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ENVIRONMENTAL REVIEW DIV

Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development Environmental Impact Statement Final Scope of Work

A. PREFACE

Columbia University is proposing a comprehensive plan to accommodate a variety of academic-related uses and public improvements in the Manhattanville section of West Harlem The proposed plan is intended by Columbia to facilitate the revitalization of Manhattanville primarily west of Broadway and allow Columbia to build new academic facilities over a 25-year period Implementation of Columbia's proposal would entail a rezoning of the area, as well as adoption of a General Project Plan (GPP) and subsequent discretionary exercise of eminent domain authority by the New York State Urban Development Corporation, doing business as the Empire State Development Corporation (ESDC), to acquire property in connection with construction beneath the streets, and development above-grade on properties owned or controlled by Columbia, publicly-owned sites, and, possibly, other sites in private ownership Adoption of the plan would require review by the local Community Board and the Manhattan Borough President, and approval by the New York City Planning Commission (CPC), the City Council, and ESDC The proposal also requires review and the preparation of an Environmental Impact Statement (EIS) under the New York State Environmental Quality Review Act (SEQRA) and City Environmental Quality Review (CEQR)

The preparation of this EIS Final Scope of Work (the "Final Scope"), based on the public comments on the Draft Scope of Work, will ensure that the full environmental impacts of Columbia's proposal are identified and studied consistently with environmental law and regulations Under those laws, public review of the Columbia proposal will not begin until CPC, which is the "lead agency," has determined that the environmental issues have been adequately studied in the form of a Draft EIS (DEIS) in order to permit meaningful review by the public and decision-makers

B. PROJECT OVERVIEW

A DEIS will be prepared pursuant to CEQR by CPC as the lead agency to assess Columbia University's proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development project (the "Proposed Actions"/"Proposed Project") Columbia University proposes the rezoning of an approximately 35-acre area (the "Project Area") of Manhattanville in West Harlem in Manhattan (see Figure 1) The rezoning would amend the zoning map in the Project Area and create the Special Manhattanville Mixed-Use Zoning District (a draft of the proposed zoning text is attached as Appendix A), allowing Columbia to develop an Academic Mixed-Use plan (the "Academic Mixed-Use Development") on approximately 17 acres (the "Academic Mixed-Use Area") within the 35-acre Project Area to meet its needs for long-term growth and modernization The Academic Mixed-Use Development, as proposed, would total approximately 6 8 million gross square feet (gsf) above and below grade Such development would consist of community facility uses serving the University, as well as street-level retail and other active ground-floor uses The remaining 18 acres within the Project Area would consist of 9 acres located primarily between Twelfth Avenue and Marginal Street and east of Broadway

(which is estimated to result in another 329,500 gsf of commercial and residential development by private parties other than Columbia), and 9 acres between Marginal Street and the pierhead line, of which 2 acres comprise the area of the new West Harlem Waterfront park and 7 acres comprise City-owned land under water. This land under water cannot be developed, nor can it generate development rights transferable to other parcels. In all, the proposed rezoning would result in an estimated 7.1 million gsf of development.

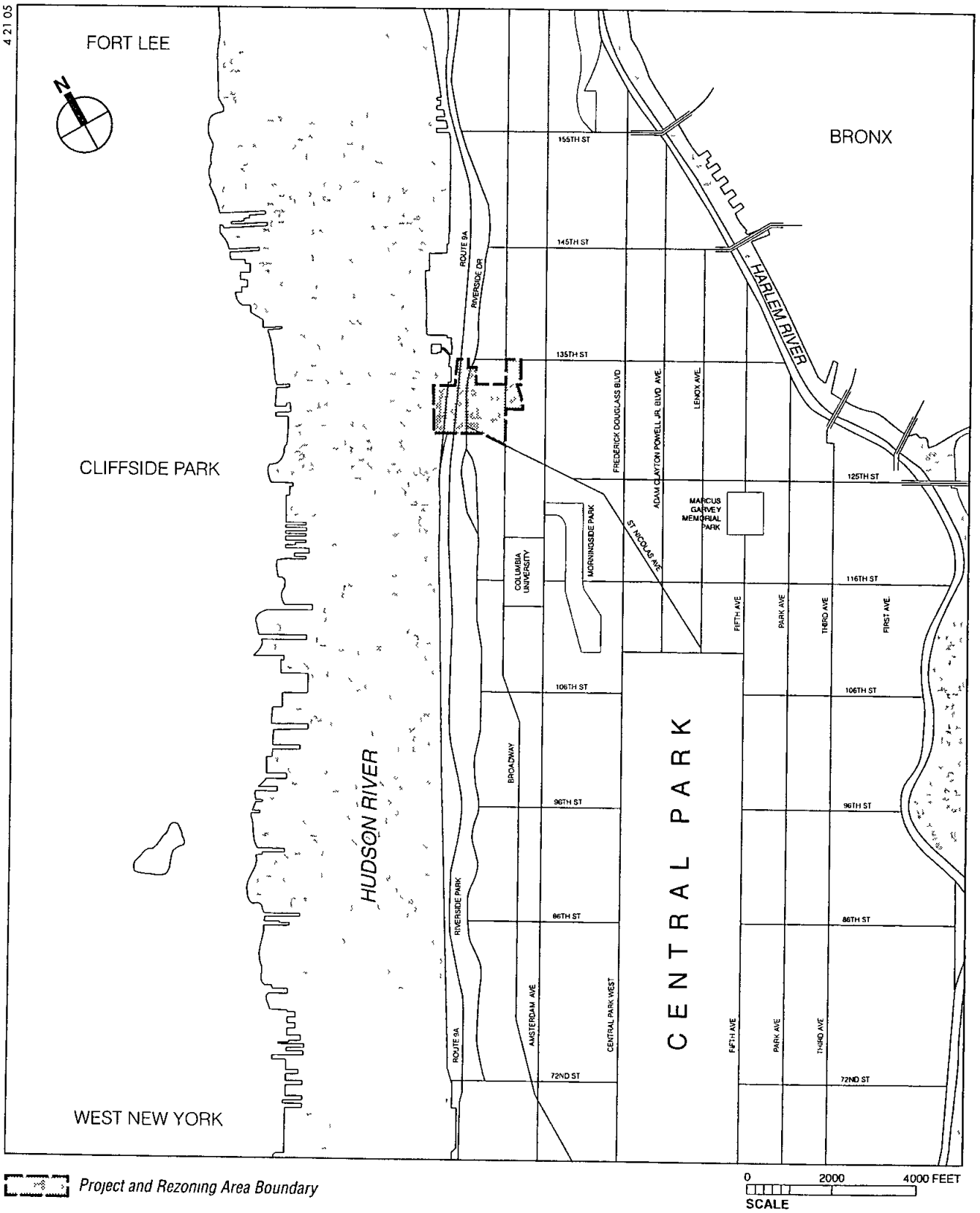
The Academic Mixed-Use Area constitutes Subdistrict A of the Project Area (see Figure 2). In addition to the rezoning, implementation of the Academic Mixed-Use Development plan contemplates the adoption of a GPP for the Academic Mixed-Use Area by ESDC and ESDC's subsequent decision to exercise its eminent domain authority to acquire property in connection with construction below streets (all of which would be mapped streets at grade that would be open to the public[1] and would not generate development rights under the New York City Zoning Resolution) and development above-grade on Columbia-owned or controlled, publicly owned, and possibly other sites in private ownership. To the extent that acquisition of non-Columbia owned above-ground parcels through eminent domain is necessary and such authority is exercised by ESDC, any such acquisition by ESDC would be in stages based on Columbia's reasonably anticipated needs for such property as the Academic Mixed-Use Area is developed. ESDC, if it makes such a determination, would also use eminent domain to acquire lands beneath West 130th, West 131st, and West 132nd Streets.

The GPP would also provide for the implementation of features of the Academic Mixed-Use Development plan that cannot be mandated through zoning regulations or other mechanisms. Such features would include preservation of a specified historic resource, uses in the below-grade space, minimum and maximum floor area thresholds for all land uses, and limitations on the allowable uses on each proposed development site. Deed restrictions and other mechanisms enforceable by New York City and/or ESDC would be used to administer and enforce the GPP.

Together, the proposed rezoning by New York City and actions proposed to be taken by ESDC constitute the "Proposed Actions." The analyses for the EIS consider the potential impacts of the Proposed Actions on the entire Project Area, which includes Subdistricts A, B, and C, and several parcels which constitute the "Other Areas," as shown in Figure 2.

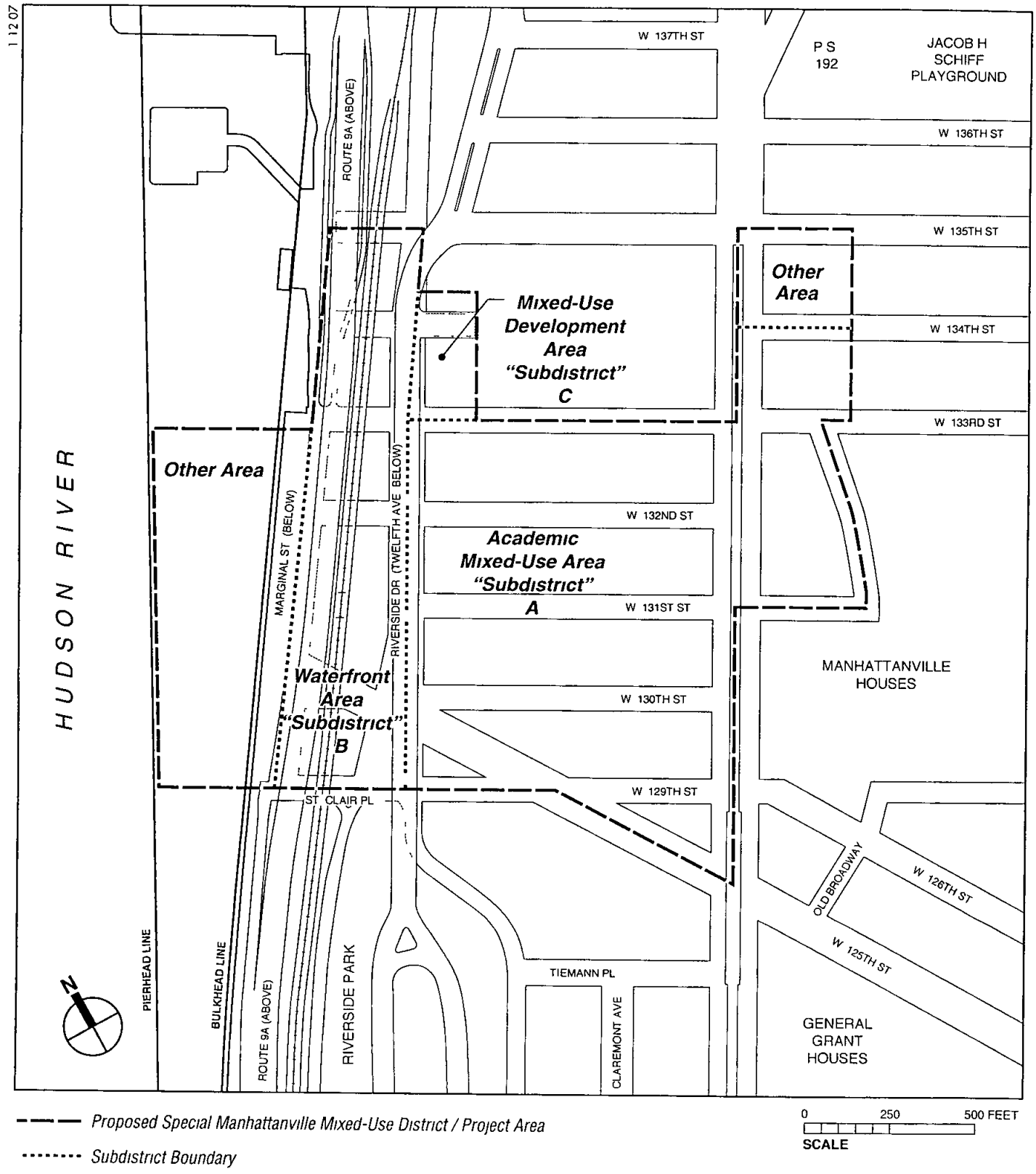
To assess impacts of the Proposed Actions fully, several scenarios of development within the Project Area have been formulated for EIS analysis. In Subdistrict A, an Illustrative Plan has been developed for the Academic Mixed-Use Development, which is generally the reasonable worst-case development scenario for the analysis of impacts in the EIS. Located roughly between Broadway and Twelfth Avenue, from West 125th Street to West 133rd Street, including several parcels located east of Broadway between West 131st and West 134th Streets (see Figure 2), the Academic Mixed-Use Development would be built over an extended period of time. The Academic Mixed-Use Development would ultimately contain approximately 6.8 million gsf, including academic buildings, academic research facilities, housing for graduate students, faculty, and other employees, administrative offices and support space, recreational facilities, parking, and central energy plants to provide heating and cooling to the Academic Mixed-Use buildings. Space in the ground floors of Columbia's buildings along West 125th Street, Broadway, and Twelfth Avenue would be leased for retail and other active uses, such as restaurants, galleries, and the like, which would be open to the public. Columbia's proposed

[1] Construction activities would involve temporary street and sidewalk closures.



MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 1
Project Location



Note The subdistrict boundaries correspond to the proposed zoning subdistricts (see Figure 6)

Figure 2

Proposed Special Manhattanville Mixed-Use District and Subdistricts

facilities in Manhattanville would principally accommodate graduate and post-graduate education, and academic research for graduate and post-graduate purposes No commercial research space is proposed within the Project Area[1] The Academic Mixed-Use Development would also include privately owned, publicly accessible open spaces

For Subdistricts B, C, and the Other Areas (shown in Figure 2), a reasonable worst-case development scenario has been formulated as the framework for the impact analyses The reasonable worst-case development scenario was developed based on a set of criteria including site size, current utilization and land use, and the opportunity for assemblages Both the Academic Mixed-Use Development, including the time frame for its full build-out, and the reasonable worst-case development scenario for Subdistricts B, C, and the Other Areas are further described in section D, "Project Description "

A public meeting to take public comments on the Draft Scope took place on November 15, 2005, at I S 195, located at 625 West 133rd Street, between Broadway and Twelfth Avenue Written comments on the Draft Scope were also accepted by the lead agency until the close of business on January 5, 2006

This is the Final Scope of Work for the DEIS for the proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development project This Final Scope considers public comments made on the Draft Scope (see Appendix B) and revises the methodologies of the studies, as appropriate, in response to comments made during scoping This Final Scope of Work also has been revised to reflect changes made to the Proposed Actions since the issuance of the Draft Scope of Work and includes a draft of the proposed Special Manhattanville Mixed-Use Zoning District text as Appendix A The Draft EIS will be prepared in accordance with the Final Scope The EIS for the Proposed Actions will be prepared based on the guidance of the *CEQR Technical Manual*, in accordance with both CEQR and SEQRA

C. PROJECT SUMMARY AND APPROVALS

PROJECT DESCRIPTION SUMMARY

Columbia University proposes to redevelop a portion of the Manhattanville section of West Harlem in order to facilitate the revitalization and improvement of the area and to allow Columbia to build new academic facilities Once a thriving manufacturing area, today Manhattanville is characterized by automotive uses, storage facilities, and a few non-automotive retail uses The area's manufacturing zoning has not stimulated the development of lively retail and office uses that are now characteristic of 125th Street east of Broadway The Proposed Actions are intended to provide zoning and land use changes needed to revitalize this section of Harlem and to permit Columbia University to develop a new Academic Mixed-Use Development for Columbia's long-term growth needs

Specifically, the Proposed Actions seek to establish a new Special Manhattanville Mixed-Use Zoning District in the Project Area to achieve two goals

[1] The provisions of 74-48 of the Zoning Resolution, which allow for commercial research space in C6 zoning districts by Special Permit, would not apply in the Project Area Commercial research is also not permitted within Subdistrict A by the proposed GPP

- To facilitate the revitalization, improvement, and redevelopment of a portion of the Manhattanville section of West Harlem by allowing greater density and a wider variety of land uses
- To allow Columbia to fulfill its role as a leading academic institution that makes a significant contribution to the economic, cultural, and intellectual vitality of New York City by enabling it to expand and modernize its facilities within a 17-acre Academic Mixed-Use area within the proposed 35-acre Special District

To allow for University facilities and other uses, the Proposed Actions would replace the existing M1, M2, and M3 zoning districts with a C6-1[1] district in Subdistricts A and B, and C6-2 in Subdistrict C of the Project Area The Other Area west of Marginal Street would be rezoned to M1-1, a district that permits park use as-of-right The Other Area east of Broadway would be rezoned to R8A and R8A with a C1-4 overlay, in order to promote housing in this location The draft proposed Special Manhattanville Mixed-Use Zoning District text is attached as Appendix A

The Proposed Actions would support the growth of Columbia University, one of New York City's largest private employers, and is intended by Columbia to enhance its ability to serve as an economic generator for northern Manhattan and the City of New York Columbia has stated that it faces a competitive disadvantage resulting from the limits of its existing space and facilities to support its academic and academic research mission and to attract the best faculty and students The University has concluded that is well behind other highly-ranked institutions in the amount of space for modern academic research (primarily for scientific research) and in space per student, and has virtually exhausted the expansion space available in the Morningside Heights area and in the vicinity of the Columbia University Medical Center The Proposed Actions are proposed by Columbia to maintain its position as a world-class educational research institution and would enable Columbia to build an estimated 6 8 million gsf of new space for academic research and other academic programs, housing for graduate students, faculty, and other employees, retail, and support Of the total approximately 6 8 million gsf of Academic Mixed-Use Development, approximately 2 0 million gsf would be located below grade in several levels including areas beneath streets (approximately 316,000 gsf), including two central energy plants, academic research support space, loading docks, and parking and storage facilities The approximately 4 8 million gsf of development above grade would be designed to provide view corridors to the Hudson River, active ground-floor uses along the wide streets, and privately owned, publicly accessible open space

The Proposed Actions would also entail the adoption of a GPP, and any subsequent ESDC decision to exercise its eminent domain authority would result in the acquisition of property in connection with construction beneath the streets, and development above-grade on Columbia-owned or controlled, publicly owned, and possibly other sites in private ownership to support the Academic Mixed-Use Development plan The GPP would allow for the implementation of features of the Academic Mixed-Use Development plan that cannot be mandated through zoning

[1] At the time the Draft Scope of Work was issued, C6-2 was proposed as the underlying zoning district for Subdistricts A, B, and C of the proposed Special District However, the provisions for Subdistricts A and B of the Special District, which have been refined since the Draft Scope, conform more closely to those of an underlying C6-1 district Therefore, the underlying zoning district has been changed to C6-1 for Subdistricts A and B The level of density for residential use in the C6-1 district corresponds to the R7 districts that are mapped to the north and east of the rezoning area

regulations or other mechanisms Such features would include preservation for adaptive reuse of the Warren Nash Service Station building, a large former manufacturing building that contributes to the historic character of Manhattanville, control of uses in below-grade spaces, minimum and maximum floor area thresholds for all land uses, and limitations on the permitted uses on each proposed development site

The urban design goals for the Academic Mixed-Use Area (Subdistrict A) are intended to promote strong visual and pedestrian connections linking the residential communities located east of Broadway and the Academic Mixed-Use Area to the waterfront park The goals also anticipate creation of an active streetscape along West 125th Street, Broadway, and Twelfth Avenue Retail and other active above-ground uses, including community uses, would animate the area's major thoroughfares, providing a visually open and accessible space at the base of the buildings All streets at grade and above in the Project Area would remain fully open and public as pedestrian and vehicular thoroughfares Through the use of setback regulations, sidewalks would be widened to make the area safer and more pedestrian-friendly

Subdistrict B consists of the west side of Twelfth Avenue, and Subdistrict C includes certain sites on the east side of Twelfth Avenue between West 133rd and West 135th Streets The Other Areas include the area of the West Harlem Waterfront park (currently under construction) and sites on the east side of Broadway between West 134th and West 135th Streets (see Figure 2) It is assumed that, with the exception of the waterfront park, these sites would be developed for retail, office, and/or residential uses, pursuant to a reasonable worst-case development scenario

APPROVALS

The Proposed Actions would entail a number of City and State approvals Several of these are discretionary actions requiring review under CEQR and SEQRA Others are ministerial and do not require environmental review, nonetheless, these are subject to review under each relevant agency's public mandate, as discussed below

DISCRETIONARY ACTIONS SUBJECT TO CEQR AND SEQRA[1]

New York City Actions

The Proposed Actions would entail the following land use actions to permit the range of proposed uses, as follows

- Zoning text amendment to establish a Special Manhattanville Mixed-Use Zoning District coterminous with the Project Area, and
- Changes to zoning sectional maps 5c and 6a (1) to map a Special Manhattanville Mixed-Use Zoning District coterminous with the Project Area and (2) change underlying zoning districts, which are subject to the City's Uniform Land Use Review Procedure (ULURP)

State-Required Actions

- Adoption of a GPP by ESDC and the making of related findings under the Urban Development Corporation Act, SEQRA, and the Eminent Domain Procedure Law (EDPL) to

[1] Although still unknown, it is possible that Columbia may apply for financing assistance from government agencies at some time in the future If that were to occur, these actions would be subject to CEQR and SEQRA, and such review would take place at the time each application was made

provide for ESDC's assistance to acquire property in connection with construction beneath the streets, property in connection with development above-grade on Columbia-owned or controlled, publicly owned, and possibly other sites in private ownership, and tie-back easements in streets and perhaps also under privately owned properties, during construction of below grade retaining walls These changes are discretionary in nature and would require public hearings and consideration by and approval of the Directors of ESDC

- ESDC override of the City map with regard to below-grade areas of West 130th Street, West 131st Street, and West 132nd Street within the Academic Mixed-Use Area of the Special Manhattanville Mixed-Use District
- New York State Department of Environmental Conservation (DEC) permit for construction and operation of the central energy plants
- DEC State Pollution Discharge Elimination System (SPDES) permit to use the existing abandoned outfall for stormwater discharges into the Hudson River Use of the abandoned outfall may also require a Tidal Wetlands permit and Protection of Waters permit from the DEC as well as authorization from the U S Army Corps of Engineers (USACE)
- Metropolitan Transportation Authority/New York City Transit (MTA/NYCT) approval of the modification of the MTA Manhattanville Bus Depot and any temporary relocation of the bus depot during construction (see further discussion on page 19), and relocation of the MTA 131st Street Shop

CITY AND STATE APPROVALS NOT SUBJECT TO CEQR OR SEQRA

- Public Authorities Control Board approval of ESDC actions
- New York City Department of Environmental Protection (DEP) approval for an Amended Drainage Plan, a Private Drainage Proposal, and construction and operation of the central energy plants
- New York City Department of Transportation (NYCDOT) approval for the proposed transportation improvements
- NYCDOT permits/approvals to construct within and rebuild West 130th, West 131st, and West 132nd Streets above the Academic Mixed-Use Development below-grade support facility
- NYCDOT, Division of Franchises, Concessions, and Consents possible approval for revocable consent
- The Proposed Actions are within the boundaries of the coastal zone and will require a determination of consistency with New York City's Local Waterfront Revitalization Program from CPC

D. PROJECT DESCRIPTION

BACKGROUND

The Proposed Actions are intended by Columbia to recognize the need for redevelopment in the Manhattanville section of West Harlem, while also acknowledging the need for Columbia University to accommodate its long-term growth and develop modern facilities to support its

educational and research missions A short history below provides a background for understanding the current land use and economic conditions in Manhattanville and how these might be affected through the implementation of the Proposed Actions

MANHATTANVILLE

Background

Manhattanville was one of the first areas of Manhattan to be settled by the Dutch during the 17th century Manhattanville's gently sloped valley allowed easy entry from the Hudson River between the island's shoreline bluffs, which encouraged settlement and led to the establishment of an incorporated village in 1806 centered around present day West 125th Street The village was organized around a street grid that followed the natural topography of the area, including Manhattan Street (now 125th Street) and Bloomingdale Road (now Old Broadway), which was based on a former Native American trail extending north–south on the island The village developed with a commercial waterfront, supported by stables, warehouses, icehouses, and factories centered on Manhattan Street

The village of Manhattanville began to be absorbed into the borough of Manhattan toward the middle of the 19th century as condemnation and street improvements, based on the rectilinear grid proposed in 1811 by the New York State Commissioner's Plan, reached as far north as Manhattanville in 1836 In the early to mid-19th century, transportation improvements—including a rail station for the Hudson River and New York Central Railroad, and a ferry terminal providing access to New Jersey, both located at West 130th Street—spurred industrial growth Dairies and meatpacking businesses, attracted to easy access to rail and river transportation for their perishable products, moved into the area at the turn of the 20th century, including Sheffield Farms (now Columbia University's Prentis Hall), which was established on West 125th Street The waterfront also included a pier supporting recreational activities for the community, including immigrants of European descent who had settled around Manhattan Street

The construction of the IRT subway system, including the Broadway viaduct from West 123rd Street to West 133rd Street over the Manhattan Valley in the first decade of the 20th century, effectively linked Manhattanville to the rest of the island and generated a housing boom that transformed the village into the urban area it is today Commercial uses continued to move northward to Manhattanville along Broadway, including automobile showrooms, service centers, and other automobile-related activities Excellent transportation access made Manhattanville a logical choice for the location of automobile service facilities The prominent six-story Studebaker Building on West 131st Street west of Broadway was constructed in 1923, and the Warren Nash Service Station building was built in 1927 The construction of the George Washington Bridge (1927) and Henry Hudson Parkway (1934) strengthened the automobile service industries located in this area However, the stock market crash of 1929, followed by the Great Depression, signaled the end of strong residential and commercial growth in Manhattanville Although the outbreak of World War II curtailed this industry, automotive service has remained in the area During the war, African-Americans migrated from the South seeking industrial jobs and settled in the area

Urban renewal efforts in the 1950s and 1960s resulted in the development of large-scale residential projects, including the Manhattanville Houses During this time, ferry service ended, the recreational pier closed, and the waterfront piers and docks vanished Trucking largely superseded water and rail transportation, so that Manhattanville's location in a valley with access

to the waterfront no longer was particularly advantageous In 1991, the MTA Manhattanville Bus Depot, on the western end of the block bounded by Broadway, Twelfth Avenue, and West 132nd and West 133rd Streets, was opened The bus depot was built on the site of the former Manhattan and Bronx Surface Transit Operating Authority Depot, which was built in 1918 The area's prospect, lying well below the elevation of Broadway, flanked by steep bluffs to the north and south, and bracketed by four viaducts—three on the west (the Amtrak rail line, Henry Hudson Parkway, and Riverside Drive) and one on the east (New York City Transit [formerly IRT] No 1 train)—makes it geographically distinct from Central Harlem

Needs and Opportunities

Early development in the Project Area with industry and shipping uses created relatively low-density development patterns The Project Area is zoned predominately for low- density manufacturing uses with maximum floor area ratios (FARs) of between 1 0 and 2 0 A City-owned parking lot at the water's edge between St Clair Place (West 129th Street) and West 133rd Street has constituted the Manhattanville waterfront for several decades (this portion of the waterfront is now under construction as the West Harlem Waterfront park), there are no longer any maritime transportation or industrial uses on the waterfront in the Project Area The Riverside Drive viaduct, which runs above Twelfth Avenue, connects the discontinuous portions of Riverside Park to the north and south of the Project Area Cyclists and pedestrians traveling along the Manhattan Waterfront Greenway, a 32-mile route that circumnavigates the island, are detoured to Twelfth Avenue between West 125th and West 135th Streets

Current zoning is not conducive to redevelopment The north side of West 125th Street is zoned for low-density manufacturing that allows commercial and only a limited range of community facility uses, thus preventing West 125th Street from functioning as an important commercial corridor west of Broadway or a strong pedestrian link to the waterfront The two blocks north of West 125th Street and east of Twelfth Avenue are zoned M1-2 for manufacturing uses and are home to gas stations, storage facilities, and other automotive uses, with a few non-automotive retail uses The Twelfth Avenue corridor from approximately St Clair Place (West 129th Street) to West 135th Street is zoned M2-3, M3-1, and M1-2 for manufacturing uses Meat wholesaling establishments and other manufacturing and warehousing uses remain in this area, although the number of these establishments has been consistently decreasing over the years There are also a limited number of commercial uses along the Twelfth Avenue corridor, including Fairway Market and Dinosaur Bar-B-Que However, most retail uses that are larger than 10,000 sf are not allowed in M2-3 districts The remainder of the area is zoned M1-2, and there are several two-story industrial buildings that cannot expand because the current zoning limits the FAR to 2 0 Institutional uses, such as university space or museums, are not generally permitted The use restrictions and FAR limitations therefore hinder both potential private and institutional development

In 2002, the New York City Economic Development Corporation (EDC) released a study of the Manhattanville area of West Harlem called the West Harlem Master Plan The major objective of the Master Plan was to propose a cohesive plan for the economic development of West Harlem that enhances the character of the neighborhood and fulfills the vision of the community To achieve these goals, the Master Plan proposed three components

- The first component proposes improvements to the City-owned parking lot on Marginal Street between St Clair Place and West 133rd Street to transform the area into a new West Harlem Waterfront park This EDC project, which is currently under way, is projected to be completed in 2008 The Master Plan recommends the development of an attractive

waterfront amenity, links to the Manhattan Waterfront Greenway, and construction of two new piers, including an excursion pier, to allow docking for recreational excursions and ferry boats

- The second component focuses on various transportation improvements to encourage growth in the area The plan recommends the development of an intermodal transfer center along the waterfront between West 125th Street and St Clair Place that could provide access for ferry boats from the excursion pier, buses from West 125th Street, bicyclists from the surrounding paths, and the potential reestablishment of a Metro-North stop on the Amtrak line at West 125th Street This component also includes the implementation of streetscape improvements along West 125th Street to encourage access to the waterfront, these improvements are currently in the design phase
- The third component proposes to build on the waterfront transportation improvements (components 1 and 2) to encourage economic development of the upland It identifies the need to change the restrictive manufacturing zoning to allow a greater variety of uses and greater building bulk in the area near Broadway, while also recommending the reuse of existing buildings In addition, the plan recommends partnering development with the neighboring institutions of Columbia University and City College, using the tax incentives and financial benefits of the Upper Manhattan Empowerment Zone, and expanding and enhancing community partnerships to attain economic development in West Harlem

COLUMBIA UNIVERSITY

Background

Columbia University in the City of New York, the oldest institution of higher learning in New York State, was founded first as King's College in 1754 and changed its name to Columbia College after the American Revolution The establishment of a School of Law, the first awarding of a Ph D , and the affiliations with Barnard College and Teachers College, among other milestones, established Columbia as a modern university by the late 19th century With the development of graduate programs, Columbia College was renamed Columbia University in the City of New York in 1896[1] and moved its campus to Morningside Heights in 1897 During the 20th century, Columbia continued to grow and prosper, known for both its liberal arts and science programs In 1928, the Columbia-Presbyterian Medical Center in Washington Heights opened as a permanent alliance between Columbia's College of Physicians and Surgeons and The Presbyterian Hospital and is now known as the Columbia University Medical Center In the 1960s, the University undertook an extensive building program on all of its campuses The University continued to expand and modernize its facilities in the 1980s and 1990s, including renovating existing buildings, developing its Audubon Biotechnology and Research Park, and constructing the new Center for Engineering and Physical Science Research, new facilities for its Schools of Law and Business, and a new student activities center Columbia also recently completed a K-8 school within a new building at Broadway and 110th Street, and opened its new School of Social Work at Amsterdam Avenue and West 122nd Street in August 2004 Columbia University currently consists of three undergraduate schools, 13 graduate and professional schools, and a school of continuing education, and is recognized as one of the nation's leading institutions of higher education

[1] Columbia's official name change took place in 1912

In addition to the intellectual and artistic contributions of the University and its graduates, Columbia University is the seventh largest nongovernmental employer in New York City with over 14,000 employees, more than two-thirds of whom are New York City residents Columbia spends approximately $2 4 billion annually (including in excess of $1 25 billion in payroll), approximately 70 percent of which is spent in the greater New York metropolitan area, and is therefore a significant contributor to the New York economy

Needs and Opportunities

Columbia University has determined that it currently faces a critical need for additional academic research and academic teaching facilities to support its academic and research mission, and maintain its status as one of the world's leading universities Currently, for example, Columbia is well behind other highly ranked institutions in the amount of space for advanced academic research, as well as the space per student in general

Columbia believes that the quality of its physical space is also an issue Because many of its buildings were constructed in the early 20th century, Columbia has determined that much of its existing space is inadequate for its current use, especially in science and academic research Although the University has invested heavily in the improvement of these facilities through renovations, it believes that the size, configuration, and age of the buildings limit adaptive reuse as a solution to space needs for many uses, and construction of new facilities has become critical

In accommodating long-term growth over the next several decades, the University wishes to avoid reliance on ad hoc acquisitions of property, as was done in the area surrounding the Morningside Heights campus, and to instead engage in the systematic, long-range planning and development of integrated facilities Columbia has determined that this is particularly necessary, because the trends in academia toward coordination among programs and interdisciplinary education require an integrated campus setting, and the amount of space that Columbia needs could not be accommodated through ad hoc acquisitions In addition, Columbia believes that ad hoc acquisitions would create continual friction with local communities over individual building initiatives Moreover, the outcome of ad hoc expansion would be a miscellaneous collection of University buildings scattered in several urban neighborhoods and lacking a cohesive identity There would be little or no connection among them, as there would be if the expansion took place in one area, creating a new "campus "

Columbia believes that such physical proximity in a campus setting is the best way to promote integration of disciplines and interaction among the faculty and students, and thus to create a learning community For example, the University's graduate schools and colleges share the Morningside Heights campus and use the same libraries, auditoriums, dining facilities, athletic center, and other facilities, students, faculty, and other employees congregate in the open areas of the campus, and to some extent they share curricula An interchange of ideas among various intellectual disciplines is greatly facilitated by having several schools in one place, and it is key to the accomplishments of the University's faculty, graduates, and students A campus setting also makes possible the planned provision of open space and other amenities, which benefit faculty, students, and neighborhood residents alike

Columbia believes that accommodating anticipated long-term growth in appropriate space is critical in order for it to maintain leadership in areas of graduate and post-graduate education and research Columbia anticipates that new laboratory and academic research space, modern academic facilities, and campus housing are needed to attract and retain students and faculty in an increasingly competitive academic environment Based on these anticipated needs and trends

in space requirements since 1994, Columbia estimates that it must expand at a rate equivalent to approximately 200,000 sf a year over the next approximately 25 years—a long-term goal of 5 to 6 million sf of program space

To understand the options available to the University, Columbia has evaluated how best to make use of its existing facilities in the nearby Morningside Heights and Washington Heights campuses in Manhattan, as well as its facilities in New York outside Manhattan (Lamont-Doherty in Palisades and Nevis Laboratories in Irvington) Columbia has only three sites remaining at the existing Columbia University campuses or on University-owned off-campus properties that could approximate the building sizes and layouts needed for academic research or major academic buildings These sites could accommodate a total of approximately 635,000 sf of new space, would not be of sufficient size to meet Columbia needs with respect to large academic research and academic buildings, and would be split up among different locations just south of the proposed Project Area, near the Columbia University Medical Center in Washington Heights, and adjacent to the Morningside Heights campus Seven other sites could only accommodate approximately 430,000 sf in total, and are all limited by various constraints in addition to their small size, such as having existing University uses on them

The University has also evaluated how best to make use of its facilities in New York outside Manhattan Nevis Laboratories in Irvington (Westchester County), and Lamont-Doherty Earth Observatory in Palisades (Rockland County) Development at either location would not provide proximity to Columbia's Morningside Heights and Medical Center campuses, and would not meet Columbia's strong commitment to remain a predominantly New York City institution In addition, neither outlying campus is physically suited for development of large academic research and academic buildings Nevis and Lamont-Doherty are currently used for specialized research facilities and offices (for physics and earth sciences, respectively) that do not require large buildings nor a critical mass of research scientists, and can thus be accommodated (albeit, inefficiently) in small buildings

Columbia also evaluated the possible use of vacant land at the southern end of the Riverside South development area Riverside South could provide about half of the needed floor area—up to 2 6 million zoning sf of development on 9 acres between West 59th and West 62nd Streets Aside from its limited size, which would not meet Columbia's articulated needs, this option, Columbia concluded, was less desirable due to the substantial distance from Riverside South to the Morningside Heights campus and the Medical Center

As a result of its evaluations, Columbia has determined that expansion in Manhattanville is the only reasonable solution to the University's critical need for new facilities, for the following principal reasons (1) adequate area to accommodate Columbia's long-term space needs, particularly the need for academic research and graduate teaching facilities, (2) enough land to create integrated University facilities, which would promote interaction among the students and faculties of several graduate schools and programs, as well as provide open space and other amenities as part of an open campus environment, (3) location and proximity to the Morningside Heights campus and Columbia University Medical Center, (4) the prospect of improving Columbia's existing connection to West Harlem by providing greater access to and through the new campus, and building new—and enhancing existing—partnerships with the community, and (5) the opportunity to transform an aging, former manufacturing area into a vibrant, mixed-use development Manhattanville lies approximately ½ mile north of the Morningside Heights campus and 1 75 miles south of the Medical Center All three locations are connected by subway and bus routes, with Manhattanville's central location offering a point of connection Columbia

believes that this proximity would allow the schools and departments to reap the benefits of interdisciplinary relationships and collaborations

The area is also close to City College, which is just a few blocks northeast of the Project Area, thus providing Columbia with an opportunity to enhance its relationship with this largest campus in the CUNY system Columbia currently collaborates with City College in a number of areas, together, they are part of a consortium of institutions that helped create and jointly share the use of the New York Center for Structural Biology on the campus of City College City College also participates in the consortium of outreach and education programs associated with the Columbia Nanoscale Science and Engineering Center, and collaborates with the Columbia Materials Research Science and Engineering Center

Columbia also intends to expand, as-of-right, its presence in Manhattanville by building a new entrance from West 125th Street to 560 Riverside Drive (a residential building) and renovating Prentis Hall, both on the south side of West 125th Street across from the Project Area, and by constructing a new academic building at the southwest corner of Broadway and West 125th Street Columbia is also renovating the Studebaker Building on West 131st Street in the Project Area and converting it for administrative uses for the University In addition, Columbia has agreed with the New York City Department of Education to locate a new science, math, and engineering public secondary school on its property, either within the Project Area, should the Proposed Actions not be approved, or at the southwest corner of Broadway and West 125th Street in a mixed-use building containing both the public school and Columbia academic space, should the Proposed Actions be approved The City would be responsible for construction of the school, which would have its own, separate public approval process

SPECIAL MANHATTANVILLE MIXED-USE DISTRICT

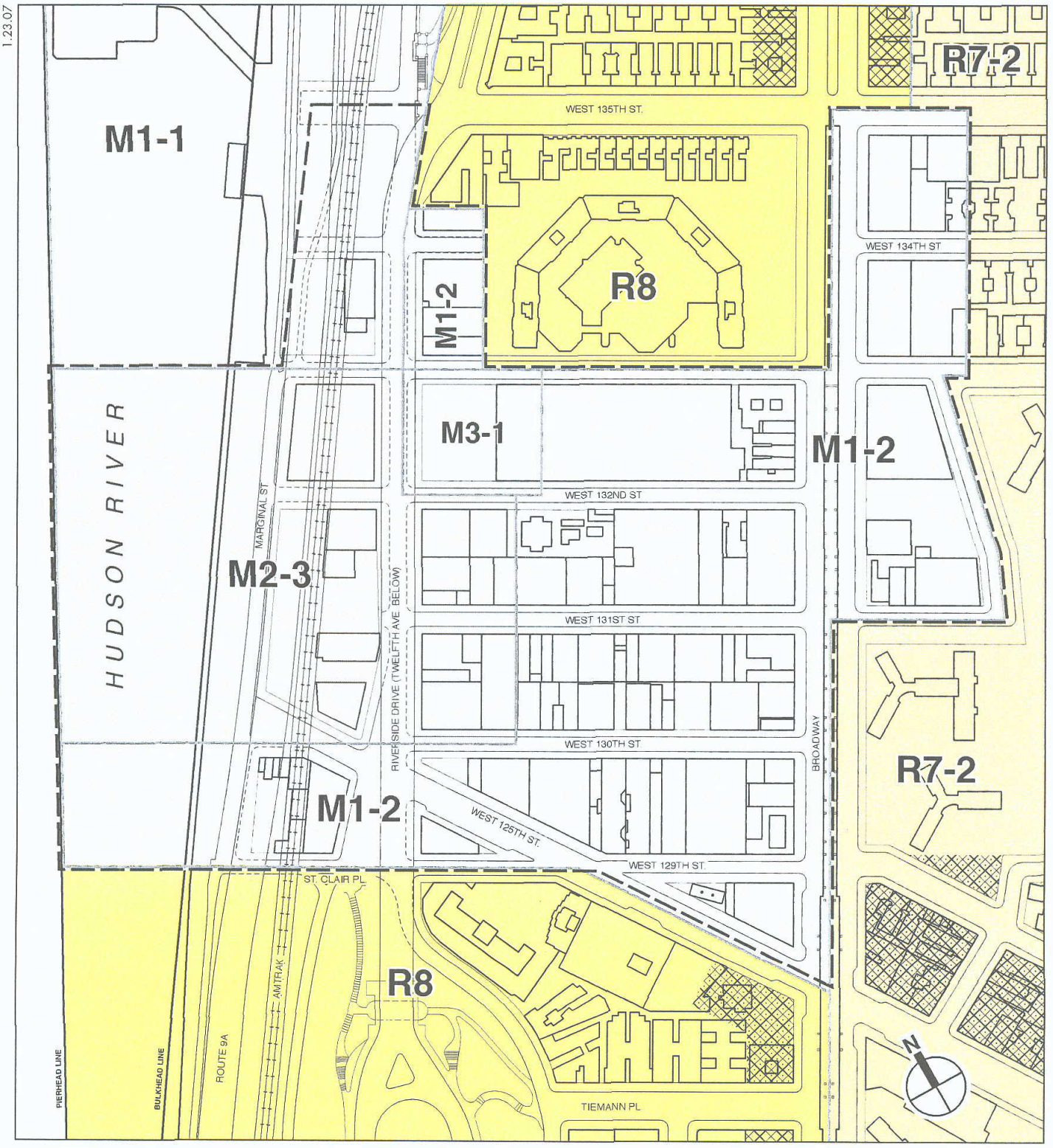
The boundaries of the proposed Special Manhattanville Mixed-Use Zoning District are coterminous with the Project Area The proposed rezoning would replace most of the current manufacturing districts in the Project Area and promote redevelopment adjacent to the waterfront consistent with several of the recommendations and planning objectives of the EDC's West Harlem Master Plan The rezoning would also allow Columbia University to develop the Academic Mixed-Use Development to meet its long-term needs for modernization and expansion of the institution's facilities The proposed rezoning includes (1) Subdistrict A, within which the Academic Mixed-Use Development would occur, and (2) adjoining Subdistricts B, C, and the two Other Areas, one east of Broadway and a second area along the waterfront west of Marginal Street, as discussed below The draft proposed Special Manhattanville Mixed-Use Zoning District text is attached as Appendix A

ACADEMIC MIXED-USE AREA (SUBDISTRICT A)

Zoning and GPP Requirements

Proposed Zoning Requirements

Subdistrict A constitutes approximately 17 acres, or 48 percent, of the Project Area In this subdistrict, the Special Manhattanville Mixed-Use Zoning District would change the existing low-density manufacturing zoning (see Figure 3)—light (M1-2), medium (M2-3), and heavy manufacturing (M3-1)—to a medium-density C6-1 district (see Figure 4) Subdistrict A would allow for a range of uses that would provide for the expansion of Columbia University, including academic space, academic research facilities containing laboratories, and housing for graduate

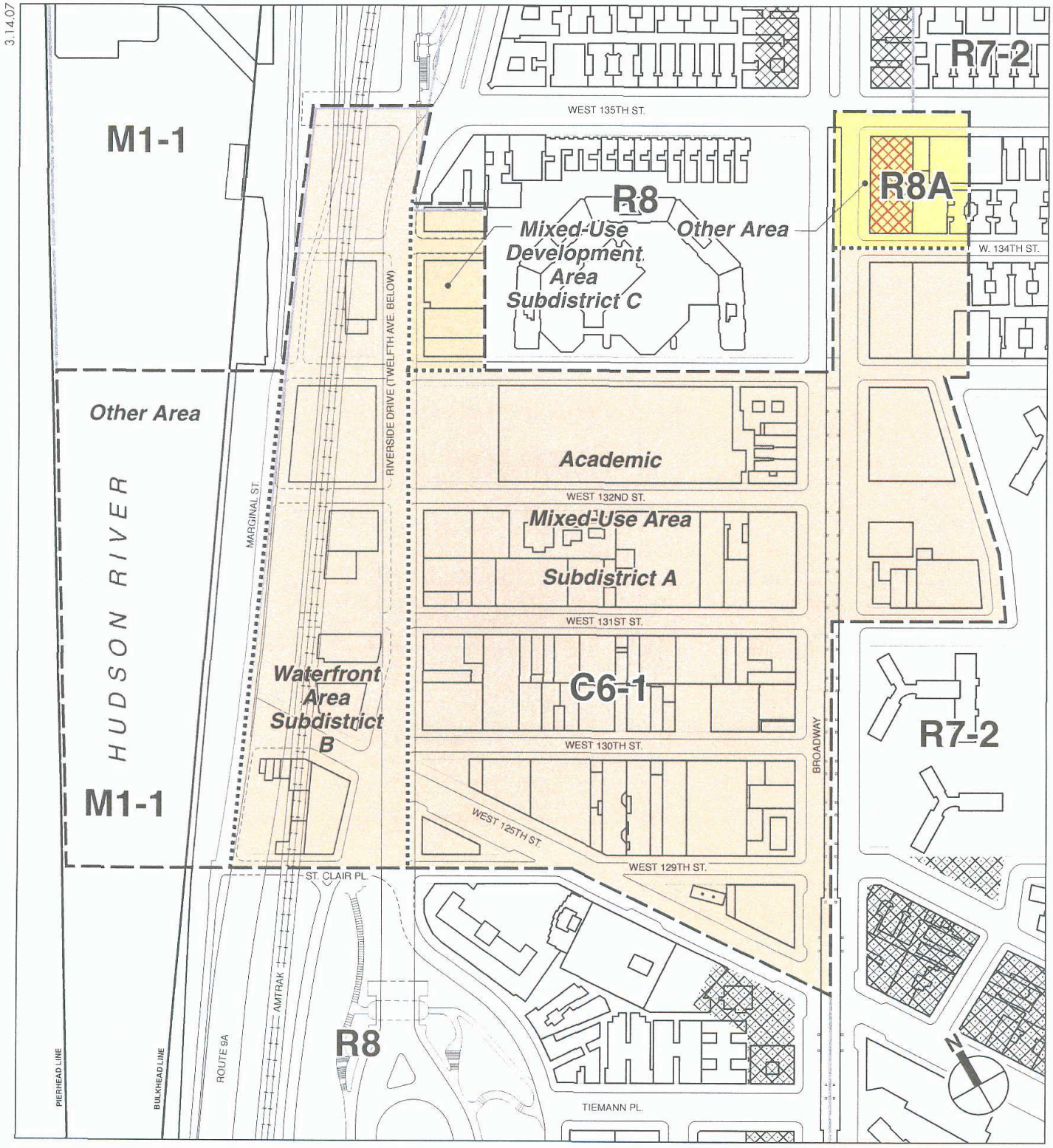


Existing Zoning

R8	General Residence District		M2-3	Manufacturing District
R7-2	General Residence District		M3-1	Manufacturing District
M1-1	Light Manufacturing District		C1-4	Commercial Overlay
M1-2	Light Manufacturing District		C2-4	Commercial Overlay

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 3
Existing Zoning



Project Area and Proposed Manhattanville Special Mixed-Use District Boundary

Subdistrict Boundary

C1-4 Commercial Overlay

C1-2 Commercial Overlay

Proposed Zoning Districts

R8A General Residence District

M1-1 Light Manufacturing District

C6-1 Commercial District

C6-2 Commercial Overlay

C1-4 Commercial Overlay

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 4
Proposed Zoning

students, faculty, and other employees The level of density for residential use corresponds to the R7 districts that are mapped to the north and east of the rezoning area The regulations for Subdistrict A would limit the FAR for community facilities to 6 (equal to the commercial FAR in C6-1 zones) instead of 6 5, thus ensuring that the overall density of Subdistrict A would be no more than 6 FAR Under the special use provisions of proposed Special District, commercial research would not be allowed The maximum floor area permitted for manufacturing uses would be 2 0 FAR These provisions are intended to maintain an appropriate scale and density

Enlargement or extensions of pre-existing non-conforming uses would be allowed under the provisions of the proposed Special Manhattanville Mixed-Use Zoning District subject to compliance with the manufacturing performance standards of the New York City Zoning Resolution The Special District would also continue to permit a range of manufacturing uses (except in the Other Area east of Broadway and Subdistrict C) to allow such uses in existing and new buildings in Subdistrict A prior to redevelopment by Columbia at the same 2 0 FAR density currently in effect

In addition, to allow flexibility for Columbia University to develop its facilities in response to evolving needs, the proposed Special Manhattanville Mixed-Use Zoning District text would allow for three types of floor area transfers within Subdistrict A, all would be subject to the maximum floor area permitted overall by zoning, as well as the site use and floor area limitations of the GPP, described below Those transfers to be made from the open spaces delineated in the proposed Special District would be "as-of-right" by notice and would require certification by the Chair of CPC that the open space will be built to the specifications in the zoning These bulk transfers are included in the Illustrative Plan, discussed below, it is anticipated that Columbia will apply for such certifications at the time of development All other transfers of floor area that would stay within the design "envelopes" set forth in the zoning for each site would be subject to both CPC Authorization and CEQR review If the transfer would create a building that did not conform to the design regulations in the zoning, a CPC Special Permit, subject to both ULURP and CEQR review, would be required

The Special Manhattanville Mixed-Use Zoning District would also have design controls and other requirements in Subdistrict A for on-site open areas to ensure the quality of, and public use and access to, privately owned, publicly accessible open space areas

Proposed General Project Plan

In addition to the regulations of the Special Manhattanville Mixed-Use Zoning District, Subdistrict A would also be subject to requirements in the GPP, which would regulate certain aspects of the plan that are not subject to City zoning These would control development of the proposed subsurface spaces and would provide additional controls for the Academic Mixed-Use Development plan that cannot be mandated through Special District regulations

To allow for flexibility in Columbia's future planning within an appropriate framework, the GPP would limit land uses on each development site to at most two permitted uses (not including street-level active ground-floor uses, which would be widely permitted) Under the GPP, one or two specified land uses would be permitted on each development site, as shown in Table 1 As noted above, commercial research is not included as a permitted use in the GPP and is not allowed under the zoning text

The Academic Mixed-Use Development would have an extensive below-grade component to provide contiguous support space The GPP would specify support uses permitted in the below-grade area, including, but not limited to, central energy plants to provide heating, ventilation, and air conditioning (HVAC) to all but one of the proposed buildings west of Broadway,

academic research support facilities, parking and loading facilities, storage space, and recreational facilities

Table 1
Permitted Uses by Development Site

Development Site	Illustrative Plan Use	Alternate Use
1	Academic	–
2	Academic research	–
3	Academic	–
4	Academic	University housing
5	Retail	–
6	Academic research	Recreation
6b	Academic research	Academic
7	University housing	Academic
8	Academic research	Academic
9	Recreation	Academic research
10	Academic	Academic research
11	Academic research	Academic
12	Academic research	Academic
13	Academic	University housing
14	University housing	Academic
15	Academic research	Academic
16	Academic	–
17	Academic research	University housing
Note	See Figure 6 for Development Site locations	

Under the GPP, Columbia would be required to retain and adapt for its use the former Warren Nash Service Station building at 3280 Broadway, at the corner of West 133rd Street This building has been determined to be a historic resource The requirements of the GPP would be administered and enforced by the City of New York and/or ESDC through deed restrictions on the land and other mechanisms

As shown in Table 2, the GPP would include maximum and minimum total floor areas for each proposed land use However, in no case would the total zoning floor area in Subdistrict A exceed the 6 0 FAR equivalent of 4 4 million square feet [1] The minimum floor area requirements represent Columbia's commitment to the basic elements of its proposal The requirements of the GPP would be administered and enforced through deed restrictions on the land and other mechanisms

Planning and Design Approach to the Academic Mixed-Use Development Plan

Columbia's planning and design of the Academic Mixed-Use Development seeks to realize the following major goals

- Use the streets through the Academic Mixed-Use Area to connect to the river and planned West Harlem Waterfront park and to areas east of the Project Area
- Create a lively, welcoming urban environment for graduate students, faculty, other employees, and the community
- Promote employment opportunities for local residents

[1] The zoning floor area of a building is the gross floor area above grade less space devoted to mechanical uses

Table 2
Subdistrict A: 2015 and 2030 Maximum and Minimum Proposed Academic Mixed-Use Development

Use	Maximum GSF[1]		Minimum GSF	
	2015	2030	2015	2030
Community Facility				
Academic research[2]	370,000	2,700,000	300,000	960,000
Academic	705,000	2,000,000	200,000	1,000 000
Housing for graduate students faculty and other employees	175,000	1,300 000	0	350 000
Recreation[3]	0	350,000	0	0
Commercial				
Active ground-floor uses	180,000	600 000	36,500	130 000
Retail[4]	90,000	300,000	18,250	65,000

Notes
Maximum academic uses would not occur with maximum housing for graduate students, faculty and other employees
1 In no case will the zoning floor area within the Academic Mixed-Use Area exceed 4 417 956 sf (6 0 FAR equivalent)
2 Does not include below-grade support.
3 Does not include below-grade swimming and diving center.
4. Included in active ground floor uses

To accomplish these goals, Columbia has incorporated the following objectives in the design approach

1) *Retain key aspects that recall Manhattanville's history*

The Academic Mixed-Use Development plan approach would retain the existing street grid and the IRT and Riverside Drive viaducts, and would preserve the Warren Nash Service Station building, a former automobile service station, which would be adapted for new use The Studebaker Building, within the Project Area on West 131st Street, would be adapted for administrative uses of the University in the future without (as well as with) the Proposed Actions

2) *Revitalize West 125th Street*

The design approach is intended to revitalize West 125th Street as the gateway to the Project Area and to the West Harlem Waterfront park, now under construction West 125th Street would be enlivened through the creation of ground-floor retail and other uses to create a lively streetscape similar to that of the street in Central Harlem Several features, such as a crossing light, clearly marked crosswalks, and landscaped open spaces fronting on the street, would make this street more pedestrian-friendly and draw people toward the waterfront

3) *Connect West Harlem to the waterfront*

The Academic Mixed-Use Area would remain open to the community without traditional campus walls or gates All streets would also remain open and public at grade Building on the streetscape improvements recommended by NYCDOT, which include the reconfiguration of the West 125th Street intersections with Twelfth Avenue and Broadway, the plan includes ground-floor setbacks, which would result in wider sidewalks on most side streets, and open areas and landscaping adjacent to sidewalks to enhance views to the waterfront and encourage pedestrians to walk through the Academic Mixed-Use Area to get to the waterfront

4) *Construct significant new privately owned, publicly accessible open spaces*

The development would include approximately 122,455 sf of privately owned, publicly accessible open space These would be located in two "squares" on the blocks between West 125th and West 131st Streets between Broadway and Twelfth Avenue, at the western tip of the triangular-shaped block formed by the intersection of Broadway, West 125th Street, and West 129th Street, in the 30-foot sidewalk widening of the Twelfth Avenue sidewalk between West 130th and West 133rd Streets, and in approximately 50-foot-wide midblock open areas, which would extend north–south from West 129th to West 133rd Streets and east–west between Broadway and Old Broadway (approximately 60 feet wide) on a line with West 132nd Street The north–south midblock open areas would create a network of landscaped open spaces connecting the focal point of the "bow-tie" intersection of West 129th and West 125th Streets, through to I S 195 on the north side of West 133rd Street

5) *Generate street vibrancy*

Visually open and accessible space is proposed at the base of the new buildings to make streets in the Academic Mixed-Use Development Area lively and welcoming to students and the community This space would constitute the ground floor of many of the new buildings and would contain community-oriented uses such as retail, galleries, performance spaces, and other space for community services Active ground-floor uses would be mandated along West 125th Street, Broadway, and Twelfth Avenue, and would be permitted elsewhere throughout the Project Area

6) *Minimize vehicular presence on the streets*

The Academic Mixed-Use Development would have a below-grade area, which would include parking and loading, to minimize vehicular presence on the streets and enhance the pedestrian environment at street level The below-grade area would also include central energy plants and virtually all the support services for the academic research buildings Locating all service uses below grade would facilitate the goal of creating visually open and accessible space along the base of buildings (see Figure 5)

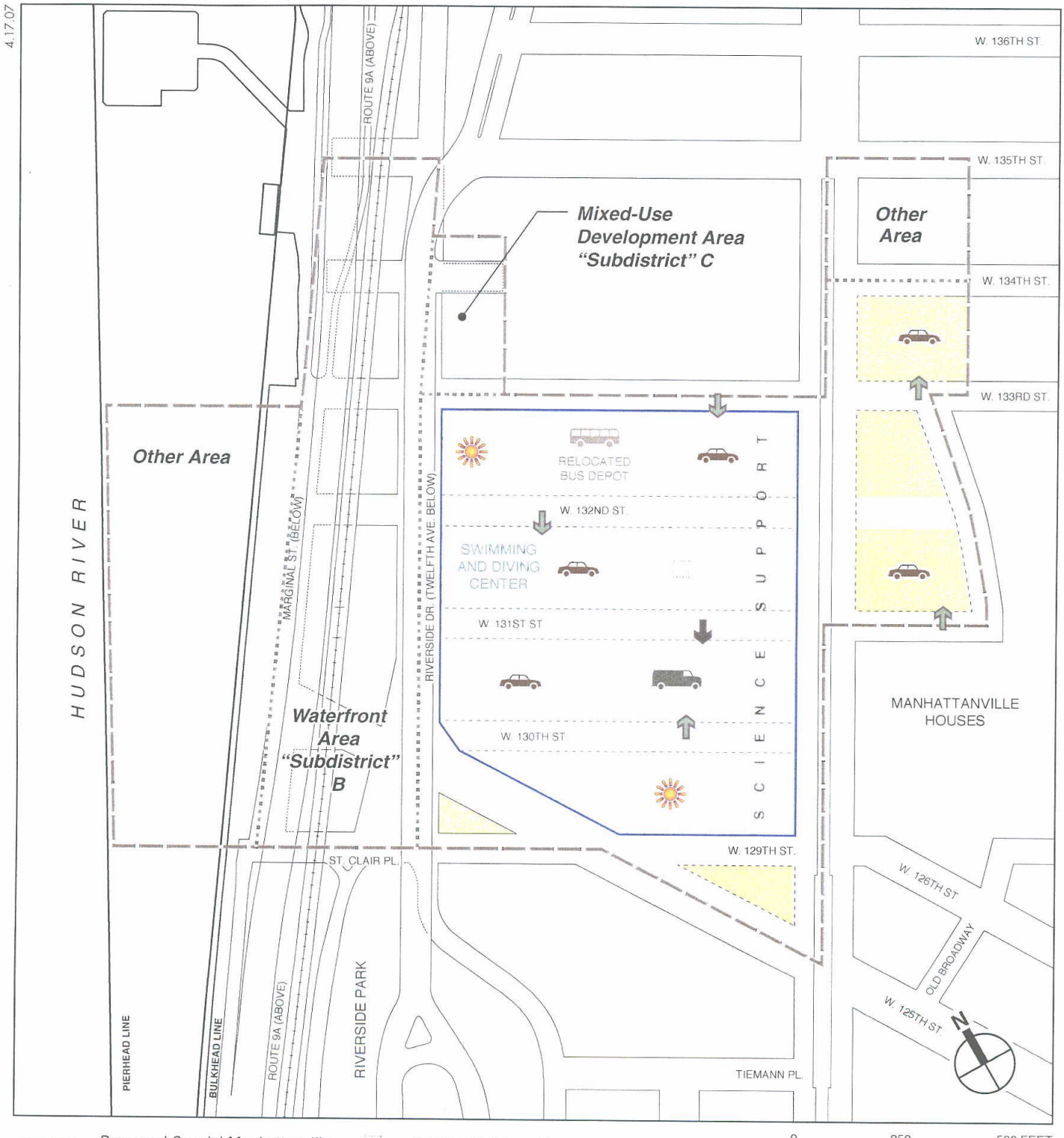
7) *Use massing to create a coordinated design*

Building height controls and streetwall requirements would be intended to ensure a design that relates to the topography and allows for a coordinated design of buildings of various uses The maximum building heights would reflect the topography of the existing valley by stepping up the slope in height northward along Broadway and Twelfth Avenue and stepping down toward the valley's southwest low point roughly at West 125th Street and Twelfth Avenue The academic research buildings that would be developed along Broadway require large floor plates and would be set back from the street along most of the cross streets The setbacks at street level would generate additional open areas that would accommodate wider sidewalks The setbacks would also allow light and air into the narrow side streets and expand and enhance views through the viaduct arches to the Hudson River

Description of the Proposed Academic Mixed-Use Development Plan

Above Grade

The Proposed Actions would enable Columbia to build an estimated 6 8 million gsf of new space in the Academic Mixed-Use Area For planning purposes, Columbia has established that academic research, academic (instruction), housing for graduate students, faculty, and other employees, and



Note: The subdistrict boundaries correspond to the proposed zoning subdistricts (see Figure 1-4)

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 5

Proposed Below-Grade Areas: Illustrative Plan for Subdistrict A

related support space would constitute the 6 8 million gsf, of which approximately 4 8 million gsf would be located above grade and 2 0 million gsf located below grade These uses are illustrated in Figure 6, which presents one of the specified uses on each site, taken together, these sites and uses constitute an Illustrative Plan for analysis in the EIS The Illustrative Plan reflects the maximum zoning square feet equivalent (6 0 FAR) for the Academic Mixed-Use Area and Columbia's current concept of its planned future development for the Academic Mixed-Use Area The proposed new buildings would range in height from 140 feet from 260 feet to the roofline (without mechanical equipment [see Figures 7 and 8])

As currently contemplated by Columbia, five new buildings (one academic research, three academic, and one for housing for graduate students, faculty, and other employees) would be developed by 2015 on the north side of West 125th Street and on the east side of Twelfth Avenue between West 130th and West 131st Streets By 2030, the remainder of the Academic Mixed-Use Area would be developed, for a total of 6 8 million gsf (see Table 3)

As shown in Figure 6, by 2015 the EIS Illustrative Plan assumes that Sites 1, 3, and 4 would be developed with academic buildings, Site 2 with academic research, and Site 7 with University housing This first phase would provide open space surrounding and across West 129th Street from the building on Site 3 The buildings would be set back from their property lines (except along Broadway) as a result of the widened sidewalk requirements in the proposed zoning There is a higher degree of specificity for the first phase of development, and Columbia anticipates that the academic research building on Site 2 would house the Jerome L Greene Science Center for Columbia's Mind, Brain and Behavior initiative, the academic building on Site 4 would house the Columbia Business School, and the academic building on Site 3 would be used for the Columbia Business School and/or the School of the Arts

As of 2015, the first phase of development would be completed and construction for Phase 2 would have started In 2015, Columbia anticipates that it would raze structures on the site of the proposed large open space and adjacent properties to begin Phase 2 construction Also in 2015, additional properties would be in use to support construction activities for the Phase 2 development on the block between West 131st and West 132nd Streets to provide land for staging of construction materials and equipment and other construction support Columbia would also use properties it currently owns on a portion of Sites 8, 9, 15, and 17 for interim parking

Although the Illustrative Plan represents Columbia's current proposal for the Academic Mixed-Use Area, Columbia's plans may evolve over several decades However, changes will be within the bounds of the uses specified in the GPP as described above in Table 1 To allow for flexibility in Columbia's future planning in project programming, maximum and minimum ranges of floor area have been developed for each component use in the Academic Mixed-Use Area The maximums and minimums, as described above in Table 2, will be included in the GPP These ranges also serve to define a reasonable worst-case development scenario for analysis purposes in the EIS, as described in Section F "Framework for Environmental Review " Both the Illustrative Plan and reasonable worst-case development scenarios follow the project's design principles and would conform to the proposed rezoning in Subdistrict A

Table 3

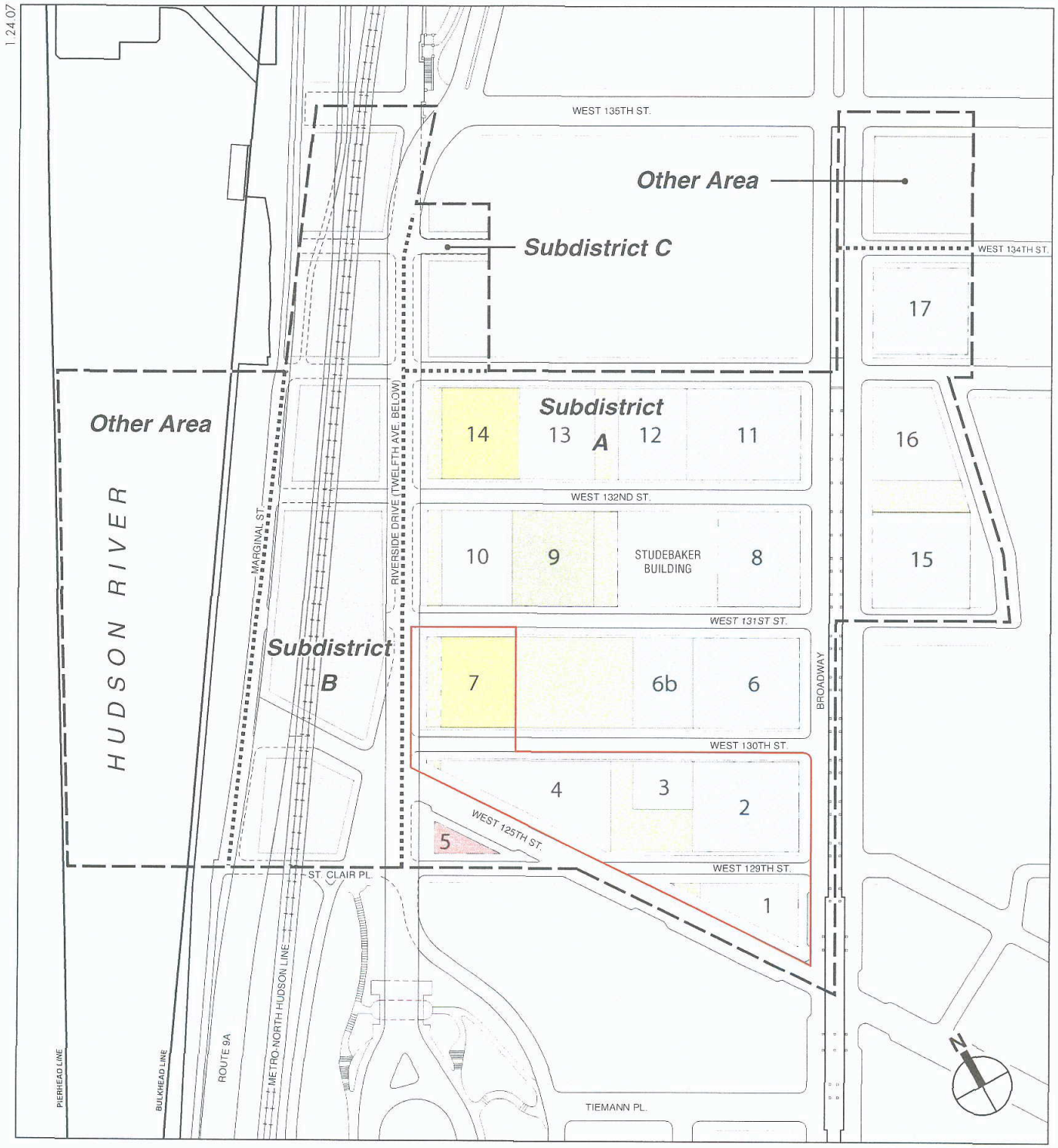
Subdistrict A: Illustrative Plan by Development Site (in GSF)

Site #[1]	Academic	Academic Research	University Housing	Recreation	Active Ground-Floor Uses	Total
2015 Development Sites						
1	114 082				16,144	130 226
2		351,310			11 400	362,710
3	64 020					64 020
4	354 738				21 505	376 243
7			158,840		11 400	170 240
2015 Above Grade	532,840	351 310	158 840	0	60 449	**1,103,439**
Below-Grade Components						
Academic research support						58,563
Below-grade program						69,830
Central energy plant						50,870
Ramp mechanical freight egress switchgear, and loading facilities						94,638
Storage						31,294
					2015 Below Grade	**305,195**
					2015 TOTAL	**1,408,634**
2030 Development Sites						
5					10,969	10 969
6		367 261			11 400	378 661
6b		138,890				138 890
8		301,101			11 400	312 501
9				250 713		250,713
10	260,370				11 400	271 770
11		398 193			11 400	409 593
12		214 225				214,225
13	266 000					266 000
14			350 360		11 400	361,760
15		386,792			11 400	398 192
16	196 318				11 400	207 718
17		439 185			11 400	450 585
2030 Above Grade	1,255 528	2 596 957	509 200	250,713	162 618	**4,775,016**
Below-Grade Components						
West of Broadway						
Academic research support						296,201
Below-grade program						69,830
Central energy plant						70,199
Ramp mechanical freight egress switchgear and loading facilities						384,512
Storage						189,225
Parking						636,933
Swimming and diving center						145,431
					Subtotal West of Broadway	**1,792,331**
East of Broadway						
Ramp mechanical freight, egress switchgear and loading facilities						44,651
Parking						148,675
					Subtotal East of Broadway	**193,326**
					2030 Total Below-Grade	**1,985,657**
					2030 TOTAL (Including 2015 Sites)	**6,760,673**

Note [1] Site reference corresponds to Figure 6

Below Grade

As noted above, the development in Subdistrict A would contain a substantial below-grade component in the center of the subdistrict. The buildings on the periphery—Sites 1 (south of West 129th Street), 15, 16, and 17 (east of Broadway)—would be constructed with conventional basements, each containing HVAC systems, utility access and service, loading areas, and storage

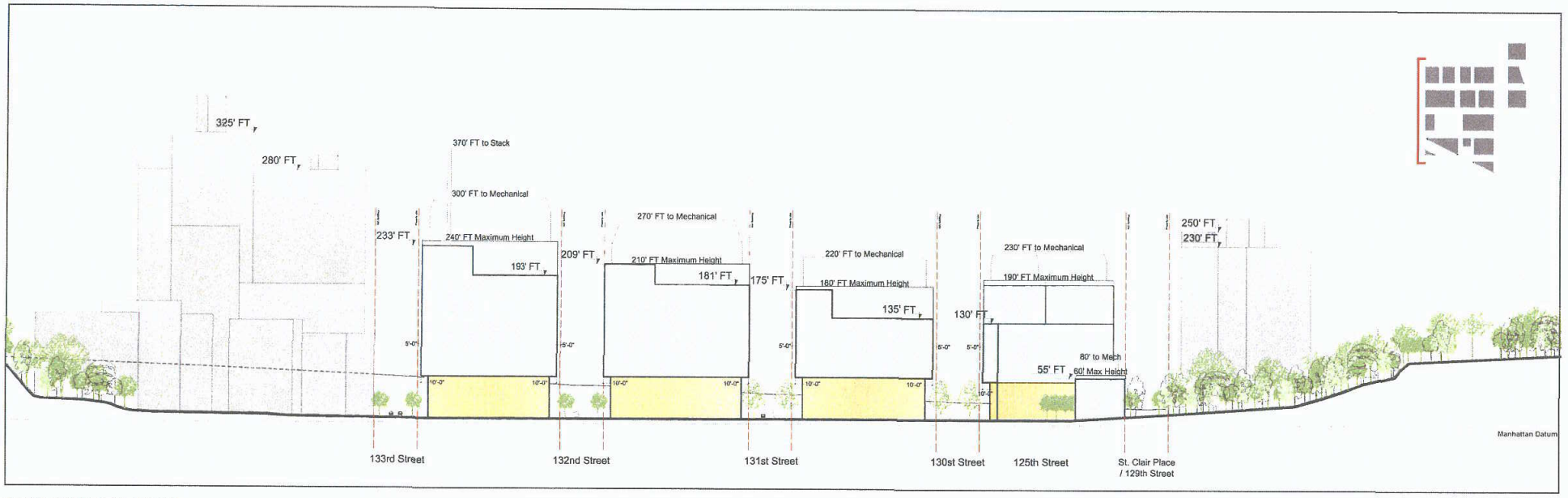


MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 6

Subdistrict A: Illustrative Land Use Plan

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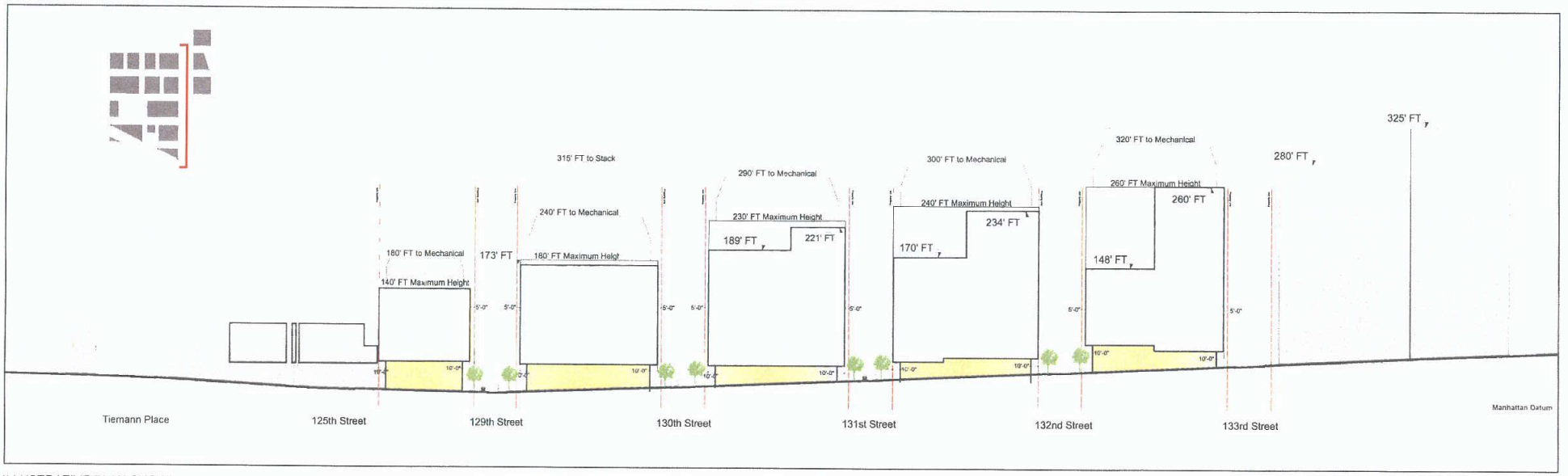


ILLUSTRATIVE PLAN SHOWN.

Figure 7

Twelfth Avenue Elevation Looking East

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ILLUSTRATIVE PLAN SHOWN.

