight open space resources. Six of these are neighborhood parks (including the 6.7-acre J. Hood Wright Park, which occupies a “superblock” site) and triangles. The other two are large portions of Fort Washington Park and Highbridge Park, which are both large, regional parks that extend far beyond the study area boundaries. Fort Washington Park is a total of 160 acres, and extends from West 155th to West 179th Streets along the Hudson River. As shown in the table, approximately 53 acres of this park are located within the ½-mile study area. Similarly, Highbridge Park is a total of 119 acres, and extends along the Harlem River between West 155th and Dyckman Streets. An estimated 62 acres of this park fall within the ½-mile study area.

**Table P.2-2
Open Spaces in ½-Mile Study Area**

Map No.*	Open Space	Total Acreage
1	Audubon Playground	0.66
2	Mitchell Square	0.77
3	Highbridge Park	62.43
4	J. Hood Wright Park	6.70
5	Fort Washington Park	52.76
6	McKenna Square	0.24
7	Morris-Jumel Ecological Education Garden	0.10
8	Roger Morris Park	1.81
Total		125.47
Note: * See Figure P.2-5.		
Source: New York City Department of Parks and Recreation		

With a total open space acreage of 125.47 acres and a total residential population of 58,983, the open space ratio is 2.13 acres per 1,000. Conservatively including the worker population in the calculations as well (although this may result in double-counting, since some people may be both workers and residents in the study area), the total population is 80,633, and the ratio of acres per 1,000 potential park users is 1.56.

To assess the adequacy of open space resources, open space ratios are compared against goals set by DCP. Although these open space ratios are not meant to determine whether a proposed action might have a significant adverse impact on open space resources, they are helpful guidelines in understanding the extent to which user populations are served by open space resources. For residential populations, DCP attempts to achieve a ratio of 2.5 acres per 1,000 residents for large-scale proposals. However, these goals are often not feasible for many areas of the City and they do not constitute an impact threshold. The *CEQR Technical Manual* notes that a Citywide survey has indicated that half of the City’s community districts have an open space ratio of 1.5 acres of City parkland per 1,000 residents, another benchmark that can be used when considering the adequacy of a neighborhood’s open spaces in serving its residents.

With the addition of 200 new residents at the University housing site, the residential-only open space ratio would decrease slightly (by 0.34 percent), from 2.13 to 2.12. Considering the addition of residents and workers to the total resident and worker population in the study area, the combined ratio would also drop slightly (by 0.29 percent), to 1.55. These very small decreases would not lead to a significant adverse impact on open space resources. According to the *CEQR Technical Manual*, if a potential decrease in an adequate open space ratio exceeds 5

percent, it is generally considered to be a substantial change, warranting further analysis. The change of less than 1 percent in the open space ratio due to the University housing project would be far lower than the 5 percent threshold and would not constitute a significant adverse impact. In addition, the amount of open space serving the study area is actually larger than indicated in the initial quantitative assessment, primarily because of the extensive regional parks that extend beyond the study area boundaries. Therefore, the new University housing site would not result in significant adverse impacts on open space resources.

In addition, the new University housing site would be located outside of the study area considered in Chapter 6, "Open Space," which is the area where open spaces could be affected by other changes in population introduced by the Proposed Actions. The new residents at the University housing site would therefore use different open spaces near their home than other new residences associated with the Proposed Actions. Therefore, the new residents of the University housing building would not result in significant adverse impacts to open space and recreational facilities.

SHADOWS

The shadow assessment considers actions that would result in new shadows long enough to reach a publicly accessible open space, important natural feature, historic landscape, or other historic resource if the features that make the resource significant depend on sunlight, and adversely affects its use and/or important landscaping and vegetation. Following *CEQR Technical Manual* guidelines, shadows analyses consider the incremental shadows cast by a building on four representative days of the year:

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

The *CEQR Technical Manual* methodology does not generally consider shadows and incremental increases in shadows within 1½ hours of sunrise or sunset.

The *CEQR Technical Manual* states that an assessment of shadows is generally necessary only for actions that would result in new structures or additions to existing structures of at least 50 feet in height. The new University housing building at the southeast corner of Broadway and 172nd Street would be an estimated 120 feet tall. Therefore, a screening analysis was conducted following the procedures described in the *CEQR Technical Manual* (see Chapter 3E, "Shadows") to determine whether the incremental shadows cast by the new University housing building might reach any open spaces or sunlight-sensitive architectural resources.

As described in the *CEQR Technical Manual*, the longest shadow that any structure will cast during the year (except within 1½ hours of sunset or sunrise, when all shadows are long) is 4.3 times the height of the building. The estimated height of the new University housing building would be 120 feet, so the longest shadow cast by the building would be 516 feet long. This long shadow would be cast early in the morning and late in the afternoon on December 21, the date on which the longest shadows are cast. A preliminary screen was conducted by determining whether any parks or sun-sensitive resources are located within 516 feet of the project site, excluding the area to the south of the site, since shadows cannot be cast southward.

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Two sun-sensitive locations are located within the 516-foot radius: the school playground behind P.S. 173, on the north side of West 173rd Street between Fort Washington Avenue and Broadway; and the front façade of the monumental Broadway Temple church building at 4111 Broadway, on the west side of Broadway between West 173rd and West 174th Streets, which has large church windows. Shadows from the project site would be cast toward the playground and church building in the late morning, between approximately 11 and 11:30 AM. At that time of day, the longest shadows that can be cast by the new building would be 2.30 times the height of the building, or 276 feet long.¹ Neither the playground nor the church building are within 264 feet of the project site, and therefore no new shadows would reach those locations as a result of the new building. Therefore, the new building at 4070 Broadway would not cause any significant adverse shadow impacts, and no further analysis is necessary.

HISTORIC RESOURCES

Historic resources include both archaeological and architectural resources. For archaeological resources, the study area is generally defined as the project site, i.e., the area that would be disturbed by project construction. As described in the *CEQR Technical Manual*, a detailed assessment of archaeological resources is required for actions that would result in in-ground disturbance. The development of the University housing building would require excavation at the project site.

Study areas for architectural resources are determined based on the area of potential effect for construction-period impacts, such as ground-borne vibrations, and on the area of potential effects for visual or contextual effects, which is usually a larger area. Following the guidelines of the *City Environmental Quality Review (CEQR) Technical Manual*, the architectural resources study areas is defined as the area within an approximately 400-foot radius of the project site. Architectural resources include designated New York City Landmarks (NYCL) and Historic Districts; properties calendared for consideration as such; properties listed on or determined eligible for listing on the State and/or National Register of Historic Places (S/NR); and National Historic Landmarks. A list of such architectural resources was compiled. In addition, surveys of the study area was undertaken to identify any buildings that could meet S/NR or NYCL eligibility criteria.

ARCHAEOLOGICAL RESOURCES

As described in the *CEQR Technical Manual*, a detailed assessment of archaeological resources is required for actions that would result in in-ground disturbance. The proposed building at the University housing site would require excavation at the site. In comments provided on November 13, 2007, Landmarks Preservation Commission (LPC) concluded that the project site has no archaeological significance (see Appendix P.4). Therefore, the proposed building has no

¹ Following the methodology presented in Chapter 3E of the *CEQR Technical Manual*, the length of the shadow and the time of day can be determined by determining the angle of the project's shadow on the open space in relation to true north and then using Table 3E-2 to identify the shadow length factor and time of day for each of the four analysis dates. The angle from true north of the project site's shadow at the point at which it could begin to fall on the school playground is approximately -23° and the angle from true north of the project's shadow at the point at which it would leave the church is approximately -3°.

potential for significant adverse impacts on archaeological resources and no further assessment is necessary.

