APPENDIX L

ENVIRONMENTAL JUSTICE

Appendix L: Environmental Justice

A. INTRODUCTION

This environmental justice analysis has been prepared under the standards set forth in *CP-29 Environmental Justice and Permitting*, (the "Policy"), issued by the New York State Department of Environmental Conservation (DEC) on March 19, 2003, to identify and address any disproportionate significant adverse impacts on minority or low-income populations (i.e., a potential environmental justice community) that could result from the Proposed Project.

The Policy provides guidance for incorporating environmental justice concerns into the DEC environmental permit review process and the DEC application of the State Environmental Quality Review Act (SEQRA). The Proposed Project would require two permits and approvals from DEC that, pursuant to the Policy, trigger the need for an environmental justice analysis: a permit for the construction and operation of the central energy plants, and a State Pollutant Discharge Elimination System (SPDES) permit to use an existing abandoned outfall for stormwater discharges into the Hudson River. The use of the abandoned outfall may also require a Tidal Wetlands permit and a Protection of Waters permit from DEC.

In order to provide the information necessary for such DEC review, this analysis identifies minority and low-income populations that could be affected by the Proposed Actions, and determines whether these populations would be disproportionately affected by adverse environmental impacts resulting from the Proposed Actions. This analysis also summarizes the Proposed Project's Public Participation Plan, to the extent that it is required under the Policy.

B. METHODOLOGY

DEC POLICY

Following the Policy, an environmental justice analysis involves identifying potential significant adverse environmental impacts and the area to be affected, and determining whether potential significant adverse environmental impacts are likely to affect a potential environmental justice community. Where it is determined that a project is likely to so affect a potential environmental justice community, public participation from the affected areas must be actively sought, and a Public Participation Plan must be submitted to DEC in accordance with the standards set forth in the Policy. In addition, consistent with the SEQRA regulations, any significant adverse environmental impact must be avoided or minimized to the greatest extent practicable.

METHODOLOGY USED FOR THIS ASSESSMENT

The assessment of environmental justice for the Proposed Actions was based on the Policy as described above. It involved four basic steps:

1. Identify the area where the Proposed Actions may cause significant adverse impacts;

2. Compile demographic data for the study area and identify potential environmental justice areas;
3. Identify the Proposed Actions' potential significant adverse impacts on potential environmental justice communities; and
4. Evaluate the Proposed Actions' potential significant adverse impacts on potential environmental justice communities relative to the Proposed Actions' overall effects to determine whether any potential significant adverse impacts on those potential environmental justice communities would be disproportionate.

DELINEATION OF STUDY AREA

The study area for environmental justice encompasses the area most likely to be affected by the Proposed Actions. For this analysis, the study area for environmental justice includes the census block groups that are substantially within a ½-mile of the Project Area. This is the geographic area likely to be affected by the Proposed Actions for a given technical area, or the area in which impacts of that type could occur. As shown in Figure L-1, the study area includes 38 census block groups.