Figure 8

Broadway Elevation Looking West

In the first phase of development, the building on Site 7 would be constructed with a separate basement that would later be connected to the central below-grade service area The basements on Sites 15 and 17 would also provide parking spaces

The central below-grade service area would extend beneath the entire area (including the side streets), from the north side of West 129th Street to the south side of West 133rd Street, from Broadway to Twelfth Avenue (except for the area beneath the Studebaker Building) However, as noted above, in the first phase of development, Site 7 would be constructed with a conventional basement that would later be connected to the central below-grade service area The depth of this space would vary up to approximately 70 feet, with construction activity extending down to 120 feet Until the actual above-grade uses are known, the location of corresponding below-grade functions cannot be finally set However, the central below-grade service area would provide space for support of academic research activities and other academic program support, accessory parking, a large, centralized truck loading area, two central energy plants to provide centralized HVAC for several structures, and a swimming facility beneath the recreation building proposed for Site 9 In total, the below-grade space would accommodate up to 2,300 parking spaces, achieved in some combination of valet and self-park spaces

By allowing a major portion of the new development to be served by a single support facility, with easy connections throughout, the proposed plan is intended to increase the efficiency of campus support functions The below-grade parking and loading facilities would also minimize vehicular presence on the streets and are intended to enhance the pedestrian environment at street level Locating all service uses below-grade would also facilitate the goal of creating visually open and accessible space along the base of buildings

Bus Depot

Development of the Academic Mixed-Use Development plan on the western portion of the block between West 132nd and West 133rd Streets, which is occupied by the MTA/NYCT Manhattanville Bus Depot, would be contingent upon Columbia entering into an agreement with the MTA for modifying or reconstructing the Manhattanville Bus Depot, which agreement has not been reached Such an agreement would involve a variety of MTA processes addressing a modification or reconstruction plan, including but not limited to SEQRA and/or the National Environmental Policy Act (NEPA) and Title VI of the U S Civil Rights Act of 1964 These processes would include review and analysis of the feasibility and environmental and other impacts of any proposed modification or reconstruction plan, as of the time such a plan was to be formulated and prior to any implementation To address a reasonable worst-case, the EIS analyzes a scenario in which the bus depot remains in the Project Area at a below-grade location generally beneath its existing site with Columbia buildings developed above In the event that a different bus depot plan would ultimately be pursued, additional environmental review of the new scenario may be required at that time An alternative under which new University facilities would be constructed on top of the existing above-grade structure will also be analyzed In either event, MTA operations would continue at that location, after a temporary relocation during construction

SUBDISTRICTS B, C, AND THE OTHER AREAS

The Special Manhattanville Mixed-Use Zoning District would change the existing zoning in Subdistricts B, C, and the Other Areas from M2-3, M1-1, and M1-2 (see Figure 3) to M1-1, R8A, R8A with C1-4 overlay, and C6-1 and C6-2 (see Figure 4) The Special Manhattanville Mixed-Use Zoning District is intended to permit development in Subdistricts B, C, and the Other Areas in a manner generally consistent with the recommendations of the EDC's West Harlem Master Plan,

such as the new West Harlem Waterfront park and other public uses The rezoning is intended to expand the range of permitted land uses, and increase density to encourage commercial development in the westerly subdistricts and a mix of commercial and residential use in the Other Area east of Broadway

Subdistrict B

The area along the west side of Twelfth Avenue to Marginal Street, consisting of approximately 8 acres, or approximately 21 percent of the Project Area, constitutes proposed Subdistrict B Subdistrict B would be rezoned from M1-1 and M2-3 to a C6-1 underlying zoning district to encourage commercial uses in this area However, to promote appropriate land uses and strengthen the visual east–west corridors to the waterfront within this subdistrict, additional regulations would apply Residential development would be prohibited, and commercial and community facility development would be limited to a maximum FAR 2 0 for both uses Community facility uses (Use Groups 3 and 4) would be limited to 5,000 sf per establishment in Subdistrict B Subdistrict B would also contain a height limitation of 60 feet, except for the southernmost block between St Clair Place and West 125th Street, Marginal Street, and Twelfth Avenue, which would have a height limitation of 130 feet The proposed zoning changes for Subdistrict B would also allow the existing Fairway Market potential for expansion Twelfth Avenue and West 125th Street in Subdistrict B would also be designated for required active ground-floor uses in the Special Manhattanville Mixed-Use Zoning District (see Appendix A for the draft proposed Special Manhattanville Mixed-Use Zoning District text)

Subdistrict C

Subdistrict C, which constitutes approximately 2 percent of the Project Area, comprises three parcels on the east side of Twelfth Avenue between West 133rd Street and north of West 134th Street It is proposed for inclusion the Special Manhattanville Mixed-Use Zoning District because it is part of the existing manufacturing area, and its location adjacent to the Riverside Park Community apartments makes it important that any new development that might occur in the future be compatible with its residential neighbors Thus, Subdistrict C would be remapped to an underlying C6-2 zoning district, which would permit residential use at an R8 equivalent with a maximum 6 02 FAR, and commercial uses with a maximum FAR of 6 0 As in the Academic Mixed-Use Area just to the south, community facility uses would be limited to an FAR of 6 0 instead of 6 5 Subdistrict C would also contain a height limit of 120 feet above curb level, which is the height of the existing buildings

Other Areas

As shown in Figure 4, the Other Areas of the proposed Special District would include two separate areas an area containing several parcels on the east side of Broadway between West 134th and West 135th Streets, and a second area comprising all of the waterfront west from Marginal Street to the pier line Together, the two Other Areas constitute approximately 10 5 acres, or 29 percent, of the Project Area The Other Area east of Broadway is less than an acre, and constitutes approximately 3 percent of the Project Area The remaining 26 percent of the Other Areas comprises 7 acres of City-owned land under water (which cannot be developed or generate development rights transferable to other parcels), and the approximately 2-acre West Harlem Waterfront park, now under construction west of Marginal Street

All of the Other Area east of Broadway would be mapped as an R8A contextual zoning district, which applies height and setback regulations designed to be compatible with the character of the neighborhood The R8A district would require a base height of 60 to 85 feet, followed by a setback, with a maximum height of 120 feet A C1-4 overlay would be mapped along the entire frontage of

Broadway to a depth of 100 feet east from Broadway As governed by the underlying zoning, the maximum FAR would be 6 02 for residential uses and 6 5 for community facility uses Where the C1-4 overlay is mapped, the maximum FAR would be 2 0 for commercial uses, otherwise, commercial uses are limited to 1 0 FAR in the base of a residential building The remaining area located east of the C1-4 overlay on the same block would be mapped R8A, with a maximum FAR of 6 02 for residential uses and 6 5 for community facility uses Commercial uses are not permitted in R8A districts

The Other Area west of Marginal Street would be mapped as M1-1 This area includes the West Harlem Waterfront park (currently under construction) The proposed zoning change would allow the park to conform to zoning, since the existing M2-3 district does not allow for a park use

TRANSPORTATION IMPROVEMENTS

Specific traffic and pedestrian improvements have been included by Columbia as part of the Proposed Project where the need for such improvements to maintain safe and efficient vehicular and pedestrian flows and to avoid impacts has been identified in project design and development These improvements will be subject to NYCDOT approval Although these improvements would be included as part of the Proposed Project, the EIS will also examine potential traffic impacts of the Proposed Actions without any improvements, to clearly disclose potential significant adverse traffic and related air and noise impacts of the Proposed Actions if the improvements were not implemented, and also to identify the effects the improvements would have in avoiding potential significant adverse traffic impacts Those improvements that would be completed by 2015 are as follows

- *Broadway and West 125th Street*—Dual northbound and southbound left-turn bays would be created at this intersection In addition, eastbound and westbound right-turn-only lanes would be created by prohibiting on-street parking at these approaches, a southbound right-turn-only lane would be created by prohibiting on-street parking at this approach, and minor signal timing changes would be made at this intersection
- *West 129th Street and West 125th Street*—A new signal would be installed with a pedestrian-only phase At this signal, eastbound/westbound left turns would be prohibited (with pavement markings), and the crosswalks would be reconfigured
- *Twelfth Avenue and West 125th Street*—The southbound approach would be moved north of West 130th Street Lane configuration/pavement markings would be made on the intersection approaches In addition, minor signal timing changes would be made at this intersection, and the crosswalk would be reconfigured
- *Broadway and West 126th, West 130th, West 131st, West 132nd, and West 133rd Streets*—Minor signal timing changes and pavement markings at the intersection approaches would be made at each of these intersections
- *Marginal Street and St Clair Place, West 132nd, and West 133rd Streets*—New signals would be installed at each of these intersections, and pavement markings would be made at the intersection approaches
- *Twelfth Avenue and St Clair Place and West 131st Street*—New signals would be installed at each of these intersections, and pavement markings would be made at the intersection approaches

- *Twelfth Avenue and West 132nd and West 133rd Streets*—Minor signal timing changes would be made, and pavement markings would be made at the intersection approaches
- *West 125th Street between Twelfth Avenue and Marginal Street*—This 62-foot-wide roadway segment would be converted to one-way westbound
- *West 131st Street between Broadway and Twelfth Avenue*—This roadway segment would be converted to one-way westbound while maintaining a roadway width of 30 feet
- *West 132nd Street between Broadway and Marginal Street*—This roadway segment would be converted to one-way eastbound while maintaining a roadway width of 30 feet
- *West 133rd Street between Broadway and Twelfth Avenue*—This roadway segment would be converted to one-way westbound while maintaining a roadway width of 38 feet
- *West 129th Street between Broadway and West 125th Street*—This roadway segment would be narrowed to 24 feet
- *Area sidewalks*—Additional widths facilitated by building setbacks would be incorporated fronting each of the development sites

Those improvements that would become necessary only later in project development are as follows

- *Broadway and West 125th Street*—In addition to the improvements described above for 2015, minor signal timing changes would be made at this intersection by 2030
- *West 129th Street and West 125th Street*—In addition to the improvements described above for 2015, minor signal timing changes would be made at this intersection by 2030
- *Twelfth Avenue and West 125th Street*—In addition to the improvements described above for 2015, minor signal timing changes would be made at this intersection, and pavement markings would be made at the intersection approaches by 2030
- *Broadway and West 126th Street*—In addition to the improvements described above for 2015, minor signal timing changes would be made at this intersection by 2030
- *Broadway and West 133rd Street*—In addition to the improvements described above for 2015, an additional widening of the northbound left-turn lane would be necessary by 2030
- *Twelfth Avenue and West 133rd Street*—In addition to the improvements described above for 2015, minor signal timing changes would be made at this intersection by 2030
- *Area sidewalks*—Additional widths facilitated by building setbacks would be incorporated fronting each of the development sites
- *New pedestrian spine between Broadway and Twelfth Avenue*—Midblock crosswalks and new signals would be installed along West 130th, West 131st, and West 132nd Streets
- *Twelfth Avenue between West 125th and West 133rd Streets*—This 58-foot-wide roadway segment would be reconfigured to include two travel lanes in each direction plus parking

E. FRAMEWORK FOR ENVIRONMENTAL REVIEW

The Proposed Actions would change the regulatory controls governing land use and development in the Project Area and would allow its redevelopment over the long term The EIS will analyze

the Proposed Actions' potential to generate significant adverse environmental impacts as the redevelopment takes place The EIS will consider alternatives that would reduce or eliminate impacts identified in the technical analyses and propose mitigation for such impacts, to the extent practicable, and will consider an alternative based on Community Board 9's Draft Section 197-a Plan, as well as other planning and design alternatives The rezoning would permit a wide range of development options, from among these, the EIS will examine the reasonable worst-case development scenario permitted under the proposed rezoning and the GPP In addition, the analyses will address *future* development, so it is necessary to identify conditions in the future, both without and with the Proposed Actions The approach to the analysis framework is discussed below

REASONABLE WORST-CASE DEVELOPMENT SCENARIO

The proposed changes would allow development of buildings of new uses and density, and would change the development potential of sites within the Project Area in a manner consistent with the Special Manhattanville Mixed-Use Zoning District and new underlying zoning districts, as well as the GPP As a result, a range of new development could occur within the Project Area For analysis purposes, therefore, likely reasonable scenarios that could result from the proposed land use control changes are first identified From this range of reasonable development scenarios, the one with the worst environmental effect is chosen for each technical impact analysis, thus creating a reasonable worst-case development scenario tailored to each analysis In this way, an appropriate reasonable worst-case development scenario is used to assess the range of effects (e g , on traffic, air quality, and neighborhood character) that might occur as a result of development with the Proposed Actions

Academic Mixed-Use Area/Subdistrict A

Reasonable Worst-Case Development Scenario

As described above, the Illustrative Plan is Columbia's current proposal for its future development Under the Illustrative Plan, Columbia contemplates total development in Subdistrict A of approximately 6 8 million gsf, with approximately 4 8 million gsf located above grade and 2 0 million gsf located below grade The maximum zoning floor area[1] within the Academic Mixed-Use Area would be 4,417,956 sf (6 0 FAR equivalent) Since development would be incremental, two analysis years—2015 and 2030—have been selected to assess the build-out of Columbia's proposed development

It is possible that as the Academic Mixed-Use Area is developed over time, the plan would change Within the limitations on uses per site and total floor area for each use in the GPP (see Tables 1 and 2, above), the EIS will assess impacts of whichever combination of uses would constitute a reasonable worst case for each impact category

The reasonable worst-case development scenario would differ from the Illustrative Plan in the following impact categories of the EIS

- *Socioeconomic Conditions*—Indirect residential and business displacement assumes maximum academic use, maximum academic research use, to the extent possible assuming maximum academic use, and minimum housing for graduate students, faculty, and other

[1] The zoning floor area of a building is the gross floor area above grade less space devoted to mechanical uses

employees This combination of uses would generate the greatest potential off-site demand for housing and commercial space

- *Community Facilities*—Assumes maximum housing for graduate students, faculty, and other employees These uses would generate the largest population that could place demands on the area's community facilities and services
- *Open Space*—Assumes maximum housing for graduate students, faculty, and other employees, maximizes other uses with high employment rates (e g , academic research), and minimizes recreation uses These uses would generate the largest demands for open space Assumes up to 122,455 sf of privately owned, publicly accessible open space
- *Shadows*—Assumes maximum heights and bulks of buildings, which would generate the largest shadows
- *Urban Design/Visual Resources*—Assumes maximum building heights, which would generate the greatest urban design changes and potential impacts on visual resources
- *Infrastructure*—Assumes maximum housing for graduate students, faculty, and other employees, and maximizes other high energy or high water users
- *Traffic and Parking*—Assumes minimum housing for graduate students, faculty, and other employees, and maximum academic use, which is the highest transportation trip generator
- *Transit and Pedestrians*—Assumes minimum housing for graduate students, faculty, and other employees, and maximum academic use, which is the highest trip generator
- *Air Quality*—For stationary source analysis, assumes minimum height of the building exhaust and maximum height for the surrounding buildings Mobile source analysis assumes the reasonable worst-case traffic and parking scenario
- *Noise*—Assumes reasonable worst-case traffic and parking scenario

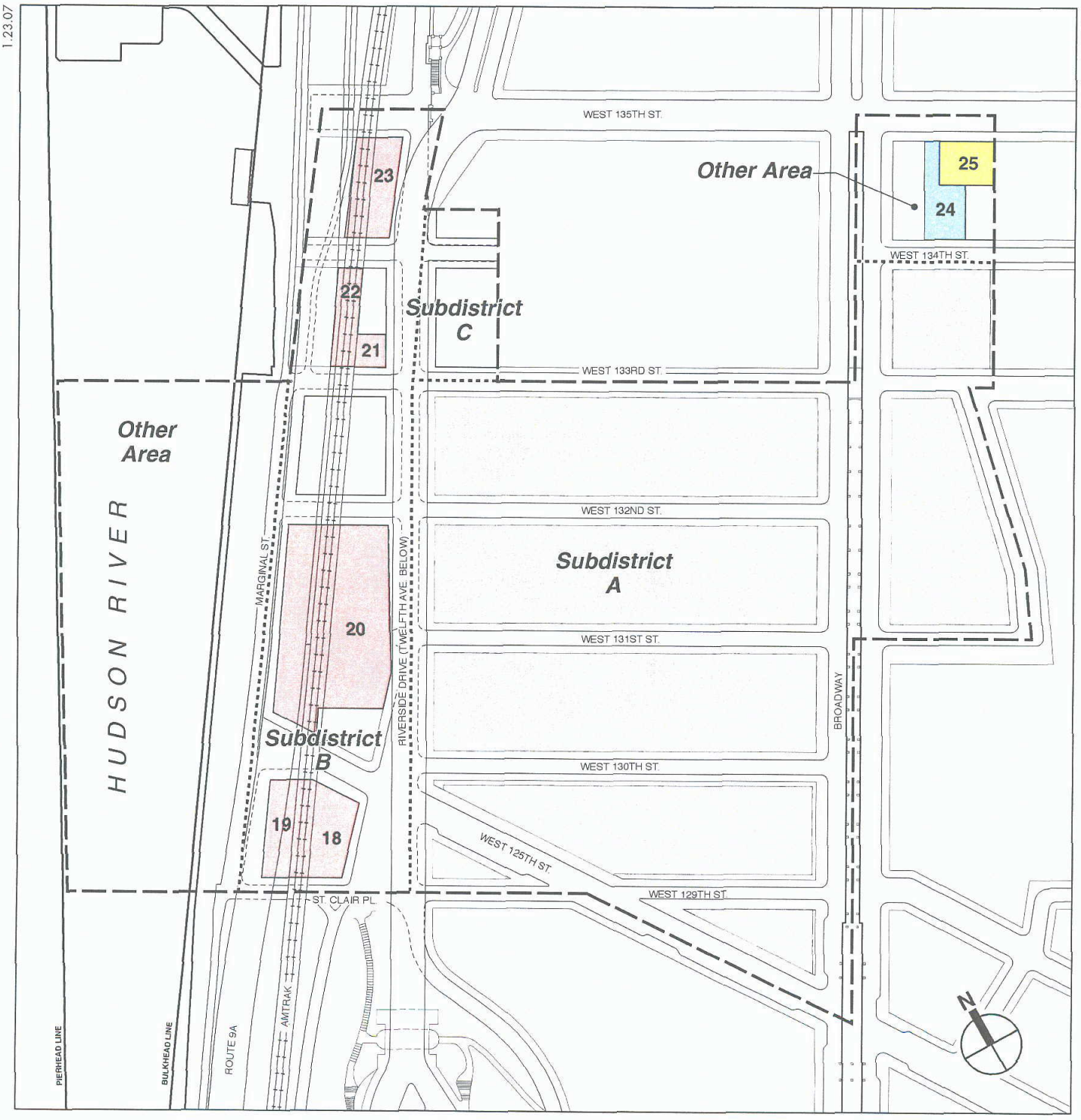
Subdistricts B, C, and the Other Areas

In Subdistricts B, C, and the Other Areas of the proposed Special Manhattanville Mixed-Use Zoning District, new uses and uses with greater densities may develop as a result of the proposed rezoning Therefore, the EIS will also consider a reasonable worst-case development scenario for the sites within Subdistricts B, C, and the Other Areas (see Table 4 and Figure 9) Although the physical form of the development for these areas is unknown, its potential characteristics are considered for analysis purposes Regardless of what is actually developed for Subdistricts B, C, and the Other Areas, the impacts would be no worse than those considered in the EIS for the reasonable worst-case development scenario

To determine the reasonable worst-case development scenario for sites located outside the Academic Mixed-Use Area, all lots in Subdistricts B, C, and the Other Areas were evaluated to determine if they would likely be redeveloped over time, based on the proposed zoning land use controls The criteria for identifying specific development sites include the size of the site, its current utilization and land use, and the opportunity for assemblages Specifically, the criteria include

- Individual or assembled lots (by the same owner) of at least 4,000 sf or larger
- Lots that are vacant, or contain vacant or partially vacant buildings

1.23.07



- Project Area Boundary
- Subdistrict Boundary
- Academic Mixed-Use Development
- Residential
- Commercial (Retail and/or Office)
- Community Facility
- 21 Projected Development Site

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 9

Subdistricts B, C, and the Other Areas: Reasonable Worst-Case Development Scenarios

- Lots containing marginal commercial and/or manufacturing uses, including parking lots and auto repair facilities (which are considered "soft," or likely to be redeveloped) These uses are located on sites that do not contain substantial investment in buildings or infrastructure and are thus more likely to be assembled or redeveloped
- Lots constructed to half or less than half the permitted floor area ratio (FAR) under proposed zoning

Lots that are planned for development, such as the West Harlem Waterfront park and lots owned by the New York City Department of Parks and Recreation, were excluded from the evaluation Sites that met one or more of the criteria were identified as soft for redevelopment and are called "projected development sites" in the EIS Table 4 presents the eight projected development sites with their existing and proposed uses, FARs, and reasonable worst-case development scenario

Subdistrict B

Proposed Subdistrict B would be along the west side of Twelfth Avenue between St Clair Place and West 135th Street Development in Subdistrict B would be limited by a height restriction to remain below the height of the Riverside Drive viaduct, except for the southernmost block between St Clair Place and West 125th Street, Marginal Street, and Twelfth Avenue, which would have a height limit of 130 feet The low clearances of both the Henry Hudson Parkway overpass and the Amtrak viaduct do not allow for any development greater than one story in much of this area Therefore, due to the height limitations and overpass constraints, the projected development sites could only accommodate two stories of development on the east side of the overpass and one story beneath the overpass It is likely that development would take the form of ground-floor retail with second-floor office space on the east side of the overpass and ground-floor retail beneath the Henry Hudson Parkway overpass This form of commercial development along Twelfth Avenue is also consistent with the recommendations of the West Harlem Master Plan and would complement both the West Harlem Waterfront park to the west (currently under construction) and the active ground-floor uses proposed for the Academic Mixed-Use Area street-front uses along the east side of Twelfth Avenue In total, Subdistrict B could accommodate approximately 179,004 sf of new commercial development (office and retail) on six projected development sites (see Table 4 and Figure 9)

Subdistrict C

Proposed Subdistrict C would be located to the east of Twelfth Avenue between West 133rd Street and just north of West 134th Street Subdistrict C does not contain any lots that meet the criteria described above All lots are overbuilt (built to a higher than permitted FAR) under the current zoning requirements They would also be built to more than half the maximum proposed FAR (under the proposed zoning requirements) and therefore would not be considered likely development sites

Table 4

Subdistrict B and the Other Areas: Projected Development Sites

Site Ref[1]	Site Description: Block Lot(s)	Site Description: Lot Area[2]	Existing: Existing Use	Existing: Existing Zoning District	Existing: Built FA	Existing: Built FAR	Existing: Permitted FA	Existing: Permitted FAR	Future with the Proposed Actions: Proposed Zoning District	Future with the Proposed Actions: Permitted FAR	Future with the Proposed Actions: Maximum Floor Area by Use (SF)	Future with the Proposed Actions: Floor Area Total (SF)	Future with the Proposed Actions: Incremental Development (SF)	Comments
18	2004 12	12 196	Wholesale auto repair	M1-2	24 392	2 0	24 392	2 0	C6-1	2 0	12 196 office 12 196 retail	24 392	0 0	Redeveloped as first floor retail second floor office
19	2004 8	18 750	Warehouse parking	M1-2	563	0 03	37 500	2 0	C6-1	2 0	18,750 retail	18 750	18 188	Only enough clearance under highway overpass for one story retail
20	2004 46 50 65 68 71 72 171	74 800	Commercial warehouse and parking	M2-3	26 180	0 35	149 600	2 0	C6-1	2 0	74 500 retail 35 000 office	109 500	83 320	35 000 sf of lot east of and 39 800 sf under highway over-pass Ground floor retail and second floor office east of overpass and one story retail west of overpass
21	2005 12	4 312	Auto repair	M1-1	4 312	1 0	4 312	1 0	C6-1	2 0	4 312 retail 4 312 office	8 624	4 312	Retail ground floor office above
22	2005 9	17 125	Storage vacant	M1-1	17 960	1 0	17 125	1 0	C6-1	2 0	11 138 retail 17 960 storage	29 098	11 138	Existing building re-mains 1 story retail on vacant area
23	2005 32	15 670	Warehouse with billboard and vacant areas	M1-1	3 000	0 2	15 670	1 0	C6-1	2 0	3 300 retail 3 300 office	6 600	3 600	Ground floor retail office above on 3 300 sf portion east of highway overpass Low headroom and lack of access to develop under highway overpass Warehouse stays to keep highway billboard
Subtotal					**76,407**		**248,599**					**196,964**	**120,558**	
24	1988 60	9 492	Health center	M1-2	18 829	2 0	18 984	2 0	R8A	6 5 Com Fac 6 02 Res	61 698 community facility	61 698	42 869	Health center could expand to maximum 6 5 FAR
25	1988 53[3]	15 987	Office	M1-1 R7-2	43 000	2 7	70 982	1 0 (M1-1) 3 44 (R7-2)	R8A /R7-2 (existing)[3]	6 02 (R8) 3 44 (R7 2)	88 819 res	88 819	45 819	Use additional 11 912 floor area available from adjacent Lot 8
	Subtotal				**61,829**		**89,966**					**150,517**	**88,688**	
	TOTAL				**138,236**		**338,565**					**347,481**	**209,246**	

Notes

FA = floor area

There are no projected development sites in Subdistrict C

1 Site reference corresponds to Figure 9

2 Based on preliminary estimates of lot area from New York City Department of Finance s Real Property Assessment Database (RPAD) and calculated ZFA

3 Lot is split in two zoning districts The western portion of the lot is located in the Project Area in an M1-1 district, and the eastern portion is located in an R7 2 district outside of the Project Area As a result of the Proposed Actions the western portion of the lot would be rezoned to R8A and therefore the entire lot could potentially be redeveloped for residential uses

4 Lot could receive 11 912 sf of additional floor area from adjacent lot (Lot 8), which is part of an existing residential building that would be rezoned to R8A

5 Future without the Proposed Actions condition is anticipated to be a continuation of existing conditions

Other Areas

As discussed earlier, there are two separate Other Areas in the proposed Special Manhattanville Mixed-Use Zoning District an area located east of Broadway and another area along the waterfront west of Marginal Street Two lots in the area east of Broadway between West 134th and West 135th Streets are considered projected development sites for community facility and residential uses (see Figure 9) Projected Development Site 24, which currently contains a community health center, could be expanded with additional floor area Projected Development Site 25 is located in two zoning districts The eastern portion of the lot is located in an R7-2 district, and the western portion of the lot, in the Project Area, would be rezoned to R8A As a result of the proposed rezoning, it is possible that the entire lot would be redeveloped for residential purposes In addition, Projected Development Site 25 could receive additional floor area from adjacent Lot 8, which is not identified as a projected development site Lot 8 is currently zoned M1-1 but is part of a larger residential building, with the remainder of the building located in an R7-2 zone to the east The Proposed Actions would rezone Lot 8 to an R8A district, which allows 6 02 FAR for residential uses With the proposed R8A district, the lot contains floor area below the maximum 6 02 FAR Therefore, the additional residential floor area could be transferred to the adjacent Projected Development Site 25

All the lots of the Other Areas of the proposed Special Manhattanville Mixed-Use Zoning District to be designated west of Marginal Street are planned to be developed as the West Harlem Waterfront park, and are therefore not considered projected development sites

Reasonable Worst-Case Development Scenario Project Area Summary

As shown in Table 5, the reasonable worst-case development scenario to be studied in the EIS assumes that in 2015, there will be approximately 1 7 million gsf of new development in the Project Area, with nearly 1 4 million gsf attributable to the Academic Mixed-Use Development/ Subdistrict A, and approximately 0 33 million gsf attributable to Subdistrict B and the Other Areas By 2030, the reasonable worst-case development scenario assumes that development in Subdistrict A will increase to approximately 6 8 million gsf, for a total of approximately 7 million gsf in the overall Project Area

ANALYSIS YEARS

Operational Analysis

As previously described, the Academic Mixed-Use Development is intended to accommodate Columbia's need for long-term growth For purposes of analyzing the reasonable worst-case development scenario for the proposed Academic Mixed-Use Development, it is assumed that this development would take place incrementally over a 25-year period The specific long-term development schedule beyond 2015 has not been defined by Columbia at this time, but the Academic Mixed-Use Development is conservatively assumed to be fully built by 2030 The EIS analyses also assume that by 2030 the Academic Mixed-Use development would be built and fully occupied, so that the impacts identified would be those associated with a completed development Accordingly, two analysis years—2015 and 2030—have been selected for EIS purposes

Table 5
Project Area Reasonable Worst-Case Development Scenario

Proposed Manhattanville Mixed-Use Zoning Subdistrict	2015 (Gross Square Feet)	2030 (Gross Square Feet)
Subdistrict A – Illustrative Plan[1]		
Community Facility Uses		
Academic research	351,310	2,596,957
Academic	532,840	1,255,528
Housing for graduate students, faculty, and other employees	158,840	509,200
Recreation	0	250,713
Commercial Uses		
Active ground-floor uses	60,449	162,618
Support Uses (Below Grade)		
Academic research support	58,563	296,201
Below-grade program	69,830	69,830
Central energy plant	50,870	70,199
Ramps, mechanical, freight egress, switchgear, and loading	94,638	429,163
Storage	31,294	189,225
Parking	0	785,608
Swimming and diving center	0	145,431
Subtotal	**1,408,634**	**6,760,673**
Subdistrict B		
Commercial Uses		
Retail	124,196	124,196
Office	54,808	54,808
Subtotal	**179,004**	**179,004**
Subdistrict C[2] **Subtotal**	**0**	**0**
Other Areas		
Residential (99 units)	88,819	88,819
Community facility	61,698	61,698
Subtotal	**150,517**	**150,517**
Total	**1,738,155**	**7,090,194**

Notes
[1] The Illustrative Academic Mixed-Use Development would be reasonable worst-case development scenario for the majority of the technical areas assed in the EIS, except for those described above (socioeconomic conditions, community facilities, open space, shadows, urban design, infrastructure, traffic and parking, transit and pedestrians, air quality, and noise)
[2] There are no projected development sites in Subdistrict C

For the purposes of evaluating any development that would occur outside the Academic Mixed-Use Area in Subdistricts B, C, and the Other Areas of the Project Area, it is conservatively assumed that any development would occur by 2015 Conditions in each analysis year "with the Proposed Actions" will be evaluated against conditions in the analysis year "without the Proposed Actions "

The future without the Proposed Actions condition will provide a baseline condition that will be evaluated and compared with the incremental changes due to the Proposed Actions The future without the Proposed Actions conditions will be assessed for the same analysis years as the Proposed Actions—i e , 2015 and 2030

The future without the Proposed Actions condition will use existing conditions as a baseline and adds to it changes known or expected to be in place at various times in the future For many

technical areas, the future without the Proposed Actions condition incorporates known development projects that are likely to be built by the analysis years This includes development currently under construction or development that can be reasonably expected due to the current level of planning and public approvals The future without the Proposed Actions analyses of some technical areas, such as traffic, use a background growth factor to account for a general increase expected in the future Such growth factors may also be used in the absence of known development projects The future without the Proposed Actions analyses must also consider other future changes that will affect the environmental setting These could include technology changes, such as advances in vehicle pollution control and roadway improvements, and changes to City policies, such as zoning regulations

2015 Analysis Year

Future Without the Proposed Actions For purposes of the most conservative analysis, the future without the Proposed Actions in the Project Area is anticipated to be a continuation of existing conditions with the exception of several known projects One project, which follows the recommendations made in the 2002 West Harlem Master Plan within the Project Area, is the West Harlem Waterfront park This EDC project, which is currently under construction, is projected to be completed in 2008 It is therefore included in the 2015 analysis year This open space, between St Clair Place and West 133rd Street, will include walking and biking paths, an excursion pier to allow docking for excursion and ferry boats, a recreation pier, an ecological platform, a small multi-purpose building, and several passive recreation areas, such as lawns and sitting areas The open space will also include traffic calming measures and streetscape improvements on Marginal Street In coordination with the master planning effort, the City proposes to improve several intersections in the Project Area along West 125th Street and on Twelfth Avenue, as well as to the streetscape from Old Broadway to Marginal Street Within the Project Area, Columbia plans to convert and renovate the Studebaker Building on West 131st Street for administrative uses

Columbia University will also partner with the City of New York on the creation of a new public secondary school that will address education in science, math, and engineering Although the details of the proposed school building have not yet been determined, for planning purposes, the school building is expected to be a total of 90,000 gsf and accommodate 650 students (grades 6–12) and 35 faculty and administrators The school will be operated by the New York City Department of Education in close collaboration with Columbia Although the location of the school is not yet final, it is anticipated that the school would be located in the Project Area on the east side of Broadway between West 131st and West 132nd Streets if the Proposed Actions were not approved and the Academic Mixed-Use Development did not go forward

In the future without the Proposed Actions, Columbia University would also develop approximately 127,300 sf of administrative space above the public secondary school Just north of this site, Columbia would also occupy the existing former Warren Nash Service Station building on the east side of Broadway between West 132nd and West 133rd Streets for University administrative space

There are also two sites west of Twelfth Avenue that are currently being redeveloped and renovated by others (not Columbia University) for new uses At the northwest corner of West 133rd Street and Twelfth Avenue, a new restaurant with an outdoor seating area is under construction Just north of the Project Area on the west side of Twelfth Avenue at West 135th Street, a vacant two-story building is being renovated for commercial use

Several rezoning applications have been submitted by Tuck-It-Away Associates, L P , for parcels they own in the Project Area These sites are proposed to be rezoned from the existing M1-2 to C6-2 For each site, two reasonable worst-case development scenarios have been developed by the applicant, one for commercial development and one for residential development For each site, the commercial reasonable worst-case development scenario would involve enlarging the existing building, retaining the existing commercial uses, and adding office space For all except two sites, the residential reasonable worst-case development scenario would involve rehabilitating the existing space for residential development and enlarging the existing building for additional residential space, with ground-floor retail or community facility uses All sites except for the 3320 Broadway site are within proposed Subdistrict A The residential reasonable worst-case development scenario for the 3300–3320 Broadway site assumes demolition of the existing buildings (except for the façade of the Claremont Theater building) and construction of a new residential development However, the Claremont Theater site at 3320 Broadway was designated as a New York City Landmark (NYCL) by the New York City Landmarks Preservation Commission (LPC) on June 6, 2006 Any development involving the theater or the transfer of development rights from the theater to another site would require a Certificate of Appropriateness from LPC (for development on the site) and possibly a Special Permit from CPC (for floor area transfers and bulk waivers) As no application for either of those discretionary approvals has been made to date, it is assumed that the Claremont Theater portion of the site would not be developed in the future without the Proposed Actions Development could proceed as-of-right (under the proposed zoning) on the portion of the site that is not landmarked Since these rezonings would not go forward if the Proposed Actions are approved, the analysis of the Proposed Actions (see discussion below) does not include these scenarios

A rezoning application and an Environmental Assessment Statement (EAS) have also been submitted for two other sites in the Project Area—3247 and 3229 Broadway, between West 129th and West 131st Streets—by J P Z Realty, LLC, aka Despatch, and Mid-Atlantic Moving and Storage, aka Hudson North American These sites are also proposed to be rezoned from the existing M1-2 to C6-2 The EAS for this application was withdrawn, and a reasonable worst-case development scenario is not available It is anticipated that a new EAS will be submitted, and at that time the details of this application will be addressed in the EIS in the analysis of the future without the Proposed Actions Similar to the Tuck-It-Away rezoning applications, the analysis of the future with the Proposed Actions does not assume additional development under this rezoning

Outside the Project Area, Columbia expects to develop the property in its control south of West 125th Street in accordance with current zoning regulations Because this development would occur independently of the proposed rezoning and would not require City or State approvals, this as-of-right development has been analyzed in the future without the Proposed Actions condition and is not part of the Academic Mixed-Use Development Prentis Hall (an academic building) will be renovated, and the low-rise portion of 560 Riverside Drive along West 125th Street will be renovated to provide a building entrance in this location Columbia also proposes to develop an approximately 250,840-gsf academic building at the southwest corner of Broadway and West 125th Street, just outside the Project Area

DCP is proposing to rezone a two-block-wide corridor centered on 125th Street, from Broadway to Second Avenue, and issued the Draft Scope of Work for the 125th Street Corridor Rezoning and Related Actions EIS in December 2006 The Draft Scope of Work identifies 26 projected development sites in the rezoning area assumed to be developed by 2017 that would result in a net

increase of 2,478 residential units, 332,056 sf of commercial office space, and 208,840 sf of commercial retail space Projected development under the 125th Street rezoning will be conservatively assumed for the 2015 analysis year in the DEIS for the Proposed Actions Although the 125th Street rezoning area is located outside the Project Area, portions of it would overlap with the study areas for several technical analyses in the DEIS for the Proposed Actions Therefore, the DEIS will include those projected development sites that fall within the Proposed Actions' study areas in the 2015 future conditions without the Proposed Actions with the exception of the transportation related analyses—traffic and parking, transit and pedestrians, mobile source air quality, noise, and construction It is anticipated that the DEIS for the 125th Street rezoning will include traffic/pedestrian improvements and, if necessary, transportation-related mitigation As this transportation information becomes available, it will be included in the FEIS for the Proposed Actions The conclusions of the 125th Street rezoning DEIS may result in additional or different transportation-related mitigation for the Proposed Actions Any such changes will be reflected in the FEIS for the Proposed Actions

The City is also planning to make streetscape improvements along 125th Street Although the design has not been finalized, it is anticipated that the streetscape improvements may include widened sidewalks, bicycle lanes, new street lighting and furniture, plantings, and way-findings

Future with the Proposed Actions Construction of the Academic Mixed-Use Development in Subdistrict A would occur from 2007 to 2030, beginning along the north side of West 125th/West 129th Street to complement Columbia's as-of-right development on the south side of West 125th Street and to continue to activate the streetscape along West 125th Street (see Figure 10 for the location and numbering of the development sites)

By 2015, the reasonable worst-case development scenario assumes that five new buildings would be developed three academic buildings (Sites 1, 3, and 4), one academic research building (Site 2), and one building for housing for graduate students, faculty, and other employees (Site 7) Development before 2015 would also include 28,855 sf of publicly accessible open space Open space is proposed on the block between Broadway, Twelfth Avenue, and West 129th and West 130th Streets (at Site 3), and at the western tip of Site 1 This initial phase of development would transform the streetscape of West 125th Street, an important street providing access to the new waterfront area

Although the specific time frame for development under the reasonable worst-case development scenario for Subdistrict B and the Other Areas is not known at this time, 2015 is conservatively assumed for analysis purposes It is anticipated that redevelopment along the west side of Twelfth Avenue would occur within a time frame that follows and builds upon the development of the adjacent West Harlem Waterfront park

Background Conditions in the Future with the Proposed Actions Generally, baseline conditions in the future with the Proposed Actions include all of the No Build projects as background conditions, except those proposed for sites in the Project Area In the future with the Proposed Actions, the public secondary school for science, math, and engineering would not be built in the Project Area, but likely located on the south side of West 125th Street west of Broadway on a site controlled by Columbia University The Columbia building planned for that site in the future without the Proposed Actions would be modified to include the school in its base In total, the building would contain 90,000 sf for the public school, 154,240 sf for Columbia academic use, and 6,600 sf for local retail, including a McDonald's restaurant to replace the existing one on the site

2030 Analysis Year

Future Without the Proposed Actions By 2030, the future without the Proposed Actions in the Project Area is anticipated to be a continuation of the 2015 future without the Proposed Actions conditions As described above, no specific developments have been identified in the study area for completion by the 2030 analysis year

Future With the Proposed Actions Between 2015 and 2030, under the reasonable worst-use development scenario, it is projected that an additional six academic research buildings, three academic (instruction) buildings, one building with housing for graduate students, faculty, and other employees, and one recreation facility would be developed within the Academic Mixed-Use Area As noted, the EIS assumes that all development projected in Subdistrict B and the Other Areas would be completed by 2015 The year 2030, therefore, will assume full occupancy of the Proposed Project, and in this way will capture the longer-term impacts of the project, without engaging in speculation over conditions in the distant future

Construction Analysis

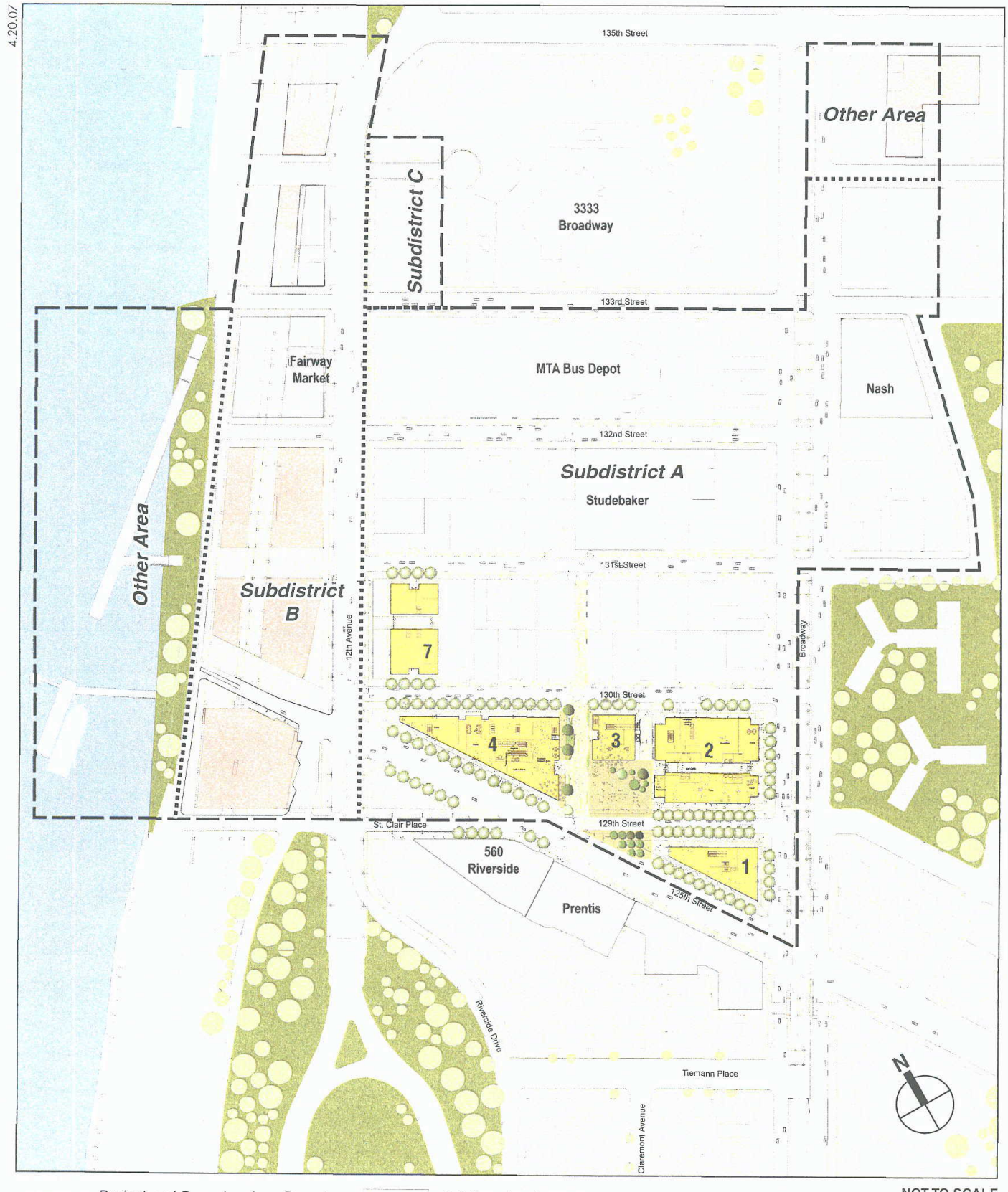
Several analysis years for construction will be examined to address conditions during construction prior to 2015 (completion of Phase 1), and conditions between 2015 and 2030 (Phase 2) For the purposes of assessing the reasonable worst-case development scenario for the Proposed Actions, it is anticipated that all of the projected development for Subdistrict B and the Other Areas would be completed by 2015, the year that Phase 1 of development in the Academic Mixed-Use District (Subdistrict A) would be completed Thus, the Phase 1 construction analysis years would address peak construction in Subdistrict B and the Other Areas, plus construction of Phase 1 in Subdistrict A

The analysis years for construction between 2015 and 2030 would address conditions likely to have the greatest impact From 2015 to 2030, construction would proceed northward through the Academic Mixed-Use District, so that the last block of construction west of Broadway would be between West 132nd and West 133rd Streets Construction would be the most complex on this block, because it would involve the relocation of the existing MTA Manhattanville Bus Depot underground, and construction of four buildings and a north–south passageway open space area above it Also, these construction activities would take place across the street from a school (I S 195) and a large residential building (3333 Broadway) In addition, "background" conditions at this time would include traffic and other effects of nearly all of the proposed development for Subdistrict A, and the redevelopment assumed for Subdistrict B and the Other Area east of Broadway This development is assumed to be completed in 2029 The construction analysis years will be selected to address the worst-case impacts for the discrete technical areas being analyzed

F. SCOPE OF WORK

The EIS for the Manhattanville in West Harlem Rezoning project will be prepared pursuant to CEQR and the *CEQR Technical Manual* It will also be prepared in accordance with SEQRA The environmental review provides a means for decision-makers to systematically consider environmental effects along with other aspects of project planning and design, to evaluate reasonable alternatives, and to identify, and mitigate where practicable, any significant adverse environmental impacts CPC will act as the lead agency for CEQR review

The scope of work for each technical area to be analyzed in the EIS for the Manhattanville in West Harlem Rezoning project follows Analyses will be conducted for two Build years Phase 1 Build



MANHATTANVILLE IN WEST HARLEM REZONING
AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 10
Subdistrict A: 2015 Illustrative Site Plan

year 2015, when the first phase of development (parcels on West 125th, West 129th, West 130th, and West 131st Streets) is anticipated to be constructed, and 2030, when the full build-out of the Academic Mixed-Use Area is expected to occur (see Figure 11)

TASK 1. PROJECT DESCRIPTION

The first chapter of the EIS will introduce the reader to the Proposed Actions and set the context in which to assess impacts The chapter will contain a project identification (brief description and location of the Proposed Actions), a statement of purpose and need for the Proposed Actions, a detailed description of the Proposed Actions and development program, and discussion of the approvals required, procedures to be followed, and the role of the EIS in the process The chapter is the key to understanding the Proposed Actions and their impact, and gives the public and decision-makers a base from which to evaluate the Proposed Actions against both Build and No Build options

TASK 2. FRAMEWORK FOR ANALYSIS

This chapter will discuss the framework for the analyses for the EIS It will identify the analysis years and project phasing, and describe the reasonable worst-case development scenarios that will be assessed in the EIS For the Academic Mixed-Use Area, a reasonable worst-case development scenario based on Columbia's Illustrative Plan has been established for many of the technical areas However, the reasonable worst-case development scenario will vary for several tasks, based on a range of minimum and maximum floor areas The chapter will also describe the reasonable worst-case development scenario for the areas outside the Academic Mixed-Use Area in the Project Area (Subdistricts B, C, and the Other Areas), including the criteria for identifying projected development sites and anticipated uses under the rezoning

In addition, the EIS will contain a conceptual analysis (in an appendix) of the environmental impacts that could occur if one or more authorizations or Special Permits for transfer of development rights within Subdistrict A and/or Special Permits for the modification of bulk requirements within the entire Special District were to be approved As described above, the transfer of floor area by authorization and Special Permit within Subdistrict A would be new transfer mechanisms created by the proposed Special Manhattanville Mixed-Use Zoning District text A Special Permit would only be required if proposed transfers would cause one or more sites to require changes in maximum height, bulk waivers, or similar relief that would alter the design "envelope" examined for the Proposed Actions in the EIS The proposed Special Manhattanville Mixed-Use Zoning District text would also allow by Special Permit for the modification of the special bulk requirements anywhere within the Special District

The Proposed Actions would result in the relocation of the MTA 131st Street Shop A relocation site for this facility is not known at this time However, the EIS will contain a generic analysis (in an appendix) of the potential environmental impacts that could result from relocating this facility

TASK 3. LAND USE, ZONING, AND PUBLIC POLICY

The Proposed Actions would directly affect the land use on approximately 28 acres of land in the Manhattanville section of West Harlem (7 of the total 35 acres are under water, which would support no development) The land use, zoning, and public policy analysis will assess the potential impacts of the expected changes in land use resulting from the Proposed Actions The analysis will evaluate impacts within the Project Area and defined primary and secondary land

use study areas The land use assessment will include a description of existing conditions, and evaluations of future with the Proposed Actions and future without the Proposed Actions conditions in 2015 and 2030 The analysis will describe any potential impacts on land use resulting from the implementation of the Academic Mixed-Use Development and the rezoning of Subdistricts B, C, and the Other Areas

The study area for land use, zoning, and public policy analysis encompasses the region within roughly ½ mile of the Project Area, a distance that, based on *CEQR Technical Manual* guidelines, defines the area in which the Proposed Actions could reasonably be expected to create potential direct and indirect impacts The specific boundaries also account for large physical barriers, such as City College and St Nicholas Park, which delineate the eastern boundaries of the study area, and the addition of areas to the north and south based on geographical proximity and accessibility to the Project Area The study area is further divided to create a primary study area, within a ¼-mile radius, where effects of the Proposed Actions are likely to be the most direct, and a secondary study area covering the blocks within a ¼- to roughly ½-mile distance from the Project Area (see Figure 12) Tasks include

A Provide a detailed description of existing land use in the Project Area and the primary study area, including a discussion of underutilized sites under zoning Underutilized sites include vacant (or in use as surface parking) lots, as well as sites that are underbuilt—i e , built at densities well below the maximum FAR allowed under current zoning This task will be closely coordinated with the socioeconomic conditions analysis, which will provide qualitative and quantitative assessments of the Proposed Actions and rezoning development scenario's effects on businesses and employment Recent land use trends in the study area will also be identified and noted Additionally, land uses sensitive to changes in environmental conditions, e g , noise levels or air quality, will be identified These may include housing, hospitals, schools, places of worship, and parks

B Identify, describe and graphically portray predominant land use patterns in the land use study areas based on existing studies, information included in existing geographic information systems (GIS) for the area, and field surveys Recent land use trends and major factors influencing land use trends will be described based, as applicable, on discussions with public or private agencies and local real estate brokers

C Provide a brief development history of the Project Area and study areas Include a land use trends analysis for 2000 to the present, including any influence Columbia's announcement of the Proposed Project or acquisition of property may have had on land use in the Project Area and study areas This analysis will be summarized in the chapter and detailed in an appendix

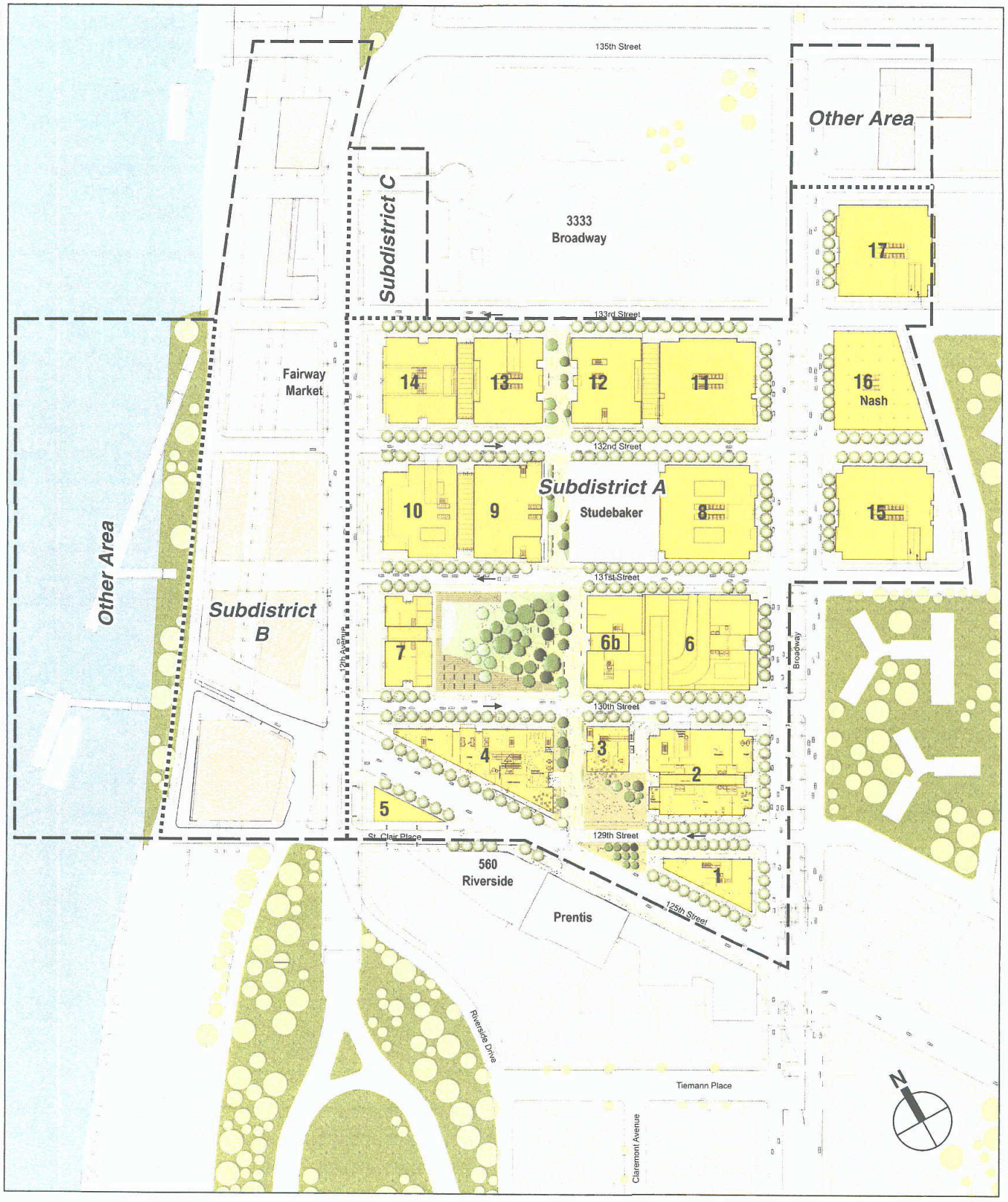
D Describe and map existing zoning and recent zoning actions in the study areas

E Describe other public policies that apply to the Project Area and the study areas, including specific development projects and plans for public improvements

F Prepare a list of future development projects in the study areas that could affect future land use patterns and trends by 2015 and 2030 Also, identify pending zoning actions or other public policy actions that could affect land use patterns and trends as they relate to the Proposed Actions Based on these changes, assess future conditions in land use zoning in the future without the Proposed Actions

G Assess impacts on land use and land use trends and public policy resulting from the activities with the Proposed Actions, and provide assessments of the compatibility of the

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Project and Rezoning Area Boundary

Subdistrict Boundary

1 Development Site

Existing Development

Columbia University Development

New Open Space

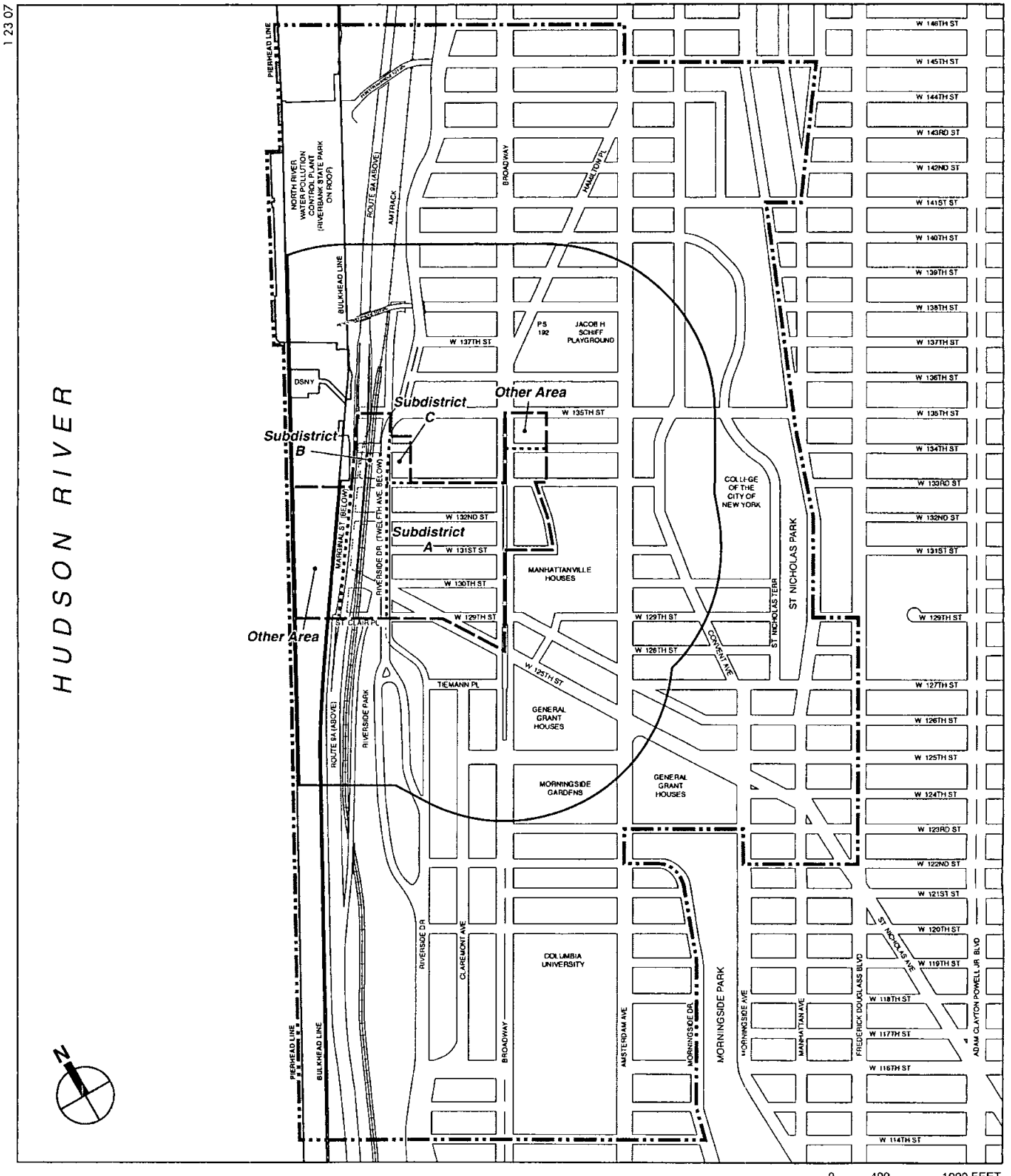
Subdistricts B, C, and the Other Areas
Projected Develoment Sites

NOT TO SCALE

MANHATTANVILLE IN WEST HARLEM REZONING
AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 11

Subdistrict A: 2030 Illustrative Site Plan



MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 12
Land Use Study Area

Proposed Actions with surrounding land use, the consistency of the Proposed Actions with recognized public policies, such as the New York City Comprehensive Waterfront Revitalization Plan, zoning, the *New York City Industrial Policy: Protecting and Growing New York City's Industrial Job Base*, the West Harlem Master Plan, and other identified City public policies.

H. This assessment will include the effect of the loss of manufacturing zoning and the effect of the Proposed Actions on existing conditions and ongoing development in the primary study area.

I. Assess the potential land use changes in the primary and secondary study areas based on the future land use trends. Analysis of these trends will include various combinations of project elements that could reasonably be expected to be developed.

J. In coordination with the analysis of socioeconomic conditions, address the potential for the Proposed Actions to influence land use trends and development in the secondary study area.

TASK 4. SOCIOECONOMIC CONDITIONS

According to the *CEQR Technical Manual*, a socioeconomic assessment should be conducted if a proposed action is reasonably expected to create substantial socioeconomic changes within the area affected by the action that would not be expected to occur absent the action (Section B, 200). The Proposed Actions could lead to direct displacement of residences, businesses, institutions, and employment. The Proposed Actions also could result in substantial new development that is markedly different from existing socioeconomic conditions, which could lead to significant secondary (or indirect) displacements. Given these potentially significant impacts, an analysis of the potential changes in socioeconomic conditions will be conducted. In addition, an assessment of the fiscal and economic benefits of the Proposed Actions will be provided.

While direct displacement would be limited to the Project Area, the Proposed Actions could have indirect displacement effects that extend beyond the Project Area into adjacent neighborhoods. Therefore, three study areas will be examined: the Project Area, consisting of the Academic Mixed-Use Area and all other areas to be rezoned; and two larger, approximately ¼- and ½-mile study areas—the primary socioeconomic study area and secondary socioeconomic study area, respectively—that include the adjoining neighborhoods (see Figure 13). As per the *CEQR Technical Manual*, these study areas are patterned on those being used to evaluate the project's effects on land use, zoning, and public policy (see Task 3), though the boundaries of the primary socioeconomic study area have been adjusted from the strict ¼-mile boundary delineation to better reflect census tract boundaries. The secondary study area was expanded to include one additional census tract encompassing the existing Columbia Morningside Heights campus. The primary study area is where effects of the Proposed Actions are likely to be more pronounced, with the secondary study area assumed to have lesser effects.

The analysis will follow the guidelines of the *CEQR Technical Manual* and will include the identification of significant impacts and accompanying mitigation strategies, where appropriate and feasible. According to the *CEQR Technical Manual*, the five principal issues of concern with respect to socioeconomic conditions are whether the Proposed Actions would result in significant impacts due to.

1) direct residential displacement in the Project Area;

2) direct business and institutional displacement in the Project Area;

3) indirect residential displacement in the primary and secondary study areas;

4) indirect business and institutional displacement in the primary and secondary study areas; and

5) adverse effects on a specific industry.

In conformance with *CEQR Technical Manual* guidelines, the assessment of these five areas of concern will begin with a preliminary screening analysis. Detailed assessments will be conducted for those areas in which the preliminary assessment cannot definitively rule out the potential for significant adverse impacts. The detailed assessments will be framed in the context of existing conditions and evaluations of the future with the Proposed Actions, and the future without the Proposed Actions in 2015 and 2030. The analysis of the future without the Proposed Actions will be based upon current conditions, taking into account background growth and other proposed projects. The conditions in the future with the Proposed Actions will then be measured against the future without the Proposed Actions. The future with the Proposed Actions condition will therefore reflect a cumulative impact analysis of all factors affecting displacement.

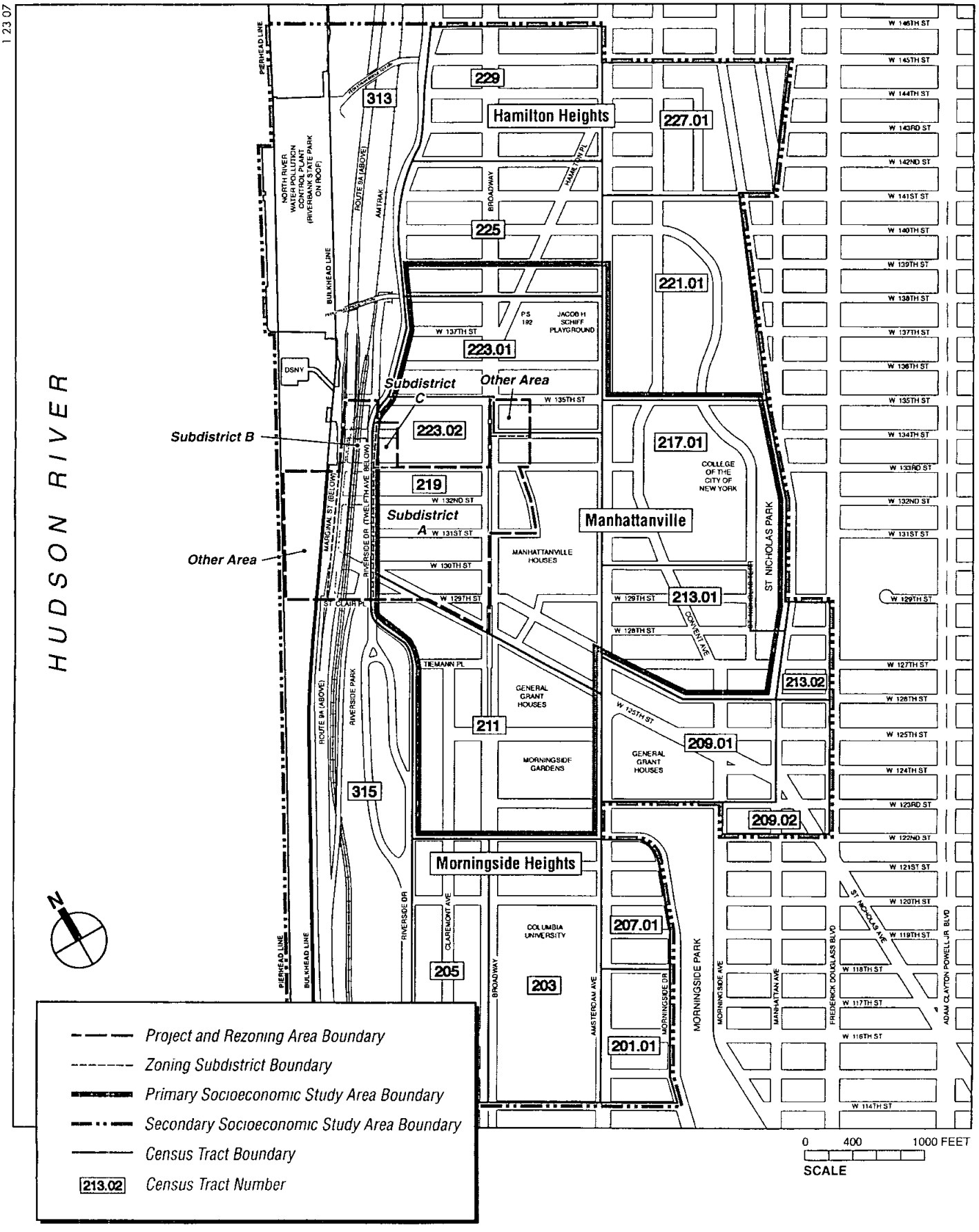
As discussed in the scope of Task 3, Land Use, Zoning and Public Policy, an analysis will be undertaken of the changes occurring in the Project Area and study areas between 2000 and 2006 to consider the potential effects of Columbia's acquisition of property in the Project Area and the announcement in 2003 of the Proposed Project. The business and employment that left the Project Area during that time will be documented in an appendix on recent trends. This recent trends analysis will also consider whether Columbia's announcement has already resulted in increases in residential sales and median rents in the surrounding neighborhoods, leading to indirect residential displacement.

The assessments will consider a reasonable worst-case development scenario developed specifically for the socioeconomic conditions assessments. The socioeconomic conditions reasonable worst-case development scenario will maximize the amount of potential academic use and, to the extent possible assuming maximum academic use, academic research use, and minimize housing for graduate students, faculty, and other employees. This combination of uses would generate the greatest potential off-site demand for housing and commercial research space, which in turn would maximize potential indirect residential and business displacement pressures. Direct displacement is unaffected by variations in the types of uses considered for a worst-case scenario.

The analytical approach to assessing potential socioeconomic impacts is outlined below. Demographic and economic studies, field investigations, phone surveys, written surveys, and interviews will be used to describe existing socioeconomic conditions in the Project Area and within the primary and secondary study areas. These studies will include descriptions of:

- Residential population, households, income, and age, race and ethnicity, based on Census data from 1980, 1990, and 2000;
- Housing characteristics, including trends in rents, sales prices, vacancy, and tenure; and
- Types of business and industries currently located in the Project Area and in the study areas.

In conjunction with the land use task, specific development projects that would occur in the primary and secondary study areas in the future without the Proposed Actions will be identified, as well as the likely changes in socioeconomic conditions that would result, such as potential increases in population, new residential developments, changes in rents or sales prices of residential units, new commercial or industrial uses, or changes in employment or retail sales.



MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 13
Socioeconomic Study Area

The socioeconomic patterns in areas surrounding Columbia's existing campuses will be considered in the socioeconomic analysis. For example, in projecting future housing demand within the study areas, the analysis will use data on places of residence of existing Columbia employees and students to identify the propensity of future Manhattanville Columbia employees and students to locate close to the proposed campus.

DIRECT RESIDENTIAL DISPLACEMENT

The Proposed Actions have the potential to result in the direct displacement of residences in the Project Area. The analysis of direct residential displacement will:

A. Identify the number of existing residents in the Academic Mixed-Use Area who would likely be directly displaced by the Proposed Actions and their demographic profile, including income, race and ethnicity, household incomes and household characteristics, rents, or home values in those buildings to be directly displaced. These buildings are located at 620 West 131st Street, 602-604 West 132nd Street, and 3281-3295 Broadway, generally range between four and six stories, and contain a total of approximately 132 units. Of these 132 units, 60 are owned by New York City Department of Housing Preservation and Development (HPD), while 72 units are owned by private parties.[1] The demographic characteristics of displaced residents will be determined to the fullest extent permitted by available data and field investigations, and/or interviews.

B. Based on the guidelines of the *CEQR Technical Manual*, determine if displaced residents represent a sizable portion of future population in the primary and secondary study areas (generally interpreted to mean greater than 5 percent), and if a population with a similar profile would not be able to relocate within the study areas.

C. Determine if the loss of existing populations and the number of units to be displaced is substantial, and whether the loss would result in a significant change in the socioeconomic profile or housing character of the study areas.

D. Describe the type of relocation benefits that would be available to the displaced landlords, homeowners, and residential tenants. The analysis will consider the Uniform Relocation Act as it applies to direct displacement.

DIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

The Proposed Actions have the potential to directly displace several existing economic uses in the Project Area. The analysis of direct business and institutional displacement will:

A. Identify the number of employees and number and types of businesses in the Project Area, including the extent to which they serve the local community, that would likely be displaced by proposed rezonings in the future without the Proposed Actions.

B. Identify the number of employees and number and types of businesses in the Project Area that would likely be displaced by the Proposed Actions. Describe the population

[1] In response to a comment made on the Draft Scope, this Final Scope notes that the residents of Manhattanville Houses would not be directly displaced by the Proposed Actions because the Houses are outside the Project Area, nor would they be at risk of indirect displacement due to rent increases; Manhattanville Houses are part of New York City Housing Authority's public housing program, which provides rent-protected apartments to low- and middle-income households.

characteristics of employees to the fullest extent permitted by available data and field investigations, and data obtained through interviews. Estimate the number and types of business and employment that would be displaced in the future with the Proposed Actions, as well as the number and types of employment that would be created.

C. Determine if the businesses or institutions to be displaced have substantial economic value to the City or regional area and can only be relocated with great difficulty or not at all.

D. Determine if any category of displaced businesses or institutions is the subject of other regulations or publicly adopted plans to preserve, enhance, or otherwise protect it.

E. Determine if the businesses, institutions, or employment to be displaced individually or collectively define or contribute substantially to a defining element of the study area's neighborhood character.

F. Describe the type of relocation benefits that would be available to the displaced landlords, businesses, and employees.

INDIRECT RESIDENTIAL DISPLACEMENT

The objective of the indirect residential displacement analysis is to determine if the Proposed Actions would increase property values and thus rents throughout the study area, making it difficult for existing residents to afford their housing. Factors that are considered in this analysis include the type and condition of housing stock, the number of owner- vs. renter-occupied units, vacancy rates, market rates within the study areas, historical trends in the housing market, and household income. Following the guidelines of the *CEQR Technical Manual*, the analysis of indirect residential displacement will:

A. Identify the various types of housing programs present within the study areas relevant to the analysis and the numbers of rent controlled and stabilized vs. market rate units.

B. Identify populations at risk of displacement by determining: (1) the portion of the population that could not sustain significant increases in rents, and (2) the portion of the population living in units not protected by rent control or rent stabilization regulations or in possession of Section 8 rent vouchers, including those within 3333 Broadway.

C. Determine if the Proposed Actions are introducing a new trend or accelerating a trend of changing socioeconomic conditions that would put identified populations at risk within the primary and secondary study area at risk of displacement.

D. Determine if the Proposed Actions would cause indirect displacement of identified populations at risk in the study areas by introducing a new land use that would affect socioeconomic conditions, including the housing market, in the future compared with the No Build condition. The analysis will consider the effects of increased housing demand from Columbia employees and students, and others within the study areas.

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

The objective of the indirect business and institutional displacement analysis will be to determine if the Proposed Actions would ultimately lead to higher property values and thus rents in commercial and industrial buildings in the primary and secondary study areas, causing existing businesses to relocate from the study areas, or from the City as a whole. The analysis assumes that under the reasonable worst-case development scenario, the Proposed Actions

would result in development of the maximum amounts of academic use and, to the extent possible assuming maximum academic use, academic research use, while minimizing all other community facility uses. Following the methodologies outlined in the *CEQR Technical Manual*, the analysis of indirect business displacement will:

A. Based on field surveys, interviews and employment data from the U.S. Census and/or New York State Department of Labor, identify and characterize conditions and trends in employment and businesses within the study areas. This characterization will include inventories of specific business sectors. To the extent that information is available, this will include artists' studios and artists in residence in the study areas.

B. Determine if the Proposed Actions would introduce a new type of economic activity that would change the existing economic patterns. Describe generally the ground-floor uses envisioned under the Proposed Actions.

C. Determine if the Proposed Actions would introduce a new trend or accelerate an existing trend in converting commercial and industrial buildings to a different use, e.g., residential.

D. Determine if the Proposed Actions would add to the concentration of one economic sector that would change the existing economic patterns in the study areas.

SPECIFIC INDUSTRIES

Based on the guidelines in the *CEQR Technical Manual*, an assessment of the Proposed Actions' potential effects on specific industries will be performed to respond to the following issues:

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

B. Would the Proposed Actions substantially reduce employment or impair viability in a specific industry or category of businesses?

The analysis will draw on the economic and real estate data compiled in assessing direct and indirect displacement impacts, as well as other published data, data from impacts analyses contained in other chapters of the EIS, and field surveys and/or interviews, as appropriate.

ECONOMIC AND FISCAL BENEFIT AND COSTS ANALYSIS

Although not required by the *CEQR Technical Manual*, the socioeconomic analysis will estimate the fiscal and economic benefits and costs of the Proposed Actions because of its size, proposed use, and likely contribution to the economic vitality of New York City. The analysis will be based on the IMPLAN (IMpact Analysis for PLANning) input-output modeling system, or similar model. The analysis will distinguish between the benefits from development planned for Subdistrict A and more generally those associated with development projected to occur in the remainder of the Project Area.

Construction Period Benefits

The following benefits that would occur during the overall construction period in the City and the State will be estimated:

A. Direct employment (in full-time equivalents) created by the capital investment and indirect employment created by purchases of other goods and services during the construction period.

B. Wages and salaries generated by the direct and indirect employment.

C. Taxes generated during the construction period, including payroll taxes, corporate and business taxes, mortgage recording fees (if any), and miscellaneous taxes. Columbia University is exempt from sales tax, and therefore it is assumed that Columbia would not pay sales tax on construction materials.

D. The total economic output, or the total demand for goods and services created by construction of the project.

Operating Period Benefits and Costs

The following benefits that would occur annually in the City and the State after the project is fully developed will be estimated:

A. Direct or permanent employment (in full-time equivalents) and indirect employment, based on economic multipliers specific to the type of development. The number and types of jobs will be estimated.

B. Wages and salaries generated by the direct and indirect employment.

C. Direct taxes generated by the annual operation of commercial, institutional, and/or graduate students, faculty, and other employee housing development, including retail sales tax, hotel occupancy tax (if any), payroll taxes, corporate and business taxes, and miscellaneous taxes.

D. Taxes generated by indirect economic activity.

E. The total economic output, or the total demand for goods and services created by annual operation of the project.

F. To the extent that the socioeconomic conditions analysis discloses that there are displaced business categories that could not relocate within the City, the analysis will estimate the costs in terms of loss of employment and related tax revenues.

G. The analysis will also estimate the net change in real estate tax revenues from the Proposed Actions.

H. Public funding support for the Proposed Actions (e.g., infrastructure) will also be estimated in the FEIS, and to the extent that this information is known at the time in the DEIS.

TASK 5. COMMUNITY FACILITIES AND SERVICES

The demand for community facilities and services is directly related to the type and size of the new population generated by development resulting from the Proposed Actions. Because the Proposed Actions are not expected to directly cause the displacement of a police or fire facility, no detailed assessment of such services is required. In addition, the project is not expected to introduce more than 600 low- to moderate-income residential units; therefore, a detailed assessment of health care facilities would not be required. The Proposed Actions are not expected to introduce more than 50 children eligible for day care (357 low-income or 417 low-moderate income residential units in Manhattan as identified in Table C, 3C-4 of the *CEQR Technical Manual*). Therefore, a detailed assessment of day care centers would not be required. Further, Columbia has its own security services for its buildings and campus health care facilities for students, and extensive libraries. This chapter will provide an assessment of public schools and libraries in the area and how the Proposed Actions may affect their utilization.

SCHOOLS

This assessment will include the identification of public schools serving the Project Area, an assessment of conditions in terms of enrollment and utilization, identification of conditions that will exist in the future without the Proposed Actions, and an evaluation of impacts by estimating the number of new students generated as a result of the Proposed Actions, relative to the available capacity that may exist in the future without the Proposed Actions. The reasonable worst-case development scenario for the schools analysis will assume maximum housing for graduate students, faculty, and other employees.

As described earlier, Columbia will collaborate with the City of New York on the creation of a new secondary public school that will address education in science, math, and engineering. Two potential locations for the public secondary school will be studied—one location if the proposed rezoning is not approved, and a different location if the Proposed Actions are approved. In both cases, the secondary school would not be considered part of the Proposed Actions; it would be a No Build project, with different locations depending on the outcome of the proposed rezoning's approval process.

LIBRARIES

The graduate student, faculty, and other employee housing component of the Proposed Actions is likely to result in an increased library user population. As a result, the library branches most likely to serve the new residential population from the Proposed Actions will be identified and the impact on library services assessed.

TASK 6. OPEN SPACE

The Proposed Actions would provide for the creation of privately owned, publicly accessible open space in the Academic Mixed-Use Area. The *CEQR Technical Manual* recommends a detailed assessment of a project's effects on open space if a proposed action is expected to generate more than 500 employees or 200 residents, or a similar substantial number of other users. Since the Proposed Actions are expected to generate more than 200 residents and 500 employees, it will have an effect on the utilization of open space and recreational facilities in the surrounding area, and on the new privately owned, publicly accessible open space to be created. Therefore, a detailed assessment of the Proposed Actions' effect on open space will be provided.

This section of the EIS will assess potential project effects on open space, including any direct or indirect impacts. A discussion of the open space added by the Proposed Actions will be provided. The reasonable worst-case development scenario for the open space analysis conservatively will assume minimum recreation, maximum housing for graduate students, faculty, and other employees, and the maximum of other uses that generate the highest employment rates. Tasks for the open space analysis will include:

A. Given the Proposed Actions' introduction of new graduate students, faculty and other employees, workers, and residents to the Project Area, the analysis will consider both passive and active open space resources, requiring two study areas: one that considers the supply and demand for passive open space required by the non-residential population, including the non-resident graduate student/faculty/other employee population; and one that considers the supply and demand for both passive and active open space required by the residential population, including the resident graduate student/faculty/other employee population. Existing publicly accessible passive open space will be inventoried within two

study areas: a ¼-mile radius (non-residential population needs) and a ½-mile radius from the Project Area (residential population needs). As recommended in the *CEQR Technical Manual*, the non-residential open space study area comprises all census tracts that have 50 percent of their area located within ¼ mile of the Project Area, and the residential study area includes all census tracts that have at least 50 percent of their area located within a ½-mile of the Project Area. Both study areas are adjusted for census tract boundaries, as shown in Figure 14. Active open spaces will also be inventoried for the residential study area. The condition and use of existing facilities will be described based on the inventory.

B. Prepare a demographic analysis of the commercial open space study area worker and residential population, and residential population in the residential open space study area, including information available from the 2000 Census.

C. Based on the inventory of facilities and worker population, calculate the open space ratios and compare these ratios to City guidelines to assess adequacy.