ARCHITECTURAL RESOURCES

The University housing site consists of a one-story commercial building and public parking area on the southeast corner of West 172nd Street and Broadway. The property is not a known architectural resource (known architectural resources include properties listed on or determined eligible for listing on the S/NR, National Historic Landmarks, NYCLs and Historic Districts, or properties pending such designation). The building also does not meet the criteria for eligibility for S/NR listing or NYCL designation. In addition, there are no known or potential architectural resources located within the 400 feet of the site. In comments provided on November 15, 2007, LPC concluded that the project site and study area do not contain any architectural resources (see Appendix P.4) and therefore that no significant adverse impacts to architectural resources would occur as a result of the proposed University housing building.

URBAN DESIGN AND VISUAL RESOURCES

The *CEQR Technical Manual* defines urban design as the components and visual resources that determine a neighborhood's "look"—its physical appearance, including the size and shape of buildings, their arrangement on blocks, the street pattern, and noteworthy views that may give an area a distinctive character. A preliminary screen assesses whether a project would have substantially different bulk or setbacks than exist in an area and whether substantial new, above-ground construction would occur in an area that has important views, natural resources, or landmark structures. Proposed projects that would result in a building or structures substantially different in height, bulk, form, setbacks, size, scale, use, or arrangement than exists require a detailed assessment. A detailed assessment is also required for proposed projects that would change block form or would demap an active street; map a new street; or affect street hierarchy, streetwalls, curb cuts, pedestrian activity, or other streetscape elements. The following provides an urban design and visual resources assessment of the area surrounding the University housing site.

The site is occupied by a one-story commercial building with a public parking lot, which is surrounded by a chain-link fence. The site occupies an irregularly shaped corner lot formed by the intersection of West 172nd Street and Broadway, which runs on a diagonal across Manhattan's regular street grid. The commercial building fronts on West 172nd Street, while the parking lot has an entrance along Broadway and West 172nd Street. The existing building has no architectural adornments and is not considered a visual resource.

The study area topography is flat. Street furniture in the area includes light poles, mail boxes, trees, trash cans, and parking meters. The street pattern is Manhattan's typical rectilinear grid, except that Broadway cuts across the grid at an angle. The project site is just north of a major intersection of Broadway with a north-south avenue (St. Nicholas Avenue). Throughout Manhattan, Broadway's intersections with north-south avenues result in wide intersections, sometimes referred to as "bow-tie" intersections.

The study area surrounding the site is primarily residential with ground-floor retail uses. A one-story commercial building and a six-floor residential building with ground-floor retail uses occupy the same block as the project site. The buildings throughout the study area are typically five to six stories tall and clad in brick, with few architectural adornments except for fire escapes. At the northwest corner of Broadway and West 173rd Street, a bulky 12-story

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residential building is an exception to this pattern. Along St. Nicholas Avenue, many buildings are one-story commercial enterprises with awnings and signs advertising the businesses within. Buildings in the study area are typically built to the streetline, forming a consistent streetwall. Immediately south of the 400-foot study area and the Broadway-St. Nicholas Avenue intersection, the Columbia University Medical Center occupies both sides of Broadway. At the campus, buildings are larger, bulkier, and taller (typically more than 12 stories) than in the surrounding neighborhood.

Views along Broadway and St. Nicholas Avenue take in the buildings along each of those streets, most prominently the Columbia University Medical Center, which is outside of the study area two blocks to the south on both sides of Broadway. Views east along the streets take in the buildings the line the streets. Looking west along West 172nd Street from the project site, a small portion of the George Washington Bridge is visible in the distance.

The University housing building would replace the existing one-story commercial building and parking lot with an approximately 12-story residential building. As a Quality Housing building, it would be contextual in terms of bulk and massing with other surrounding residential buildings. The building would provide a consistent streetwall, with a setback at 60 to 85 feet high, similar in height to the six-story building on the adjacent parcel and to the six-story buildings in the surrounding study area. The building's bulk and use would thus be similar to what exists in the study area. The building would be taller than most other buildings in the study area, although similar in height to the 12-story building at West 173rd Street and Broadway, and would be notably newer as well. As a result, the new building would appear as a new element, more like the development at Columbia University Medical Center just to the south of the study area. Nonetheless, the new building would not be incompatible with the urban design of the study area. Therefore, the University housing building at the site would not result in significant adverse impacts on urban design or visual resources.

NEIGHBORHOOD CHARACTER

As defined in the *CEQR Technical Manual*, a neighborhood's character is established by numerous factors, including land use patterns, the scale of development, building design, presence of historic resources, and a variety of other features.

The University housing building would result in residential development with approximately 159 residential units at 4070 Broadway. It would provide ground-floor retail space along Broadway, similar to most of the other buildings nearby. As described above under "Land Use, Zoning, and Public Policy," the University housing building would be compatible with the predominantly residential nature of the surrounding area, and would not have any adverse land use, zoning, or public policy impacts. No adverse impacts to urban design or historic resources would occur. The University housing building would not alter existing street patterns and would not obstruct views to any visual resources or view corridors in the study area. In addition, as discussed later in this appendix, the new building would not result in significant adverse traffic or noise impacts. Therefore, the University housing building would not result in significant adverse impacts on neighborhood character, and further analysis is not warranted.

NATURAL RESOURCES

A natural resources assessment is conducted when a natural resource is present on or near the project site and when an action involves the disturbance of that resource. The *CEQR Technical Manual* defines natural resources as water resources, including surface water bodies and

groundwater; wetland resources, including freshwater and tidal wetlands; upland resources, including beaches, dunes, and bluffs, thickets, grasslands, meadows and old fields, woodlands and forests, and gardens and other ornamental landscaping; and built resources, including piers and other waterfront structures.

The University housing building site is located in a fully developed area of Manhattan. The site, at 4070 Broadway, is occupied by a one-story commercial building. No significant natural resources exist on the project site. Since the site is located within a developed portion of the City and no significant natural resources are present, there is no potential for significant adverse impacts, and no further analysis is required.

HAZARDOUS MATERIALS

The goal of a hazardous materials analysis is to determine whether a proposed action could lead to increased exposure of people or the environment to hazardous materials and whether the increased exposure would result in significant public health impacts or environmental damage. The *CEQR Technical Manual* states that the potential for significant adverse impacts related to hazardous materials can occur when: elevated levels of hazardous materials exist on a site; an action would increase pathways to their exposure, either human or environmental; or an action would introduce new activities or processes using hazardous materials and the risk of human or environmental exposure is increased.

The site contains a public parking lot and an associated one-story building (which was formerly occupied by a fast-food restaurant). The surrounding neighborhood is characterized by commercial and residential development. Hydro Tech Environmental Corp. performed a subsurface (Phase II) investigation on the site in 2004. Impact Environmental performed a Phase I Environmental Site Assessment on the property in June 2005, and a ground-penetrating radar (GPR) survey in July 2005.

SUBSURFACE CONDITIONS

Borings on the site encountered weathered bedrock at depths ranging from 2 to 10 feet below grade. No groundwater was encountered.

PHASE I STUDY

The Phase I study reviewed a variety of information sources including: Environmental regulatory agency databases identifying state and/or federally listed sites; SanbornTM Fire Insurance Maps; published geological and groundwater information; and city databases and records (Department of Buildings and Fire Department) to assist in identifying prior uses. In addition, the Phase I study included reconnaissance of the sites and surrounding property and a review of the earlier studies on the site.

No aboveground or underground storage tanks were observed on the site. The former use of the site as a fast-food restaurant involved no apparent storage or use of hazardous materials. The surrounding properties are residential or commercial.