IDENTIFICATION OF POTENTIAL ENVIRONMENTAL JUSTICE COMMUNITIES

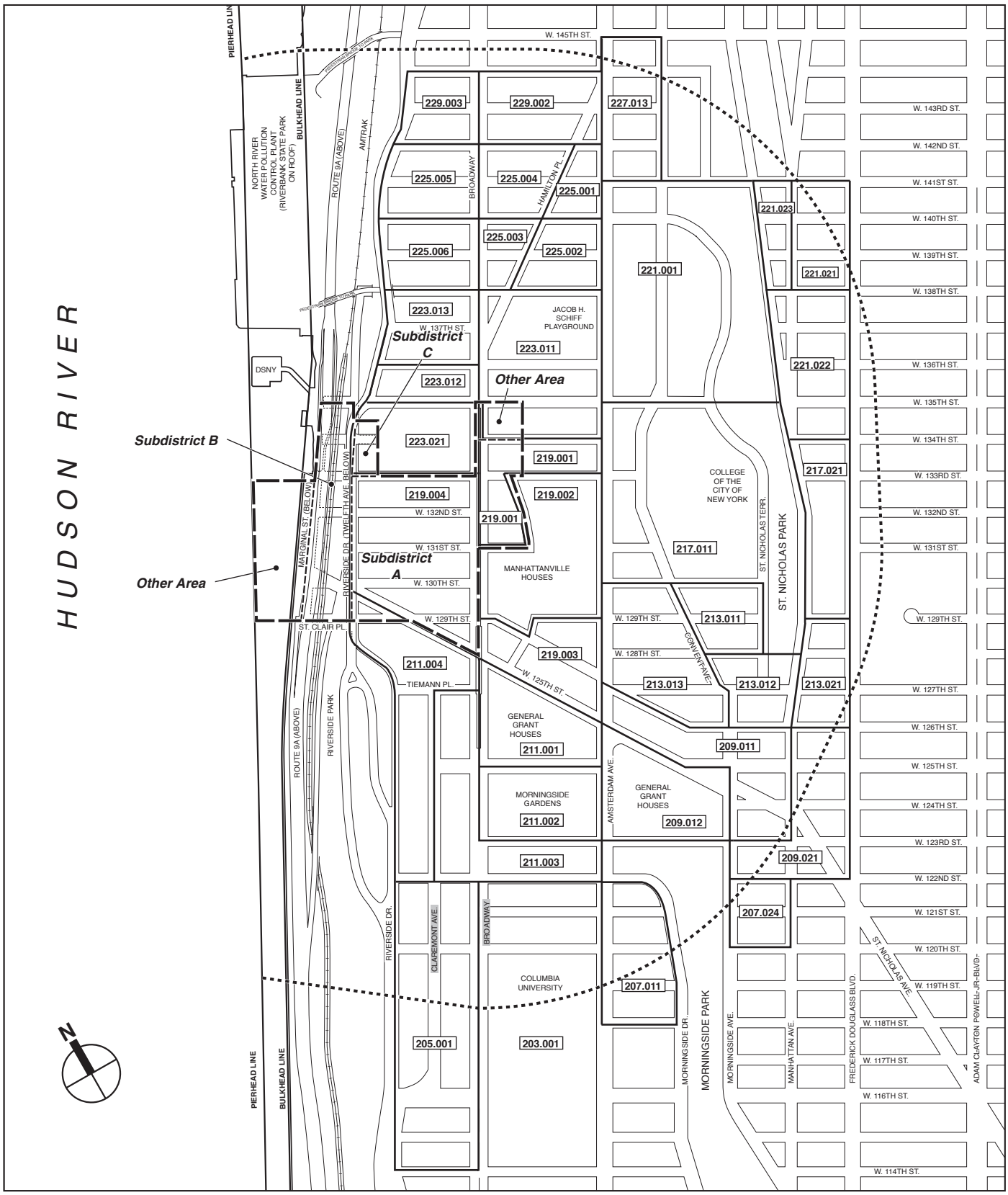
Data on race and ethnicity and poverty status were gathered from the U.S. Census Bureau's *Census 2000* for the census block groups within the study area, and then aggregated for the study area as a whole. In addition, to put the population and economic characteristics of the study area into perspective, these characteristics were compared with those of the broader area of Manhattan, as well as New York City as a whole. Potential environmental justice areas were identified as follows:

- *Minority Communities:* The Policy defines minority populations to include persons identified by the U.S. Census Bureau as Hispanic, African-American or Black, Asian and Pacific Islander, or American Indian. To be conservative, this environmental justice analysis also identifies Alaska Natives and persons of some other race or two or more races as being minority. Following the guidance in the Policy, as the study area is in an urban (rather than rural) setting, minority communities were identified where the minority population of the affected area exceeds 51.1 percent.
- *Low-Income Communities:* The Policy defines a low-income population as having an annual income that is less than the poverty threshold as established by the U.S. Census Bureau. In accordance with the Policy, any census block group having a low-income population equal to or greater than 23.59 percent of the total population is considered a low-income community.