D. Assess expected changes in future levels of open space supply and demand in both 2015 and 2030 based on other planned development projects within the study areas. The analysis for future conditions will also consider the creation of new public open spaces in the study area, such as the adjacent waterfront park planned between St. Clair Place and West 133rd Street to the west of Marginal Street. Open space ratios will be developed for future conditions and compared with existing ratios to determine changes in future levels of adequacy; and

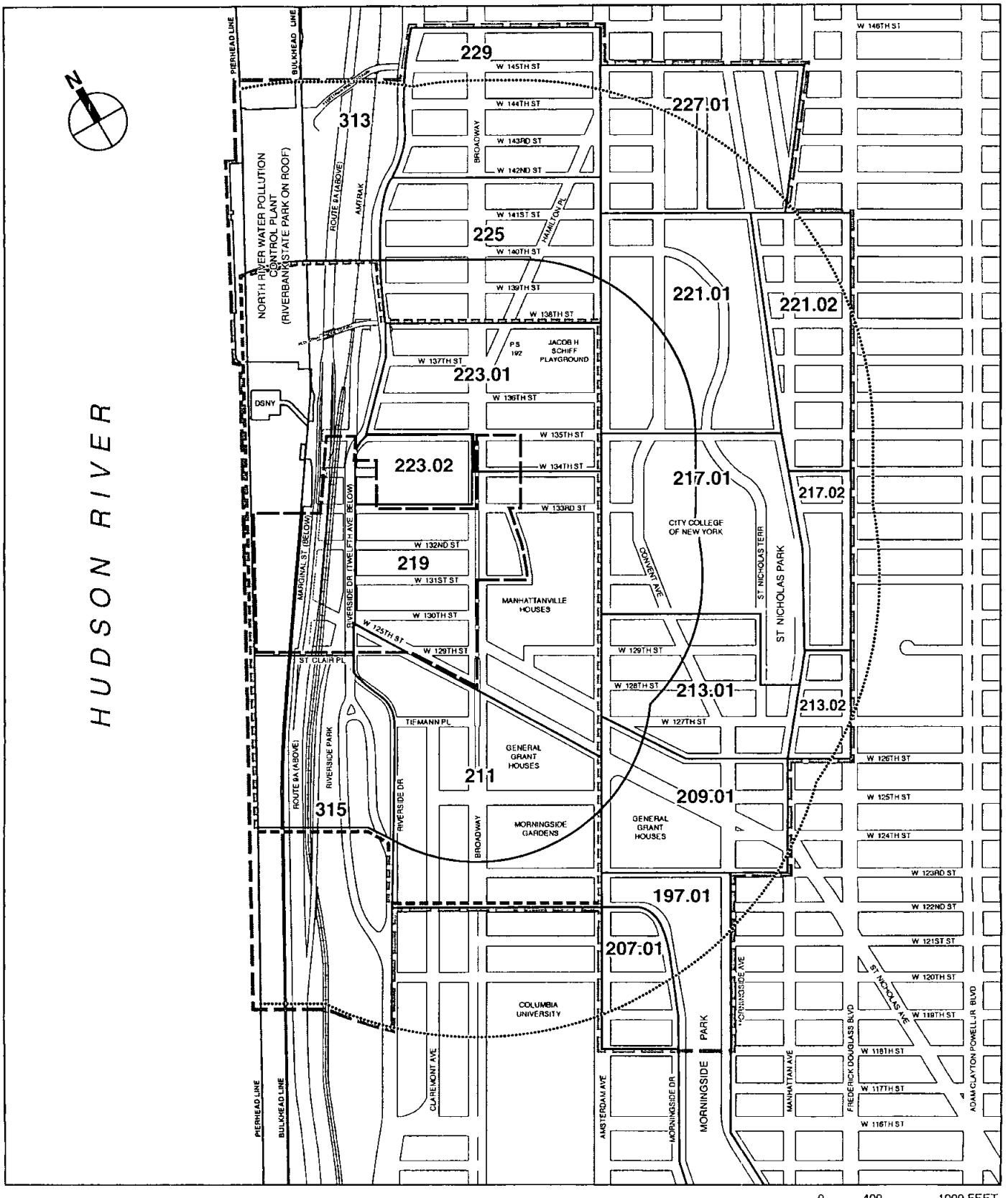
E. Based on the population added by the Proposed Actions, assess their effects on open space supply and demand. The assessment of impacts will be based on a comparison of open space ratios with the Proposed Actions and their associated public space, and open space ratios in the future without the Proposed Actions. The analysis will also consider, at least qualitatively, the recreational facilities provided by the Proposed Actions.

TASK 7. SHADOWS

The Proposed Actions will result in the creation of at least 16 new buildings in West Harlem/ Manhattanville. Therefore, an analysis of shadows will be prepared focusing on the relation between the incremental shadows created by the Proposed Actions' buildings on any sun-sensitive landscape, or activities in the publicly accessible open spaces near the Project Area (including the open spaces of the Manhattanville Houses), or any historic resources if the features that make the resources significant depend on sunlight. Shadows on buildings that are not historic resources will not be analyzed because CEQR does not address impacts on private property, unless such property has a public purpose (e.g., a publicly accessible, privately owned open space). The reasonable worst-case development scenario for the shadow analyses will assume the maximum heights of the Academic Mixed-Use Development buildings, in relation to sun-sensitive uses. These analyses will include the following tasks:

A. Identify sun-sensitive landscapes and historic resources within the path of the Proposed Actions' shadows. In coordination with a survey for the open space and historic analyses, map and describe any sun-sensitive areas. For open spaces, map active and passive recreation areas and features of the open spaces, such as benches or play equipment.

B. Prepare a three-dimensional CAD model of the Academic Mixed-Use Area, including existing structures and topology as well as the proposed structures. The data for this model will come from Sanborn Fire maps, U.S. Geological Survey (USGS) topological data,



MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 14
Open Space Study Area

surveys prepared as part of the project design, and other plans available for the Academic Mixed-Use Area.

C. Prepare shadow diagrams for time periods when shadows from the new buildings could fall onto publicly accessible open space as well as project-created open spaces. The analysis will also take into account any historic resources identified in Task 8 that may have significant sunlight-dependent features. These diagrams will be prepared for up to four representative analysis days if shadows from the proposed buildings would fall onto any of the open spaces on that day. The four analysis days will be:

   a. March 21—the vernal equinox, which is the equivalent of September 21, the autumnal equinox
   b. May 6—the midpoint between the vernal equinox and the longest day of the year, which is the equivalent to August 6—the midpoint between the equinox and the shortest day of the year
   c. June 21—the longest day of the year
   d. December 21—the shortest day of the year

D. Describe the effect of the incremental shadows on the publicly accessible open spaces based on the shadow diagrams for each of the analysis dates. Assess the effects of the Proposed Actions' incremental shadow compared with shadows expected under No Build conditions for both the 2015 and 2030 analysis years.

E. If vegetation or sun-sensitive activity areas will be covered by the Proposed Actions' increment for a significant amount of time, the duration of the Proposed Actions' increment will be compared with the amount of sunlight on those areas under No Build conditions.

TASK 8. HISTORIC RESOURCES

Historic resources include resources of archeological value and architectural value. In comments dated September 23, 2004 and October 12, 2005, LPC has determined that the Project Area is not sensitive for archeological resources. The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) concurred with these findings in a letter dated October 7, 2004. Therefore, this task focuses only on architectural historic resources, and the EIS will not include an analysis of archeological resources.

The area of Manhattanville where the Proposed Actions would be located contains a number of structures dating from the early to mid-20th century. These include known architectural resources, including the Manhattan Valley IRT viaduct, the 125th Street IRT Subway Station, the Riverside Drive viaduct, the former Sheffield Farms Stable at 3229 Broadway, the Studebaker Building at 615 West 131st Street, the former Warren Nash Service Station building at 3280 Broadway, the former West Market Diner at 659 West 131st Street, the former New York Central Railroad Substation No. 11 at 2350–2362 Twelfth Avenue, the former Lee Brothers Storage Building at 571 Riverside Drive, and the Claremont Theater building at 3338 Broadway. The Project Area is also located in the vicinity of other architectural resources. Prior to assessing the potential impacts of the Proposed Actions, all historic resources in the Project Area and in the study area will be identified according to *CEQR Technical Manual* methodologies. In addition, the buildings that have been identified as potentially significant under the 197-a Plan have been brought to the attention of OPRHP and LPC. As part of the EIS, research and consultation with OPRHP and LPC will be undertaken to identify buildings that appear to meet criteria for listing on the State and National Registers or designation as

landmarks. The analyses will consider the potential effects of the Academic Mixed-Use Development and the rezoning of Subdistricts B, C, and the Other Areas in the Project Area on historic resources.

The historic architectural resources analyses will include the following tasks:

A. Map and briefly describe designated architectural resources within the study area (see Figure 15). These comprise National Historic Landmarks, properties listed on or determined eligible for listing on the State and National Register of Historic Places (S/NR, S/NR-eligible), New York City Landmarks (NYCLs), properties listed within New York City Historic Districts (NYCHD), and properties pending NYCL and NYCHD designation.

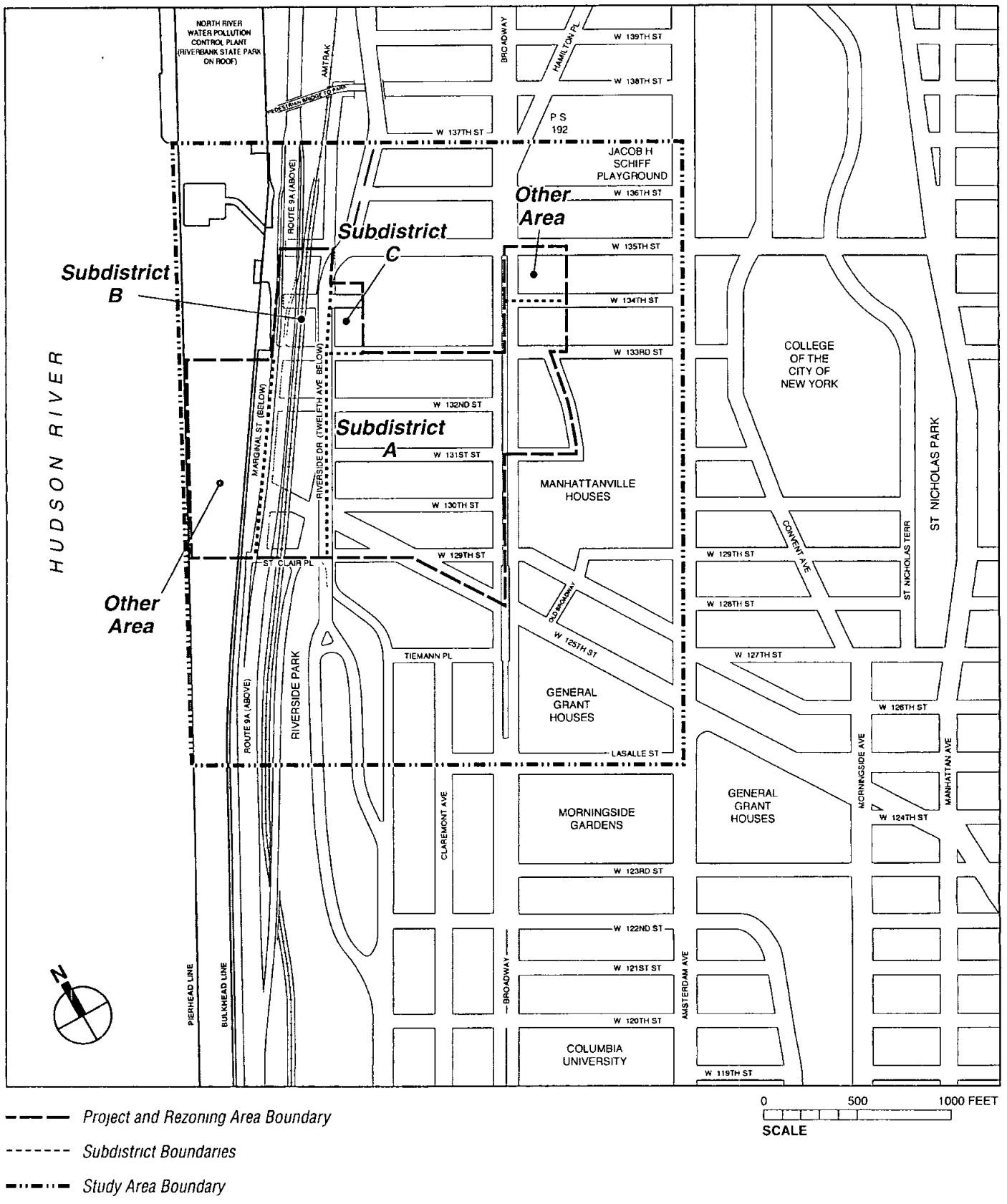
B. Field survey the Project Area and the study area to determine whether there are any potential architectural resources that could be impacted by the Proposed Actions. Potential architectural resources comprise properties that may be eligible for listing on the S/NR and/or designation as an NYCL. Identification of potential architectural resources will be based on criteria for listing on the National Register as found in the Code of Federal Regulations, Title 36, part 60, and LPC's criteria for NYCL/NYCHD designation. Map and describe any identified architectural resources. In consultation with OPRHP and LPC, seek determinations of eligibility for any potential resources in the Project Area and study area that would be impacted by the Proposed Actions.

C. Based on planned development projects, qualitatively discuss any impacts on architectural resources that are expected in the future without the Proposed Actions.

D. Assess any direct physical impacts of the Proposed Actions on architectural resources. If necessary, perform a feasibility study to determine whether the adaptive reuse of a historic resource is possible. In conjunction with the urban design task, assess the Proposed Actions' potential to result in any visual and contextual impacts on architectural resources.

TASK 9. URBAN DESIGN/VISUAL RESOURCES

This section of the EIS will consider the effects of the Academic Mixed-Use Development and of the rezoning of Subdistricts B, C, and the Other Areas on the urban design character of the Project Area and surrounding area (bounded by West 137th Street to the north, LaSalle Street to the south, Amsterdam Avenue to the east, and the Hudson River to the west). Following the guidance of the *CEQR Technical Manual*, the EIS will consider the following urban design characteristics: building bulk, use and type; building arrangement; block form and street pattern; streetscape elements; street hierarchy; and natural features. In addition, the analysis will consider the effects of the Proposed Actions on visual resources in the area, including the Manhattan Valley IRT station and viaduct, Riverside Drive viaduct, Riverside Park, and the Hudson River waterfront. It will also discuss views of the Project Area from Riverside Park and major roadways in the area, including 125th Street, Riverside Drive, and the Henry Hudson Parkway. For Subdistrict A, the urban design and visual resources analysis will assess the reasonable worst-case development scenario in terms of proposed use-based building types and maximum building heights. The potential effects of the rezoning of Subdistricts B, C, and the Other Areas will be evaluated based on the projected development sites identified for the reasonable worst-case development scenario and as allowed by the proposed zoning regulations, including the proposed height limitations for Subdistrict B in relation to the height of the Riverside Drive viaduct. The urban design and visual resources analysis will consist of the following tasks:



MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 15

Historic Resources Study Area

A. Based on field visits, describe the Project Area and the urban design, visual resources, and major view corridors of the study area, using photographs and text as appropriate. Include a discussion of the topographical relationship between the valley and the heights, and the Grant, Manhattanville, and 3333 Broadway housing complexes.

B. Based on planned development projects, describe the changes expected in the urban design and visual character of the study area that are expected in the future without the Proposed Actions.

C. Assess the potential changes in urban design and visual resources that could result from the Proposed Actions in the study area and evaluate the significance of those changes.

TASK 10. NEIGHBORHOOD CHARACTER

The character of a neighborhood is established by numerous factors, including land use patterns, the scale of development, the design of buildings, the presence of notable historic, physical, or natural landmarks, and a variety of other features, including traffic and pedestrian patterns, noise, and socioeconomic conditions.

Since most of these elements will already be covered in other sections of the EIS, this assessment will essentially represent a summary of the key findings of these other analyses. As appropriate, the neighborhood character assessment will incorporate the finding of the reasonable worst-case development scenario analyses for the other environmental sections of the EIS.

A. Drawing on other EIS sections, describe the predominant factors that contribute to defining the character of the area.

B. Based on planned development projects, public policy initiatives, and planned public improvements, summarize changes that can be expected in the character of the neighborhood in the future without the Proposed Actions.

C. Drawing on the analysis of impacts on various other EIS chapters, assess and summarize the Proposed Actions' impacts on neighborhood character.

TASK 11. NATURAL RESOURCES

The upland portion of the Project Area is a largely impervious surface that contains few areas with vegetation and provides limited habitat for wildlife. The proposed increase in landscaped areas has the potential to result in additional habitat available for urban wildlife. Although the amount of impervious surface and the amount of stormwater generated within the Project Area would not be expected to increase as a result of the Proposed Actions, increased sewage discharges from within the Project Area have the potential to affect combined sewer overflows and, consequently, water quality and aquatic biota. Stormwater discharges, whether directed to a separate storm sewer or to the combined sewer system, also have the potential to affect water quality and aquatic biota. While 7 acres of the Project Area are located within the Hudson River, only minimal in-water activities to allow for the reuse of an existing outfall would occur within the Hudson River. Analyses performed in this chapter will:

A. Describe existing natural resources (plants, wildlife, threatened or endangered species, floodplains, groundwater, and earthquake potential) within the study area defined for the Proposed Actions.

B. Provide a general description of aquatic resources of the lower Hudson River in the vicinity of the Proposed Actions, including water quality and aquatic organisms (plankton, macro-invertebrates, fish, and threatened or endangered species).

C. Assess potential effects on natural resources from the Proposed Actions, including potential increases in wildlife habitat resulting from landscaped areas, and potential effects on migratory birds due to the size and heights of the proposed buildings in 2015 and 2030.

D. Assess the potential effects to aquatic natural resources of the Hudson River (water quality and aquatic organisms) in the vicinity of the Proposed Actions associated with stormwater and sewage discharges to the combined sewer system, and separate storm sewer from the Proposed Actions in 2015 and 2030.

TASK 12. HAZARDOUS MATERIALS

The Project Area has been utilized for a variety of industrial uses in the past and in the present, and, therefore, may contain a range of hazardous materials and other contaminants. Also, construction of the below-grade space would involve extensive excavation of the area's streetbeds. The hazardous materials analysis in the EIS will consider whether hazardous or contaminated materials potentially exist in the Project Area, whether they would be disturbed during construction, whether they would persist in the area after development (posing a threat to workers, visitors, and residents at the development), and whether E-designations[1] are warranted on parcels not presently controlled by Columbia University. It is anticipated that subsurface investigations and/or remediation will need to be performed at properties within the Project Area prior to redevelopment.

For the EIS, a preliminary environmental site assessment (PESA) will be performed for the entire Project Area. It will include an area-wide summary of topographical, geological, and hydrogeological conditions from City, State, and USGS sources. For each site in the Project Area, the following tasks will then be undertaken:

A. A visual inspection of the property (from sidewalks and public rights-of-way) to identify uses and assess existing conditions, such as fill pipes, vent caps, transformer vaults, dumping and abandoned drums, or other evidence of petroleum usage or hazardous materials;

B. An evaluation of the land use history, using historical fire insurance maps going back to approximately 1900, if available;

C. Interviews will be conducted with individuals familiar with current and past uses of the property to the extent feasible as part of the Environmental Site Assessments for the Proposed Project.

D. A review of U.S. Environmental Protection Agency and DEC databases regarding hazardous materials will be done for the sites in the Project Area and for the surrounding area. These

[1] Pursuant to Section 11-15 of the New York City Zoning Resolution, E-designations are applied to specific properties that could require remediation, should an owner seek to demolish, excavate, or otherwise construct on his/her property, and are denoted on the zoning map. DEP review of development on an E-designated property is required prior to the issuance of a permit from the New York City Department of Buildings.

records can assist in identifying the use, generation, storage, treatment, disposal, or release of hazardous materials and chemicals;

E. A review of available Phase I Environmental Site Assessment reports (Phase I ESA), subsurface investigation reports, or remedial reports; and

F. For each site in the Project Area, a short narrative history will be written. It will highlight environmental conditions on the site and, if appropriate, note potential impacts from properties within or adjacent to the surrounding site. Recommendations for any necessary subsurface testing or remediation of contaminated materials, as well as measures to be followed during demolition/construction, will also be included.

In addition, for those sites currently owned or controlled by Columbia University, to the extent practicable, the PESA will also include an inspection of the interior of buildings. At these sites, if the potential for contamination is found in the PESA, then surface and subsurface investigations will be conducted to confirm the presence and extent of the contamination, and appropriate mitigation measures will be developed to eliminate, reduce to acceptable levels, or control any significant sources of contamination.

TASK 13. WATERFRONT REVITALIZATION PROGRAM

The New York State Coastal Management Program (CMP) is designed to balance economic development and preservation by promoting waterfront revitalization and water-dependent uses while protecting fish and wildlife, open space and scenic areas, public access to the shoreline and farmland, and minimizing adverse effects on ecological systems and erosion and flooding. New York City's Local Waterfront Revitalization Program (LWRP) was approved by the New York State Department of State for inclusion in the New York State CMP. The New York City Department of Planning (DCP) is responsible for determining a project's consistency with the policies and intent of the City's LWRP. The 10 policies that constitute the LWRP are the City's principal coastal zone management tool and are as follows:

- Support and facilitate residential and commercial redevelopment in appropriate coastal zone areas;
- Support water-dependent and industrial uses in New York City coastal areas that are well suited to their continued operation;
- Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers;
- Protect and restore the quality and function of ecological systems within the New York City coastal area;
- Protect and improve water quality in the New York City coastal area;
- Minimize loss of life, structures, and natural resources caused by flooding and erosion;
- Minimize environmental degradation from solid waste and hazardous substances;
- Provide public access to and along New York City's coastal waters;
- Protect scenic resources that contribute to the visual quality of New York City; and
- Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

Because most of the Project Area is located within the designated boundaries of New York City's Coastal Zone (see Figure 16), the Proposed Actions will be reviewed, as specified in the Waterfront Revitalization Program and in the *CEQR Technical Manual*, for consistency with all the policies comprising the LWRP. This review will incorporate the results of the analyses of potential impacts to the resource areas addressed by the LWRP. Where appropriate, measures will be included in the Proposed Project to maintain consistency with the LWRP. The waterfront revitalization analysis will draw from various impact analyses throughout the EIS, as relevant. These impact analyses will be based on different study areas reflecting the requirements of each analysis.

TASK 14. INFRASTRUCTURE

This chapter of the EIS will assess the additional demands the Proposed Actions would place on the infrastructure systems serving the area, including water supply, sanitary sewage, stormwater management, and telecommunication services. Internal infrastructure systems will also be described. The analyses will be based on the maximum development plan that would place the greatest burden on the infrastructure system. This would typically include the largest possible residential development. The infrastructure analyses will include the following tasks:

A. The existing utilities under those streets below grade that are to be acquired will be described with respect to size, capacity, and general location. Current deficiencies will be identified. Any special features, such as the existing Consolidated Edison cooling station, and other nearby infrastructure components with the potential to be affected by the Proposed Actions, such as the combined sewer system, will also be described. The planned utility relocations and new capacities will be described and illustrated. Measures to avoid impacts on the existing users during the relocation will be explained.

B. Project water demand for the Proposed Actions' 2015 and 2030 development phases to determine whether this demand would trip any threshold requiring additional analysis. The ability of the new water lines to handle the existing and estimated additional demand will be assessed.

C. An estimate of sanitary sewage generation for the Proposed Actions' 2015 and 2030 development phases will be provided. The latest 12 months of flows to the North River Water Pollution Control Plant (WPCP) will be used in the analysis of sewage from the Proposed Project. Future flows to the WPCP will be projected using an analysis prepared by DEP. The compliance of the North River WPCP with its permit requirements, which are protective of the Hudson River water quality, will be discussed. The ability of the combined sewer system to handle the existing and estimated additional demand will be assessed.

D. Stormwater management, including the proposed separate stormwater system for part of the Academic Mixed-Use Area, and potential impacts to the combined sewer system will be discussed for the Proposed Actions' 2015 and 2030 development phases. The water quality in the vicinity of the Project Area will be described. Any expected changes due to other projects will be included.

E. The effect of the Proposed Actions' reasonable worst-case development scenario on discharges to the combined sewer overflows (CSOs) and sewage flows to the North River WPCP, and the ultimate impact of these changes on water quality in the Hudson River, will be assessed using hydraulic and water quality models.

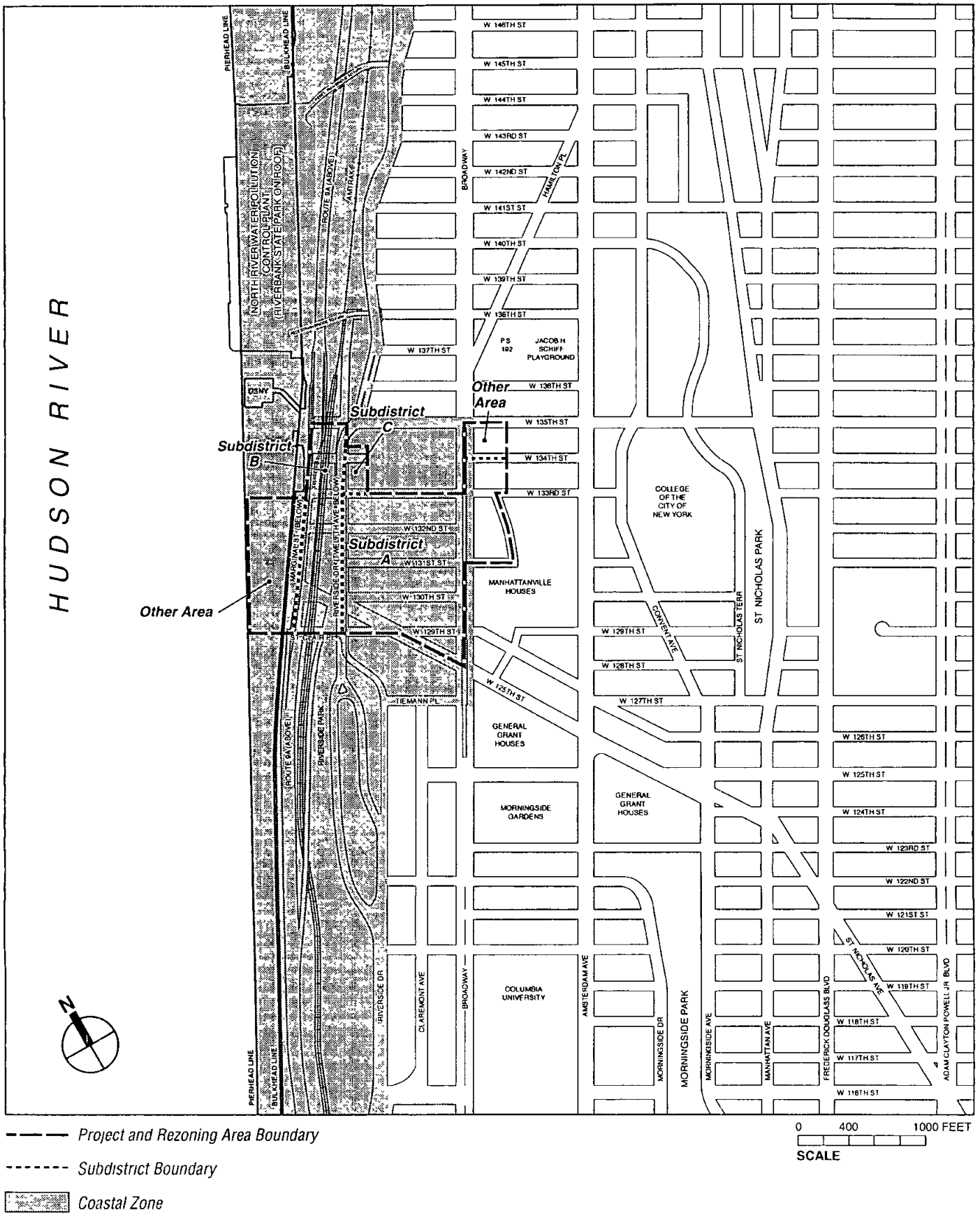


Figure 16

Waterfront Revitalization Program: Coastal Zone Boundary

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

F. The required telecommunication systems to support the new development as well as the existing uses will be described. The ability of the new utilities to handle the existing and estimated additional demand will be assessed.

TASK 15. SOLID WASTE AND SANITATION SERVICES

This chapter of the EIS will assess the additional demands the Proposed Actions would place on solid waste disposal services. The analyses will be based on the maximum development that would place the greatest burden on the solid waste system. This would typically include the largest possible residential development.

Solid waste generation from the Proposed Actions' 2015 and 2030 development phases will be estimated to determine whether this demand would trip any threshold requiring additional analysis. The volume of this waste will be quantified, and the handling system described.

TASK 16. ENERGY

This chapter of the EIS will assess the additional demands the Proposed Actions would place on the energy supply. The analyses will be based on the maximum development that would place the greatest burden on the energy system. This would typically include the largest residential development.

Based on square footage and proposed uses, the energy usage for the Proposed Actions' 2015 and 2030 development phases will be estimated. Any "green measures" to reduce energy consumption as well as the potential effect of the proposed central energy plants on the energy supply and distribution system will be described to the extent they are known at the time of EIS publication. The effect of the new demand on the energy supply systems will be assessed. In addition, the ability of the new utilities to handle the existing and estimated additional demand will be assessed.

TASK 17. TRAFFIC AND PARKING

The EIS will contain a detailed assessment addressing the traffic and parking-related issues associated with the increased vehicular traffic and changes in the parking supply and projected parking demand resulting from the Proposed Actions. This study will include a description of existing conditions, projection of future transportation conditions, and identification of potential adverse impacts of the Proposed Actions with its proposed transportation improvements. Feasible mitigation measures for identified impacts will be recommended, as necessary. In addition, the traffic analysis will be performed for the Proposed Actions without the transportation improvements. This analysis (which will be summarized in the chapter and detailed in an appendix) will allow full disclosure of the Proposed Actions' potential for impacts if the improvements were not undertaken, and will also identify the effects the improvements would have in avoiding potential significant traffic impacts. Both analyses will be undertaken according to the scope described below.

Based on the uses that generate the highest number of trips, the reasonable worst-case development scenario for the traffic and parking analyses will assume maximum administration and academic research uses, and minimum housing for graduate students, faculty, and other employees.

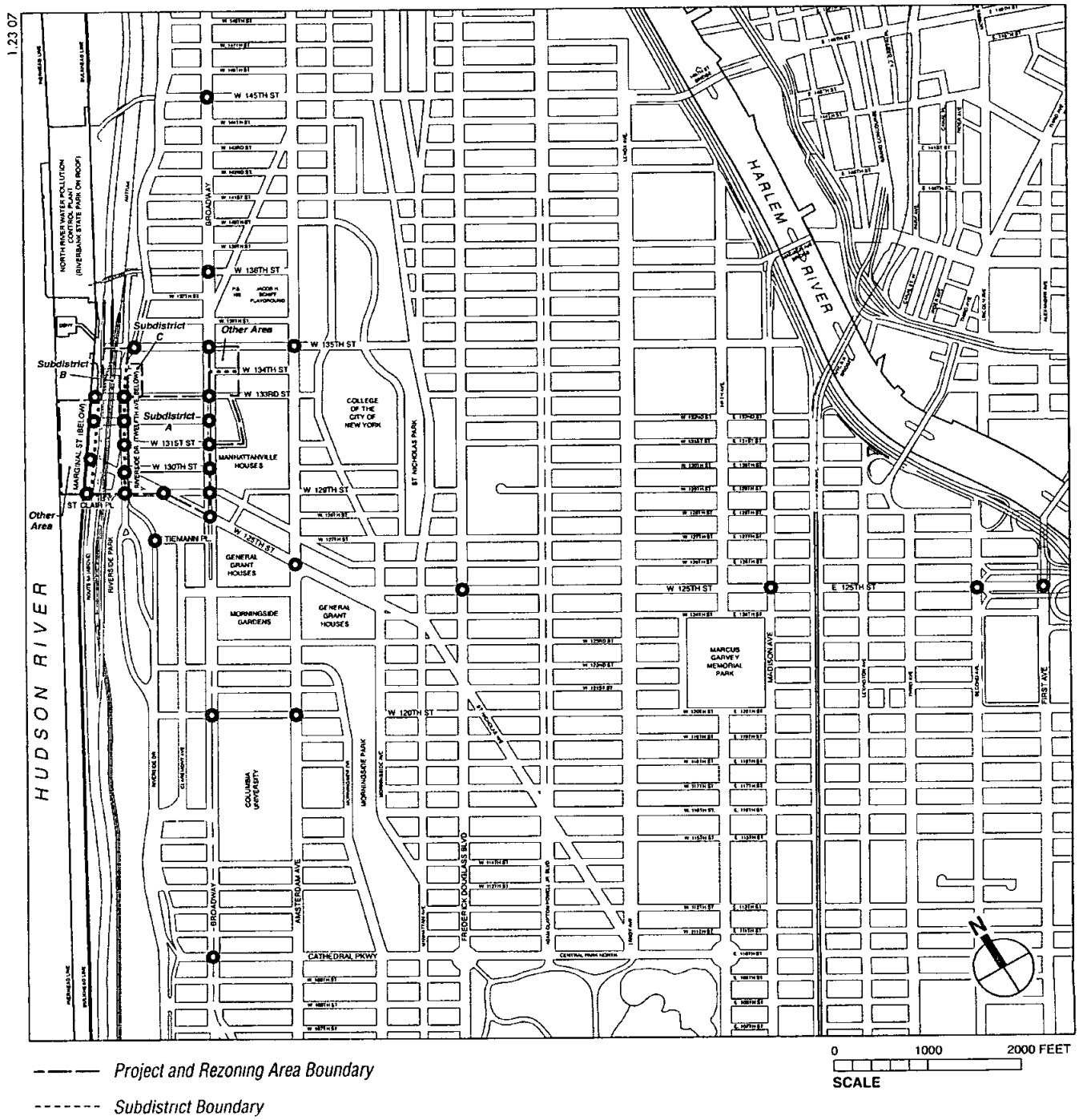
The traffic and parking studies will include the following tasks:

A. Conduct travel demand projections. Project trip generation estimates will be developed for each component of the Academic Mixed-Use Development—academic research, housing for graduate students, faculty, and other employees, administrative office, commercial office, retail, and recreational uses (including trips associated with goods delivery). These estimates will be based on the results of original travel questionnaires developed for the Proposed Actions, information provided by Columbia University, standard references, the *CEQR Technical Manual,* and a review of rates developed for similar uses from previous studies, such as the *Columbia University School for Social Work, Audubon Research Park, Metrotech, Rockefeller University Projects, and East River Science Park.* The estimated daily trips will be distributed for the weekday AM, midday, and PM peak hours by travel mode. The peak hour trips by mode will then be assigned to the available modes of transportation. Trips associated with No Build projects will also be estimated. To develop the reasonable worst-case development scenario, these estimates will be applied to a unit of development area and distributed to different travel modes and analysis peak periods. The resulting peak hour volumes will then be ranked from highest to lowest to determine which project components are the highest transportation trip generators. The peak hour volumes for the Academic Mixed-Use Development will be applied to the background peak hours.

B. Define traffic study areas. The primary study area, which encompasses the Academic Mixed-Use Area, is bounded by West 138th Street to the north, West 122nd Street to the south, Amsterdam Avenue to the east, and Marginal Street to the west. All intersections within this primary study area will be analyzed for potential traffic impacts, and are listed below. To adequately evaluate the potential effects of the Proposed Actions on the surrounding roadway network, a larger (secondary) study area has been delineated to include key intersections located as far north as West 145th Street, as far east as the First Avenue, and as far south as West 110th Street (see Figure 17) and as listed below. When vehicular trip assignments are fully developed, if necessary, additional intersections that would have 50 or more vehicle trips will be included in the traffic study area. In addition, operating conditions on nearby Henry Hudson Parkway ramps will also be addressed.

Intersections to Be Analyzed—Primary Study Area

- Marginal Street and West 125th Street
- Riverside Drive and West 135th Street
- Twelfth Avenue and West 133rd Street
- Twelfth Avenue and West 132nd Street
- Twelfth Avenue and West 125th Street
- Broadway and West 138th Street
- Broadway and West 135th Street
- Broadway and West 133rd Street
- Broadway and West 132nd Street
- Broadway and West 131st Street
- Broadway and West 130th Street
- Broadway and West 129th Street
- Broadway and West 125th Street
- Amsterdam Avenue and West 135th Street
- Amsterdam Avenue and West 125th Street
- Marginal Street and West 133rd Street
- Marginal Street and West 132nd Street
- Marginal Street and St. Clair Place



Project and Rezoning Area Boundary

Subdistrict Boundary

Intersection to be Analyzed

Figure 17

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Traffic Study Area/Intersections to Be Analyzed

- Riverside Drive and Tiemann Place
- Twelfth Avenue and West 131st Street
- Twelfth Avenue and St. Clair Place
- Riverside Drive and St. Clair Place
- West 125th Street and West 129th Street/St. Clair Place

Intersections to Be Analyzed—Secondary Study Area

- Broadway and West 110th Street
- Broadway and West 120th Street
- Amsterdam Avenue and West 120th Street
- Frederick Douglass Boulevard and West 125th Street
- Madison Avenue and East 125th Street
- Second Avenue and East 125th Street
- First Avenue and East 125th Street
- Broadway and West 145th Street

C. Conduct traffic data collection. Manual turning movement and vehicle classification counts for peak weekday time periods will be conducted. The likely hours of peak traffic levels have been preliminarily identified as 7:00 to 10:00 AM in the morning, noon to 2:00 PM in the midday, and 4:00 to 7:00 PM in the evening. These manual counts will be supplemented with continuous (7-day) automatic traffic recorder (ATR) counts to develop an understanding of background temporal distribution of traffic and to determine/confirm peak analysis hours. Physical inventories of study area intersections will include the number of lanes, lane width, parking regulations, signal timing information (obtained from NYCDOT), and other general roadway characteristics.

D. Collect parking data. An inventory of the on- and off-street parking supply, as well as on-street parking regulations, in the study area will be performed. The on-street parking supply survey will be conducted on one weekday during the AM, midday, and PM peak periods. Areas within a ½-mile radius for on-street parking and a 1-mile radius for off-street parking, from the boundaries of the Academic Mixed-Use Area have been identified as the parking study area.

E. Analyze traffic operations and parking conditions. Traffic data will be summarized to determine existing vehicular peak hours, heavy vehicle percentages, peak hour factors, and other analysis parameters, and to develop peak hour balanced traffic networks for the primary and secondary traffic study areas. Traffic volumes in the future without the Proposed Actions in place (No Build) will be determined, including an annual background growth rate plus traffic generated by major new development projects in the study area. For the future Build analyses, two scenarios will be considered to reflect the gradual phasing of the Academic Mixed-Use Development. These scenarios will encompass a Phase 1 Build year of 2015 and a full Build year of 2030. Detailed traffic and parking analyses for the baseline, future No Build, and Build conditions will be conducted for the AM and PM peak periods in accordance with CEQR guidelines to identify potential adverse impacts associated with the Proposed Actions. It is anticipated that a midday analysis would not be required. A review of midday peak period traffic data and trip projections will be conducted to confirm the comparatively lower activities levels.

F. Collect accident data and perform safety analyses. An investigation of the latest three years of accident history will be conducted to identify potential safety issues concerning study area

intersections and to evaluate potential safety impacts that future project-generated trips may have on these locations. The recorded accidents will be categorized and correlated with observed operational conditions. This information will be used as the basis for recommending potential safety improvements and will be taken into consideration should the intersections also require traffic mitigation.

G. Prepare mitigation analyses. As appropriate, potential mitigation measures, such as signal timing modifications, lane restriping, and intersection approach daylighting will be recommended.

TASK 18. TRANSIT AND PEDESTRIANS

The transit and pedestrians analyses for the EIS will be based on the trip generation estimates developed for the traffic and parking task. The transit and pedestrians studies will include a description of existing conditions, projection of future conditions, identification of potential adverse impacts, and recommendation of feasible mitigation measures. The reasonable worst-case development scenario for the transit and pedestrian analyses will also assume maximum administration and academic research uses and minimum housing for graduate students, faculty, and other employees.

The transit and pedestrian studies will include the following tasks:

A. Conduct transit and pedestrian data collection and analyses. For the transit and pedestrian study locations identified below, original data will be gathered, in accordance with CEQR guidelines, to develop existing baseline conditions. As with traffic and parking, it is assumed that detailed future conditions analyses will be conducted for two Build years, incorporating the weekday AM and PM peak periods.

B. Assess transit conditions. The transit analysis will include a description of nearby transit facilities and a characterization of subway and bus ridership levels. Transit service to the Project Area is available via NYCT subways and buses. Based on the *CEQR Technical Manual*, detailed analyses will be required if the Proposed Actions generate 200 or more peak hour trips at a particular subway station or bus route. Given the scale of the Proposed Actions, it is expected that a detailed assessment, including operational analyses of stairways and control areas, will be required for the 125th Street and 137th Street No. 1 subway stations, and the 125th Street A/B/C/D subway station. A line-haul assessment of the Broadway No. 1 subway line will also be provided. In addition, selective nearby bus routes (M3, M4, M5, M11, M18, M60, M100, M101, M104, and Bx15) will be assessed in terms of their capability to accommodate additional riders from the Project Area.

C. Assess pedestrian conditions. The Proposed Actions will generate pedestrian traffic along likely routes between the Project Area and connecting transit service, and the adjacent neighborhoods. It is assumed that a quantified analysis of sidewalk, crosswalk, and corner conditions will be conducted, focusing on conditions along major pedestrian corridors, such as 125th Street and Broadway, and other key locations where high pedestrian activities have been identified and/or will be generated.

D. Prepare mitigation analyses. As appropriate, potential mitigation measures, such as widening restrictive stairways and crosswalks, and increasing frequency of bus service, will be recommended.

TASK 19. AIR QUALITY

The air quality studies for the Proposed Actions will include both mobile and stationary source analyses. The mobile source air quality impact analysis will assess potential effects from traffic-generated emissions. For the purposes of analyzing the Proposed Actions' reasonable worst-case development scenario for mobile source air quality, the analysis will incorporate the reasonable worst-case findings of the traffic analyses. The stationary source air quality impact analysis will address the following issues with respect to the potential for air quality impacts: the effects of emissions from the proposed central energy plants on pollutant levels (i.e., sulfur dioxide [SO_2], carbon monoxide [CO], particulate matter [PM_{10} and $PM_{2.5}$], and/or nitrogen dioxide [NO_2] concentrations); the expected usage of potentially hazardous materials and the procedures and systems that would be employed in the proposed facilities to ensure the safety of staff and the surrounding community in the event of a chemical spill in one of the proposed laboratories; and the potential for impacts on project users from existing industrial/manufacturing uses in the area. To be conservative, the reasonable worst-case development scenario for stationary source air quality will minimize the height of the structure that contains the stack for the central energy plants, minimize the height of the proposed laboratories (with exhaust), and maximize the height of the adjacent surrounding Academic Mixed-Use Development buildings.

MOBILE SOURCE ANALYSES

A. Gather existing air quality data. Collect and summarize existing ambient air quality data for the study area.

B. Determine receptor locations for the CO, PM_{10}, and $PM_{2.5}$ microscale analysis. Select critical intersection locations in the study area and outside the study area, based on data obtained from the Proposed Actions' traffic analysis. At each intersection, multiple receptor sites will be analyzed in accordance with CEQR guidelines. Annual $PM_{2.5}$ concentrations will be calculated at neighborhood scale receptor locations, in accordance with the most current DEP guidance.

C. Select dispersion model. The U.S. Environmental Protection Agency (EPA) CAL3QHC screening model will be used for less congested locations. EPA's CAL3QHCR refined intersection model will be used at the more sensitive CO receptor locations. For this analysis, five years (2000–2004) of meteorological data from LaGuardia Airport and concurrent upper air data from Brookhaven, New York, will be utilized for the modeling program.

D. Select emission calculation methodology and worst-case meteorological conditions. Vehicular cruise and idle emissions for the dispersion modeling will be computed using EPA's MOBILE6.2 model. For the worst-case analysis of CO (at screening locations), conservative meteorological conditions to be assumed in the dispersion modeling are a 1 meter per second wind speed, Class D stability, and a 0.70 persistence factor. Temperature data for input to the MOBILE6.2 model will be based on the most recent guidance available from EPA and DEP.

E. Select appropriate background levels. For the microscale analyses, existing background levels will be used as estimates of future background conditions.

F. At each CO mobile source microscale receptor site, calculate maximum 1- and 8-hour concentrations for existing conditions, the future conditions without the Proposed Actions, and the future conditions with the Proposed Actions. PM_{10} and $PM_{2.5}$ maximum 24-hour and annual concentrations will be determined for the future conditions without the Proposed Actions and the future conditions with the Proposed Actions. Future year analyses with and

without the Proposed Actions will be performed for two Build years: 2015 and 2030. The analysis period will be based on the reasonable worst-case project trips as determined in the traffic task. For intersections along Twelfth Avenue, background concentrations from Henry Hudson Parkway traffic volumes will be included in the microscale analysis.

G. Assess the potential impacts associated with proposed parking facilities. The analysis will use the procedures outlined in the *CEQR Technical Manual* for assessing potential impacts from proposed parking facilities associated with the below-grade area. Cumulative impacts from on-street sources and emissions from the parking facilities will be calculated where appropriate. Compare future CO pollutant levels with standards and applicable *de minimis* criteria to determine potential significant adverse project impacts.

H. Compare existing and future predicted concentrations of CO and PM pollutant levels with and without the Proposed Actions to determine whether or not significant adverse air quality impacts would occur. The City's *de minimis* criteria for CO will be employed to determine the CO impacts of the Proposed Actions. The incremental increases in $PM_{2.5}$ for the future conditions with and without the project will be compared with the current DEC and updated DEP interim guidance criteria for $PM_{2.5}$.

I. At any receptor sites where significant impacts occur, analyses would be performed to determine what mitigation measures would be required.

J. Determine the consistency of the Proposed Actions with the strategies contained in New York's current State Implementation Plans (SIPs) for the area.

STATIONARY SOURCE ANALYSES

Central Energy Plants and Other HVAC Systems

K. Perform a detailed stationary source analysis of the emissions from the Academic Mixed-Use Development's central energy plants using EPA's AERMOD dispersion model. Five years of meteorological data (2000-2004) with surface data from LaGuardia Airport and concurrent upper air data from Brookhaven, New York, will be used for the simulation modeling. Concentrations of NO_2, SO_2, CO, PM_{10}, and $PM_{2.5}$ will be determined. Predicted values will be compared with ambient air quality standards, and DEP and DEC $PM_{2.5}$ interim guidance criteria. In the event that violations of standards are predicted, examine design measures to reduce pollutant levels to within standards.

L. Perform a screening analysis, based on the methodology of the *CEQR Technical Manual*, of HVAC emissions from Site 5 within Subdistrict A, and sites within Subdistricts B, C, and the Other Areas. The analysis will assess impacts on existing sensitive uses and proposed development sites (i.e., project-on-project impacts) to determine whether they are below significant thresholds.

M. Assess the combined impacts of criteria air pollutants from the Proposed Actions' stationary sources with pollutants from other existing or planned future commercial, institutional, manufacturing or large-scale residential sources (e.g., the North River WPCP, the MTA Manhattanville Bus Depot, the Columbia University Morningside Campus Central Steam Plant, and the Manhattanville Houses) in the defined study areas that may contribute to ambient air quality concentrations. The cumulative impact analysis will consider larger sources of PM_{10}, NO_x, CO, and SO_2 within a ½-mile radius of the Project Area. Maximum predicted impacts will be added to background concentrations based on the latest monitoring data at

nearby stations operated by DEC and compared with ambient air quality standards. This analysis will also assess the impact of these other sources on proposed development sites.

Chemical Spills

N. Review information provided by Columbia University on chemicals and storage quantities that would be expected at the proposed Academic Mixed-Use Development laboratories. Information on toxicity, volatility, and other relevant characteristics will be reviewed. Based upon a preliminary review of this information, it is expected that the chemicals to be considered for the lab spill analysis will include osmium oxide, methyl isocyanate, 2-propenal, and bromine or bromine solutions. Review design information of the laboratory fume hood exhaust system provided by the project's engineers.

O. Impacts from an accidental spill occurring in the proposed Academic Mixed-Use Development laboratory buildings will be evaluated using the information provided and the procedures and methodologies contained in the *CEQR Technical Manual.* The procedures utilize evaporation rates developed by the Shell Development Company (M.T. Fleisher, *An Evaporation/Air Dispersion Model for Chemical Spills on Land*, December 1980), an examination of recirculation potential using the methodology described by D.J. Wilson in *A Design Procedure for Estimating Air Intake Contamination from Nearby Exhaust Vents* (ASHRAE TRANS 89, Part 2A, pp.136-152, 1983), and the determination of maximum pollutant concentrations at elevated receptors downwind of the fume exhausts using the EPA INPUFF model (W.B. Peterson, *Estimating Concentrations Downwind From an Instantaneous Puff Release*, EPA 600/3-82-078, August 1978). One set of design parameters will be evaluated.

P. Maximum concentrations will be compared with the Short-Term Exposure Levels (STELs) or ceiling levels recommended by the National Institute for Safety and Health (NIOSH) and the U.S. Occupational Safety and Health Administration (OSHA) for the chemicals examined. Where necessary, recommendations will be made to reduce any potential levels of concern.

Existing Sources

Q. Assess potential impacts on the Proposed Actions from existing HVAC sources. Larger sources within 1,000 feet of the Proposed Actions will be analyzed, along with sources within 400 feet of commercial, institutional, or large-scale residential developments. Concentrations will be determined using EPA's AERMOD dispersion model.

Industrial Source Analyses

R. A field survey will be performed to determine if there are any manufacturing or processing facilities within 400 feet of the Proposed Actions for each of the analysis years. The DEP's Bureau of Environmental Compliance (BEC) files will be examined to determine if there are permits for any industrial facilities within a 400-foot radius of the boundary of the proposed rezoning area, and a 1,000-foot radius of the proposed rezoning area for large sources with process emissions, as per the *CEQR Technical Manual* guidelines. A review of federal and State permits will also be conducted (using the EPA Envirofacts and DEC Air Guide-1 databases). Based on this information, a determination will be made of whether further detailed analysis is necessary. The ISC3 dispersion model screening database will be used to estimate the short-term and annual concentrations of critical pollutants at the potential receptor sites. Predicted worst-case impacts on the project will be compared with the short-term guideline concentrations (SGC) and annual guideline concentrations (AGC) reported in the DEC's *DAR-1 AGC/SGC Tables* (December 2003) to determine the potential for

significant impacts. In the event that violations of standards are predicted, measures to reduce pollutant levels to within standards will be provided.

TASK 20. NOISE

The noise study will focus on assessing: (1) potential noise impacts due to project-generated traffic (mobile sources); (2) potential noise impacts due to building operations (i.e., stationary source noise from the Academic Mixed-Use Development's two central energy plants and other mechanical equipment); and (3) the level of attenuation needed in the Academic Mixed-Use Development's buildings and other proposed sites to satisfy CEQR requirements. For the purposes of analyzing the Proposed Actions' reasonable worst-case development scenario for mobile source noise, the analyses will incorporate the reasonable worst-case findings of the traffic analyses.

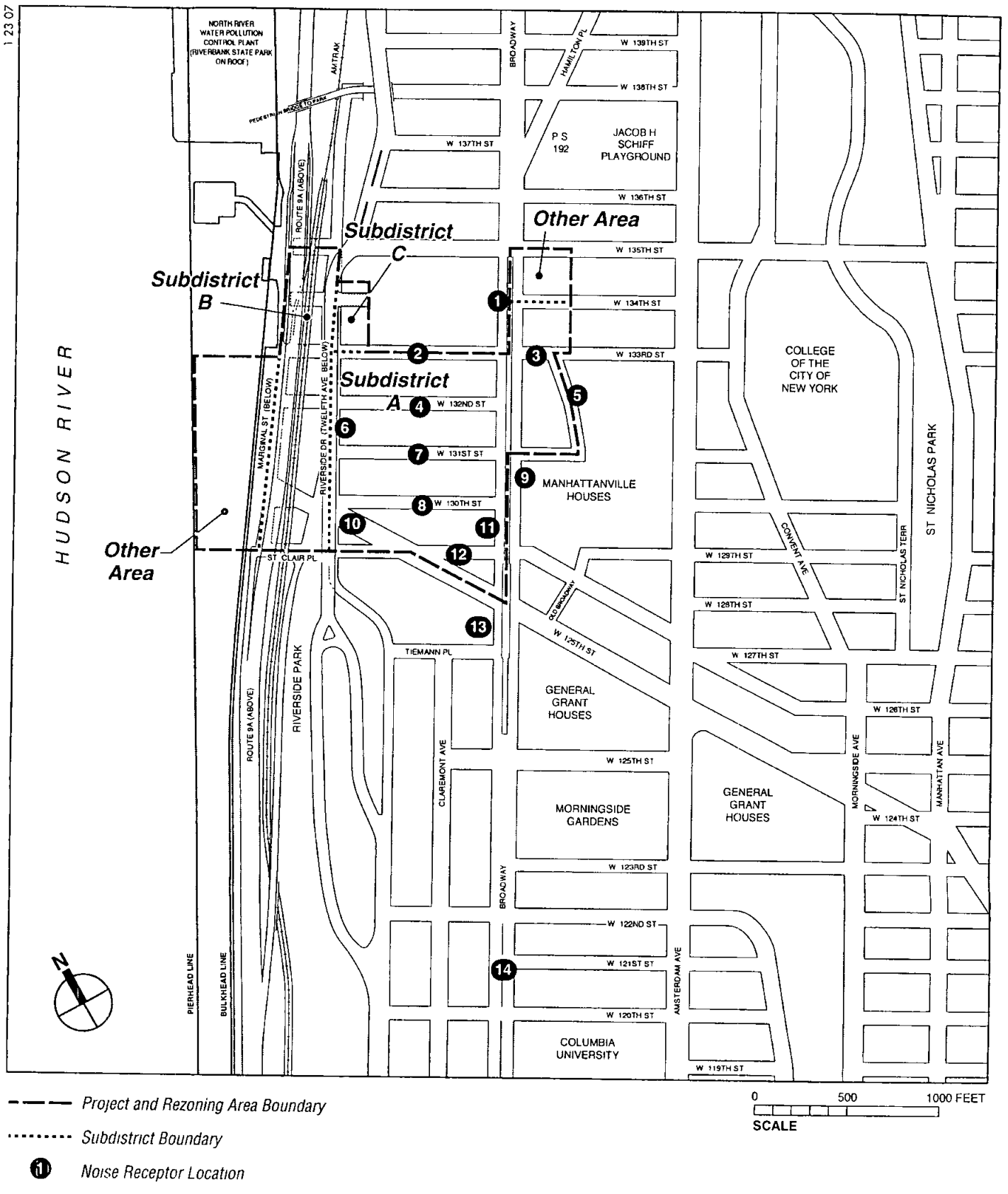
The EIS noise study will include the following tasks:

A. Select appropriate noise descriptors. Appropriate noise descriptors that characterize the noise environment and the impact of the Proposed Actions will be selected based on current CEQR criteria. Consequently, the 1-hour equivalent ($L_{eq(1)}$) and, where appropriate, the L_{10} noise levels will be examined. Where appropriate, the 24-hour day night (L_{dn}) noise levels will be examined for train and subway noise.

B. A screening analysis will be performed to determine locations where there is the potential for significant impacts due to the Proposed Actions. In general, these locations would be places where traffic generated by the Proposed Actions would result in a doubling of passenger car equivalents (PCEs). Techniques used for this screening analysis will include proportional modeling, use of the TNM model, and/or use of the Federal Transit Administration (FTA) transit modeling techniques.

C. Select receptor locations for detailed analysis. Two types of receptor sites will be selected: receptor sites for detailed impact analysis, and receptor sites for building attenuation purposes. Where necessary, both ground-level and elevated receptors will be selected. In general, receptor sites selected for impact analysis will be those locations where the Proposed Actions have the potential for significant impacts (based upon a screening analysis that will look for a doubling of traffic). These receptor sites would include locations where the Proposed Actions would have the greatest potential to affect ambient noise levels. Receptor sites for building attenuation purposes will be locations where building design measures would be necessary to meet CEQR requirements, but where no detailed impact analysis is necessary (because project-generated traffic would not result in a significant increase in noise levels). Receptor sites will include locations adjacent to busy streets, rail and subway tracks, and the elevated Henry Hudson Parkway. Particular attention will be paid to sensitive land uses—parks, open space, residences, etc. See Figure 18 for potential noise receptor sites.

D. Determine existing noise levels. At each of the impact receptor sites identified above, existing noise levels will be measured during four time periods—weekday AM, weekday midday, weekday PM, and weekday nighttime). At each of the building attenuation receptor sites identified above, existing noise levels will be measured during three time periods—weekday AM, weekday midday, and weekday PM. Weekday nighttime conditions will be examined as part of the impact analysis (but not for building attenuation). Measurements will be made using a Type 1 instrument, and L_{eq}, L_1, L_{10}, L_{50}, and L_{90} values will be recorded. At each site, 20-minute spot measurements will be made. At selected locations, 24-hour continuous measurements will be made.



MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 18
Noise Receptor Locations

E. Determine future noise levels without the Proposed Actions. At each of the impact receptor locations, noise levels without the Proposed Actions will be determined for the 2015 and 2030 analysis years using existing noise levels, acoustical fundamentals, and mathematical models. Noise from traffic, transit (train and subway), and mechanical equipment operation will be included in the analysis. Techniques used for this analysis will include proportional modeling, use of the TNM model, and/or use of the FTA transit modeling techniques.

F. Determine future noise levels with the Proposed Actions for the 2015 and 2030 analysis year programs. At each of the impact receptor locations, noise levels with the Proposed Actions will be determined using existing noise levels, acoustical fundamentals, and mathematical models. Noise from traffic, transit (train and subway), and mechanical equipment operation will be included in the analysis. Techniques used for this analysis will include proportional modeling, use of the TNM model, and/or use of the FTA transit modeling techniques. Noise due to stationary sources (including the proposed HVAC and central energy plant equipment) will be included in the analysis. An analysis will be performed to examine the potential impacts on ambient noise levels due to the bus depot circulation vents on West 133rd Street. The potential effects of reverberation of sound reflected from the proposed tall buildings on receptors such as Manhattanville Houses, Grant Houses, 3333 Broadway, and the residential buildings on Tiemann Place will also be analyzed.

G. Compare noise levels with CEQR impact evaluation criteria. Existing noise levels and future noise levels, both with and without the Proposed Actions, will be compared with the CEQR noise impact criteria to determine project impacts. In addition, noise from mechanical equipment will be compared with other relevant City noise criteria (e.g., New York City Noise Code, Performance Standards for Manufacturing Zones contained in the New York City Zoning Resolution, etc.).

H. Determine level of building attenuation required. For the buildings analyzed as part of the Proposed Actions, the level of attenuation and the types of measures (e.g., alternative ventilation, double-glazed windows, etc.) necessary to achieve the attenuation specified in the *CEQR Technical Manual* will be examined.

I. Examine mitigation measures, if necessary. If significant noise impacts are predicted to occur with the Proposed Actions, possible mitigation measures will be examined to reduce or eliminate such impacts. These measures will include possible rerouting of traffic and building attenuation measures (e.g., retrofitting windows and providing alternative ventilation), as well as design modifications for mechanical equipment.

TASK 21. CONSTRUCTION

The EIS will assess potential construction-related impacts from all activities associated with construction of the Proposed Actions during Phase 1 and Phase 2. The likely construction schedule for the Academic Mixed-Use Development and an estimate of activity on-site (in the Academic Mixed-Use Area) will be described. For the purposes of analyzing the reasonable worst-case development scenarios for construction, construction impacts will be evaluated for the periods when maximum potential impacts are expected during construction activity: for conditions prior to 2015 (completion of Phase 1), and conditions between 2015 and 2030 for Phase 2 construction. Potential impacts from excavation of the below-ground space will also be analyzed. If the construction analysis identifies significant adverse impacts, practicable mitigation measures will be developed.

As described earlier, to address a reasonable worst-case, the EIS analyzes a scenario in which the MTA Manhattanville Bus Depot remains in the Project Area at a below-grade location generally beneath its existing site with Columbia buildings developed above. A specific temporary relocation plan for the buses during this construction is not known at this time. However, the EIS will contain a generic analysis (in an appendix) of the potential environmental impacts that could result from the temporary relocation of buses from the MTA Manhattanville Bus Depot during construction. If the analysis determines that significant adverse impacts could occur, potential mitigation measures will also be discussed. When a specific temporary bus relocation plan is set forth at a later time, a further review, which would include public participation, would be undertaken to refine and implement these mitigation strategies.

Technical areas to be analyzed in the construction analysis include:[1]

A. *Transportation Systems*. Consider any temporary losses in streets, lanes, walkways, parking, and other above- and below- grade transportation services, and increases in vehicles from construction workers; assess impacts on the traffic conditions that affect emergency responders; and analyze potential temporary impacts to these transportation systems.

B. *Air Quality*. Analyze direct emissions from demolition and construction site activity, including fugitive dust and on-site diesel equipment. Analyze potential effects from increases in mobile source emissions of trucks and worker vehicles at nearby sensitive receptors and congested locations, and from potential long-term traffic diversions. Discuss measures and emission reduction strategies to reduce impacts.

C. *Noise and Vibration*. Discuss noise from the construction activity, including effects on nearby sensitive receptors. Discuss the potential for vibrations caused by construction activities to damage buildings and other resources, and, if necessary, mitigation measures to minimize vibrations.

D. *Hazardous Materials*. In coordination with the work performed for the hazardous materials task, above, summarize actions to be taken during construction to limit exposure of construction workers, residents, and the environment to potential contaminants. This would include the implementation of a construction health and safety plan (CHASP), which would require approval by DEP, and would be based on the results of subsurface testing (soil and groundwater analyses).

E. *Infrastructure*. The Proposed Actions would need to relocate public infrastructure, particularly water and sewer mains, as well as electric, gas, and telephone lines; thus, the maintenance of services to the neighborhood during the relocation will be addressed.

F. *Historic Resources*. The integrity of nearby historic resources within and adjacent to the Project Area could be adversely affected by construction vibrations; thus, the maintenance of the integrity of such resources would need to be assessed.

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[1] At the time the Draft Scope of Work was issued, the privately owned, publicly accessible open space proposed for the Academic Mixed-Use Development during Phase 1 would have been temporarily removed during construction. Since the issuance of the Draft Scope, the Proposed Actions have changed such that there would be no temporary loss of open space. Therefore, the construction open space analysis to address the temporary loss of open space described in the Draft Scope is no longer necessary, and the Final Scope has been revised to reflect this.

G. *Socioeconomic Conditions.* Assess effects on local business operations as a result of construction activities in the Project Area. There would be no temporary takings of businesses during construction.

H. *Other Technical Areas.* As appropriate, discuss the other areas of environmental assessment for potential construction-related impacts.

TASK 22. PUBLIC HEALTH

Following the guidelines presented in the *CEQR Technical Manual*, this task will examine the project's potential to significantly impact public health concerns related to the construction and operation of the Proposed Project. Drawing on other EIS sections, this task will use all relevant information to assess and summarize the potential for significant adverse impacts on public health from project activities. Included in the public health analysis will be descriptions of liquid and solid wastes from the laboratories and other facilities that cannot be disposed of directly into the sanitary sewers or handled by the solid waste systems. Methods to meet the standards imposed by DEP and/or DEC will be discussed. The discussions will include handling and transport of these waste products.

Columbia University currently does not operate a laboratory at Biosafety Level 4 and would not operate a Biosafety Level 4 laboratory at the proposed Manhattanville university area. Since the precise areas of research to be undertaken at the proposed Manhattanville university area cannot be identified at this time, Columbia currently does not have plans for a Biosafety Level 3 laboratory. However, the EIS assumes that there would be one or more Biosafety Level 3 laboratories, and a description of the biological materials handled and the required laboratory practices and equipment for Levels 1 through 3 will therefore be included in the FEIS. The transport, handling, use, storage, and disposal of the materials associated with this type of laboratory will be discussed. The safety and security measures that would be implemented at such facilities will also be presented.

The public health chapter will also include a discussion of asthma and other health effects related to diesel engine exhaust emissions.

TASK 23. MITIGATION

Where significant project impacts have been identified in the analyses discussed above, any practicable measures that have the potential to avoid or mitigate those impacts will be identified. This task summarizes the findings of the relevant analyses and discusses potential mitigation measures. Where impacts cannot be mitigated, they will be described as unavoidable adverse impacts.

TASK 24. ALTERNATIVES

The purpose of an alternatives analysis is to examine reasonable and practicable options that avoid or reduce project-related significant adverse impacts and achieve the stated goals and objectives of the Proposed Actions. The EIS will also consider other planning and design alternatives. The specific alternatives to be analyzed will include a no action alternative, which assumes that the Proposed Actions are not implemented and the Project Area parcels maintain their current uses; a 197-a Plan alternative, which will assess the environmental effects of a development scenario prepared by DCP in consultation with Community Board 9 consistent with the Proposed 197-a Plan; an alternative that seeks to minimize or avoid identified

significant adverse impacts; and a cogeneration energy supply alternative. The "Alternatives" chapter will also include a discussion of alternatives considered and rejected by Columbia in its planning process, including infill development limited to sites currently under the ownership or control of Columbia, and construction of new University facilities on top of the existing above-grade bus depot.

TASK 25. EIS SUMMARY CHAPTERS

In accordance with CEQR guidelines, the EIS will include the following three summary chapters, where appropriate to the Proposed Actions:

- Unavoidable Adverse Impacts—Any significant impacts for which no mitigation can be put forth or implemented will be presented as unavoidable adverse impacts;
- Growth-Inducing Aspects of the Proposed Actions—Any growth-inducing aspects of the Proposed Actions, focusing on whether they are expected to trigger further development, will be described; and
- Irreversible and Irretrievable Commitments of Resources—This section summarizes the Proposed Actions and its impacts in terms of the loss of environmental resources, both in the immediate future and the long term

TASK 26. EXECUTIVE SUMMARY

The executive summary will utilize relevant material from the body of the EIS to describe the Proposed Actions, the necessary approvals, study areas, environmental impacts predicted to occur, measures to mitigate those impacts, unmitigated and unavoidable impacts (if any), and alternatives to the Proposed Actions.

APPENDIX ITEM: ENVIRONMENTAL JUSTICE

For the purposes of DEC permit approvals, an analysis will be provided as an appendix to the EIS that considers the potential for disproportionately high and adverse human health or environmental effects of the project on minority or low-income populations. This analysis will be conducted in accordance with CP-29, *Environmental Justice and Permitting* (the "Policy"), issued by DEC on March 19, 2003. ✷

APPENDIX A

PROPOSED DRAFT SPECIAL MANHATTANVILLE MIXED-USE DISTRICT ZONING TEXT

Proposed Special Manhattanville Mixed Use District

Matter in Graytone or Underlined is new, to be added;
Matter in ~~Strikeout~~ is old, to be deleted;
Matter within # # is defined in Section 12-10;
* * * indicate where unchanged text appears in the Zoning Resolution

11-12
Establishment of Districts

* * *

Establishment of the Special Madison Avenue Preservation District

* * *

Establishment of the Special Manhattanville Mixed Use District

In order to carry out the special purposes of this Resolution as set forth in Article X, Chapter 4, the #Special Manhattanville Mixed Use District# is hereby established.

* * *

12-10
Definitions

* * *

Special Madison Ave Preservation District

* * *

The "Special Manhattanville Mixed Use District" is a Special Purpose District designated with the letters "MMU" in which regulations set forth in Article X, Chapter 4, apply. The #Special Manhattanville Mixed Use District# appears on #zoning maps# superimposed on other districts and, where indicated, its regulations supplement, modify and supersede those of the districts on which it is superimposed.

* * *

14-44
Special Zoning Districts Where Certain Sidewalk Cafes are Permitted

#Enclosed# or #unenclosed sidewalk cafes# shall be permitted, as indicated, in the following special zoning districts, where allowed by the underlying zoning. #Small sidewalk cafes#, however, may be located on #streets# or portions of #streets# within special zoning districts pursuant to the provisions of Section 14-43 (Locations Where Only Small Sidewalk Cafes Are Permitted).

Manhattan	#Enclosed Sidewalk Cafe#	#Unenclosed Sidewalk Cafe#
Battery Park City District	Yes	Yes
Clinton District	Yes	Yes
Limited Commercial District	No	No*
Lincoln Square District	No	Yes
Little Italy District	No	Yes
Lower Manhattan District	No	Yes**
Manhattanville Mixed Use District	No***	Yes
Transit Land Use District	Yes	Yes
Tribeca Mixed Use District	Yes	Yes
United Nations Development District	No	Yes

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* #Unenclosed sidewalk cafes# are allowed on Greenwich Avenue

** #Unenclosed sidewalk cafes# are not allowed on State, Whitehall or Chambers Streets or Broadway

*** #Enclosed sidewalk cafes# are allowed in Subdistrict B only.

* * *

ALL TEXT IN ARTICLE X, CHAPTER 4, IS NEW

Article X: SPECIAL PURPOSE DISTRICTS

Chapter 4
Special Manhattanville Mixed Use District

104-00
GENERAL PURPOSES

The "Special Manhattanville Mixed Use District" established in this Resolution is designed to promote and protect public health, safety and general welfare. These general goals include, among others, the following specific purposes, to:

(a) encourage the development of a mixed use neighborhood that complements a revitalized community-oriented waterfront;

(b) support a variety of community facility, commercial and manufacturing uses;

(c) provide opportunities for the expansion of large academic, scientific and mixed use facilities in a manner that benefits the surrounding community;

(d) strengthen the retail and service character and economic vitality of the neighborhood by encouraging active ground floor uses along Broadway, West 125th Street and 12th Avenue;

(e) facilitate the maximum amount of design flexibility while fulfilling the goals of the mixed use district;

(f) improve the physical appearance of the streetscape by providing and coordinating harmonious open space, sidewalk amenities and landscaping within a consistent urban design;

(g) strengthen the visual corridors along West 125th Street and other east-west corridors that connect the community to the waterfront;

(h) expand local employment opportunities;

(i) recognize, preserve and promote the existing historic transportation infrastructure of the neighborhood;

(j) promote the most desirable use of land in this area and thus conserve the value of land and buildings, and thereby protect the City's tax revenues.

104-01
Definitions

Definitions specifically applicable to this Chapter are set forth in this Section. The definitions of other defined terms are set forth in Section 12-10 (DEFINITIONS).

Lower street wall

"Lower street wall" is that portion of the #street wall# of a #building# that extends from grade to a minimum prescribed height above the highest elevation of the #street# frontage of the #building# on each #street#.

Mandatory widened sidewalk

A "mandatory widened sidewalk" is a paved area along the #front lot line# of a #zoning lot# at the same elevation as the adjoining sidewalk and directly accessible to the public at all times. Mandatory widened sidewalks are shown on Map 3 (Widened Sidewalk Lines) in Appendix A to this Chapter.

Mandatory widened sidewalk line

A "mandatory widened sidewalk line" is the boundary line of the #mandatory widened sidewalk# shown on Map 3 in Appendix A of this Chapter.

Upper street wall

"Upper street wall" is that portion of the #street wall# of a #building# that extends from the #lower street wall# to the maximum #building# height set forth for each Parcel in the Base Plane and Building Height Table in Appendix B of this Chapter, or the height of the #building#, whichever is less.

104-02
General Provisions

In harmony with the general purposes and content of this Resolution and the general purposes of the #Special Manhattanville Mixed Use District#, the regulations of this Chapter shall apply to all #developments#, #enlargements#, #extensions#, alterations and changes of #use# within the #Special Manhattanville Mixed Use District#. The regulations of all other Chapters of this Resolution are applicable, except as superseded, supplemented or modified by the provisions of this Chapter. In the event of a conflict between the provisions of this Chapter and other regulations of this Resolution, the provisions of this Chapter shall control.

104-03
District Plan and Maps

The regulations of this Chapter are designed to implement the #Special Manhattanville Mixed Use District# Plan.

The District Plan includes the following maps and illustrative diagrams in Appendix A of this Chapter:

Map 1 Special Manhattanville Mixed Use District and Subdistricts
Map 2 Subdistrict A Block Plan
Map 3 Widened Sidewalk Lines
Map 4 Street Wall Types and Locations
Map 5 Parcel Designation and Maximum Building Heights
Map 6 Ground Floor Use and Frontage
Map 7 Mandatory Open Areas

The District Plan includes the following table in Appendix B of this Chapter:

Base Plane and Building Height Table

These maps, diagrams and table are hereby incorporated and made part of this Resolution for the purpose of illustrating requirements or specifying locations where the special regulations and requirements set forth in the text of this Chapter apply.

104-04
Subdistricts

In order to carry out the provisions of this Chapter, three subdistricts are established, as follows:

Subdistrict A – Academic Mixed Use Area

Subdistrict B – Waterfront Area

Subdistrict C – Mixed-Use Development Area

The location of the Subdistricts of the #Special Manhattanville Mixed Use Special District# are specified on Map 1 in Appendix A of this Chapter.

104-05
Applicability of Article I, Chapter 1

Within the #Special Manhattanville Mixed Use District#, Section 11-15 (Environmental Requirements) shall apply, except that prior to issuing a building permit for any #development#, or for an #enlargement#, #extension# or a change of #use#, on a lot that has an (E) designation for hazardous material contamination, noise or air quality, the Department of Buildings shall be furnished with a report from the Department of Environmental Protection (DEP) of the City of New York stating:

(a) in the case of an (E) designation for hazardous material contamination, that environmental requirements related to the (E) designation have been met for that lot; or

(b) in the case of an (E) designation for noise or air quality, that the plans and drawings for such #development# or #enlargement# will result in compliance with the environmental requirements related to the (E) designation.

104-10
SPECIAL USE REGULATIONS

The #use# regulations of the underlying C6 Districts are modified in Sections 104-11 through 104-18, inclusive:

104-11
Residential Use Modifications

The #residential use# regulations of the underlying C6-1 District are modified as follows:

(a) In Subdistrict A, a #residential use# may locate in, or share a common wall with, a #building# containing a #use# listed in Section 104-132 (Use Groups 16, 17 and 18) only in accordance with the certification provisions of Section 104-14; and

(b) In Subdistrict B, no #residential use# shall be permitted.

104-12
Community Facility Use Modifications

The #community facility use# regulations of the underlying C6-1 District are modified as follows:

(a) In Subdistrict A, a #community facility use# with sleeping accommodations, as listed in this Section, may locate in, or share a common wall with, a #building# containing a #use# listed in Section 104-132 (Use Groups 16, 17 and 18), only in accordance with the certification provisions of Section 104-14:

College or school student dormitories or fraternity or sorority student houses
Domiciliary care facilities for adults
Nursing homes and health-related facilities
Philanthropic or non-profit institutions with sleeping accommodations
Monasteries, convents or novitiates
Non-profit hospital staff dwellings without restriction as to location on the same #zoning lot#
Non-profit or voluntary hospitals and related facilities;

(b) In Subdistrict B, #uses# listed in Use Groups 3 and 4 are limited to 5,000 square feet of #floor area# per establishment.

104-13
Commercial and Manufacturing Use Modifications

In Subdistricts A, B and C, the #commercial# and #manufacturing use# regulations of the underlying C6 Districts are modified as set forth in Sections 104-131 (Use Group 14) and 104-132 (Use Groups 16, 17 and 18):

104-131
Use Group 14

In Subdistrict B, #uses# listed in Use Group 14 are permitted.

104-132
Use Groups 16, 17 and 18

In Subdistricts A, B and C, the following #uses# in Use Groups 16, 17 and 18 are permitted, subject to the performance standards for an M1 District set forth in Section 42-20 (PERFORMANCE STANDARDS).

Such #uses# may locate in, or share a common wall with, a #building# containing a #residential use# or a #community facility use# with sleeping accommodations listed in Section 104-12 (Community Facility Use Modifications), only in accordance with the certification provisions of Section 104-14:

From Use Group 16A:
Animal hospitals or kennels
Automobile, motorcycle, trailer or boat sales, enclosed only
Carpentry, custom woodworking or custom furniture making shops
Motorcycle or motor scooter rental establishments, enclosed only
Trade schools for adults

From Use Group 16B:
Automobile, truck, motorcycle or #trailer# repairs
Automobile laundries, provided that the #zoning lot# contains reservoir space for not less than ten automobiles per washing lane
#Automotive service stations#, open or enclosed, provided that facilities for lubrication, minor repairs or washing are permitted only if located within a completely enclosed building

From Use Group 16C:
Commercial or public utility vehicle storage, open or enclosed, including accessory motor fuel pumps
Public transit yards, open or enclosed, including accessory motor fuel pumps

From Use Group 16D:
Moving or storage offices, with no limitation as to storage or #floor area# per establishment
Warehouses
Wholesale establishments, with no limitation on #accessory# storage

From Use Group 17A:
Produce or meat markets

From Use Group 17B:
Advertising displays
Apparel or other textile products, from textiles or other materials, including hat bodies or similar products

Ceramic products, including pottery, small glazed tile or similar products
Food products, except slaughtering of meat or preparation of fish for packing
Leather products, including shoes, machine belting or similar products
Luggage
Musical instruments, including pianos or organs
Optical equipment, clocks or similar precision instruments
Perfumes or perfumed soaps, compounding only
Printing or publishing, with no limitation on #floor area# per establishment
Scenery construction
Textiles, spinning, weaving, manufacturing, dyeing, printing, knit goods, yarn, thread or cordage
Toys
Wood products, including furniture, boxes, crates, baskets, pencils, cooperage works or similar products

From Use Group 17C:
Public transit, railroad or electric utility substations, open or enclosed, with no limitation as to size

From Use Group 18A:
Manufacturing of beverages, alcoholic or breweries

104-14
Certification Requirements

In Subdistrict A, a #use# listed in Section 104-132 (Use Groups 16, 17 and 18) and a #residential use# or a #community facility use# with sleeping accommodations listed in Section 104-12 (Community Facility Use Modifications) may locate in the same #building# or share a common building wall only upon certification by a licensed architect or a professional engineer to the Department of Buildings stating that the #commercial# or #manufacturing use#:

(a) does not have a New York City or New York State environmental rating of "A," "B" or "C" under Section 24-153 of the New York City Administrative Code for any process equipment requiring a New York City Department of Environmental Protection operating certificate or New York State Department of Environmental Conservation state facility permit; and

(b) is not required, under the City Right-to-Know Law, to file a Risk Management Plan for Extremely Hazardous Substances.

104-15
Ground Floor Use and Frontage Regulations

For the purposes of this Section, ground floor level shall mean the floor of a #building#, the level of which is located at, or within five feet of, the finished level of the adjacent sidewalk. In the locations specified on Map 6 (Ground Floor Use and Frontage) in Appendix A of this Chapter, the ground floor #use# and frontage regulations of this Section shall apply to any #development# or change of #use# located on the ground floor level of a #building or other structure#, or any

#enlargement# that increases the #floor area# of the ground floor level of a #building# by more than 25 percent.

A minimum of 75 percent of the length of a #street wall# on the ground floor level measured to a depth of at least 30 feet, or the depth of the #building#, whichever is less, shall be limited to #uses# listed in Section 104-16 (Use Group MMU). Such #uses# shall be located at the #street wall#. In no event shall the length of #street# frontage occupied solely by lobby space or entryways exceed, in total, 40 feet.

All such #developments#, #enlargements# and changes of #use# on the ground floor of a #building or other structure# (other than a change of #use# on the ground floor of a #building# located on Parcels E2 or G2, as shown on Map 5 in Appendix A) shall comply with the transparency requirements of Section 104-41.

104-16
Use Group MMU

Use Group MMU comprises a group of #uses# selected from Use Groups 3, 4, 6, 7, 8, 9, 10, 12 and 17, as modified, including any of such #uses# that are #accessory# to a college or university and open to the public.