Historical Sanborn insurance maps show that the site was undeveloped prior to 1913. Maps from 1935 through 1983 show a gasoline station on the site with two 550-gallon underground gasoline storage tanks. The existing on-site building is shown on maps from 1985 through the present. New York City Buildings Department records include a Certificate of Occupancy from 1922 for an “auto supply station” and gasoline tank permits from 1950, 1952, and 1960.

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Regulatory databases identified an on-site spill for the property (spill number 0401273). As described below, the spill was reported when gasoline-contaminated soil was encountered during a Phase II subsurface investigation on the site. None of the other reported spills in the vicinity were deemed likely to have impacted the site.

PHASE II STUDY

The Phase II subsurface investigation was performed in May 2004. Soil borings were advanced to bedrock at 14 locations around the property. Volatile organic compounds typical of gasoline were detected in samples from four locations on the west side of the restaurant building. A spill was reported to the New York State Department of Environmental Conservation (DEC) hotline.

GROUND PENETRATING RADAR SURVEY

The ground-penetrating radar survey was intended to look for any underground storage tanks remaining on the site. The survey covered the area of the site surrounding the former restaurant building. One anomaly, consistent with the presence of an underground tank, was detected in a 10-foot by 10-foot area in the northwestern portion of the site, near the corner of Broadway and West 172nd Street.

POTENTIAL IMPACTS

The site would be developed with a new University housing building. Although a design has not been finalized for this site, it is assumed that the building would have below-grade space and therefore that excavation would be required during construction. Demolition of the existing building and excavation for construction of the new facility would potentially involve disturbance of hazardous materials in the building structures and the existing on-site soil.

The presence of hazardous materials threatens human health or the environment only when exposure to those materials occurs and, even then, a health risk requires both a complete exposure pathway to the contaminants and a sufficient dose to produce adverse health effects. To prevent such exposure pathways and doses, a Restrictive Declaration would be recorded against the Columbia-owned property. As such, any hazardous material contamination will have to be mitigated in accordance with the Restrictive Declaration before receiving New York City Department of Environmental Protection (DEP) approval for the proposed University housing development. The Restrictive Declaration would ensure that the proposed development includes appropriate health and safety and investigative/remedial measures (conducted in compliance with all applicable laws and regulations and conforming to appropriate engineering practices) that would precede or govern both demolition and soil disturbance activities. These measures would include: procedures for pre-demolition removal of asbestos and appropriate management of lead-based paint and of PCB- and mercury-containing equipment; additional subsurface investigation, both to study sites not yet investigated and to better characterize soil to be removed for project excavation; and development of a Construction Health and Safety Plan (CHASP).

To address the remediation of known and potential environmental conditions that may be encountered on the University housing site during proposed construction and development activities a Remedial Action Plan (RAP) will be prepared prior to construction. The purpose of this RAP is to present measures for remediating the on-site gasoline spill, managing contaminated on-site soil and groundwater, and removing suspected remaining underground petroleum storage tanks in accordance with applicable federal, state and local regulations.

Contaminated soil management includes guidelines for temporary on-site stockpiling and off-site transportation and disposal. The RAP will be submitted to DEP for review and approval. The Restrictive Declaration will ensure implementation of these measures.

Potential impacts during construction and development activities would be avoided by implementing a CHASP. The CHASP would ensure that there would be no significant adverse impacts on public health, workers' safety, or the environment as a result of potential hazardous materials exposed by or encountered during construction. The CHASP would specify dust control, air monitoring and other appropriate testing and/or monitoring, and detail appropriate measures to be implemented (including notification of regulatory agencies) if underground storage tanks, contaminated soil or groundwater, or other unforeseen environmental conditions are encountered.

Soil excavated as part of site remediation and development activities is regulated and will be managed in accordance with all applicable regulations. Soil intended for off-site disposal will be tested in accordance with the requirements of the intended receiving facility. Transportation of material leaving the site for off-site disposal will be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.

If dewatering is required for construction, testing will be performed to ensure compliance with NYCDEP sewer discharge requirements. If necessary, pre-treatment would be conducted prior to the water discharge to the City's sewer system, as required by NYCDEP permit/approval requirements.

With implementation of these measures, no significant adverse impacts related to hazardous materials would be expected to occur as a result of the demolition and construction activities for development of the new residential building on the relocation site. Following demolition and construction, there would be no further potential for adverse impacts.

WATERFRONT REVITALIZATION PROGRAM

Actions that are located within the designated boundaries of New York City's Coastal Zone are subject to an assessment for consistency with the City's Local Waterfront Revitalization Program (WRP). The WRP includes several policy objectives that prioritize the development of water-dependent and water-enhancing uses on Coastal Zone properties, mandate public access to the waterfront, offer construction guidelines for flood zones, and address the maintenance of water quality. The project site is not located within the Coastal Zone; therefore, no further analysis is necessary.

INFRASTRUCTURE

For CEQR purposes, "infrastructure" is concerned with water supply, sewage treatment, and stormwater management. As stated in the *CEQR Technical Manual*, the City is committed both to maintaining adequate water supply and pressure for all users and to adequately treating all wastewater generated in the City. An assessment of a project's effects on the City's water supply is necessary only for projects that would create an exceptionally large demand for water, such as power plants, very large cooling systems, or other large developments that would use more than 1 million gallons of water per day (mgd). An assessment of a project's effects on the City's sanitary sewage system is necessary only for unusual projects with very large flows.

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WATER SUPPLY

In total, approximately 159 university housing units would be developed at 4070 Broadway, as well as ground-floor retail and community facility space. This site is assumed to house 200 graduate students and post-doctorate researchers and 10,566-sf of retail and community facility space. Using a water consumption rate of 112 gallons per day (gpd) per resident and 0.17 gpd per sf of retail and community facility space, which are the rates presented in the *CEQR Technical Manual* (Table 3L-2, “Water Usage and Sewage Generation Rates for Use in Impact Assessments”) and the same rate used to calculate water demand from residential components of the Proposed Actions, the University housing building would have a demand for 24,196 gpd of water. This small addition to the total water consumption predicted for the Proposed Actions (see Chapter 14, “Infrastructure,” of this FEIS), together with the small additional water consumption associated with the relocation housing sites (see Appendix B.2) would not change the conclusions of that chapter. The Proposed Actions would not result in significant adverse impact to the City’s water supply or water delivery system

SEWAGE

Wastewater and sewage generated by the University housing building would be treated by the North River Water Pollution Control Plant (WPCP). This plant has a permitted capacity of 170 million gallons per day (mgd). For the 12-month period ending in August 2007, the plant processed an average dry-weather flow of 127 mgd, which is well below its permitted limit. The University housing building would introduce approximately 200 residents and a minimal number of new employees (building service workers). Conservatively assuming that sewage generation is the same as water usage, the proposed residential building would generate an estimated 24,196 gpd of sanitary sewage. This amount would result in a negligible increase in the Proposed Actions’ sewage generation, and the WPCP’s overall capacity would be maintained below its permitted limit. Therefore, no significant adverse impacts on sewage treatment are expected, and further analysis is not warranted.

SOLID WASTE AND SANITATION SERVICES

In the City of New York, residential refuse is handled by the New York City Department of Sanitation (DSNY). Residential waste was formerly disposed of at the Fresh Kills Landfill, which stopped receiving solid waste as of March 22, 2001. DSNY now collects solid waste, delivers it to transfer stations, and from there private carters take it to facilities generally located in Virginia, Ohio, and Pennsylvania. The municipal waste system handles approximately 13,000 tons per day, and the private carters handle approximately 13,000 tons per day.