C. IDENTIFICATION OF POPULATIONS OF CONCERN WITHIN THE STUDY AREA

Based on the Policy and the methodology described above, all but four of the study area's 38 census block groups exceed DEC's thresholds used for defining minority and low-income communities. Therefore, as a whole, the entire study area would be considered a potential environmental justice area. The characteristics of the study area are summarized in Table L-1 and described below.

8.3.07



MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure L-1
Environmental Justice Study Area

Table L-1
Study Area Population and Economic Characteristics

Census Block Groups	Population (2000)												Economic Profile (1999)
		Race and Ethnicity*										Total Minority (%)	Individuals Below Poverty Level (%)**
	2000 Total	White	%	Black	%	Asian	%	Other	%	Hispanic	%		
CT 203 BG 1	1,859	1,097	59.0	213	11.5	309	16.6	45	2.4	195	10.5	41.0	22.96
CT 205 BG 1	1,562	1,158	74.1	126	8.1	165	10.6	30	1.9	83	5.3	25.9	9.14
CT 207.01 BG 1	2,548	1,555	61.0	193	7.6	475	18.6	87	3.4	238	9.3	39.0	22.94
CT 207.02 BG 4	504	49	9.7	384	76.2	5	1.0	17	3.4	49	9.7	**90.3**	13.54
CT 209.01 BG 1	1,332	54	4.1	786	59.0	59	4.4	31	2.3	402	30.2	**95.9**	**41.25**
CT 209.01 BG 2	2,116	9	0.4	1,190	56.2	11	0.5	17	0.8	889	42.0	**99.6**	**51.81**
CT 209.02 BG 1	1,006	52	5.2	688	68.4	12	1.2	54	5.4	200	19.9	**94.8**	**50.49**
CT 211 BG 1	3,007	28	0.9	1,609	53.5	30	1.0	85	2.8	1,255	41.7	**99.1**	**50.00**
CT 211 BG 2	1,672	838	50.1	363	21.7	294	17.6	64	3.8	113	6.8	49.9	2.56
CT 211 BG 3	2,791	1,156	41.4	381	13.7	239	8.6	99	3.5	916	32.8	**58.6**	**29.39**
CT 211 BG 4	3,246	1,494	46.0	487	15.0	597	18.4	146	4.5	522	16.1	**54.0**	19.47
CT 213.01 BG 1	1,879	44	2.3	1,176	62.6	7	0.4	45	2.4	607	32.3	**97.7**	**25.90**
CT 213.01 BG 2	1,427	43	3.0	971	68.0	9	0.6	64	4.5	340	23.8	**97.0**	21.41
CT 213.01 BG 3	1,237	21	1.7	718	58.0	30	2.4	47	3.8	421	34.0	**98.3**	**65.80**
CT 213.02 BG 1	256	6	2.3	186	72.7	0	0.0	11	4.3	53	20.7	**97.7**	**47.95**
CT 217.01 BG 1	1,399	29	2.1	603	43.1	25	1.8	30	2.1	712	50.9	**97.9**	**26.29**
CT 217.02 BG 1	2,669	20	0.7	2,287	85.7	4	0.1	98	3.7	260	9.7	**99.3**	**38.49**
CT 219 BG 1	1,391	18	1.3	274	19.7	10	0.7	15	1.1	1,074	77.2	**98.7**	**31.83**
CT 219 BG 2	3,092	22	0.7	1,696	54.9	40	1.3	62	2.0	1,272	41.1	**99.3**	**41.65**
CT 219 BG 3	1,670	77	4.6	459	27.5	26	1.6	17	1.0	1,091	65.3	**95.4**	**43.94**
CT 219 BG 4	270	11	4.1	84	31.1	0	0.0	11	4.1	164	60.7	**95.9**	**31.40**
CT 221.01 BG 1	474	32	6.8	273	57.6	21	4.4	29	6.1	119	25.1	**93.2**	**43.28**
CT 221.02 BG 1	560	16	2.9	441	78.8	4	0.7	11	2.0	88	15.7	**97.1**	**27.12**
CT 221.02 BG 2	656	23	3.5	531	80.9	9	1.4	37	5.6	56	8.5	**96.5**	14.29
CT 221.02 BG 3	834	7	0.8	690	82.7	2	0.2	20	2.4	115	13.8	**99.2**	**26.79**
CT 223.01 BG 1	4,161	58	1.4	171	4.1	14	0.3	70	1.7	3,848	92.5	**98.6**	**36.04**
CT 223.01 BG 2	1,657	28	1.7	59	3.6	19	1.1	25	1.5	1,526	92.1	**98.3**	**29.77**
CT 223.01 BG 3	2,592	106	4.1	149	5.7	97	3.7	47	1.8	2,193	84.6	**95.9**	**33.59**
CT 223.02 BG 1	3,997	55	1.4	1,214	30.4	7	0.2	48	1.2	2,673	66.9	**98.6**	**38.17**
CT 225 BG 1	1,167	10	0.9	387	33.2	5	0.4	36	3.1	729	62.5	**99.1**	**40.61**
CT 225 BG 2	2,661	69	2.6	452	17.0	35	1.3	43	1.6	2,062	77.5	**97.4**	**39.43**
CT 225 BG 3	611	22	3.6	59	9.7	6	1.0	5	0.8	519	84.9	**96.4**	12.66
CT 225 BG 4	1,062	50	4.7	332	31.3	21	2.0	33	3.1	626	58.9	**95.3**	21.42
CT 225 BG 5	2,718	123	4.5	500	18.4	53	1.9	50	1.8	1,992	73.3	**95.5**	**32.78**
CT 225 BG 6	2,889	131	4.5	647	22.4	40	1.4	39	1.3	2,032	70.3	**95.5**	22.11
CT 227.01 BG 3	1,428	103	7.2	933	65.3	29	2.0	70	4.9	293	20.5	**92.8**	**25.63**
CT 229 BG 2	3,191	49	1.5	1,105	34.6	20	0.6	47	1.5	1,970	61.7	**98.5**	**37.00**
CT 229 BG 3	1,960	94	4.8	309	15.8	19	1.0	63	3.2	1,475	75.3	**95.2**	**33.28**
Study Area	69,551	8,757	12.6	23,126	33.3	2,748	4.0	1,748	2.5	33,172	47.7	**87.4**	**33.02**
Manhattan	1,537,195	703,873	46	234,698	15	143,291	9	37,517	2	417,816	27	54.2	20.00
New York City	8,008,278	2,801,267	35	1,962,154	25	780,229	10	304,074	4	2,160,554	27	65.0	21.25