From Use Group 3
Libraries, museums or non-commercial art galleries

From Use Group 4A
Community centers or settlement houses
Ambulatory diagnostic or treatment health care facilities
Non-commercial recreation centers

From Use Group 6A
Bakeries, provided that #floor area# used for production shall be limited to 750 square feet per establishment
Barber shops
Beauty parlors
Drug stores
Dry cleaning or clothes pressing establishments or receiving stations dealing directly with ultimate consumers, limited to 2,000 square feet of #floor area# per establishment, and provided that only solvents with a flash point of not less than 138.2 degrees Fahrenheit shall be used, and total aggregate dry load capacity of machines shall not exceed 60 pounds
Eating or drinking establishments, including those which provide outdoor table service or have music for which there is no cover charge and no specified show time
Food stores, including supermarkets, grocery stores, meat markets or delicatessen stores
Hardware stores
Laundry establishments, hand or automatic self-service
Liquor stores, package
Post offices
Shoe or hat repair shops

Stationery stores
Tailor or dressmaking shops, custom
Variety stores, limited to 10,000 square feet of #floor area# per establishment

From Use Group 6B
Veterinary medicine for small animals, provided all activities are conducted within a completely #enclosed building#

From Use Group 6C
Antique stores
Art galleries, commercial
Artists' supply stores
Automobile supply stores, with no installation or repair services
Banks
Bicycle sales
Book stores
Candy or ice cream stores
Carpet, rug, linoleum or other floor covering stores, limited to 10,000 square feet of #floor area# per establishment
Cigar or tobacco stores
Clothing or clothing accessory stores, limited to 10,000 square feet of #floor area# per establishment
Clothing rental establishments, limited to 10,000 square feet of #floor area# per establishment
Dry goods or fabrics stores, limited to 10,000 square feet of #floor area# per establishment
Eating or drinking establishments with entertainment, but not dancing, with a capacity of 200 persons or less
Eating or drinking establishments with musical entertainment, but not dancing, with a capacity of 200 persons or less
Electrolysis studios
Fishing tackle or equipment, rental or sales
Florist shops
Furniture stores, limited to 10,000 square feet of #floor area# per establishment
Furrier shops, custom
Gift shops
Interior decorating establishments, provided that #floor area# used for processing, servicing or repairs shall be limited to 750 square feet per establishment
Jewelry or art metal craft shops
Leather goods or luggage stores
Loan offices
Locksmith shops
Medical or orthopedic appliance stores
Millinery shops
Music stores
Newsstands, open or enclosed
Optician or optometrist establishments
Paint stores
Pet shops

Photographic equipment or supply stores
Photographic studios
Picture framing shops
Record stores
Seed or garden supply stores
Sewing machine stores, selling household machines only
Shoe stores
Sporting or athletic stores
Stamp or coin stores
Telegraph offices
Television, radio, phonograph or household appliance stores, limited to 10,000 square feet of #floor area# per establishment
Toy stores
Travel bureaus
Typewriter stores
Wallpaper stores
Watch or clock stores or repair shops

From Use Group 7B
Bicycle rental or repair shops
Moving or storage offices, with storage limited to items for retail sale and to 1,500 square feet of #floor area# per establishment
Refreshment stands
Sign painting shops, limited to 2,500 square feet of #floor area# per establishment
Venetian blind, window shade or awning shops, custom, limited to 2,500 square feet of #floor area# per establishment

Use Group 8A (all uses)

From Use Group 8B
Lumber stores, limited to 5,000 square feet of #floor area# per establishment, exclusive of that #floor area# used for office and display area, and provided that not more than 400 square feet of #floor area# shall be used for cutting of lumber to size
Television, radio, phonograph or household appliance repair shops
Upholstering shops dealing directly with consumers

From Use Group 9A
Automobile, motorcycle, #trailer# or boat showrooms or sales, with no repair services and with no preparation of vehicles or boats for delivery
Clothing or costume rental establishments
Musical instrument repair shops
Plumbing, heating or ventilating equipment showrooms, without repair facilities
Printing establishments, limited to 2,500 square feet of #floor area# per establishment for production
Public auction rooms

Studios, art, music, dancing or theatrical
Typewriter or other small business machine sales, rental or repairs
Umbrella repair shops

From Use Group 10A
Clothing or clothing accessory stores, limited to 20,000 square feet of floor area per establishment
Office or business machine stores, sales or rental
Variety stores, limited to 20,000 square feet of floor area per establishment

From Use Group 12B
Antique stores
Art gallery, commercial
Book stores
Candy or ice cream stores
Cigar and tobacco stores
Delicatessen stores
Drug stores
Gift shops
Jewelry or art metal craft shops
Music stores
Newsstands
Photographic equipment stores
Record stores
Stationery stores
Toy stores

From Use Group 17A
Produce or meat markets, wholesale

From Use Group 17B
Ceramic products, including pottery, small glazed tile, or similar products

#Accessory uses# to all the above uses are permitted.

#Physical culture or health establishments# are subject to a special permit, pursuant to Section 73-36.

104-17
Modification of Article VII, Chapter 4 (Special Permits by the City Planning Commission)

The provisions of Section 74-48 (Scientific Research and Development Facility) shall not apply in the #Special Manhattanville Mixed Use District#.

104-20
SPECIAL BULK REGULATIONS

In Subdistricts A, B and C, the #bulk# regulations of the underlying C6 Districts, as modified in this Chapter, shall apply to any #development# or #enlargement# and changes of #use# pursuant to Section 104-26 (Change of Use).

The #floor area ratio#, #open space ratio# and #lot coverage# regulations applicable in the underlying C6 Districts are modified as set forth in Sections 104-21 through 104-25. No #floor area# bonuses shall be permitted.

Special provisions regulating change of #use# in #non-complying buildings# are set forth in Section 104-26.

The height and setback regulations of the underlying C6 Districts are modified as set forth in Sections 104-30 through 104-34, inclusive.

104-21
Maximum Floor Area Ratio, Open Space Ratio and Lot Coverage for Residential Uses

In Subdistricts A and C, the #bulk# regulations for #residential use# are modified in accordance with the provisions of this Section.

For all #zoning lots#, or portions thereof, the maximum #floor area ratio#, #open space ratio# and #lot coverage# regulations shall not apply. In lieu thereof, the provisions of this Section shall apply:

In Subdistrict A, the maximum #floor area ratio# for #residential use# shall be 3.44.

In Subdistrict C, the maximum #floor area ratio# for #residential use# shall be 6.02.

For #interior# or #through lots#, or portions thereof, the maximum #lot coverage# shall not exceed 70 percent. For #corner lots#, the maximum #lot coverage# shall not exceed 80 percent. However, there shall be no maximum #lot coverage# for any #zoning lot# comprising a #corner lot# of 5,000 square feet or less.

The provisions of Section 23-70 (MINIMUM REQUIRED DISTANCES BETWEEN TWO OR MORE BUILDINGS ON A SINGLE ZONING LOT) shall not apply.

104-22
Maximum Floor Area Ratio and Lot Coverage for Community Facility Uses

In Subdistricts A and C, the maximum #floor area ratio# permitted for #community facility uses# shall be 6.0.

In Subdistrict B, the maximum #floor area ratio# permitted for #community facility uses# shall be 2.0.

#Lot coverage# requirements for #community facility uses# shall not apply.

104-23
Maximum Floor Area Ratio for Commercial Uses

In Subdistricts A and C, the maximum #floor area ratio# permitted for #commercial uses# shall be 6.0, except that the maximum #floor area ratio# for #uses# in Use Group 16 listed in Section 104-32 (Use Groups 16, 17 and 18) shall be 2.0.

In Subdistrict B, the maximum #floor area ratio# permitted for #commercial uses# shall be 2.0.

104-24
Maximum Floor Area Ratio for Manufacturing Uses

In Subdistricts A, B, and C, the maximum #floor area ratio# permitted for #manufacturing uses# shall be 2.0.

104-25

Maximum Floor Area Ratio for Mixed Buildings

When more than one #use# is located on a #zoning lot#, the maximum #floor area ratio# permitted for any #use# on a #zoning lot# shall not exceed the maximum permitted for such #use# as set forth in Sections 104-21 through 104-24, inclusive, provided the total of all such #floor area ratios# does not exceed the maximum #floor area ratio# permitted for any such #use# on the #zoning lot#.

104-26
Change of Use

(a) Change to Residential

Notwithstanding the provisions set forth in Section 34-222 (Change of use) and in the last paragraph of Section 35-31 (Maximum Floor Area Ratio for Mixed Buildings) regarding the applicability of #floor area ratio# and #open space ratio# regulations to a change from a non-#residential use# to a #residential use# in a #building# in existence on December 15, 1961, such conversions of non-#residential buildings# shall be permitted only if such #buildings# comply with all of the #bulk regulations for #residential# or #mixed buildings#.

(b) Change to Non-Residential

In Subdistrict A, the provisions of Section 54-31 (General Provisions) shall not apply. In lieu thereof, a #use# listed in Use Groups 16, 17 or 18 located in a #non-complying building or other structure# may be changed to:

(1) a #use# listed in Section 104-132 (Use Groups 16, 17 and 18), subject to the performance standards for an M1 District set forth in Section 42-20 (PERFORMANCE STANDARDS), and subject to Section 104-14 (Certification Requirements), if applicable, or

(2) a #community facility use# or an office #use# listed in Use Group 6B.

The #bulk# regulations of the underlying C6 District as modified by the #Special Manhattanville Mixed Use District# and the regulations set forth in Section 104-40 (SPECIAL URBAN DESIGN REGULATIONS) shall not apply to the changes of #use# set forth in paragraph (b) of this Section.

The provisions of paragraph (b) of this Section, shall apply to Blocks A and C, as shown on Map 2 (Subdistrict A Block Plan) in Appendix A to this Chapter and to Parcel D4, as shown on Map 5 (Parcel Designation and Maximum Building Height) through December 31, 2015, and to all other Parcels and Blocks in Subdistrict A through December 31, 2030. Beginning on January 1, 2016, with respect to Blocks A and C and Parcel D4, and beginning on January 1, 2031, with respect to Parcels D1, D2, and D3, as shown on Map 5, and Blocks E, F, G, and H, as shown on Map 2, the provisions of paragraph (b) of this Section shall lapse, and the #bulk# regulations of the underlying C6 District as modified by the #Special Manhattanville Mixed Use District# and the requirements set forth in Section 104-40 (SPECIAL URBAN DESIGN REGULATIONS), shall apply to the changes of #use# set forth in paragraph (b) of this Section.

104-30
SPECIAL HEIGHT AND SETBACK REQUIREMENTS

In the #Special Manhattanville Mixed Use District#, the height and setback regulations of the underlying C6 Districts are modified as set forth in this Section.

In Subdistrict A, for the purposes of this Chapter, the provisions for establishing a #base plane# set forth in Section 12-10 (DEFINITIONS) shall not apply. In lieu thereof, #base planes# are specified for each Parcel shown on Map 5 (Parcel Designation and Maximum Building Height), in Appendix A of this Chapter. The level of the #base plane# is designated for each such Parcel in Appendix B. The height of all #buildings or other structures# shall be measured from such #base planes#.

Wherever a #mandatory widened sidewalk line# is shown on Map 3 (Widened Sidewalk Lines), such line shall be used instead of the #street line# for all purposes of Section 104-30 et seq.

The City Planning Commission may modify, by special permit, the special height and setback requirements of this Section pursuant to Section 104-60 (MODIFICATION OF SPECIAL BULK REQUIREMENTS AND TRANSFER OF FLOOR AREA BY SPECIAL PERMIT).

104-31
Maximum and Minimum Building Height

In Subdistrict A, the maximum #building# height, by Parcel, is shown on Map 5 in Appendix A and specified in Appendix B. In Subdistricts B, C and the Other Area East of Broadway, the maximum #building# heights are shown on Map 5 in Appendix A. No #building# shall exceed the maximum #building# height set forth in such Map or Appendix B. No #building# in Subdistrict A shall be #developed# to a height less than the minimum #building# height set forth in Appendix B.

104-32
Rooftop Regulations

In Subdistrict A, the provisions of Section 33-42 (Permitted Obstructions) shall not apply. In lieu thereof, the provisions of this Section shall apply.

104-321
Mechanical equipment

Mechanical equipment, open or enclosed, may be located on the roof of a #building# in accordance with the following provisions:

(a) Mechanical equipment shall not exceed the maximum height of mechanical equipment specified for each Parcel as set forth in Appendix B to this Chapter and shall be measured from the roof level of the highest #story# of the #building#. Such mechanical equipment may penetrate the maximum #building# height specified for each Parcel as set forth in Appendix B.

(b) Such mechanical equipment shall be set back at least 10 feet from the #upper street wall# of the #building#. In addition, such equipment shall not penetrate a #sky exposure plane# that begins at the point of intersection of the roof and the #upper street wall# of the #building#, and rises over the #building# at a slope of 2.7 feet of vertical distance for each foot of horizontal distance, except for permitted obstructions set forth in Section 104- 322. Where portions of the #upper street wall# are located at different distances from the #street line# or #mandatory widened sidewalk line#, whichever is applicable, the portion used to establish such reference line shall be the portion that occupies the greatest area of such #upper street wall#.

(c) Such mechanical equipment shall not overhang any recess in the #building wall# that is open to the sky.

104-322
Permitted Obstructions

The following shall not be considered obstructions and thus may penetrate the applicable maximum #building# height and the applicable maximum height for mechanical equipment set forth in Appendix B to this Chapter, and may also penetrate the #sky exposure plane# set forth

in Section 104-311 (Mechanical equipment). Within 50 feet of the #upper street wall#, the width of such obstructions shall be limited in total to 10 percent of the #aggregate width of street walls# of a #building#, per #street# frontage, at any level above the maximum level of mechanical equipment as set forth in Section 104-311. Beyond 50 feet from the #upper street wall#, the permitted obstructions may occupy an area not to exceed 30 percent of the #building# coverage at the ground level. Where portions of the #upper street wall# are located at different distances from the #street line# or #mandatory widened sidewalk line#, whichever is applicable, the portion used to establish such reference line shall be the portion that occupies the greatest area of such #upper street wall#. However, in no event shall such obstructions be located within 10 feet of the #upper street wall#.

Flagpoles or aerials;
House of worship towers, ornamental, having no #floor area# in portion of tower penetrating such #sky exposure plane#;
Parapet walls, not more than four feet high;
Spires or belfries;
Wire, chain link or other transparent fences;
Antennae and structural support thereto;
Railings;
Chimneys, flues, intake and exhaust vents limited to a #lot coverage# of 900 square feet with neither length nor width of any single such obstruction, nor the total length or width of all such obstructions, greater than 30 feet ;
Pipes and supporting structures;
Window washing equipment; and,
Elevator and stair bulkheads to a maximum height of 15 feet above the permitted maximum height of mechanical equipment.

104-33
Mandatory Street Walls

Eight types of mandatory #street walls# are established in the *#Special Manhattanville Mixed Use District#*, the regulations for which are set forth in Sections 104-331 through 104-338. Map 4 (Street Wall Types and Locations) and Map 5 (Parcel Designation and Maximum Building Height), in Appendix A to this Chapter, specify locations where such regulations apply. The mandatory #street wall# requirements shall apply to any #development# and the #enlarged# portion of an existing #building#, except that such requirements shall not apply to an #enlargement# where such #enlargement# solely increases the #floor area# of the ground floor of a #building# by 25 percent or less.

In Subdistrict A, the mandatory #street walls# specified as Street Wall Types 1, 3 and 4 consist of a #lower street wall# and an #upper street wall#.

(a) #Lower Street Wall#

(1) For Parcels D1, E1, F1, G1, G2 and H, the #lower street wall# is that portion of the #street wall# that extends from grade to a minimum height of 15 feet above the highest elevation of the #street# frontage of the #building# on Broadway and a

maximum height of 55 feet above such elevation for each #street# frontage. For #buildings# without frontage on Broadway, the #lower street wall# shall be measured from the highest elevation of each such #street# frontage of such #building#;

(2) For Parcels A, C1, C4, D4, E4 and F4, the #lower street wall# of each #street# frontage of a #building# is that portion of the #street wall# that extends from grade to a minimum height of 20 feet and a maximum height of 55 feet above the highest elevation of such #street# frontage of such #building#;

(3) For Parcels C2, C3, D2, E2, E3, F2 and F3, the #lower street wall# of each #street# frontage of a #building# is that portion of the #street wall# that extends from grade to a minimum height of 20 feet and a maximum height of 45 feet above the highest elevation of such #street# frontage of such #building#. For the purposes of this Section, Parcel C2 shall be considered to have frontage only on West 130th Street.

(b) #Upper Street Wall#

For all Parcels, the #upper street wall# is that portion of the #street wall# that extends from the #lower street wall# to the maximum #building# height set forth in Appendix B, or the height of the #building#, whichever is less.

104-331
Type 1 Street Wall Location

Type 1 #street walls#, as shown on Map 4, shall comply with the provisions of this Section:

(a) The #upper street wall# shall be located at or within 10 feet of the #street line# and shall extend along at least 70 percent of the #street frontage# of the Parcel.

(b) The #lower street wall# shall be set back at least 2 feet but no more than 10 feet from the #upper street wall# required pursuant to paragraph (a) of this Section and shall extend along at least 70 percent of the #street# frontage of the Parcel. For Parcels D1, E1, F1, G1, G2 and H, the height of the #lower street wall# shall be not less than twice the depth of the setback of the #lower street wall# from the #upper street wall#, but not less than 15 feet.

(c) No #street wall# location regulation shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

(d) At least 20 percent of the area of an #upper street wall# facing Broadway shall be recessed to a minimum depth of 10 feet.

104-332
Type 2 Street Wall Location

Type 2 #street walls#, as shown on Map 4, shall comply with the provisions of paragraphs (a) or (b) of this Section:

(a) the #street wall# shall be located at or within 10 feet of the #street line# or the #mandatory widened sidewalk line#, whichever is applicable, and shall rise to a minimum height of 45 feet, or the height of the #building#, whichever is higher, and a maximum height of 130 feet, and shall extend along at least 70 percent of the length of the #street line# or the #mandatory widened sidewalk line# of the Parcel, as applicable; or

(b) where the #lower street wall# is set back from the #upper street wall#, the #street wall# on West 130th Street shall comply with the provisions of Section 104-334 (Type 4 Street Wall Location) and the #street wall# on West 125th Street shall comply with the provisions of Section 104-331 (Type 1 Street Wall Location).

No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-333
Type 3 Street Wall Location

Type 3 #street walls#, as shown on Map 4, shall comply with the provisions of this Section:

(a) The #upper street wall# shall be located at or within two feet of the 12th Avenue #widened sidewalk line#, and shall extend along no more than 70 percent of the length of the #mandatory widened sidewalk line# of the Parcel. Any #upper street wall# located on the remaining portion of the #street# frontage of the Parcel shall be set back from the 12th Avenue #widened sidewalk line# by a minimum distance of either

(1) 20 feet, if such setback area faces both 12th Avenue and a #narrow street#, or

(2) 10 feet if such setback area faces only 12th Avenue.

(b) The #lower street wall# shall be located at the same distance from the #mandatory widened sidewalk line# as the #upper street wall# required pursuant to paragraph (a) of this Section or set back not more than ten feet from such #upper street wall#, for at least 80 percent of the length of such required #upper street wall#.

(c) No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-334
Type 4 street wall location

Type 4 #street walls#, as shown on Map 4, shall comply with the provisions of this Section:

(a) The #upper street wall# shall be located at or within 10 feet of the #street line# or #mandatory widened sidewalk line#, as applicable. Such #street wall# shall extend along at least 50 percent of the length of the #street line# or #mandatory widened sidewalk line of the Parcel#, as applicable.

(b) The #lower street wall# shall be set back at least two feet but no more than 10 feet from the #upper street wall# required pursuant to paragraph (a) of this Section and shall extend along at least 50 percent of the #street line# or #mandatory widened sidewalk line# of the Parcel, as applicable.

(c) No #street wall# location regulation shall apply to that portion of the #street# frontage that exceeds 50 percent of the #street# frontage of a Parcel.

104-335
Type 5 street wall location

Type 5 #street walls#, as shown on Map 4, shall comply with the provisions of paragraphs (a) or (b) of this Section:

(a) the #street wall# shall be located at or within two feet of the #street line# or the #mandatory widened sidewalk line#, whichever is applicable, and shall rise to a minimum height of 45 feet or the height of the #building#, whichever is higher, and to the maximum building height applicable to each Parcel, as set forth in Appendix B, and shall extend along at least 50 percent of the length of the #street line# or the #mandatory widened sidewalk line# of the Parcel, as applicable; or

(b) where the #lower street wall# is set back from the #upper street wall#, the #street wall# shall comply with the provisions of Section 104-334 (Type 4 Street Wall Location).

No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-336
Type 6 street wall location

#Street wall# Type 6 shall be located at or within three feet of the #street line# and shall extend along at least 70 percent of the length of the #street line# of the Parcel, and may rise to a maximum height of 60 feet. No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-337
Type 7 street wall location

On Parcel 1 in Subdistrict B, #street wall# Type 7 shall be located at or within three feet of the #street line# and shall extend along at least 70 percent of the length of the #street line# of the Parcel, and may rise to a maximum height of 130 feet. No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-338
Type 8 street wall location

#Street wall# Type 8 shall be located at or within 10 feet of the #street line# and shall extend along at least 70 percent of the length of the #street line# of the Parcel, and may rise to a

maximum height of 120 feet. No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-34
Permitted Street Wall Recesses

In the portion of the #street wall# required pursuant to the provisions of Section 104-33 (Mandatory Street Walls), recesses are permitted for architectural, decorative or functional purposes, provided that below the level of the minimum building height set forth in Appendix B of this Chapter, the depth of the recess shall not exceed 20 feet from the #street line# or #mandatory widened sidewalk line#, as applicable, and the width of any one recess shall not exceed 30 feet. Above the minimum building height, the maximum area of recesses shall not exceed 30 percent of the area of the #street wall# above the minimum building height.

104-40
SPECIAL URBAN DESIGN REGULATIONS

The special urban design regulations of this Chapter include ground floor transparency requirements, and requirements for six different types of open areas that are accessible to the public, as described below, and shown on Maps 3 (Widened Sidewalk Lines) and 7 (Mandatory Open Areas), in Appendix A of this Chapter.

104-41
Street Wall Transparency Requirements

Within Subdistricts A and B, the transparency requirements of paragraph (a) of this Section, subject to the modifications of paragraph (b) of this Section, as applicable, shall apply to #developments#, changes of #use# on the ground floor of a #building or other structure#, and #enlargements# that increase the #floor area# of the ground floor by more than 25 percent, but shall not apply to a change of #use# on the ground floor of a #building# located on Parcels E2 or G2, as shown on Map 5 in Appendix A of this Chapter.

(a) On all #streets#, at least 70 percent of the surface of the #street wall# shall be glazed, and at least 50 percent of the area of each such #street wall# shall be transparent to a minimum height of the ceiling of the ground floor, or not less than 15 feet above the finished level of the adjacent sidewalk, whichever is lower. The glazing material shall be highly transparent, with low reflectivity. Above this height, and to the top of the #lower street wall#, the #street wall# surface shall be 50 percent glazed and 30 percent transparent. Door or window openings within such walls shall be considered as transparent. Each such opening shall have a minimum width of two feet.

(b) For #street walls# where the provisions of Section 104-332 (Type 2 Street Wall Location) apply, the required glazing at the ground floor shall apply to the minimum height of the ceiling of the ground floor, or not less than 20 feet above the finished level of the adjacent sidewalk, whichever is lower.

(c) For #street walls# in Subdistrict B, the transparency requirements of paragraph (a) of this Section shall apply to a height not more than 15 feet above the finished level of the adjacent sidewalk.

104-42
Open Areas

All mandatory open areas as shown on Map 7 (Mandatory Open Areas) in Appendix A of this Chapter and all open areas adjacent thereto up to the #street wall# required pursuant to the provisions of Section 104-33 (Mandatory Street Walls) shall comply with the urban design regulations of Section 104-42 through 104-43, inclusive, and shall be open and unobstructed except as specified.

104-421
Mandatory widened sidewalks and adjacent areas

(a) Map 3 (Widened Sidewalk Lines) in Appendix A of this Chapter, specifies the locations of #mandatory widened sidewalks#. The depth of such #mandatory widened sidewalks# shall be as indicated on Map 3 and specified in this Section, and shall be measured perpendicular to the #street line#. #Mandatory widened sidewalks# shall be constructed at the same level as the adjoining public sidewalks and shall be accessible to the public at all times. The portions of all #mandatory widened sidewalks# used for pedestrian circulation shall be improved as sidewalks to Department of Transportation standards.

(b) Within #mandatory widened sidewalks#, landscaping and other amenities shall be permitted. However, no fences shall be permitted, no planters shall be higher than 2½ feet above the finished level of the adjacent sidewalk, and all trees shall be planted flush to grade.

(c) Adjacent area at grade between lower street wall and sidewalk

Where the #lower street wall#, or the #street wall# if no #lower street wall# is required, is set back from the #mandatory widened sidewalk line# or the #street line#, whichever is applicable, the entire surface area of the ground located between the #street wall# and the public sidewalk shall comply with the standards of paragraphs (a) and (b) of this Section. Such areas may be covered and may include columns and other elements not specifically excluded pursuant to paragraph (b) of this Section.

(d) Additional regulations shall apply to the following areas and conditions:

(1) Narrow #streets#

The #mandatory widened sidewalks# located along #narrow streets# shall be five feet wide. A paved walking path not less than 10 feet wide, which may include

the public sidewalk, shall be provided. The paving surface shall be of a non-skid material, whether wet or dry.

(3) 12th Avenue

The #mandatory widened sidewalks# located along 12th Avenue, as shown on Map 7, shall be 30 feet wide and include a 15 foot wide area adjacent to the #street line# for the provision of an open market and a walking surface with a minimum clear path of 15 feet adjacent to the market area. The walking surface shall be of a non-skid material, whether wet or dry.

(i) Permanent, fixed elements, such as landscaping and seating, with a minimum coverage of five percent of the market area, shall be required.

(ii) The following obstructions shall be permitted:

Temporary, moveable elements with a maximum coverage of 30 percent of the market area per #zoning lot#, such as:

Market umbrellas;
Carts, kiosks or pavilions, open or enclosed;
Retail structures, open;
Seating and other street furniture.

104-422
Midblock Open Areas

Midblock Open Areas shall be provided as shown on Map 7 (Mandatory Open Areas) in Appendix A of this Chapter. However, no Midblock Open Area is required on any #block# that is not developed as a single #zoning lot#. The Midblock Open Areas shall have a minimum width of 50 feet clear and open to the sky, except that the Midblock Open Area located adjacent to Parcel C3 may have a width of 45 feet above a height of 20 feet above the grade of such Midblock Open Area. Below a height of 20 feet, awnings attached to #buildings# may project up to five feet into the Midblock Open Area.

All Midblock Open Areas shall have a minimum clear path of 15 feet and shall be improved as paved surfaces of a non-skid material, whether wet or dry. A minimum of ten percent and a maximum of 50 percent of each Midblock Open Area shall be improved with landscape treatment, including planting and other amenities. No fences shall be permitted. No walls or planters shall be higher than 2 ½ feet above the finished level of the adjacent sidewalk.

The full width of each Midblock Open Area shall be improved and open to the public prior to applying for and receiving a temporary certificate of occupancy for any #development# adjacent to such area. However, up to 10 feet of the length of a Midblock Open Area may be temporarily enclosed within a construction fence for the shortest period of time reasonably necessary to permit construction in the adjacent area.

For #buildings# adjacent to the Midblock Open Areas, other than a #building# located on Parcel E2 as shown on Map 5 in Appendix A, building walls fronting on such Open Areas shall be transparent for 50 percent of the area of each such wall, measured from the finished level of the adjacent pavement to the height of the ceiling of the second #story#. Door or window openings within such wall shall be considered as transparent. Each such opening shall have a minimum width of two feet.

104-423
East/West Open Area

An East/West Open Area shall be provided as shown on Map 7 (Mandatory Open Areas) in Appendix A of this Chapter. The East /West Open Area shall have:

(a) a minimum width of 60 feet and shall be open to the sky;

(b) a minimum clear path of 15 feet, which shall be improved as a paved surface of a non-skid material, whether wet or dry; and

(c) a minimum of ten percent of its area improved with landscape treatment, including planting and other amenities. No walls or planters shall be higher than 2 ½ feet above the finished level of the adjacent sidewalk.

Exhaust shafts with a minimum height of 15 feet, and stair bulkheads with a maximum height of 20 feet, shall be permitted, provided such obstructions do not exceed 10 percent of the area of the East/West Open Area.

The full width of the East/West Open Area shall be improved and open to the public, prior to applying for and receiving a temporary certificate of occupancy for any new #development# adjacent to such area.

104-424
The Square

Area of the Square
If Block D is developed as a single #zoning lot#, an open area known as "the Square," with a minimum area of 40,000 square feet, shall be provided, connecting West 130th and West 131st Streets, as shown on Map 7 (Mandatory Open Areas) in Appendix A of this Chapter. This minimum area shall not include either the Midblock Open Area on Block D, or the area of the #mandatory widened sidewalks# on the West 130th and 131st Street frontages adjacent to the Square.

The Square shall be used for open space accommodating both passive recreation and limited active recreation.

Building Transparency
The bounding building wall on the west side of the Square shall be transparent for 50 percent of the area of such wall, measured from the finished level of the adjacent pavement to the height of the ceiling of the second #story#. Door or window openings within such wall shall be considered

as transparent. Each such opening shall have a minimum width of two feet.

Circulation and Access
No fences or gates shall be permitted anywhere in the Square.

An unimpeded pedestrian access, with a minimum width of 15 feet, shall be provided across the Square in a generally diagonal direction in the north/south orientation, connecting the two narrow streets, with both ends located a minimum of 100 feet from the Midblock Open Area on Block D.

The Square shall provide minimum unobstructed access from the adjoining sidewalks for at least 50 percent of the length of each street frontage of the Square. No single fixed element, within 15 feet of the #street line# of the Square, shall have a dimension greater than 15 feet or be higher than 30 inches, measured from the finished level of the adjacent sidewalk. The clear path between obstructions shall be at least three feet; however, to qualify as an unobstructed access that contributes to the 50 percent requirement set forth in this paragraph, a minimum width of five feet is required.

Elevation of the Square
The elevation of the Square shall generally follow the adjacent topography. Within fifteen feet of the #street line#, the elevation of the Square, for a minimum of 50 percent of the length of each frontage on a #street#, shall have a maximum slope of 1:15. Beyond fifteen feet from the #street line#, all open areas in the Square, including rolling or bermed lawn areas, may vary but shall not be more than five feet above or one foot below the level of the adjoining sidewalk or natural topography. Paved areas shall not be higher than 2½ feet above the level of the nearest adjoining sidewalk.

Permitted Obstructions
No walls or planters shall be higher than 2½ feet above the finished level of the adjacent sidewalk. No planters or planter walls shall be higher than 18 inches above the level of the adjacent grade.

Permanent structures, such as food or information kiosks, pavilions or public restrooms, may be placed in the Square, provided they do not exceed a height of 20 feet, or occupy more than three percent of the area of the Square.

Temporary or movable amenities, including elements such as trellises, movable tables, game tables, play equipment and performance facilities, are permitted, not to exceed 10 percent of the area of the Square.

Seating
Seating shall be provided for no fewer than 200 people. A minimum of 75 percent of the required seating shall be fixed; up to 25 percent may be movable. Every 2½ linear feet of fixed seating shall be considered as seating for one person.

The following standards shall apply to all required seating:

(a) fixed seating may be provided in the form of double-sided benches;

(b) 50 percent of the fixed seats shall have backs; such backs shall be not less than 14 inches high;

(c) fixed seating shall be between 16 inches and 18 inches in height, with a minimum depth of 18 inches measured from the edge to the back; and

(d) All seating shall be made of durable material and shall be comfortable to sit on, with rounded edges of at least 1inch radius.

However, other types of seating, such as the top of natural stones and rocks and edges of planters and fountains, may count toward the required amount of seating if such seating has a minimum depth of 22 inches and is between 16 and 18 inches in height.

At least 20 percent of the required seating shall be provided within 15 feet of the #street line# of the Square fronting all #streets# and the adjacent Midblock Open Area, and arranged to encourage a variety of uses. If such Midblock Open Area is provided with seating, that frontage of the Square may be exempt from this requirement. Seating provided in the adjacent Midblock Open Area may count towards the required seating for the Square.

General Requirements for Trees and Planting

A minimum of 50 percent of the Square shall be landscaped with soft ground cover. Soft ground cover shall include trees, grasses, shrubs and other ornamental planting material. The remaining 50 percent of the Square may be paved as hard surface.

At least 30 percent of the area of the Square shall contain a continuous planting area, with minimum soil depth of five feet. Berming is allowed provided that the height of the berm is not greater than five feet above the level of the adjoining sidewalk.

Trees

A minimum of 30 trees is required. Such trees shall measure at least four inches in caliper at the time of planting, except that trees which are multi-stem varieties shall have a minimum height of eight feet. Trees shall be planted in continuous planted areas that have a minimum depth of four feet and a minimum area of 500 square feet of soil. All trees shall be planted flush to grade.

Planting

Seasonal planting is encouraged but not required. When planting beds are provided, they can be counted towards meeting the requirement for soft ground cover. Planting beds shall have a minimum soil depth of two feet for grass or other similar ground cover and three feet for shrubs.

Other Required Amenities
Racks shall be provided for a minimum of 100 bicycles. Such racks shall be located in the Square within 10 feet of the #street line# or, if outside the Square, on any open area facing the Square.

Four drinking fountains, two of which shall be fully accessible for children and people with disabilities, shall be provided in the Square or on the sidewalks, #mandatory widened sidewalks# or Midblock Open Area adjacent to the Square.

Not less than 40 cubic feet of trash receptacles shall be provided. Individual containers shall not be smaller than 2½ cubic feet each. However, there shall be no fewer than ten containers, at least three of which shall be for used for recycling paper, plastic and metal waste. Such recycling containers shall be located in the Square within 10 feet of the #street line# or, if outside the Square, on any open area facing the Square.

Permitted Amenities
Permitted amenities include such elements as artwork and water features, which may occupy up to 10 percent of the area of the Square.

Public Space Signage
At least four entry and two information plaques shall be provided. The content and design of such #signs# shall comply with the standards for public space #signs# set forth in the Zoning Resolution. Information about the Square may be provided on the entry plaques.

Vents Facing the Square
On any building wall adjacent to and facing the Square, exhaust or air intake vents shall be located higher than 15 feet above the level of the Square.

Vents and Stairs in the Square
Exhaust or air intake vents and stair bulkheads shall not be permitted in the Square, except as authorized by the City Planning Commission, subject to the following conditions:

(a) The top of the exhaust or intake vent shall be a minimum of 20 feet above the adjacent grade;

(b) No single element shall be more than 200 square feet; and

(c) The aggregate area occupied by all vents and stair bulkheads shall not exceed one percent of the area of the Square.

In order to grant such authorization, the Commission shall find that:

(1) placement of such elements cannot be reasonably accommodated elsewhere on the #zoning lot#; and

(2) such vents and stair bulkheads are located so as to minimize impact on the visibility, accessibility and public use and enjoyment of the Square.

The Commission may prescribe appropriate conditions and safeguards to minimize adverse effects on the character of the Square.

104-425
The Small Square

If Block C is developed as a single #zoning lot#, an open area known as the "Small Square," with a minimum area of 10,000 square feet, shall be provided as a passive open space, connecting West 129th and West 130th Streets. It shall be improved with paved surfaces of a non-skid material, whether wet or dry. No fences or walls shall be permitted in the Small Square.

The bounding building walls on all #buildings# abutting the Small Square shall be transparent for 50 percent of the area of the portion of each such wall measured from the finished level of the adjacent pavement to the height of the ceiling of the second #story#.

The Small Square shall be landscaped with a minimum of eight trees. Such trees shall measure at least four inches in caliper at the time of planting, except that trees which are multi-stem varieties shall have a minimum height of eight feet, and shall be planted in soil with a minimum depth of four feet. All trees shall be planted flush to grade.

A minimum of 30 moveable seats shall be provided at all times; additional moveable or fixed seating may be provided.

104-426
The Grove

If Block A is #developed# as a single #zoning lot#, an open area known as "the Grove," with a minimum area of 400 square feet, shall be provided as a passive open space connecting West 125th and West 129th Streets. It shall contain a grove of trees and seating at the western portion of the Block.

The Grove shall be improved with paved surfaces of a non-skid material, whether wet or dry. It shall be landscaped with trees planted flush to grade and may include additional planting. The Grove may contain fixed or moveable seating.

No fences, walls, or planters are permitted in the Grove.

104-43
Open Area Standards

104-431
Access and hours of public accessibility

All open areas shall be accessible directly from an adjoining public sidewalk, except as otherwise provided in this Chapter. No fences or gates shall be permitted anywhere within the open areas, except as permitted in this Section.

All open areas except the Square and the East West Open Area shall be accessible to the public twenty-four hours per day, seven days a week. The Square and the East West Open Area shall be accessible to the public seven days per week, from the hours of 7:00 a.m. to 7:00 p.m., from November through April, and from 7:00 a.m. to 11:00 p.m. from May through October. All open areas may be closed not more than one day each year, on a non-holiday weekend day in January, to preserve the private ownership of such areas, except the Square and the East West Open Area may each be closed by its respective owner for private events and activities for a maximum of 12 days in each calendar year, which days shall not include public holidays. Advance notice of such closing shall be posted at the perimeter of the Square and the East West Open Area and shall be provided to the Chair of the City Planning Commission not less than 24 hours prior to each such closing.

104-432
Lighting

All paved areas shall be illuminated with a minimum level of illumination not less than two horizontal foot candles (lumens per foot) throughout. All other areas shall have a minimum level of illumination not less than 0.5 horizontal foot candles (lumens per foot). Such level of illumination shall be maintained from sunset to sunrise. Electrical power shall be supplied by one or more outlets furnishing a total of at least 1,200 watts of power for every 4,000 square feet, or fraction thereof, of the area of the open space.

104-433
Maintenance and operation

The owner of each open area within Subdistrict A shall be responsible for its maintenance and operation. Maintenance shall include, but not be limited to, necessary repairs, litter control and the care and replacement of vegetation. The owner of an open area may temporarily close the smallest portion reasonably necessary for the shortest period of time reasonably necessary to make repairs or to mitigate hazardous or emergency conditions, or in connection with construction on adjacent Parcels. The owner may establish and enforce rules of conduct for the use of the open areas and standards for permits for events and activities in an open area. Rules and regulations for the open areas will be subject to review and approval by the Chairperson of the City Planning Commission.

No vehicles shall be stored on any of the open areas.

104-44
Street Trees on Narrow Streets and Broadway

On #narrow streets# and Broadway, #street trees# with a minimum caliper of four inches, or, for trees which are multi-stem varieties, with a minimum height of eight feet, shall be provided for the entire length of the #street# frontage of the #zoning lot#, except adjacent to the Square, the

Small Square and the Midblock Open Areas. Such trees shall be planted at maximum intervals of 25 feet on center, except where the Commissioner of Parks and Recreation determines that such tree planting would be infeasible. All trees shall be planted flush to grade and in accordance with the applicable standards of the Department of Parks and Recreations, and shall be located within a soft surface, landscaped strip at least five feet wide adjacent to the curb, which landscape strips need not be continuous. Other planted landscape treatment and amenities may be permitted within such planting strip. Such trees shall be maintained by the owner of the adjacent #development# or #enlargement#.

104-50
PERMITTED TRANSFER OF FLOOR AREA

Transfers of #floor area# may be made from granting sites to receiving sites, within Subdistrict A, subject to the requirements of this Section.

For the purposes of this Section, a "granting site" shall mean any #zoning lot# in Subdistrict A that comprises a #block# as identified by letter on Map 2 in Appendix A, or the portion of the #block# identified as Block H on Map 2 (Subdistrict A Block Plan) in Appendix A in this Chapter, from which #floor area# is to be transferred pursuant to the provisions of this Section, and a "receiving site" shall mean a #zoning lot# in Subdistrict A that comprises a #block#, as identified by letter on Map 2, or the portion of the #block# identified as Block H on Map 2, to which #floor area# is transferred.

#Floor area# may be transferred as follows:

(a) by Notice, in accordance with the provisions of Section 104-52 (Transfer of Floor Area by Notice);

(b) by authorization, in accordance with the provisions of Section 104-53 (Transfer of Floor Area by Authorization); or

(c) by special permit in accordance with the provisions of Section 104-60 (MODIFICATION OF SPECIAL BULK REQUIREMENTS AND TRANSFER OF FLOOR AREA BY SPECIAL PERMIT), provided that the proposed #development# on the receiving site requires modification of the #bulk# regulations of Section 104-30 (SPECIAL HEIGHT AND SETBACK REQUIREMENTS).

104-51
General Requirements for Transfer
For any transfer of #floor area# by notice or by authorization pursuant to Section 104-50, inclusive, the requirements of this Section shall apply:

(a) Notification

Prior to any transfer of #floor area#, pursuant to Sections 104-52 (Transfer of Floor Area by Notice) or 104-53 (Transfer of Floor Area by Authorization), the owners of the granting site and the receiving site(s) shall jointly notify or apply to the Department of

City Planning, as applicable, in writing, of such intent to transfer #floor area#. Such notification or application shall be signed by the owners of the granting site and the receiving site(s) and shall include site plans.

(b) Notices of Restriction

Notices of restrictions shall be filed by the owners of the granting site and the receiving site(s) in the Office of the Register of the City of New York, indexed against the granting site and the receiving site(s), certified copies of which shall be submitted to the Department of City Planning. Notice by the Department of City Planning of its receipt of certified copies thereof shall be a condition to issuance by the Commissioner of Buildings of a building permit for a #building# on the receiving site containing any such transferred #floor area#.

(c) #Floor area#

The amount of #floor area# to be transferred from a granting site shall not exceed the maximum amount of #floor area# permitted on the #block# containing the granting site for #community facility uses#, pursuant to Section 104-12 (Community Facility Use Modifications), less the total floor area of all existing buildings on such #block#. The transfer of #floor area#, once completed, shall irrevocably reduce the maximum #floor area# permitted on the granting site for any #use# by the amount of #floor area# transferred.

(d) #Use#

#Floor area# transferred pursuant to the provisions of Section 104-50 through 104-53, inclusive, shall only be used for #community facility uses# and shall be in addition to the #floor area# permitted for #community facility uses# on the receiving site.

(e) Height and Setback

Any #building# on a receiving site that uses the #floor area# so transferred shall comply with the special #bulk# regulations of this Chapter.

104-52
Transfer of Floor Area by Notice

For any transfer of #floor area# from a granting site which comprises any of Blocks A, C or D to one or more receiving sites on Blocks B, E, F, G or H, the general requirements of Sections 104-50 and 104-51 shall apply as well as the following:

(a) the site plan submitted for the granting site under the provisions of paragraph (a) of Section 104-51 shall show the conditions and #floor area# calculations for the granting site and the receiving site, before and after the transfer;

(b) no building permit shall be issued by the Department of Buildings for a #building# on a receiving site containing any such transferred #floor area# until the Chairperson of the City Planning Commission has certified to the Department of Buildings that plans submitted to the Department of City Planning for the Square, the Small Square or the Grove, as applicable, on the granting site, conform with the requirements of Section 104-40 (SPECIAL URBAN DESIGN REGULATIONS); and

(c) no temporary certificate of occupancy shall be issued by the Department of Buildings for any portion of a #building# utilizing the transferred #floor area# unless and until the Chairperson of the City Planning Commission certifies to the Department of Buildings that the public open area which is required to be provided on the granting site pursuant to the provisions of Sections 104-424 (The Square), 104-425 (The Small Square) or 105-426 (The Grove), as applicable, has been constructed substantially in accordance with the plan certified by the Chairperson of the City Planning Commission pursuant to paragraph (a) of this Section and is substantially complete and may be opened to the public, and no permanent certificate of occupancy shall be issued by the Department of Buildings for any portion of a #building# utilizing the transferred #floor area# unless and until the Chairperson of the City Planning Commission certifies to the Department of Buildings that construction of the public open space which is required to be provided on the granting site is complete.

104-53
Transfer of Floor Area by Authorization

Within Subdistrict A, the City Planning Commission may authorize the transfer of #floor area# from a granting site other than Blocks A, C or D to a receiving site, subject to the general requirements of Sections 104-50 and 104-51, provided the Commission finds that:

(a) such transfer will permit better site planning; and

(b) such transfer will not unduly increase the #bulk# of #buildings# in any #block#, to the detriment of the occupants or users of #buildings# on #blocks# outside Subdistrict A.

In granting such authorization, the Commission may prescribe additional conditions and safeguards to minimize adverse effects on the character of the surrounding area.

104-60
MODIFICATION OF SPECIAL BULK REQUIREMENTS AND TRANSFER OF FLOOR AREA BY SPECIAL PERMIT

The City Planning Commission may, by special permit,

(a) modify the special height and setback requirements of Section 104-30 (SPECIAL HEIGHT AND SETBACK REQUIREMENTS) inclusive, provided the Commission finds that such modifications are necessary to:

(1) meet programmatic and mechanical requirements;

(2) achieve a better distribution of #bulk# on the #zoning lot# and will not adversely affect access to light and air for surrounding public access areas, streets, #buildings# and properties;

(3) provide flexibility of architectural design and encourage more attractive building forms; and

(4) result in a #development# or #enlargement# that is compatible with #development# in the surrounding area.

(b) permit the transfer of #floor area# from any granting site to a receiving site for a #development# that requires modification of the special height and setback requirements of Section 104-30 (SPECIAL HEIGHT AND SETBACK REQUIREMENTS), inclusive, provided the Commission finds:

(1) such transfer complies with the general requirements set forth in paragraphs (a), (b), (c) and (d) of Section 104-51;

(2) the distribution of #floor area# on the receiving site does not adversely affect the character of the surrounding area by unduly concentrating #floor area# in any portion of Subdistrict A; and

(3) where such transfer is from a granting site on Blocks A, C or D, it shall also comply with the provisions of paragraphs (b) and (c) of Section 104-52 (Transfer of Floor Area by Notice).

The Commission may prescribe additional conditions and safeguards to minimize adverse effects of the development or enlargement on the character of the surrounding area.

104-70
PARKING AND LOADING REGULATIONS AND CURB CUT LOCATIONS

In the #Special Manhattanville Mixed Use District#, the #accessory# off-street parking and loading regulations of the underlying zoning districts shall apply except as set forth in this Section, inclusive.

104-71
Accessory Off-Street Parking

In Subdistrict A, the #accessory# off-street parking and loading regulations in Article III, Chapter 6, pertaining to the underlying C6 District shall be modified, as follows:

(a) #accessory# parking spaces at or above grade shall be completely enclosed;

(b) #accessory# parking garages at or above grade shall not be located:
(1) within sixty (60) feet of the #lot line# on Broadway of any #zoning lot# or within ninety (90) feet of the #lot line# on 12th Avenue of any #zoning lot;
(2) on Parcels E2 or G2; or
(3) on any Mandatory Open Area as shown on Map 7 in Appendix A of this Chapter or within ten (10) feet of any such Mandatory Open Area; and

(c) Section 36-12 (Maximum Size of Accessory Group Parking Facilities) shall not apply to parking spaces provided below grade.

104-711
Accessory parking below grade

Required and permitted #accessory# off-street parking spaces may be located below grade, without regard to #zoning lot lines#.

(a) Such #accessory# group parking facilities shall not exceed the following maximum number of spaces:

For Blocks C, D and E combined	up to 1,800 spaces in total
For Block F	up to 1,000 spaces in total
For Blocks G and H combined	up to 600 spaces in total

(b) Such #accessory# group parking facilities are subject to the following requirements:

(1) the location of the curb cuts is subject to the provisions of Section 104-73 ;

(2) such #accessory# off-street parking spaces shall not be located further than 1,000 feet from the nearest boundary of the #zoning lot# to which they are accessory; and

(3) such #accessory# off-street parking facilities shall provide adequate reservoir spaces at the vehicular entrances to accommodate either ten automobiles or five percent of the total parking spaces provided by the #use#, whichever amount is greater, but in no event shall such reservoir spaces be required for more than 50 automobiles at each entrance.

104-72
Public Parking Garages

In Subdistrict A, public parking garages shall not be located:

(a) within sixty (60) feet of the #lot line# on Broadway of any #zoning lot# or within ninety (90) feet of the #lot line# on 12th Avenue of any #zoning lot;

(b) on Parcels E2 or G2; or

(c) on any Mandatory Open Area as shown on Map 7 in Appendix A of this Chapter or within ten (10) feet of any such Mandatory Open Area..

104-73
Permitted Curb Cut Locations

The following curb cut regulations shall apply to any #development# or #enlargement#:

(a) Existing curb cuts on #wide streets# may remain until such time as a #community facility use# is located on that portion of the #zoning lot#.

(b) No new curb cuts are permitted on #wide streets# or within 50 feet of the intersection of any two #street lines#. Furthermore, no curb cuts are permitted on Block B. However, curb cuts may be permitted in such areas where the Commissioner of Buildings determines there is no alternative means of access to off-street parking spaces or required loading berths from other streets bounding the #block# or #zoning lot#.

(c) New curb cuts shall not be greater than 30 feet in width.

(d) There shall be no more than two new curb cuts per #street# frontage on a #zoning lot#, except on Block F where three curb cuts per #street# frontage are permitted, and except as provided in paragraph (f) of this Section;

(e) There shall be a minimum distance of 30 feet between curb cuts on a #street# frontage of a #zoning lot#.

(f) In order to access the Square, as described in Section 104-425, one curb cut, not to exceed 15 feet in width, shall be permitted along each #street# frontage of the sidewalk adjacent to the Square. Such curb cuts shall be in addition to the two curb cuts permitted on Block D, pursuant to paragraph (d) of this Section.

Special Manhattanville Mixed Use District

Appendix A
District Maps

Map 1 Special Manhattanville Mixed Use District and Subdistricts
Map 2 Subdistrict A Block Plan
Map 3 Widened Sidewalk Lines

Map 4 Mandatory Street Walls
Map 5 Parcel Designation and Maximum Building Heights
Map 6 Ground Floor Use and Frontage
Map 7 Mandatory Open Areas

Appendix B

Base Plane and Building Height Table

APPENDIX B
Base Plane and Building Height

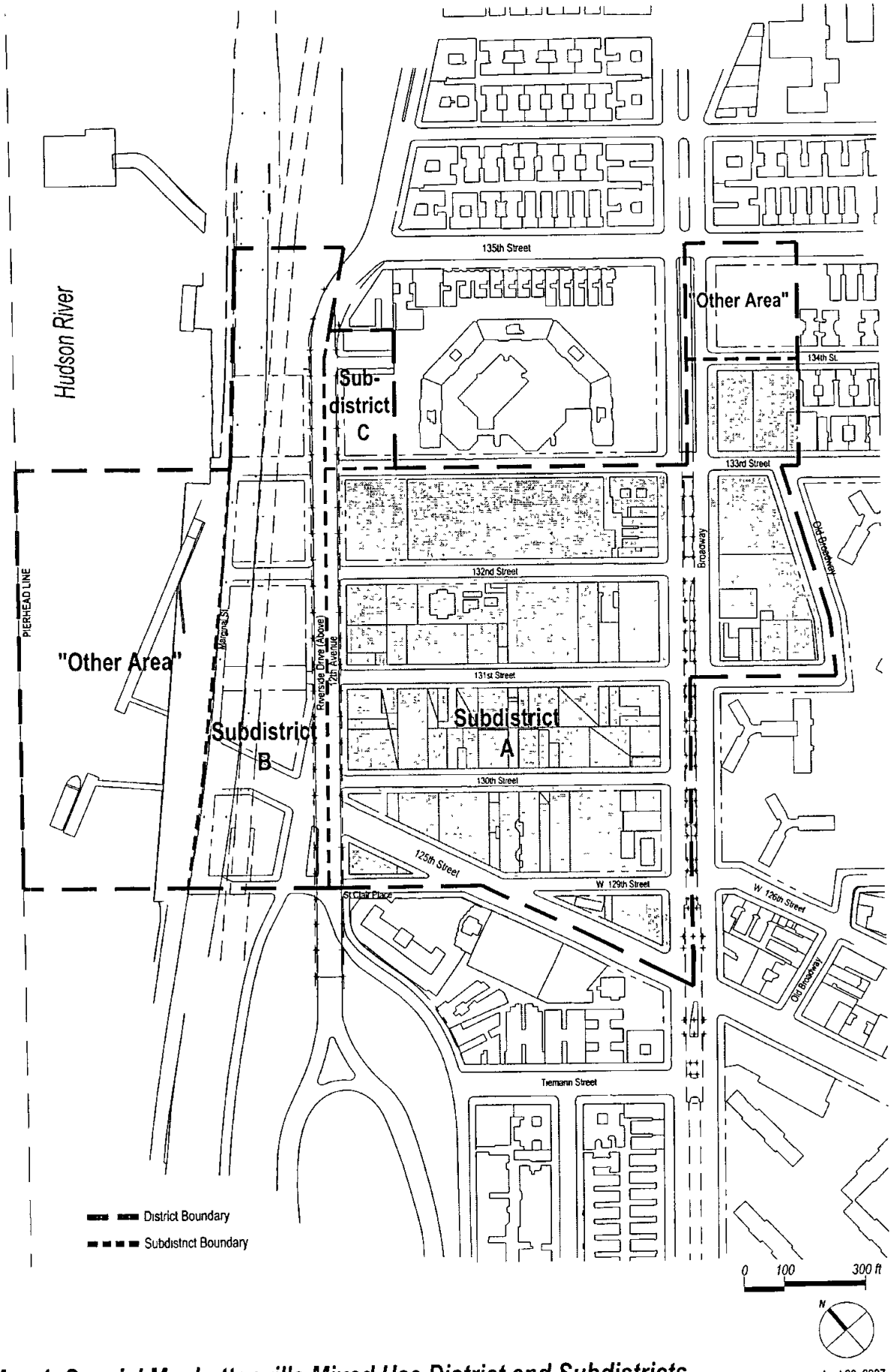
Parcel*	Base Plane	Minimum Building Height, Above Base Plane	Maximum Building Height, Above Base Plane	Maximum Height of Mechanical Equipment
A	21.6'	85'**; 45'***	140'	40'
B	10.37'	55'	60'	20'
C1	20.74'	85'**; 45'***	180'	60'
C2	19.29'	45'	120'	40'
C3	15.19'	85'**; 45'***	190'	40'
C4	9.36'	45'	130'	40'
D1	26.68'	85'**; 45'***	230'	60'
D2	23.25'	45'	160'	60'
D3	15.85'	NA	50'	NA
D4	9.05'	55'**; 45'***	180'	40'
E1	32.42'	85'**;45'***	240'	60'
E2	23.38'	45' (Studebaker, to remain)	118'	40'
E3	14.82'	45'	170'	60'
E4	10.11'	55'**; 45'***	210'	60'
F1	43.25'	85'** ;45'***	260'	60'
F2	34.92'	45'	170'	60'
F3	25.63'	45'	190'	60'
F4	11.97'	75'**; 45'***	240'	60'
G1	44.92'	85'**; 45'***	210'	60'
G2	55.62'	85'**; 45'*** (Nash Building, to remain)	100'	40'
H	66.61'	85'**;45'***	240'	60'

NOTE: These numbers reflect measurement in feet above Manhatttan Datum, which is 2.75' above Sea Level.

* Parcels shown on Map 5, Appendix A

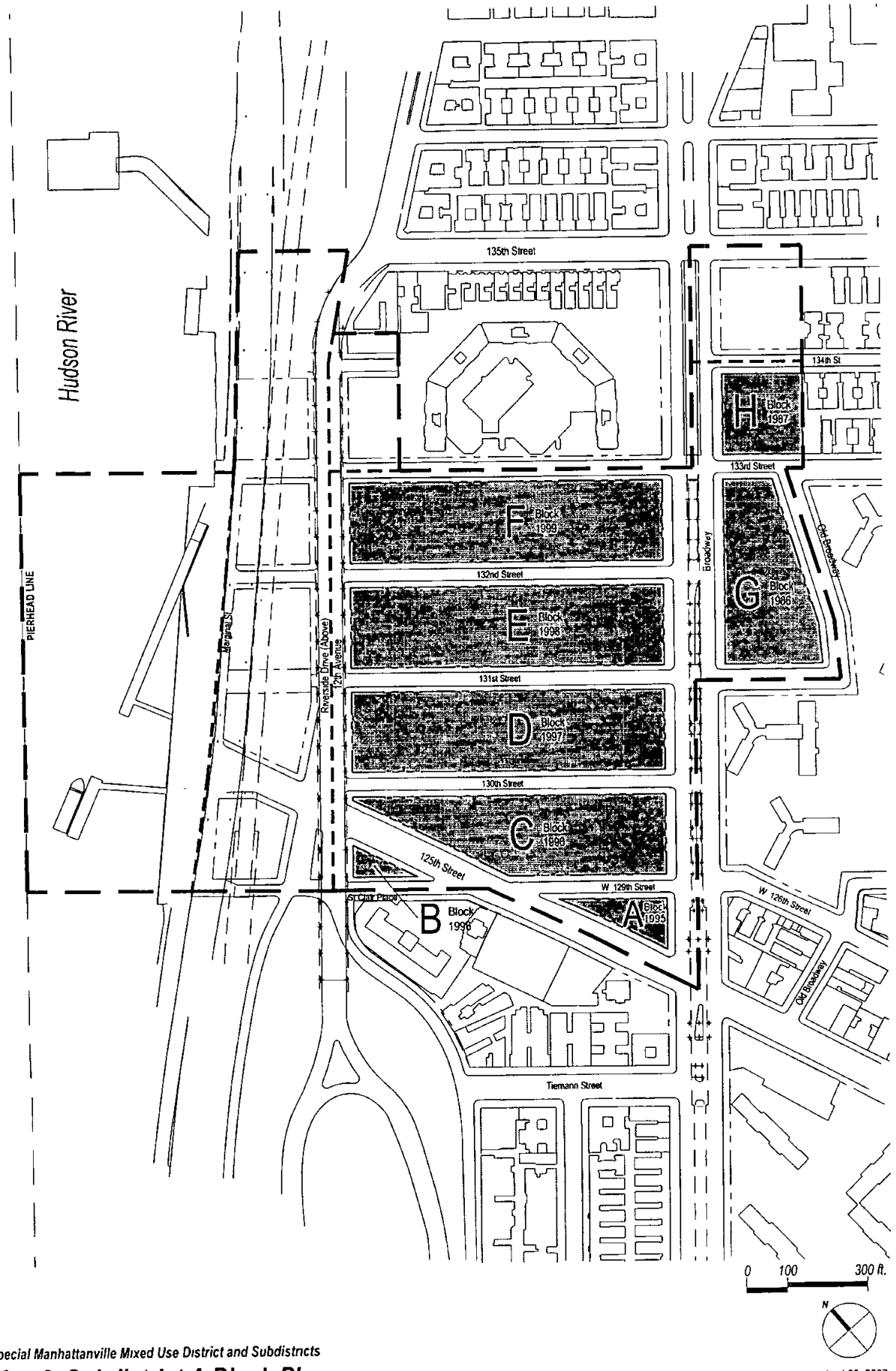
** Minimum building heights on wide streets

*** Minimum building heights on narrow streets



Map 1. Special Manhattanville Mixed Use District and Subdistricts

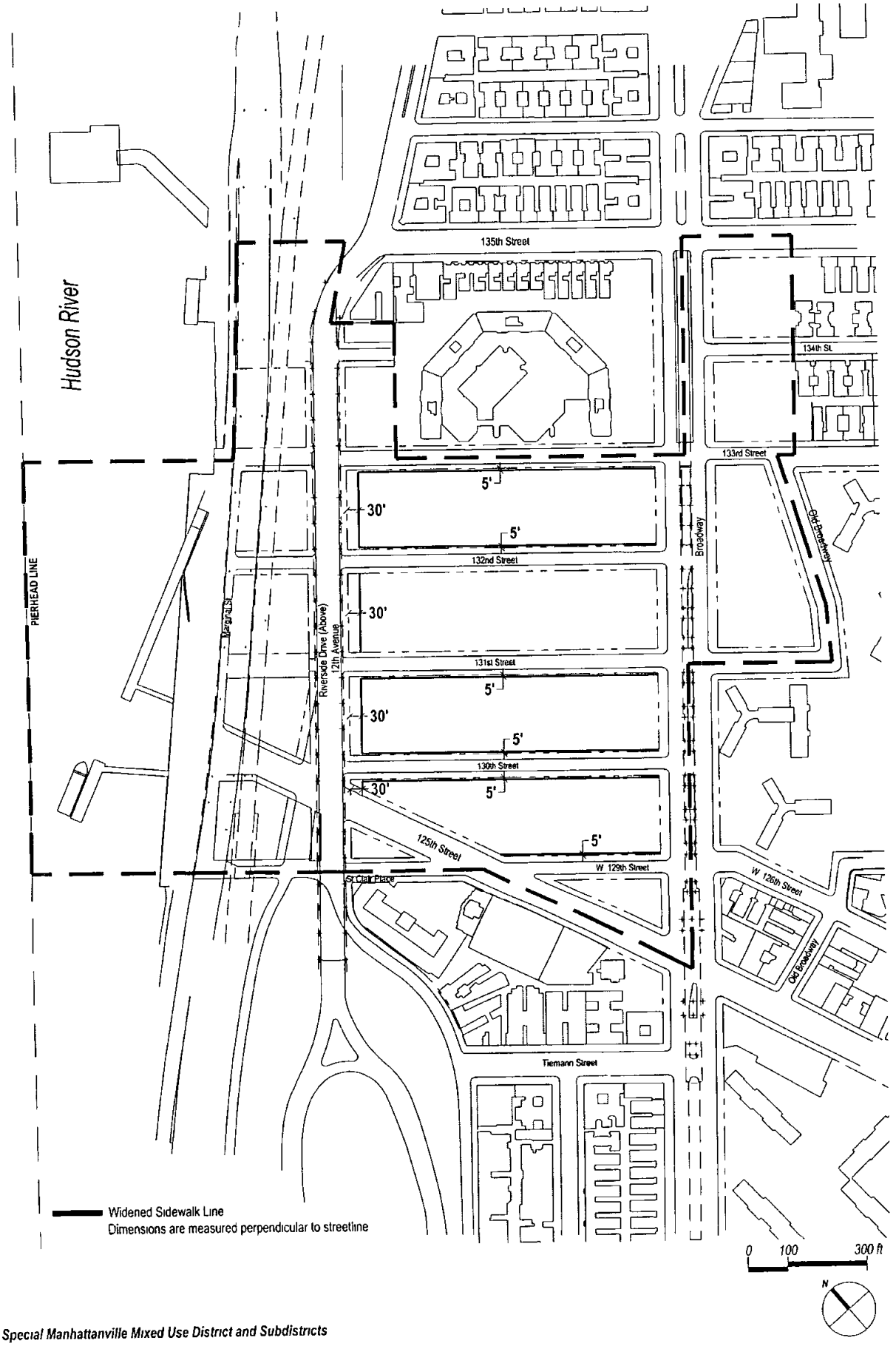
April 20, 2007



Special Manhattanville Mixed Use District and Subdistricts

Map 2. Subdistrict A Block Plan

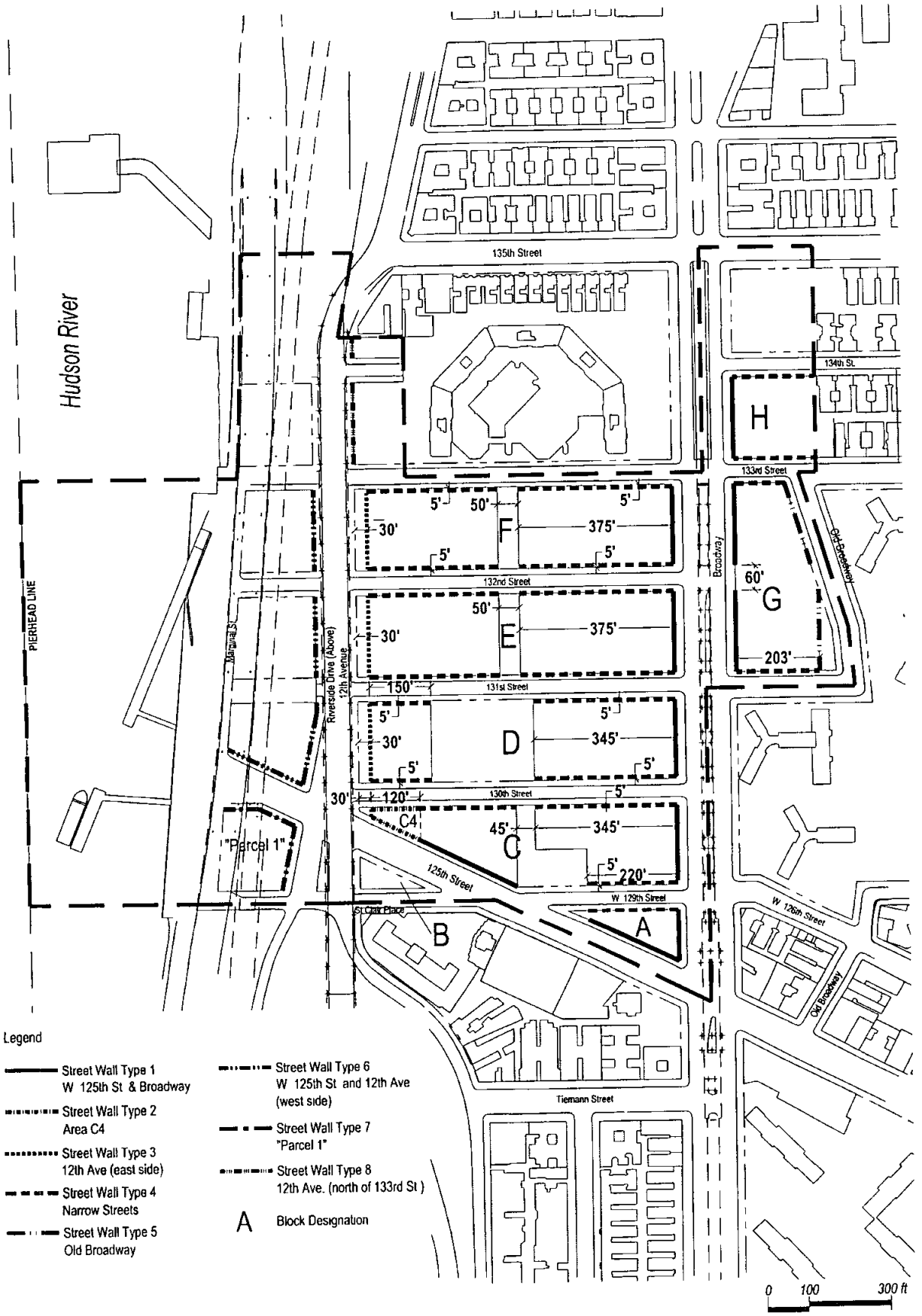
April 20, 2007



Special Manhattanville Mixed Use District and Subdistricts

Map 3. Widened Sidewalk Lines

April 20, 2007



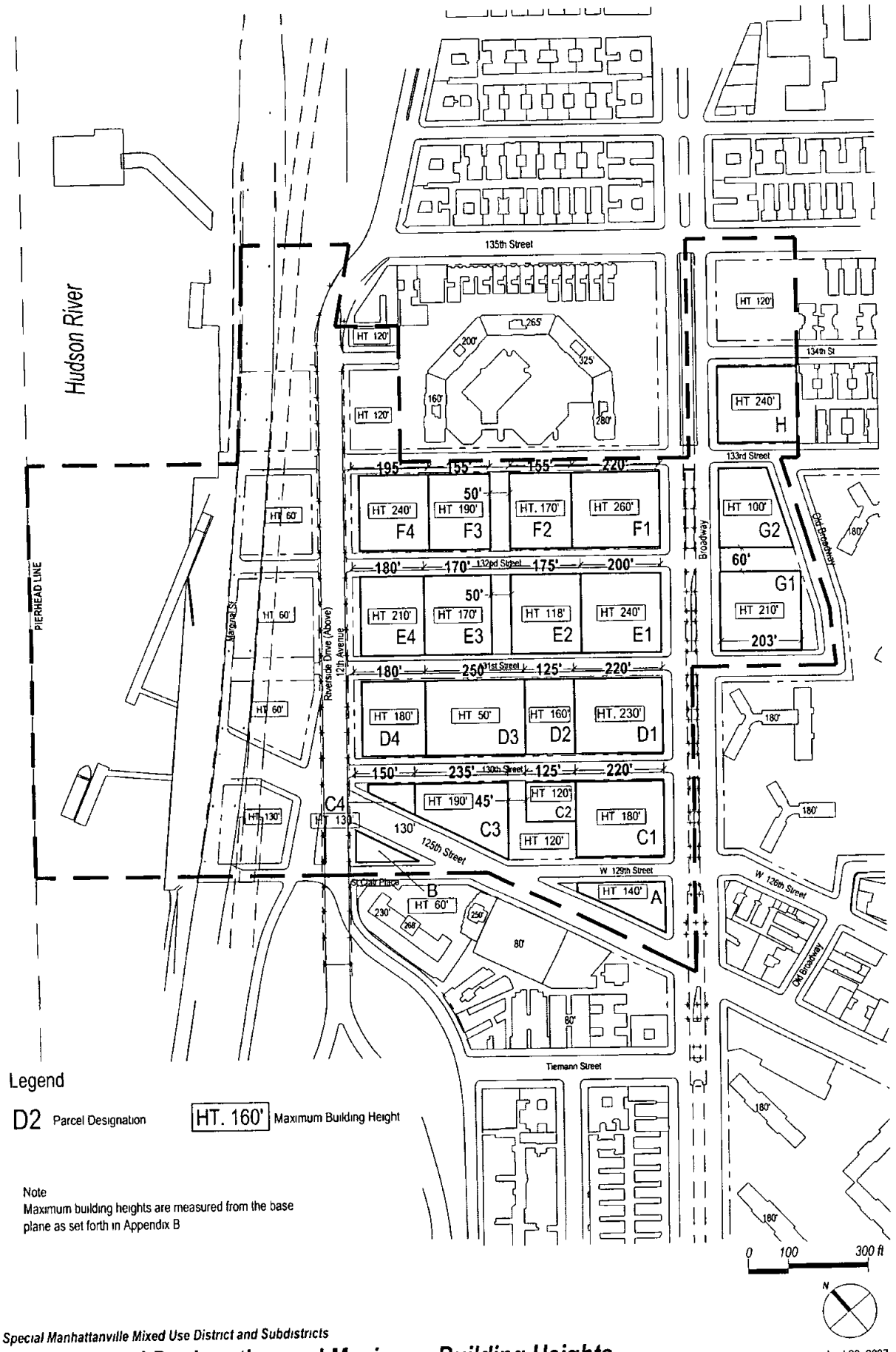
Legend

- Street Wall Type 1 — W 125th St & Broadway
- Street Wall Type 2 — Area C4
- Street Wall Type 3 — 12th Ave (east side)
- Street Wall Type 4 — Narrow Streets
- Street Wall Type 5 — Old Broadway
- Street Wall Type 6 — W 125th St and 12th Ave (west side)
- Street Wall Type 7 — "Parcel 1"
- Street Wall Type 8 — 12th Ave. (north of 133rd St)
- A — Block Designation

Special Manhattanville Mixed Use District and Subdistricts

Map 4. Street Wall Types and Locations

Apnl 20, 2007



Legend

D2 Parcel Designation

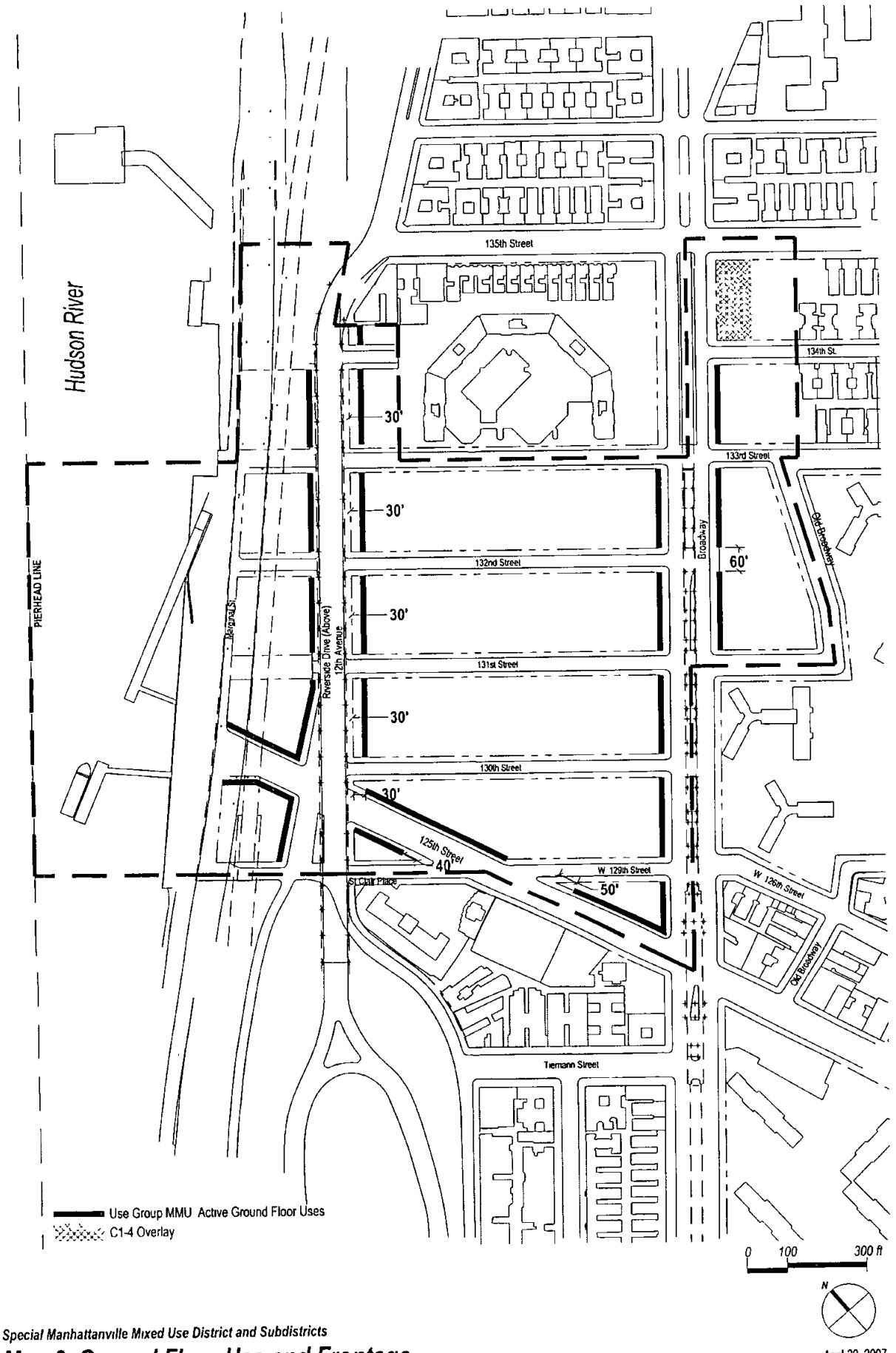
HT. 160' Maximum Building Height

Note
Maximum building heights are measured from the base plane as set forth in Appendix B

Special Manhattanville Mixed Use District and Subdistricts

Map 5. Parcel Designation and Maximum Building Heights

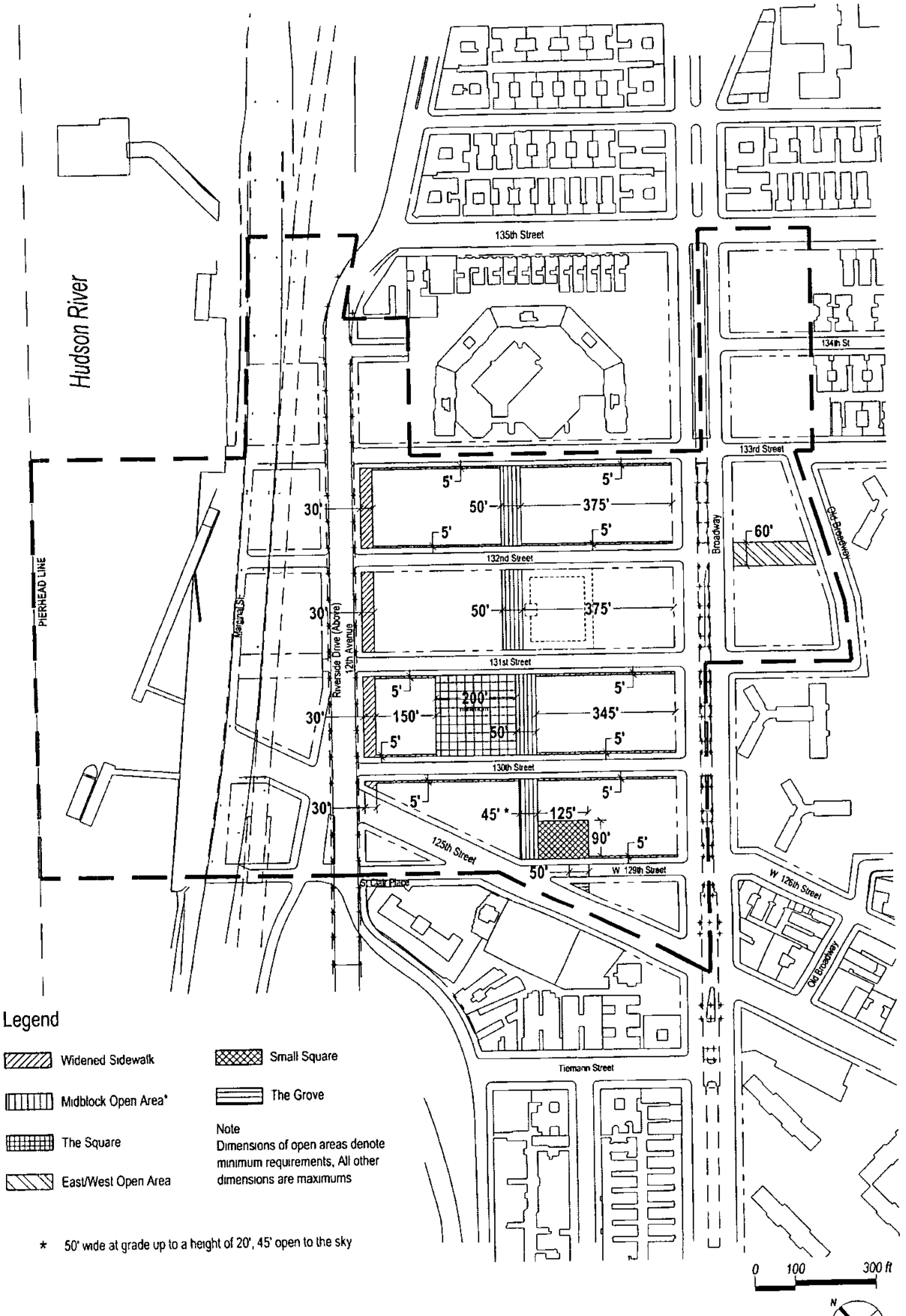
April 20, 2007



Special Manhattanville Mixed Use District and Subdistricts

Map 6. Ground Floor Use and Frontage

April 20, 2007



Legend

- Widened Sidewalk
- Midblock Open Area*
- The Square
- East/West Open Area
- Small Square
- The Grove

Note
Dimensions of open areas denote minimum requirements, All other dimensions are maximums

* 50' wide at grade up to a height of 20', 45' open to the sky

Special Manhattanville Mixed Use District and Subdistricts

Map 7. Mandatory Open Areas

April 20, 2007

APPENDIX B

RESPONSE TO COMMENTS ON THE DRAFT SCOPE

A. INTRODUCTION

This document summarizes and responds to comments on the Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development Environmental Impact Statement (EIS) Draft Scope of Work (Draft Scope). Oral comments were received during the public meeting held by the New York City Department of City Planning (DCP) on November 15, 2005.