Using the solid waste generation rates presented in Table 3M-1 in the *CEQR Technical Manual*, “Solid Waste Generation Rates” (17 pounds per week per resident and 79 pounds per week per employee), the 200 new residents and 35 employees in the University housing building would generate approximately 6,182 pounds per week of solid waste. This level of solid waste represents a minimal increase in the solid waste generated by the Proposed Actions and in the New York City’s overall waste stream. Thus, the proposed residential buildings are not expected to result in significant adverse impacts on the collection or disposal of solid waste, and no further analysis is necessary.

ENERGY

According to the *CEQR Technical Manual*, detailed assessments of energy impacts should be limited to actions that significantly affect the transmission or generation of energy, or that generate substantial indirect consumption of energy. An energy analysis focuses on an action's consumption of energy, and where relevant, any effects on the transmission of energy that could result from the action.

The University housing site is served by Con Edison, which delivers electricity to all of New York City (except the Rockaway area in Queens) and almost all of Westchester County. The electricity is generated by a number of independent power companies as well as Con Edison. In 2006 (the latest year for which data are available), annual electric sales totaled about 57.0 billion kilowatt-hours (KWH) in Con Edison's delivery area. This is equivalent to about 195.8 trillion British Thermal Units (BTUs). In addition, Con Edison supplied about 107.5 trillion BTUs of natural gas and 23.25 billion pounds of steam, which is equivalent to 22.5 trillion BTUs. Overall, about 325.8 trillion BTUs of energy are consumed within Con Edison's New York City and Westchester County service area.

Energy use as a result of the University housing building is estimated to be 12,288 million BTUs for all heating, cooling, and electric power. This estimate is based on the annual consumption rate of 145,500 BTUs per square foot of residential space (79,710 gsf of residential space) and a rate of 65,300 BTUs per sf (10,566 gsf) of retail/community facility space¹. This amount of energy represents a small increase to the amount of energy usage predicted for the Proposed Actions and a minimal percentage of the overall energy used in New York City and within Con Edison's service area. Furthermore, all new structures requiring heating and cooling are subject to the New York State Energy Conservation Code, which reflects state and City energy policy. Therefore, those actions that would result in new construction or substantial renovation of buildings would not create adverse energy impacts, and would not require a detailed energy assessment. As such, the University housing building would not have significant impacts on energy, and no further analysis is necessary.

TRAFFIC AND PARKING

The impact methodology guidelines in the 2001 *CEQR Technical Manual* suggest undertaking traffic and parking analyses for projects that create new vehicular trips, such as the construction of new residential or commercial buildings. According to Table 30-1 in the *CEQR Technical Manual*, "Minimum Development Densities Potentially Requiring Traffic Analysis," the residential development threshold in Manhattan north of 60th Street for a detailed traffic analysis is 200 new residential units. The 159 new units and 10,566 sf of retail and community facility space at the University housing site would fall below this threshold. The new development would be almost two miles away from the Project Area, and therefore the trips that would occur near the University housing site would not affect intersections where other new person-trips associated with the Proposed Actions would occur.

The new building would displace an existing public parking lot. This lot has a small number (40) of spaces, and the loss of these spaces would not adversely affect parking supply in the neighborhood. In addition, as described in the beginning of this appendix, the new University

¹ Source: *CEQR Technical Manual*, Table 3N-1, "Energy Use Index Averages."

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housing building would provide 64 accessory parking spaces for the residential portion of the building.

Therefore, the University housing building would not result in any significant adverse impacts on traffic and parking, and no further analysis is warranted.

TRANSIT AND PEDESTRIANS

The objective of the transit and pedestrian analyses is to determine whether a proposed action can be expected to have a significant impact on public transportation facilities and services and on pedestrian flows. New University housing would be developed at 4070 Broadway for a total of approximately 159 units. The impact methodology guidelines in the *CEQR Technical Manual* suggest that residential development projects below the thresholds shown in Table 3O-1 do not require detailed transit and pedestrian analyses. The total number of new residential units at the University housing site falls below the threshold in Table 3O-1, "Minimum Development Densities Potentially Requiring Traffic Analysis." In addition, the new development would be almost two miles away from the Project Area, and therefore the trips that would occur near the University housing site would not affect intersections, subway stations or service, or bus stops or service in the same locations where other new person-trips associated with the Proposed Actions would occur. Therefore, no significant adverse impacts on transit and pedestrian conditions would occur as a result of the University housing building, and no further analysis is warranted.

AIR QUALITY

This section discusses the direct and indirect air quality impacts associated with the University housing building. Direct impacts stem from emissions generated by stationary sources at the project site, such as emissions from fuel burned on site for heating, ventilation and air conditioning (HVAC) systems. Indirect impacts are caused by potential emissions from nearby stationary sources and the proposed potential for emissions due to motor vehicles generated by the University housing site. Mobile source air quality impacts associated with the residential buildings are anticipated to be insignificant. A quantified trip generation analysis was not necessary since the University housing building would not exceed the *CEQR Technical Manual* screening thresholds for warranting such an analysis. Given that there are no predicted significant adverse traffic impacts, no analysis of mobile source emissions is required. In addition, no permitted industrial facilities were found within 400 feet of the site and therefore, no significant adverse impacts on the University housing building are anticipated from industrial source emissions.

The primary stationary source of air pollutants associated with the University housing building would be emissions from the combustion of fossil fuel by HVAC equipment. An HVAC screening analysis was performed for the University housing site utilizing the procedures found in the *CEQR Technical Manual*. This screening analysis involved using Figure 3Q-5 in the *CEQR Technical Manual*, which identifies threshold sizes for new developments (in square feet), above which a project might have an adverse effect on nearby uses. It was assumed that the University housing building would use No. 4 oil in the HVAC systems and the stack was assumed to be located three feet above the roof height (as per the *CEQR Technical Manual*). Using this information, the building's square footage (90,276 gross square feet) and the distance to the nearest residential development of similar or greater height (which is approximately 350 feet away), Table 3Q-5 indicates that the new building would not have the potential to result in significant adverse air quality impacts on nearby receptors. Therefore, the University housing

building would not result in any significant stationary source air quality impacts from the combustion of No. 4 fuel oil, since the project development size would be below the maximum permitted size derived from Figure 3Q-5 of the *CEQR Technical Manual*.

NOISE

A noise analysis is appropriate if a project would generate any mobile or stationary sources of noise or would occur in an area with high ambient noise levels. The new University housing building would not generate any new stationary sources of noise. According to the *CEQR Technical Manual*, a doubling of traffic volumes over existing levels is the increase that would result in a perceptible change to mobile-source noise levels. The University housing building would not lead to a doubling of traffic volumes; therefore, no significant adverse noise impacts are expected, and no further analysis is warranted. However, ambient noise levels adjacent to the project site must be considered in order to address CEQR noise abatement requirements for the building. This potential is assessed below.

NOISE STANDARDS AND CRITERIA

New York CEQR Noise Standards

The New York City *CEQR Technical Manual* defines attenuation requirements for buildings based on exterior noise level (see Table P.2.3, “Required Attenuation Values to Achieve Acceptable Interior Noise Levels”). Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower, and are determined based on exterior $L_{10(1)}$ noise levels.