Notes:
BOLD denotes potential environmental justice areas.
* The racial and ethnic categories provided are further defined as: White (White alone, not Hispanic or Latino); Black (Black or African American alone, not Hispanic or Latino); Asian (Asian alone, not Hispanic or Latino); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino; Some other race alone, not Hispanic or Latino; Two or more races, not Hispanic or Latino); Hispanic (Hispanic or Latino; Persons of Hispanic origin may be of any race).
** Percent of individuals with incomes below established poverty level. The U.S. Census Bureau's established income thresholds for poverty levels defines poverty level.
Sources: U.S. Census Bureau, Census 2000.

Based on 2000 Census data, the study area had approximately 69,551 people, with Hispanic persons making up the largest racial or ethnic group (47.7 percent), followed by African-American or Black persons (33.3 percent) and Asians (4.0 percent). With these and other minorities making up approximately 87 percent of the total population, the study area exceeds DEC's definition of a minority community. In comparison, 54 percent of Manhattan's total population and 65 percent of New York City's total population are made up of minority residents. Moreover, approximately 33 percent of the study area's residents were living below

the poverty level in 1999, compared with approximately 20 percent of the population in Manhattan and New York City. With the number of individuals living below the poverty level exceeding DEC's threshold of 23.59 percent, the study area is also defined as a low-income community. All but four of the study area's 38 census block groups (concentrated in the southern portion of the study area) exceed DEC's thresholds used for defining minority and low-income populations, with total minority populations ranging from 54 percent to nearly 100 percent and low-income populations ranging from 25.63 percent to 65.80 percent. Therefore, as a whole, the entire study area would be considered a potential environmental justice area.