Section B alphabetically lists the elected officials, community boards, government agencies, organizations, and individuals that provided relevant comments on the Draft Scope. Section C summarizes these relevant comments and responds to each of them. These summaries convey the substance of the comments but do not necessarily quote the comments verbatim. Comments are organized by subject matter and generally follow the chapter structure of the Draft Scope. Where more than one commenter expressed a similar view, the comments have been grouped and addressed together.

A number of commenters did not make specific arguments related to the proposed approach or methodology for the impact assessments. Others suggested editorial changes. Where relevant and appropriate, these edits as well as other substantive changes to the Draft Scope have been incorporated into the Final Scope.

B. LIST OF ORGANIZATIONS AND INDIVIDUALS WHO COMMENTED ON THE DRAFT SCOPE

ELECTED OFFICIALS, GOVERNMENT AGENCIES, AND COMMUNITY BOARDS

1. Honorable Adriano Espaillat, New York State Assembly, comments made at public meeting (Espaillat)
2. Honorable David A. Paterson, Minority Leader, New York State Senate, 30th District, written submission dated January 5, 2006 (Paterson)
3. Honorable Bill Perkins, New York City Council, comments made at public meeting (Perkins)
4. Honorable Eric T. Schneiderman, Deputy Minority Leader, New York State Senate, 31st District, written submission dated January 6, 2006 (Schneiderman)
5. Honorable Scott Stringer, Manhattan Borough President-elect, comments made at public meeting (Stringer)
6. Landmarks Preservation Commission, written submission dated October 11, 2005 (LPC)
7. Community Board 9, written submission dated January 5, 2006 (CB9)
8. Michael Adams, CB9, comments made at public meeting (Adams-CB9)

9. Jocelyne Chait, CB9, comments made at public meeting (Chait-CB9)
10. Patricia Jones, CB9, 2nd Vice Chair, comments made at public meeting (Jones-CB9)
11. Jamillah Jordan, CB9, comments made at public meeting (Jordan-CB9)
12. Carolyn Kent, CB9, comments made at public meeting and written submission dated January 4, 2006 (Kent-CB9)
13. Mark Levine, CB12, comments made at public meeting (Levine, M.-CB12)
14. Jordi Reyes-Montblanc, CB9, Chair, comments made at public meeting (Reyes-Montblanc-CB9)
15. Carmen Perez, CB9, comments made at public meeting (Perez, C.-CB9)
16. Ron Shiffman, CB9, comments made at public meeting (Shiffman-CB9)
17. Matty Stanislaus, CB9, comments made at public meeting (Stanislaus-CB9)

ORGANIZATIONS AND INTERESTED PUBLIC

18. Coalition to Preserve Community, written submission dated January 2, 2006 (CPC)
19. Environmental Defense, written submission dated January 6, 2006 (ED)
20. Harlem Community Development Corporation, written submission from Thomas Lunke, Director of Planning, dated December 14, 2005 (Harlem CDC)
21. Morningside Heights/West Harlem Sanitation Coalition, written submission from Joan S. Levine, Chair, dated November 15, 2005 (MH/WH Sanitation Coalition)
22. Natural Resources Defense Council, Inc., written submission from Dimple Chaudhary and Eric Goldstein, dated January 6, 2006 (NRDC)
23. West Harlem Environmental Action for Environmental Justice, written submission dated January 6, 2006 (WEACT)
24. Judith Ackerman, written submission dated January 6, 2006 (Ackerman)
25. Tasha Amezcua, Student, Columbia University, United Students Of Color Council, comments made at public meeting (Amezcua)
26. Brendan Babish, comments made at public meeting (Babish)
27. Nellie Hester Bailey, comments made at public meeting (Bailey)
28. Savona Bailey-McClain, Executive Director, West Harlem Art Fund, comments made at public meeting (Bailey-McClain)
29. Clara Batista, written submission dated December 12, 2005 (Batista)
30. Alberto Betancourt, comments made at public meeting (Betancourt)
31. Yolande Cadore, WEACT, comments made at public meeting (Cadore)
32. Kizzy Charles-Guzman, WEACT, comments made at public meeting (Charles-Guzman)
33. Helen Chin, WEACT, comments made at public meeting (Chin)
34. Cecil Corbin-Mark, WEACT, comments made at public meeting (Corbin-Mark)

35. Monica Cottman, written submission dated January 6, 2006 (Cottman)
36. Fred Danesh, comments made at public meeting (Danesh)
37. Januaria De Bourbon, comments made at public meeting (De Bourbon)
38. Thomas Demott, comments made at public meeting (Demott)
39. Toni Dickinson & Luis Munoz, written submission dated January 6, 2006 (Dickinson & Munoz)
40. Cynthia Doty, comments made at public meeting (Doty)
41. Maritta Dunn, comments made at public meeting (Dunn)
42. Fausto Echavarria, Mirabal Sisters Cultural and Community Center, comments made at public meeting (Echavarria)
43. Ruth Eisenberg, CPC, comments made at public meeting and written submission dated January 6, 2006 (Eisenberg)
44. Ursula Embola, WEACT, comments made at public meeting (Embola)
45. March Etienne, written submission dated December 5, 2005 (Etienne)
46. David Evans, Columbia University Faculty, comments made at public meeting (Evans)
47. Aundrea Fares, written submission dated November 30, 2005 (Fares)
48. Jeannine Festco, comments made at public meeting (Festco)
49. Nathan Franco, comments made at public meeting and written submission—undated (Franco)
50. Ming Fung, written submission—undated (Fung)
51. Tamara Gayer, Artist, comments made at public meeting and written submission dated January 6, 2006 (Gayer)
52. Nell Geiser, Senior, Columbia College, Civic Coalition On Expansion and Gentrification, comments made at public meeting (Geiser)
53. Luis Gill, Mirabal Sisters Cultural and Community Center, comments made at public meeting (Gill)
54. Dr. Gholson, Executive Director, Deel Communications, comments made at public meeting and written submission dated January 6, 2006 (Gholson)
55. Mary Granado, comments made at public meeting (Granado)
56. Larry Greenberg, Pearlgreen Corporation, comments made at public meeting and written submission dated November 14, 2005 (Greenberg)
57. George Gruenthal, comments made at public meeting (Gruenthal)
58. Monique Guishard, WEACT, comments made at public meeting (Guishard)
59. Louisa Henriquez, comments made at public meeting (Henriquez)
60. Anhthu Hoang, Staff Attorney, WEACT, comments made at public meeting (Hoang)
61. Paul Hunter, comments made at public meeting (Hunter)

62. Eliott Kahn, written submission dated December 6, 2006 (sic) (Kahn)
63. Tom Kappner, Chair, 121st-122nd Street Block Association, comments made at public meeting, read by James Bias (Kappner/Bias)
64. Rev. Dr. Earl Kooperkamp, Rector, St. Mary's Episcopal Church, comments made at public meeting and written submission dated January 5, 2006 (Kooperkamp)
65. Jeff Kraus, written submission dated November 15, 2005 (Kraus)
66. Christina Burks Lee, comments made at public meeting and written submission—undated (Lee)
67. Eric Levine, Morningside Heights/West Harlem Sanitation Coalition, comments made at public meeting (Levine, E.)
68. Amie Lewis, Senior, Barnard College, comments made at public meeting and written submission—undated (Lewis)
69. Sophie Liu, written submission dated December 10, 2005 (Liu)
70. Staci Lofton, WEACT, comments made at public meeting (Lofton)
71. W. Frances Mack, comments made at public meeting (Mack)
72. Mr. Julius Manigault, written submission dated November 18, 2005 (Manigault)
73. Mario Mazzoni, comments made at public meeting and written submission dated January 5, 2005 (sic) (Mazzoni)
74. Patricia McClure, written submission dated December 27, 2005 (McClure)
75. Christa McNamee, written submission dated December 8, 2005 (McNamee)
76. Maureen McOwen, Environmental Law Society, Columbia Law School, comments made at public meeting and written submission dated January 5, 2006 (McOwen)
77. Bryan Mercer, Student Coalition On Expansion And Gentrification, comments made at public meeting (Mercer)
78. Rowan Moore Gerety, Senior, Columbia College, Student Coalition On Expansion And Gentrification, comments made at public meeting (Gerety)
79. Brett Murphy, Student Coalition On Expansion And Gentrification, comments made at public meeting (Murphy)
80. Julia Nagle, written submission dated January 2, 2006 (Nagle)
81. Theodor Norris, Manhattanville Houses, comments made at public meeting (Norris)
82. Lee Norsworthy, Student Coalition On Expansion And Gentrification, comments made at public meeting (Norsworthy)
83. Carmen Ortiz, Represented by Maritta Dunn, comments made at public meeting and written submission dated January 5, 2006 (Ortiz, C.)
84. Erica Ortiz, written submission dated December 20, 2005 (Ortiz, E.)
85. Bernard Payne, written submission dated January 6, 2006 (Payne)
86. Esperanza Perez, comments made at public meeting (Perez, E.)

87. Marlene Petty, Vice President, 3333 Broadway, comments made at public meeting (Petty)
88. Blanca Piquero, written submission dated December 27, 2005 (Piquero)
89. Swati Prakash, WEACT, comments made at public meeting (Prakash)
90. Mary Prestinary, written submission dated January 4, 2005 (Prestinary)
91. Norma Ramos, Environmental Attorney, comments made at public meeting (Ramos)
92. Ada Rodriguez, comments made at public meeting and written submission dated November 15, 2005 (Rodriguez, A.)
93. Carmen Rodriguez , written submission dated December 12, 2005 (Rodriguez, C.)
94. Gustavo Rodriguez, written submission dated December 28, 2005 (Rodriguez, G.)
95. Nivrka Rodriguez, 55-59 Tenants Alliance, comments made at public meeting (Rodriguez, N.)
96. Robert Rosello, comments made at public meeting (Rosello)
97. Carol Rosenfeld, Environmental Defense, comments made at public meeting (Rosenfeld)
98. Marcia Ruiz, written submission dated December 10, 2006 (Ruiz)
99. Maude Scutt, written submission dated December 15, 2005 (Scutt)
100. Peggy Shephard, Director, WEACT For Environmental Justice, comments made at public meeting (Shephard)
101. Jay Shuffield, comments made at public meeting (Shuffield)
102. Norman Siegel, Representing West Harlem Business Group, comments made at public meeting and written submission dated January 6, 2006 (Siegel/WHBG)
103. Ms. Ed Snowden, written submission dated January 6, 2006 (Snowden)
104. Walter South, comments made at public meeting (South)
105. Nick Sprayregen, Tuck-It-Away Storage, comments made at public meeting (Sprayregen)
106. Lucky Stubbs, President, Riverside Park Community, comments made at public meeting (Stubbs)
107. Debbi Sutton, written submission dated November 15, 2005 (Sutton)
108. Isioma Ugbaja, WEACT, comments made at public meeting (Ugbaja)
109. Visnja Vujica, Senior, Barnard College, comments made at public meeting (Vujica)
110. Mary Wadkins, Represented by Maritta Dunn, comments made at public meeting (Wadkins)
111. Vita and Ishmael Wallace, Orfeo Duo, written submission dated November 15, 2005 (Wallace)
112. Leah Yananton, comments made at public meeting and written submission dated November 14, 2005 (Yananton)
113. Luis Zapata, written submission dated December 27, 2005 (Zapata)

114. Ann Zuhusky-Whitman, Hudson Moving and Storage, comments made at public meeting and written submission dated January 3, 2006 (Zuhusky-Whitman)

115. Judy Zuhusky, Despatch Moving and Storage, comments made at public meeting and written submission—undated (Zuhusky)

C. COMMENTS AND RESPONSES

PROJECT REVIEW PROCESS AND PUBLIC PARTICIPATION

REVIEW PROCESS

Comment 1: Work on the 197-a Plan began approximately 14 years ago and preceded Columbia's plans for Manhattanville. The 197-a Plan was subject to many public meetings and contains a great deal of the community's input and, therefore, must be given full consideration. The CB9 would like confirmation from DCP and Columbia University that the framework for the inclusion of the Board's 197-a Plan in the EIS alternative analysis (as stated in the November 7, 2005, letter to DCP and Columbia) will be the basis for the analysis of the 197-a Plan in the EIS. (Reyes-Montblanc-CB9, Jones-CB9, Shiffman-CB9, CB9, CPC). General support for CB9's 197-a Plan. (Festco, Perkins, Sprayregen, Yananton, Gruenthal, Kappner/Bias, Danesh, Vujica, Geiser, Gill, Evans, Norsworthy, Shephard, Rodriguez, N., Lewis, Corbin-Mark, Cadore, Piquero, Zapata, Fung, Ortiz, C., ED, Kraus, Wallace, Lewis, Lee, Eisenberg, Kent-CB9)

Response: As noted in the Final Scope, the 197-a Plan will be analyzed as an alternative to the Proposed Actions in the EIS. The Final Scope has been revised to note that the analysis will be based on a development scenario prepared by DCP in consultation with CB9 that reflects the land use proposals of the 197-a Plan for Manhattanville.

Comment 2: A negotiated agreement must be made between Columbia and the Coalition to Preserve the Community (CPC) with markers to make sure these agreements are adhered to. (Evans, Norsworthy, Cottman) Based on Columbia's unfulfilled promises to the community for the Audubon Biotech Park, there must be agreements with built-in, robust enforcement provisions and monitoring for the Manhattanville project. It has to have the force of law behind them or they are going to renege again as they have uptown. (Levine, M.-CB12)

Response: Columbia University is discussing a negotiated agreement with community representatives. This agreement, when executed, would not be a governmental agreement, and its provisions are not part of City Environmental Quality Review (CEQR).

Comment 3: Columbia University must give full documentation of all data, assumptions, and calculations for its 197-c Plan. These sources should also be posted on the Internet before releasing a Draft EIS (DEIS) for public review. (Paterson, CPC)

Response: The DEIS will contain documentation of data, assumptions, and calculations for its environmental impact analyses, which will be subject to public review and comment in accordance with CEQR/New York State Environmental Quality Review Act (SEQRA) requirements.

Comment 4: Columbia's deferring permitting procedures for individual project components constitutes impermissible segmentation under the State environmental impact review criteria. Columbia proposes to rezone 35 acres, yet describes plans for only 17 acres and fails to explain plans for the remaining 18 acres. The review process must comprehensively consider all components of a development project in a simultaneous analysis; the project applicant may not submit its plans piecemeal to separate agencies, because this tactic would inadequately address the combined effects of the total project. The Draft Scope should be revised to include full disclosure of development plans and require simultaneous review of all project components so environmental impacts can be adequately assessed. (WEACT)

Response: The Scope explains that the rezoning addresses more than the area slated for Columbia's proposed Manhattanville university area. The area to be rezoned contains Subdistrict A (the Academic Mixed-Use Area), which is the 17 acres that Columbia proposes to redevelop. Because the time frame for development exceeds 25 years, it is not possible at this point to be highly specific about the development on each site. However, the General Project Plan (GPP) would limit the use (to no more than two alternate uses) and the proposed zoning would set maximum floor areas on each site. By analyzing a "reasonable worst-case" scenario, the EIS will address the full range of impacts that could occur with the development of Subdistrict A.

The remaining 18 acres within the Project Area would consist of 9 acres located primarily west of Twelfth Avenue and east of Broadway (Subdistricts B, C, and the Other Area east of Broadway), plus another 9 acres in the Other Area west of Marginal Street out to the pierhead line. The Other Area west of Marginal Street subdistrict encompasses 2 acres that comprise the area of the new West Harlem Waterfront park and 7 acres of land under water, which is owned by the City and would not generate development rights that could be used in place or transferred for use at another location. Columbia has no plans for development of any portion of the Project Area other than Subdistrict A. The future development scenarios in Subdistricts B, C, and the Other Areas have been formulated based upon assumptions as to which sites in those subdistricts would be likely to be developed under the proposed rezoning by other parties. The EIS will therefore analyze the effects of all project components not limited to the

area that Columbia proposes to redevelop. The Draft and Final Scopes fully disclose all development plans.

Comment 5: This project should take into consideration the history Columbia has had with, and its previous impacts on, the communities in which it currently resides. This should include:

1. The University's real estate practices with non-affiliated tenants, its history of negotiations with the community, and an analysis of whether the University has managed to integrate into the community and the City effectively;
2. A detailed analysis of Columbia's impact specifically on urban design in relation to the existing campuses. Columbia's recent impact on upper Broadway would serve as a good case study in defining the accepted business and planning process held by the college. In the past decade, Columbia has taken over and rebuilt significant portions of Broadway in Morningside Heights. The EIS should analyze whether this stretch of Broadway, which exists just blocks from an equally affluent and vital neighborhood model (the Upper West Side), achieves comparable or acceptable levels of vitality;
3. An analysis of Columbia University's existing actions in Manhattanville;
4. An analysis of Columbia's treatment of its properties in Manhattanville; and
5. An analysis of the uses of properties in the area before purchase by Columbia and the socioeconomic impacts the purchase of these properties had on those who lived and worked there. (Gayer, CPC)

Response: The purpose of CEQR review is to evaluate the potential for significant adverse environmental impacts resulting from the Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development, which constitutes the "Proposed Actions." The DEIS will contain all information relevant to the prediction of potential impacts related to the Proposed Actions. Analysis of uses of properties in the Project Area before their purchase by Columbia, and their effect on land use and economic conditions, has been added to the Final Scope. This analysis will be summarized in the "Land Use, Zoning, and Public Policy" and "Socioeconomic Conditions" chapters, and detailed in a "Recent Trends Analysis" appendix item. In addition, a description of how the University has managed properties in the Academic Mixed-Use Area since the time of purchase will be described in the EIS as part of the "Recent Trends Analysis" appendix.

Comment 6: The current tension between Northwestern University and the City of Evanston can serve as one example in which the "deal" does not economically benefit the City despite assumptions to the contrary. A comprehensive analysis of other

relationships, both positive and negative, between the City and institutions should serve as part of the Final EIS. (Gayer)

Response: The described analysis is not part of CEQR review, the purpose of which is to evaluate the potential for significant adverse environmental impacts of the Proposed Actions.

PUBLIC PARTICIPATION

Comment 7: DCP must provide a response to all comments on the Draft Scope and the opportunity for interested parties to address any comments that are rejected by the DCP. (Jones-CB9, CB9, CPC) The Draft Scope should be revised and adequate time allowed for public review before issuing the Final Scope. (CB9, CPC) DCP's public participation procedure has been deficient. The City has failed its legal mandate to make information accessible to the public to ensure public participation in the scoping process. (Shephard, Hoang, Piquero, Eisenberg, Gholson, CPC, WEACT) The scoping hearing was undemocratic, as community residents were relegated to last place in the speaking order. (WEACT) DCP must make sure that all parties involved in the 197-a planning process have an opportunity to participate in the scoping and the EIS process. Members of the Coalition to Preserve Community (CPC) should be apprised of all meetings in a timely way, and all parties should have equal access to all information given to Columbia by the DCP and the City Planning Commission. (CPC)

Response: The requirement for public scoping under CEQR is 30 days notice of a meeting and 10 days to receive comments following close of the meeting, for a total of 40 days. The scoping process for the Proposed Project has far exceeded this requirement. It included a written comment period of 45 days following the public scoping meeting, which was held on November 15, 2005. In all, the public review period extended from the issuance of the Draft Scope on October 3, 2005 until January 6, 2006, a period of over 90 days. DCP, as lead CEQR agency, has addressed all relevant comments and revised the Scope as appropriate, in response to comments received throughout this period. In addition, Community Board 9 was afforded an opportunity to comment on draft responses to its public scoping comments. CEQR does not provide for public review of the Final Scope.

Comment 8: Only CB9 can accurately assess whether the 197-a Plan has been properly included in the EIS, and as sponsor of the plan, CB9 would like to participate in the process. DCP and Columbia must establish a schedule to meet with CB9 during its development of the EIS. (Jones-CB9, CB9)

Response: As noted above, the Final Scope has been revised to note that the analysis of the 197-a Plan as an alternative will be based on a development scenario prepared

by DCP in consultation with CB9 that reflects the land use proposals of the 197-a Plan for Manhattanville.

Comment 9: All proposed and approved projects on undeveloped lots that Columbia plans on including in the proposed build year must be submitted for comment by the community and the Community Board. (Stanislaus-CB9) The EIS should consider phased public review of baseline assumptions. (Paterson)

Response: A description of projects within or immediately adjacent to the Project Area will be included in the Final Scope. The list of all projects included in the analysis of the "future without the Proposed Actions" (including projects within the larger study areas) will be included in the DEIS and be the subject of public review and comment under SEQRA, including comment by the community and the Community Board. The CEQR review procedures do not provide a separate mechanism for community and Community Board review of this data.

Comment 10: Columbia should interact with the community to understand how its presence affects other institutions and local initiatives. These local initiatives do not have the support nor do they receive financial support to thrive and grow. Columbia needs to acknowledge this and support local initiatives. (Bailey-McClain) Students should be involved in the dialogue. (Gholson)

Response: Columbia has stated that it expects to address a variety of community needs through a negotiated agreement, which is not part of the CEQR process. Such an agreement would be in addition to Columbia's ongoing community initiatives.

Comment 11: The DCP must demand that Columbia work with Manhattanville residents and the City to fit its needs into those of the West Harlem community. At a minimum, the DCP must hold Columbia to task to fulfill its legal obligation in conducting an environmental impact analysis that thoroughly addresses and mitigates, eliminates, or avoids the significant adverse impacts its expansion would have on the economy, environment, and health of the Manhattanville community. (WEACT)

Response: DCP, as the CEQR lead agency, will require an environmental impact analysis that thoroughly addresses the potential for significant adverse environmental impacts from the Proposed Actions, including any significant adverse socioeconomic or public health impacts to the Manhattanville community, and identifies any practicable mitigation measures that serve to eliminate or avoid any such impacts.

Comment 12: There is a need for a higher degree of community awareness about the overall project, especially the plans for the potential biotech expansion and all the safety concerns that must be addressed in operating and handling dangerous

biochemical materials within the densely populated central Harlem community. (Espaillat, Siegel/WHBG, Amezcua, CPC) The EIS should disclose all significant risks associated with the biotech facility and power plant and the costs associated with the protection of the site and the building. This should include long-term costs for surveillance, vehicle and bag searches, traffic diversions, City police and services, including overtime and other security measures. (Siegel/WHBG, CPC)

Response: The Final Scope has been revised to note that although the precise areas of research to be undertaken at the proposed Manhattanville university area cannot be identified at this time, the EIS assumes that there would be one or more Biosafety Level 3 laboratories, and a description of the biological materials handled and the required practices and equipment for Levels 1 through 3 will therefore be included in the EIS. The transport, handling, storage, and disposal of the materials associated with this type of laboratory will be discussed. The safety and security measures that would be implemented at such facilities will also be presented.

As noted in the Scope, the EIS will also examine the effects of a potential lab spill. Columbia has its own security department and does not contemplate requesting City police or other services to implement an appropriate routine of security measures at the academic research buildings or elsewhere in the new university area.

PROJECT DESCRIPTION, NEEDS, AND OPPORTUNITIES

PROJECT DESCRIPTION

Comment 13: Columbia's project description is inadequate. (WEACT, CB9) There is insufficient information and level of detail for public comment and response, and for meaningful and effective dialogue and negotiation. (CB9) When the Draft Scope finally moves beyond the flowery description of Columbia's history and pre-eminence in the academic and social life of New York City, its description of the project degrades into technical jargon that evades any specificity. Columbia must not use technical lingo to evade CEQR's ultimate goal of providing stakeholders with detailed and specific information that would allow a full and informed evaluation of this expansion project's environmental impact. (Hoang) Columbia's explanations of its plans are so vague that a typical reviewer cannot easily understand the project. (Shiffman-CB9, Hoang, Charles-Guzman, Dickinson & Munoz, McClure, Scutt, Ortiz, C., CPC) There is insufficient information and level of detail for public comment and response, and for meaningful and effective dialogue and negotiation. (CB9)

Response: The Draft Scope included a description of the Proposed Project at a level of detail sufficient to allow the public and interested and involved agencies to understand the Proposed Actions and comment on the proposed methods of

analysis in the EIS. The Final Scope has been revised to include additional information in the project description as a result of advances in the design since the Draft Scope. The Final Scope has also been revised to reflect changes to the Proposed Actions since the issuance of the Draft Scope.

As described in Section D, "Project Description," of the Draft Scope, the Proposed Actions include a rezoning that would allow redevelopment of a 35-acre area, including a 17-acre area for expansion of Columbia University, known as the Academic Mixed-Use Area. Columbia's needs are long term, so the environmental effects of the plan are addressed for two Build years, the first being in 2015, and the second being in 2030. The build-out of the Academic Mixed-Use Area would be controlled by the zoning regulations and the provisions of the Empire State Development Corporation (ESDC)'s General Project Plan (GPP). There is a higher degree of specificity for the first phase of development, and the Final Scope has been revised to note the specific academic programs that Columbia anticipates would occupy the buildings in the first phase of development. However, at this time, there are no specific plans or building designs to analyze. For that reason, the Proposed Actions are defined by an Illustrative Plan—a possible build-out reflecting zoning and GPP controls, as presented in the Draft Scope. To cover the range of possibilities that might occur, and to be sure that the EIS takes a hard look at all potential significant adverse impacts, reasonable worst-case development scenarios are examined, as relevant, in each technical analysis. These worst cases are derived from the maximum amounts of floor area allowed, overall, for each proposed land use, and, as relevant, the maximum building heights that could be achieved. In addition, the Scope formulates a reasonable worst-case development scenario that might ensue from the rezoning of the areas outside the Academic Mixed-Use Area. In this way, the EIS will provide a full and informed evaluation of the potential environmental impacts of the Proposed Project.

Comment 14: The community would continually be under construction for the project. What is the exact construction plan for the next 25 years? (Ortiz)

Response: It is not possible now to know the exact construction plan over the next 25 years. The EIS will address two likely peak construction years: one before completion of Phase 1, and the other between completion of Phases 1 and 2, when some of the project would be completed and occupied, while the remainder would be under construction.

Comment 15: Explain the meaning of: "the GPP would allow for the implementation of features...that cannot be mandated through zoning regulations or other mechanisms." (as in the Draft Scope) (Harlem CDC)

Response: Zoning regulations control land use, density, parking requirements, and certain design elements, such as streetwalls and building forms and heights. They can

also allow for the transfer of floor area among sites in a special district. Zoning generally establishes a range of uses that are permitted in a given district, and it does not mandate a specific use on a specific site. The GPP would go beyond zoning controls to include the preservation of a specified historic resource, provide overall minimum and maximum floor areas for specific uses within the Academic Mixed-Use Development, limit development on project sites to no more than one or two specified uses from among the range of uses permitted under the zoning, and govern uses in below-ground spaces. The Final Scope has been revised to include this information.

Comment 16: The EIS should give an explanation of whether expanding "approximately 200,000 square feet a year over the next 25–30 years" can be sustained, and if so, what happens after that. (Harlem CDC)

Response: The EIS will include an expanded explanation of Columbia's stated future growth needs, including how the Proposed Actions would satisfy those long-term growth needs.

Comment 17: The EIS needs to describe what Columbia plans to do with the 70 feet of below-grade space and what services they are planning to put there. (Lewis)

Response: The Final Scope contains further detail on the plans for the proposed below-grade space. These plans will be considered in the EIS for purposes of impact analysis.

Comment 18: Does the total gross square footage include the area under the streetbeds? (Harlem CDC, CPC)

Response: Yes. Of the total 6.8 million gsf of the Academic Mixed-Use Development, approximately 2.0 million gsf would be located below grade in several levels, including central energy plants, academic research support space, loading docks, parking and storage facilities, with approximately 316,000 gsf beneath the streets. Approximately 4.8 million gsf of development would be above grade. The Final Scope has been revised to clarify this information.

Comment 19: Highlight where the entrances and exits would be for the underground uses (i.e., parking, bus depot, storage, loading docks, and energy plant). (Harlem CDC)

Response: The EIS will describe the locations of entrances and exits for the underground uses.

Comment 20: The EIS should explain how the research space would be linked with graduate and post-graduate academic training, as mentioned in the Draft Scope. (Harlem CDC)

Response: The Scope has been amended to make it clear that all of the proposed research space would be academic research space, which would, accordingly, be directly linked with graduate and post-graduate training.

Comment 21: Does Columbia have a plan to improve the property it owns on the south side of 125th Street (560 Riverside Drive, Prentis Hall, and the McDonald's site)? (Harlem CDC)

Response: Yes. These improvements will be described and analyzed in the EIS as part of the conditions in the "future without the Proposed Actions" in each EIS technical chapter, and as part of the No Action Alternative in the "Alternatives" chapter. These plans are also described in more detail in the Final Scope.

Comment 22: The Draft Scope is unclear on how streets in the Academic Mixed-Use Area would be treated by Columbia University and the City, and whether they would remain completely open and accessible as publicly owned and publicly controlled thoroughfares. (CB9, CPC)

Response: As described under the heading "Project Description Summary" of Section C of the Draft Scope, all streets would remain open and public (except for temporary closure due to construction). The Final Scope has been revised to further emphasize that all streets would be City-owned and City-controlled at grade and above, and would function as fully open pedestrian and vehicular thoroughfares.

Comment 23: The EIS needs to describe what is being planned for all of the area, especially the area between Broadway and Old Broadway from West 131st to West 133rd Streets, and to the west side of Broadway from West 132nd to West 133rd Streets. The EIS should describe if West 132nd Street between Broadway and Old Broadway will be reopened. (Ortiz)

Response: The properties fronting along the east side of Broadway between West 131st and West 133rd Streets are proposed to be rezoned as part of the Academic Mixed-Use Area and either redeveloped or reused for institutional purposes, as described in the Draft Scope. There are no plans to reopen West 132nd Street between Broadway and Old Broadway. This area would become a midblock open space in accordance with the proposed Special Zoning District text. As shown in Figure 6 in the Final Scope, the property on the west side of Broadway between West 132nd and West 133rd Streets would be redeveloped with four new buildings in accordance with the Illustrative Plan, as follows: two academic research buildings (Sites 11 and 12), one academic building (Site 13) and one building for university housing (Site 14).

Comment 24: What are Columbia's plans for the 52 percent of the proposed Project Area outside Subdistrict A? How is Columbia planning to acquire these properties?

(Harlem CDC) The Draft Scope makes no mention of what the specific facilities would be on Parcels B and C. The Draft Scope should detail the future project in Subdistrict B. (WEACT, CPC, CB9)

Response: Columbia has no plans to acquire or develop properties in the rezoning area outside the Academic Mixed-Use Area (Subdistrict A). See also the response to Comment 13.

Comment 25: Describe the Metropolitan Transportation Authority (MTA)'s involvement in the Proposed Project. Would the replacement of the bus depot require SEQRA/CEQR review? How would it operate during construction? (Harlem CDC, CPC, WEACT) The Draft Scope relies on key assumptions in planning its method of study without discussing how it would modify this plan should these assumptions prove incorrect. Building facilities over the bus depot or moving the facility underground would entail a separate City action and new EIS process, but the Draft Scope makes no mention what Columbia would do if its assumptions are incorrect. (WEACT).

Response: Columbia has coordinated with MTA on how the bus depot would be treated in the EIS. Construction on the block between West 132nd and West 133rd Streets would begin after all of the construction directly to its south was completed. Construction on the western portion of this block, which is occupied by the MTA Manhattanville Bus Depot, would be contingent upon Columbia entering into an agreement with the MTA for modifying or reconstructing the Manhattanville Bus Depot; this agreement has not been reached. Such an agreement would involve a variety of MTA processes addressing a modification or reconstruction plan, including but not limited to SEQRA and/or the National Environmental Policy Act (NEPA) and Title VI of the U.S. Civil Rights Act of 1964.

These processes would include review and analysis of the feasibility and environmental and other impacts of any proposed modification or reconstruction plan, as of the time such a plan was formulated and prior to implementation. To address a reasonable worst-case, the EIS analyzes a scenario in which the bus depot remains in the Project Area at a below-grade location generally beneath its existing site with Columbia buildings developed above. In the event that a different bus depot plan would ultimately be pursued, additional environmental review of the new scenario may be required at that time

A specific temporary relocation plan for the buses during this construction is not known at this time. However, the EIS will contain a generic analysis (in an appendix) of the potential environmental impacts that could result from the temporary relocation of buses from the MTA Manhattanville Bus Depot during construction. If the analysis determines that significant adverse impacts could occur, potential mitigation measures will also be discussed. When a specific temporary bus relocation plan is set forth at a later time, a further review, which

would include public participation, would be undertaken to refine and implement these mitigation strategies. The Final Scope has been revised to reflect this.

Comment 26: Would revocable consent be needed for pedestrian bridges? Explain the need for revocable consent. (Harlem CDC)

Response: There are no pedestrian bridges proposed in the Proposed Project.

Comment 27: Are federal funds involved in this project, or is there federal agency involvement? (Harlem CDC)

Response: Although Columbia, like all other universities, relies on grants from the National Institutes of Health (NIH) to fund a large portion of its research efforts and NIH is a federal agency, the individual grants are not subject to the regulations of the National Environmental Policy Act (NEPA). There are no other federal funds or federal agency involvement with the Proposed Actions.

Comment 28: It is anticipated that Columbia will receive millions in federal government research contracts and in revenue from biomedical research. The projected cost of construction for the project is around $1 billion, and of this a minuscule percentage is set aside for philanthropic community or truly public efforts. (Gholson)

Response: Columbia University has stated that it is undertaking discussions toward a negotiated agreement (Community Benefits Agreement—CBA) with community representatives. Although this agreement would be executed outside the CEQR process and would not constitute a governmental agreement, it is anticipated that several of its provisions will address Columbia's role in addressing a variety of community needs.

Comment 29: In Manhattanville, there is a history of artists and artisans using industrial spaces because they allow noise and use of a variety of materials that would not be appropriate in residential areas. However, these uses will not necessarily show up on City records. The plan does not address this, nor does it say how the cultural pact with the University is going to expand and improve the neighborhood. This could be a model for the first urban cooperation between a university and a community. Columbia's development does not allow for any kind of progressive cultural development. This should be the point of expanding an academic institution. (Gayer) The EIS should provide documentation on the local artist community, including an inventory of artists' studios and artists in residence (AIR) in the area. (CB9, CPC) It should include an assessment of West Harlem's rich cultural heritage, and cultural and arts facilities in the

secondary study area that may be adversely impacted by the proposed rezoning action and campus expansion plan. (CB9)

Response: The socioeconomic conditions analysis in the EIS will identify and characterize, to the extent that information is available, any artist studios and artists in residence in the Project Area and study areas. The Final Scope has been revised to note this.

NEEDS AND OPPORTUNITIES

Comment 30: The EIS should include a detailed list of possible alternative development sites, as well as descriptions of how much of Columbia's alleged need these sites would accommodate. (Dickinson & Munoz, Schneiderman) For these alternative locations, the EIS should identify each alternative location assessed by Columbia University, identify the specific rationale for rejecting each alternative location, identify what portions of the research facilities can be established at the alternative locations, identify what portions of the research facilities require a contiguous location, identify the specific rationale for a contiguous location, identify the impact of establishing research facilities at non-contiguous locations, identify what portion of the total square footage projected to be developed by 2015 can be accommodated at alternative locations, identify all properties owned by Columbia University at alternative locations, and identify population characteristics in proximity to each of the alternative locations. (CB9, CPC) Columbia must consider building its biotech campus outside of New York City. (CPC)

Response: The Final Scope discusses the alternative sites Columbia considered in deciding how to meet its long-term growth needs and the reasons for their rejection by Columbia, and presents the rationale for choosing the Manhattanville site, in particular. This information will also be provided in the EIS.

Comment 31: Columbia's 197-c Plan does not fit into the CB9's 197-a Plan. The 197-c Plan does not address the needs or provide for the health or safety of the people who live there today. It directly contradicts and violates the plans and goals of the 197-a Plan. (CPC)

Response: The CB9 Proposed 197-a Plan is a draft plan that reflects different goals and objectives from the Proposed Actions in a number of areas. The potential for the Proposed Actions to result in significant adverse effects in the area of public health will be thoroughly assessed in the EIS.

Comment 32: The people who live in the community should decide how the community should grow and how to create real economic development that will provide opportunities for all the current residents, and at the same time preserve Manhattanville's diversity and historic character. (Doty)

Response: The Proposed Actions will be reviewed pursuant to the City's Uniform Land Use Review Procedure, which provides opportunities for community comment and input by City officials at various levels of government. The GPP will be subject to public review and comment pursuant to the Urban Development Corporation Act.

Comment 33: Columbia University's goals and objectives continue to be vague and need to be much more specific to properly assess viable alternatives. Will DCP request and Columbia provide a statement of the University's "goals and objectives" for their proposed development? (CPC)

Response: Consistent with its purpose, the Final Scope includes a concise description of Columbia University's goals and objectives. The EIS will include an expanded description of project purpose and need that reflect Columbia's long-term goals. This description will inform the extent to which these goals and objectives can be met by alternatives.

Comment 34: The Draft Scope states that the rezoning action is to allow Columbia to fulfill its role as a leading academic institution and that it has less than half the square footage per student of peer institutions, such as Yale, Harvard, and Princeton. The EIS needs to state how many students are in undergraduate and graduate schools at Columbia, how much growth has taken place in the past 10 years, and how much growth they anticipate in the next 10 years. (Dickenson & Munoz, CPC) What study was used to assert that Columbia has less than half the square footage per student of peer institutions? (Mazzoni) Columbia must document the study that found the information regarding the square footage per student at Columbia and that of peer institutions. We need to know the methodology used to determine the amount of space per student and how this relates to educational experience. (Dickinson & Munoz, CPC) What methodology did Columbia use to determine the amount and type of space (e.g., public spaces, classrooms, offices, etc.) that exists per student? (Mazzoni)

Response: Additional information regarding Columbia's need for space, and historic and recent trends of the growth of the University, will be provided in the EIS.

Comment 35: A critical component of Columbia University's rationale for its expansion is increased space per student to enable it to compete with other similar institutions. Yet, Table 5 in the Draft Scope indicates that only 19.3 percent of the proposed Academic Mixed-Use Area (Subdistrict A) and half of the area allocated for research are for academic purposes. (CB9, CPC)

Response: The comment is incorrect in stating that only the general or other academic uses (cited as 19.3 percent in the comment) listed in Table 5 of the Draft Scope are for academic purposes. All of the above-grade uses in Table 5 of the Draft Scope, except active ground-floor uses that are intended to enliven the

streetscape, are for academic purposes. Columbia's proposed facilities would accommodate graduate and post-graduate education and academic research. No commercial research space is proposed within the Project Area. Accordingly, virtually all of the proposed uses, including research facilities and the below-grade components, are for or support academic purposes.

Comment 36: The University is not really just in the business of educating but in the business of real estate. The real estate market is the way that the University is staying cutting edge and competitive. That doesn't really serve educational needs. It serves Columbia's bottom line. (Geiser, CPC) It's a profit-driven idea. (Zapata, CPC)

The EIS needs to explain exactly what the need is academically for this institution and not financially, since the financial interests, not academic, seem to be driving this proposal. Columbia must disclose the activities at its new research facilities and the impact of these and other facilities in the vicinity. (South, Dickinson & Munoz, Harlem CDC; CB9, CPC)

Response: As stated in the Draft and Final Scopes, the Proposed Actions are proposed by Columbia to maintain its position as a major world-class university—a position which it believes would erode over time if the University is limited to its existing facilities, many of which cannot accommodate the needs of modern scientific research and other academic programs. Except for the street level retail, which is intended to enliven the streetscape and provide local retail services, none of the proposed uses would be commercially oriented. The proposed redevelopment of Subdistrict A would otherwise be composed of facilities for education (academic research, academic, and student/faculty housing) and support services for those facilities. The EIS will evaluate the environmental effects of those facilities.

Comment 37: It is important to consider how much of Columbia's space constraints may be due to mismanagement or underutilization of space by Columbia, its unwillingness to develop on existing property, and a student body growing to an unreasonable size. The EIS should answer: What is the breakdown of space in Columbia's real estate holdings, according to use (e.g., instructional areas/classrooms, research facilities, libraries, administrative offices, faculty offices, student housing, faculty housing, dining areas, open space, recreational space, etc.)? What are the addresses and square footage of these holdings, including undeveloped parcels? What is the maximum square footage of buildable space allowed under current zoning regulations for each of these properties? What is the difference between maximum allowable density and built density on Columbia's existing holdings? How much open space is on the Morningside campus in square feet and as a percentage of the whole site? How many students reside in Columbia-owned housing? How many have enrolled at Columbia for each of the past 30 years? (Mazzoni)

Response: Information on current student enrollment, space needs, and constraints on Columbia's ability to expand its facilities at the Morningside Heights campus provided in the Final Scope will be expanded in the EIS to include more detail and documentation.

Comment 38: Columbia states in the Draft Scope that 1 million square feet of research space is needed every five years. How did Columbia arrive at the figure, and why is the need always growing? (Mazzoni)

Response: The comment is incorrect in citing 1 million square feet of research space. As noted in the Draft Scope, the 1 million square feet refers to total space, not just academic research space. Additional information regarding the need for space will be provided in the EIS.

Comment 39: What properties have Columbia or its affiliate institutions pursued or researched as potential sites in Morningside Heights or elsewhere? How much of Columbia's space needs could be accommodated by other available properties? (Mazzoni)

Response: As noted in the response to Comment 34, above, the EIS will contain more detail and documentation regarding Columbia's needs determination, as well as alternative sites considered.

Comment 40: The EIS should answer: How many leases has Columbia failed to renew on property that it has purchased in Manhattanville? Have there been any contingency agreements between Columbia and building owners that stipulates that owners may not extend long-term leases to tenants of their properties? Has Columbia extended short-term leases to any businesses or other tenants in the area since acquiring the property? (Mazzoni)

Response: A description of how Columbia has managed properties it has purchased in the Academic Mixed-Use Area will be described in the EIS as part of the recent trends analysis.

Comment 41: The EIS should say why this project is necessary and how much of the projected impacts will actually be necessary. Space in New York is at a premium, and for Columbia to assert itself over all the property it can afford to purchase doesn't take into account the people who are already here whose needs ought to outweigh those of Columbia. The EIS should explain Columbia's actual space needs, not desires. (Vujica, CPC) What is the need for space? What are exact figures on how they use the space that they already have? (Mazzoni, CPC) Columbia should explain why adaptive reuse of its current building stock doesn't work for its needs. (ED, CPC)

Response: See the responses to Comments 34 and 37. The EIS will contain additional information regarding Columbia's need for space and why adaptive reuse of its current building stock would not meet its goals, most particularly related to the requirements for academic research space.

Comment 42: Columbia should, more appropriately, compare its space issues with other New York City universities in high-density areas. (Dickinson & Munoz)

Response: See the responses to Comment 34 and 37. As described in the Final Scope, the most relevant space comparison is with those other universities that compete with Columbia for funding, faculty, and students. The specific universities in question vary with the program under consideration (e.g., business school, school of the arts, biological sciences, engineering, etc.). A comparison with another New York City institution would only be relevant if that university competed with Columbia in a given program area (NYU for the School of the Arts, for example).

Comment 43: Elaborate on Columbia's relationship with City College and how it would be enhanced by the Proposed Project. (Harlem CDC, CPC)

Response: The EIS describes the relationship between the proposed new university area and City College.

Comment 44: In light of the many recent investments in commercial, residential, industrial, and recreational projects, explain the comment from the Draft Scope that Manhattanville and West Harlem have "not shared in the economic renaissance occurring in Central and East Harlem." (Harlem CDC) The neighborhood has recently attracted some major businesses that promise to anchor a period of renewed economic growth. (WEACT)

Response: The language has been removed from the Final Scope. The DEIS will contain a "Recent Trends Analysis" appendix, which includes a comparison of land use and economic conditions in the study area with other areas in Northern Manhattan.

EMINENT DOMAIN

Comment 45: Eminent domain in New York State has been used for economic development and blight. The Draft Scope needs to address the subject of blight. Is this area a blighted area? How do we define blight? We need to identify the specific objective criteria used to determine blight and underutilization. What, if anything, does the reported study of the EDC on blight have to say about the Project Area? If there is blight, what role, if any, did Columbia contribute to this blight status, including an assessment at which the announcement of the project

contributed to the blight condition? The Draft Scope should identify all properties determined to be blighted, including property owned by Columbia. (Siegel/WHBG) The study should eliminate those blighted properties owned or controlled by Columbia. (Lee)

Response: ESDC is investigating neighborhood conditions insofar as relevant to its potential involvement in the Proposed Actions in the Academic Mixed-Use Area, which could include a determination pursuant to Section 10(c)(1) of the Urban Development Corporation Act, that the area in which the project is to be located is a substandard or an unsanitary area, and tends to impair or arrest sound growth and development. Neither the EIS nor the Final Scope will identify "blighted" versus "non-blighted" properties, as such specific identification is outside the scope of CEQR.

Comment 46: The study area is being deemed as blighted because it doesn't have the same income levels or resources. Columbia University seems to only care about their community, not ours. (Rosello)

Response: See the response to Comment 45. The EIS will analyze potential impacts on the surrounding community, including various study areas that extend generally between ¼ and ½ mile from the Project Area. Also, as noted in the Final Scope, under the description of the Proposed Actions, the proposed zoning requires a number of amenities (including 122,455 sf of publicly accessible open spaces) and urban design features, including active ground-floor uses and building setbacks to in effect widen sidewalks and make the area more attractive for pedestrians to walk through to the waterfront. The zoning also proposes several subdistricts outside the Academic Mixed-Use Development Area with the purpose of creating a lively environment in the area adjacent to the West Harlem Waterfront park, currently under construction, and to improve the Broadway corridor in Manhattanville.

Comment 47: The EIS must provide a relocation strategy for any residents and businesses facing eminent domain. It should provide the details of its buyout strategy, tell us how it profiles the tenants to determine that they must be removed, and reveal how it decides what incentives will be used to remove them. (CPC)

Response: The relocation benefits available to residents and businesses will be described in the direct displacement analyses in the EIS.

Comment 48: The Draft Scope should explain the rationale and justification for the use of eminent domain. (Siegel/WHBG, Ruiz, CPC) General opposition to eminent domain. (Mack, Sprayregen, Perkins, Yananton, Ramos, Geiser, Gerety, Stringer, Lewis, Levine, E., Corbin-Mark, Petty, Baily, Rodriguez, C., MH/WH Sanitation Coalition; Payne, Snowder, CPC)

Response: If ESDC determines that Columbia University's need for a new campus in Manhattanville is in the public interest and use of eminent domain is warranted to allow the plan to be realized, it may determine to acquire properties under the Eminent Domain Procedure Law (EDPL).

Comment 49: Condemnation of property under the eminent domain procedure laws should be used with great care for a public purpose only and never to convey property from one private owner to another. (CB9, Reyes-Montblanc-CB9, Shiffman-CB9, Espaillat, Payne)

Response: To the extent that acquisition of property not owned or controlled by Columbia through eminent domain is determined by ESDC to be warranted, any such acquisition by ESDC would be in stages based on Columbia's anticipated needs for such property as the Academic Mixed-Use Area is developed. The appropriateness of using eminent domain to convey property from one private owner to another is not an environmental impact issue under CEQR.

Comment 50: The Draft Scope fails to directly address the issue of eminent domain and the issue of phasing and timing for the use of eminent domain. (CB9) The Draft Scope has not set forth any methodology to determine the appropriateness of the ESDC's undertaking of property takings. (CB9, CPC) A proposed methodology must be included in the comments, including one for property under the streetbeds of many City streets, which belongs to the City of New York. (Shiffman-CB9, Bailey, Siegel/WHBG)

Response: Displacement caused by the anticipated change in use in the Project Area and the impacts caused by redevelopment of the Project Area are considered under CEQR. This analysis will consider the potential for displacement in both 2015 and 2030, reflecting the proposed build-out of the Proposed Project. To the extent that acquisition of non-Columbia-owned or controlled property through eminent domain is determined by ESDC to be warranted, any such acquisition by ESDC would be in stages based on Columbia's anticipated needs for such property as the Academic Mixed-Use Area is developed.

Comment 51: Under the GPP, if property not owned by Columbia is taken through eminent domain, would that land be cleared all at once or in phases depending on need? (Harlem CDC) Since the proposed development of Subdistrict A would be phased, the revised Scope should identify whether the eminent domain actions would be phased to follow the projected development by Columbia University in Subdistrict A and identify the projected time periods and phases for eminent domain actions. (CB9, CPC)

Response: To the extent that acquisition of non-Columbia-owned property through eminent domain is determined by ESDC to be warranted, any such acquisition by ESDC would be in stages based on Columbia's anticipated needs for such property as

the Academic Mixed-Use Area is developed. Any ESDC acquisitions would take place after its approval of the GPP and a decision to exercise its eminent domain authority.

Comment 52: Is eminent domain being used in a threatening manner to coerce tenants, landlords, and business owners to sell their properties unfairly? (Espaillat) The Draft Scope should explain the rationale and justification for the use of eminent domain. (Siegel/WHBG, Ruiz, CPC)

Response: The Final Scope has been revised to note the extent to which eminent domain could be used to acquire City-owned and private property to permit development of the Academic Mixed-Use Development. To the extent that eminent domain is utilized in connection with the Proposed Actions, all relevant legal standards and requirements will be followed.

FRAMEWORK FOR ENVIRONMENTAL REVIEW

Comment 53: Columbia must consider all development expected over the next 20–30 years. This must be accounted for as the future (No Build) baseline condition without development by Columbia. (Paterson, CPC) The Draft Scope must compare the future action condition with the future no action condition. (WEACT)

Response: As described in the Scope, the "future without the Proposed Actions" will provide a baseline for the evaluation of impacts associated with the Proposed Project. All known or announced projects, or proposals pending approval that can be reasonably expected to be completed (including rezoning and public policy) by the Build years of the Proposed Actions (2015 and 2030) will be considered in the future without the Proposed Actions. For all technical areas of the EIS, the future with the Proposed Actions condition will be compared with the future without the Proposed Actions condition (the baseline condition) to identify potential impacts.

Comment 54: The baseline must incorporate the projected economic development stimulus arising from improvements on the waterfront, include the reasonable development of all properties currently owned by Columbia University without the Proposed Actions, and include projected economic and business development arising from the maximum use of all available economic development resources in the Empowerment and Empire Zones, as well as initiatives by newly elected Manhattan Borough President Scott Stringer and EDC. (CB9, CPC)

Response: The baseline, or future without the Proposed Actions, condition will incorporate all known or announced projects, or proposals pending approval that can be reasonably expected to be completed (including rezonings and public policy changes) by the Build years of the Proposed Project. These include

developments that are under construction, planned, or proposed. The baseline condition will include certain as-of-right development plans for properties currently owned by Columbia in the study area and Project Area, but will not assume the development of all properties currently owned by Columbia. As described in the *CEQR Technical Manual*, the baseline analysis is not equivalent to the maximum development capacity, but to the future development that can reasonably be expected to occur within the Proposed Project's time frame.

Comment 55: In terms of the framework, avoidance must be a step before mitigation in the conduct of analysis. Priority must be given to avoidance of impacts rather than mitigation of impacts in the analysis of the reasonable worst-case development scenario in the EIS. (CB9) In particular, there must be an analysis of avoidance of displacement before mitigation of that displacement. (Stanislaus-CB9, DeMott, Kappner/Bias, CPC, NRDC). The Draft Scope makes no mention of mitigation or alternatives that would minimize the development's impact on the housing condition in West Harlem. (WEACT)

Response: The EIS will identify the potential for significant impacts under reasonable worst-case development scenarios with the Proposed Actions. For all significant impacts identified, any practicable mitigation measures will be identified to avoid these impacts upon implementation of the Proposed Actions, and alternatives will be considered. Under CEQR/SEQRA, alternatives are considered that can serve to reduce or eliminate impacts of the Proposed Actions while substantively meeting the goals and objectives of the action. The selection of alternatives is generally linked to the identification of anticipated significant adverse environmental impacts.

Comment 56: The EIS must gather study information as completely and thoroughly as possible in order to allow the public and the City to evaluate the significance of this project's adverse impacts. (Jordan-CB9, Charles-Guzman, Prakash, CPC) Columbia must revise its Scope of Work, incorporating the legally required analysis with the mandated detail and specificity, before the City can go ahead and allow this expansion with the CEQR process. (Jordan-CB9, Charles-Guzman, Prakash, Rodriguez, G., WEACT) The Draft Scope fails to identify proper study methodologies and relies on secondary sources. (WEACT)

Response: CEQR requires that EIS analyses use appropriate methodologies and a level of detail appropriate to disclose whether a significant adverse impact could occur. The Draft Scope thus provides that the analyses in the EIS will use analysis procedures, methodologies, and impact criteria contained in the *CEQR Technical Manual*. Therefore, the Final Scope does not need to be revised. To the extent that these methodologies recommend the use of secondary sources, they will be used in the DEIS.

Comment 57: A cumulative impact analysis must be included in the EIS. The methodologies for conducting a cumulative impact analysis must be proposed as a supplement to the Draft Scope for comment before finalization of the Scope. (Stanislaus-CB9, Lee, Espaillat; Ramos, Hoang) Columbia's ignoring mention of cumulative impacts analysis violates the law and hides the true effects of the expansion development by slicing its project into palatable pieces. (WEACT)

Response: The full redevelopment of the entire rezoning area, Columbia's portion and the other subdistricts, will be addressed in the EIS under a reasonable worst-case development scenario. The conditions examined in the EIS will include the activity generated by No Build projects and background growth added to the conditions generated by the Proposed Project, thus presenting a cumulative analysis of future conditions with the Proposed Project, in accordance with the methodologies and approaches recommended in the *CEQR Technical Manual.* Therefore, there is no need for a supplement to the Scope.

Comment 58: The EIS should use an earlier start date for the existing conditions baseline (e.g., 2000) before Columbia's widespread acquisition of property in Manhattanville and announcement of its Manhattanville campus development plans rather than a 2005 start date supplemented by a recent trends analysis. Columbia aggressively started purchasing property in this area around the year 2000, which could have been a direct cause for residential and business displacement. It is likely that land speculation has been a major cause for business and residential displacement as a result of Columbia's acquisition activities and announcement of its development plans. (Stanislaus-CB9, CB9, CPC)

Response: In accordance with the *CEQR Technical Manual*, existing conditions will be examined in the EIS for the year 2005. However, the EIS will contain a review of conditions and trends preceding the existing condition year, with particular focus on the years between 2000 and 2005.

Comment 59: The Draft Scope fails to demonstrate that the selected Build years—2015 and 2030—represent the years for maximum impact from projected development arising from Columbia's proposed rezoning action and development plan. The EIS must base its analysis on years in which maximum impacts would occur from full build-out and operation of the proposed facilities. (CB9, CPC, WEACT) There needs to be a separate Build year for the peak construction impacts to assess each of the topic areas for the peak year of construction for both subgrade and above-grade construction. (Stanislaus-CB9, CB9, WEACT) The maximum Build year in 2030 should be extended to the year of maximum impacts from the full construction, not just the final construction date. (Stanislaus-CB9, Gerety, ED, WEACT) The maximum Build year should be extended to 2055, and the information requested in the EIS should start in 1990. (CPC) Columbia must study a Build year, such as 2012, during which

construction activities are anticipated to be at their peak to determine the impacts of construction. Moreover, it must analyze a Build year in which facilities planned for Phase 1 would be operating in full swing to determine the project's operational impacts. (WEACT)

Response: The Scope has been modified to emphasize that the year 2030 examined in the EIS will assume full occupancy and "maturation" of the Proposed Project, and in this way will capture the longer-term impacts of the project, without engaging in speculation over conditions in the distant future.

As noted in the Final Scope, in addition to the 2015 and 2030 analysis years, several peak construction years will be examined to address conditions during both Phase 1 and Phase 2 construction periods. The analysis of peak construction activities during Phase 2 will also account for the operation activities associated with a sizable portion of the proposed development, which would occur at the same time (discrete technical analyses may be performed for other times, if warranted).

Comment 60: The study areas should be based on the interlinkage of the two existing Columbia campuses, Morningside Heights and Washington Heights, and the new proposed campus in Manhattanville. (Stanislaus-CB9, Chait-CB9, Geiser, Gerety, Corbin-Mark, Dickinson & Munoz, CPC, WEACT) The study area for certain technical areas—e.g., land use, socioeconomic conditions, traffic, transit, neighborhood character, and historic resources—must be expanded to include all neighborhoods encompassed and impacted by Columbia's Morningside Heights, Washington Heights, and proposed Manhattanville campuses, as well as City College, which has a close scientific relationship with Columbia. (CB9) (CB9, CPC, WEACT) The ¼-mile and ½-mile study area for all technical analysis is inappropriate because the impacts in some technical areas (particularly traffic and residential displacement) will be felt over much wider expanses of West Harlem than others. The proper north–south borders of the study area should be the full 3-mile stretch between the two campuses, from 110th Street to 170th Street, and the proper east–west border should be from 12th Street to Malcolm X Boulevard. (WEACT)

Response: As indicated in the Draft and Final Scopes, each technical area of the EIS has its own, appropriate study area. As described under Task 3, Land Use, and Task 4, Socioeconomic Conditions in the Draft Scope, the ¼-mile and ½-mile study areas suggested in the *CEQR Technical Manual* for use in land use and socioeconomic analyses have been adjusted based on such factors as neighborhood boundaries and topographic conditions. The study areas for community facilities are defined by the catchment areas for each facility (e.g., school districts). The traffic area, as presented in the Draft Scope, would extend well beyond the ½-mile limit, to include locations as far east as First Avenue. Consistent with CEQR, the EIS will measure the impacts of the Proposed

Actions, and will not analyze all of Columbia University's operations or the interlinkage of all the existing campuses. The study area for the technical analyses will therefore not be expanded to cover all three campuses.

Comment 61: The Draft Scope discusses a reasonable worst-case scenario. That is an unreasonable standard to use here because we need to look at the standards of what promotes health, what enhances health, what will add to the health of our community, and not what is a reasonable worst-case scenario. On page 28, it talks about the indirect impacts of this. It needs to be discussed in more detail. (Kooperkamp) Columbia's use of an "omnibus worst-case scenario" is inappropriate because CEQR requires a separate worst-case scenario analysis for each technical area. (WEACT)

Response: The reasonable worst-case development scenario is used to make a conservative assessment of the potential for significant adverse environmental impacts from a proposed action. A reasonable worst-case development scenario is the standard approach for the analysis framework for actions that are not site specific, as defined by the *CEQR Technical Manual*. The Scope does not propose use of an omnibus worst-case scenario; rather, it specifies a reasonable worst-case scenario for each technical area within the framework of maximum and minimum floor areas for each land use component that would be set by the GPP (see Final Scope Table 2 or Draft Scope Table 3). The EIS will not apply the worst-case scenario as a standard (as mentioned in the comment) but would instead use it to address the maximum envelope of impacts from the proposed rezoning, so that all potential adverse impacts could be disclosed. The EIS will use air quality and other standards based on the protection of public health, as appropriate, in its technical analyses.

Comment 62: The EIS should supply text and graphics for the worst-case development scenario instead of the Illustrative Plan, since this plan could change. (Harlem CDC, CB9)

There is inadequate demonstration to support the reasonable worst-case development scenario for the Academic Mixed-Use Area (Subdistrict A) in Table 5 of the Draft Scope (Table 7, EAS). The reasonable worst-case development scenario must be supported by a demonstration that the maximum allowable development for the proposed zoning actions (see Table 9. EAS) is limited by factors set forth in the *CEQR Technical Manual*, including technical, legal, or construction restrictions, and the need for additional future approvals. The EIS analysis of impacts in the Academic Mixed-Use Area (Subdistrict A) must be based on a reasonable worst-case development scenario that is clearly derived from specifically documented restrictions to the maximum allowable development permitted in the proposed zones. (CB9, CPC)

Response: The restrictions on the maximum allowable development are set forth in the proposed zoning and would be further restricted under the GPP. These are

described in the Draft and Final Scopes and will be described in more detail in the EIS. The maximum zoning floor area within the Academic Mixed-use Subdistrict is 6.0 FAR, as defined by the proposed Special Manhattanville Mixed-Use Zoning District text amendments. Table 3 of the Draft Scope and Table 2 of the Final Scope set forth the maximum floor area ranges that would be set forth in the GPP. The Final Scope has been revised to indicate that the Illustrative Plan reflects the maximum 6.0 FAR. Actions that would require additional approvals are not included in the reasonable worst-case development scenario.

Comment 63: There is insufficient information regarding development of the subgrade "factory" in terms of phasing or full build-out, access, and plans to acquire the right to develop. This is a major component of the project and a major rationale behind the use of eminent domain. Full and complete disclosure regarding street closures, utility relocation, and construction techniques with respect to development below grade is crucial for decision-makers to consider environmental effects, evaluate alternatives, and identify adverse impacts, including construction, open space, and economic impacts. (CB9, CPC)

Response: The Final Scope has been revised to include additional information regarding the development of the below-grade space, which has been further defined as a result of advances in the designs since the Draft Scope. The EIS will contain a description of the below-grade space as will be specified in the GPP. Information regarding street closures, utility relocation, and construction techniques will be provided insofar as relevant to impact analyses, e.g., traffic and construction impacts.

Comment 64: Explain the phasing of the full build-out, including how many phases there would be and what would get built in each phase. (Harlem CDC) For the baseline, future without the Proposed Actions (No Action condition), Columbia must identify all developments it projects to be built by each of the Build years in the following categories: under construction, planned, and proposed "soft sites," projects not proposed or planned but expected to occur by the Build year. (CB9, CPC)

Response: As noted in the Final Scope, it is anticipated that up to five buildings would be completed by Columbia by the year 2015, with construction of the remaining Columbia development in the Academic-Mixed Use Area by 2030. 2015 and 2030 are used as analysis years in the EIS. Construction activities that would be ongoing in the Academic Mixed-Use Area from the start of construction through 2030, and the associated phasing schedule, will be described in the "Construction" chapter of the EIS. The Final Scope has been revised to include additional information regarding projects, proposed by Columbia and others, reasonably anticipated to be developed in the future without the Proposed

Actions in the 2015 analysis year (there are no known projects with completion dates after 2015). Projects that are neither planned nor proposed cannot be identified for this analysis without engaging in speculation.

Comment 65: Explain how the construction of the garage would be phased. For example, could it be built all at once? Would it be built a block or a partial block at a time? How would it ultimately be connected together? How many blocks and streets would it be under? How would it be entered after each phase? How would this affect the water table, coastal zone, and Hudson River? (Harlem CDC)

Response: This information has been added to the Final Scope and will be available in the EIS. The below-grade space would not be built all at once. The phased development of the below-grade space will be summarized in the "Project Description" chapter and described in the "Construction" chapter of the EIS. Potential effects on natural resources from the Proposed Project, including from construction activities, will be described in the "Natural Resources" chapter of the EIS.

Comment 66: In the Draft Scope, Columbia needs to explain how its development would support the West Harlem Master Plan rather than only discussing those components that are consistent and ignoring those that are not, both during construction and when the campus is complete. (CB9, CPC, WEACT, ED, Harlem CDC) Inconsistencies of the current proposal with the West Harlem Master Plan should be carefully explored. (NRDC) While some uses are common to the two plans, the scale of development and approach to manufacturing and job retention are very different. For example, the West Harlem Master Plan advocates for low- to mid-rise development in keeping with the existing character of Manhattanville, maintenance of the existing pedestrian scale of Twelfth Avenue, infill development and the preservation of the existing historic character, a stepping down of scale from Broadway to the waterfront, manufacturing uses at a density higher than what is currently allowed, and retention of existing jobs. The EIS should analyze consistency of Columbia's rezoning proposal and development plan with each of the above goals. (CB9, CPC)

Response: The EIS will discuss the relationship of the Proposed Actions to the goals of the West Harlem Master Plan, and consider the consistency of the Proposed Actions with the West Harlem Master Plan under "Land Use, Zoning, and Public Policy." The Final Scope has been revised to reflect this.

Comment 67: The EIS impacts analyses must include whether Columbia's proposed rezoning and development plan would achieve, or would preclude the achievement of, the requirements in the 197-a Plan regarding: economic development, land use and

zoning, open space, historic resources (as identified in the 197-a Plan), urban design (e.g., recommended height limitations along the waterfront), transportation and transit, community facilities, and housing. (CB9, CPC)

Response: The impact analysis for the Proposed Project will be based on a comparison of the future No Build and future Build conditions. The 197-a Plan will be assessed as an alternative to the Proposed Project, and its impacts under a future Build condition analyzed in order to permit a comparison with those of the Proposed Project under a future Build condition.

Comment 68: The Proposed Project must also provide a means for providing an in-depth analysis of positive contributions to the community (those that ameliorate the current conditions, not only assess the potential negative impacts). (Kooperkamp)

Response: The EIS will discuss the Proposed Project's benefits, as well as disclose potential significant adverse environmental impacts. However, amelioration of current adverse environmental conditions is not a required element of CEQR analysis, which focuses on any significant adverse impacts attributable to a new proposal. Columbia has stated that it expects to address a variety of community needs through a negotiated agreement, which is not part of the CEQR process.

LAND USE, ZONING, AND PUBLIC POLICY

LAND USE

Comment 69: In the EAS, a map should be included showing what properties Columbia currently owns (it says 31 percent of the area) and those that Columbia leases or has options to purchase. (Harlem CDC)

Response: The EAS does not require that such a map be provided. However, this information will be shown on a map, labeling the parcels by block and lot and indicating which are controlled (ownership, lease or option) by Columbia, as part of the "Land Use, Zoning, and Public Policy" chapter in the EIS.

Comment 70: The EIS should include a detailed description of land use in the Project Area in 2000, when Columbia started acquiring property. (Draft Scope, Task 3A). (CB9)

Response: In accordance with the *CEQR Technical Manual*, existing conditions will be examined in the EIS for the year 2005/2006, and the EIS will include a detailed description of land use conditions in the Project Area using current conditions as existing conditions. However, as described in the Final Scope, the EIS will also contain a review of land use conditions and trends preceding the existing condition year, with particular focus on the years between 2000 and 2006

Comment 71: Land use patterns in proximity to Columbia University's existing campuses over the last 15 years must be documented, and impacts, including socioeconomic impacts, analyzed. Such analyses should be used to inform the analysis of land use impacts resulting from the Proposed Actions. (CB9, CPC)

Response: The EIS will address the potential impacts of the rezoning proposal and Columbia's proposal for the Academic Mixed-Use Development. The EIS will include a development history of the neighborhood surrounding the Project Area as well as a description of recent land use trends. However, it is not the purpose of CEQR review to analyze all of Columbia University and its effects on land use patterns over the past 15 years.

Comment 72: Land use impacts of student and faculty housing adjacent to Columbia University's existing campuses must be analyzed and used to inform the analysis of land use impacts, particularly residential displacement and increased residential costs, in the expanded study area as a result of the Proposed Actions. (CB9, CPC)

Response: The EIS will consider the potential for land use impacts in the primary and secondary study areas resulting from the introduction of new student and faculty housing with the Proposed Actions. Analysis of the potential for residential displacement and increased residential costs will be analyzed in the "Socioeconomic Conditions" chapter of the EIS. The Final Scope has been revised to note that the patterns in areas surrounding existing campuses will be used in a number of ways throughout the socioeconomic analyses, as described in response to Comment 101. To the extent that these affect the land use analysis, they will be included also in the "Land Use, Zoning, and Public Policy" chapter.

Comment 73: Clarify the meaning of "nothing remains of Manhattanville's past as an active commercial and transportation corridor." The existing building stock is currently in use, new buildings are being constructed, and transportation throughout the area is constant. (Harlem CDC)

Response: The Scope has been revised to remove this statement.

Comment 74: The EAS states that there would be no manufacturing or industrial use in the proposed Project Area, but the Special District allows manufacturing use. Also, is biomedical research considered manufacturing? (Harlem CDC)

Response: As clarified in the Final Scope, selected manufacturing uses would be permitted throughout the proposed Special District, except for the Other Area east of Broadway. In Subdistrict A, such uses would be allowed in existing buildings prior to their redevelopment by Columbia. Under the GPP, which will specify permitted uses in Subdistrict A by site, no manufacturing uses would be

included in Columbia's redevelopment of Subdistrict A. Manufacturing use was not projected for Subdistricts B, C, and the Other Area west of Marginal Street as part of the reasonable worst-case development scenario, because this use would not be the worst case for environmental analysis purposes. Academic biomedical research as part of a college or university is a community facility use, not a manufacturing use, under the New York City Zoning Resolution.

Comment 75: The characterization of Manhattanville as having a number of buildings partially or totally vacant needs clarification, as does Figure 5 [in the EAS]. Only one small building, at the northeast corner of Twelfth Avenue and West 131st Street, is currently vacant, and it is owned by Columbia University. The lot mapped as vacant on the northwest corner of Twelfth Avenue and West 131st Street is the Hudson River Café. (Harlem CDC)

Response: The Scope has been revised to reflect current changes in land use and development since it was initially written. The EIS will contain an updated land use map [Figure 5 in the EAS].

Comment 76: Clarify what amount of land is actually vacant and what amount is used as surface parking (i.e., is the 112,600 square feet of land listed as vacant in the EAS actually parking lots?). Also, Table 4 in the Draft Scope, "Subdistricts B, C, and Other Areas," and Table 10, "Subdistricts B, C, and Other Areas Reasonable Worst-Case Development Scenario," have properties listed as vacant when they appear to be parking or commercial space. (Harlem CDC, CB9, CPC) Only one small building, at the northeast corner of Twelfth Avenue and West 131st Street is currently vacant, and it is owned by Columbia University (See EAS, Figure 5). The lot mapped as vacant on the northwest corner of Twelfth Avenue and West 131st contains the Hudson River Café. CB9) What is referred to as vacant or industrial property needs to be clarified. Is it parking and manufacturing space? (Harlem CDC)

Response: The EIS will clarify the location and amount of land that is vacant and that is used for surface parking. Table 4 in the Draft and Final Scopes) has been revised to reflect recent changes of vacant land to surface parking. Further information will also be provided, as relevant to the impact analyses, in the EIS. The EIS will explain existing land uses that are considered industrial. The Final Scope has also been revised to describe projects under construction or planned to be developed in the future without the Proposed Actions—including the restaurant under construction at the northwest corner of Twelfth Avenue and West 133rd Street (this restaurant is not located at West 131st Street, as referenced in the comment).

Comment 77: There is a reference to underbuilt sites in the document. It appears that only four sites within the Project Area are underbuilt to existing zoning. The rest are at

bulk or overbuilt. Please clarify. (Harlem CDC) The land use analysis should include a detailed and accurate assessment of current underbuilt sites in the Project Area. (CB9)

Response: As noted in the Final Scope, the "Land Use" chapter of the EIS will include a discussion of sites in the Project Area, including those that are underbuilt under the existing and proposed zoning in the Project Area.

Comment 78: Clarify what "enlargements or extensions of pre-existing non-conforming uses would be allowed" under the proposed Special District. (Harlem CDC)

Response: The Final Scope attaches the draft proposed Special Manhattanville Mixed-Use Zoning District text, which includes the description of the provisions for non-conforming uses.

Comment 79: Clarify if the sites listed in Subdistrict C are developable. Since they would have unobstructed views of the waterfront after clearing the height of the Riverside Drive viaduct, they may in fact be rebuilt to the maximum allowable floor area ratio (FAR) under the proposed rezoning. This would affect views, light, and air of 3333 Broadway, located on the same block, and the Riverside Drive viaduct. Please analyze. (Harlem CDC)

Response: As noted in the Scope, sites in Subdistrict C are not projected for future development. The EIS will describe the sites listed in Subdistrict C as related to the criteria for identifying projected development sites. Subdistrict C would also contain a height limit of 120 feet above curb level on the ground.

Comment 80: Update Figure 4's soft sites to reflect the current renovation and construction that has taken place on Sites 18, 21, and 23. This will reduce the overall likely development that would happen if the proposed rezoning were approved. (Harlem CDC)

Response: The Scope has been revised to reflect current changes in land use and development since it was initially written.

Comment 81: Clarify that the 7 acres of under-water land would not have air rights that could be transferable. (Harlem CDC)

Response: The Scope has been revised to clarify that the 7 acres of land under the Hudson River would not have development rights that could be built in place or transferred for use at another location.

Comment 82: On page 1b, item 3b paragraph 6, it discusses: "future projects in Subdistricts B..." Subdistrict B goes from Twelfth Avenue into the Hudson River. The Draft Scope should document what future project this is. On page 2, item 10, it

answers the question: "Federal actions/approvals/funding?" by simply stating, "No." How can there be no federal actions or approvals required when 7 acres of the zoning request are under the Hudson River? This should be clarified, as should the role of the federal government and the construction of the Metro-North above-ground train line. (CPC)

Response: As stated in the Draft Scope, the area proposed for Subdistrict B would be located along the west side of Twelfth Avenue to Marginal Street. The rezoning would result in changes in land use controls that could allow subsequent future developments in Subdistrict B, as yet undefined, to be developed. The rezoning would allow such redevelopment to occur as-of-right, but there are no known development plans for the area at this time. Therefore, for analysis purposes, a reasonable worst-case development scenario will be considered in the EIS for these sites based on the potential for development. As noted in response to Comment 81, the rezoning of 7 acres of land under water in the Other Area west of Marginal Street would not generate any development at all.

The Proposed Actions would use an existing abandoned outfall for stormwater discharges into the Hudson River. New York State Department of Environmental Conservation approval would be required for a Pollution Discharge Elimination System (SPDES) permit to use the existing abandoned outfall. Use of the abandoned outfall may also require a Tidal Wetlands permit and Protection of Waters permit from the DEC as well as authorization from the U.S. Army Corps of Engineers (USACE). The Final Scope has been revised to reflect this. The Proposed Actions would not include construction of a Metro-North train station.

Comment 83: "Active Ground Floor Use"—under Use Regulations in Appendix A (Proposed Special Manhattanville Mixed-Use Zoning District text amendments), p.2—does not specify the size of development or enlargement that would trigger the requirement of active ground-floor uses. Appendix A should include a list of active ground-floor uses that would be permitted. (CB9, CPC, Harlem CDC)

Response: Appendix A of the Final Scope contains the draft proposed Special Manhattanville Mixed-Use Zoning District text, which includes a list of active ground-floor uses that would be permitted and specifies the requirements for active ground-floor uses.

Comment 84: Mention that retail and community facility uses are also part of the 125th Street corridor description. (Harlem CDC)

Response: The Scope has been modified to include a more detailed description of the existing land uses along the north side of West 125th Street in the Project Area. A description of land uses along West 125th Street outside the Project Area will be included in the "Land Use, Zoning, and Public Policy" chapter of the EIS.

ZONING

Comment 85: The City should not change the zoning for a project that will displace many residents. (Ortiz, E., McClure)

Response: The EIS will examine the potential for impacts of residential displacement as a result of the Proposed Actions in the "Socioeconomic Conditions" chapter.

Comment 86: The EIS should analyze zoning and land use trends in an expanded secondary study area (i.e., incorporating the Morningside Heights, Washington Heights, and proposed Manhattanville campuses as well as City College) and should include all current or projected rezoning, development, rehabilitation, or expansion plans by Columbia University as well as City College and other major institutions to determine cumulative impacts. (CB9, CPC)

Response: The EIS will include a description of recent land use trends in the Project Area. As described in the Draft and Final Scopes, the EIS will also analyze the potential for impacts resulting from the Proposed Actions within a primary study area (approximately ¼-mile radius from the Project Area) and a larger secondary study area (approximately ½-mile radius from the Project Area). These are defined by the *CEQR Technical Manual* as appropriate land use study areas for actions that may have indirect effects. As described in the Draft and Final Scopes, and consistent with the *CEQR Technical Manual*, the ¼-mile and ½-mile study areas suggested for use in the land use analyses have been adjusted based on such factors as neighborhood boundaries and topographic conditions. Consistent with CEQR, the EIS will measure the impacts of the Proposed Actions, not those of all of Columbia University's operations, and the study area will therefore not be expanded to cover all three campuses. In evaluating the potential impacts of the Proposed Actions, the EIS will take into account all current and projected developments in these study areas, including any plans for City College.

Comment 87: Analyze the impact of removing a manufacturing zone in upper Manhattan where there are few such zones. Where would manufacturing uses locate to? (Harlem CDC) The EIS should include a determination of consistency with New York City's New Industrial Policy released in January 2005, and the City's efforts to retain industrial businesses and jobs. Specifically, the EIS should address the impacts of rezoning one of the few remaining manufacturing zones in upper Manhattan and should identify potential relocation sites for existing industrial uses. Will the EIS consider the positive cumulative impact of an enhanced manufacturing zone? (CB9, CPC)

Response: The EIS will address the potential impacts of eliminating a manufacturing district as a result of the Proposed Actions, with regard to consistency with any relevant public policy related to manufacturing uses. Specifically, the EIS will

discuss the relationship of the Proposed Actions to the *New York City Industrial Policy: Protecting and Growing New York City's Industrial Job Base* under "Land Use, Zoning, and Public Policy." The Final Scope has been revised to reflect this. The EIS's socioeconomic conditions analysis will consider the potential for direct and indirect displacement impacts from the Proposed Actions in the Project Area. An enhanced manufacturing zone has not been proposed as part of the Proposed Actions, and it will not be addressed in the EIS analysis of the Proposed Actions. To the extent that the 197-a Plan recommends such a zone, it will be included in the analysis of that plan as an alternative.

Comment 88: Performance standards for "selected" manufacturing uses in Subdistricts A, B, and C (Appendix A, p.2) must address compatibility of uses. The EIS should specify "research" use and "other selected" manufacturing uses. Biotech is not listed under any use group in the Zoning Resolution. Whether biotech or other types of manufacturing-related uses inherent to scientific research are proposed, performance standards must address compatibility of uses. (CB9, CPC)

Response: Appendix A to the Final Scope is the draft proposed Special Manhattanville Mixed-Use Zoning District text. Performance standards in the New York City Zoning resolution regulating new manufacturing uses are proposed for the Special Zoning District. The EIS will describe the proposed academic research facilities (which are community facility uses). The Proposed Actions do not contemplate the introduction of new commercial or manufacturing uses related to scientific research in Subdistrict A.