**Table P.2-3
Required Attenuation Values to Achieve Acceptable Interior Noise Levels**

	Marginally Acceptable	Marginally Unacceptable		Clearly Unacceptable		
Noise Level With Proposed Action	$65 < L_{10} \leq 70$	$70 < L_{10} \leq 75$	$75 < L_{10} \leq 80$	$80 < L_{10} \leq 85$	$85 < L_{10} \leq 90$	$90 < L_{10} \leq 95$
Attenuation*	25 dB(A)	(I) 30 dB(A)	(II) 35 dB(A)	(I) 40 dB(A)	(II) 45 dB(A)	(III) 50 dB(A)
Note:	* The above composite window-wall attenuation values are for residential dwellings. Commercial office spaces and meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.					
Source:	New York City Department of Environmental Protection					

EXISTING NOISE LEVELS

Existing noise levels were measured for 20-minute periods during the three weekday peak periods—AM (8:00–9:00 AM), midday (MD) (12:00–2:00 PM), and PM (5:00–6:00 PM) peak periods on November 5, 2007 at two receptor sites adjacent to the project site. Site 1 was located on Broadway between West 172nd Street and West 171st Street. Site 2 was located on West 172nd Street between Broadway and St. Nicholas Avenue.

The instrumentation used for the 20-minute noise measurements was a Brüel & Kjær Type 4189 ½-inch microphone connected to a Brüel & Kjær Model 2260 Type 1 (according to ANSI Standard S1.4-1983) sound level meter. This assembly was mounted at a height of 5 feet above the ground surface on a tripod and at least 6 feet away from any large sound-reflecting surface to

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avoid major interference with sound propagation. The meter was calibrated before and after readings with a Brüel & Kjær Type 4231 sound-level calibrator using the appropriate adaptor. Measurements at each location were made on the A-scale (dBA). The data were digitally recorded by the sound level meter and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq} , L_1 , L_{10} , L_{50} , and L_{90} . A windscreen was used during all sound measurements except for calibration. All measurement procedures conformed to the requirements of ANSI Standard S1.13-1971 (R1976).

The results of the measurements of existing noise levels are summarized in Table P.2-4.

**Table P.2-4
Existing Noise Levels at the University Housing Site
(in dBA)**

Site	Measurement Location	Time	L_{eq}	L_1	L_{10}	L_{50}	L_{90}
1	Broadway between West 172nd Street and West 171st Street	AM	72.3	81.4	75.6	68.9	62.9
		MD	63.8	73.4	65.9	61.5	58.4
		PM	61.9	71.6	64.0	59.6	56.5
2	West 172nd Street between Broadway and St. Nicholas Avenue	AM	64.4	71.3	66.8	62.7	60.6
		MD	61.2	69.5	64.5	58.7	56.4
		PM	68.4	77.7	70.7	67.0	61.5
Note: Field measurements were performed by AKRF, Inc. on November 5, 2007.							

At all monitoring sites, traffic noise was the dominant noise source. Measured noise levels are moderate to relatively high and reflect the level of vehicular activity on the adjacent streets. In terms of the CEQR criteria, the existing noise levels at all sites would be in the “marginally unacceptable” category.

NOISE ATTENUATION MEASURES

As shown in Table P.2-3, the New York City *CEQR Technical Manual* has set noise attenuation quantities for buildings, based on exterior $L_{10(1)}$ noise levels, and in order to maintain interior noise levels of 45 dBA or lower. A Restrictive Declaration for the property would ensure that the building design includes the use of well sealed double-glazed windows and air conditioning (i.e., an alternate means of ventilation). With these measures, the window/wall attenuation would provide at least 35 dBA for all facades of the building. Based upon the $L_{10(1)}$ values measured at the project site, these design measures would provide sufficient attenuation to achieve the CEQR requirements.

CONSTRUCTION IMPACTS

Construction for the new University housing at 4070 Broadway would involve demolishing the existing structures at the site. Following demolition, construction at the site would involve building an approximately 12-story building. Like all construction projects, work would result in temporary disruptions to the surrounding community, such as temporary closures of sidewalks and curb lanes bordering the site, and occasional noise and dust. These effects would be temporary and are not considered significant.

The construction associated with the University housing building would be required to comply with applicable control measures for construction noise. Construction noise is regulated by the

New York City Noise Control Code and by the Environmental Protection Agency noise emission standards for construction equipment. These federal and local requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emissions standards. Except under exceptional circumstances, construction activities must be limited to weekdays between the hours of 7 AM and 6 PM. Construction materials would be handled and transported in such a manner as to not create any unnecessary noise. Compliance with those noise control measures would be ensured by including them in the contract documents as materials specification and by directives to the construction contractors. No significant adverse impacts are expected to occur as a result of construction.

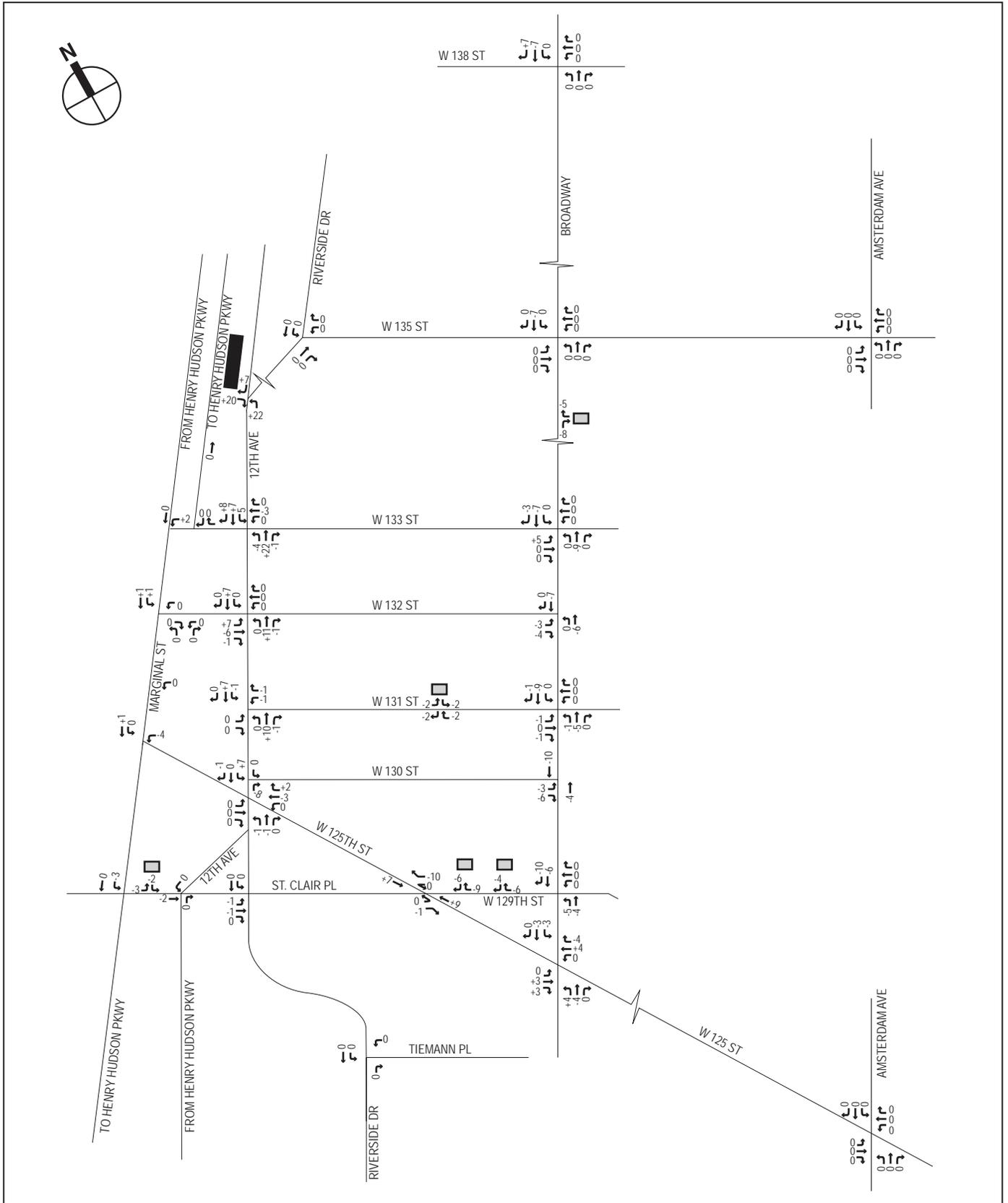
PUBLIC HEALTH

According to the *CEQR Technical Manual*, public health involves the activities that society undertakes to create and promote a community's wellness. Public health may be jeopardized by poor air quality resulting from vehicular traffic or emissions from stationary sources, increased exposure to heavy metals and other contaminants in soil or dust, hazardous materials in groundwater used for drinking water, significant adverse impacts related to noise or odors, solid waste management practices that attract vermin and pest populations, and actions that result in exceedances in City, State, or federal standards.