D. SUMMARY OF EXISTING ENVIRONMENTAL BURDENS ON POTENTIAL ENVIRONMENTAL JUSTICE COMMUNITIES

This section identifies existing sources of environmental issues not related to the Proposed Actions that may be a burden on the community. Data on air, surface water and groundwater emissions discharges were gathered to assess how the community may be burdened by the presence of local discharges and to determine if the local community is currently disproportionately burdened by these discharges. To make this determination, the U.S. Environmental Protection Agency's (EPA) pollution data contained in its Toxic Release Inventory (TRI) database was reviewed. TRI provides data on emissions or release for air, surface water, and groundwater discharges. The data provided in TRI generally focuses on major sources of emissions such as power plants, chemical plants, and major manufacturing complexes. There are two sites identified on the TRI within ½ mile of the project site. These are a water services company located at 608 West 132nd Street, and a bus depot located at 1381 Amsterdam Avenue. Although the facility status for these two sites remains open, they have not reported any uncontrolled releases since 1989 and 1997, respectively.

In addition to TRI, which focuses on major releases, data were gathered on total air discharge permits within a distance of ½ mile from the proposed facility. These permits cover the much broader range of all regulated air discharge activities, including major sources referenced above, but also minor sources such as dry cleaners, gas stations, and auto body shops. These data for the ½-mile study area were compiled by Toxics Targeting. Twenty-six sites within a ½-mile radius were listed on the database of New York State Air Discharges. The uses listed within the ½-mile study area are uses found in other residential neighborhoods within New York City. The majority of these facilities are listed as being in compliance with federal and state regulations, which are enforced by DEC and the New York City Department of Environmental Protection (DEP) in the City.

Gas stations and the Metropolitan Transportation Authority (MTA) Manhattanville Bus Depot are uses found within the study area that store large of quantities of gasoline and diesel fuel. A number of formerly or perhaps presently leaking petroleum storage tanks from various sources such as apartment buildings, office buildings, Consolidated Edison facilities, and New York City Transit (NYCT) facilities are also present in the study area. A number of these facilities are also considered generators of minor quantities of hazardous waste.

Overall, there is not a disproportionate concentration of sites with significant air, surface water and groundwater emissions discharges in the vicinity of the project site.

E. SUMMARY OF POTENTIAL SIGNIFICANT ADVERSE IMPACTS RESULTING FROM THE PROPOSED PROJECT AND PROPOSED MITIGATION

The Final Environmental Impact Statement (FEIS) has concluded that the Proposed Actions would result in significant adverse impacts in several analysis areas. The analysis areas where practicable and feasible mitigation measures may not fully mitigate significant adverse impacts are described below.

SOCIOECONOMIC CONDITIONS

As described in Chapter 4, "Socioeconomic Conditions," the projected University demand in the socioeconomic reasonable worst-case development scenario (for an estimated 839 non-University housing units in the primary study area), combined with potential demand generated by a non-University population due to the increased livability and overall residential appeal of the neighborhood, could place upward pressure on market-rate rents, which could result in significant adverse indirect residential displacement impacts in the primary study area by 2030.

Columbia would establish a $20 million fund to develop or preserve affordable housing which would preserve and/or develop an estimated 1,110 units in CB9; provide 31 additional affordable housing units from incremental development at direct residential displacement relocation sites; enact a range of programs to reduce University-generated off-site housing demand within the primary study area; and fund anti-eviction/anti-harassment legal services for Manhattanville residents. These measures would partially mitigate the significant adverse indirect residential displacement impact.

With these mitigation measures in place, there would be some remaining off-site housing demand from the University-generated population, and there would be demand generated by the non-University population due to the increased livability and overall residential appeal of the neighborhood. While indirect displacement could still occur with the Proposed Actions, with mitigation measures described above, the amount of displacement would likely be less.