Comment 89: What bonuses are proposed in the Special District? (Harlem CDC)

Response: No bonuses are proposed in the Special District.

Comment 90: Would the proposed City Planning Commission Special Permit for modifications of bulk and street wall requirements go through the Uniform Land Use Review Procedure (ULURP)? (Harlem CDC)

Response: All special permits for modifications of bulk and street wall requirements would require ULURP and CEQR review.

Comment 91: The revised Scope should describe conditions where parking in excess of that permitted by zoning would be allowed. (CB9)

Response: Appendix A of the Final Scope contains the draft proposed Special Manhattanville Mixed-Use Zoning District text, which includes the proposed parking provisions. The proposed text provides a maximum number of below-grade accessory off-street parking spaces within Subdistrict A. Maximum accessory above-grade parking spaces within Subdistrict A would be governed by the parking requirements for the underlying C6 district per Section 36-12

(Maximum Size of Accessory Group Parking Facilities) of the Zoning Resolution. Maximum accessory parking spaces (above or below grade) for the remainder of the rezoning area would be governed by the parking requirements for the underlying district.

Comment 92: Is the transfer of floor area within the Subdistrict A to be a ministerial action or would it go through public review? (Harlem CDC)

Response: As described in the Final Scope, the Special Zoning District text would allow for three types of floor area transfers within Subdistrict A; all would be subject to the maximum floor area permitted overall in the Subdistrict. Those transfers to be made from three open spaces delineated in the proposed Special District would be "as-of-right" by notice and would require certification by the Chair of the CPC that the open space will be built to the specifications in the zoning. These bulk transfers are included in the Illustrative Plan; it is anticipated that Columbia will apply for such certifications at the time of development. All other transfers of floor area that would stay within the design "envelopes" set forth in the zoning's height, setback, and streetwall requirements for each site would be subject to both CPC Authorization and CEQR review. If the transfer would create a building that did not conform to the design regulations in the zoning, a CPC Special Permit subject to both ULURP and CEQR review would be required. As noted in the Final Scope, the EIS will include a conceptual analysis of potential impacts from any future uses of the Special Permits.

Comment 93: More detailed information needs to be provided in the Final Scope of Work with regard to the transfer of floor area, by certification of the chairperson of the City Planning Commission, and potential for a modification of the bulk regulations and mandated streetwall requirements by special permit from City Planning Commission stated in the proposed Special Manhattanville Mixed-Use Zoning District text amendments (Appendix A, p.4 and p.5). (CB9, CPC)

Response: See the response to Comment 92.

PUBLIC POLICY

Comment 94: Columbia's expansion plans are inconsistent with New York City's land use needs and public policy because they will demolish publicly accessible affordable housing while adding density to an area that is already caught in an affordable housing shortage. (WEACT)

Response: Comment noted. The EIS will address the consistency of the Proposed Actions with existing public policy in the "Land Use, Zoning, and Public Policy" chapter. The potential for direct residential displacement impacts will be considered in the "Socioeconomic Conditions" chapter.

Comment 95: The EIS should state concrete policy that will lend to the further development and the sustainability of the Harlem community, as opposed to presentations that undermine the struggle, accomplishments, and celebration of the legacies of all the ethnicities that constitute the Harlem community, Manhattanville in particular. If there are no specifics given, the City should not allow this project to move forward. (Gholson)

Response: The EIS will analyze the consistency of the Proposed Actions with existing public policies and neighborhood character for the area.

Comment 96: The EIS should analyze a more specific solution to the affordable housing crisis in the community, which would be the University's commitment to cease its policy of deregulating rent-regulated apartments in residential buildings it owns. (CPC)

Response: Consistent with CEQR, the EIS will measure the impacts of the Proposed Actions. As such, the EIS will address the potential for indirect and direct residential displacement. An analysis of Columbia's housing practices is outside the scope of CEQR analysis.

Comment 97: If the streets are merged with the blocks below grade, what happens to the street's development rights above grade? Do they become Columbia's or do they stay in public ownership? (Harlem CDC)

Response: As stated in the Final Scope, the streets will remain as New York City mapped streets that are open to public pedestrian and vehicular uses above-grade. Those mapped streets do not generate any development rights under the New York City Zoning Resolution.

SOCIOECONOMIC CONDITIONS

GENERAL COMMENTS

Comment 98: The methods for determining the indirect effects of residential, business, and institutional displacement are flawed. The study area must be enlarged to take in a radius of at least 20 blocks. Columbia is already looking as far as 153rd Street for alternative residential sites. (Kooperkamp). The study area for potential displacement must be widened considerably (CPC). The Draft Scope must analyze impacts over a larger area than the generic ¼- and ½-mile study area it identified for the entire project (WEACT).

Response: A study area is defined as the area most likely to be affected by the Proposed Actions. Beyond approximately a ½-mile radius from the Project Area, other influences would be greater than those of the Proposed Actions in creating pressures for indirect displacement. Following the guidelines of the *CEQR*

Technical Manual, the socioeconomic study areas mirror the roughly ¼- and ½-mile land use primary and secondary study areas, although the secondary area has been extended southward to include the Morningside Heights campus.

Comment 99: Columbia's Draft Scope ignores the community's socioeconomic characteristics and focuses only on the physical aspects of the Project Area that would be demolished. It would shatter the community. The Draft Scope must examine this socioeconomic component of the displacement process in depth. (CPC) There is no mention of race in the demographics of the Draft Scope. Columbia should acknowledge the racism and classism inherent in their plan. (Amezcua)

Response: The Scope has been revised to confirm that the analysis of direct residential displacement will describe the socioeconomic characteristics of any displaced populations, including their race and ethnicity based on census data.

Comment 100: How will cumulative impact analysis be done in terms of primary and secondary displacement? Clear methodology should be in the Draft Scope. (CPC)

Response: As noted in the Scope, the analysis will be conducted following standard CEQR methodologies. The future without the Proposed Actions will analyze not only current conditions, but also conditions in the future with background growth and other proposed projects. The conditions in the future with the Proposed Actions will then take into account both the elements of the Proposed Actions and elements of the future without the Proposed Actions. The future with the Proposed Actions condition will therefore reflect the cumulative increase of all factors affecting displacement.

Comment 101: Socioeconomic patterns in proximity to Columbia University's existing campuses must be documented and analyzed. The potential for similar socioeconomic patterns to occur in Manhattanville as a result of the Proposed Actions must be analyzed in the EIS. (CB9, CPC)

Response: The analysis of socioeconomic conditions will focus on the potential for the Proposed Actions to result in significant adverse impacts within the ¼-mile and ½-mile study areas. However, the Final Scope has been revised to note that patterns in areas surrounding existing campuses will be considered in the socioeconomic analysis. For example, in projecting future housing demand within the study areas, the analysis will use data on places of residence of existing Columbia employees and students to identify their propensity to locate close to a campus.

Comment 102: As stated in the Draft Scope, the reasonable worst-case development scenario for the socioeconomic conditions assessments will "minimize private commercial research space," generating the greatest potential off-site demand

for such uses and maximizing potential indirect residential and business displacement (Draft Scope, p.27) Since most of Upper Manhattan is zoned for residential or small-scale retail operations, it is not clear where off-site demand for commercial research space will be met. Such analysis must be included in the EIS. (CB9, Harlem CDC)

Response: As clarified in the Final Scope, no commercial research space is proposed for the Project Area. The provisions of the proposed Special Manhattanville Mixed-Use District text do not allow for commercial research space pursuant to the provisions of Section 74-48 of the Zoning Resolution (Scientific Research and Development Facility), and commercial research space is also not a use in Subdistrict A permitted under the proposed GPP. The DEIS will consider locations in the study area, but outside the Project Area, that could attract commercial research space consistent with existing zoning and physical space requirements typical of commercial research uses.

Comment 103: There must be consideration of potential increased economic segregation in northern Manhattan as a result of Columbia's proposed rezoning action and development plans. We risk a "Paris-like" situation in Harlem if we continue to segregate and discourage opportunity. (CB9, Chait-CB9, Adams-CB9, Echavarria, CPC)

Response: Following *CEQR Technical Manual* guidelines, the socioeconomic conditions analysis will consider the potential for significant adverse impacts due to direct and indirect residential and commercial displacement. This will include: evaluation of whether the Proposed Actions would displace existing residents and/or add substantial new populations with different socioeconomic characteristics compared with the size and character of the existing populations; whether the Proposed Actions would introduce a critical mass of non-residential uses such that the area would become more attractive as a residential neighborhood complex; whether the Proposed Actions would introduce enough of a new economic activity to alter existing economic patterns; and whether the Proposed Actions would introduce land uses that would impede efforts to attract investment to the area. The indirect displacement analyses focus on identifying low-income residential populations and specific industries most vulnerable to displacement due to rent increases.

Comment 104: The EIS needs to explain how the expansion would impact the densely populated areas of Manhattanville and central Harlem for the working-class and middle-class families. (Espaillat, Batista, CPC)

Response: The analysis of indirect residential displacement will consider whether the Proposed Actions would adversely affect populations vulnerable to displacement due to rent increases. The identification of vulnerable populations is based in part on income levels. In addition, the analysis will consider whether

direct displacement of businesses and institutions from the Project Area would result in significant adverse impacts as per the *CEQR Technical Manual*, and how potential changes in the composition of businesses in the surrounding study areas would affect existing residents (as consumers of those goods and services) and the composition of employment in the study areas.

Comment 105: What Columbia University training programs and jobs are being planned for Manhattanville residents? (Ortiz, C. Harlem CDC; Nagle, CPC) A Community Benefits Agreement (CBA) that would allocate a certain percentage of created jobs to local residents should be considered. (Nagle) Place of residence of prospective employees in developments resulting from the Proposed Actions must be included in the analysis. (CB9, CPC)

Response: As stated in the Draft and Final Scopes, the "Socioeconomic Conditions" chapter in the EIS will include estimates of the number and types of jobs generated by the Proposed Actions. That analysis will be based upon Columbia's current experience related to the place of residence of prospective employees (31 percent of administrative employees live in Northern Manhattan; a quarter of these reside in Community Board 9. [Note that while the traffic and transportation analyses will make certain assumptions regarding the number of employees making auto and transit trips to and from the Project Area, these assumptions will be designed to ensure that the analyses are conservative and will therefore not provide a firm indication of the place of residence of prospective employees.]) Columbia University training programs and jobs for Manhattanville residents beyond what can be expected based upon the University's current experience could be addressed as part of a negotiated agreement. See also the response to Comment 2.

Comment 106: The Draft Scope does not contain a proper analytic methodology (i.e., CEQR's three-step approach) to determine significant impacts (or cumulative) on primary and secondary residential, business, and institutional displacement that would occur as a result of the project. (WEACT, NRDC, CPC) To further define the displaced population, field visits and on-site interviews should be conducted. Reliance on secondary sources such as the U.S. Census or City housing data would not reveal the complex characteristics—such as household size, per capita income, occupancy rates, and density—of this community. The Draft Scope only describes the strategy for tackling the Project's socioeconomic impacts, as if a preliminary assessment rather than the detailed assessment is required by CEQR. Columbia's development will demolish 33 units of housing that are involved in the Tenant Interim Lease low-income homeownership program As Columbia's development begins, land speculation will intensify resulting in a concomitant rise in housing prices. The expansion's introduction of high-income residents and retail services will accelerate West Harlem's gentrification. These forces will exacerbate the shortage of affordable housing

that Columbia will have created with the removal of on-site housing. This trend must be addressed in the housing impacts analysis. (WEACT)

Response: As stated in the Draft Scope, the socioeconomic conditions analysis will follow the assessment methodologies established in the *CEQR Technical Manual.* In conformance with *CEQR Technical Manual* guidelines, the analyses of primary and secondary (i.e., direct and indirect) residential, business, and institutional displacement begin with a preliminary assessment. The approach of the preliminary analysis is to learn enough about the effects of the Proposed Actions either to rule out the possibility of significant adverse impact, or to determine that more detailed analysis will be required to resolve that question. The detailed assessments will be framed in the context of existing conditions and evaluations of the future without the Proposed Actions, and the future with the Proposed Actions in 2015 and 2030.

In conjunction with the land use task, specific development projects that would occur in the area in the future without the Proposed Actions would be identified, as well as the likely changes in socioeconomic conditions that would result, such as potential increases in population, changes in the demographic characteristics of the study area, new residential developments, likely changes in rents or sales prices of residential units, new commercial or industrial uses, or changes in employment or retail sales. Those conditions would then be compared with the future with the Proposed Actions to determine the potential for significant adverse impacts. In that the future with the Proposed Actions will take into account planned and projected development within the study areas apart from the Proposed Actions themselves, the analysis will be cumulative in nature.

Secondary sources such as the U.S. Census do, in fact, include data such as household size, per capita income, occupancy rates, and household density. Interviews with residents and businesses within the Project Area and/or study areas will be conducted to the extent that the data would need to be supplemented.

Comment 107: The Draft Scope violates CEQR's requirement by failing to contain an analysis of future housing conditions without the Proposed Actions. The Draft Scope must be revised to address anticipated future conditions without the expansion project that includes the housing condition that will likely result from EDC's Master Plan (WEACT)

Response: See the response to Comment 106. EDC's West Harlem Master Plan contains a number of proposed strategies for future development in the Project Area. However, there are no specific projects or developments proposed; nor has underlying zoning reflecting these strategies been adopted. For this reason, a future scenario under the EDC West Harlem Master Plan is not included as an anticipated future condition in the Scope or the EIS.

Comment 108: The Draft Scope implies that the future action condition will replace the demolished housing stock with additional housing and thereby eliminate the impact on availability of housing facilities in the Project Area. However, Columbia's planned residential buildings will only be available to its affiliates, and not to current residents whose needs are the actual targets of the required CEQR analysis. The Draft Scope must be revised to describe plans for a proper analysis of the development's impact on direct residential displacement as compared to the no action condition. (WEACT)

Response: Neither the Draft nor Final Scope implies that tenants directly displaced from the Project Area would be accommodated within new housing located within Subdistrict A. As noted in the scope, there is no "residential use" in the Columbia program for Subdistrict A—rather, the housing is clearly described as University housing for students and faculty. As noted in the responses to comments below, the Scope describes and the EIS will contain an analysis of direct residential displacement by development planned for Subdistrict A. That analysis will also discuss relocation assistance.

DIRECT RESIDENTIAL DISPLACEMENT

Comment 109: The Draft Scope must require an analysis of precisely who will be displaced based on the following characteristics: race and ethnicity, age, number in household, number of dependents in household, number of children/grand-children in household, number of persons in primary or secondary education, years of education of head of household, average years of education of household members over 25, primary language spoken in household, language skills (i.e., English fluency), employment status and history, number of employed household members traveling 30 miles or less to places of employment, income of head of household, average income of household member over 25, and total household income? (Franco, CPC)

Response: The analysis of direct residential displacement will follow the methodology outlined in the *CEQR Technical Manual* in considering demographic factors appropriate for analysis. Under CEQR, direct displacement is not in and of itself a significant adverse impact. Rather, residential displacement may result in significant adverse impacts if the numbers and types of people being displaced would be enough to alter neighborhood character in the study areas and perhaps lead to indirect displacement of remaining residents. Population parameters to be considered typically include household size and income, and age. Other parameters may be relevant if they are an important or common defining element of the population that may be displaced. It is therefore not the purpose of CEQR to address the identifying characteristics of persons in this population at this level of detail. Further, development of the Proposed Project would take up to 25 years, and it is therefore not possible to predict these characteristics with precision far into the future. Therefore, while the Scope has been revised to

confirm that the analysis of direct residential displacement will describe the socioeconomic characteristics of any displaced populations, including their race and ethnicity, the Scope has not been revised to reflect other details requested in this comment.

Comment 110: The Draft Scope did not contain a full discussion of the displacement of tenants. It did not contain a full discussion of loss of jobs and businesses, nor did it discuss missed opportunities as a result of Columbia's construction. (Danesh, Rodriguez, G., WEACT)

Response: The purpose of the Draft Scope is to outline the proposed methodology for analyzing the potential for impacts due to the direct displacement of tenants and businesses. The Draft and Final Scopes indicate that these subjects will be analyzed. The analysis in the EIS will contain a full discussion of the potential for displacement of tenants and the loss of jobs and businesses. CEQR requires consideration of "irreversible and irretrievable commitments of resources" (including land use) associated with a proposed action and consideration of alternatives, if appropriate, with different land uses, but it does not require a specific analysis of missed opportunities.

Comment 111: Clarify why a significant impact on the residents displaced is determined by "a sizable portion of the future population" (greater than 5 percent) and substantial "loss of existing population and the number of units displaced." (Harlem CDC)

Response: The Draft Scope states that the analysis of direct residential displacement will, as part of the analysis, "determine if displaced residents represent a sizable portion of future population in the primary and secondary study areas (generally interpreted to mean greater than 5 percent)..." The Scope has been revised to state that this proportion is based on guidelines of the *CEQR Technical Manual,* which states that "if the population to be displaced represents a sizable portion of the population (generally greater than 5 percent) and that a population with a similar profile would not be able to relocate within the neighborhood, then the issue of potential change in neighborhood character is addressed in the neighborhood character analysis."

The *CEQR Technical Manual* goes on to state that if the number of units to be displaced is substantial and the loss of the existing residential population or the types of units being demolished would result in significant change in the socioeconomic profile or housing character of the study area, a potential significant adverse impact may occur.

The potential for significant impacts due to direct residential displacement is not determined by any one quantified threshold. As per CEQR, the objective of the analysis is to determine whether the profile of the displaced residents is similar or markedly different from that of the overall study area; the displaced

population represents a substantial or significant portion of the population within the study area; and the action would result in a loss of this population group within the neighborhood. The 5 percent quantity is not in itself a determining threshold for impacts. The displacement of a population that represents less than 5 percent of a study area population can be considered significant if the displaced population is markedly different from that of the overall study area, or if the displacement would result in the loss of a specific population group.

Comment 112: The seniors, disabled, and low-income residents in Manhattanville Houses and in the neighborhood cannot find another place to live. If Columbia University takes over Manhattanville, there will be nowhere for this population to live. (Norris, Snowder, Manigault) Columbia must replace the housing and the workplaces of those being displaced. (Adams-CB9, CB9)

Response: The residents of Manhattanville Houses would not be directly displaced by the Proposed Actions, nor would they be at of risk indirect displacement due to rent increases, because Manhattanville Houses are part of New York City Housing Authority's public housing program, which provides rent-protected apartments to low- and middle-income households. The Final Scope has been amended to clarify this point. The analysis of indirect residential displacement in the EIS will include a detailed assessment that identifies the population elsewhere in the neighborhood most vulnerable to displacement due to increases in rent.

Comment 113: Leaving a community where you work, where you've raised your children, where your grandchildren were born, where you've lived with your family for many years, and where you know that your neighbors will look out for you is too difficult and expensive. Relocating is unacceptable. (Perez, E. through interpreter)

Response: Comment noted.

Comment 114: Since there are more low- to moderate-income housing units in the proposed Project Area than those owned by the City of New York, include them in the analysis. (Harlem CDC)

Response: As noted in the Final Scope, the direct residential displacement analysis will identify all types of housing that exist in the Project Area.

Comment 115: The EIS should take into consideration the impact on affordable housing supply in CB9 in terms of direct residential displacement as a result of the action, as well as lost opportunities for affordable housing development on the site. (CB9, Chait-CB9, Danesh, NRDC, CPC)

Response: The Final Scope has been revised to describe the various types of housing that would be directly displaced by the Proposed Actions. CEQR does not require consideration of lost opportunities for uses other than those being proposed, except as such uses are directly related to the Proposed Actions—e.g., whether the loss of manufacturing zoning may result in to the loss of opportunities for industrial development.

Comment 116: Columbia's expansion will directly displace some 450 low- to moderate-income units and indirectly affect 3,500 subsidized units and several other City rent-regulated and federally subsidized housing facilities.

The project will worsen housing conditions on an already decreasing housing stock and an exceedingly vulnerable tenant population. A likely result of Columbia's expansion will be that tenants in the Manhattanville area will be forced into the periphery of the City where housing standards are even lower, exacerbating their already poor health. Many residents may even be forced to relocate to other boroughs, placing higher demands on their time and energy with longer commutes and decreased family time. In addition, the forced relocation would be especially hard on children, who will have to switch schools and adjust to a new learning environment. The subsequent effect will also be magnified for seniors, who will be denied the community facilities and services that they had grown accustomed to. (Jordan-CB9)

Response: The Proposed Project would directly displace 132 units in the Project Area, not 450 as cited in the comment. The discrepancy in these figures is likely due to the estimates, made by the commenter, of possible residents living illegally in manufacturing space. There is no reasonable way to estimate such residents—they would be unlikely to admit in an interview that they are living illegally—and the analysis of displacement recommended in the *CEQR Technical Manual* focuses only on legal residents. The amount of indirect displacement of vulnerable populations, if any, is a subject of the EIS and will be considered. As part of this analysis, the EIS will consider whether residents potentially displaced by the Proposed Actions would be able to relocate within the neighborhood.

Comment 117: Reliance on government-gathered demographic information will be insufficient to understand the demographic complexity in the community. The Draft Scope should disclose methodology that will determine the demographic conditions of the Project Area and the socioeconomic impact of the project. It should also require the collection of primary data from community residents and businesses in addition to secondary resources, including personal interviews in languages that residents are able to understand and in which they feel comfortable expressing themselves. (Jordan-CB9, Cadore, NRDC, CPC, WEACT)

Response: The Final Scope has been revised to indicate that the socioeconomic conditions analysis will follow the guidelines of the *CEQR Technical Manual* in gathering

information necessary to assess the potential for impacts. These sources will include, but will not be limited to: U.S. Census, New York City Housing and Vacancy Survey, New York State Department of Labor, newspaper advertisements and Internet listings for housing rentals and sales, and discussions with local realtors. As described in the Final Scope, primary data—including field investigations, phone surveys, written surveys, and interviews—will be used to the extent necessary to supplement secondary data in defining the socioeconomic characteristics of the community.

Comment 118: Regarding affordable housing, the critical task is to focus on preserving what still remains. Otherwise, a hundred units are lost for every one that may or may not be created. It is also the most efficient way of providing affordable housing. It costs less to preserve what exists than to build new units. Columbia's practices have had a devastating impact on the socioeconomic character of our multicultural neighborhood. They should not be able to do so through acquisitions and/or use of their not-for-profit status. (Kappner/Bias, MH/WH Sanitation Coalition) The only development we want to see is affordable housing for the poor. Columbia's development means direct and indirect displacement of the West Harlem community. (Gill)

Response: Consistent with CEQR, the EIS will address the potential for direct and indirect displacement in the Project Area and study areas.

Comment 119: Data must be provided stating how many households will be displaced due to the development of their neighborhood according to the University's development plan—including direct and indirect displacement—in the next 50 years.

Note: In contrast to the proposals in the Draft Scope, which specify 2030 as the last furthest projection, 50 years is used because estimates of displacement must project approximately one generation (25 years—i.e., 2030) past the completion of the development, which is planned to take 25 years.

- This requirement is reasonable and historically accurate considering that the developments of the Morningside Heights campus during the 1960s are still having negative effects on the neighborhoods surrounding that campus, as indicated by the continued displacement of long-time residents unable to afford increases in cost of living and proportional rent.
- In contrast to the Draft Scope, this must be established by comparing 50-year projections assuming the development occurs and 50-year projections assuming the community's alternative development plan (the 197-a Plan) occurs. (CPC)

Response: Although 2030 is the analysis year, the study will examine indirect displacement impacts once the project is complete and is not actually limited to an exact

moment in time. Therefore, any significant adverse impacts identified would be those associated with a completed development.

Comment 120: The Draft Scope must include methodology that will be used to assess the magnitude of displacement induced by the project or its long-term effects on the community, and in view of its impact on neighborhood character and diversity. It describes only the methodology to assess the project's benefits. (NRDC, Paterson, CPC)

Response: The Scope correctly describes the methodology, per the *CEQR Technical Manual*, that will be used to determine the potential for significant adverse socioeconomic impacts with respect to the five areas of socioeconomic concern under CEQR: (1) direct residential displacement in the Project Area, (2) direct business and institutional displacement in the Project Area, (3) indirect residential displacement in the primary and secondary study areas, (4) indirect business and institutional displacement in the primary and secondary study areas, and (5) adverse effects on a specific industry.

Comment 121: Data on real estate market conditions in the primary and secondary study areas must include an inventory of Columbia-owned property—disclosure of all property transactions in or adjacent to Manhattanville and its other campuses, indicating date of purchase, occupancy, use and development status, including proposed start date for new developments; conditions before and after acquisition of property by Columbia; the time frame for residential and business displacement should include the period before 2000, the year 2000, and today. Columbia aggressively started purchasing property in this area around the year 2000, and that could have been a direct cause for displacement. The EIS should also include a forecast of the market without Columbia's Proposed Actions; co-op conversion activity in the expanded secondary study area; business sectors serving Columbia that are located in the study areas vs. business sectors serving Columbia that are not located in the study areas due to current zoning. (CB9, CPC) The Draft Scope should provide a profile of how many regulated apartments Columbia has currently in its real estate portfolio, how many it has deregulated during its ownership of all residential properties, and how many it expects to deregulate in the future. (CPC) How many units of rent-controlled or -stabilized housing have been deregulated while under the ownership of Columbia University or its affiliates? (Mazzoni)

Response: As noted in the Final Scope, the analysis will identify acquisitions by Columbia University in the Project Area and the study areas since 2000 and discuss the potential for these acquisitions to have resulted in displacement. In addition, a description of Columbia's management of the property that it has purchased in the Academic Mixed-Use Area will be described in the EIS as part of the recent trends analysis. Columbia's management of property in the vicinity of its other

campuses will not be considered as part of the EIS, which is intended to provide an analysis of the potential impacts of the Proposed Actions in the Project Area and study areas.

Comment 122: The EIS needs to consider that the outcomes of displacement of the people in the neighborhood are going to be in New Jersey and Queens. (Franco)

Response: The socioeconomic analysis will consider whether the population to be displaced by the Proposed Actions represents a sizable proportion of the study area population and whether a population with a similar profile would be able to relocate within the neighborhood. It is outside the scope of a CEQR analysis to consider the potential effects of relocated residents on neighborhoods outside the study area.

Comment 123: In a few years, all the buildings where we live are going to be a recreational area with a swimming pool What's going to happen to us? Where are the tenants from that building going? (Henriquez)

Response: As noted in the Scope, the direct residential displacement analysis will describe the type of relocation benefits that would be available to the displaced homeowners and residential tenants, and will consider whether displaced residents would be able to relocate within the neighborhood.

Comment 124: The EIS needs to address Columbia's track record on housing in the surrounding communities. It should address: What are the addresses of real estate holdings (including properties that have since been sold) of Columbia and its partner institutions outside the Morningside campus over the past 30 years and their dates of acquisition and/or sale? How many apartments in residential buildings purchased by Columbia in the past 30 years have been converted from occupancy by non-affiliated community members to housing or other uses for Columbia or its affiliates? (Mazzoni)

Response: The CEQR analysis focuses on the potential adverse impacts of the Proposed Actions in the Project Area and relevant study areas.

Comment 125: The EIS should assess the market value of the residential buildings in the expansion area and indicate it in relative terms—comparing the residential buildings with each other and evaluating their value, and doing the same with the businesses. The Draft Scope should also require analysis of those market values based on the assumption that 1) the requested zoning application is granted, and 2) a "No Build" situation occurs. (CPC).

Response: A market values analysis as described by the comment will not be conducted. However, using *CEQR Technical Manual* methodologies, the indirect residential displacement analysis will consider the extent to which an increase in

rents associated with rising property values could make it difficult for some existing residents to afford their homes.

DIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

Comment 126: The Draft Scope must analyze the Project's displacement (both direct and indirect) of the businesses currently operating in the area. The analysis Columbia describes is inadequate and merely reiterates the language of the *CEQR Technical Manual.* Determination of whether a business contributes to the character of a neighborhood or whether it provides a valuable service to the community cannot be done without input from residents and community members. The Draft Scope does not mention on-site surveys or personal interviews with residents. Further, because of complex interactions between businesses, the economic impact of the loss of a business may be felt over an area much greater than the immediate neighborhood in which it is located. (WEACT)

Response: The methodology for socioeconomic impact analysis in the *CEQR Technical Manual* specifically addresses the neighborhood character effects of business displacement. Field surveys and interviews will be conducted, to the extent necessary for the analysis. For example, it is expected that merchants will be interviewed as part of the direct and indirect business displacement analyses. The direct business displacement analysis will consider the effects of the loss of businesses within the neighborhood, as well as in the broader regional economy.

Comment 127: EDC already has a plan to generate more economic activity in the area. The job and business displacement analysis should draw on EDC's 2002 West Harlem Master Plan as the "existing condition" baseline with which to determine the Proposed Project's impact. Otherwise, DCP should examine the EDC plan as a viable alternative for the economic development and rezoning of Manhattanville. (WEACT)

Response: The West Harlem Master Plan sets forth a series of recommendations and does not reflect an "existing condition" baseline. In addition, the Plan does not have regulatory status to prescribe changes in land use and development in the Project Area, and therefore cannot serve as the future baseline condition in the EIS. The West Harlem Master Plan is, however, an expression of public policy, and the EIS will therefore consider the consistency of the Proposed Actions with the West Harlem Master Plan. This has been clarified in the Final Scope.

Comment 128: The Draft Scope should identify each individual business with a breakdown of its employees, including race and economic status, and how the services each business provides to the community would be replaced if the businesses were displaced. (Siegel/WHBG, Zuhusky, Lee, CPC)

Response: As noted in the Final Scope, the direct business displacement analysis will estimate employment displacement by individual business and by business sector, and whether the businesses provide services to the community that cannot be replaced. If information on salary levels is available, it will be presented. The analysis will estimate the percentage of jobs displaced that are held by residents of the socioeconomic study areas.

Comment 129: Assessment of employment benefits for the community as a result of the proposed development must be limited to direct employment by the University itself (i.e., not subcontractors) in permanent positions with benefits (living wage jobs) that would be available to current neighborhood residents (based on education, language skills, and employment history). (CPC)

Response: As stated in the Final Scope, the "Socioeconomic Conditions" chapter will include estimates of the number and types of jobs generated by the Proposed Actions, including both direct employment by the University and indirect employment (e.g., construction or retail serving Columbia employees). This analysis cannot provide a precise assessment of the place of residence of prospective employees, beyond looking to Columbia's current experience (see response to Comment 105). Columbia University employment opportunities for local residents may be included as part of a negotiated agreement; however, they are not part of the CEQR analysis.

Comment 130: Include the surveys referenced in the EAS regarding the 1,600 employees that would be directly displaced. (Harlem CDC)

Response: The EAS contained an employment estimate based on square footage and standard employment factors. The EIS will contain a more specific and accurate estimate of employment to be directly displaced by the Proposed Project.

Comment 131: When discussing business displacement, include those that "have an important economic value" to the community as well as to the City. Also, discuss how those businesses whose livelihoods are linked to a particular building type (e.g., storage and small manufacturers in loft buildings) would be significantly impacted. (Harlem CDC; CB9, CPC)

Response: Per *CEQR Technical Manual* guidelines, the analysis of direct business displacement will consider whether the businesses and institutions that would be displaced have substantial economic value to the City or regional area, and whether they could relocate without great difficulty. Consistent with the manual, the direct business displacement analysis will also consider whether businesses or institutions define or contribute substantially to a defining element of neighborhood character. The relocation analysis will consider physical space needs of business activities. The "Neighborhood Character" chapter in the EIS

will consider how direct business displacement could potentially affect employment characteristics in the surrounding study areas.

Comment 132: Columbia says that their plan will create jobs. Their plan will get rid of the jobs of 1,500 people who work for the small businesses in the area (storage companies, meat markets, auto repair shops, and so on). There will be some temporary construction jobs while Columbia puts up its buildings in the area, but there would be at least as many construction jobs if affordable housing was built for the area instead.

Once Columbia's construction is completed, there will be jobs for some professors, biotech experts, maybe some lab assistants, almost all of which will go to people from outside the neighborhood. (Gruenthal)

Response: The analysis of direct business and institutional displacement will identify the employment directly displaced by the Proposed Actions, and will assess potential impacts that could result from the displacement. The "Socioeconomic Conditions" chapter will also estimate the number and types of jobs generated by the Proposed Actions, which are not limited to professors, biotech experts, and lab assistants. This analysis cannot provide a precise assessment of the place of residence of prospective employees, beyond looking to Columbia's current experience (see response to Comment 105). Columbia University employment opportunities for local residents may be included as part of a negotiated agreement.

Comment 133: The vitality of Twelfth Avenue businesses over the past 10 years and the constant capital improvements by the other businesses in the proposed expansion site should be part of the EIS. Columbia's current warehousing and poor maintenance of real estate in the area should also be examined. (CPC)

Response: The socioeconomic conditions analysis will include a discussion of business trends in the Project Area and study areas, and those trends will inform the evaluation of potential effects of the Proposed Actions. Columbia's acquisitions and treatment of properties in the Project Area will also be considered in the analysis.

Comment 134: My company is formally certified by the City of New York as a woman business enterprise. A hundred percent of my 23 employees are either women or minorities. The Columbia plan injures women and minorities and I don't accept mitigation. I accept avoidance. What we have is irreplaceable. We pay full freight in real estate taxes, and to take our businesses away from us and give it to a tax-exempt institution is criminal (Zuhusky-Whitman)

Response: Comment noted.

Comment 135: We have spent over $2 million renovating and expanding our facility. We've tripled our workforce and many of our personnel live in the neighborhood. Our story mirrors similar investments by other members of the local business community.

We are attempting to ascertain where we fit in with respect to Columbia's development plan. Rather than studying how to mitigate the harm to displaced businesses in the area, we want them to study how to avoid the displacement in the first place. Why does Columbia refuse to develop alongside property owners that will not sell? (Greenberg)

Response: Comment noted. As noted in the Draft and Final Scopes, the stated purpose of the Proposed Actions is to meet Columbia University's need for additional academic research, academic teaching facilities, and related University housing to support its mission and maintain its status as one of the world's leading universities. Infill development is not being proposed by Columbia for the Academic Mixed-Use Area, because it believes that it could not accommodate the building sizes and layouts needed for academic research, teaching, or housing for students, faculty, and other employees for its long-term growth. Columbia University has stated that its objectives include avoiding the need for the University to rely on ad hoc acquisitions of property to accommodate expansion of the University, as was done at the Morningside Heights campus. Rather, Columbia University seeks to engage in systematic, long-range planning and develop an integrated university area that is open and inviting to the community. Columbia does not believe that infill development would achieve this objective, and Columbia has not proposed it for the project for this reason as well. Columbia's reasons for rejection of an infill alternative will be discussed in the "Alternatives" chapter of the EIS.

Comment 136: The EIS needs to disclose what will happen to the current Broadway businesses that serve the community, such as the drugstore, supermarket, and department stores. (Ortiz)

Response: The EIS will identify all businesses that would be directly displaced by the Proposed Actions, and will describe relocation benefits and/or assistance provided to displaced businesses. In addition, the analysis of indirect business displacement will consider whether Broadway businesses not directly displaced would be vulnerable to indirect displacement due to increased rents.

Comment 137: There should be financial help for displaced retail businesses so that they can return. The study should show what kind of stores on 125th Street and Broadway would benefit this community. (Wadkins)

Response: The EIS will describe relocation benefits provided to directly displaced businesses. It is outside the scope of the EIS to consider what types of stores would benefit the community.

INDIRECT RESIDENTIAL DISPLACEMENT

Comment 138: Households should be considered at risk of displacement if the projected proportion of their total cash income devoted to the general cost of living (based on food prices, number of dependent persons in the household, and other measures of cost of living) and proportional rent exceeds the current proportion dedicated to these expenses.

- This is necessary for this assessment to be realistic and historically accurate. Compared with the Draft Scope, which would set similar criteria only for people living below the poverty line, these criteria must be set for all residents.
- Furthermore, in contrast to the Draft Scope, this analysis must include an adjustment for the cost of living.
- If other estimates of criteria for projected displacement are to be used, they must match historical patterns based on displacement following large-scale development and/or property acquisition in neighborhoods with similar racial and ethnic distributions, levels of racial and ethnic make-up, education, language skills, and employment history—such as the patterns of displacement following the expansions of the University and its property holdings in Morningside Heights and Washington Heights during the 1960s. (CPC)

Response: The indirect residential displacement analysis will identify the population vulnerable to displacement by using the methodology described in the *CEQR Technical Manual*. Given the characteristically low median household incomes in the study areas, all tenants of unprotected units in the study areas would be considered for analysis purposes as a population at risk and potentially vulnerable to displacement under the CEQR methodology, regardless of the proportion of their income spent on rent.

Comment 139: The EIS must disclose the residents' vulnerability to displacement. Relevant information should identify type and condition of housing stock, the number of owner- vs. renter-occupied units, vacancy rates, fair market rate of areas within walking distance of the campus, and the 30-year trend as an indication of the likely future demand for affordable housing. The EIS should also study the specific groups, such as seniors and individuals with HIV/AIDS and/or disabled persons who depend on subsidized housing and community facilities such as health clinics, and, thus, are most vulnerable to rent increases and housing shortages. (Jordan-CB9, Cadore) Also include job classification, travel and work time, education level, English proficiency, unemployment rate, participation in the labor force, and Social Security recipients. (Harlem CDC)

Response: Per *CEQR Technical Manual* guidelines, the indirect residential displacement analysis will identify the presence of the population vulnerable to displacement.

Factors that are considered in this analysis include the type and condition of housing stock, the number of owner- vs. renter-occupied units, rent-regulated vs. non-regulated units, vacancy rates, market rates within the study areas, historical trends in the housing market, and household income. The characterization of a potentially vulnerable population could generally be identified through most of the other factors listed in the comment, i.e., factors such as HIV/AIDS, disabled persons, job classification, travel time to work, education level, English proficiency, and Social Security. However, in the case of the Proposed Actions, all of the tenants living in housing units that are unprotected by rent regulations are considered to be vulnerable for the purposes of the EIS impact analysis.

Comment 140: Displacement must also be projected if the employment "benefits" Columbia promises to create will not provide sufficient income to balance the projected increases in cost of living and rent. To account for the employment benefits of the development claimed by the University, households that will be eligible for and whose employment will provide sufficient income to balance the projected increases in cost of living and proportional rent—i.e., if through the development, the University claims to create 200 permanent jobs with benefits that will be available to persons with the average education, language skills, and employment history currently found in the adult population in this neighborhood, and 100 of these will pay enough such that the proportion of household income dedicated to cost of living expenses and proportional rent does not increase past the current proportion, then it may be assumed that these households will not be displaced. Other changes in employment incorporated in the projections must match historical trends in neighborhoods with similar racial and ethnic distributions, levels of education, language skills, and employment history. (Franco, CPC)

Response: The purpose of a socioeconomic analysis under CEQR is to identify the potential for significant adverse impacts due to changes in the residential and commercial real estate markets. With respect to indirect displacement, the EIS will evaluate whether the Proposed Actions would create upward pressures on property values and thus rents throughout the study area, making it difficult for some existing residents to afford their homes. The ability of some local residents to absorb rent increases as a result of new jobs created with the Proposed Actions is not considered, since the focus of the analysis is on populations particularly vulnerable to economic changes, and thus these residents will be included. The EIS will assume that all tenants of units that are not rent-protected would be potentially vulnerable to indirect displacement.

Comment 141: In addition to the existing conditions baseline, the EIS must document rent-burdened households and residents in subsidized/rent-controlled buildings that may potentially be displaced due to loss of subsidy or rent-controlled status by

the Build years of the Proposed Actions; all acquisitions by Columbia University in the period before and after 2000, including properties in and adjacent to Manhattanville and its Morningside Heights and Washington Heights campuses; conditions at and adjacent to each property before and after acquisition by Columbia, including changes in tenant occupancy and use, changes in tenant lease terms, including length, and disclosure of all housing court actions, tenant/landlord disputes, and records of maintenance violations. (Chait-CB9, Siegel/WHBG, CB9, CPC)

Response: The indirect residential displacement analysis will identify the population vulnerable to displacement by using the methodology described in the *CEQR Technical Manual*. All tenants of unprotected units in the study areas would be considered for analysis purposes as a population at risk potentially vulnerable to displacement under the CEQR methodology. This approach is more conservative than the approach suggested in the comment. The Final Scope has been revised to reflect that the analysis also will identify acquisitions by Columbia University in the Project Area and Columbia's activities with regard to those properties, as part of the recent trends analysis. An analysis of Columbia's housing practices is outside the scope of a CEQR analysis.

Comment 142: The projections of displacement should extend to 2055, not 2030 (Framework also). (CPC)

Response: As noted in the response to Comment 90, a 50-year analysis period is not required by the *CEQR Technical Manual* or considered reasonable by the lead agency because it would be speculative. The EIS will consider the 2015 and 2030 analysis years. In the latter year, the analysis assumes that the development would be fully built and occupied, and any adverse impacts identified would be those associated with a mature development.

Comment 143: Projected rents must be defined as the proportion of the market price that a household paid before the announcement of the University's expansion plans (four years ago)—i.e., if in 2001 a household paid $1,000/month for an apartment with a market value of $1,200/month, then the ratio of their projected rent to the projected market value must be equal to the ratio of 1,000/1,200. This is referred to below as "proportional rent." (CPC).

Response: As stated in the Final Scope, the EIS will include a discussion of historical trends in rent in the study areas, with specific attention provided to the period immediately before announcement of the expansion plans up to current conditions, and rent increases in the study areas between 2000 and 2006 will be discussed in the recent trends analysis in the EIS. A "proportional rent" calculation is not used to determine the potential for significant adverse socioeconomic impacts pursuant to the *CEQR Technical Manual*.

Comment 144: More comprehensive and more analytical criteria regarding indirect residential, business, and institutional displacement must be developed to provide a thorough assessment of the Proposed Project. (Kooperkamp, Kahn, Nagle, CPC) Indirect displacement analyses must include the following vulnerable populations: rent-burdened households paying more than 30 percent of gross income toward rent; residents in subsidized rent-controlled buildings that may potentially be subject to displacement due to loss of subsidy/rent-controlled status by the Build years of the Columbia action. Withdrawal of 3333 Broadway, a 1,190-unit apartment complex, from the New York State Mitchell-Lama Program in early 2005, and transition from subsidized to market rents must be considered as an indirect displacement arising from real estate speculation due to the Proposed Actions. This may be indicative of other comparable actions in and around Columbia's holdings in northern Manhattan, and the cumulative impact of these on the residential market must be assessed. (CB9, CPC)

Response: The analysis will follow the guidelines of the *CEQR Technical Manual* in determining the population at risk of displacement within the ¼-mile and ½-mile study areas. The analysis will identify the status (rent-regulated or non-regulated) of the housing stock in the study areas, and identify the number and location of households in the study areas that are potentially at risk of displacement. For each Census tract in the study areas, the average household income for renters in small buildings will be compared with the average household income for all renters in Manhattan. If the average for small buildings is lower than the borough-wide average for all renters, the Census tract will be identified as having a potentially vulnerable population. This is a highly conservative methodology. The affordability of market-rate housing is a component of this analysis. While the rent burden within the study areas will be discussed, the 30 percent threshold noted in the comment is not a determining factor under CEQR for identifying the vulnerable population.

To the extent that data relevant to the study area is available to identify a trend in the loss of subsidized/rent-controlled residential units that would increase the population potentially vulnerable to indirect displacement, it will be considered in the analysis. The transition of 3333 Broadway from subsidized to market rents will be considered as part of the indirect residential displacement analysis. The recent trends analysis in the EIS will consider whether it is reasonable to assume that 3333 Broadway "opted out" of the Mitchell-Lama program due to added real estate pressure generated by Columbia's announcement of its plans.

Comment 145: Include the number and percentage of units that are in the Mitchell-Lama program and are either rent-controlled or stabilized. (Harlem CDC) The secondary displacement analysis should consider private owners of buildings, such as those in the Mitchell-Lama program, who opted out of housing agreements for low-income families. (Batista, Betancourt, De Bourbon, Demott,

Gruenthal, Bailey, Kappner/Bias, Hunter, Kraus, Levine, M.-CB12, Stubbs, Rodriguez, N., Mazzoni, Granado, Ortiz, E., Etienne, Ruiz, Rodriguez, A., Wallace, Yananton, CPC)

Response: The Scope has been revised to note that the indirect residential displacement analysis will identify the various types of housing programs present within the study areas and the amount of rent-controlled and stabilized vs. market rate units.

Comment 146: Columbia should be made to repair the damage (i.e., examples of evictions/displacement) it has already caused, and it should return properties back to the residential rental market and allow minorities to reside within our neighborhoods. (Rodriguez, A, Kahn)

Response: Comment noted.

Comment 147: I recommend that the University put on the table a substantial and comprehensive community benefits package addressing the needs of all the surrounding areas. Will the expansion help accelerate what many feel to be the massive displacement of working-class families in the neighborhoods north of 135th Street? In 2004, there have been as many as 16,000 eviction proceedings initiated by landlords against tenants in that area. (Espaillat) How would the existing residents benefit economically, culturally, and civically? (Harlem CDC)

Response: Columbia has stated that it expects to address a variety of community needs through a negotiated agreement, which is not part of the CEQR process.

Comment 148: To rectify the secondary displacement issue, Columbia should build 1,000 affordable mixed-income units. (Kahn)

Response: Comment noted. The analysis of secondary (indirect) residential displacement will evaluate the potential for significant adverse impacts and propose practicable mitigation for any significant impacts identified. The provision of "appropriate, comparable [housing]" is one of several possible mitigation measures cited in the *CEQR Technical Manual.*

Comment 149: More than half of the residential buildings between West 110th and West 125th Streets, with well over 6,000 apartment units, are owned by Columbia. Less than 750, around 100 of them on our block, remain occupied by long-term community residents.

Other than public housing, and Morningside Gardens and 3333 Broadway, now under threat, these units remaining within Columbia housing are the last enclaves of stability and diversity. (Kappner/Bias)

Response: Comment noted.

Comment 150: The Draft Scope did not look at the impact of secondary displacement on the private market. There are many things that the private market does in response to an increase in population. For example, many people are subleasers. Landlords routinely evict people without notice when there's pressure being put on the rents. Section 8 vouchers are often revoked because the landlords can get more money. Mitchell-Lama buildings often choose to opt out of the program. The impact of the private market has not been analyzed with respect to this plan. (Mazzoni) All households receiving Section 8 subsidies should be considered in imminent risk of displacement given that landlords can opt out of the program at any time, and usually do when market rents exceed caps paid by the government. (CPC)

Response: As noted in the Draft Scope, the socioeconomic conditions analysis will consider the potential for indirect displacement with respect to any units that are not subject to rent control or rent stabilization. There are currently no Mitchell-Lama buildings within the study area.

Comment 151: The Draft Scope must account for the fact that students place greater displacement pressures on local housing markets than most other populations. (CPC) Rising rents will drive residents out of the neighborhood when students and faculty come to the area. (Kraus, Kahn) The short-term effect of an influx of students who typically come from upper-income families would be a severely restricted ability of others to attain housing and harassment of current long-term tenants who pay below-market rents in rent-stabilized apartments. The casual, uninformed, or transient nature of students makes them easy allies for landlords seeking to deregulate apartments, including through illegal means. (Mazzoni)

Response: The Draft and Final Scopes note that the analysis of indirect residential displacement will consider changes in real estate market conditions that could be precipitated by the presence of Columbia employees and students who might want to live in the study areas.

Comment 152: For new jobs that Columbia claims it will create, especially white collar jobs, the EIS should reflect the creation of an increased demand for housing by a population with greater means than current residents, driving up housing prices and causing displacement. The presence of Columbia and the demographic changes it will spawn will be the impetus for other people to seek housing in the neighborhood. Displacement pressures by Columbia students and faculty will be constant and perpetual. (Mazzoni)

Response: The indirect residential displacement analysis will consider the potential effects of increased housing demand from Columbia employees and students, as well as others within the study areas.

Comment 153: A sharp rise in market rent in areas surrounding Columbia's proposed development could encourage landlords to harass even rent-stabilized tenants through frivolous court actions and withholding services. (Mazzoni)

Response: The effects of possible illegal actions are not considered under CEQR.

Comment 154: The EIS needs to analyze the current residents surrounding the proposed Columbia development who have no rent protections or whose protections may be removed, including residents in non-rent-regulated housing, subleasers, and recipients of Section 8 subsidies. (Mazzoni)

Response: As noted in the Scope, the EIS will examine the potential for displacement of vulnerable populations from units that are not rent-protected, including those with Section 8 vouchers.

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

Comment 155: The EIS needs to include specific information on the types and location of retail businesses being proposed, and direct and indirect impact and displacement of businesses at least as far east as Convent and Manhattan Avenues. (Dunn, Zuhusky, CPC)

Response: At this time, the specific retail tenants in the proposed development are unknown. However, as described in the Scope, the socioeconomic analysis will generally describe the types and locations of retail uses envisioned with the Proposed Actions. The direct business displacement analysis will address businesses in the Project Area; the indirect business displacement analysis will consider the potential effects on businesses within the ½-mile study area, which includes Convent and Manhattan Avenues.

Comment 156: The EIS should study the impact of Phase 1 (2015) development on the operation of businesses along West 131st Street between Broadway and Twelfth Avenue. This street is Pearlgreen's only truck entrance, where from 5 AM to 7 PM deliveries and loading trucks are received. The yard is where they park their 11-truck fleet overnight. They require that the street remain open and maintained with enough clearance to accommodate tractor-trailer size deliveries.

If this street is closed or otherwise rendered inoperable, the business cannot operate. It is ironic that the University has promised to develop the area in a way that benefits the community, but has asked the State to help remove those property owners that have refused to sell. (Greenberg)

Response: Partial and/or complete street closures only would occur during portions of construction periods. The "Construction" chapter of the EIS will include an analysis of the potential effects on all area business operations during construction phases.

Comment 157: Indirect displacement analyses must include the following vulnerable populations: businesses that may potentially be subject to displacement due to rent increases as a result of the Proposed Actions, and businesses whose livelihoods are linked to a particular building type, e.g., storage companies and small manufacturers in loft buildings that maybe converted to residential or other uses. (CB9, CPC)

Response: As noted in the Draft and Final Scopes, the indirect business displacement analysis will identify businesses vulnerable to displacement due to rent increases. The physical space needs of any identifiable vulnerable businesses and their ability to find relocation space will be considered as part of that analysis.

SPECIFIC INDUSTRIES

Comment 158: The EIS should include a sectoral analysis of industry classification, such as storage, auto repair, and manufacturing, when discussing adverse impacts. (Harlem CDC)

Response: The analyses of direct and indirect business displacement, and the analysis of adverse effects on specific industries, will evaluate the effects on specific industry sectors. Because the Project Area contains storage, auto repair, and some types of manufacturing, the EIS will address these sectors.

ECONOMIC AND FISCAL BENEFITS AND COSTS ANALYSIS

Comment 159: The EIS should include an assessment of the fiscal and economic impacts of the Proposed Actions in terms of costs as well as benefits. (Chait-CB9, Eisenberg, Prestinary, Siegel/WHBG, Paterson; Eisenberg, WEACT) The EIS should assess net job loss and revenue loss from business displacement. (CB9)

Response: As described in the Final Scope, although not required by the *CEQR Technical Manual*, the socioeconomic analysis will estimate the fiscal and economic benefits and costs of the Proposed Actions. The analysis will be based on the IMPLAN (IMpact Analysis for PLANning) input-output modeling system, or similar model. The model will predict direct and indirect economic activity, employment, and City and State tax revenues from construction and operation of the Proposed Actions. The analysis will distinguish between the benefits from development planned for Subdistrict A and more generally those associated with development projected to occur in the remainder of the Project Area. To the extent that the socioeconomic conditions analysis discloses that there are business categories that could not relocate within the City, the analysis will estimate the costs of this displacement in terms of loss of employment and related tax revenues. The analysis will also estimate the net change in real estate tax revenues from the Proposed Actions. Public funding support for the Proposed

Actions (e.g., infrastructure) will also be estimated in the FEIS, and to the extent that this information is known at the time, in the DEIS.

Comment 160: The EIS should analyze government costs associated with the use of eminent domain; establish the fair market value of public lands, including streets and related underground rights that are associated with the proposed extensive development; analyze impacts on socioeconomic characteristics of the study areas, e.g., consolidation of property under single ownership and within one industry (education) vs. multiple owners with various businesses; and analyze consequences to the neighborhood from residential and business displacement and gentrification. (CB9, CPC)

Response: Under ESDC procedures, costs associated with the use of eminent domain are borne by the developer. The fair market value of public lands will be established through standard methods, including appraisal. The EIS will evaluate the potential of the Proposed Actions to result in direct and indirect residential and business displacement.

Comment 161: The analysis of socioeconomic impacts must include disclosure of government income/expenditures in each plan (CB9 member/s, Eisenberg) and data on real estate market conditions in the primary and secondary study areas, including conditions before Columbia began acquiring property; and disclosure of all property transactions by Columbia in or adjacent to Manhattanville. (Chait-CB9) The EIS should compare government income/expenditures with respect to tax revenues arising from each alternative for all federal, State, and New York City tax categories; tax abatements, government grants or loans, government-backed bonds; and all public subsidies. (CB9, CPC)

Response: See the response to Comment 159. As noted in the Final Scope, the EIS analysis will describe real estate market conditions within the study area, including the period before Columbia's acquisition of property. The analysis will also detail acquisitions by Columbia University in Manhattanville since 2000 and discuss the potential for these acquisitions to have resulted in displacement.

Comment 162: Jobs created under the 197-a Plan must be compared against those created as a result of the Proposed Actions with regard to temporary vs. permanent jobs; relative income level of jobs, e.g., as a percent of median income; new jobs generated per year over the build-out period, including types of jobs, background necessary, pay scale, and whether they are temporary or permanent (jobs relocated from other Columbia facilities must be documented separately and not included in the analysis of economic benefits from new jobs); impact on local unemployment, i.e., percentage of hiring from the local resident pool; relationship to local occupational skills and needs; job training and placement efforts (specifically, for local residents within the Project Area and whether

local residents have access to the academic facilities proposed); and number of jobs lost per year, including an analysis of the types of jobs and whether or not they were local jobs. (CB9, CPC)

Response: The "Socioeconomic Conditions" chapter will include estimates of the number and types of jobs created by the Proposed Actions based on comparisons with a future condition without the Proposed Actions that does not include the 197-a Plan. The EIS also will include a 197-a Plan Alternative analysis that will generally describe economic activities under the development scenario for the 197-a Plan. However, it would be speculative to project information regarding jobs generated by the 197-a Plan at the level of detail requested by the comment. The analysis of the Proposed Actions similarly cannot provide a precise assessment of the place of residence of prospective employees, beyond looking to Columbia's current experience (see response to Comment 105). Columbia University employment opportunities for local residents may also be included as part of a negotiated agreement.

Comment 163: To genuinely assess Columbia's claims about job growth and community benefit, the EIS needs to answer: How many of Columbia's faculty were residents of Harlem, Washington Heights, or Hamilton Heights before being hired? Of employees who were residents in these areas, what is their average income, compared with average income of non-student, non-research employees who were not residents of the surrounding communities? Provide similar comparative information for students, including New York City residency, family income, and racial breakdown. (Mazzoni)

Response: The economic and fiscal benefits and costs analysis that will be part of the "Socioeconomic Conditions" chapter will include estimates of the number and types of jobs generated by the Proposed Actions. That analysis cannot provide a precise assessment of the place of residence of prospective employees, beyond looking to Columbia's current experience, and some of the other information requested, which will be included in the EIS (see response to Comment 105). (Columbia University employment opportunities for local residents may be included as part of a negotiated agreement.) The indirect residential displacement analysis will include discussion of the population characteristics of students and faculty likely to reside within the study areas, to determine whether that population would contribute to changes in neighborhood character that would result in significant adverse impacts.

Comment 164: Separate analyses must be conducted for Subdistrict A and the other subdistricts in the Project Area and compared against the 197-a Plan. Separate analyses must be conducted for the two selected Build years The costs of the Proposed Actions must be included in the analysis (e.g., loss of property tax, corporate tax, and sales tax revenues as a result of business displacement). As a tax-

exempt institution, Columbia will not generate any additional tax revenues from its proposed Manhattanville development. (CB9, CPC, WEACT)

Response: See the response to Comment 159. The analysis will be conducted for the entire rezoning action—the action that the City Planning Commission will ultimately vote on—and not separately for each subdistrict. However, as noted in the Final Scope, the economic and fiscal benefits and costs analysis will distinguish between the benefits from development planned for the Academic Mixed-Use Area (which would primarily be attributable to investments by Columbia University), and more generally those associated with development projected to occur in the remainder of the Project Area (in Subdistrict B and the Other Area east of Broadway). The analysis will be presented in two phases: the first outlining the economic and fiscal benefits that would occur by 2015, and the second describing those that would occur at full project build-out, assumed to occur by 2030. In both cases, Columbia's tax exempt status will be factored into the analysis. As noted in the response to Comment 159, the analysis will estimate the costs or losses associated with the Proposed Actions, including estimates of the net change in property tax revenues generated in Subdistrict A.

As noted in the response to Comment 162, the development scenario prepared by DCP in consultation with CB9 for the 197-a Plan Alternative will be assessed for its likely economic benefits.

Comment 165: The projected use and value of Brownfield Tax Credits from the New York State Brownfields Law must be included in the economic and fiscal benefits analysis. (CB9)

Response: There are no Brownfield Tax Credits available for the Proposed Actions. Columbia is not a taxpayer, as defined under the Brownfields statute.

Comment 166: The economic benefit of construction arising from the implementation of the 197-a Plan and all projected development in the baseline Build years (i.e., without the Proposed Actions) must be documented. (CB9)

Response: The 197-a Plan will be analyzed as an alternative to the Proposed Actions. As noted in the response to Comment 164, the alternatives analysis in the EIS will assess economic benefits under the development scenario for the 197-a Plan Alternative.

Comment 167: The EIS should evaluate loss of business income and sales tax revenues as a result of street closures or detours, service and utility disruptions, and restricted access during construction. It should also assess costs to the City resulting from development below streets, street closures, and service or utility disruptions, etc. (CB9, CPC)

Response: As noted in the Draft and Final Scopes, the analysis in the "Construction" chapter will assess the potential effects on local business operations as a result of construction activities in the Project Area.

Comment 168: How much is Columbia going to pay for the land under all the streets and sidewalks? How much are they going to pay for real estate taxes? How much do they expect to be subsidized through the Dormitory Authority of the State of New York's (DASNY) bonding programs and so forth? (South, Siegel/WHBG, Prestinary, CPC) Also include government bonds, grants, etc., that could be used for other projects and Columbia's application to DASNY in the list of discretionary actions. (Harlem CDC, Eisenberg)

Response: Under ESDC procedures, costs associated with the use of eminent domain are borne by the developer. The fair market value of public lands will be established through standard methods, including appraisal. Should Columbia decide at some time in the future to request grants, bonds, or DASNY financing for aspects of development in the Academic Mixed-Use Area, those applications would be subject to public approval processes, including environmental review, when any of these requests are made.

Comment 169: Analysis of employment and economic growth data must not be limited to the 20-year period between the 1980 and 2000 Censuses, but must separately consider growth patterns for the last five years, i.e., between 2000 and 2005, and for 2005 vs. the previous 25 years. Furthermore, employment must be separated by industry categories. (CB9, CPC)

Response: The analysis will consider historic employment trends for the Project Area dating back to 1965, and will include employment estimates for 1965, 1984, 2000, and 2005. The EIS will include a specific recent trends analysis of residential and commercial market conditions from 2000 to 2005. Employment will be categorized based on the Department of Labor's North American Industrial Classification System (NAICS)—a standard method for classifying businesses and employment in economic analyses.

Comment 170: The Draft Scope refers to a Harlem Urban Development Corporation study from 1984 to state that "employment has decreased by more than 35 percent." Why was 20-year-old data used as a baseline for determining employment figures today? More recent data has shown increases in employment. (Harlem CDC) Columbia must not use outmoded data. (WEACT)

Response: The data referred to in the comment will be used as part of a historic trends discussion in the EIS; it will not be used to determine existing employment. Various sources, including phone surveys, written surveys, field investigations, Dun & Bradstreet data, and U.S. Census and New York State Department of

Labor data will be used to define existing employment within the Project Area and broader study areas.

See "Eminent Domain" in the "Project Description, Needs, and Opportunities" section above, for related comments.

COMMUNITY FACILITIES AND SERVICES

Comment 171: Columbia says that the only way schools will be impacted is by additional students who will want to take classes in the existing schools. Children in the neighborhood are going to be impacted by displacement. The schools that are working in this neighborhood should be looked at in the EIS. (Murphy, CPC) This expansion plan does not consider the effects on public schools. It does not consider how education is a resource. Columbia should talk about academic uses and how this new campus can actually help the community instead of helping its own profit. (Mercer)

Response: The Proposed Actions would not directly displace any existing public schools. As detailed in the *CEQR Technical Manual*, indirect effects to public schools are created when a project would add population to an area and increase the demand for public schools. The EIS will analyze effects to public schools as a result of the Proposed Actions using analysis procedures and impact criteria in the *CEQR Technical Manual*.

Comment 172: The Draft Scope says that "Proposed Actions would not trigger the threshold for analysis of hospitals or day care centers," citing the rule that there would be no more than 50 new elementary/middle school or 150 high school students as a result of the Proposed Project. Is this reasonable or even predictable given the unstated amount of faculty housing to be built? (CPC) The Draft Scope needs a more specific explanation of the project to determine whether Columbia's assertion that the project is not expected to introduce more than 600 low- to moderate-income residential units and not more than 50 children eligible for day care is valid, and, thus, that no health- or childcare analysis is required. Students and research staff may qualify for public childcare services. (WEACT)

Response: The Draft Scope states that the threshold in the *CEQR Technical Manual* for a detailed assessment of health care facilities is the introduction of more than 600 low- to moderate-income residential units. The Draft Scope states that the Proposed Actions are not expected to trigger the threshold for a day care analysis—introduce more than 50 children eligible for day care (357 low-income or 417 low-moderate income residential units in Manhattan as identified in Table C, 3C-4 of the *CEQR Technical Manual*). The Proposed Actions would not trigger that threshold. The Draft Scope states that the threshold in the *CEQR Technical Manual* for a detailed assessment of public schools is the introduction of more than 50 new elementary/middle school or 150 high school students. The

Proposed Actions would trigger this threshold; therefore, the EIS will contain a detailed analysis of public schools. Although the exact amount of faculty housing has not been defined, for analysis purposes the EIS will assume a worst-case scenario that maximizes housing in the Project Area. The EIS will include a screening analysis, using procedures contained in the *CEQR Technical Manual,* for those community facilities that will not require a detailed analysis.

Comment 173: Information on the proposed new specialized public high school for science and engineering announced by the City and Columbia University in October 2005 is inadequate. The location of the proposed school must be clearly identified in the revised Draft Scope, and the EIS must compare the capacity of the school and population served with the demand for classroom space and educational needs of CB9. The new public high school must be identified as a component of the Columbia plan or included in the future baseline condition for analysis of impacts of the Proposed Actions. (CB9, CPC)

Response: The Final Scope has been revised to include more detailed information regarding the new public high school for science, math, and engineering. As described in the Final Scope, the EIS will study two potential locations (both on Columbia property) for the public high school for science, math, and engineering—one location if the Proposed Actions are not approved, and a different location if the Proposed Actions are approved. In both cases, the high school would not be considered part of the Proposed Actions; it would be a No Build project, with different locations depending on the outcome of the Proposed Actions' approval process. Because the EIS addresses the Proposed Actions only, it will not contain an analysis of the public high school as it may relate to the educational needs of CB9.

Comment 174: Although the University discusses additional community facilities in its Draft Scope, its failure to set out in detail the ways in which Columbia will address the lack of much needed community facilities in the Scoping Document is not only disingenuous, but undermines any expectation that this private institution will act in any other way than as a private institution advancing its own interests. Columbia should do a lot more to serve the local community. (Fares, CPC) What services is Columbia University planning to bring to the area? (Ortiz, C., Harlem CDC)

Response: The purpose of the "Community Facilities" chapter of the EIS is to consider the potential that the Proposed Actions may result in significant adverse impacts to certain public or publicly funded facilities, including schools, hospitals, day care centers, and fire and police protection. Columbia has stated that it expects to address a variety of community needs through a negotiated agreement, which is not part of the CEQR process.

Comment 175: The Draft Scope ignores discussion of impacts on other community facilities like Reality House. (WEACT) Please include a discussion of the Proposed Project's impact on Reality House (a drug treatment facility), located on the north side of 125th Street, near the intersection of St. Clair Place. (Harlem CDC)

Response: The Proposed Actions would not have an effect on Reality House, which is currently in receivership and closed its operations at 637 West 125th Street in the middle of 2006 prior to Columbia entering into a contract to purchase the property. The New York State Office of Alcoholism and Substance Abuse Services (OASAS) is working with Reality House to reestablish and relocate its programs to other facilities in Northern Manhattan. During this period of transition, Columbia is providing temporary office space to Reality House in 3280 Broadway, a University-owned building.

Comment 176: Columbia should take into consideration the marine transfer station, which should remain closed in Manhattanville and made into an ecology center after the City has finalized its Manhattan- or City-wide solid waste management program. This would provide an opportunity for children and teenagers to learn about marine biology, the Hudson estuary, and other types of sciences, and perhaps provide an opportunity to attend Columbia or other types of higher learning institutions where they can get a solid education. (Bailey-McClain)

Response: Comment noted.

OPEN SPACE

Comment 177: Open spaces accessible to all area residents should be created. Plans are under way to connect both ends of the 125th Street corridor to parks along the waterfront, opening up miles of waterfront for recreation. The new campus should foster those connections. The new campus should help connect local neighborhoods to the proposed Harlem on the River plan, which calls for a public waterfront greenway and bike path, new public piers, and programming that highlights the Hudson River's recreational and environmental resources. (ED, CPC) Columbia must provide comprehensive information on how it will control access points to the planned West Harlem Waterfront park and other open spaces, and how access will be impacted during its 25-year construction period. (NRDC, Eisenberg, Gayer, CPC)

Response: Under the Special Zoning District text, attached to the Final Scope as Appendix A, the open space proposed in the Academic Mixed-Use Development would be required to be accessible to all area residents. Except for temporary anticipated closures during construction, the Proposed Actions would not affect access to the West Harlem Waterfront park; all streets through the Academic Mixed-Use

Area to the waterfront area would remain open. Access to parks and open space during construction will be addressed in the construction analysis.

Comment 178: The Draft Scope must require the University to analyze in depth the effect of its proposal on public space and to compare those results with an analysis of public space and access under the 197-a Plan. (Eisenberg) There is insufficient information in the Draft Scope on public access to the proposed privately owned, publicly accessible open space, including times of access, use restrictions, and potential closures. The impact of the Proposed Actions on the ability to achieve the open space components of the 197-a Plan must also be analyzed. (CB9, CPC)

Response: The proposed operations of the proposed publicly accessible open space are described in more detail in Appendix A in the Final Scope. As noted in the answers to several comments above, the 197-a Plan will be considered as an alternative in the EIS, and the analysis in the EIS will consider the effects on open space from the 197-a Plan alternative in order to permit a comparison with effects on open space from the Proposed Actions.

Comment 179: As there is no guarantee that private open space will remain publicly accessible, all "reasonable worst-case scenarios" in this technical area should be characterized as privately owned and not publicly accessible. (WEACT)

Response: Public accessibility of the privately owned public space will be enforceable as a requirement of the Zoning Resolution.

Comment 180: The private open space may have walls and planters up to 2½ feet high. These can act as barriers to pedestrian access, limiting public use. Describe the rationale for using them along with their impacts. (Harlem CDC, CPC)

Response: See the response to Comment 179. The draft proposed Special Manhattanville Mixed-Use Zoning District text, attached to the Final Scope as Appendix A, contains extensive requirements to create and maintain public access to the privately owned, publicly accessible public spaces. The analysis in the "Open Space" chapter will describe effects of the design features and other requirements of the Zoning text, if any, on public accessibility.

Comment 181: The private open space created would have curfews that are more restrictive than public open space. Explain the rationale for this, especially the closing time of 7:00 PM from November to April. Also, explain how the curfews would be enforced. (Harlem CDC)

Response: The proposed hours for the open space would be similar to those for public parks. These hours are described in the Special Mixed-Use Zoning District text, attached to the Final Scope as Appendix A.

Comment 182: During construction, open space should be closed for as short a time as possible. At a minimum, Columbia could offset the impacts of construction sites by creating passive recreation spaces. (ED)

Response: At the time the Draft Scope was issued, the privately owned, publicly accessible open space proposed for the Academic Mixed-Use Development during Phase 1 would have been temporarily removed during construction. Since the issuance of the Draft Scope, the Proposed Actions have changed such that there would be no temporary loss of open space during construction. All open space would be permanently open to the public after it is constructed. Therefore, the construction open space analysis to address the temporary loss of open space described in the Draft Scope is no longer necessary, and the Final Scope has been revised to reflect this.

Comment 183: Would the proposed gymnasium be open to the community? (Harlem CDC)

Response: Columbia has stated its willingness to consider public access to University facilities as a subject for inclusion in a negotiated agreement. The EIS conservatively assumes for purposes of the open space analysis that the proposed recreational facility in the Illustrative Plan in the Academic Mixed-Use Development would be developed as its alternative use—academic research—as specified in Table 1 of the Final Scope.

SHADOWS

Comment 184: There were several proposals months ago, four different types of scenarios, that could take place in Manhattanville in the area of bulk, and there was one scenario proposal for standard heights where the impact would be less on the community for shadows and noise. Columbia should look at that proposal and eliminate the plazas in the center of their complex. They would take up a lot of unnecessary space that could be used for other types of building, which could then allow lower heights of buildings at different points throughout Manhattanville. (Bailey-McClain)

Response: The EIS will analyze the potential impacts of the Proposed Project on the surrounding area, both for potential noise and shadow impacts. The proposed privately owned, publicly accessible open spaces are an integral part of the design of the Proposed Project and will be considered in the EIS analyses. To evaluate the Proposed Project's potential to cast incremental (additional beyond existing) shadows most conservatively, the shadows analysis will assume the maximum heights of buildings permitted under the proposed rezoning. If significant adverse shadow impacts are identified, alternative configurations will be considered among identified practicable alternatives.

Comment 185: Buildings should be designed such that their shadows have as small a footprint as possible on existing homes, schools, and public spaces, such as parks, gardens, and sidewalks. This will allow residents to have natural light come into their homes, making people have a greater sense of well-being and requiring less electricity for artificial lighting. (ED)

Response: For the purposes of the EIS, the shadows analysis will focus on the Proposed Project's potential to impact sun-sensitive resources, which are defined in the *CEQR Technical Manual* as public open spaces, historic resources with significant sunlight-dependent features, and natural features. Streets, sidewalks, and existing homes will not be evaluated. Nor will shadows on buildings that are not historic resources. CEQR does not address impacts on private property, unless such property is a historic resource or is a publicly accessible open space.

Comment 186: There needs to be an in-depth study of the loss of light, view, and air from the height and placement of the proposed buildings. (Dunn, CPC) Include an analysis of the shadow impacts on the private open space proposed to be created. (Harlem CDC) What will be done to protect our view and sunlight? (Ortiz)

Response: As per the *CEQR Technical Manual*, the EIS will evaluate the Proposed Project's potential to adversely affect publicly accessible sun-sensitive resources in the surrounding area, based on the maximum heights of the buildings permitted under the proposed rezoning. The extent to which incremental shadows would be cast on the Proposed Project's privately owned, publicly accessible open space will be discussed. See also the response to Comment 185.

Comment 187: The EIS should include an analysis of shadow impacts from proposed tall buildings on the Manhattanville Houses, the landmarked area of the Riverside Drive viaduct, Tiemann Place buildings, and of the potential for significant reductions in daylight penetration at street level near and under the viaducts. (CB9, CPC, Harlem CDC)

Response: As noted in the Draft and Final Scopes, in accordance with the *CEQR Technical Manual*, the EIS will evaluate the Proposed Project's potential incremental shadows on publicly accessible public open spaces, including the publicly accessible open spaces of the Manhattanville Houses, historic resources with significant sunlight-dependent features, and natural features. Streets, sidewalks, and historic resources without sun-sensitive features will not be evaluated. Shadows on buildings that are not historic resources will not be analyzed, because CEQR does not address impacts on private property, unless such property has a public purpose (e.g., a publicly accessible, privately owned open space).

Comment 188: The Draft Scope does not describe how shadows from the proposed pedestrian sky bridge will be evaluated. The Scope discusses plans to build a pedestrian sky bridge above the streets (this information is in the regulatory approval section) stating Columbia will ask the New York City Department Of Transportation (NYCDOT)'s Bureau of Bridges "to approve the rebuilding of West 130th, West 131st, and possibly West 132nd Streets above the Academic Mixed-Use Development below-grade support facility." (WEACT)

Response: No pedestrian sky bridge is proposed. The language in the Draft Scope pertains to rebuilding the at-grade streets above the proposed below-grade support facility.

Comment 189: Include an analysis that describes how the Proposed Project would shadow the new West Harlem Waterfront park, Riverside Park, the school yard at West 134th Street and Broadway, Manhattanville Houses open space, and the Hudson River itself, as well as streets, sidewalks, and other publicly accessible areas. (Harlem CDC, CB9, CPC) Shadow impact analyses should be conducted for proposed open spaces, such as the privately owned, publicly accessible open space in the Academic Mixed-Use Area and the new West Harlem Waterfront park. (CB9)

Response: The EIS will evaluate the Proposed Project's incremental shadows on publicly accessible open spaces and natural features, including the proposed new West Harlem Waterfront park, Riverside Park, the I.S. 195 Playground, the Manhattanville Houses open space, and the Hudson River. The incremental shadows that will be cast on the Proposed Project's privately owned, publicly accessible open space will be discussed.

HISTORIC RESOURCES

Comment 190: The Landmarks Preservation Commission (LPC) is in receipt of the EAS and Scope of Work for the EIS of 9/30/05. The text is acceptable for architectural resources. In its findings of 9/23/04 the LPC has noted that there are no further archaeological concerns. Should the Scope of work change to include or remove additional blocks and lots, the LPC shall receive the amended block/lot list for first-level review and comment. (LPC)

Response: Comments noted.

Comment 191: The EIS should include a determination of consistency with New York City Landmarks Law. (CB9, CPC)

Response: As described in the Final Scope, the EIS will also evaluate properties consistent with the New York City Landmarks Law criteria, as set forth in the *CEQR*

Technical Manual, and evaluate potential project impacts on any properties that meet such criteria.

Comment 192: The Columbia expansion plan has a negative impact on the historic resources in Manhattanville. The 197-a Plan protects historic resources. (Zuhusky-Whitman, Kent-CB9) Because the Community Board has already identified the resources that are important to the community, the EIS should accept the 197-a Plan's guidance on this matter. (CB9) Will DCP require Columbia to provide a broader look at historic properties in the area? (CPC)

Response: As set forth in the *CEQR Technical Manual*, the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and LPC make decisions regarding the significance of any potential architectural resources identified. Potential impacts from the Proposed Actions will be evaluated on those resources identified as significant. The potential significance of buildings in the Project Area and in the study area have been determined in consultation with OPRHP and LPC, based on OPRHP's and LPC's criteria for significance. The buildings that have been identified as potentially significant under the 197-a Plan will be brought to the attention of OPRHP and LPC.

Comment 193: The EIS must expand its definition of historic resources to include buildings and sites of historic and cultural, as well as architectural, significance, and it should widen its focus beyond sites now either designated or pending designation. The EIS should embrace the broader definition of historic resources that CB9 used in its 197-a Plan, including designated New York City landmarks (NYCLs) or properties listed on the State and National Registers; those found eligible for designation listing by New York City's LPC or the State Historic Preservation Office; or those found worthy of study for further consideration for designation listing. The EIS needs to include an assessment of the as yet unregistered architectural historical sites. (CB9, Kent-CB9, Shiffman-CB9, Bailey-McClain, Harlem CDC, CPC, WEACT)

Response: As per the *CEQR Technical Manual*, the EIS will consider historic resources to include National Historic Landmarks, State and National Register listed and eligible properties, NYCLs and Historic Districts, and properties pending such designation, as well as properties that appear to meet these criteria which have not yet been evaluated by OPRHP and LPC. OPRHP and LPC will be consulted to determine the significance of any properties not yet evaluated by OPRHP and LPC, including those identified in the 197-a Plan.

Comment 194: Analysis for worst-case impacts on historic property should be based on all of the historic resources identified in the 197-a Plan per the letter that was sent to both the Department and to Columbia, dated November 7, 2005 (see the attachment to CB9's written submission, dated January 5, 2006). (Shiffman-

CB9, Kent-CB9) Analysis of the worst-case impacts on historic property should be based on all of the potentially historic resources discussed in the 197-a Plan whether they are "proposed for designation" or "proposed for study." Analysis should be done of primary impacts on resources within the Project Area, as well as secondary impacts for resources identified by the 197-a Plan that are within the community district but outside the Project Area. (CB9)

Response: OPRHP and LPC will be consulted regarding the potential eligibility of structures in the Project Area, as well as properties located in the study area that may appear to meet criteria for State and National Register listing and NYCL designation, including buildings identified in the 197-a Plan. Potential project-related impacts will be assessed on properties that have been determined by OPRHP and LPC to meet State/National Register listing criteria and NYCL criteria, and these impacts will be evaluated for both historic resources in the Project Area and in the study area, as identified in the Draft Scope for historic resources.

Comment 195: The historic resources study area drawn in the Draft Scope, Figure 12, does not represent an appropriate limitation of the study area in Manhattanville west of Amsterdam Avenue. The land use study area map, Figure 9, is the more appropriate boundary for discussion of the project plan's primary and secondary impacts on Manhattanville historic resources. (Kent-CB9)

Response: As defined in the *CEQR Technical Manual,* the study area for architectural resources is the area in which any resources could be affected by the Proposed Actions. The study area should be defined to account for both potential physical (construction related) impacts, as well as potential visual impacts. While the *CEQR Technical Manual* indicates that a study area of 400 feet is usually sufficient, study areas of different sizes are sometimes appropriate based on the proposed scale of the project. To account for the Proposed Actions' potential impacts on historic resources, a larger study area was defined. It ranges between 700 and 1,400 feet, and takes into consideration the topography of the area and large structures, such as the Manhattanville Houses and Riverside Park Community apartment houses, that limit visibility to areas beyond them. Thus, the historic analysis would not be improved by expanding its study area to include the primary and secondary land use study areas.