As described above, the University housing building would not result in significant adverse impacts on air quality or noise. No exceedances of City, State, or federal standards would occur. The University housing building would not involve solid waste management practices that would attract vermin or pest populations. Therefore, no significant adverse impacts on public health would occur, and no further analysis is necessary. *

APPENDIX P.3

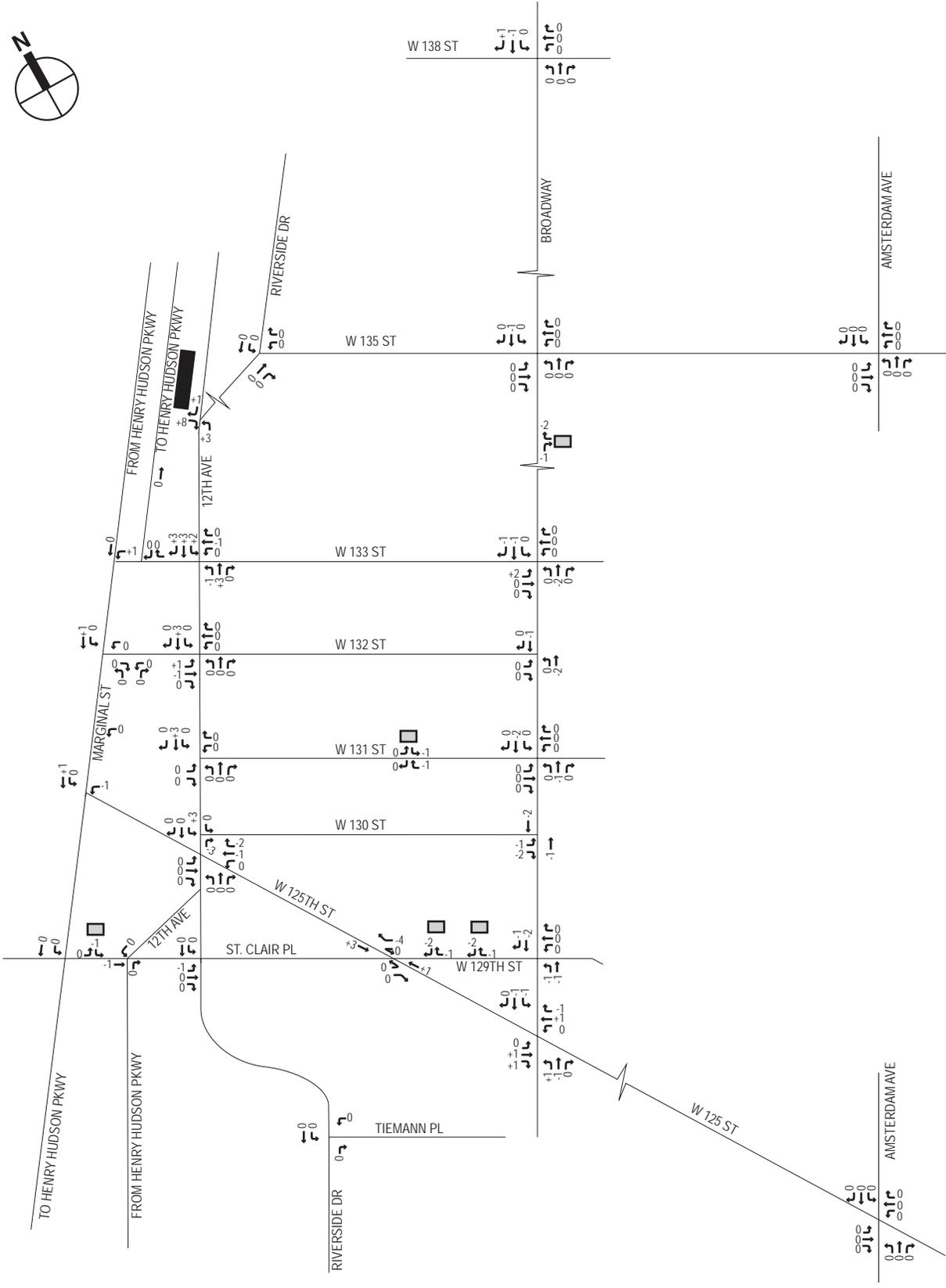
PARKING MITIGATION: NET PARKING REROUTING VOLUMES



- Existing Parking Garage
- New Columbia Parking Garage

NOT TO SCALE

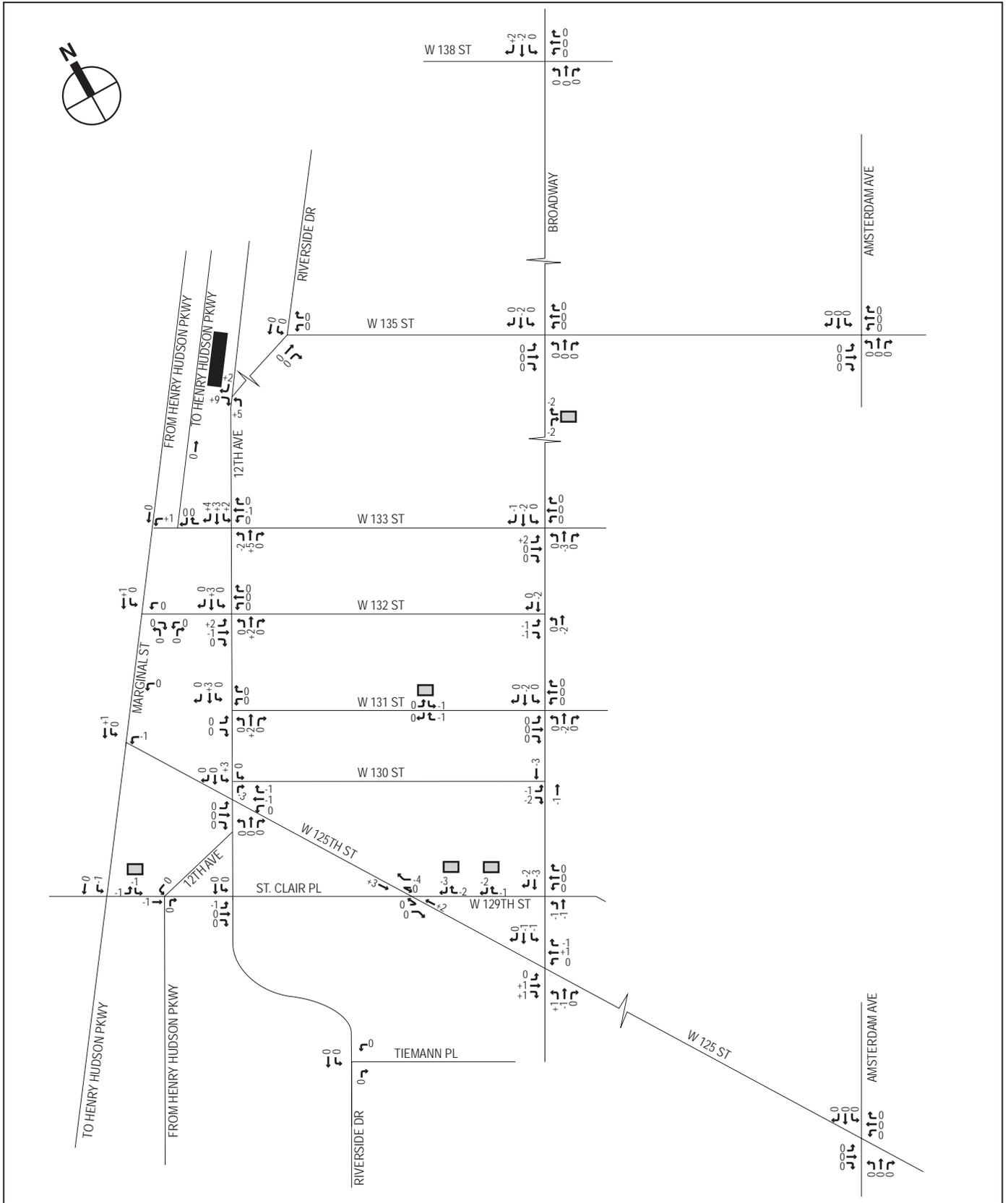
Figure P.3-1
Build 2015
Net Parking Rerouting Volumes
Morning Peak Hour