OPEN SPACE

As discussed in Chapter 6, "Open Space," the Proposed Actions would result in a direct adverse shadow impact on the I.S. 195 Playground during the March and December analysis periods in 2030. Columbia has committed to fund enhancements at the I.S. 195 Playground and will work with the Department of Education (DOE) and the New York City School Construction Authority (SCA) to determine the details of the process for implementing the funding and executing the enhancements. The funding for enhancements would only partially mitigate the significant adverse shadow impacts on this open space.

An alternative to reduce or eliminate the shadow impact on the I.S. 195 Playground was also considered in Chapter 24, "Alternatives," in which University housing is placed on Sites 17 and 11, which would greatly reduce the height of buildings on those sites and proportionally reduce shadows. This alternative use and height scenario would substantially reduce the extent and duration of incremental shadow during the March/September analysis period, particularly during the late morning and early afternoon.

After reviewing each of the potential options for reducing or eliminating the impact, this FEIS concludes that the two realistic options to address the shadow impacts on the I.S. 195 Playground

are either to maintain the project and building heights as proposed, allowing the impact to occur, but applying the funding for enhancements as partial mitigation to the playground, or to seek a modification to the Proposed Actions to change the uses and related building heights and configuration and thus the building sizes on Sites 17 and 11.

The Proposed Actions could also result in indirect significant adverse impacts on passive and active open spaces in the non-residential study area in 2015 and 2030. Columbia has committed to several measures to address the significant adverse indirect open space impacts. Columbia proposes to acquire and create publicly accessible open space on Block 1996, Lot 1, the location of development Site 5 of the Illustrative Plan. Columbia would convey the site to the City and would be responsible for up to $30,000 per year for 25 years to be used for site maintenance. Columbia has agreed to contribute $500,000 per year, increasing at 3 percent annually, for the West Harlem Waterfront park for a period of 25 years. These measures would partially mitigate the indirect significant adverse impacts on open space.

HISTORIC RESOURCES

As described in Chapter 8, "Historic Resources," demolition of the former Sheffield Farms Stable at 3229 Broadway in the Academic Mixed-Use Area constitutes a significant adverse impact on this historic resource.

Measures that would partially mitigate this impact include Historic American Buildings Survey (HABS) Level I documentation of the former Sheffield Farms Stable (to be submitted to OPRHP, the New York Historical Society, and the Museum of the City of New York); and development and installation of a permanent interpretive exhibit or exhibits in or near the Project Area to document the history of the former Sheffield Farms Stable and to encompass the larger history of the Manhattanville neighborhood. However, despite the measures described here and further outlined in Chapter 23, this impact would not be completely eliminated. Therefore, it would constitute an unavoidable significant adverse impact on this historic resource as a result of the Proposed Actions.

PARKING

As discussed in Chapter 17, "Traffic and Parking," although adequate parking supply would be provided for the Columbia University demand projected for the Proposed Actions, significant adverse parking impacts attributable to the displacement of existing parking facilities within the Project Area would result. To address the shortfall, Columbia University, working with the New York City Department of Environmental Protection (DEP), has developed a plan to license, under a revocable license to be agreed upon by the parties, portions of the DEP property between West 135th and West 145th Streets beneath the Henry Hudson Parkway for use as a public parking facility. Implementation of this parking mitigation would fully mitigate the projected significant adverse parking impact while not resulting in the potential for significant adverse traffic impacts.

Absent the implementation of the above parking plan, Columbia University is prepared to add up to 72 parking spaces through an improvement of operational efficiency and parking configuration at its 560 Riverside Drive parking garage, thereby providing additional supply at area public parking facilities. This measure would partially mitigate the projected significant adverse parking impact in 2015.

As with 2015, the proposed public parking facility under the Henry Hudson Parkway would fully mitigate the projected significant adverse parking impacts identified for 2030. As discussed

above, absent the implementation of the above parking plan, Columbia University is prepared to reconfigure the 560 Riverside Drive Columbia University parking garage to add up to 72 parking spaces. This measure would partially mitigate the projected significant adverse parking impact in 2030 if the above parking facility is not developed.