Comment 196: The process of identifying historic resources and weighing impacts on them must be conducted in the appropriate manner. The Final Scope should make it clear that historic, cultural, architectural, and archeological resources within the Project Area will be identified before the potential impact of the Proposed Actions on those resources is assessed. (CB9, CPC)

Response: The Final Scope has been revised to make clear that the identification of historic resources in the Project Area and in the study area will be undertaken in

accordance with *CEQR Technical Manual* methodologies prior to assessing the potential impacts of the Proposed Actions on those resources. LPC and OPHRP have determined that the study area is not sensitive for archaeological resources.

Comment 197: The proposed development of a seven-story basement in the area appears to create a greater disturbance to archeological features than what has been done in the past. Please analyze this. (Harlem CDC) The Draft Scope must assess Manhattanville's archeological resources. (WEACT)

Response: Because LPC and OPHRP have determined that the study area is not sensitive for archaeological resources, no archaeological impacts will be studied.

Comment 198: The building at 3247 Broadway is prominent and relevant to the 20th-century commercial history of Manhattanville. This building is the only building in Manhattanville in single continuous use. It's a 10-story brick and stone storage warehouse built circa 1909 by Thomas McQuire. The building served the public as a fallout shelter during the Cold War, was a former home of Chelsea Warehouse—the families that founded Allied Moving and Storage—and was a state-of-the-art facility for piano and fur storage. It remains an imposing figure in the Manhattanville neighborhood and can be viewed from on the West Side Highway, New Jersey, and the Broadway viaduct. The Despatch moving and storage company was founded in 1816 during the horse and buggy era and is one of the oldest moving and storage companies in the City. (Zuhusky)

Response: The potential historical significance of all buildings in the Project Area, including the building at 3247 Broadway, will be evaluated as part of the EIS process. See also the response to Comment 193 regarding the methodology to identify historic resources.

Comment 199: The Hudson Moving and Storage building is listed on the New York State Historic Register as of September 20, 2005, and on the National Register of Historic Buildings as of November 9, 2005. The Columbia plan only respects the historic resources of our community at their convenience, like the Prentis and Studebaker Buildings. But there are many interspersed between these two buildings with a rich history. (Zuhusky-Whitman)

Response: The EIS will evaluate the Proposed Project's impacts on historic resources, including the former Sheffield Farms Stable at 3229 Broadway (currently the location of the Hudson Moving and Storage building), and a study will be conducted to consider whether this building may be adaptively reused rather than demolished. Any nearby historic structures that could be affected by project construction would be protected, as required by OPRHP and LPC.

Comment 200: Recognition should be given to Manhattanville Houses, which are architecturally and culturally significant. The distinctive architectural style of the Manhattanville Houses is emblematic of the mid-20th century's tower in the park concept. William Lescaze designed the towers to make best use of the site's view corridors and bring the beneficial qualities of air and light to the residents of this public housing complex. These important values should be carefully assessed and protected. (CB9, CPC)

Response: The potential significance of the Manhattanville Houses will be evaluated as part of the EIS process.

Comment 201: The increase in FAR of the Other Area east of Broadway would impact the Claremont Theater, a building that meets National Register criteria. Please analyze this in the EIS. (Harlem CDC, CB9)

Response: The potential impacts of the proposed rezoning on the Claremont Theater, which was recently designated by LPC as a New York City Landmark, will be evaluated in the EIS.

URBAN DESIGN AND VISUAL RESOURCES

Comment 202: We are troubled by the scale of the proposed buildings. They are out of context with the surrounding community. (Levine, E., MH/WH Sanitation Coalition) The area should retain the low-scale buildings. (Rodriguez, G.) It is important for Columbia to construct buildings that are consistent with current streetscaping. (ED)

Response: The EIS will evaluate the potential impacts of the Proposed Project on the urban design and visual resources of the surrounding area, including streetscape and building form. To most conservatively evaluate potential impacts, the analysis will assume the maximum heights of buildings permitted under the proposed rezoning.

Comment 203: To be consistent, refer to the height of the buildings in stories and in feet in the figures. Also, include the mechanical space in the highest point calculations of the buildings, since it seems to be a significant addition (i.e., 40–60 feet) to the height of the rentable space. (Harlem CDC)

Response: The EIS will describe the maximum heights of buildings in feet, both with and without the rooftop mechanical space. This is the best way to describe the buildings, rather than to refer to the number of stories, because some of the academic and all of the academic research buildings would likely have atypical ceiling heights.

Comment 204: Clarify the height limits of Subdistrict B. How far below the Riverside Drive viaduct would the maximum height of the proposed structures be? Would there be excess development rights on these properties? If so, explain who would control them and how they would be distributed? (Harlem CDC, CB9, CPC)

Response: As further described in Appendix A to the Final Scope, the proposed height limits in Subdistrict B, with one exception, would be 60 feet, the height underneath the structure of the Riverside Drive viaduct. This height limit notwithstanding, no building could be taller than two stories. It is likely that on some lots it would not be possible, given these limits, to achieve the full floor area allowed under the proposed zoning. Any use of excess development would be subject to underlying zoning regulations, which permit such uses only on merged lots. Under these regulations, excess development rights could not be distributed elsewhere. As described in the Final Scope, the "Urban Design and Visual Resources" chapter of the EIS will assess the proposed height limits in Subdistrict B and their relationship to the height of the Riverside Drive viaduct.

Comment 205: The EIS should provide figures showing existing elevations for comparison purposes. (Harlem CDC) The EIS should include a complete and accurate visual analysis, including renderings or computer models of the Academic Mixed-Use Development (reasonable worst-case development scenarios for Subdistrict A in future Build years), showing full (maximum permitted) building heights as seen from a distance, in addition to close-up street-level views, and views from various levels at Manhattanville Houses and 3333 Broadway, to provide a clear indication of the scale and bulk of the Proposed Project in relation to the surrounding urban fabric, including historic and visual resources, public streets, and public open space. It would also be helpful if figures showing the existing conditions elevations were included for comparison purposes. (CB9, CPC)

Response: The EIS will include a detailed visual analysis in the "Urban Design and Visual Resources" chapter, including view corridors and key visual resources as defined by the *CEQR Technical Manual* based on maximum permitted building heights. The analysis will consider the impacts on public views as required under CEQR; CEQR does not require that effects on views that are not publicly accessible be considered in the impact analysis.

Comment 206: Table 6 [of the EAS] states a maximum allowable height of 320 feet in the proposed Special District, yet the document doesn't always refer to this as the maximum allowable height. Please explain. Also, show the maximum height in the figures for consistency. (Harlem CDC) Explain what the height and setback regulations in Appendix A would be. (Harlem CDC)

Response: As noted in the EAS, the tallest building in the proposed Special District would be 320 feet, including the zoning maximum of 260 feet plus rooftop mechanical space. However, this maximum applies only to Site 11 in Subdistrict A There

are maximum heights set for all sites, and these "maximums" are lower than the maximum for Site 11. Additional information regarding the proposed height limits is contained in Appendix A to the Final Scope and will be described in the EIS.

Comment 207: Explain why research buildings require large floor plates. Large floor plate buildings have a tendency to deaden streetscapes, which contradicts an important part of the plan. The EIS should explore alternative designs for research buildings. (Harlem CDC, CB9)

Response: The space requirements for academic research buildings are described in the Final Scope and in the EIS. The "Urban Design and Visual Resources" chapter will analyze the potential impacts of the Proposed Actions, including the proposed larger floor plate buildings, on urban design in the Project Area. If the analysis identifies significant adverse impacts, practicable mitigation measures and possible alternatives that would reduce or eliminate impacts will be explored. At this time, however, the range of alternatives identified in the Final Scope does not include alternative designs for academic research buildings.

Comment 208: The lack of public ground-floor uses along the perimeters of the midblock passageways and private quad/square may reduce their attractiveness, safety, and accessibility to the public. Why aren't ground-floor uses proposed? (Harlem CDC, CB9)

Response: Active ground-floor uses are permitted but not required in these locations to allow Columbia flexibility in siting entrances and other building functions. While Columbia has stated that its intention is to create the liveliest possible streetscape, the EIS reasonable worst-case development scenario will assume the "minimum," i.e., the required, public ground-floor uses only.

Comment 209: The Draft Scope does not state under what conditions and for what purposes the transfer of floor area would be permitted, or if any limitations will be placed on the size of developments on receiving sites. Modification of bulk regulations and mandated streetwall requirements, as provided in the proposed zoning text amendments (Appendix A), could radically alter the scale and character of the development and substantially impact neighborhood character as well as urban design and visual resources. (CB9)

Response: The Final Scope provides more information on the limitations and purposes of the floor area transfers in the Academic Mixed-Use Development Area Subdistrict A (see the response to Comment 92). In addition, the EIS will contain a conceptual analysis (in an appendix) of the environmental impacts that could occur if one or more authorizations or Special Permits for transfer of development rights within Subdistrict A were to be approved. The transfer of floor area by authorization and Special Permit would be new transfer

mechanisms created by the proposed Special Manhattanville Mixed-Use Zoning District text. A Special Permit would only be required if proposed transfers would cause one or more sites to require changes in maximum height, bulk waivers, or similar relief that would alter the design "envelope" examined for the Proposed Actions in the EIS. The Final Scope has been revised to include this information.

Comment 210: Greening open space (such as by planting native trees) and infrastructure (such as through rooftop gardens) will enhance aesthetics as well as provide air purification and climate benefits. Columbia should preserve current community gardens and establish new garden spaces. (ED)

Response: The Proposed Actions would not remove any existing community gardens; rather, they would establish new, privately owned, publicly accessible open spaces. The zoning requirements for the design of the open spaces, including requirements for landscaping, are described in Appendix A of the Final Scope.

Comment 211: The Draft Scope mentions that the University will bring its cultural capital to Manhattanville. One obvious way that this can be demonstrated is to create a series of architecturally significant buildings. Increasing the architectural profile of the area would not only benefit its residents but benefit the City as a whole. (Gayer)

Response: Comment noted.

Comment 212: The urban design and visual resources of this neighborhood, from the multiple viaducts to the stunning views of the Hudson River, are one of the most defining assets of the community and are greatly cherished by local residents. Many of these visual resources will be obstructed by the proposed buildings. Residents who have been able to enjoy these spectacular views will not be cut off from them unless Columbia designs it development so as to preserve them. Therefore, a paramount concern in the analysis of the project's impacts on visual resources is the identification of these resources. West Harlem residents have been appreciating its visual resources for years, and therefore know the vista points. The accurate assessment of Manhattanville's visual resources should include close collaborations with local residents. (WEACT)

Response: As noted in the Scope, the Proposed Project's impacts on the area's visual resources, including the Hudson River and views of its shorelines, will be assessed in the EIS. As set forth in the *CEQR Technical Manual*, the assessment includes effects on views from public and publicly accessible locations. The public will be able to comment on the visual resources of the study area during public review of the DEIS.

Comment 213: Include how the Proposed Project would impact on and affect the views of and from the Broadway IRT and Riverside Drive viaducts, the IRT subway station, the 125th Street view corridor, and the Hudson River waterfront. Also, discuss the topographical relationship between the valley and the heights, and the Grant, Manhattanville, and 3333 Broadway housing complexes. In addition, explain how the proposal would affect the existing street walls, street hierarchy, and pedestrian activity. (Harlem CDC, CB9)

Response: As noted in the Final Scope, the "Urban Design and Visual Resources" chapter will address the factors cited in this comment.

Comment 214: Since the planned development will have significant adverse impacts on urban design and visual resources, Columbia must identify and study mitigation measures and project alternatives that will avoid and reduce these impacts. The development of practicable mitigation measures should also be done collaboratively with community residents. (WEACT)

Response: The Proposed Project's potential to impact the urban design and visual resources of the area will be assessed in the EIS. For any significant adverse impacts identified, practicable mitigation measures, if any, would be identified.

NEIGHBORHOOD CHARACTER

See also "Socioeconomic Conditions," above, for related comments.

Comment 215: The EIS should include an assessment of impacts on neighborhood character and community identity from direct and indirect displacement of residents, businesses, and workers, and from increasing gentrification as a result of the Proposed Project. (Paterson, CB9)

Response: As described in the Draft and Final Scope, the EIS will include an assessment of the impacts on neighborhood character drawn from several of the EIS technical analyses, one of which will be the socioeconomic analyses, including direct and indirect displacement.

Comment 216: In defining the character of Manhattanville for the EIS, DCP should consult the community itself, and allow neighborhood residents and other direct stakeholders to define what they believe to be the significant attributes that create the unique character of the Manhattanville neighborhood. (CB9)

Response: The scoping process affords neighborhood residents and other members of the community the opportunity to identify the attributes that they believe to be significant in defining the character of the Manhattanville neighborhoods. These opinions are expressed throughout the comments on all relevant study areas, such as land use, socioeconomic conditions, public policy, open space, historic resources, urban design and visual resources, traffic, and noise These comments

have identified such features as topography, building type and elevated structures, socioeconomic and demographic characteristics, housing, neighborhood history and historic resources, and specific enclaves, such as the artists' community, among others, and the technical scopes have been revised to reflect these insights. All of the relevant scope changes directly effect the analysis of community character, which will be conducted in accordance with the *CEQR Technical Manual*, and will include field visits, photographs, collecting and reviewing available information, and interviews, where appropriate.

Comment 217: Eviction patterns—including the rate of eviction in the expanded study area over the last 10 years and associated demographic changes, and potential for increased evictions and further demographic changes from the Proposed Actions—must be analyzed with regard to neighborhood character. (CB9, CPC)

Response: The neighborhood character assessment in the EIS will use analysis procedures and impact criteria in the *CEQR Technical Manual* and will contain information from the analysis of socioeconomic conditions, as relevant. Although the "Socioeconomic Conditions" chapter will not address evictions specifically, it will address the effect upon neighborhood character, if any, of potential for indirect displacement of vulnerable residents.

Comment 218: The Draft Scope describes the history of Manhattanville in terms of the viaduct and in terms of industrial buildings, but never addresses the people who actually live here and contribute. The chapter in the Draft Scope talks about neighborhood character in terms of traffic patterns and buildings, but people make up a neighborhood. (Murphy, CPC)

Response: As described in the *CEQR Technical Manual*, neighborhood character is an amalgam of the various elements that give neighborhoods their distinct "personality." These can include land use, urban design, visual resources, historic resources, socioeconomics, traffic, and noise. These technical areas, and whether an action would affect them, are considered in CEQR and are defined and described individually in the EIS. For neighborhood character, CEQR considers how those elements combine to create the context and feeling of a neighborhood and how an action would affect that context. Therefore, to determine an action's effect on neighborhood character, these contributing elements are considered together.

The EIS will evaluate the Proposed Project's effect on key elements of neighborhood character as defined by the *CEQR Technical Manual*, including land use, urban design, visual resources, historic resources, socioeconomic conditions, traffic, and noise. Potential changes in population, as described above, will be considered in the assessment of socioeconomic conditions related to neighborhood character.

Comment 219: The key defining characteristic of our neighborhood is that it has been a multi-racial, multi-class community for decades. Columbia's expansion plan must not render our community more vulnerable to resegregation forces by displacing poor people and people of color. (Ramos) Demographic changes must be analyzed. (CB9) New York neighborhoods (e.g., Chinatown and Little Italy) are widely seen as contributing to the character of the City. Harlem has been "the capital of Black America" for generations. This project threatens to damage neighborhoods with distinct ethnic and cultural characteristics (CPC)

Response: As noted in the response to Comment 217, the neighborhood character assessment in the EIS will use analysis procedures and impact criteria in the *CEQR Technical Manual*. An evaluation of potential changes in population will be considered in the assessment of socioeconomic conditions as they relate to neighborhood character.

Comment 220: A description of Columbia-owned property and current conditions of such property must be factored into assessment of existing neighborhood character, with conditions before acquisition by Columbia, i.e., before 2000, used as the baseline. (CB9, CPC)

Response: The Final Scope has been revised to note that the EIS will also include a summary of the land use trends in the neighborhood from 2000 to 2005 in the land use, zoning, and public policy assessment with the detailed analysis included as an appendix. This information, to the extent relevant to any impacts identified under land use, zoning, and public policy, will also be included in the assessment of neighborhood character.

Comment 221: Explain how Columbia's private security services may impact the neighborhood character. (Harlem CDC, CB9, CPC)

Response: The New York City Police Department (NYPD) would continue to patrol the streets and sidewalks, which would remain open to pedestrians and vehicular use. Columbia has stated that its private security services would be responsible for Columbia property. The neighborhood character analysis will consider the potential impact, if any, of these private security measures.

Comment 222: Include the relationship between the people on the street to their built environment (i.e., street life), not just the built environment to itself. This would include an assessment of the socioeconomic aspects of the community and how this affects the use of the environment. (Harlem CDC, CB9, CPC) There needs to be an assessment of the interplay between changes in neighborhood character and changes in socioeconomic conditions. Changes to physical and social environment of a locality affect its economic structure in many ways, and the effects often compound over time. (CPC)

Response: The Draft and Final Scopes note that the neighborhood character assessment will take into account the potential impacts on all aspects of community character drawn from several of the EIS technical analyses, one of which will be the socioeconomic conditions.

Comment 223: The EIS should include an assessment of impacts on neighborhood character and community identity from the demolition of buildings and complexes of buildings that provide historic context and continuity to the neighborhood, and the construction of new buildings that will form new block fronts and streetscapes and be occupied by new and substantially different uses. (See Task 22) (CB9, CPC)

Response: The EIS will include an assessment of impacts on historic resources and context in the assessment of neighborhood character. The assessment will also analyze the Proposed Project's effects on urban design and land use as they relate to neighborhood character.

Comment 224: There should be separate reviews in the EIS of potential impacts on neighborhood character from the proposed rezoning action and from the proposed Academic Mixed-Use Development in order to explore unintended consequences, in terms of height and bulk, that may result from the rezoning in the event that the development project is changed, or in the event that the project is aborted and the properties are developed by other owners for other uses as-of-right. (CB9)

Response: The analysis will be conducted for the entire Proposed Actions, under the terms of both the rezoning and the GPP. Given Columbia's current ownership of and investment in property within the proposed Academic Mixed-Use Area, it would be speculative to assume development under the proposed zoning for that area under conditions in which Columbia does not go forward with its development plans in the area.

NATURAL RESOURCES

See also "Waterfront Revitalization" and "Infrastructure," below, for related comments.

Comment 225: We recommend using environmentally friendly integrated pest management practices whether they are mechanical capture devices, natural pesticides (biopesticides), or chemicals that disrupt mating (pheromones). (ED)

Response: Comment noted.

Comment 226: The Draft Scope describes no more than an assessment of the natural resources; no study area is identified to put this inventory into context. (WEACT)

Response: As described in the Draft and Final Scopes, the natural resources analysis will generally assess impacts on natural resources within the Project Area and impacts on aquatic natural resources of the Hudson River in the vicinity of the Proposed Actions.

TERRESTRIAL RESOURCES

Comment 227: The EIS must include a thorough inventory of wildlife populations and habitats, and determine whether threatened or endangered species are present in and around the study area. It also must assess their sensitivity to project activities and design mitigation and alternatives that would reduce or eliminate this impact. (Chin)

Response: Existing terrestrial and aquatic habitats within the defined natural resource study areas, and the wildlife known or expected to use these habitats, will be described in the EIS. The potential for threatened or endangered species to occur within the study area defined for the natural resources assessment, and the assessment of potential impacts to these resources, will be presented in the EIS on the basis of information received from the New York Natural Heritage Program, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service. Any practicable mitigation measures will be identified for any significant adverse impacts identified in the natural resources assessment.

Comment 228: Migratory bird flight patterns in proximity to the areas of the Proposed Actions must be documented, and potential impacts arising from the height and bulk of the Proposed Actions must be analyzed. (CB9, CPC)

Response: As noted in the Final Scope, the natural resources assessment presented in the EIS will evaluate the potential for the proposed building heights to result in significant adverse impacts to migratory birds.

Comment 229: Private open space on the roof of a subterranean garage doesn't appear to be a significant habitat for flora and fauna. Explain the rationale for including it as such. (Harlem CDC)

Response: As noted in the Draft and Final Scopes, the land portion of the Project Area is currently a largely impervious surface. Therefore, it has limited existing vegetation resources and consequently provides almost no habitat for wildlife. The Proposed Project would result in an increase in landscaped areas, which has the potential to provide some habitat for wildlife. The potential for this will be assessed in the "Natural Resources" chapter of the EIS.

Comment 230: The EIS should examine the existence of a fault line in the Project Area, and any consequences that might result from construction and the conduct of Biosafety Level 3 research in a seismically active area. (CPC)

Response: The natural resources assessment will describe the earthquake potential of the New York City metropolitan region and assess the potential impacts to the environment from the operation of the Proposed Project in relationship to this potential.

Comment 231: The EIS should study the possible effects of Columbia's "bathtub foundation" on natural resources.

Response: As noted in the Draft and Final Scopes, the EIS will assess potential impacts to natural resources from the Proposed Actions. This includes any impacts from the construction and operation of the proposed below-grade facilities.

AQUATIC RESOURCES AND WATER QUALITY

Comment 232: The description of aquatic resources in the Hudson River stated in the Draft Scope should include aquatic resources not just in the vicinity of the Proposed Actions, but in the plume of water farther downstream from the project as well. (ED)

Response: The EIS will describe the aquatic resources of the lower Hudson River, which includes the portion of the river within the vicinity of the Project Area, and assess potential impacts on water quality and aquatic biota of that portion of the lower Hudson River with the potential to receive combined sewer overflow (CSO) discharges originating from the North River Water Pollution Control Plant (WPCP) drainage area and effluent from the WPCP, located north of the Project Area.

Comment 233: The EIS must make a full accounting of potential impacts to the river and mitigation strategies to reduce those impacts. This includes an analysis of the benefits of green roofs, porous paving, water-use efficiency, and other steps to cut wastewater and surface runoff. (ED)

Response: The EIS will assess the potential for the Proposed Project to affect water quality and aquatic resources of the Hudson River in the vicinity of the Project Area. Any practicable mitigation measures will be identified for any significant adverse impacts identified in the natural resources assessment.

Comment 234: On page 3, item 3 of the Draft Scope, this question is posed: "Does the directly affected area include any mapped or otherwise known wetland?" And the answer given was, "No." If New York defines wetland to include all land within

20 feet of a free-running body of water, Columbia has the responsibility to analyze its project in relation to that issue. (CPC)

Response: The natural resources assessment in the EIS will identify whether there are any tidal or nontidal wetlands or regulated adjacent areas present within the Project Area and assess the potential for adverse impacts to these resources.

Comment 235: With its plans calling for increased density, roadway and street paving, and building density and bulk, Columbia's plan is an invitation for disaster for the area's drainage and erosion control. (Chin, WEACT)

Response: The EIS will assess the potential for the Proposed Project to result in adverse impacts related to the City's combined sewer system within the drainage area for the North River Water WPCP. The EIS will address the revised drainage plan prepared for the Project Area.

Comment 236: Many low-income subsistence fishermen use the Harlem waterfront areas to fish and collect aquatic invertebrates, such as crabs, to feed their families. The Draft Scope does not address the Harlem residents' consumption of fish, which may be contaminated by the project's construction and operation. (WEACT)

Response: DEC monitors contaminant levels in fish and wildlife. The New York State Department of Health (DOH) is responsible for issuing advisories on eating sportfish and wildlife taken in New York State, because some of these foods contain potentially harmful levels of chemical contaminants. The primary contaminants of concern with respect to fish consumption (mercury, PCBs, cadmium, chlordane, DDT, dieldrin, dioxin and mirex) are generally located in bottom sediment of the Hudson River estuary. As will be described in the EIS, the Proposed Actions would require minimal in-water construction activities to allow the reuse of the existing abandoned outfall. The work would consist of removing the plate that covers the outfall, and, if necessary, patching any damaged concrete to ensure structural stability of the outfall. These activities would not have the potential to result in the resuspension of sediment contaminants into the water column or the redeposition of sediment contaminants elsewhere in the Hudson River estuary. The EIS will not address potential human health effects associated with fish consumption. The EIS will address the potential for the proposed reuse of an existing but unused outfall to discharge stormwater originating from a portion of the project site to affect aquatic resources of the Hudson River estuary. The EIS will describe the aquatic resources of the Hudson River in the vicinity of the Project Area, and assess potential impacts to these resources as a result of the Proposed Project.

Comment 237: The EIS must include a full water quality analysis, separate from the infrastructure impacts, given the magnitude of the potential sewage problem, and identify all new sources of water pollution discharge. This should

enumerate and analyze all potential point and non-point sources of water pollution as well as any pollution settlement or run-off affecting the Hudson River. (McOwen, NRDC) The EIS must also discuss how the project will affect New York City's continued compliance with EPA water quality standards. It should describe the process that will be put into place to minimize run-off and pollution of the Hudson River. The project should seek to create a zero (or reduced) waste management plan which addresses reducing runoff so it does not contribute to the waste at the North River Sewage Treatment Plant. The project should establish a means to reduce and treat its wastewater on rainy and overflow days so that the Hudson River watershed is not taxed and burdened with its overflow. (WEACT)

Response: The natural resources assessment presented in the EIS will evaluate potential effects related to the combined sewer system and North River WPCP from the discharge of stormwater and sewage generated during operation of the Proposed Project's buildings. The analysis will evaluate potential impacts to the North River WPCP and Hudson River from increased sewage flow from the Proposed Actions and other proposed projects within the WPCP's drainage area. The analysis will also evaluate potential impacts to the Hudson and Harlem Rivers due to potential changes in CSOs from the increased sewage flow from the Proposed Actions and other proposed projects within the WPCP's drainage area. The natural resources assessment presented in the EIS will also evaluate potential impacts to aquatic resources from the discharge of stormwater from the Project Area to the combined sewer system, and discuss stormwater management and erosion control measures, including the new proposed stormwater sewers, that would be implemented during construction and operation of the Proposed Project's buildings.

Comment 238: Columbia claims this area would not affect water resources although it would sit adjacent to the Hudson River. The Draft Scope should require a more comprehensive analysis of the effect of the project on natural resources. (CPC)

Response: The EIS will describe the aquatic resources of the Hudson River within the vicinity of the Project Area and assess potential impacts to these resources from the Proposed Actions.

Comment 239: Columbia's project calls for extensive landscaping of the campus, but it gives no mention of the analysis of how these activities will impact water quality of the river. Ordinarily, landscaping involves intensive pesticide and fertilizer use and introduction of non-native plant species that affect erosion and drainage patterns. However, new developments in pest management and landscaping design including use of native species can mitigate much of the negative effects. The EIS must evaluate how proposed landscaping associated with the project

will impact water quality and wildlife in the West Harlem portion of the Hudson River. (WEACT)

Response: The EIS will evaluate the potential for operation of the Proposed Actions, including maintenance of landscaped areas, to adversely impact natural resources.

Comment 240: The character and use of Columbia's 7-acre underwater facility is undisclosed in the Draft Scope. This is a major disruption in the coastline that could endanger the support system for the entire waterfront area, and encroachment and destruction of viable habitat. The EIS must provide an analysis of the impact of the underwater facility on the Hudson River and aquatic life. (WEACT)

Response: There would be no 7-acre underwater facility as part of the Proposed Actions. While 7 acres of the area to be rezoned are located in the Hudson River, no construction or associated activities would occur in the river as part of the Proposed Actions, other than the minor in-water work required to open an existing SPDES outfall, as described in response to Comment 236.

Comment 241: The EIS should investigate whether there are still subsurface streams flowing to the Hudson. (CPC)

Response: The EIS will describe groundwater resources within and in the vicinity of the Project Area and assess potential adverse impacts on these resources from the Proposed Actions.

Comment 242: The Final Scope should direct the project sponsor to detail the extent of planned construction adjacent to and underneath the Hudson River, and to fully enumerate potential adverse impacts on the river's water quality. (NRDC)

Response: See the response to Comment 240.

Comment 243: The EIS should include an analysis of the impacts from the steam and chilled water plants on local wildlife. The EIS analysis needs to study and mitigate thermal pollution and pollution from the power plant's emission fallout onto the water and air pollution impacts on aquatic plants and animals. The EIS must identify and adopt habitat mitigation processes that will ensure that the power plant itself, its operation-associated temperature changes, and its waste stream will not contribute to the further degradation of the West Harlem portion of the Hudson River. (WEACT)

Response: The EIS will assess potential impacts of the proposed central energy plants to natural resources. The Proposed Actions would not result in the discharge of water from the power plant to the Hudson River.

HAZARDOUS MATERIALS

Comment 244: In addition to consultation with secondary sources, such as the Environmental Protection Agency (EPA) and DEC, CEQR prescribes in-field surveys and personal interviews with individuals familiar with current and past uses of the property and practices thereon in order to determine the presence of hazardous material. Where significantly adverse impacts are expected, the project applicant must discuss mitigation and alternatives designed to reduce or eliminate the project's effects.

The likelihood that West Harlem residents will be exposed to hazardous materials during both construction and operation is great. Columbia's plans for determining whether hazardous materials are present on properties within the Project Area are restricted to review of secondary sources of data, such as historical fire insurance maps and databases from the EPA and DEC. The closest the study plan comes to an in-field survey is a visual inspection of the property from sidewalks and public right-of-ways. (Babish, CPC, WEACT)

The Draft Scope makes no mention of personal interviews. Constructing a narrative history of land use in the Project Area and a 1,000-foot perimeter around the Project Area (as the *CEQR Technical Manual* prescribes) will require extensive collaboration with local residents and organizations. This should be specified in the Scope. (WEACT)

Response: In conformance with the standards of the American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice, interviews will be conducted with individuals familiar with current and past uses of the property to the extent feasible as part of the Environmental Site Assessments for the Proposed Project. The Scope has been revised to note that interviews will be conducted.

Evaluation of potential hazardous material in the Project Area will include both a Preliminary Environmental Site Assessment (PESA) per ASTM Standard E1527-00 and, to the extent that access is practicable, subsequent subsurface investigation that includes the laboratory analysis of soil and groundwater samples. Where significantly adverse impacts are expected or identified (or when regulatory requirements or standard procedures would be routinely undertaken to avoid or mitigate the potential for such impacts), protocols will be presented to reduce or eliminate the Proposed Project's effects. This evaluation will be described in the EIS and submitted to the New York City Department of Environmental Protection (DEP) for review and approval.

Properties owned by Columbia would be subject to a Restrictive Declaration obligating Columbia to implement remediation before or during construction. Properties within the rezoning area not owned by Columbia would be subject to an E-designation under Section 11-15 of the New York City Zoning Resolution.

Comment 245: Columbia has been fined repeatedly by the EPA for mishandling toxic waste. Despite this, they have been granted by the EPA the right to self-audit their compliance with biohazard safety, which means that information will be taken out of the public domain, and there will be no access to the audit of biohazard safety. (Levine, M.-CB12, Gerety) Columbia's history of EPA violations should be disclosed as part of examining the "worst-case development scenario" for hazardous materials. A detailed explanation of the EPA self-audit process now being employed by Columbia for many of its facilities should be included as part of any discussion of hazardous materials use and oversight by EPA or other regulators. All reports and other audit materials generated by Columbia regarding hazardous materials should be included. Reports submitted to regulatory agencies should also be included in the EIS. (CPC)

Response: In accordance with CEQR requirements, the EIS will address hazardous material issues relative to the Proposed Project (i.e., an assessment will be made of whether the Proposed Project would lead to increased exposure of people or the environment to hazardous materials, and whether any increased exposure, should it occur, would result in any public health impacts or environmental damage). Regulations and protocols governing hazardous materials use and biohazard safety will be described in the "Infrastructure" and "Public Health" chapters of the EIS. Columbia University's record in dealing with hazardous material issues at other non-project sites is beyond the scope of CEQR review.

Comment 246: The EIS must disclose the finding of the presence of hazardous materials, both with respect to hazardous materials within buildings (e.g., asbestos and lead) and in soils. The EIS must disclose remedial measures to address such conditions and the proposed air monitoring and dust control program during remedial work—both during the initial phases of exploring the demolition and the demolition itself. (CB9, CPC)

Response: As described in the Draft and Final Scopes, the EIS will contain a full analysis of the potential for the presence of hazardous materials within buildings and in soils, and will propose remedial measures, as necessary, during project construction and operation. Properties owned by Columbia would be subject to a Restrictive Declaration obligating Columbia to implement remediation before or during construction. Properties within the rezoning area not owned by Columbia would be subject to an E-designation under Section 11-15 of the New York City Zoning Resolution.

Comment 247: The presence of hazardous materials on, in, or under any properties slated for demolition or to be left standing in the development area should be provided in the EIS. Any building that is expected to remain must be analyzed to determine the existence of contaminated materials in the exterior soils; the presence of soil vapors migrating into the building, and any interior contaminates (e.g., asbestos

and lead). The same must be done for all streets in the Project Area because Columbia is proposing to excavate under them. In the case of the Studebaker Building, where automobiles were once manufactured, an in-depth analysis must be done to assure that it is not contaminated. Because that building will be retained, any study of it must take into account that the building will be in place for many decades. The impact of potential deterioration in the future must also be considered. (CB9, CPC)

Response: See the response to Comment 244. Properties owned by Columbia would be subject to a Restrictive Declaration obligating Columbia to implement remediation prior to or during the course of construction. This Restrictive Declaration would include the Studebaker Building and the former Warren Nash Service Station building, which would remain. Remediation of spaces beneath the streets and of publicly owned lands will be enforced through agreements or declarations with ESDC and other relevant agencies.

Comment 248: The results of the hazardous materials study, and all others involving hazardous materials, should be presented to the community well before any formal land use actions are taken, and a special hearing on this matter should be held before the EIS report is filed. (CPC)

Response: The results of the hazardous materials studies will be presented in the DEIS. The Proposed Project will undergo extensive public review as part of the City's ULURP and environmental review under CEQR procedures. Both of these processes entail public review by the affected communities and mandate public participation opportunities. Following publication of the DEIS, the 7-month ULURP process for the project will include multiple opportunities for public comment and input, including public hearings held by CB9, the Manhattan Borough President, and the City Planning Commission, as well as the public hearing to be held by the City Council following publication of the FEIS. The public is invited to review and comment on the DEIS either in writing or at the public hearing to be held by the City Planning Commission.

Comment 249: The Draft Scope's definition of hazardous materials avoids all issues pertaining to hazards associated with the proposed biotech center. The transport of biological and hazardous materials from proposed research facilities to other Columbia University facilities and other sites should be examined as well, and possible repercussions of all "worst-case scenarios" should be analyzed in the context of a densely populated urban residential community which reaches far beyond the proposed expansion area. Methods of transportation and routes must be identified and impacts—from an accidental release during transport—must be made measured and mitigation identified. How these mitigation measures would be enforced over time should also be addressed. (CB9, CPC)

Response: As described in the Final Scope, applicable regulations governing the management and transportation of hazardous materials and waste related to the proposed academic research facilities will be discussed in the "Public Health" chapter of the EIS. Moreover, transportation practices and applicable regulations for various laboratory materials associated with the proposed academic research facilities will be described in the EIS. A description of the use, storage, transportation practices, and disposal practices of laboratory materials will also be included in the "Public Health" chapter of the EIS. This analysis will include descriptions of procedures to be followed in case of accidental spills. As described in the Draft and Final Scopes, the air quality analysis will address the potential for impacts from accidental laboratory spills associated with the academic research facilities.

Comment 250: The state of preparedness by City, State, and federal emergency agencies is another element that needs to be addressed. The proximity of the proposed biotech center to a water treatment plant and a river should be analyzed too. The potential for access to hazardous materials by terrorists and the vulnerability created in securing hazardous materials must be considered in the EIS. (CPC)

Response: Federal, State, and City regulatory requirements applicable to Columbia University's activities, including those under the USA Patriot Act, will be discussed in the EIS. Security measures beyond regulatory and statutory requirements associated with anti-terrorist activities are the responsibility of law enforcement and other agencies, and are beyond the scope of CEQR analysis. However, Columbia has met with, and will continue to meet with, NYPD, FDNY, and other government agencies on security issues.

Comment 251: The EIS must consider not just oil leaks from car repair, but all different groups of a state that pathogens can take from these facilities in an area which the EPA itself says has a million people in the immediate surroundings. (DeMott, Eisenberg)

Response: The EIS will address all types of known and potential contaminants associated with the Project Area resulting from all types of past on-site operations.

Comment 252: The Studebaker Building was formerly an automobile factory. That entire area has been a heavy industry area at one time or another. There are also three gas stations that would be displaced under the Columbia plan; gas stations are known to have leaking underground storage tanks. There needs to be extensive soil and groundwater testing. (Ramos)

Response: As described in the Draft and Final Scopes, if the potential for contamination is found in the PESA, then surface and subsurface investigations will be conducted to confirm the presence and extent of the contamination. The protocol for this

testing is outlined in the Final Scope, and the results of this testing will be included in the EIS.

Comment 253: Include analysis of wastes generated from the bus depot and the existing Con Edison substation. (Harlem CDC)

Response: Information regarding wastes generated at the bus depot and existing Con Ed substation was included in the ASTM E1527-00 (Phase I) evaluation required under CEQR.

Comment 254: If the centralized steam and chilled water plants would create hazardous materials, explain how they would be handled and disposed of. (Harlem CDC)

Response: The potential for and management of hazardous materials from all proposed facilities will be evaluated as part of the hazardous materials assessment in the EIS.

Comment 255: The EAS refers to proposed storage tanks—gas or storage stations. There is no reference in the Draft Scope to these. Please clarify. Where would they be? How large? What would they be used for? (Harlem CDC)

Response: The hazardous materials analysis in the EIS will describe proposed fuel oil storage locations to the extent feasible. No gas or storage stations are anticipated.

Comment 256: Related to construction, the Draft Scope fails to explain how Columbia will determine whether a source of contamination is significant or what strategies it will use to identify the steps that will need to be taken in order to contain or eliminate contamination. (WEACT)

Response: Evaluation of hazardous materials in the EIS will be conducted in accordance with the *CEQR Technical Manual*, i.e., based on the PESA and the subsequent subsurface investigation, which will include the laboratory analyses of soil and groundwater samples. The determination of significance will be based on levels and extent of contamination identified, potential for exposure, etc. Contaminants identified will be remediated (cleaned up) as part of the Proposed Project. Contaminated soils, historical fill, and demolition debris would either be disposed of off-site in accordance with all applicable regulations, or capped (covered by a building, paving, or other impervious material). Potential impacts during construction and development activities would be avoided by implementing a construction health and safety plan (CHASP). The CHASP, which would be reviewed and require approval by DEP, 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. Following construction, any remaining

contamination would be isolated from the environment, and there would be no further potential for exposure.

Comment 257: The Draft Scope neglects to describe how necessary excavations will be conducted to minimize exposure of community residents and on-site workers to hazardous materials. (WEACT)

Response: The Final Scope has been revised to reflect that potential impacts during construction and development activities would be avoided by implementing a CHASP. The CHASP, which would require approval by DEP, would be based on the results of subsurface testing (soil and groundwater analyses).

Comment 258: Would any Columbia-owned property require E-designations? (Harlem CDC, CPC)

Response: Under Zoning Resolution Section 11-15, E-designations for hazardous materials can apply only to properties not under the control of the project sponsor. Subsurface investigations will be conducted on Columbia-owned properties to determine the extent of hazardous or contaminated materials, and the remediation, as appropriate, that will be required in a Restrictive Declaration and undertaken in accordance with DEP approval. A Restrictive Declaration is recorded against the real property and requires that the property owner enter into a sampling and/or remediation agreement to be approved by DEP as a prerequisite to soil disturbance.

WATERFRONT REVITALIZATION PROGRAM

See also "Natural Resources," above, for related comments.

Comment 259: Under Discretionary Actions Subject to CEQR and SEQRA on page 2, the Draft Scope does not identify that a Local Waterfront Revitalization Program (LWRP) consistency finding must be made by the City Planning Commission acting as the City Coastal Commission. (See *CEQR Technical Manual*, Section 721, p.3K-12) (CB9)

Response: As clarified in the Final Scope, the EIS will include the coastal zone consistency determination from the City Planning Commission as an additional City action required for the Proposed Project.

Comment 260: In relation to the Waterfront Revitalization Program (Task 13), the Draft Scope simply states that "the Project Area is located within the designated boundaries of New York City's Coastal Zone (see Figure 13). The Proposed Actions will, therefore, be reviewed, as appropriate, for consistency with the LWRP. The study area for the LWRP evaluation will be the designated Coastal Zone boundary." The language should be changed to: "The Proposed Actions will,

therefore, be reviewed, as specified in the Waterfront Revitalization Program and in the *CEQR Technical Manual*, Chapter K, for consistency with the LWRP." (CB9, CPC)

Response: The Scope has been amended to include the language suggested in this comment.

Comment 261: The Draft Scope should make it clear that while the actions under LWRP review are those applicable to the Coastal Zone, the area of analysis of potential inconsistency may be larger than the Coastal Zone and will vary according to each LWRP policy (and issue it addresses), with each of the relevant study area boundaries reflecting those required for analyses in related technical areas in the EIS "The study area may have to be enlarged for certain proposed actions to include resources that are part of a larger environmental system...." (*CEQR Technical Manual*, Section 310, p.3K-4) (CB9)

Response: As clarified in the Final Scope, the waterfront revitalization analysis will draw from various impact analyses throughout the EIS, as relevant. These impact analyses will have different study areas, reflecting the requirements of each analysis.

Comment 262: The Draft Scope should also make it clear that the LWRP review will fully identify and describe all of the impacts identified in the other technical areas that relate to LWRP policies and, where they represent inconsistencies with LWRP, will specify how those inconsistencies will be mitigated. In addition, relevant other technical analyses should be cross-referenced, and analysis of the LWRP should refer to these other sections of the environmental assessment. (*CEQR Technical Manual*, Assessment Methods - Sections 300 and 322, pp.3K-4 and 3K-5). The *CEQR Technical Manual* further stipulates: "Because the LWRP review considers the many laws affecting the coastal area, consideration of an action's consistency with the LWRP typically requires a comprehensive assessment, which also includes synthesis of different technical areas described in this Manual. Therefore close coordination with the other technical areas will be needed. The analysis of each of these technical areas such as natural or air resources, and use and zoning, or historic resources, is summarized and presented in this chapter as it relates to LWRP policies." (*CEQR Technical Manual* Section 300 page 3K-4) and "...mitigation of a significant adverse impact related to the LWRP may require coordination with other technical analyses. Mitigation measures may include those described in Section 500 of the different chapters of this Manual." (*CEQR Technical Manual*, Section 500, p.3K-li) (CB9)

Response: See the response to Comment 261.

Comment 263: The EIS should consider the following LWRP policies, which are of particular concern. They include, but are not limited to:

1. Policy 2.2 B: "Support continuation of industrial uses outside SMIA's that are well located relative to customers and delivery networks and adequately buffered from surrounding residences." (Related to the socioeconomic conditions technical area)
2. Policy 4.1 E: "Protect designated Significant Coastal Fish and Wildlife Habitats from land or water uses which would...destroy habitat values associated with the designated habitat through direct physical alteration, disturbance, or pollution or indirect effects of actions that would result in a loss of habitat..." The Hudson River is a Significant Coastal Fish and Wildlife Habitat. (Related to the natural resources technical area)
3. Policies 5.1 and 5.2: "Protect and improve water quality in the New York City coastal area." (Related to the natural resources technical area)
4. Policies 7.1, 7.2 and 7.3: "Minimize environmental degradation from solid waste and hazardous substances" (Related, but not limited to, the hazardous materials, solid waste, air quality, infrastructure, construction impacts, and natural resources technical areas)
5. Policy 8.2: "Encourage the development and maintenance of high-quality public spaces in appropriate locations, particularly those that would facilitate connection of existing public access spaces...." Of particular significance is the relationship of the proposed open space to the West Harlem Waterfront park, specifically those elements endorsed by the Community Board, and the impact on the park of the tall buildings proposed for the east side of Twelfth Avenue. (Related to the open space, urban design, and shadows technical areas)
6. Policy 9: "Protect scenic resources that contribute to the visual quality of the New York coastal area" (Related to the neighborhood character, urban design and visual Resources, shadows, and historic resources technical areas)
7. Policy 10.1 A and C: "Retain and preserve designated historic resources and enhance resources significant to the coastal culture of New York City." The Riverside Drive viaduct from Tiemann Place to West 135th Street has been declared eligible for the State/National Registers of Historic Places. (Related to the historic resources, neighborhood character, urban design and visual resources, and shadows technical areas) (CB9, CPC)

Response: As noted in the Final Scope, the EIS will consider the above-mentioned policies.

Comment 264: Explain how a 70-foot-deep basement in a coastal zone is consistent with coastal zone policy. (Harlem CDC)

Response: The EIS will assess the consistency of the Proposed Actions, including the above- and below-grade components of the Academic Mixed-Use Development,

with the Waterfront Revitalization Program, as well as other aspects of the Proposed Project located within the coastal zone.

Comment 265: The EIS should consider the impacts of the development of a superblock in Subdistrict A (with potential restricted access) on public access to and use of the new West Harlem Waterfront park. The EIS must analyze and address if Columbia's project will in effect privatize the pier project by isolating the park within a private and exclusive development, essentially turning it into a recreational space for the University community. Access to the shoreline and to recreational space is critical to Harlem because of the shortage of park space and therefore, any increase of diminution in access is more significant that it would be elsewhere. (CB9, CPC)

Response: As described in the Draft and Final Scopes, no superblock is proposed in Subdistrict A or in any other part of the rezoning area; further, all streets and sidewalks would remain open to pedestrian and vehicular use. The EIS will describe the improvements to access to the Hudson River waterfront, including the West Harlem Waterfront park, for users within the study area as a result of the Proposed Actions.

Comment 266: What legal protections are in privately owned public streets to prevent closing of streets in areas that would impede access to the waterfront? (Dunn, Eisenberg) Columbia may request closure of the streets leading to the waterfront in the future to maintain security of its campus. Assess the impact that street closure would have on the coastal management and waterfront revitalization programs. (Harlem CDC)

Response: No private streets are proposed in Subdistrict A or in any other part of the rezoning area. All streets within the Project Area would remain open and public.

Comment 267: Although the *CEQR Technical Manual* provides extensive guidelines to determining whether a project will have a significant impact on the Local Waterfront Revitalization Program (LWRP) and the City's natural resources, Columbia only states that it would study its own development plan to determine consistency with the LWRP. The Draft Scope does not describe what plans will be developed in order to allow Columbia to comply with the LWRP and how these plans will be implemented. (WEACT).

Response: As discussed in the response to Comment 261, the EIS will incorporate the results of the analyses from other resources areas (e.g., natural resources, cultural resources, infrastructure, hazardous materials, solid waste, etc.) into the analysis of consistency with the Waterfront Revitalization Program. Where appropriate, the EIS will describe measures to be included in the Proposed Project to maintain consistency with the Waterfront Revitalization Program.

Comment 268: The Draft Scope does not address how it will determine structural integrity of the Harlem Piers in order to support both the waterfront that the community has worked so hard to build and Columbia's planned development—which includes extensive build-up of the area around the waterfront. Importantly, Columbia must address the impacts of the project's construction activity on the integrity of the piers, particularly with the extensive excavation that will be required in order to install the planned underground service facilities. (Chin, WEACT)

This is a major but critical undertaking that cannot be completed without extensive planning and coordination with the DEC and the Army Corps of Engineers. Therefore, Columbia's impact on the structural integrity of the waterfront cannot be determined until it releases detailed plans.

Response: The Academic Mixed-Use Area, which would contain the facilities proposed as part of Columbia's expansion, is located east of Riverside Drive and would be separated from the waterfront by Subdistrict B. Therefore, the proposed development of the Academic Mixed-Use Area would not affect the integrity of existing or proposed piers located west of Marginal Street, and the EIS will not include an assessment of potential impacts to the structural integrity of waterfront structures.

Comment 269: The Hudson River waterfront is described in the document as both neglected and regenerating. It is also referred to as a parking lot, when it is actually being developed as a new waterfront park, an extension of the Hudson River greenway. Please clarify. (Harlem CDC)

Response: The EIS will describe the current condition of the waterfront, including the site of the West Harlem Waterfront park, and the condition of the waterfront in the future following park completion. Potential impacts on the resources that will be developed within the waterfront park will be assessed as part of the EIS.

Comment 270: In reference to Task 13, Waterfront Revitalization Program, the Draft Scope needs to explain how the development will be compatible with and support the West Harlem Master Plan, both during construction and when the campus is complete. The University should ensure that its vision helps advance the vision of the Harlem on the River Plan prepared by WEACT and CB9. Inconsistencies with the West Harlem Master Plan should be explored in the EIS. (ED, NRDC)

Response: The EIS will discuss the relationship of the Proposed Actions to the West Harlem Master Plan and consider the consistency of the Proposed Actions with the West Harlem Master Plan under "Land Use, Zoning, and Public Policy."

Comment 271: The Final Scope and EIS need to detail how public access to the waterfront park will be impacted during the 25-year construction period as well as after the project is complete. (NRDC)

Response: The Scope has been revised to provide more information on conditions during the construction period, including construction of the below-grade space. The EIS will contain more detail and analysis, including discussion of provisions for continuous access to the waterfront during construction. As noted in response to Comment 265, after construction is completed, all streets would remain public and would be open for access to the waterfront park.

Comment 272: Although not required in the *CEQR Technical Manual*, determination of the action's consistency with the LWRP should consider the action in comparison, not only to the no action condition but also to the 197-a Plan alternative. (CB9, CPC)

Response: The alternatives analysis of the 197-a Plan will consider the effect of development under the 197-a Plan on consistency with the LWRP, in order to permit a comparison with the Proposed Actions.

Comment 273: A power plant is inconsistent with our waterfront revitalization. (Ramos)

Response: As noted in the Final Scope, the Proposed Actions do not include a power plant. Instead, Columbia is proposing two central energy plants to handle the heating, ventilation, and air conditioning (HVAC) needs of the development west of Broadway between West 129th and West 133rd Streets. Other properties in Subdistrict A would have individual HVAC systems.

INFRASTRUCTURE

See also "Natural Resources," above, for related comments.

GENERAL COMMENTS

Comment 274: The EIS needs to describe specifically what is being planned underground and above ground. The EIS needs to analyze how these plans will affect public utility service to the community in the short and long term. (Dunn, Eisenberg)

Response: The EIS description of the below-grade space will reflect advances in the project planning since the Draft Scope, as well as the above-ground improvements contemplated as part of the Proposed Actions. As noted in the Scope, the infrastructure analysis will address demand for and provision of utility services in the Project Area and utility service areas in the short term, when some relocation would be required, and over the long term, with the demand from the new development added to current demand.

Comment 275: The impacts due to relocation of utilities due to subgrade construction must be analyzed. (CB9, CPC)

Response: As noted in the Draft and Final Scopes, the EIS will describe the utilities to be relocated and address the maintenance of services to the neighborhood during the relocation.

Comment 276: If the centralized steam and chilled water plants would create hazardous materials, explain how they would be handled and disposed of. (Harlem CDC)

Response: The potential for creation of hazardous materials from the proposed central energy plants will be assessed in the EIS. The disposal of wastes from the plants will be described in the EIS.

Comment 277: Columbia should live up to its self-proclaimed role as a leader in civic, social, and technological innovation by constructing their new facilities within the LEED guidelines and/or using green design and building principles. (Jordan-CB9, McOwen, ED, NRDC, WEACT) Columbia's EIS should evaluate the full benefits of following high-performance building standards. This should include an analysis of the long-term environmental benefits and cost savings from a full range of high-performance modifications, such as efficiency gains that would allow for the use of cleaner, smaller heating or energy systems. (ED, McOwen, NRDC)

Response: Columbia has stated that it is studying the feasibility of incorporating a number of high-performance building standards and green design into its new buildings. To the extent that these are known at the time of the EIS, the environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the buildings will be described in the EIS.

Comment 278: All permanent non-lab buildings should meet the silver standard of the LEED standards, and its lab buildings should follow the EPA's Lab 21 program, which is a rating system based on the LEED standards specifically for laboratories. (Rosenfeld, ED)

Response: Columbia University has stated that it is developing new energy and environmental design guidelines, which will incorporate many elements of the latest developments and published guidelines, including LEED and Lab 21. Environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the buildings will be described to the extent they are known at the time of the EIS.

Comment 279: Columbia should include top-tier green design commitments in all elements of campus design, from buildings to transportation infrastructure and landscaping. For instance, Columbia should demonstrate strong commitments to energy efficiency and the use of clean sources of energy. Incorporating solar, geothermal, or wind sources into building designs makes financial and

environmental sense, and new technologies are increasingly available that allow great flexibility in design. Designing buildings so that they require minimal heating and cooling, and using efficient heating and air conditioning systems, for example, can achieve substantial energy and cost savings. (ED) The guidelines must cover all major resource issues, such as energy, air, and water, and should meet at least the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standard for developing high-performance, sustainable buildings. (NRDC)

Response: Environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the buildings will be described to the extent they are known at the time of the EIS.

Comment 280: WEACT and Environmental Defense have collaborated in drafting the Health and Urban Environmental Guide for Developers (HUEGD), and environmental guidance of sorts that describes environmentally friendly and sustainable building principles. The HUEGD also makes recommendations for energy efficient building materials and equipments and resources for their acquisition. (WEACT).

Response: Comment noted.

WATER

Comment 281: Under SEQRA, a water supply permit is necessary whenever a project proposes to acquire, take, or develop any new or additional source of water supply in connection with an existing water supply. The Draft Scope does not mention that it will have to apply for a water supply permit from the DEC, a process that will require disclosure of the uses the water will be put to and the intensity of that use. (WEACT)

Response: The proposed buildings would use City water supply, so a permit from DEC would not be required.

Comment 282: The Draft Scope neglects to explain exactly what the "additional water demand" would be (e.g., how many residents and workers will be added to the project) and what the existing condition is or how Columbia will determine either of these parameters. (WEACT)

Response: The projected water demand from residents and workers at the Proposed Project will be quantified in the EIS.

Comment 283: The Draft Scope must be revised to include a detailed discussion of mitigation mechanisms such as water conservation and reclamation measures. (WEACT)

Response: Practicable mitigation mechanisms will be discussed in the EIS if a significant adverse impact is identified. To include them in the Draft Scope would be premature. Water conservation and reclamation as contemplated for the Proposed Project will also be described in the EIS.

SANITARY SEWAGE

Comment 284: The existing capacity of the North River WPCP must be documented for both dry and wet weather conditions, along with its capacity in both Build years—for both the Build and No Build 197-a Plan conditions, and available fixture capacity beyond each of the Build years. The future baseline condition must identify influents from the Riverside South and Hudson Yards projects and their impact on treatment and capacity. The impacts to the North River WPCP from in-sink garbage disposal units must be analyzed for each Build year, using the percentage of the use of such units in other municipalities in the United States where such an option currently exists as a baseline. (CB9)

Response: The latest 12 months of flows to the North River WPCP will be used in the analysis of sewage from the Proposed Project in the EIS. The future flows to the WPCP will be projected using an analysis prepared by DEP. The information from DEP will include the effects of other development proposed for the WPCP service area and the effects of in-sink garbage disposal units.

Comment 285: According to the DEP records, the North River WPCP is operating at a capacity that is reflective of the 2000 Census data, which right now would be somewhat obsolete. The population of upper Manhattan contains an additional 40,000 to 60,000 persons who are undocumented.

North River handles sewage from CB9, CB12, and CB7. A community board roughly has about 110,000 persons per district using facilities. This data does not account for the many residents who live in our community.

North River handles or treats roughly 130 million gallons of raw sewage daily. The potential for this plant to add additional sewage will cause a major environmental health hazard. North River at present is operating at or near capacity. During winter or rainy seasons, the plant shuts down and the sewage then runs untreated into the Hudson River. Furthermore, the Draft Scope does not account for the incomplete development of Trump City Riverside, all of which will be connected to North River.

Unless there is talk about expanding North River, or if Columbia plans to build its own sewage treatment plant, it is not feasible to connect the new development to an already overtaxed and overburdened North River Sewage Treatment Plant. There should be a moratorium put in place on any new hazardous pollution-causing development and/or expansions in this area. (Perez, C.-CB9, Lee, McOwen, Charles-Guzman) Include a discussion of how the

Hudson River would be impacted by increased pressure on the combined sewer system. (Harlem CDC, McOwen, NRDC, CPC)

Response: The Final Scope has been revised to note that the latest 12 months of flows to the North River WPCP will be used in the analysis of sewage from the Proposed Project in the EIS. The future flows to the WPCP will be projected using an analysis prepared by DEP. The compliance of the North River WPCP with its permit requirements, which are protective of the Hudson River water quality, will be disclosed in the EIS. The effect of the Proposed Actions' reasonable worst-case development scenario on CSO and stormwater discharges to the Hudson River and sewage flows to the North River WPCP, and the ultimate impact of these changes on water quality in the Hudson River, will be assessed using hydraulic and water quality models.

Comment 286: The Draft Scope neglects to discuss the project's impact on the City's sewage system. The Draft Scope states that the EIS would "discuss" existing and anticipated demand on the City's sewage and stormwater management systems without giving any detail on how that demand would be analyzed or what impact the increased demand would have. (WEACT)

Response: The Proposed Project's potential adverse impacts on the sewerage will be analyzed and disclosed in the EIS, using the methodology of the *CEQR Technical Manual*. See the response to Comment 285.

Comment 287: Water quality in the Hudson River should be protected by reducing the burden on local sewage infrastructure. Using permeable asphalt, for instance, could result in less runoff of toxic substances and, therefore, reduce the burden on the local wastewater treatment plant. Columbia should also study the feasibility of installing a gray water recycling system to conserve freshwater. (Rosenfeld) The Final Scope should require the exploration of creative mitigation techniques, such as the use of permeable asphalt to limit run-off, in its analysis. (NRDC) Columbia could reduce its burden on local sewage infrastructure by minimizing impervious surfaces, using permeable surfaces for paths and parking, building green roofs, installing a rain water harvesting and gray water recycling system, and constructing catchment basins. Taking into consideration that the incremental impact of this project on the City's water system will be significant, Columbia should make a commitment to install the most efficient water appliances. (ED)

Response: Environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the Proposed Project will be described to the extent they are known at the time of the EIS. Any practicable mitigation for any significant adverse impacts disclosed in the EIS will be identified as necessary.

LIQUID LABORATORY WASTE

See also "Hazardous Materials," above, and "Public Health," below, for related comments.

Comment 288: The Draft Scope fails to discuss how Columbia plans to study and implement plans for reducing the amount of hazardous materials and waste it will generate during its operations. (WEACT)

Response: The laboratory waste, which requires special handling, and the methods used to handle, transport, and dispose of these wastes will be described in the EIS.

Comment 289: Columbia needs to maintain a concise declaration about the type of research that will be undertaken at the proposed facilities. There is concern about the research facilities located in close proximity to I.S. 195 and 3333 Broadway, which has thousands of families living in it. There is concern that Columbia would change the type of research it would conduct in its buildings many years after the approval. (Lee)

Response: With the exception of the academic research building on Site 2 that would be developed in the first phase of development, which would house the Jerome L. Greene Science Center for Columbia's Mind, Brain and Behavior initiative, the precise areas of academic research that are currently contemplated for the proposed Manhattanville university area cannot be identified at this time. Any other types of academic research that may be developed many years from now are not known and thus cannot be addressed in the EIS; however, any future types of research would be conducted in accordance with applicable safety standards. See also the response to Comment 290.

Comment 290: The Draft Scope did not contain the full impact of the hazards of biological research, especially above levels 2, 3, and 4. (Danesh, Zapata, CPC) Include in the hazardous materials analysis the Proposed Project's introduction of such materials (i.e., biomedical waste, liquid wastes from the research laboratories) into the area. What is proposed to take place in the biomedical research labs, and how would those wastes be disposed of? (Harlem CDC, CPC)

Response: Columbia University currently does not operate a laboratory at Biosafety Level 4 and would not operate a Biosafety Level 4 laboratory at the proposed Manhattanville university area. Since the precise areas of research to be undertaken at the proposed Manhattanville university area cannot be identified at this time, Columbia currently does not have plans for a Biosafety Level 3 laboratory. However, the EIS assumes that there would be one or more Biosafety Level 3 laboratories, and a description of the biological materials handled and the required laboratory practices and equipment for Levels 1 through 3 will therefore be included in the EIS. The transport, handling, use, storage, and disposal of the materials associated with this type of laboratory will

be discussed. The safety and security measures that would be implemented at such facilities will also be presented.

Comment 291: We suggest that Columbia, in consultation with CB9, include community members on its institutional research review board for bioresearch. Additionally, the University should create a community biohazards committee to assess the risks of current or proposed biohazard research. (ED)

Response: Comment noted.

Comment 292: The new research facilities, including a level 3 laboratory, will handle hazardous bacteria, viruses, and pathogens that are primary targets for terrorism. This poses added risks given that the area is on an active fault line and near a river. Columbia needs to discuss and propose more detailed analysis of this. (Eisenberg, Prakash, Sutton, Gayer, CPC)

Response: Columbia University has instituted policies to meet the requirements of the USA Patriot Act as it applies to their laboratories and the materials found in the laboratories. Security measures associated with terrorist activities are the responsibility of law enforcement and other agencies and are beyond the scope of CEQR analysis. See also the response to Comment 290.

Comment 293: The EIS should describe and assess other biotech labs in the City and examine accident reports from other biotech labs in the country. (Zapata, CPC)

Response: Other biotech laboratories in New York City are not part of the Proposed Project. See also the response to Comment 290.

Comment 294: The proximity of the proposed biotech center to a water treatment plant and a river should also be analyzed. (CPC)

Response: Columbia University's policy of prohibiting the disposal of chemicals into the City's sewer system would be instituted and enforced at the proposed Manhattanville university area. A detailed discussion of the transport, handling, use, storage, and disposal of the materials associated with the types of laboratories contemplated at the Manhattanville university area will be included in the EIS. See also the response to Comment 290.

Comment 295: The state of preparedness of City, State, and federal emergency agencies should be addressed. (CPC)

Response: The role of emergency response agencies in addressing spills or accidents that could pose a public hazard will be described in the EIS.

SOLID WASTE AND SANITATION SERVICES

Comment 296: Where will the waste from demolition of existing buildings be deposited? (Shiffman-CB9)

Response: Disposal of demolition materials will be in accordance with all applicable requirements, as will be discussed in the "Construction" chapter of the EIS.

Comment 297: Columbia should specify how solid waste is going to be transported within the campus (i.e., if the underground factory area is going to be used for such purposes) and try to minimize impacts (e.g., using electric modes of transportation and alternative fuels for trucks). In any case, Columbia should minimize the use of trucks to transport its waste. Columbia should support the reopening of the 59th Street Marine Transfer Station under the Mayor's Solid Waste Management Plan for the City to send commercial waste there, or support the reconstruction of rail facilities along the West Side. (ED)

Response: Comment noted. An analysis of disposal of solid waste from the Proposed Project will be described and quantified in the EIS.

Comment 298: Columbia should study the composition of its solid waste stream and analyze an advanced way to reduce it. (Rosenfeld) The amount of waste generated could support a cost-effective recycling program as well as other initiatives of waste reduction. It should support a community-based pilot project or educational activities focusing on waste prevention and reduction. (ED)

Response: The recycling programs that are contemplated as part of the Proposed Project will be described in the EIS.

Comment 299: The Draft Scope states that it considers the worst-case scenario for waste management to be a maximum residential build plan and will study its impacts in this area accordingly. However, out of a 7.3 million square foot development, only 700,000 square feet maximum will contain residential uses. Considering the waste generation capability of the current "take-out" culture of restaurant businesses and research laboratories alone, these uses could outpace the waste generation rates of any residential use. Therefore, Columbia must identify and study plans for managing the waste that will be generated as a result of its expansion development, including the waste resulting from the business ventures that will exist there. This may entail a preliminary comparison of the waste generation rates of different project components and intended uses in order to identify the worst-case scenario of solid waste disposal. The EIS should not call the maximum residential uses its "worst-case" scenario and analyze the impact with no further explanation for its decision. (WEACT).

Response: As noted in the Scope, the analysis in the EIS will be based on a potential program that would generate the greatest amount of solid waste. As described in Table 3 of the Draft Scope and Table 2 of the Final Scope, the maximum amount of housing for graduate students, faculty, and other employees in the Academic Mixed-Use area would be 1.3 million square feet, not 700,000 square feet. Based on the solid waste generation rates in the *CEQR Technical Manual*, in general the uses that would generate the most solid waste would be active ground-floor uses and housing for graduate students, faculty, and other employees. The reasonable worst-case development scenario for the solid waste analysis will comprise a 6.8-million-square-foot scenario in the Academic Mixed-Use area that assumes maximum housing and active ground-floor uses plus other major generators of solid waste included in the Proposed Actions.

Comment 300: The Draft Scope should specify how Columbia is planning to deal with its paper and metal-glass-plastics streams. It should also contemplate the possibility of establishing a program, especially during its demolition and construction phase, for the reuse of building materials, or build a "recovery center" for disposed materials that could be used by others in the community. (ED)

Response: The recycling programs that are contemplated as part of the Proposed Project will be described in the EIS. Disposal of demolition materials will be in accordance with all applicable requirements, as will be discussed in the "Construction" chapter of the EIS.

Comment 301: Organic waste should be separated from the regular waste stream, and Columbia should study the feasibility of building an anaerobic digester as other large developments have done recently in New York City. (ED)

Response: The recycling programs that are contemplated as part of the Proposed Project will be described in the EIS.

Comment 302: The EIS should analyze the impact of Columbia's proposed Manhattanville development on requirements for a zero-waste zone in the CB9's 197-a Plan. (See CB9's 197-a Plan, p 77) (CB9, CPC)

Response: The recycling programs that are contemplated as part of the Proposed Project will be described in the EIS. The concept of the zero-waste zone as a goal of the 197-a Plan will be discussed in the "Alternatives" chapter of the EIS.

Comment 303: Columbia should develop rules requiring their contractors and commercial retailers to use less packaging in their products and services. (ED)

Response: Environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the Proposed Project will be described to the extent they are known at the time of the EIS.

ENERGY

Comment 304: Columbia should commit to having a percentage of its energy supply be from renewable energy sources, such as wind or solar energy. (NRDC) The University should rise to the challenge and build the greenest development New York City has ever seen. (McOwen) Columbia should demonstrate strong commitments to energy efficiency and the use of clean sources of energy. Energy-efficient EPA Energy Star appliances will save energy. Additionally, using day lighting wherever possible will require less energy for electricity. Green roofs could also be used to increase the energy efficiency of buildings and reduce the heat island effect and stormwater runoff. Green roofs also purify the air by taking in dust and air pollution, absorb noise pollution, and are aesthetically pleasing. (ED) Columbia should refine and exceed the LEEDS platinum standard in all the buildings that they rehabilitate and/or construct. The EIS must analyze energy conservation measures for the construction of Columbia's proposed developments, including the use of green building materials, energy-efficient building equipment, and incorporation of the substantive requirements of LEED platinum standards, without regard to formal application in Columbia's structures. Green measures to reduce energy consumption should be assessed against specific targets/goals standards. (CB9, CPC)

Response: As noted in the response to Comment 278, Columbia has stated that it is currently studying the feasibility of incorporating a number of high-performance building standards and green design into its new buildings. To the extent that these are known at the time of the EIS, the environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the buildings will be described in the EIS.

Comment 305: The Draft Scope describes "green measures to reduce energy consumption," which needs to be clarified. The Columbia campus should include energy-efficient buildings that use materials that are good insulators, have energy efficient appliances, and use daylight instead of artificial lighting. (Rosenfeld)

Response: Environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the Proposed Project will be described to the extent they are known at the time of the EIS.

Comment 306: Local electrical distribution networks must be analyzed to assess their capacity to handle the additional electrical load associated with the Proposed Actions. (CB9)

Response: As noted in the Draft and Final Scopes, the effect of the Proposed Project on energy demand will be analyzed in the EIS. As a regulated monopoly that delivers energy to consumers, Con Edison is required to be able to supply

electricity to all customers. As a matter of course, before construction of a building commences, the construction manager approaches Con Edison with the electrical loads and demand of the new building. This occurs when the building is fully designed, and its electrical loads and demand are completely defined. With this information, Con Edison then analyzes its local distribution system to determine if the system is adequate or if it needs to be changed or reinforced. Con Edison must make any necessary changes so that the system can reliably deliver the electricity.

Comment 307: The Draft Scope provides no discussion of the project's energy needs, not even a description of the structures or activities that will require energy inputs, and certainly no analysis of the impact that the project will have on the City's energy supply—for any energy type or source.

The document makes broad and vague statements about the components of its EIS assessments, discussing undefined terms such as "green measures to reduce energy consumption" and "new demands" that will be studied. The only specific use identified in the Draft Scope is the centralized steam and chilled water plants. Even the description of that facility is deficient because it provides no information on the number of residential, research, or office units that the facility will serve, or how Columbia plans to study its energy consumption, efficiency, or mitigation

Columbia must detail its anticipated average and peak energy needs, the uses that this energy will be required for, the types of fuel that will be used to satisfy this need, and the impacts this will have on the City's energy supply.

Columbia must study how it plans to mitigate this effect, including an assessment of green building and landscaping designs and materials. (Embola, Prakash, WEACT)

Response: The demand for energy from the Proposed Project will be quantified in the EIS, and any adverse impacts on the energy generation and delivery systems will be described. Environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the Proposed Project will be described to the extent they are known at the time of the EIS.

Comment 308: According to the Draft Scope, Columbia plans to lessen its impact on the City's electric power capacity by constructing a cogeneration plant in order to generate its own electricity. If Columbia indeed plans to construct a power cogeneration facility, it will need to disclose this fact, describe the plan with specific details, and analyze the plant's environmental impact, include the increase in chemical and thermal pollution output into the Hudson River and degradation of West Harlem's air quality and public health. (WEACT)

Response: The cogeneration plant is not proposed as part of the Proposed Project, and will be considered as an alternative in the EIS. The Final Scope has been revised to

reflect this change. The Proposed Project would contain two central energy plants to handle the HVAC requirements of buildings in Subdistrict A west of Broadway between West 129th and West 133rd Streets. All other buildings in Subdistrict A would have conventional on-site HVAC plants. The EIS will analyze relevant potential adverse impacts from the Cogeneration Plant Alternative in the "Alternatives" chapter.

Comment 309: It is very disturbing that Columbia has proposed constructing a power plant to meet its new energy needs. Is it going to be coal-fired, is it going to be natural gas, all of which pose huge problems? There are no details in the Draft Scope.

A power plant is not needed. If Columbia used green building design and conservative measures at its existing campus that would more than compensate for any new building. (Ramos)

Response: See the response to Comments 305 and 308.

Comment 310: Would there be any impact on the area by removing the existing Con Edison substation? Would there be a cogeneration plant on-site? If so, explain how it would work. (Harlem CDC)

Response: The existing Con Edison facility is a cooling operation for its main trunk line, not a substation. Columbia and Con Edison together will identify a relocation site where the facility could continue to perform the same function it performs now. The possibility of a cogeneration plant will be considered as an alternative in the EIS.

TRAFFIC AND PARKING

Comment 311: The Draft Scope defines an inappropriate study area for the traffic and parking impacts analysis. The new campus will likely attract staff and students from both the Morningside Heights and Washington Heights campuses as well as new employees from other parts of Manhattan and other boroughs, such as the Bronx or even Queens. The EIS must examine traffic routes serving these areas and the potential for the project to cause congestion, because experience reveals it will. (WEACT)

Response: The size of the study area is appropriate and complies with the *CEQR Technical Manual*. The traffic study in the EIS will incorporate a primary study area that includes key intersections surrounding the Project Area, and a secondary study area that includes intersections along likely traveled corridors, including those linking to the Morningside Heights and Washington Heights campuses, and thus will address the concerns raised by the comment. Since the Manhattanville university area would not only serve future growth of Columbia University, but also accommodate existing needs that currently take place within the overcrowded Morningside Heights and Washington Heights campuses, some

future trips made to or through the Manhattanville neighborhood are expected to already be in the area. However, for a conservative impact assessment, the EIS traffic analysis will assume all projected trips to be new trips to the area. Vehicular trips coming from the north and east, including those from the Bronx and Queens, will be counted as they aggregate with Manhattan trips coming from similar directions.

Comment 312: If Columbia is putting forth a project that will have 6,000 to 8,000 employees who have to get to work, a number of them are going to drive to work unless they find a solution they haven't proposed. That means that their vehicles and delivery vehicles will have to be parked. They have plans for parking in the year 2030, but parking and traffic problems will exist many years before. (Lee)

CEQR requires the project applicant to provide a detailed profile of the parking facilities available in the study area and identify the project's impact on the capacity of these facilities. Although the Draft Scope makes mention of a parking analysis, it does not provide any detail on how this analysis will be made or the mitigation that will be required to minimize project effects.

The residents of Manhattanville depend primarily on free street parking for their vehicles. The EIS needs to analyze the effect on the existing limited on-street parking supply. The removal of some parking spaces as a result of Columbia's physical structures and the additional residential density, not to mention workers and visitors, will undoubtedly significantly decrease the available parking for the existing Harlem residents. The Draft Scope does not mention how the EIS plans to study the impact of this parking loss on the Manhattanville community. (Lee, Wadkins, Ugbaja, Lee, CPC, WEACT). The Draft Scope ignores studies of parking mitigation measures such as implementation of permitting plans that would preserve parking priority for Manhattanville residents or replacing this lost parking capacity by allowing Manhattanville residents access to Columbia parking structures. (WEACT)

Response: As noted in the Scope, the EIS analysis will account for the projected demand from the proposed uses and provide a detailed on- and off-street parking analysis for both future analysis years of 2015 and 2030. The analysis methodology and study area will conform to the *CEQR Technical Manual*. Any potential significant adverse parking impacts associated with the Proposed Actions will be disclosed, and any practicable mitigation measures, if necessary, will be identified.

Comment 313: The study methods of the Draft Scope do not take into account that the worst traffic problems are on Thursday and Friday evenings and on weekends. The Draft Scope does not even consider weekends. Columbia's arts facility will be operating on weekends as will most labs. This methodology cannot be permitted in this EIS. (Lee)

Response: Based on programming information provided by Columbia University, the proposed uses envisioned for the Manhattanville university area are expected to generate the most activities during the typical weekday peak periods (morning, midday, and afternoon), for which traffic conditions and potential impacts will be analyzed in the EIS, and as a result there will be no weekend analysis.

Comment 314: The Draft Scope takes no notice of the parking and traffic problems the Fairway Market creates and will continue to create, or of the additional traffic/parking problems the new Hudson River Park will create. The area already has problems with parking and traffic, and there is no mitigation that will lessen this problem except finding another place altogether. (Lee)

Response: The demand on the area's transportation network and parking facilities from the Fairway Market and the West Harlem Waterfront park will be incorporated into the analysis of future conditions.

Comment 315: The study must examine not only the existing conditions, and the alternative of the 197-a Plan, but must consider the additional traffic which the North Campus will generate, both as to construction over a long period and as to residents and deliveries and services. The aggregate effect of the project must estimate accurately and quantify these traffic streams. Columbia must propose remedial measures to prevent this area from becoming, in stages, a major generator of congestion and automobile pollution.

The need to do so is aggravated by Columbia's plan to close roadways to build the underground facilities. These road closings will have a quantifiable negative effect on the balance of the area for very substantial periods of time, and must be studied, quantified, and taken into account in determining the environmental effects of the proposed underground facility and of the North Campus generally. (Lee)

Response: The EIS will address any proposed changes to the roadway network and provide a comprehensive analysis of the Proposed Actions' effects on traffic conditions in the area. Any adverse construction-related impacts associated with temporary road closures needed to construct underground facilities will also be addressed in the construction impacts assessment. Traffic under the 197-a Plan will be analyzed as part of the "Alternatives" chapter of the EIS.

Comment 316: The EIS should assess traffic impacts throughout the district and particularly on West 125th Street and Broadway. Much of the early development will be in this area as well as intersection improvements by the City. (CB9)

Response: As discussed in the response to Comment 311, the traffic study will incorporate a primary study area that includes key intersections surrounding the Project Area and a secondary study area that includes intersections along likely traveled corridors, including West 125th Street and Broadway. The locations planned to

be analyzed in detail extend as far east as West 125th Street and First Avenue, as far north as Broadway and West 145th Street, and as far south as Broadway and Cathedral Parkway. The traffic study area is shown in Figure 14 in the Draft Scope and Figure 17 in the Final Scope.

Comment 317: The EIS may want to include the intersections along 126th and 141st Streets in the analysis. Because of the superblocks, parks, and topography, these streets are used as alternative means for getting into Manhattanville from the east. (Harlem CDC, CB9)

Response: The Broadway/West 126th Street/West 129th Street intersection is an analysis location within the primary study area. Within the secondary study area, key intersections along major travel routes, which include the Broadway intersections with West 138th and West 145th Streets, were selected based on the anticipated access and egress patterns of trips to and from the Manhattanville university area. If the EIS analysis determines that an expansion of either the primary or secondary study area is necessary, additional intersections will be selected and included in the overall traffic impact assessment.

Comment 318: The Draft Scope for traffic and parking needs to include an analysis of the impact of goods delivery in this neighborhood. The Draft Scope doesn't include a description of how impacts on vehicular safety will be addressed. (Guishard)

Response: The Scope has been revised to explain that goods delivery traffic will be incorporated into the overall traffic projections. Vehicular and pedestrian safety will also be evaluated in the EIS.

Comment 319: There is quite a wide range proposed for accessory parking spaces: between 1,475 and 2,900, a 1,425-space margin. Explain this in the context of the Special District not requiring any accessory parking spaces. (Harlem CDC)

Response: While accessory parking would not be required by the proposed Special District, on-site parking would be provided to accommodate the projected demand from the Proposed Actions. The number of spaces needed to adequately accommodate this demand will be determined in the EIS analysis, based on anticipated vehicular trip-making characteristics of the Proposed Actions.

Comment 320: What traffic and parking changes are being planned for Old Broadway? (Ortiz)

Response: There are no traffic or parking changes proposed for Old Broadway as part of the Proposed Actions.

Comment 321: Would the Special District allow on-street parking? Map the locations. (Harlem CDC, CB9)

Response: The Special District does not address on-street parking. On-street parking regulations are the purview of NYCDOT. Should the traffic analysis recommend changes to these regulations, these changes will be detailed in the EIS and will be subject to the approval of NYCDOT.