NOT TO SCALE

- Existing Parking Garage
- New Columbia Parking Garage

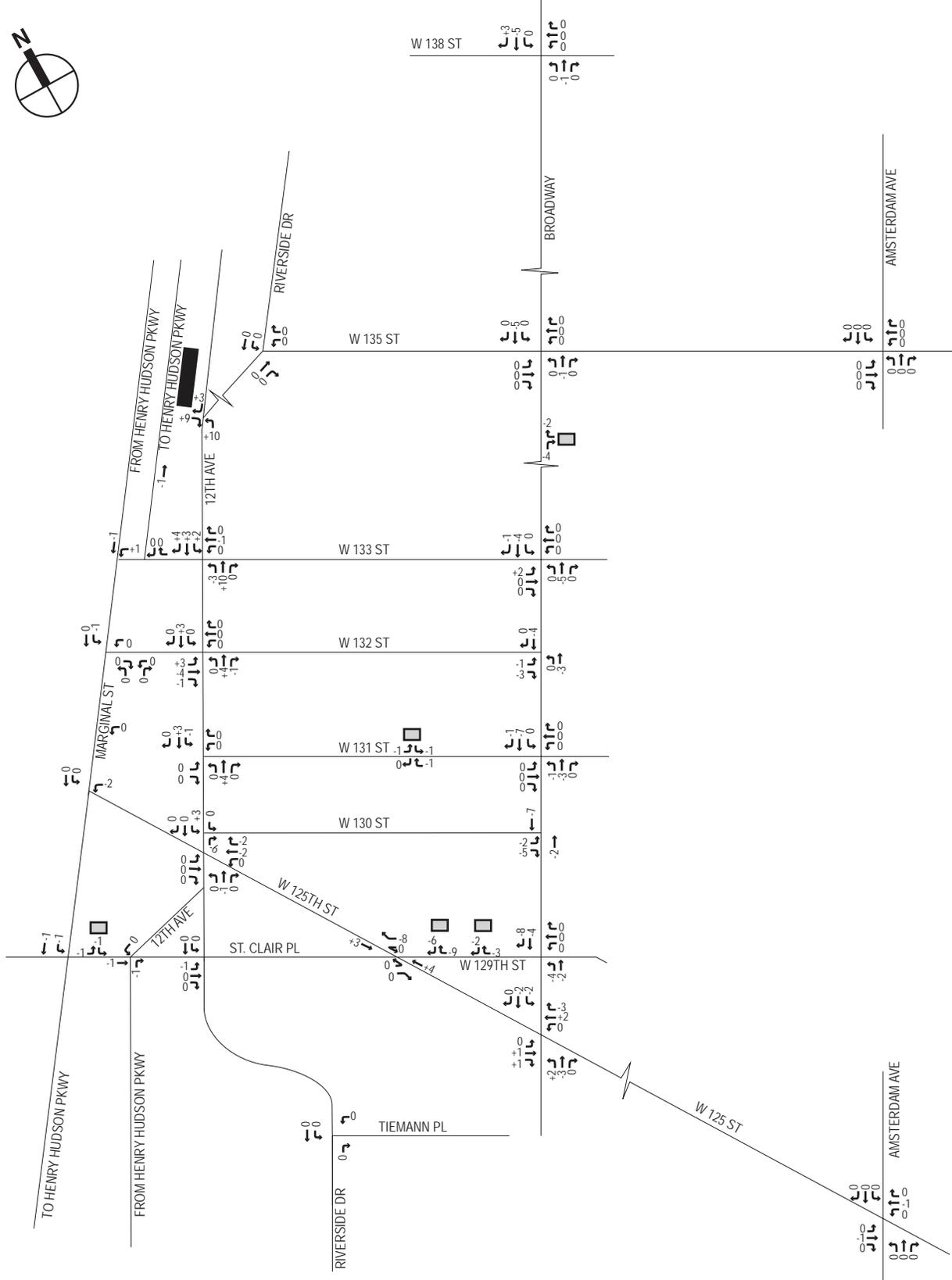
Figure P.3-2
Build 2015
Net Parking Rerouting Volumes
Midday Peak Hour