NOISE

The Proposed Actions would have a significant noise impact at Noise Receptor 10, located at West 125th Street between Twelfth Avenue and St. Clair Place. This impact would result from a combination of project-generated traffic and the effects of adding a traffic light midblock on West 125th Street between Twelfth Avenue and Broadway to facilitate pedestrian crossings at this location. There are no effective mitigation measures that could be implemented to eliminate the noise impact predicted at this location. The impact at this location would affect pedestrians and would be considered an unmitigated significant adverse impact. Buildings adjacent to the proposed site are either existing buildings owned by Columbia University (e.g., 560 Riverside Drive) or new buildings that would be constructed by Columbia University as part of the Proposed Actions (e.g., Sites 4 and 5). These existing buildings already have double-glazed windows, and the new buildings would be designed to have double-glazed windows and central air conditioning (i.e., alternative ventilation), and, consequently, noise levels within these buildings would satisfy City Environmental Quality Review (CEQR) interior noise level requirements.

CONSTRUCTION

NOISE

As described in Chapter 21, significant noise impacts during construction would be expected to occur at a number of receptor sites at residential locations within the Project Area, specifically, Riverside Park Community (3333 Broadway), two buildings at Manhattanville Houses (95 Old Broadway and 1430 Amsterdam Avenue), and 560 Riverside Drive. Although these residences have double-glazed windows, which would provide significant sound attenuation during winter months when the windows are closed, the buildings would provide only limited attenuation during warmer months when the windows are open for ventilation. Additionally, while some of the buildings with air conditioning would also experience limited noise attenuation, residents in buildings without air conditioning would be significantly impacted by noise during construction. Columbia University would make available air conditioning units at no cost to those residents of 3333 Broadway and 95 Old Broadway and 1430 Amsterdam Avenue who would be affected by the significant adverse impact (see Chapter 23 for details). This would partially mitigate the temporary noise impacts due to construction activities.

CONCLUSIONS ON ENVIRONMENTAL JUSTICE IMPACTS

Based on the Policy and the methodology described above, the entire study area has been determined to be a potential environmental justice area. As discussed above and detailed more fully in Chapter 23, the Proposed Actions would mitigate significant adverse impacts to the maximum extent practicable. The Proposed Project would be expected to have significant adverse impacts that could not be fully mitigated in the following areas: socioeconomic conditions, open space, historic resources, parking (if the proposed public parking facility is not developed) noise, and construction noise.

While there would be a significant adverse noise impact at Receptor Site 10, the impact at this location would not impact any sensitive land uses, other than buildings owned by or proposed to be built by Columbia University.

In addition to the consideration of the above-mentioned project-related impacts, these conclusions include consideration of other existing pollutant sources located in the area (as described above under Section D). An analysis of existing environmental burdens in the study area determined that there is not a disproportionate concentration of sites with significant air emissions within the study area. Therefore, relative to the Proposed Actions' overall effects, the Proposed Actions are not expected to result in any disproportionate significant adverse impacts on minority and low-income populations.

F. PUBLIC PARTICIPATION

In addition to the extensive public participation process being undertaken as part of the Proposed Actions' environmental review process, public participation will be sought throughout the DEC permit review process, in accordance with the DEC Policy. An extensive public outreach program to the affected communities will be implemented, including minority and low-income populations in the study area, providing these groups with ample opportunity to have any of their concerns addressed (see "Public Participation," below). A Public Participation Plan will be developed and submitted to DEC in conjunction with the required permit applications. The key elements of the plan will include the following tasks:

- Identify stakeholders to the Proposed Actions;
- Distribute and post written information on the Proposed Actions and permit review process;
- Hold a public information meeting(s) to keep the public informed about the Proposed Actions and the permit review status;
- Establish easily accessible document repositories in or near the potential environmental justice area;
- Provide a report(s) that summarizes all progress to-date in implementing the plan, all substantive concerns raised to-date, all resolved and outstanding issues, the components of the plan yet to be implemented, and an expected timeline for completion of the plan; and
- Upon completion of the plan, submit written certification that the applicant has complied with the plan and submit a final report detailing the activities that occurred pursuant to the plan.

With implementation of the Public Participation Plan, the Proposed Project will be consistent with the public participation requirements of the Policy. ✷