Comment 322: The revised Scope should indicate the number of parking spaces that would be provided in the below-grade support space (the "factory") and describe who will be able to use it (CB9), the estimated cost on a daily/monthly basis, what kind of security will be in place, and where the entrances and exits will be to both the parking facilities and other areas which will require vehicle use and service. (CPC)

Response: The parking demand for the Proposed Project will be estimated in the EIS analysis and will determine the number of spaces needed. The proposed below-grade parking facility in Subdistrict A would provide sufficient parking for the demand generated by the Columbia program. The EIS will also determine the availability of public parking facilities in the study area. Access and egress locations, as well as anticipated changes to area traffic circulation patterns, will be detailed in the EIS.

Comment 323: The revised Scope should explain and indicate the number of loading docks in the "factory" floor, their general location, and the type of vehicles that would be using them. (CB9)

Response: The Final Scope has been revised to include Figure 5, which indicates generally the location of loading and other vehicular access. Since the Proposed Actions do not contemplate such uses as manufacturing and warehousing, which typically require transport with heavy trucks, it is expected that the type of vehicles used for delivery activities would be consistent with existing delivery traffic in the Manhattanville area.

Comment 324: It appears that existing curb cuts would be used along with additional ones. Please map and clarify. (Harlem CDC)

Response: Figure 5 in the Final Scope shows entry points for vehicles in the Project Area. Existing curb cuts would not be maintained unless one or two happen to coincide with the entrances to below-grade parking for the Proposed Project. Because delivery and parking would primarily be accommodated within the below-grade facilities, the number of curb cuts within the development area is expected to be lower than what exists currently. The EIS will identify areas where curb cuts may be located.

Comment 325: Columbia must analyze the truck and trucking impacts of its solid waste and other infrastructure supply systems. The University should support reducing the

volume of trucks moving solid waste and making deliveries in the Project Area, as well as routing trucks in ways that minimize doorstep exposures. (ED)

Response: The below-grade facilities would, in addition to accommodating the Proposed Actions' parking demand, facilitate delivery and other service activities (such as solid waste pick-ups) and minimize doorstep exposures. Trucks would be routed on NYCDOT-designated truck routes.

Comment 326: Ways that Columbia might reduce traffic are requiring off-hours deliveries, instituting idling rules, and altering signal timing. Limiting the amount of available parking and making parking more expensive during higher-demand periods will help to discourage driving in the area. Columbia might also study the feasibility of using parking fees to provide funding for the improvement of mass transit in the area. Lastly, we recommend that Columbia create incentives to encourage students and staff to take public transit. (ED)

Response: Comment noted.

Comment 327: The Draft Scope should mention how Columbia plans to study the project's cumulative impact resulting from the interaction between traffic and transit impacts and other project components that could increase pollution. (Ugbaja, Harlem CDC, WEACT)

Response: A cumulative impact analysis of the potential combined impacts from the Proposed Actions and other large existing emission sources in the study area will be presented in the air quality assessment in the EIS.

TRANSIT AND PEDESTRIANS

SUBWAYS AND BUSES

Comment 328: Columbia should define a more appropriate study area. Considering the project's size, it will likely attract staff and students from both the Morningside and Washington Heights campuses. Columbia must examine traffic and transit routes serving these areas and the potential for the project to cause congestion. For example, the Project Area is located along the No. 1, A, C, B, and D subway lines and bus routes along West 125th Street and Broadway. Transit service along these routes is already highly impacted, with delays, overcrowding, and aged tracks on subways. (Ugbaja, WEACT)

Response: The study area is appropriate, conforms to the *CEQR Technical Manual*, and the EIS will address the concerns noted in the comment. A detailed transit analysis will be conducted for the 125th Street Stations at Broadway and at St. Nicholas Avenue, as well as for the 137th Street/Broadway Station. In addition, loading

conditions along the Broadway line and nearby bus routes (i.e., Bx15) will be assessed in the EIS.

Comment 329: The increased travel time due to train delays and malfunctions will translate to less time available for West Harlem residents for activities important to maintaining a good physical and mental health. Because Columbia's development will have a tremendously negative impact on the health and well-being of the Manhattanville community, the EIS must conduct the proper analysis and identify mitigation and alternatives that will either eliminate or avoid this problem. (WEACT)

Response: The EIS will consider the potential for the Proposed Project to result in significant adverse impacts with respect to transit conditions. Should significant adverse impacts on NYCT's ability to maintain subway service to the area be identified, feasible and practicable mitigation will be recommended.

Comment 330: Alternative transportation strategies for staff, faculty, and students should be considered in the EIS, aimed at minimizing auto dependency and using mass transit alternatives for traveling to and from and servicing the area. (CB9)

Response: A large number of students, faculty, and other employees are expected to make use of public transit due to the vicinity of the 125th Street and 137th Street No. 1 subway stations and several nearby bus routes. If the transportation analyses identify significant adverse impacts, practicable mitigation measures, as appropriate, will be developed.

Comment 331: Redesigning the No. 1 subway station at 125th Street and making it an express subway stop will allow it to handle an increased volume of passengers. Columbia could also persuade Metro-North to build a stop at 125th Street and the Hudson River to provide transit out of the City for area residents and to rejuvenate the Harlem corridor. Columbia might partner with NYCDOT to increase the number of express bus lines in the area, since these are lacking. (ED)

Response: Comment noted.

Comment 332: Include a discussion and analysis on the proposed Metro-North multi-modal station. (Harlem CDC, CB9, CPC)

Response: The potential Metro-North station will be discussed in the EIS, although it is not part of the Proposed Actions.

PEDESTRIAN AND BICYCLIST CONDITIONS

Comment 333: The Draft Scope needs to consider impacts on pedestrians currently using the area. The EIS must analyze the project's effect on current pedestrian patterns, areas where accidents are likely to occur, and how added density will impact the safety of residents and workers already in the area, rather than solely focusing on the likely impacts created by new pedestrians. For example, the intersection of 125th Street and Broadway, under the subway overpass, at present poses a danger to pedestrians wishing to cross Broadway. This problem is especially pronounced at night and on rainy days because the street is dark and many cars speed through the area. Unless modifications to the streetscape, lighting regime, and traffic control mechanisms for the areas are made, the added density from the Proposed Project will worsen the pedestrian safety in these areas. (WEACT)

Response: Geometric and operational improvements would be incorporated into the Proposed Actions at numerous locations surrounding the Project Area, including the Broadway intersection with West 125th Street. A detailed pedestrian analysis will be conducted in the EIS to evaluate existing and future pedestrian operating levels at critical locations. In addition, pedestrian safety will be evaluated in the EIS by reviewing accident data gathered from NYSDOT and NYPD and determining whether increased vehicular and pedestrian activities may result in potentially significant adverse safety impacts. If there are such impacts, practicable mitigation will be proposed.

Comment 334: Once operational, the proposed facilities will stand between many current residents and two important community assets: the Fairway grocery store on Marginal Street between West 132nd and 133rd Streets and the upcoming West Harlem Waterfront park. The development's impact on the current and future pedestrian routes to and from these invaluable facilities should be included in the EIS. (Guishard, WEACT) The Draft Scope doesn't include a description of how impacts on pedestrian safety will be addressed. (Guishard) The Draft Scope must analyze the project's impacts on pedestrian safety and take measures to avoid further degradation of the health and safety of the community. (WEACT)

Response: The comment is incorrect. The Proposed Actions would include improvements along these access routes to create a more favorable environment for existing and future users. All streets and sidewalks will remain City owned and open. These improvements and projected future conditions, including any effect on access to the Fairway Market or the West Harlem Waterfront park, will be discussed in the EIS. See the response to Comment 333 regarding pedestrian safety.

Comment 335: The EIS should include an analysis of pedestrian movement throughout the proposed campus, including the location and time of peak activity, and impacts of various campus security measures on public access. (CB9)

Response: As described in the Draft and Final Scopes, the EIS will provide a comprehensive pedestrian operational analysis. Public access along City streets would be maintained at all times. Campus security would be provided by Columbia, and there would be no security operations that would interfere with public access along public streets and passageways through the campus or to the publicly accessible open spaces.

Comment 336: The Proposed Project would be "without traditional campus walls or gates." Would there be other non-traditional methods used to restrict access through the campus, such as ID cards? Would the midblock passageways and the private quad or square have restricted access? (Harlem CDC, CB9) For all streets and properties where Columbia University may restrict public access, the specific restrictions, including periods of restricted access, must be identified, and the potential impacts associated with such restrictions, e.g., limited accessibility to remaining businesses and increased emergency response times, must be analyzed in the EIS. (CB9, CPC) Columbia provides no process for ensuring that "gates" and restricted public access will not occur. (WEACT)

Response: The Proposed Actions would not restrict access through the proposed privately owned, publicly accessible open spaces, including the north–south midblock open areas and other open spaces. As described in Appendix A to the Final Scope, the proposed zoning will limit the size and location of any walls or fences to ensure public access. Streets and sidewalks will remain open to the public without restriction.

Comment 337: Discuss the existing and proposed pedestrian activity along Twelfth Avenue. (Harlem CDC)

Response: A pedestrian analysis of activities along Twelfth Avenue will be provided in the EIS.

Comment 338: The Draft Scope does not mention that it will analyze how the design of the project will contribute to discouraging local residents from walking in and around the study area. During construction, especially with the extensive excavation required to build the "Factory," the project will deter pedestrian use of the area because of the noise, odors, and dust. Also during construction, heavy scaffolding will probably divert foot traffic onto the surrounding streets, increasing pedestrian exposure to vehicular traffic. Both operation and construction will increase use and population density that will undoubtedly cause traffic and pedestrian safety hazards and injuries. The Draft Scope

provides no discussion of plans to analyze this problem and presents no mitigation or alternatives that will reduce or eliminate this impact. (WEACT)

Response: During construction, temporary disruptions, similar to any other construction activities for new developments, are expected. Any associated significant temporary adverse impacts will be addressed in the EIS. As noted above, the design of the project is intended to encourage, not discourage, local residents from walking in and around the Project Area.

Comment 339: Mention that the pedestrian character will be strengthened with the planned implementation of traffic calming measures highlighted in the West Harlem Master Plan and the CB9 197-a Plan. Further, explain how reducing on-street vehicular traffic would enliven the streets. (Harlem CDC)

Response: The relation between the 197-a Plan and the transportation improvements recommended in the West Harlem Master Plan will be discussed in the "Alternatives" chapter of the EIS. The relation between the traffic improvements proposed as part of the Proposed Actions and recommendations highlighted in the West Harlem Master Plan will also be discussed in the EIS.

Comment 340: Columbia should also consider pedestrian and bicyclist friendly designs. Such improvements as wider sidewalks, bikeways, and improved traffic flow are recommended. (ED)

Response: Comment noted.

Comment 341: Bicycle transportation should be included in the Scope. If it's not required, the City Planning Commission should consider it. (Shuffield)

Response: Comment noted.

AIR QUALITY

See also "Public Health" for related comments.

GENERAL COMMENTS

Comment 342: A cap on climate emissions from University operations would allow Columbia to save money through reduced energy use and increased efficiency, as well as take a leadership role on perhaps the gravest threat to global ecology. Columbia's own studies identify serious local impacts from climate change, and both New York City and State have committed to new steps to curb local emissions. (ED)

Response: Comment noted. Columbia has stated that it is studying the feasibility of incorporating a number of high-performance building standards and green

design into its new buildings. Environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the buildings will be described to the extent they are known at the time of the EIS.

Comment 343: Given the asthma condition discussed under "Public Health," Columbia University should look at the air quality impacts not only of their project but of other sources in the area as well and take the cumulative impact into account. Aim for no net increase in pollution for the neighborhood, commit to using clean fuel and the best available retrofit technologies on its fleet of vehicles, as well as on the construction vehicles that it contracts with for this project, and set an emissions cap, especially for greenhouse gases, such as CO_2, which are not mentioned in the Draft Scope.

Pollution that cannot be reduced on campus should be offset through financing comparable reduction elsewhere in the neighborhood. (Rosenfeld, ED, NRDC, CPC)

Response: A cumulative impact analysis of the potential combined impacts from the Proposed Actions and other large existing emission sources in the Proposed Project's study area will be presented in the EIS. The Proposed Actions would increase emissions of air pollutants due to the need to provide heating and cooling for the proposed university area. Any potential significant adverse impacts on air quality will be disclosed, and any practicable mitigation will be identified. Columbia has stated that it is studying the feasibility of incorporating a number of high-performance building standards and green design into its new buildings. Environmentally sensitive guidelines and principles associated with the planning, construction, and maintenance of the buildings will be described to the extent they are known at the time of the EIS.

Comment 344: The Draft Scope does not consider indoor air quality, which is important for both health and productivity (ED)

Response: Indoor air quality is a function of mechanical and other building systems, and is regulated by applicable codes and standards other than CEQR. All HVAC systems for the Proposed Actions would be designed to achieve appropriate indoor air quality.

Comment 345: The Final Scope should require an analysis of the cumulative impacts of expected new pollution sources in conjunction with existing background levels and community public health concerns—bifurcated analysis of stationary sources and mobile sources, without a cumulative assessment, is insufficient. (NRDC)

Response: See the response to Comment 343. The EIS will analyze both the stationary and mobile sources of air pollution, but will not analyze the combined impacts of

stationary and mobile sources because these two sources occur at different elevations—impacts from stationary sources occur at higher elevations near the tops of buildings, while impacts from mobile sources occur at ground level.

Comment 346: The Final Scope should require that the EIS identify the extent to which any net increase in air pollution would result during the construction phases or final build-out. (NRDC)

Response: As described in the Scope, a construction air quality analysis will be conducted in the EIS, which will assess direct emissions from demolition and construction site activities, including fugitive dust and on-site diesel equipment. In addition, the potential adverse impacts from increases in mobile source emissions from trucks and worker vehicles at nearby sensitive receptors and congested locations and from potential long-term traffic diversions will be analyzed.

Comment 347: The Draft Scope needs to include an analysis of air pollution that covers a wide area, well beyond the proposed expansion area. There also needs to be a comparison between the existing sources of pollution in the area and those that the proposed development will bring. Part of this study could include examining what industries operate 24 hours a day now in comparison to Columbia's projected 24-hour need. (CPC).

Response: The air quality analysis to be presented in the EIS will identify the maximum predicted concentrations of pollutants at ground level and elevated receptor locations near the Proposed Actions and out to a distance of 5 kilometers. Although the existing industries in the Project Area emit air pollutants to the atmosphere, the air quality analysis will be conducted without taking credit for the emission reductions which would occur, which is conservative.

Comment 348: We have concerns about the biotech research center, insofar as the scoping document does not address what could happen to the air quality if there is an accident. The Draft Scope does not deal sufficiently with air toxins, such as benzene, perc, VOCs, etc., which could be released from activities in the Project Area. While regulated under CAA, maintaining standards is suspect and this should be examined more clearly. (CPC)

Response: As noted in the Scope, the air quality analyses will be conducted according to the methods suggested in the *CEQR Technical Manual*. The analyses will include the potential worst-case release of a laboratory chemical spill to evaluate potential effects on the proposed university area and the surrounding community. In addition, potential exposures to air toxins from existing industries that would remain after completion of the Proposed Actions will be assessed. The handling, storage or transport of other toxins will be addressed in the "Hazardous Materials," "Public Health," and "Infrastructure" chapters.

CONSTRUCTION

See also "Construction" for related comments.

Comment 349: With respect to the construction period's air quality, the Draft Scope must include details of the construction plans including (1) how the facilities will be built, (2) the amount of excavation and soil disturbance their construction will cause, (3) the types of equipment that will be used, (4) the hours of the day construction activity will take place, (5) how many hours a day each piece will operate, (6) a detailed analysis of the types and amount of emissions that each is expected to generate, (7) the types of fuel that will be consumed by construction equipment and vehicles, (8) the routes of construction-related vehicles will travel, and other relevant information. This analysis should include a study of the cumulative impacts the construction phase will have on West Harlem air considering the other pollution-generating uses in the air, including the Manhattanville Bus Depot and other such facilities. The EIS must analyze mitigation and alternatives that will eliminate or avoid these impacts. This study must be conducted according to DEC Policy, *CP-33/Assessing and Mitigating Impacts on Fine Particulate Matter Emissions* (December 29, 2003). (WEACT)

Response: The Final Scope contains more detail as to construction plans, and the EIS will contain additional material relevant to impact analysis as it becomes available. Cumulative impacts from construction-related vehicles (e.g., heavy-duty trucks and construction worker vehicles) and background traffic will be determined. Air quality impacts from construction site activities are highly localized and would not overlap with maximum impacts from nearby existing stationary sources emitting the same pollutants. Instead, impacts from construction site activities will be added to the project-generated stationary and mobile sources, and maximum ambient background concentrations, where appropriate, to conservatively estimate future maximum predicted pollutant levels. $PM_{2.5}$ impacts will be assessed based on the current DEC and updated DEP interim guidance criteria.

Comment 350: The Draft Scope makes no mention of an analysis of hazardous air pollutants (HAPs) levels during construction as required by SEQRA. (WEACT)

Response: Emissions of HAPs from site construction activities are anticipated to be insignificant, due to a number of measures to be taken during construction, such as the requirement to use diesel particulate filters and a health and safety plan to reduce exposure to volatile hazardous materials. The construction analysis in the EIS will be conducted in accordance with the requirements of CEQR.

Comment 351: Changes in air quality during the project's construction must be fully assessed given the length of the building phases and the heavy excavation required by the project. (NRDC).

Response: As per the *CEQR Technical Manual*, the construction air quality impact analysis will be modeled using five years of meteorology to determine maximum short- and long-term impacts. This will ensure that impacts are determined over a full range of conditions that can be expected to occur. In addition, background concentrations will use the highest measured concentrations at nearby DEC monitoring stations. This conservatively assumes that maximum background concentrations occur on all days.

Comment 352: The Final Scope should direct the EIS to consider the possibility of such strategies as using only clean fuel vehicles during the construction phases to mitigate emissions. (NRDC)

Response: The Final Scope has been revised to note that this issue will be addressed in the EIS.

OPERATION

Comment 353: The Draft Scope description of the analysis of impacts on criteria pollutants is minimal and does not describe how the impacts on non-criteria pollutants will be assessed, event though guidance for their analysis (including odors and several volatile organic chemicals) are provided in DEC's DAR-1. (WEACT).

Response: As indicated in the Draft Scope, the EIS will include an analysis of potential air quality impacts resulting from a release to the environment of laboratory chemicals, which are non-criteria pollutants. In addition, the EIS will include an analysis of existing manufacturing or processing activities that would remain in the study area for their potential impacts on the Proposed Project. These activities generate primarily non-criteria compounds.

Comment 354: A cumulative emissions inventory of National Ambient Air Quality Standards (NAAQS), including $PM_{2.5}$ and HAPS, must be prepared consisting of all permitted combustion sources with heat inputs greater than 2.8 million BTU/hr for a primary study area encompassing Columbia's Morningside Heights and Washington Heights campuses and proposed Manhattanville development, a secondary study area of 2 kilometers from the boundary of the primary study area consisting of permitted combustion sources greater than 50 million BTU/hr., and a tertiary study area between 2 kilometers and 10 kilometers of the primary study area boundary of current and proposed "major" combustion-related facilities. (CB9, CPC) The analysis should include what industries operate 24 hours a day now in comparison to Columbia's projected 24-hour needs. (CPC)

Response: The analysis described above is typically used on power plant projects subject to CEQR, which have a much greater generating capacity than the proposed central energy plants. In discussion with DEP and as reflected in the Draft

Scope, the methodology described in the EIS would include a cumulative analysis focusing on existing large emission sources within the study area. The Final Scope has been revised to list examples of these existing large sources. By calculating these combined impacts and adding the maximum background concentrations, a conservative estimate of potential future concentrations with the Proposed Actions will be determined.

MOBILE SOURCE ANALYSIS

Comment 355: The EIS needs to fully consider all mobile source emissions, including carbon dioxide (CO_2), nitrogen oxides (NO_x), ozone, and volatile organic compounds (VOCs) rather than only carbon monoxide (CO) and particulate matter. (ED)

Response: The mobile source analysis will be performed in accordance with CEQR requirements, as well as current State and local guidance. As described in the *CEQR Technical Manual*, CO emissions and particulate matter are the pollutants of concern from automobiles and heavy duty trucks, respectively. NO_x are of principal concern because of their role, together with VOCs, as precursors in the formation of ozone. The Proposed Actions would not have a significant effect on the overall volume of vehicular travel in the metropolitan area; therefore, no measurable impact on regional NO_x emissions or on ozone levels would result. CO_2 emissions from the Proposed Actions would not have any significant adverse air quality impact since it is not a regulated pollutant, and in terms of climate change, the Proposed Actions would have a negligible effect. Analysis of project-related emissions of these pollutants from mobile sources is therefore not warranted.

Comment 356: It is important for Columbia to undertake a broad emissions reduction program, aimed at no net increase of all mobile source pollutants for the neighborhood. A comprehensive emissions reductions program might be based on the most effective combination of:

- *Emissions inventories and caps.* A strong cap for particulate or greenhouse gas emissions, for example, could help stimulate investments in energy efficiency and tailpipe pollution reduction. Private sector leaders have shown the effectiveness of this approach. Pollution that cannot be reduced on campus could be offset through the financing of comparable reductions elsewhere in the neighborhood.
- *Clean tailpipes.* New York City laws now require municipal fleets and vehicles that operate under City contract to use clean fuels and the best available retrofit technology to cut emissions. Retrofits are available to cut diesel pollution by up to 90 percent. These commitments can be made a part of Columbia's construction and operations contracts for all diesel fleets.

- *No idling.* Enforcing existing idling rules, and creating new ones targeting the construction and operation of the new campus, can deliver cleaner air and fuel savings.
- *Truck access plans.* Access into the site for trucks and vehicles should be designed to achieve environmental performance goals, including exposure of residents and students to pollutants. Trucks routinely bringing goods to the campus should be required to use the most effective pollution controls and coordinate delivery times in ways that cut congestion. For example, creating an off-site truck receiving facility might help alleviate traffic congestion and reduce air quality impacts. (ED)

Response: Comment noted. If any significant adverse air quality impacts are identified, any practicable mitigation of those impacts would be identified. The Proposed Actions would incorporate below-grade facilities for vehicular parking and goods delivery, such that vehicles circulating area streets in search of curbside parking and trucks idling on-street for loading and unloading could be kept to a minimum. All regulations regarding vehicle idling would be enforced by Columbia University. In addition, the emissions reduction program committed to by Columbia during construction activities will be discussed in the EIS.

Comment 357: The Scope of the EIS needs to include an examination of doorstep (localized) air pollution exposure levels. The microscale analysis proposed for CO and fine particulate matter should be completed for other mobile source pollutants as well. A recent University of Southern California study found modeled doorstep exposures to fine particulate matter to be almost three times greater than the exposures found using larger-scale models. The EIS needs to specifically address local exposures. (ED)

Response: The air quality impact analysis as described in the Scope will estimate impacts of CO and fine particulate matter at discrete receptor locations, such as sidewalks, open spaces, and elevated receptors representing windows and balconies.

Comment 358: At a minimum, the baseline air quality data from the 1996 WEACT-EPA collaborative Air Monitoring Study and the 1996 WEACT-Columbia collaborative study must be included in the University's air quality analysis. (WEACT)

Response: The background monitoring data used in the air quality impact analyses must use data collected from monitoring stations that meet stringent EPA and DEC criteria regarding monitor placement, collection and analysis methodology, and QA/QC procedures. In addition, as required by CEQR, background concentrations should be based on the latest available monitoring data. The EIS will use DEC data for the years 2001 to 2005, depending on the pollutant being

analyzed; in light of such updated data, the WEACT-Columbia data for 1996 will not be used.

Comment 359: Current background levels of $PM_{2.5}$ are above the recently promulgated NAAQS promulgated by EPA. The State of New York is developing a State Implementation Plan (SIP) that will bring northern Manhattan into compliance. New York County will need to take measures to reduce ambient $PM_{2.5}$ to come within the SIP level. For this reason, future background $PM_{2.5}$ will actually be lower than existing conditions. The EIS assessment of the project's generation of $PM_{2.5}$ pollution should use the values identified in the new NAAQS, and not the current $PM_{2.5}$. (WEACT)

Response: The Proposed Project is a local development project, which would affect air quality in a relatively limited area. Its methodology for its air quality analysis is appropriately set forth in the *CEQR Technical Manual*, which requires use of the latest existing background values of any pollutant in question. It would be speculative to attempt to quantitatively address future background values that might occur as a result of the SIP, which is long-term regional plan. Therefore, the EIS will not rely on the recently revised NAAQS for estimating future background concentrations of $PM_{2.5}$.

Comment 360: The determination of receptor locations for CO and $PM_{2.5}$ microscale analysis should be done in collaboration with local community residents and organizations. West Harlem is a community with a strong history of participation in air quality studies. Among these are a 1996 study in which local youth measured $PM_{2.5}$ at the intersection of 133rd Street and Broadway and a short-term EPA air monitoring study for $PM_{2.5}$. In both studies, local residents played a key role in ensuring that the intersections selected and the height of air monitors were representative of large scale human exposure (WEACT)

Response: The selection of receptor locations for microscale analyses will be based on the procedures outlined in the *CEQR Technical Manual*. It is primarily based on two major factors: the peak number of vehicles generated by a proposed action and the predicted levels of traffic congestion with a proposed action.

Comment 361: The Draft Scope should analyze the potential for an increase in black carbon as an indicator of diesel exhaust specifically because it is a potent asthma trigger. Black carbon is a better indicator of heavy-duty vehicle traffic than PM_{10} or $PM_{2.5}$. (WEACT)

Response: As noted in the Scope, the EIS will analyze potential impacts of PM_{10} and $PM_{2.5}$, since they are regulated pollutants. Black carbon is a constituent of PM_{10} and $PM_{2.5}$ and will not be analyzed separately. EPA has promulgated ambient air quality standards for $PM_{2.5}$ in part because excessive levels of fine particles can aggravate asthma.

Comment 362: The EIS must include an analysis of future emissions from the bus depot as part of the cumulative air quality impacts of its expansion project. This analysis should focus on $PM_{2.5}$, even though the *CEQR Technical Manual* suggests that PM_{10} is the primary pollutant of concern for parking lots used by heavy-duty diesel vehicles. In light of recent general consensus among air pollution scientists that $PM_{2.5}$ represents a more accurate and biologically relevant pollutant from diesel vehicles, the information provided in the *CEQR Technical Manual* is outdated. (WEACT)

Response: The EIS will evaluate the future cumulative impacts of the MTA Manhattanville Bus Depot and the Proposed Actions with respect to stationary sources, and in terms of the future traffic conditions around the bus depot. Impacts of $PM_{2.5}$ from the bus depot itself are not considered to be significant, since all buses at this facility currently use either ultra-low-sulfur diesel fuel with diesel particulate filters, or alternative fuels that produce little or no $PM_{2.5}$.

Comment 363: The air quality analysis needs the proper modeling of the spread of pollutants. The Draft Scope proposed model for studying mobile source emissions involves an iterative process that develops assumptions about the volume of various types of traffic in order to identify their air pollution output. The analysis must be based on proper field surveys of on-the-ground traffic patterns rather than assumed counts developed by the New York State or City Department of Transportation. These surveys must be done at intersections whose traffic will be impacted by project users. In order to conduct this analysis, the EIS will have to disclose the exact use the project facilities will be put to, the type and number of uses who will be involved, and their impact on the local traffic. (WEACT)

Response: As noted in the Scope, the mobile source analysis in the EIS will rely on traffic information from the traffic analysis, which is primarily based on fieldwork.

Comment 364: Regarding $PM_{2.5}$ impact analysis, it is assumed that the following DEP/DEC criteria for assessing $PM_{2.5}$ impacts will be used: 5 ug/m^3 24- hour period at both ground and elevated receptors, 0.3 ug/m^3 annual impacts at discrete ground level or elevated locations, and on an annual average neighborhood average basis. (CB9, CPC)

Response: The current DEC and updated DEP $PM_{2.5}$ interim guidance criteria will be used for the air quality impact analysis, as explained in the Final Scope.

STATIONARY SOURCE ANALYSES

Central Energy Plants

Comment 365: The steam and chilled water plants can be fueled on coal, oil, or natural gas. Without any details about what that's going to be, how large it's going to be,

and how much electricity, it is inadequate. (Prakash, NRDC, WEACT) The Draft Scope should provide more details about the size and fuel needed for the proposed central steam and chilled water plants. If Columbia cannot provide more information about the plant, then the EIS should assume a reasonable worst-case scenario for the plant—one with maximum size that is continuously burning high-sulfur oil, and not other types of fuel, such as natural gas. (WEACT)

Response: The proposed two central energy plants would be required to meet all applicable federal, State, and local air quality regulations. Analyses will be performed to determine plant parameters and any emission controls necessary to satisfy the requirements (including fuel requirements, stack heights, exhaust velocity, exhaust temperature, etc.). The EIS will describe regulatory measures which will be utilized, including any restrictions or requirements that will be used, to ensure that these plants satisfy all regulatory requirements.

Comment 366: If the project will include the construction of a cogeneration power plant, then the Final Scope and EIS must contain a robust analysis of the plant's possible impacts on air quality, as such a facility would be a major new source of industrial emissions in the area. (NRDC)

Response: The Proposed Project would contain two central energy plants. A cogeneration plant will be considered as an alternative to the Proposed Actions. The Final Scope has been revised to reflect this change. As noted in the Final Scope, the EIS will include a comprehensive, detailed analysis of the potential air quality impacts from the proposed central energy plants, and the cogeneration alternative. Analyses will be performed to determine plant parameters and any emission controls necessary to satisfy the requirements (including fuel requirements, stack heights, exhaust velocity, exhaust temperature, etc.). The EIS will describe regulatory measures which will be utilized, including any restrictions or requirements that will be used, to ensure that these plants satisfy all regulatory requirements.

Comment 367: For Task L of the Scope under the Centralized Steam and Chilled Water Plant and other HVAC Systems, the cumulative impact analysis must include $PM_{2.5}$.

Response: As described in the Scope, the analysis of $PM_{2.5}$ will be conducted in accordance with the current DEC and updated DEP interim guidance criteria.

Comment 368: If Columbia is allowed to build up to even half the height it requests, it will create huge canyons of buildings, both on West 125th St. and Broadway, where polluted air will sit uncirculated for a much longer time. The current low scale for buildings mitigates the problem of air sitting in the valley of 125th Street. There must be an analysis of the effect of higher buildings along the corridors. (CPC)

Response: The dispersion model to be used for the air quality analysis will be used to model the effects of such proposed buildings.

Comment 369: The proposed centralized steam and chilled water plants should be run on the cleanest fuels, at least equivalent to natural gas. Also, Columbia is proposing a substantial underground "factory" area for trucks and deliveries. The EIS must fully analyze underground air quality and the emissions from vent stacks associated with the factory. (CB9, CPC)

Response: Analyses will be performed to determine plant parameters and any emission controls necessary to satisfy the requirements (including fuel requirements, stack heights, exhaust velocity, exhaust temperature, etc.). The EIS will describe regulatory measures which will be utilized, including any restrictions or requirements that will be used, to ensure that these plants satisfy all regulatory requirements. As noted in the Draft and Final Scopes, emissions from vents associated with the below-grade parking area will be evaluated in the EIS. Other ventilation systems servicing the below-grade service area would be part of the overall building systems and would be analyzed as such.

Comment 370: Discuss how tall structures facing the east side of the Riverside Drive viaduct would impact the air quality of the viaduct and the waterfront. (Harlem CDC, CPC)

Response: The air quality impact analysis in the EIS will include a comprehensive receptor network. Pollutant concentrations will be estimated at each receptor to determine maximum potential impacts. The receptor network will include ground-level and elevated receptors along the waterfront and the Riverside Drive viaduct.

Chemical Spills

Comment 371: Occupational Safety and Health Administration (OSHA) standards for triggering a finding of a "potentially hazardous" situation arising from a chemical spill are not appropriate. Those are guidelines that are intended for use in work settings rather than community settings. OSHA's Short-Term Exposure Levels were designed to be protective of the "typical worker," which is by definition an adult who is presumably healthy enough to be working. These standards were not designed to be protective of children, the elderly, or people with asthma and heart disease. The Draft Scope must be revised to include better standards for protecting the health of these vulnerable receptors. (Prakash, WEACT)

Response: The laboratory spill analysis will be performed in accordance with the procedures recommended in the *CEQR Technical Manual*. The short-term exposure levels recommended by the National Institute for Safety and Health

(NIOSH) and OSHA are used as an indicator of the potential effects on the community from a potential lab spill event. While these thresholds are designed for workplace exposure, they are developed with an added margin of safety. The prediction of chemical concentrations in the atmosphere from a lab spill event uses a model containing very conservative assumptions regarding plume dispersion to predict impacts. Therefore, by demonstrating that a lab spill, if it occurred, would not exceed NIOSH or OSHA recommended exposure limits, no significant adverse air quality impact to the community would occur. The Final Scope has been revised to reflect the use of NIOSH as well as OSHA standards in determining the potential for impact on air quality and public health.

Comment 372: Considering the bioresearch facilities will be a key component of the expansion project, the Draft Scope must also include "release of biohazardous or potential hazardous biological agents or materials," in all analyses, particularly because many of these will be airborne disease agents. To this end, the EIS must disclose the type of research that will be conducted in the bioresearch laboratories and the names and amounts of chemicals they will use. The EIS must study the buffers that will adequately protect the public against harm. Specifically, the EIS must include the "procedures and systems that would be employed...in the event of a chemical spill in one of the proposed laboratories." This analysis must be extended to include an accidental release of biohazardous materials or other biological agents from the laboratories. (WEACT)

Response: See the response to Comment 290. The controls and measures that would be undertaken to minimize the potential exposure to the community from biological and chemical substances, will be presented in the EIS.

Comment 373: Discuss how the research facilities would be vented away from residential and other structures. (Harlem CDC)

Response: This information will be presented in the EIS.

Comment 374: The air quality impacts from an accidental release of a biological substance from a research facility or during transportation must be analyzed. (CB9, CPC)

Response: As described in the Draft and Final Scopes, the air quality analysis will address the potential for impacts from accidental laboratory spills associated with the academic research facilities. Transportation practices to and from the laboratories will be described in the EIS analysis.

INDUSTRIAL SOURCE ANALYSES

Comment 375: The ISC3 model proposed in the Draft Scope is not accurate in estimating dispersion across areas as wide as the ¼-mile distance from the sources that the

Draft Scope has identified as the study area. ISC is also inappropriate for use in the complex terrain of the project's urban setting, because tall buildings and potential "street canyon" effect might concentrate rather than disperse airborne pollutions. The Draft Scope must identify a better model to predict pollution dispersion thorough this urban setting. (WEACT)

Response: The ISC3 model is an EPA model, which, until recently, was the preferred model for predicting impacts from stationary sources. EPA has recommended the use of the AERMOD model as a replacement to the ISC3 model. AERMOD has been shown to be superior to the ISC3 model and is applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). It also incorporates the Plume Rise Model Enhancements (PRIME) program, which uses more sophisticated algorithms to provide enhanced treatment of plumes affected by building downwash. Since the AERMOD model is now approved for use, the EIS will use it to predict air quality impacts from the Proposed Actions.

Comment 376: Columbia's expansion plan will contain an underground service, support, and delivery facility, parking facilities, steam and chilled water plant(s), and a hotel/conference center that will include kitchen facilities, all of which will require exhaust of air pollution, including criteria pollutants and HAPS. Columbia also plans to construct a cogeneration power plant that will also be a major source of industrial emission. Columbia's new "industrial" facilities will require a new source review under the Clean Air Act.

In New York State, the DEC administers the air quality program. Industrial sources that qualify as major sources of air pollution emission are subject to the Title V permitting process. As part of the application for a permit to build its facilities, Columbia should meet the Lowest Achievable Emission Rate (LAER) standard and identify the equipment necessary to achieve the emission goals. (WEACT)

Response: These issues will be addressed in the EIS. However, the Proposed Actions do not include a hotel/conference center, nor do they include a cogeneration power plant. A cogeneration option will be considered in the "Alternatives" chapter of the EIS. The cogeneration facility considered as an alternative would be too small to require a Title V permit from DEC.

Comment 377: If the Manhattanville Bus Depot is put underground or on top, the EIS should also examine how future emissions from the bus depot will affect local air quality. Vent stacks must be fitted with advanced filters to remove pollutants before they escape into the ambient air. (CB9, CPC, NRDC)

Response: As noted in the Final Scope, potential air quality impacts from operations at the bus depot will be addressed in the EIS. The bus depot's combustion source

emissions will be modeled with the Proposed Project's emission sources to determine potential cumulative impacts. Process operations such as spray coating will also be assessed.

Comment 378: The North River WPCP has had a history of odor problems. Analyze how the Proposed Project would affect odor from the plant into the area. (Harlem CDC)

Response: As described in the Scope under "Infrastructure," the EIS will assess the potential of the Proposed Actions to cause significant adverse impacts on the operations at the North River WPCP. Odor is an issue related to plant operations. If the water quality/infrastructure analysis finds that there would be a potential for adverse impact on plant operations, the EIS will address all of the potential consequences related to deterioration in plant operations, as well as proposed practicable mitigation.

NOISE

CONSTRUCTION

See also "Construction" for related comments.

Comment 379: The noise decibels identified by the Draft Scope, 70 db, is inappropriate. The World Health Organization (WHO) has found that noise at 70 db can cause permanent hearing damage. More fitting noise exposure guidelines would be the WHO's noise exposure thresholds. Accordingly, individuals not involved in direct construction work should only be exposed to 30 db indoors and 45 db outdoors, much lower levels than the 70 db identified in the Draft Scope, which is more appropriate for commercial/public areas. The DEC recommends that noise exposure for non-industrial, residential settings should not exceed 6 db above ambient noise for any receptor. Therefore, the project's noise impacts should be considered significantly adverse if it increases noise exposure to 6 db above ambient noise. (WEACT)

Response: The commenter has not correctly read the Draft Scope. There is no mention of a 70 db value. The noise analysis for the project will use analysis procedures and impact criteria in the *CEQR Technical Manual*, which define a significant noise impact as an increase in L_{eq} of 3 dBA or more.

Comment 380: The Draft Scope does not include a plan to study the project's noise impacts during over 25-years of construction, and construction-related noise mitigation. (WEACT)

Response: As described in the Scope, the EIS will examine noise from each phase of construction activity throughout the construction period. The construction analysis will examine two separate peak years.

OPERATION

Comment 381: The study methodology identified in the Draft Scope is inadequate to assess the noise impacts of the project because an accurate determination of noise receptors and their sensitive uses cannot be done without knowing the age or sensitivity of residents and the uses to which local facilities are put. Many Manhattanville dwelling units are occupied by non-traditional residents who may not be "visible" to ordinary forms of demographic data collection. Also, the name of facilities may not reflect their actual use by community members. For example, a local coffee shop may be the *de facto* community center because it's a natural place for local residents to gather to discuss issues of social or business importance. Data on the existence and location of sensitive receptors and sensitive uses cannot be collected without personal interviews of community members. The Draft Scope must include in-field surveys and interviews with residents in order to determine the true noise impacts of its expansion project. (WEACT)

Response: As stated in the Scope, the noise analysis for the project will use analysis procedures and impact criteria in the *CEQR Technical Manual*. Receptor locations will be selected adjacent to residences, schools, and other sensitive uses as described in the *CEQR Technical Manual*. The approach suggested in the comment is not consistent with the *CEQR Technical Manual* and will not be used in the EIS.

Comment 382: The Draft Scope fails to describe an appropriate method for determining the baseline ambient noise level. DEC has issued guidance for this process in a report entitled *Assessing and Mitigation Noise Impacts*. The DEC guidance recommends that for non-industrial setting, new noise sources should not exceed ambient noise levels by more than 6 dB at any receptor. If a project increases the L_{eq} noise levels by 6 dB or more, it should be considered a significant adverse impact that must be mitigated. (WEACT)

Response: The noise analysis will use analysis procedures and impact criteria contained in the *CEQR Technical Manual*. As described in the Draft Scope, field measurements will be performed to determine existing noise levels. This is an appropriate method for determining baseline ambient noise levels, and it is consistent with procedures contained in the *CEQR Technical Manual*. In terms of impact criteria, again as described in the Draft Scope, the impact criterion in the *CEQR Technical Manual* will be used to evaluate potential project impacts. This 3 dBA criterion is considerably more stringent than the 6 dBA criterion contained in the DEC guidance report cited in the comment.

Comment 383: The Draft Scope identified four time periods—weekday AM, weekday midday, weekday PM, and weekday nighttime—for analysis. The Draft Scope does not

provide specific information as to the exact time any of these categories fall within. The Draft Scope gives no justification for why the ambient noise will only be measured during these four specific time periods, Consequently, the analysis may miss key peak noise generation times that may result from different hours. For example, the early morning commute and delivery commute may both occur during a weekday AM but may be staggered in time—one occurs from 7:30 AM to 9:00 AM and the other from 10 AM to 11 AM; therefore, using only one morning time point may miss one or the other of these uses. (WEACT)

Response: The exact time period used will be determined based on traffic studies. Typically, for weekdays, the AM peak period is approximately between 8:00 AM and 9:30 AM; the midday is approximately between 10:00 AM and 2:00 PM; the PM peak period is approximately between 4:30 PM and 7:00 PM; and the nighttime is approximately between 9:00 PM and midnight.

Comment 384: The screening analysis described in subsection B of the Draft Scope proposes to use a doubling of passenger car equivalents (PCEs), which is inappropriate as the threshold for developing further analysis because a doubling of the PCE would generate unacceptable levels of noise for most receptors in Manhattanville. Given the highly residential nature of the neighborhood and the presence of schools at the perimeter of the development area, a threshold of 25 percent PCE increase is a far more defensive criterion. (WEACT)

Response: At least a 100 percent increase in PCEs would be necessary for there to be a perceptible (3 dBA) change in noise levels at a specific location. (A 25 percent increase in PCEs would result in less than a 1 dBA increase in noise level, an imperceptible change in noise level.) Consequently, as a screening tool, and consistent with the *CEQR Technical Manual*, locations where traffic volumes would increase by close to or more than 100 percent will be examined for potential noise impacts.

Comment 385: The Draft Scope ignores any discussion of health impacts of the noise that the project will generate. The Draft Scope must be revised to include this analysis and identify measures to mitigate damages to Manhattanville resident's health. (WEACT)

Response: The noise analysis in the EIS will contain a general discussion of health effects due to noise. An understanding of the health effects of noise exposure forms the basis for the City's noise impact criteria. Pursuant to CEQR requirements, at locations where the Proposed Actions would result in significant adverse noise impacts, the feasibility of implementing measures to mitigate these impacts will be examined.

Comment 386: Include a map of the locations of the noise level meters used for analysis. (Harlem CDC)

Response: The Final Scope has been revised to include a map of the noise analysis locations.

Comment 387: The Draft Scope should include a study of how noise levels will not only affect nearby residents, but also non-resident pedestrians. (CPC)

Response: The noise analysis in the EIS will examine potential noise impacts at receptor sites. This would not be limited to residential locations, and it would not exclude non-resident pedestrians.

Comment 388: Include a weekend noise level analysis. If the proposal is to introduce a 24/7 environment into an area that is currently quiet on weekends, there may be a significant impact. (Harlem CDC, CB9, CPC)

Response: Potential noise impacts of the Proposed Project would be primarily due to project-generated traffic. This traffic would occur primarily on weekdays. Therefore, maximum noise impacts would be expected on weekdays, and a weekend noise analysis is not necessary.

Comment 389: The EIS should assess potential noise impacts from the bus depot air circulation vents on West 133rd Street. Construction of tall buildings above the existing bus depot may create a reverberation effect impacting residents at 3333 Broadway and require mitigation. (Harlem CDC, CB9) The EIS must analyze how sound reflected off the new tall buildings along Broadway from the IRT viaduct above Broadway would impact Manhattanville Houses, Grant Houses, 3333 Broadway, and the residential buildings on Tiemann Place, and identify mitigation measures. (CB9, CPC)

Response: As noted in the Final Scope, an analysis will be performed to examine the potential impacts on ambient noise levels due to the bus depot circulation vents on West 133rd Street, or the reverberation of sound from the new tall buildings to the locations cited above. Pursuant to CEQR requirements, at locations where the Proposed Actions would result in significant adverse noise impacts, the feasibility of implementing measures to mitigate these impacts will be examined.

Comment 390: The EIS should assess potential noise impacts on Manhattanville Houses, Grant Houses, 3333 Broadway, and the residential buildings on Tiemann Place from increased traffic and building operations in the Project Area. (CB9, CPC) Assess these impacts on Riverside Drive and Henry Hudson Parkway viaducts. (Harlem CDC, CB9, CPC)

Response: The analysis locations for the traffic-related noise analysis are selected based on the likelihood of noise level increases from project generated traffic and the sensitivity of the adjacent land uses. Residential uses are considered to be sensitive uses for the noise analysis. If the traffic analysis shows a doubling of traffic near any of the locations cited in the comment, a noise analysis will be conducted for that location.

Comment 391: What will be done about additional noise from the trains (Ortiz, C. Wadkins) and the noise from the subways bouncing off the tall buildings? (Etienne) There's a need for a noise abatement plan for the elevated IRT train that has been tested both nationally and internationally. This should include detailed information about the cities, towns, and countries studied. (Dunn)

Response: See the response to Comment 389.

CONSTRUCTION

Comment 392: Construction impacts for all pertinent technical areas must be analyzed. (CB9, CPC)

Response: As noted in the Draft and Final Scopes, the analysis of potential construction related impacts will include all pertinent technical areas, including transportation systems, air quality, noise and vibration, hazardous materials, infrastructure, historic resources, and socioeconomic conditions.

Comment 393: In 1986, we experienced a minor earth tremor. Nothing has been mentioned about this. This neighborhood cannot afford such pounding and digging. (Festco, De Bourbon) Analyze the impact of building on an underground stream and an earthquake fault line. (Harlem CDC, Lee)

Response: The "Natural Resources" chapter will describe the earthquake potential of the New York City metropolitan region and the Project Area, and assess the construction and operation of the Proposed Project in relationship to this potential.

Comment 394: The EIS should consider construction impacts from the renovation of existing buildings in the Academic Mixed-Use Area for interim use. (Draft Scope, p.23) (CB9, CPC)

Response: The bulk of construction activities from renovation of existing Columbia buildings in Subdistrict A for interim use would take place indoors. Except for construction staging, trailers, and materials delivery, most of the construction would be interior improvements. The construction analysis presented in the Final Scope focuses on the reasonable worst case, which would include those activities associated with major demolition and redevelopment throughout

Subdistrict A for the development of the Academic Mixed-Use Development Plan.

Comment 395: Construction impacts analyses must be based on the period of maximum construction activity and consider both subgrade and above-grade activities. (CB9, CPC) Proposed construction techniques for these activities must be documented. (CB9, CPC) The impacts and benefits of alternative techniques for sub-grade excavation, construction, and the removal of buildings/infrastructure (deconstruction and demolition) must be analyzed. (CB9, CPC)

Response: As described in the Final Scope, the analysis of potential construction-related impacts for both below-grade and above-grade activities generally will be based on two peak analysis years of construction activity, one peak year in each construction Phase. The likely construction techniques will be described in the EIS.

Comment 396: Explain in greater detail the "temporary closure and reconstruction of streets." The closure would likely impact existing businesses, residents, pedestrian and vehicular traffic patterns, and access to the new waterfront park. (Harlem CDC, CPC)

Response: Construction-related activities will be coordinated with the NYCDOT Office of Construction Mitigation and Coordination (OCMC). The EIS will address any temporary changes to area traffic patterns and temporary disruptions to businesses during construction that are associated with the Proposed Actions.

Comment 397: The EIS must address the kinds of trucks that will be used during construction and to serve the proposed development and the frequency of their visits. (CPC).

Response: The construction analysis in the EIS will contain a description of the types of trucks coming to and from the site and the frequency of their visits. The traffic analysis for the completed project will also describe and quantify the trucks coming to and from the site.

Comment 398: Access limitations/restrictions arising from subgrade construction must be documented, and impacts on businesses and residents, including reduced economic activity and increased emergency response times, analyzed. (CB9, CPC)

Response: As noted in the Draft and Final Scopes, likely temporary lane, street, and sidewalk closures will be described in the EIS. In addition, the EIS will assess impacts on existing business and on the traffic conditions that affect emergency responders

Comment 399: The Draft Scope should address how the businesses will be negatively affected by construction. Will Tuck-It-Away Storage and Pearlgreen be able to conduct their business while construction is going on? If not, what remedial steps will be taken to address the negative impact? (Siegel/WHBG) Analysis of socioeconomic-related construction impacts should include loss of revenue and potential displacement of local businesses arising from reduced access for customers as well as shipping or delivery services, and service and utility disruptions. (CB9, CPC)

Response: As noted in the Draft and Final Scopes, the impact of construction on existing businesses will be assessed in the "Construction" chapter.

Comment 400: All temporary takings of business establishments during the construction period must be analyzed as permanent takings. (CB9, CPC)

Response: As noted in the Draft and Final Scopes, the impact of construction on existing businesses will be assessed in the "Construction" chapter. There would be no temporary takings of business establishments during construction. The Final Scope has been revised to indicate this.

Comment 401: Strategies for minimizing the impacts of construction vehicles must be analyzed, including minimizing the number of construction truck trips through the maximization of truckloads, use of truck fleets that use alternative fuels, siting of an alternative fuel station in proximity to the Proposed Actions, and use of non-truck-based transport of construction materials. (CB9, CPC)

Response: Potential impacts from construction traffic, including both worker vehicles and truck trips, will be examined in the EIS. If necessary, measures to mitigate such impacts will be recommended.

Comment 402: Analysis of transportation-related construction impacts should include loss of curbside parking as a result of road and lane closures and competition for parking spaces from construction workers. (CB9, CPC)

Response: As noted in the Final Scope, parking during construction will be analyzed in the EIS.

Comment 403: A schedule of construction activities, including all periods of restricted vehicular and pedestrian access as well as excavation, demolition, and relocation of utilities, must be included in the EIS. (CB9, CPC)

Response: The construction schedule, to the extent it is known at the time of the EIS, will be included in the EIS

Comment 404: Impacts on public transportation during construction must be analyzed. (CB9, CPC)

Response: As noted in the Final Scope, potential impacts on public transportation during construction will be examined in the EIS.

Comment 405: The Draft Scope doesn't assess the construction impacts on pedestrian safety, local pest populations (Guishard), or on access to parks and streets. (Etienne) The Draft Scope needs to consider pedestrian safety during the construction period and the potential increase in accidents and injuries. (WEACT)

Response: Potential impacts on pedestrian safety from the Proposed Actions, as well as access to parks and streets, will be examined in the EIS. During construction, detailed maintenance and protection of traffic (MPT) plans will be developed and approved by NYCDOT to ensure appropriate vehicular and pedestrian traffic circulation and safety. The construction-period rodent control program will be described in the EIS.

Comment 406: There is no proposal to assess the air quality impacts from construction activities in the Draft Scope. That has to be fixed. (Prakash, NRDC) All construction equipment must use ultra-low-sulfur fuel and maximum available control technology for particulates emissions. (CB9, CPC) The EIS must present proposed methods for dust and air pollution during construction. (CB9, CPC) *(See related comment above, in "Air Quality.")*

Response: As noted in the Draft and Final Scopes under Task 21, Construction, item A, Air Quality, the construction analysis will analyze direct air quality emissions from demolition and construction site activity, including fugitive dust and on-site diesel equipment. The construction air quality analysis will also analyze potential effects from increases in mobile source emissions of trucks and worker vehicles at nearby sensitive receptors and congested locations, and from potential long-term traffic diversions. The EIS will also discuss measures to reduce impacts, including the measures cited in the comment.

Comment 407: The Draft Scope doesn't include construction-related noise, which is a huge omission considering the intensity and duration of activities, and the proximity of schools and high density of buildings in the area. (Guishard, Wadkins) The EIS should include a proposal for assessing and mitigating construction-related noise, and must present proposed methods for noise control during construction. (WEACT, CB9, CPC) *(Also in "Noise," above)*

Response: As described in the Final Scope, noise during construction, including effects on nearby sensitive receptors, will be assessed in the EIS. Potential mitigation measures will be presented.

Comment 408: Columbia should be required to develop a minimum energy construction strategy that includes deconstruction of all buildings in lieu of demolition, alternatives to dumping of construction-related materials, reuses for excavated fill, and a plan to minimize waste and reduce truck trips in and out of the construction zone over the entire build-out period. (CB9, CPC)

Response: The comment suggests a strategy for the reduction of construction waste. If the construction analysis identifies significant adverse impacts, practicable mitigation measures will be developed. The Final Scope has been revised to note this. The analysis will consider potential impacts, among others, from truck trips and construction waste.

Comment 409: The Draft Scope doesn't specify a method for assessing and mitigating impacts of construction vibration on nearby buildings. The Manhattanville Bus Depot was built in 1988 across the street from I.S. 195. The community children and parents expressed fear and discomfort from the vibration of the construction project. The Draft Scope doesn't include any way to assess or prevent the hazard of vibration. (Guishard)

Response: The Final Scope has been revised to explain more clearly that the potential for damage from vibrations caused by construction activities will be examined in the EIS. Any practicable mitigation measures to minimize vibrations will be identified.

PUBLIC HEALTH

Comment 410: Beyond level 2, anything else should not be located in any population area. It is not enough to rely on methods of avoiding accidents. Any level of research, if accidents did happen, could cause serious harm to lives and health. Biotech labs that work with dangerous substances have no place in a high-density residential neighborhood. (Danesh, Levine, E., Echavarria, Norris, McClure, Ortiz, E., Zapata, Rodriguez, G., Prestinary, Fung, Rodriguez, C., Batista, Liu, Etienne, Ortiz, C., MH/WH Sanitation Coalition, Sutton, Fares, McNamee, Yananton, Kent-CB9, CPC)

Response: See the response to Comment 290.

Comment 411: To facilitate Columbia's planning process, WEACT and Environmental Defense have collaborated in drafting an Environmental Benefits Agreement, which is a set of recommendations, including: using building material that provides proper insulation, resisting mold and other allergens that reduce asthma and other respiratory ailments, designing and implementing an integrated pest management plan for the occupied space that will minimize exposure to pesticide toxicity, and incorporating green roofs (to increase energy efficiency and to reduce the heat island effect from stormwater runoff). (Jordan-CB9).

Response: Comment noted.

Comment 412: The Draft Scope does not contain an adequate proposal for assessing the health impacts of the development proposal. The Draft Scope is not responsive to the *CEQR Technical Manual* guidelines. One example of a specific omission is the failure to discuss how to assess public health impacts of potential solid waste management practices that could attract vermin and result in an increased impact on populations. At a minimum, the possible health issues that disproportionately affect community residents must be directly addressed in the EIS, and these are likely to be impacted for the worse by the proposed development. (Lofton)

Response: The Final Scope has been clarified to state that the EIS will follow *CEQR Technical Manual* guidelines in preparation of the public health analysis, and the "Public Health" chapter will include all relevant information in assessing the project's potential impact on public health, including vermin control.

Comment 413: During the initial construction phase, the pollution loading of increased air and noise pollutants will worsen Harlem residents' already poor cardiovascular health. The extensive excavation in the area will result in an increase in fugitive and fine particles emissions, thus intensifying the already large amount of particulate matter pollution in the area. (WEACT)

Response: The EIS will assess the potential for construction-related significant adverse impacts from air pollutants, including fugitive dust emissions and emissions from demolition and construction activities. If significant adverse noise or air quality impacts are identified, any concomitant impacts on public health will be examined, and any practicable mitigation will be identified.

Comment 414: Low birth weight and premature health—which at 11 percent of live births is higher in this community than anywhere else in the City—is related to both air pollution and environmental stress, which would be aggravated by the construction of this project. (Lofton)

Response: The public health analysis for the Proposed Actions will use analysis procedures and impact criteria in the *CEQR Technical Manual*. If significant air quality or other significant impacts of the Proposed Actions are identified, any concomitant impacts on public health will be examined, and any practicable mitigation will be identified.

Comment 415: There is a tangible and well-documented connection between environmental health hazards, such as noise and air pollution, and overall anxiety in fear of displacement on mental health and well-being. Colombia's project will increase community fears of displacement and gentrification, as well as cause direct

displacement of residents currently living in the area. The project will also spur a rash of land speculation and cause rent and housing prices to skyrocket, which will result in secondary displacement. The fear of residential displacement and rising rents can create stress that in turn manifests in mental and physical disease. During the later construction phases, anxiety will likely increase as the presence of security guards and strange/new people are introduced into the area. (WEACT) It is well within the mandate of the *CEQR Technical Manual* for the EIS to assess the overall impact of the development on community health and mental health by all measures that fit within this category. (Lofton, WEACT) The Draft Scope should include an assessment of mental health consequences of the impacts to socioeconomic conditions. (WEACT)

Response: The public health analysis for the Proposed Actions will use analysis procedures and impact criteria in the *CEQR Technical Manual*. The EIS will not include a specific analysis of project impacts on mental health in the study area. However, the potential for adverse effects resulting from indirect residential and business displacement on neighborhood character will be addressed.

Comment 416: The development will discourage local residents from using the waterfront park and Fairway grocery store, which will pose an unreasonable risk to public health. The expansion plan will also likely contain campus gates, security guards, walls and raised pedestrian bridges; all act as an effective barrier between the campus and the local community. This possibility, and the consequent impacts on public health (specifically physical activity patterns and mental health), must be assessed in this section of the EIS. (WEACT)

Response: As noted elsewhere in responses to these comments, no gates, walls, or pedestrian bridges that could interfere with public access are proposed by Columbia, nor are they allowed under the proposed rezoning. The Special Zoning District text would widen most east–west sidewalks through the area in order to improve both visual and physical access to the Fairway Market and the waterfront. The public health analysis for the Proposed Actions will use analysis procedures and impact criteria in the *CEQR Technical Manual*.

Comment 417: The EIS should require an examination of public health issues from the perspective of the often overlooked impact of the large upper income/exclusive development on low income communities. (CPC). The EIS should include an analysis of the potential impacts on public health, community identity, and social psychology caused by direct and indirect residential and business displacement and complete transformation of the physical and social environment as a result of Columbia's proposed rezoning action and development plan. (CB9, CPC, WEACT) A white paper on Columbia University's project, attached to CB9's written submission, dated January 5, 2006, discusses the significant and potentially long-term consequences of

"massive spatial reorganization," such as widespread urban renewal practiced in the 1950s and 1960s, with reference to Columbia's Manhattanville expansion plan. (CB9, CPC)

Response: The public health analysis for the Proposed Actions will use analysis procedures and impact criteria in the *CEQR Technical Manual*. While CEQR does consider the effects of an action on neighborhood character and socioeconomic conditions, it does not include an analysis of the effect of potential displacement on community identity and social psychology.

Comment 418: Asthma is a serious threat to the community. Twenty-five percent of children under 13 in Harlem have asthma, and the national rate is only 6 percent. There are already a lot of diesel and other tailpipe pollutants in the area. (Rosenfield, Lofton, ED) It is vital that the project incorporate pollution reduction strategies (i.e., green building) into its design to yield long-term benefits for the community. (NRDC)

Response: The Final Scope has been revised to note that these issues will be addressed in the EIS, including Columbia's commitments to emission controls on construction equipment. In addition, Columbia has stated that it is studying the feasibility of incorporating high-performance building standards and green design into its new buildings. To the extent that these standards and designs are known at the time of the EIS, they will be described in the EIS.

Comment 419: The World Health Organization's Health Impact Assessment methodology is an excellent approach to comprehensively and accurately assess the environmental and public health impacts of a proposed development project. Given the size and duration of this enormous project, there must be real community participation and an assessment by the process as well as a development and monitoring of mitigation measures. (Lofton; Prakash)

Response: The WHO Health Impact Assessment (HIA) methodology provides a general framework for assessing the health impacts of a project, and encourages decision makers to undertake HIA using available evaluation tools. The CEQR process, consistent with the recommended HIA framework, provides detailed guidance for assessing impacts using the most current and accepted evaluation tools, while addressing environmental issues specific to New York City. The environmental and public health analysis for the Proposed Project will use analysis procedures and impact criteria as presented in the *CEQR Technical Manual*.

Comment 420: The EIS should look at the history of the Manhattanville Health Clinic at 21 Old Broadway, which was a popular free clinic for children and immigrant families. The City's yielding to Columbia's desire to take over the clinic should be discussed because it presents a model for predicting some of the long-term

consequences the community faces as a result of conflicting approaches to public health between Columbia and the community. (CPC)

Response: The Manhattanville Health Clinic, located at 21 Old Broadway, is owned and operated by the New York City Department of Health and Mental Hygiene (DOHMH). DOHMH closed the clinic for renovations in June 2005 and diverted clients seeking health services to the Health and Hospitals Corporation's (HHC) nearby Grant Houses. Closure of this clinic is unrelated to the Proposed Actions and will not be included in the EIS.

MITIGATION

Comment 421: Columbia violates its CEQR mandate by ignoring any mention of mitigation or alternatives that would minimize the development's impact on the housing condition in West Harlem. Under CEQR, reasonable mitigation measures include providing housing of equivalent quality and close proximity to the residents' present location. (Jordan-CB9, Cadore, NRDC, WEACT)

Response: The purpose of the EIS is to evaluate the potential for the Proposed Actions to result in significant adverse impacts on the environment. As noted in the Draft and Final Scopes, the EIS analyses will be prepared for all the technical areas listed in the *CEQR Technical Manual,* including socioeconomic conditions, which will include an assessment of whether the Proposed Actions would have significant adverse impacts relating to direct or indirect residential displacement. The analysis of direct residential displacement will describe the relocation assistance available to residents being displacement by the Proposed Actions. Practicable mitigation measures, if any, will be developed for any significant adverse impacts identified in the EIS.

Comment 422: The Draft Scope should require the EIS to identify and study mitigation measures that would eliminate the expansion's adverse impacts. This analysis must be compared side-by-side with the analysis of the appropriate technical areas. For each technical area, the *CEQR Technical Manual* provides specific strategies for avoiding, eliminating, and minimizing significant adverse impacts. The *CEQR Technical Manual* mitigation discussion is squarely placed within the guidance for analysis of individual technical areas, and not in a separate stand-alone section. The Draft Scope should be revised to study project mitigation alongside its analysis of impacts in individual technical areas—not a stand-alone section. (WEACT)

Response: For any significant adverse impacts identified in the EIS, any practicable mitigation measures will be developed with appropriate City and State agency coordination. Any practicable mitigation measures identified will be summarized in a separate chapter, "Mitigation," to allow the reader to easily

identify the potential adverse impacts and the measures to avoid or reduce any such impacts.

Comment 423: Columbia continues to ignore the study of mitigation measures, such as implementation of permit parking—permitting plans that would preserve parking priority for Manhattanville residents or plans that replace this lost parking capacity by allowing Manhattanville residents access to the Columbia parking structures. (Ugbaja)

Response: Should significant adverse impacts be identified in relation to parking, any practicable mitigation measures to avoid or reduce significant adverse impacts would be identified in the EIS.

Comment 424: Columbia's planned development will have a significantly adverse impact on both the urban design and visual resources of the Project Area; thus, Columbia must identify and study mitigation measures and project alternatives that will avoid or reduce this harm. (WEACT)

Response: The "Urban Design and Visual Resources" chapter of the EIS will assess the potential of the Proposed Actions to adversely impact the urban design and visual resources of the study area. Should significant adverse impacts be identified, any practicable measures to avoid or reduce the significant adverse impacts would be identified in the EIS.

Comment 425: Columbia should design its expansion to first avoid any impacts before working to mitigate them. (ED, CB9,CPC, WEACT)

Response: The EIS will discuss and analyze strategies that have been considered and incorporated in the design of the Proposed Project to avoid and minimize potential environmental impacts. For example, design considerations aimed at minimizing air quality impacts include restrictions on fuel usage and fuel sulfur content, exhaust stack heights, and location of exhaust vents from interior parking facilities. Based on such design elements, the environmental analyses contained in the EIS will first determine if the Proposed Actions would result in any significant adverse impacts. Any significant adverse impacts identified would then require that any practicable mitigation measures and/or alternatives be developed to avoid or reduce impacts. These mitigation measures will be identified in the EIS.

ALTERNATIVES

Comment 426: There must be a non-eminent domain alternative to the Columbia plan in the EIS. (Stanislaus-CB9, Shiffman-CB9, Yananton, Sprayregen, Bailey, Siegel/WHBG, Zuhusky, Paterson, Snowden, CB9, CPC) The proposed

expansion site is not a blighted area, although the assemblage of sites and warehousing of space by Columbia may give the appearance of blight. Therefore, it is crucial that the EIS include an analysis of Columbia's proposed Manhattanville campus development without eminent domain as an alternative. (Bailey, Yananton) The EIS should consider a separate alternative that would achieve the academic needs identified in Columbia's project plan while only developing that portion of the research facilities that avoids the use of eminent domain and is consistent with the 197-a Plan. (CB9, CPC)

Response: The EIS will analyze a reasonable worst-case development scenario that assumes full development of the Project Area, based on assemblage of sites and development of below-grade facilities. This is a conservative analysis for CEQR purposes, since it tends to maximize the levels of potential impacts. Based on the EIS analysis of this reasonable worst-case development scenario, the EIS will also evaluate alternatives that would reduce or eliminate impacts of the Proposed Actions while substantively meeting the goals and objectives of the Proposed Actions. The use or non-use of eminent domain to achieve assemblages is not itself a subject for the EIS. However, the EIS will include discussion of an "infill development" alternative under which Columbia facilities would be developed only on properties it currently owns or controls, and consider the extent this would meet the long-term needs identified by Columbia. The 197-a Plan, which does not include use of eminent domain, will also be considered as an alternative in the EIS.

Comment 427: The 197-a Plan must be compared topic by topic as a full-blown alternative analysis, not merely to mitigate impacts. It should include a detailed analysis of the tax consequences of development by Columbia in contrast with development under the 197-a Plan. (CB9, Stanislaus-CB9, Chait-CB9, Eisenberg, Bailey, Kappner/Bias, ED, McOwen, Zuhusky, Paterson, Schneiderman, CPC) Community Board 9's framework for inclusion of the 197-a Plan that was submitted to DCP on November 7, 2005, must be the basis for the analysis of the 197-a Plan as an alternative in the EIS. (CB9)

Response: The 197-a Plan will be assessed in the EIS as an alternative using analysis procedures contained in the *CEQR Technical Manual* and as described in the April 11, 2006 letter to CB9 from DCP Counsel.

Comment 428: The 197-a Plan should be mentioned when discussing the area's public policies. (Harlem CDC, Ackerman) The comparative impacts of the 197-a Plan must be analyzed for each technical area in the EIS, along with existing conditions, Columbia's proposed development for the future Build years, the No Build alternative, and any other alternative, as required under both City and State environmental review laws, not just in the alternatives section. (CB9, CPC)

Response: The 197-a Plan will be assessed in the EIS as an alternative using analysis procedures contained in the *CEQR Technical Manual* and as described in the April 11, 2006 letter to CB9 from DCP Counsel.

Comment 429: The separate Alternatives section is confusing and undermines CEQR's objective in providing the public and decision makers with a project description that is sufficiently detailed, and that includes a side-by-side comparison of the project's impacts, and measures that will be taken to eliminate or lessen its negative effects. (WEACT)

Response: CEQR requires that alternatives to the Proposed Actions be identified and evaluated in an EIS. Under CEQR/SEQRA, alternatives considered should reduce or eliminate impacts of the Proposed Actions while meeting the goals and objectives of the action. Where significant adverse impacts of the Proposed Project have been identified, the analysis will determine the impacts of one or more reasonable alternatives (if any) to provide a comparison. Having a separate Alternatives section is consistent with the *CEQR Technical Manual* and CEQR practice.

Comment 430: EDC's Master Plan must be included as an alternative, with a side-by-side comparison of the two plans for the analysis. (WEACT).

Response: The West Harlem Master Plan will not be assessed as an alternative because it is not a specific zoning or land use proposal. The consistency of the Proposed Actions and the 197-a Plan Alternative with the West Harlem Master Plan will be considered in the EIS.

Comment 431: The Draft Scope must identify and analyze alternatives that would minimize or avoid its environmental and health impacts. For example, it must consider alternative locations within the study area for siting facilities such as bioresearch laboratories or parking garages so that their exhaust does not amply into sensitive uses and users. (WEACT).

Response: The identification of alternatives is linked to the anticipated impacts. If any significant adverse impacts are identified, the EIS will identify any practicable mitigation measures and would consider reasonable alternatives.

Comment 432: Include a discussion of a potential rezoning to implement an adopted 197-a Plan in the "Future Without the Proposed Actions" section. It is unlikely that Manhattanville would remain in its current condition without the Proposed Actions, considering the recent and planned investment in the area (e.g., Pearlgreen, Dinosaur BBQ, Gluck Architects, Hudson River Café, Alexander Doll, Fairway, the waterfront park, etc.) and the community's adoption of its 197-a Plan. (Harlem CDC)

Response: The 197-a Plan will be assessed in the EIS as an alternative using analysis procedures in the *CEQR Technical Manual*. As required by SEQRA, the No Action Alternative will be a separate alternative that describes the environmental conditions that would exist for all technical areas of the EIS if no action were undertaken. The No Action Alternative provides a baseline for the evaluation of impacts associated with the Proposed Project. All known or announced projects, or proposals pending approval that can be reasonably expected to be completed (including rezoning and public policy), are included in the No Action Alternative.

Comment 433: Alternatives analyses should include inclusionary zoning as a means of ensuring the provision of affordable housing in all districts rezoned from manufacturing to residential and commercial uses: Subdistrict A (from M1-2, M2-3, and M3-1 to C6-2); Subdistrict C (from M1-2 to C6-2), and the Other Area east of Broadway (from M1-2 to R8-A). (CB9, CPC)

Response: As noted in the Draft and Final Scopes, the program for Subdistrict A would include only University housing, which is a community facility use under City zoning, and so it would not be subject to inclusionary zoning. Housing would not be permitted in Subdistricts B and C, so these areas, too, would not be appropriate for inclusionary zoning. Inclusionary zoning could be applied to the Other Area east of Broadway, the proposed zoning for which would encourage residential development. However, the number of affordable units that could be produced in this area is limited, given the small number of projected development sites. In addition, as noted in the Final Scope, the "Alternatives" chapter of the EIS will consider the proposed 197-a Plan, which contains requirements for 50 percent of new units to be affordable.

Comment 434: Columbia has extensive holdings in New Jersey. Why not use this? Shuttle bus services, as have been used by NYU, can be incorporated into the project. (Snowden)

Response: The EIS will discuss Columbia's consideration and rejection of expansion at its existing facilities outside Manhattan as a means to meet its long-term growth needs.

Comment 435: Columbia should consider as an alternative the possibility of using infill development focused on preserving the existing structures for the proposed Academic Mixed-Use Area. (Schneiderman, Nagle, Yananton, CB9, CPC)

Response: As noted in the Draft and Final Scopes, the purpose of the Proposed Actions is to meet Columbia University's stated need for additional academic research, academic teaching facilities, and University housing to support its mission and maintain its status as one of the world's leading universities. Infill development focused on preserving existing structures is not being proposed by Columbia for

the Academic Mixed-Use Area because Columbia believes that it could not accommodate the building sizes and layouts needed for academic research, teaching, or housing for students, faculty, and other employees. In addition, Columbia believes that infill development could not provide contiguous below-grade support.

Comment 436: Non-defense medical research may result in valuable long-term contributions to society (and the community). Why isn't another type of research being considered as an alternative? (CPC)

Response: Columbia's plans for the specific types of academic research at all of the proposed research buildings for the Manhattanville university area have yet to be defined. For analysis purposes in the EIS, the academic research facilities have been defined as containing science laboratory space to reflect the range of research facilities that could be sited in the Project Area. The academic research contemplated for Manhattanville is not necessarily defense-related and includes research that could lead to valuable long-term contributions to society, including medicine and patient care, among others.

OTHER COMMENTS

ENVIRONMENTAL JUSTICE

Comment 437: The methodologies for conducting an environmental justice analysis must be proposed as a supplement to the Draft Scope for comment before finalization of the Scope. (CB9, Embola) The Draft Scope must include an analysis of its environmental justice impacts in order to comply with State and Federal permitting policy. (WEACT, CB9)

Response: As noted in the Final Scope, the environmental justice analysis in the EIS will be conducted in accordance with *CP-29 Environmental Justice and Permitting,* (the "Policy"), issued by DEC on March 9, 2003.

Comment 438: Critical components of an environmental justice analysis are the performance of existing sources and background levels of pollution. This analysis must include a detailed assessment of any permitted industrial facility in, or adjacent to, the expanded study area (including Columbia's Morningside Heights and Washington Heights campuses and proposed Manhattanville development). (CB9, CPC)

Response: See the response to Comment 437.

Comment 439: Columbia's planned development would affect the environmental justice balance of the City. West Harlem is already overburdened and is forced to endure sewage problems for almost Manhattan's entire west side and the North

River Sewage Treatment Plant. West Harlem is home to no less than six pollution-generating bus depots, and, of course, Manhattanville has its very own. There's also a Marine Transfer Station. Columbia would commit a travesty of justice if it continues to ignore the environmental racism perpetrated on this community. Therefore, Columbia's analysis must include alternatives that avoid adverse impacts on Manhattanville residents and other low-income communities and communities of color. (Charles-Guzman, Gholson, WEACT)

Response: An environmental justice assessment will be included as an appendix to the EIS. The identification of alternatives is linked to the anticipated impacts; if any significant adverse impacts are identified, the EIS will present any practicable mitigation measures and consider any reasonable alternatives.

Comment 440: Putting this in a low-income and primarily Black and Hispanic community is unjust. (Zapata) It is important that the Draft EIS addresses the effects of Columbia's expansion project in the context of a broader set of developments that have significant impacts on the area's residents and quality of life. Because of zoning allowances, a certain neighborhood can be the target of developments that could have negative impacts. It is often the case also that neighborhoods that undergo this process are often low-income and minority communities, presenting an environmental justice problem. Therefore, it is important that the Draft EIS addresses cumulative impacts in the West Harlem area as well as including a section that analyzes the expansion project in the context of Environmental Justice. (ED)

Response: An environmental justice assessment will be included as an appendix to the EIS.

COMMUNITY OUTREACH

The following comments do not address the Draft Scope, but are included here to complete the range of comments made during the scoping process.

Comment 441: Community boards need technical expertise to effectively review an EIS. Funding for this should be taken into account in the EIS. (Paterson)

Response: Comment noted.

Comment 442: We must let elected officials know that this expansion is going to change the face of this community. It's not simply about Columbia. Government has a role. Government exists for the public good, and we must make them accountable. (Shephard, Cottman)

Response: Comment noted.

Comment 443: The Office of the Borough President is not about land use and zoning. It's about community-based planning, community boards, real EISs, sitting down and

having a real Community Benefits Agreement that ensures the protection of people's homes and hopefully an expansion that will really benefit the City and the surrounding neighborhoods. (Stringer)

Response: Comment noted.

Comment 444: With Columbia University's vast experience dealing with the upper Manhattan community, you would think that the University would love this opportunity to create something so vitally needed: affordable housing and business opportunities for people who won't or would not have them otherwise, people who, because of projects like this one, are often displaced in upper Manhattan.

This is what is important for Columbia to do to be able to make any plans palatable to people in the community, otherwise it would just continue to be a hostile project in our community. And when they're talking about the benefits and revitalization in upper Manhattan and West Harlem, they recognize that the people who are already here deserve to benefit as well as Columbia University. (Adams-CB9, Kappner/Bias, Cottman)

Response: Comment noted.

Comment 445: We receive daily mailings regarding property that realtors are selling in the Harlem, Hamilton Heights, and Washington Heights area and flyers saying "if you like Inwood, you'll love Jackson Heights for half the price." These do not just suggest that people move, they tell them to move. This is disturbing and is not a correct position. (Mack, CPC)

Response: Comment noted.

Comment 446: We cannot only look at the Manhattanville area and talk to it specifically when we talk about the entity (Columbia) which has presented or is making a plea to be able to have these changes and these City subsidies to enable them to re-alter the legacy of a people, and to enable them to be able to be subsidized at the disbenefit of so many others. We can refer to this specific development area of being West Harlem/Manhattanville, but Columbia is a very dominating entity within the Harlem community. Its history and its legacy has not been one favorable to the Harlem community. (Gholson)

Response: Comment noted.

Comment 447: The proposed changes have little or nothing to do with the affected community. They are meant first and foremost to benefit Columbia. (Dunn, Yananton, Payne)

Response: Comment noted.

Comment 448: There are key lessons that we have to take away from experience with Columbia's previous expansions in upper Manhattan. The first is a pattern Columbia has of reneging on its promises in a community to win its support during the expansion. The Audubon Biotech Park in Washington Heights project won agreement in Washington Heights because of promises of jobs, internships, union memberships, and scholarships for careers in the health sciences. But on each of these accounts, a decade and a half on the record is abysmal. Very few, if any, community members have gotten internships or union memberships. And today, only one-seventh of the promised scholarship money has even been allocated. (Levine, M.-CB12) The Draft Scope should examine the promises (sometimes informal) that were made in the Audubon project, which influenced the approval of the community. (CPC)

Response: Columbia University is discussing a negotiated agreement with community representatives. This process is not part of CEQR review.

Comment 449: Columbia University has the Earth Institute. Jeffrey Sachs goes all over the world fighting for people who live on a dollar a day, which is very important because there is so much poverty in the world. But the Earth Institute needs to pay attention to what's going on in his community because poverty is here. (Ramos, Lewis)

Response: Comment noted.

Comment 450: Despite the public relations campaign waged by Columbia University in our community for the past two years, Columbia has come across once again as our enemy and not our friend. (Levine, E.)

Response: Comment noted.

Comment 451: Our building (3289 Broadway) is part of the Tenant Interim Lease Program, which helps tenants put together cooperative, affordable housing in this community. This plan is unacceptable as it stands right now. This would never happen in a community in Midtown, Upper East Side, or any other affluent community in the City. We are here to fight this plan as it stands as long as it threatens our homes, our businesses, and our community. (Rosello)

Response: Comment noted.

Comment 452: Columbia showed and described a plan that did not include 3333 Broadway. The 3333 Broadway building land was bought for $1. The building was supposed to stay in the Mitchell-Lama program as affordable housing for 75 years. After 30 years, they have sold out. People are being displaced. People are being put out. People are homeless. Columbia, what do you have to offer to the people of 3333 Broadway? (Petty)

Response: Comment noted.

Comment 453: Columbia's educational ambitions should be more inclusive of our local communities.' We have no agenda to remove them from the land that they have called home. But that is the agenda that they have for us. (Mazzoni)

Response: Comment noted. *