- Existing Parking Garage
- New Columbia Parking Garage

NOT TO SCALE

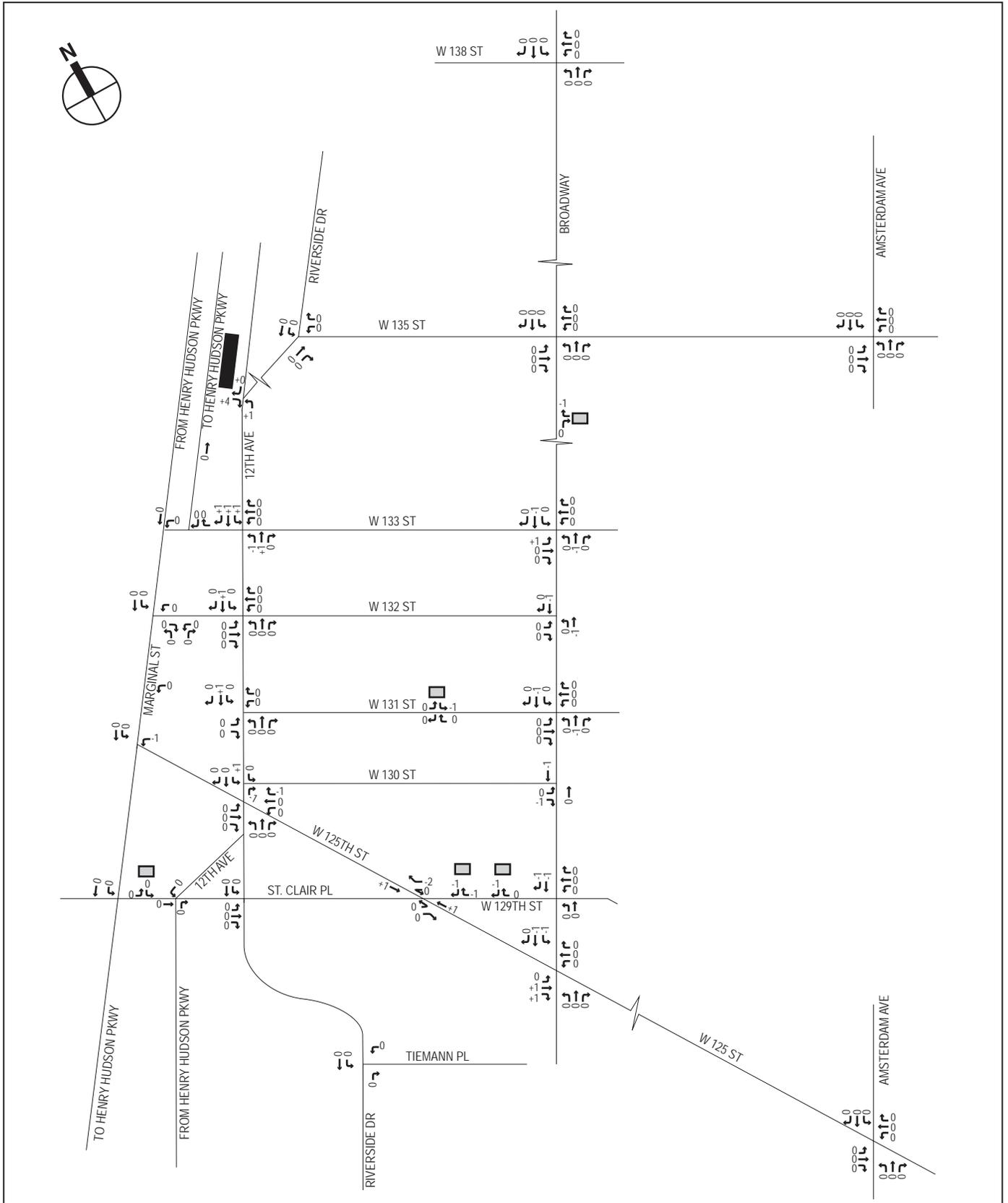
Figure P.3-3
Build 2015
Net Parking Rerouting Volumes
Evening Peak Hour



NOT TO SCALE

- Existing Parking Garage
- New Columbia Parking Garage

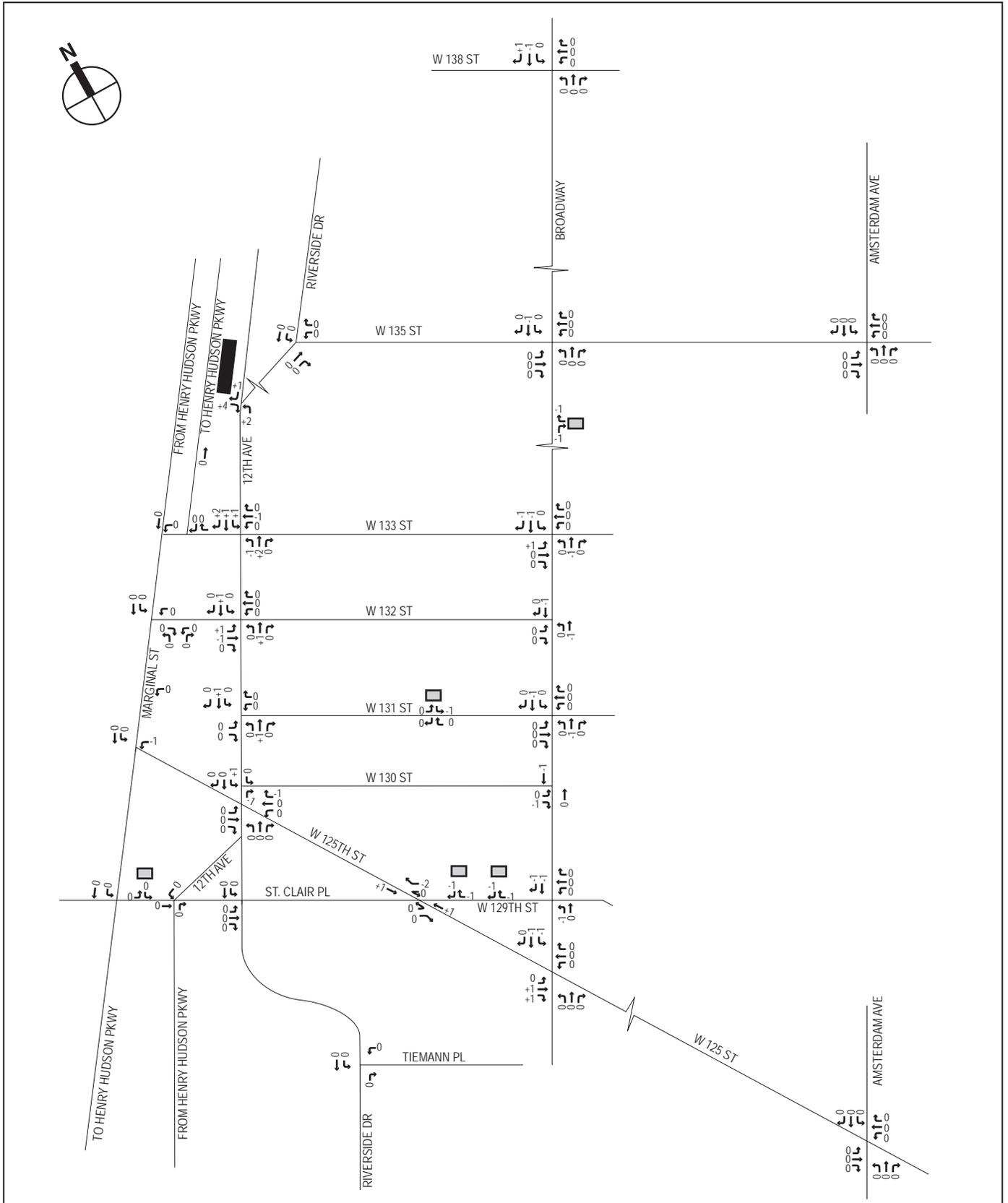
Figure P.3-4
Build 2030
Net Parking Rerouting Volumes
Morning Peak Hour



- Existing Parking Garage
- New Columbia Parking Garage

NOT TO SCALE

Figure P.3-5
Build 2030
Net Parking Rerouting Volumes
Midday Peak Hour



- Existing Parking Garage
- New Columbia Parking Garage

NOT TO SCALE

Figure P.3-6
Build 2030
Net Parking Rerouting Volumes
Evening Peak Hour

APPENDIX P.4

**UNIVERSITY HOUSING MITIGATION
CORRESPONDENCE**

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre Street, 9N, New York, NY 10007 (212) 669-7700 www.nyc.gov/landmarks

ENVIRONMENTAL REVIEW

DCP/06DCP032M

11/7/2007

Project number

Date received

Project: Manhattanville/ W. Harlem Rezoning

Comments: There are no further archaeological concerns for B 1895 L 49 and B 2141 L 17.



11/13/2007

SIGNATURE

DATE

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THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre Street, 9N, New York, NY 10007 (212) 669-7700 www.nyc.gov/landmarks

ENVIRONMENTAL REVIEW

DCP/06DCP032M 11/14/2007

Project number **Date received**

Project: MANHATTANVILLE/W.HARLEM REZONING

Comments: Appendix P.2 dated 11/12/07 is acceptable for architecture and archaeology. Regarding the replacement site on W. 172 St., there are no concerns.

 11/15/2007

SIGNATURE **DATE**

24070_FSO__11152007.doc